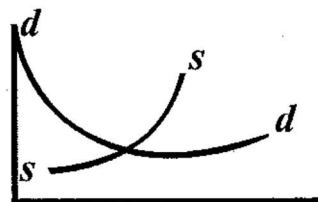


# LAND USE

## IN



# AGRICULTURE



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# CHAPTER FIFTEEN

## INTRODUCTION, DEFINITION, PRINCIPLES AND PRACTICE OF HORTICULTURE

BY : DR. E.A. ALADEMERIN

### 15.1. Definition:

Horticulture is the preparation of fruits, vegetables, flowers, ornamentals etc. for agricultural purposes and for man's uses. It involves the followings;

- ❖ Fruits – guava, banana, cashew, mango, almond fruit, apple, citrus etc. some of these are tropical in nature while other are adapted to the cool temperate regions.
- ❖ Ornamentals – crops for decorative purposes e.g. the fruits, leaves or the flowers.
- ❖ Vegetable – leaves, fruits and seeds.

Growth of vegetables is restricted to local farms while tree fruits is to plantation farms. The horticultural industries are those that are responsible for the processing of fruits, vegetables and ornaments for various man's uses on small and commercial scales.

Vegetable may be defined as succulent herbaceous plant that is eaten whole in part, raw or cooked as a part of a main dish or in salad. Vegetables are all those food crops harvested and eaten in a fresh state as part of the main dish. They are characterized by high moisture content being of the order of 75% moisture or more and 25% or less dry matter.

Fruits and vegetables when processed must retain their freshness. The edible part may be a root e.g. carrot, tuber e.g. Irish potato, yam, fresh pods e.g. vegetable cowpea, immature fruit e.g. fresh corn, okra,

ripe fruit e.g. tomato, mature green fruit e.g. peppers, tender leaves, e.g. amaranthus or green; young shoots of tropical trees e.g. oha; Pterocarpus soyauxi; immature flower e.g. cauliflower; whole shoot e.g. asparagus, elephant grass spear; bulb e.g. onion etc.

The intensity of production, techniques adopted in cultivation, attention given to individual plant, state of edible portion when used and how used, all determine whether the crop is designated a vegetable, fruit or arable crop. Arable crops or field crops are usually harvested in a dry state and are processed before use.

### 15.2. Vegetable Production in Nigeria Farming System:

Farming system is a specific agricultural enterprise that satisfies well define objectives and involves plant and/or animal inputs and the practices and operations with which they are managed in a given environmental setting. In the tropical West Africa, farming systems vary in their objectives, complexity, degree of sophistication and the number of practices and operation involved.

In traditional West Africa, the diet is always rich in starch staples. However, recently some farm families are now appreciating the importance of vegetables in the traditional farming system and profitability of vegetable crops, an aspect relegated to the farm family's wife.

Traditionally and culturally, stews and soups are taken with various preparations of starch staples. Hence, house wives have to ensure that fresh vegetables, certain fruits, spices, nuts and oil seeds are available for soups, stews and sauces. Hence, they incorporate vegetable into the various farming systems. Within the existing farming systems, therefore, vegetables come from;

### 15.3. Sources of vegetables:

- ❖ Wild
- ❖ Semi-wild and protected plants
- ❖ Vegetable intercrops in compound mixed cropping system and home gardens.
- ❖ Importantly, from commercially cultivated vegetables grown as sole crops in market gardens and vegetable farms, for distant markets and for processing.

### 15.4. Commercial Vegetable Production:

The tropical people consume substantially less vegetable than the temperate people; Africa has the lowest consumption per person. We consume substantially less meat and dairy products. The main food item is still mostly carbohydrate and food virtually means carbohydrates. An optimum level of good health can hardly be supported with this level of feeding. Apart from this, our genius will hardly develop without an excellent level of feeding including adequate protein. At our present level of meat availability, vegetables offer us a very good chance of developing ourselves in terms of good health, vitality and longevity. It also offers a great opportunity for profitable independent employment through commercial vegetable production.

