LECTURE 3

FARMER'S DECISIONS

Questions facing the peasant farmer as a producer:

1. What to produce? i.e. the choice of products
2. For whom to produce?
3. Where to produce?
4. When to produce?
5. How to produce the product? i.e. the choice of process or choice of technique.
6. How much to produce of each kind of output?
7. How much of each input or factor of production to employ? (which will depend on the choice of technique and level of output selected)
8. What price to charge? (a decision which will have to be taken together with question (3) above, because the amount of output consumers are willing to buy depends on the price of the product).

What to produce

The agricultural products could be crops or livestock depending on the farmer's interest and objectives.

The farmer has many different alternative use of his resources which unfortunately are limited.

Because resources are limited, the farmer has to make a choice on which of the possible products would he like to produce

If he decides to produce maize on his piece of land, he can not grow sorghum on the same land at the same time

Similarly, if he uses his building for raising layers there will be no room for broilers for the given building and time.

It is the question of having either this or that and not both at the same time.

The determining factor is the farmer's objective.

If it is profit maximization, then he will produce that which will give maximum profit or minimum cost;

and if it is family food security, then he will grow the crop that has minimum chance or crop failure.

How to produce or what method of production to be used

Just as there are many products which might be produced, thee are also many possible ways of producing them

The method of production chosen, affects the cost of production.

Most producers, therefore seek to select the technique of production that will give the lowest cost for the amount or volume of products intended to produce.

The choice of product is not dependent of the choice of technique of production.

Thus under certain circumstances it might be cheaper for a peasant farmer to plough his piece of land than to use a hoe.

How much to produce

There are many possible levels of output for each agricultural product.

A farmer has to decide for each commodity which he grows the amount or volume of output which he intends to produce.

Businesspeople do not produce more than what they expect to sell for profit;

And they tend to increase output when they expect better prices

"produce what you can sell, rather that trying to sell what you have produced"

The level of production which is most profitable in the production process is not independent of the method of production used.

A farm which is large enough to employ profitably a mechanical harvester, for example may find that it is paying to produce more maize than a farm which uses hand labour for harvesting.

The amount of output produced depends on the quantities of inputs used in the production.

This relationship between input used and output produced brings us to the concept of a production function.

The concept of production function

Production function is a function or physical relationship describing the way in which quantities of a particular product or output depend on the quantities of a particular input(s) used while other factors are regarded as fixed.

Inputs are rates of resource use and;

Output is a rate of production over specified time period, usually the crop season.

A production function provides information concerning the quantity of output that may be expected when certain inputs are combined in a specific manner.

Although an individual producer can not alter a production function, he can choose between alternative functions

Expressing the production function

1. As a table:

Input X: fertilizer (kg)	Output Y: paddy (bags)
0	12
12	18
24	24
36	30
48	36

In this example we have:

i. Land is fixed at one ha
ii. Fertilizer is varied in 12 kg units
iii. Paddy yield increases 6 bags for each additional 12 kg of N. fertilizer unit

2. As a mathematical function (equation)

The above relationship can be described mathematically, either in general form which says that paddy output (Y) is some function of different levels of a variable input (X), or Y=f(X); or in a specific form which tries to give the exact relationship between output and input. The exact mathematical relationship which describes the above table is a linear equation written as follows:

$$Y=a+bX$$

where **Y** is the output; **X** is the input, **a** is a constant and **b** is the slope of the production function

