HOW TO manage soil nutrients

EXCESS NUTRIENTS
- Inappropriate sources, rates, placements and timing of application of mineral and organic fertilizers
- Unsound basic livestock management (e.g. exceedng livestock carrying capacity)

LACK OF NUTRIENTS
- Inadequate access to and availability of mineral and organic fertilizers
- Soil degeneration processes (e.g. erosion, compaction) preventing any recovery of nutrient levels and causing soil nutrient losses
- Plant uptake and soil degradation

WATCH OUT! OFTEN PRIMARY NUTRIENTS ARE ADDED IN EXCESS WHILE SECONDARY AND MICRO NUTRIENTS ARE LACKING

SUSTAINABLE NUTRIENT MANAGEMENT
- Making nutrients available when crops need them
- A balanced supply of nutrients from various sources in plant-available form
- Ensuring fertilizer use efficiency

LACK OR EXCESS OF NUTRIENTS CAN SHOW ON CROPS’ LEAVES, ROOTS, AND FRUITS. HOWEVER, SYMPTOMS CAN VARY DEPENDING ON THE PLANT, NUTRIENT, SOIL TYPE, pH, WATER STATUS, AND WEATHER CONDITIONS

EXAMPLES OF SUSTAINABLE MANAGEMENT PRACTICES
- Integrated Soil Fertility Management (ISFM)
- Crop rotation
- Fertigation (through irrigation water)
- Foliar application

WATCH OUT! OFTEN PRIMARY NUTRIENTS ARE ADDED IN EXCESS WHILE SECONDARY AND MICRO NUTRIENTS ARE LACKING

EXCESSIVE FERTILIZER USE CAN ALSO CAUSE SOIL/WATER POLLUTION, AFFECTING THE QUALITY OF DRINKING WATER AND THAT OF ENVIRONMENT

Lack of nutrients can limit the uptake of another. If one of the essential plant nutrients is deficient, plant growth will be poor even if all other essential nutrients are sufficient [Liebig’s law of minimum]