



Introduction to Agriculture



Agriculture

is derived from Latin words
Ager and *Cultura*.

Ager means land or field and
Cultura means cultivation

Therefore, the term agriculture means
cultivation of land.

Synonymous with **Farming**.



It is also referred as the science of producing crops and livestock from the natural resources of the earth.



AGRICULTURE AS AN ART, SCIENCE AND BUSINESS OF FARM PRODUCTION

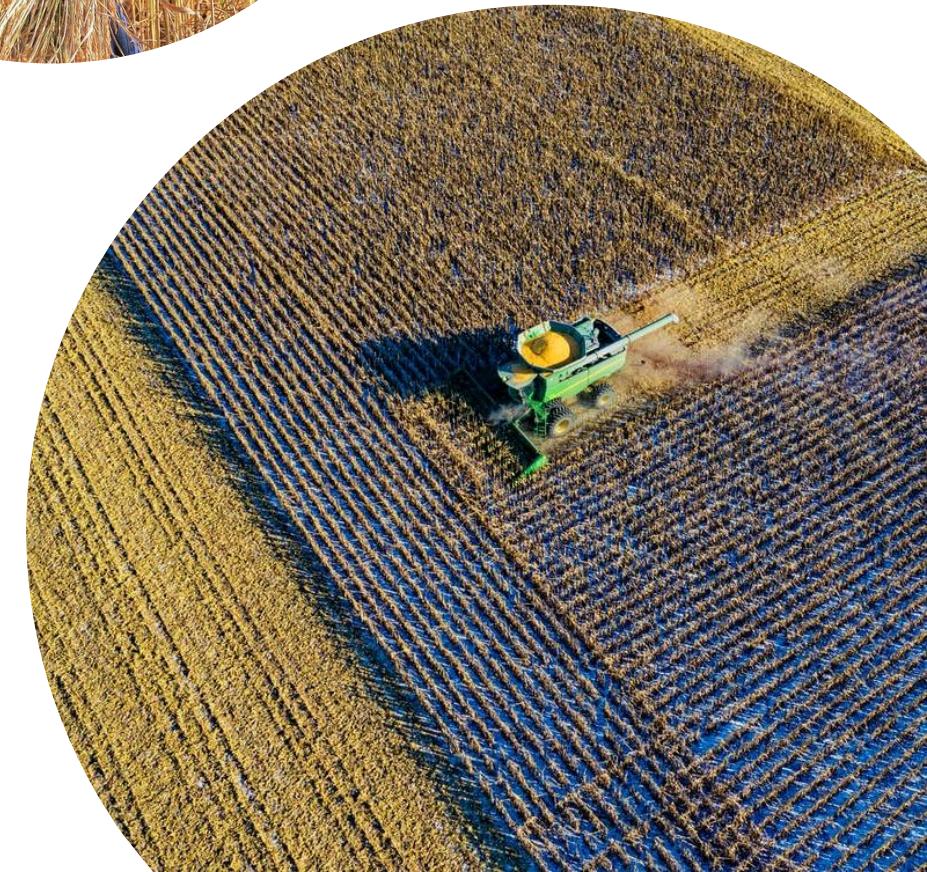
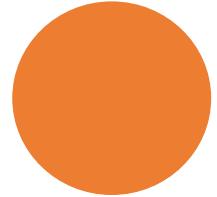
- Agriculture is defined as the art, the science and the business of producing crops and the livestock for economic purposes.

AS AN ART

it embraces knowledge of the way to perform the operations of the farm in a skillful manner.

The skill is categorized as;

Physical skill and Mental Skill



Physical skill:

It involves the ability and capacity to carry out the operation in an efficient way for e.g., handling of farm implements, animals etc., sowing of seeds, fertilizer and pesticides application etc.



Mental skill:

The farmer can take a decision based on experience, such as (i) time and method of ploughing, (ii) selection of crop and cropping system to suit soil and climate, (iii) adopting improved farm practices etc.



AS A SCIENCE

It utilizes all modern technologies developed on scientific principles such as crop improvement/breeding, crop production, crop protection, economics etc., to maximize the yield and profit. For example, new crops and varieties developed by hybridization, transgenic crop varieties resistant to pests and diseases, hybrids in each crop, high fertilizer responsive varieties, water management, herbicides to control weeds, use of bio-control agents to combat pest and diseases etc.