Basic commercial vegetable production requires certain facilities for all season's operation. These are:- sprinkle or drip irrigation.

- ❖ Machinery and propagation unit with maintenance service
- ❖ A source of high quality seeds
- ❖ Availability of farmyard manure
- ❖ Suitable insecticide and fungicide at moderate cost
- ❖ General and special fertilizers
- ❖ Services of a well trained extension agent

- ❖ Choice of suitable vegetable crops based on market survey
- ❖ Good storage
- ❖ Good transportation.

### 15.5. Care of Vegetable Crops:

❖ **Cultivating:** Weeds rob cultivated vegetables of water, nutrient, space CO<sub>2</sub> and light. As soon as the soil can be properly worked after each rain or irrigation, it should be hoed or cultivated to kill weeds that have sprouted and to keep the surface in a loose, friable condition to admit oxygen. The primary aim of hoeing or cultivating is to control weed. This cultivation should be shallow to avoid injuring the vegetable plant roots that lie near the surface.

❖ **Mulching:** In non-irrigated areas that have frequent periods of insufficient soil moisture, a mulch of dry grass, dried lawn clippings, half rotted leaves, or similar materials help conserve moisture and keep down weeds. To be effective, the mulch must be applied between the rows and around the plants, early, before the mulch dries out and such a mulch also keeps the fruits of vegetable losses caused by certain rot organisms that are present on the soil.

❖ **Watering:** In most areas the vegetable farm requires a reasonable moisture supply equivalent to about three centimeter of rain a week during the growing season for best result. During the dry season when rains ceases, regular watering of the crops will be required for good yield.

❖ **Controlling Diseases and Insects:** Garden crops are subject to attack by a number of diseases and insects. Preventive measures are best, but if an attack occurs and the grower is not familiar with the insect or disease and the proper treatment to protect his crop, he is advised to consult the plant protection unit of the Ministry of Agriculture.

However, the most important disease-control measures are the use of disease resistant varieties and clones, seed treatment with fungicides and insecticides and regular spraying of growing crops.

### 15.6. Marketing:

❖ **Preparing Vegetables for Market:** This involves the following procedures:

- (a) **Washing:** Some vegetables are washed and trimmed before being sent to market, particularly root and leafy vegetables. Washing removes soil from the roots and leaves. It also helps to keep the vegetables in fresh condition. Since leafy vegetables may wilt after a short exposure to the sun if not sprinkled lightly with water before sale they are harvested in the cool evening or early and taken to market in cool weather.
- (b) **Plastic Containers:** the use of plastic packaging materials prevents water loss, and so the content of the plastic container will remain fresh for some time if kept cool. Vegetables in plastic bags should not be sealed.
- (c) **Cool storage:** This is an essential factor for large scale vegetable crops under all conditions. A fairly moist atmosphere is also a great advantage, and produce can be kept in a fresh state, lightly sprinkling it with water at regular intervals.
- (d) **Grading:** Selection of product is usually by size or quality, and this is often repaid by higher prices received. This is not widely practiced in the tropics, but the farmers may be required to select it to a definite standard or grade, before they can be accepted.

❖ **Handling and Storage of Perishable Produce:** Produce which remains after sales may be wasted unless they can be kept in cool storage. Cool storage is particularly valuable during the periods of over-production which occur at certain time the year. One of the main benefits to the grower is the stabilization of prices and a reduction in the amount of wastage.

❖ **Methods of Selling Vegetables:** *There are several channels through which produce can be sold;*

- (a) **Direct Sales:** A grower often sells his produce directly to the public. By this the grower will be familiar with the volume of demand for his produce, and will be able to present at a time the quantities of each item likely to be required by the public.
- (b) **Selling Agents:** The growers here for obvious reasons may be unable to sell their produce directly to the consumer, and, may then be obliged to sell to an intermediary, such as the market agent or wholesale buyer. This means that the grower will receive fairly low rate of payment for his produce.