

Crop Monitoring in Liberia

Presented by: Aurelia M. Jones

Table of Content

- General information for Agriculture.....1
- Crop Phenology for Rice (Narica L-19).....2
- Crop Phenology for Rice (Land preparation, Meteorology).....3
- Crop Phenology for Rice (Time).....4
- Current problems.....5
- Requirements6
- Expectation.....7

General Information for Agriculture

- Agriculture is the basis of livelihood for about 48.9% of Liberia's population which accounts for about 36% of the country's GDP. This constitutes 14% total of export earnings (World Bank 2021).
- Farmers depend on agricultural produce for livelihood and other socio-economic activities. Though there are interventions being made by the government (Ministry of Agriculture) through the Smallholder Transformation Revitalization Project (STAR-P), FAO ETC., the system is still poorly integrated and limited in basic infrastructure such as machineries, farming equipment's/tools, farm to market roads, fertilizers/pesticides, technological equipment's and food storage facilities.
- The most dominant system of agriculture here is rain fed.
- One of our main crops is rice (staple food).
- Agricultural practices in terms of crop monitoring is through traditional human inspection

Crop Phenology for Rice (Narica L-19)

- Low land cultivation is highly encouraged amongst farmers in Liberia due to the availability of water in the field all year round, which enhances productivity and yield as well as, the move from rain fed agriculture
- Rice been a major crop in Liberia, Narica L-19 is one of the preferably used variety by farmers because of its early maturity and yield, can be planted on low land all year round. The process starts by sowing of seeds on nursery which will Vegetate/emerge fully having 3-5 leaves with-in three weeks and is now ready for transplanting.

Crop Phenology for Rice (Land preparation, Meteorology)

- The inspection of proposed cultivated area is carried out to ensure good irrigation system is in place; this may include look out for vegetation's with broad leaves, source of water etc. after which clearing, de-storming, removal of debris and construction of head dike from the source of water, the peripheral canal, the tail dike and central canal for outlet (irrigation control structures).
- Next will be the division of plots 20/20m or 400sq.m, plow the plots by hoe (manual) or power tiller/tractor (mechanized) and have it leveled, after which, fertilizer application is done; 6Kg of NPK (15, 15, 15) on one standard plot and wait for two to three days for transplanting; rice is planted 30 cm apart in row. Alternatively you may apply top dressing after two-three weeks.

Crop Phenology for Rice (Time)

- Within six weeks, other branches aside from the mother plant will start to sprout out. The booting stage is between 45-60 days and panicle/heading will be initiated;
- The milky/grain filling stage is between 60-75 days;
- while the ripening/maturity stage is between 75-90 days at which time harvest takes place.
- Crop monitoring takes place from nursery up to harvest time
- variety of rice is chosen based on early maturity and yield.
- Other preferred varieties are Suacoco 8, Narica 14, etc.

Current problems

- Smallholder farmers are resource poor and produce on a subsistent level
- limited access to fertilizer and irrigation technology, poor seeds and breeding stock, limited access to machineries, infrastructures, transportation storage and market access
- Limited knowledge and use of agricultural technology/ remote sensing (GIS, drones, etc.) for proper monitoring and early warning
- Limited access to laboratory systems for pest identification and decision making
- Typical farmers are faced with numerous bio-physical constraints, low-yielding, crop varieties, pests, and diseases, as well as poor soil conditions

Requirements

- The lowland areas needs to be rehabilitated to increase water and land availabilities
- Rehabilitation of feeders roads
- Promotion of value addition; to increase agriculture production and strengthen linkages between farmers and markets which will improve the food security and better price of staple food (rice, cassava, vegetables).
- Capacity building in the areas of laboratory services for decision making, GIS, GPS, use of drones, system of rice, crop production on a larger scale, identification of pests, diseases and weeds, report writing and data collection

Expectations

- The development of extensive technical skills in acquiring, extraction, mapping, management of data, and data analysis to improve monitoring and food security
- The application and practicalization of knowledge gained from remote sensing training and setting up of data-base to keep surveillance on crops in Liberia's agriculture sector
- Knowledge gained will be used for early warning on pest infestation (Crop Monitoring), research purposes to prevent the recurrence of natural phenomenon and report writing
- Trainers to be able to train other technicians back home on remote sensing