AS THE BUSINESS

As long as agriculture is the way of life of the rural population, production is ultimately bound to consumption. But agriculture as a business aims at maximum net return through the management of land, labor, water and capital, employing the knowledge of various sciences for production of food, feed, fiber and fuel. In recent years, agriculture is commercialized to run as a business through mechanization.



BRANCHES OF AGRICULTURE

3 main spheres of Agriculture:

- **Geoponic** (Cultivation in earth-soil)
- **Aeroponic** (cultivation in air)
- **Hydroponic** (cultivation in water)



Branches

- Crop Production
- Horticulture
- Forestry
- Animal Husbandry
- Fishery Science
- Agricultural Engineering
- Home Science



4 Major Categories

1. Crop Improvement
2. Crop Management
3. Crop Protection
4. Social Sciences



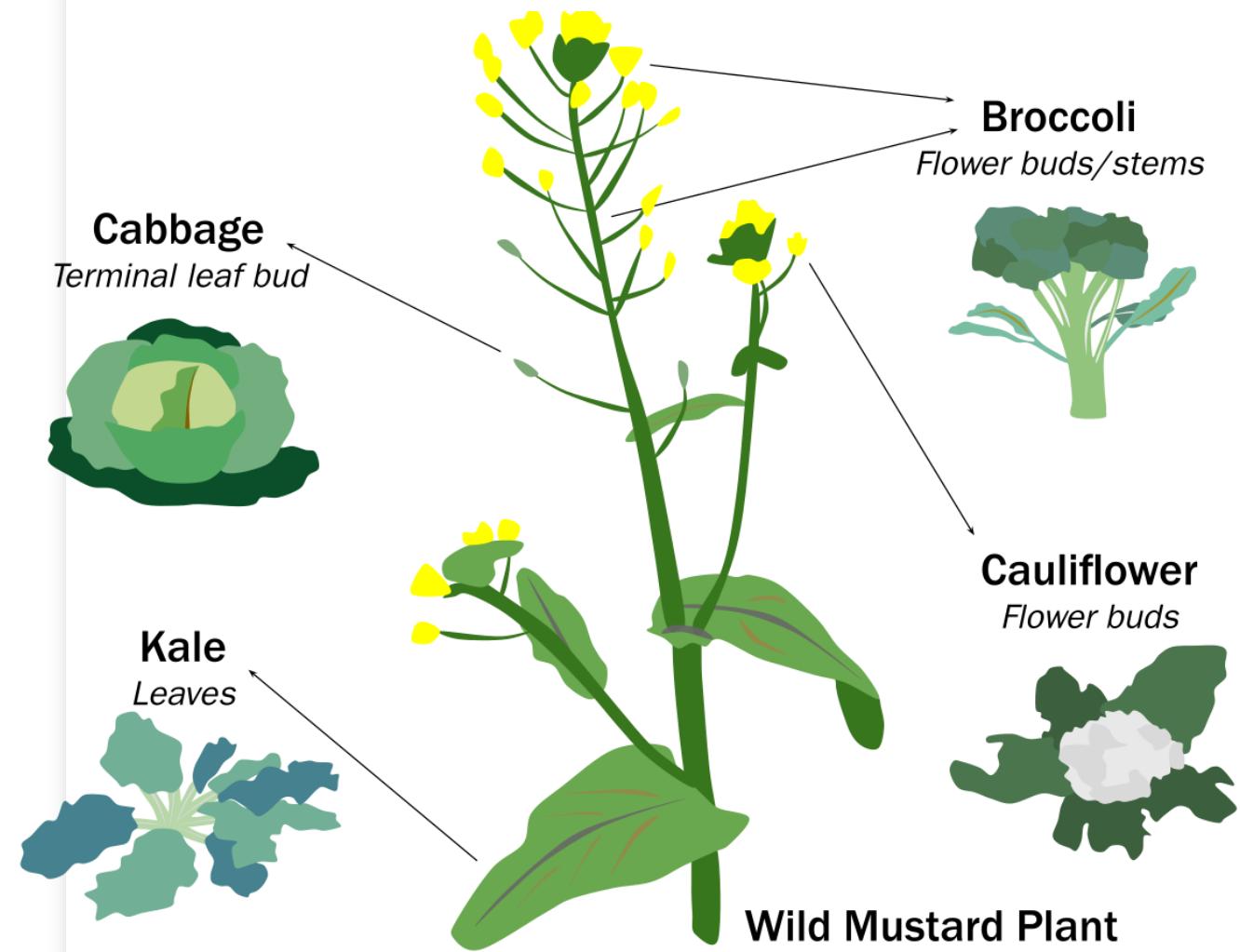
A. Crop Improvement

- (i) Plant breeding and genetics
- (ii) Bio-technology



Plant breeding

Plant breeding is the science of changing the traits of plants in order to produce desired characteristics. It has been used to improve the quality of nutrition in products for humans and animals.





