

SUBJECT: AGRICULTURAL SCIENCE

TOPIC: SURVEYING AND PLANNING OF FARM STEAD

WEEK: WEEK THREE (3)

CLASS: SS2

TERM: 1<sup>ST</sup> TERM

### MAENING OF FARM SURVEYING

Farm surveying defined as the process by which measurement of land is made on the farm. Such measurement by tables plans or layout are done for specific purposes.it can also mean the measuring and mapping out of the position, size, and boundaries of an area of farm land.

### IMPORTANCE OF FARM SURVEY AND PLANNING IN AGRICULTURE

1. It helps to determine the hectares of land
2. Farm surveying exposes the gradient of the land.
3. It helps in determining the amount of input of labour, seeds, fertilizer and chemicals to be used in the farm.
4. It helps the farmer to make decisions on location of various farm building and structures.
5. It enables farmers to make the best use of available resources in order to achieve maximum profits
6. Loan can be got with the help of farm survey plan.
7. Farm survey gives the owner of land security.
8. It does not allow for wastage of land.
9. It helps to determine the yield or productivity of crops.

### SOME COMMON SURVEYING EQUIPMENT/INSTRUMENTS

Some common surveying equipment or instruments include

1. Ranging poles
2. Günter's chain
3. Measuring tape
4. Prismatic compass
5. Theodolite
6. Arrows or pin
7. Offset staff
8. Beacons or pillars

### RANGING POLES

Ranging poles is made of wood or metal ,it is varying lengths e.g. 1.8m,2.4m, 3.0m.it is usually painted black, bright red and white to enable it be seen from a distance ,it also has a pointed end.

Functions /uses

1. It is used for making station
2. It is also used for making straight lines

#### GUNTERS CHAIN

It consists of a series of dumb bell links of steel wires joined together by three small rings.it has brass handles either side ,it length is normally 20.13m (66ft) and the chain is entirely metallic.

Function /uses

1. It used to take short detailed measurement of length and breadth.

#### MEASURING TAPES

It is usually made of linen or fine steel sheet, it is usually marked on one side with metric units and the side with the imperial unit, the tape is of various types and length, the tape is normally wound in a small case from where it unwound for use.

Function/uses

It used for taking measurement of length and height and breadth.

#### ARROWS OR PINS

These are thin pointed steel wires of about 30cm long with one end curved into a ring ,a red cloth is normally attached to the ring so that it can be seen from afar.

Function/uses

It is used during chaining for making off chain length as measured; it can also be used for making stations.

#### OFFSET STAFF

This is a graduated rod-3m long; a hook may be fitted at the top for the purpose of pulling a chain through a hedge.

Function/uses

It used for taking short offset measurements.

#### BEACONS/PILLARS

It is made of rectangular block usually in concrete form, marks are usually inscribed on top of the block, and the beacon is always buried in the ground with marked head raised a little above the ground.

#### Function/uses

It is used for marking off points measured, it also used for the recognition of the measured or surveyed area.

#### THEODOLITE

It consist of a tripod stand ,made of wood or light weight metal in solid or telescope legs ,the tripod stand forms the base of the instruments, it has a lower plate which contains the graduated horizontal circle made of glass or brass.

#### Function /uses

It is used to measure horizontal or vertical angles or planes.

#### PRISMATIC COMPASS

It is normally placed on a stand, it has a prism ,it is a compass card marked in degrees, half degree, minutes and seconds in a clockwise direction.

#### Function/uses

It used for taking bearings it also used in the measurement of angular distances.

#### GENERAL MAINTENANCE OF SURVEYING

1. All instruments must be cleaned after use
2. Keep instruments in a cool and dry place.
3. Metals parts should be oiled, greased or painted before storage.
4. Keep them away from rain and heat to prevent rusting
5. Replace worn out parts.
6. Use the instruction only for the intended functions
7. Let competent surveyor handle and use the instruction only.

#### ASSGNMENT

1. List seven surveying instruments and state their uses
2. List five general maintenance of surveying instruments.