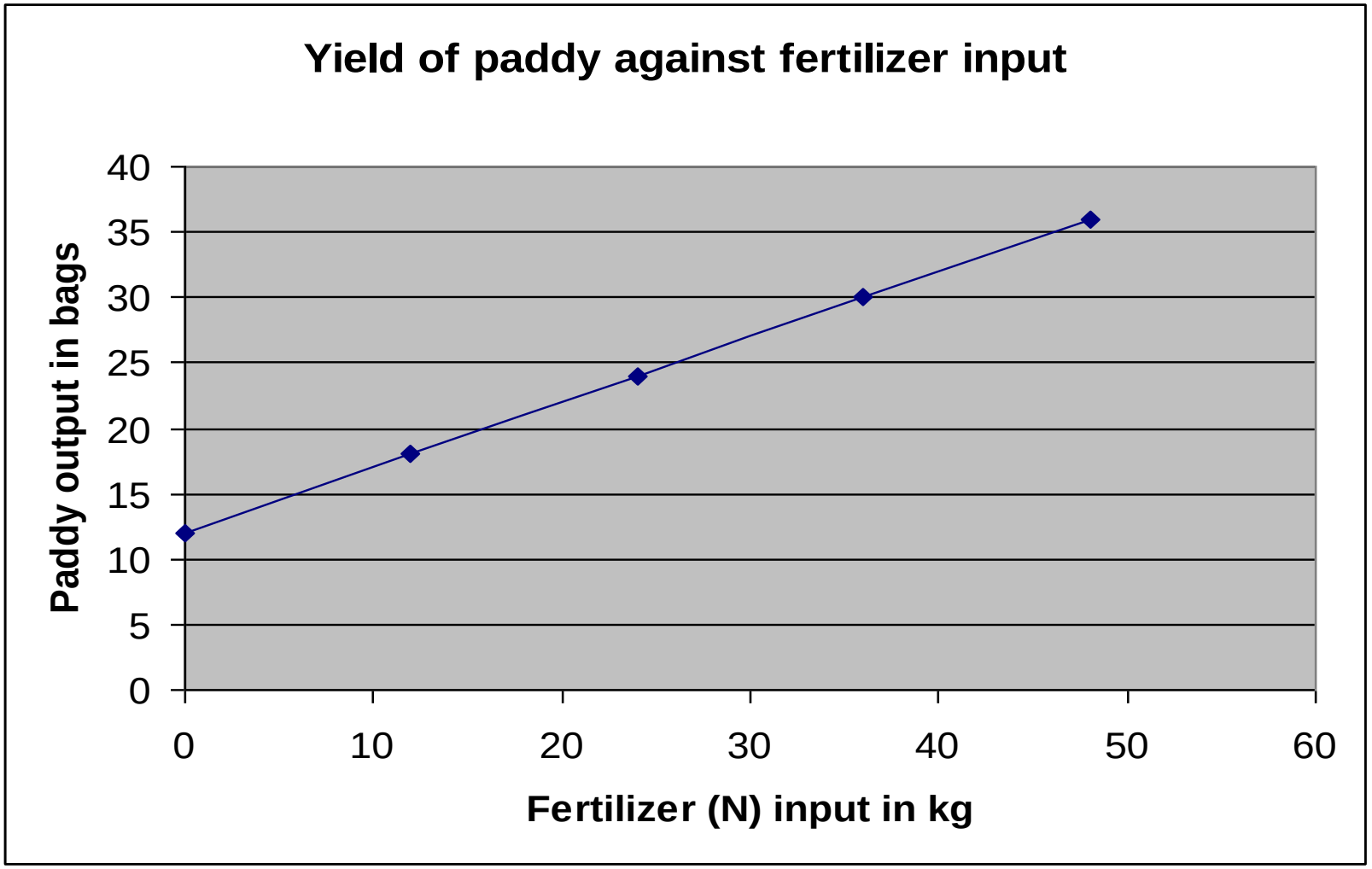
Thus, the operating equation for the above example is:

$$Y=12+6/12X$$

i.e $Y=12+0.5X$

Once the quantity of fertilizer is known, the amount of expected yield can be determined using the above equation.

3. Graphically



Characteristics of production function

1. Producer has no control and therefore cannot alter the production function.

At any one time he can only choose from a range of alternative production functions the one that suits him most

2. At any one time, the production function that is in use is not known due to having many factors that may affect production.

Most of the factors affecting production are outside the farmer's control.

Thus, the production function that is being applied can only be obtained through experimentation