Agricultural biotechnology

Collection of scientific techniques used to improve plants, animals, and microorganisms. Based on an understanding of DNA.

Crop Management

- Agronomy
- Soil Science and Agricultural Chemistry
- Seed technology
- Agricultural Microbiology
- Crop-Physiology
- Agricultural Engineering
- Environmental Sciences
- Agricultural Meteorology





Agronomy

Agronomy is the science and technology of producing and using plants in agriculture for food, fuel, fiber, and land restoration.



Agricultural soil science

studies the chemical, physical, biological, and mineralogical composition of soils as they relate to agriculture.



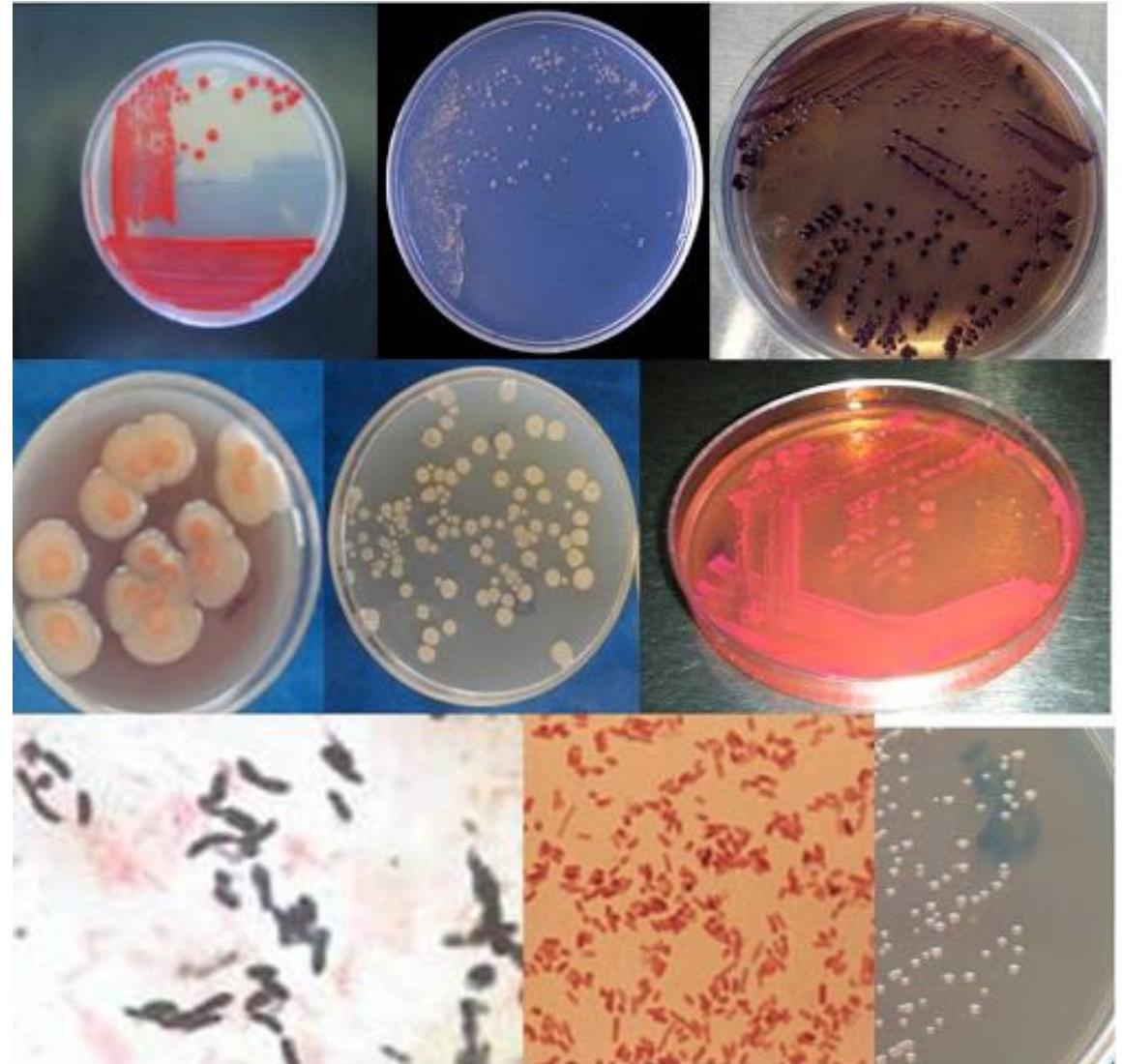
Seed Technology

A body of knowledge which deals on the production, handling and storage of seeds.



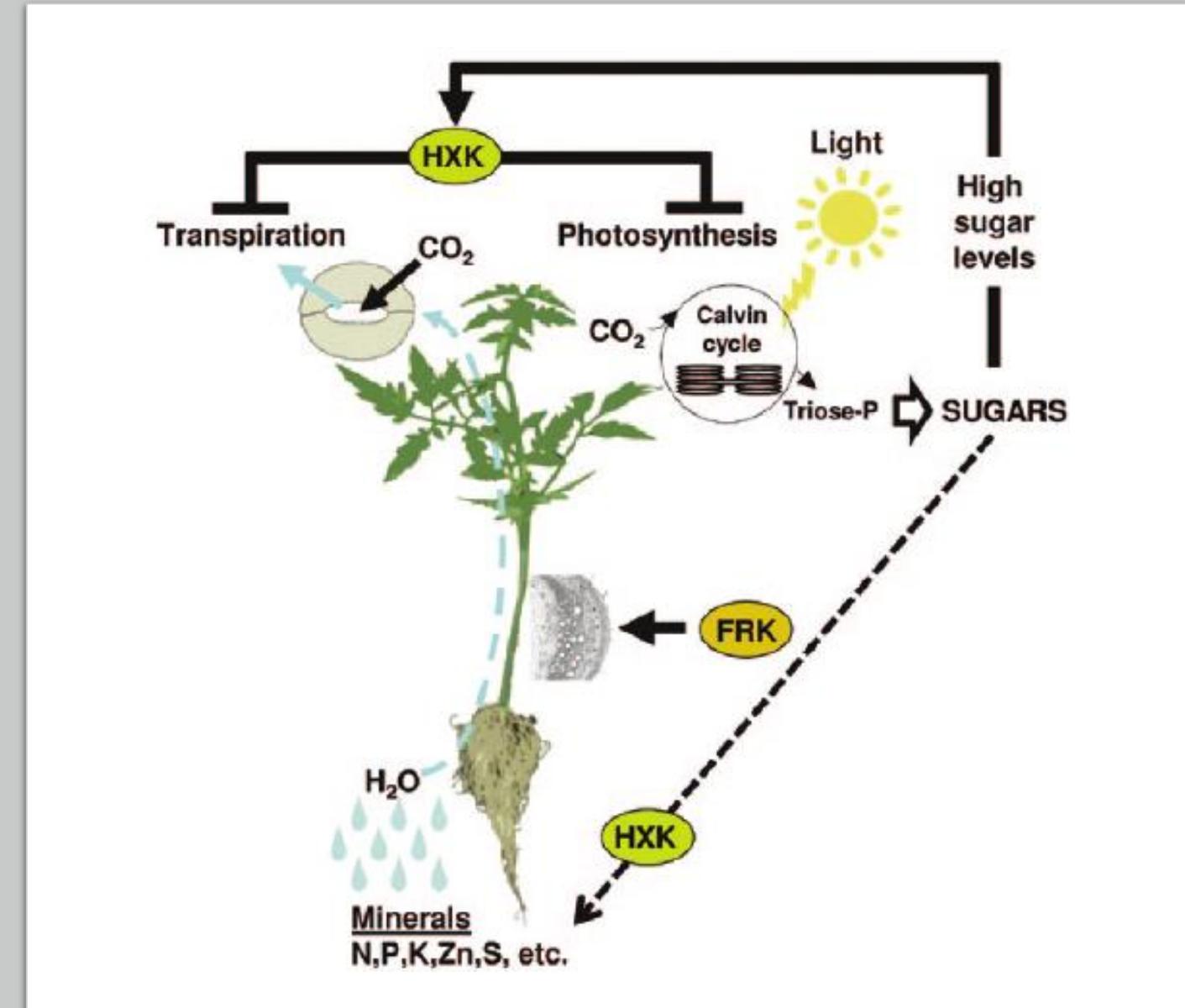
Agricultural Microbiology

Is a field of study concerned with plant – associated with microbes.



Crop- Physiology

- In Greek “*physis* = nature and *logos* = “discourse in the nature of plants”
- Science of how plants develop, grow and respond to their environment at the cellular and biochemical level.



Agricultural Engineering

area of engineering concerned with the design, construction and improvement of farming equipment and machinery. Agricultural engineers integrate technology with farming.



Environmental science

an interdisciplinary academic field that integrates physical, biological and information sciences to the study of the environment, and the solution of environmental problems.



Agricultural Meteorology

branch of meteorology that deals with the relationship of weather and climate to crop and livestock production and soil management.



Crop Protection

- Agricultural Entomology
- Plant Pathology
- Nematology



Agricultural entomology

is the branch of ecology which seeks to use knowledge about insects to help preserve crops. Farmers lose a significant portion of their crops to insect associated damage each year.



Plant pathology

Plant pathology is the science that studies the causes of plant diseases, the mechanisms by which diseases develop in individual plants and in plant populations, and the ways and means by which plant diseases can be managed or controlled.





Nematology

the scientific study of
nematode worms.



Social Sciences

- Agricultural Extension
- Agricultural Economics



Agricultural extension

the application of scientific research and new knowledge to agricultural practices through farmer education.



Agricultural Economics

Is an applied field of economics in which the principles of choice are more applied in the use of scarce resources such as land, labour, capital and management in farming and allied activities.



Allied Subjects

- Agricultural Statistics
 - English
 - Mathematics
 - Bio-Chemistry etc.





Conventional Farming

- Relies on chemical intervention to fight pests and weeds and provide plant nutrition. That means synthetic pesticides, herbicides, and fertilizers.



Organic Agriculture

- is an integrated production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity (FAO/WHO Codex Alimentarius Commission, 2007).
- is a production system that regenerates the health of soils, ecosystems, and people. Organic farming relies on natural principles like biodiversity and composting instead to produce healthy, abundant food.



Sustainable Agriculture

- The type of agriculture that focuses on producing long-term crops and livestock while having minimal effects on the environment.



Urban Agriculture, Urban Farming, or Urban Gardening

- The practice of cultivating, processing, and distributing food in or around urban areas. Urban agriculture can also involve animal husbandry, aquaculture, agroforestry, urban beekeeping, and horticulture.



AGRICULTURE AND FISHERY ARTS' AREAS OF SPECIALIZATIONS

- Agricultural Crops Production (NC I) 320 hours
- Agricultural Crops Production (NC II) 640 hours
- Agricultural Crops Production (NC III) 640 hours
- Animal Health Care Management (NC III) 320 hours
- Animal Production (Poultry-Chicken) (NC II) 320 hours
- Animal Production (Large Ruminants) (NC II) 320 hours
- Animal Production (Swine) (NC II) 320 hours
- Aquaculture (NC II) 640 hours



Artificial Insemination (Large Ruminants) (NC II) 160 hours
Artificial Insemination (Swine) (NC II) 160 hours
Fish Capture (NC II) 640 hours
Fishing Gear Repair and Maintenance (NC III) 320 hours
Fish-Products Packaging (NC II) 320 hours
Fish Wharf Operation (NC I) 160 hours
Food Processing (NC II) 640 hours
Horticulture (NC III) 640 hours
Landscape Installation and Maintenance (NC II) 320 hours
Organic Agriculture (NC II) 320 hours
Pest Management (NC II) 320 hours
Rice Machinery Operations (NC II) 320 hours
Rubber Processing (NC II) 320 hours
Rubber Production (NC II) 320 hours
Slaughtering Operations (Hog/Swine/Pig) (NC II) 160 hours

ROLES OF AGRICULTURAL SECTOR IN THE ECONOMIC PROGRESS OF A NATION

- provides food.
 - provides raw materials needed to create another products
 - contributes to the economic progress through export.
 - provides employment to a large number of Filipinos.
 - A progressive agricultural sector can support other sectors of the economy.



End of
presentation

