Session 10: AN IMPROVED FALLOW SYSTEM

Objective

1. To integrate plants and trees into your farming system in order to increase or improve biodiversity, plant nutrition, firewood supply, soil organic matter, tilth, pest management and human and animal nutrition.

Improved fallows

A fallow period is a period of time when farmers decide to let their land rest in order for it to regain fertility. Improved fallow means growing something on the land that will improve the soil faster than traditional bush fallow. The traditional bush fallow may require a fallow period of 10 to 20 years. In an improved fallow system, fast growing, nitrogen-fixing trees or shrubs are grown for 1 to 3 years in order to raise the fertility of the soil in a short period of time. The longer the improved fallow, the more fertile the soil will become and the higher the yields will be. If the fallow is too short, say only one year, then it will be necessary to add manure or compost to the soil for the yields to be good.

Agroforestry

An improved fallow can be a tree-crop rotation system. The trees improve the soil by adding organic mulch material and nutrients to the soil. Trees and bushes generally have highly developed root systems which can absorb many nutrients that are lost to crops with shallow root systems. The nutrients are stored in the woody species. In this way the nutrients are protected from being leached in periods when no other crops are cultivated. After the leaves or cuttings fall...
to the ground, the nutrients once again become available to the crops via decomposition. This effect of woody species is sometimes called a nutrient pump. Trees also help by breaking through hard layers of soil so that the roots of succeeding crops can penetrate deeper in search of water and nutrients. When trees are integrated into a farm system we call it Agroforestry.

Can you think of other advantages of growing trees on your farm? Do you have problems of wind and water erosion? Need of shade for your animals? Need of cash income from selling products from the trees?

Discuss which trees and shrubs you can grow in your area. Ask your neighbours, extension officers or other resource persons for advice.

Read about three types of trees and shrubs that farmers at Kasisi Agricultural Training Centre in Zambia have tried with good results. These are sesban, tephrosia and pigeon pea. Find out more about these trees from your local extension officer.
Three types of trees/shrubs for improved fallow

Sesban, tephrosia and pigeon pea are all extremely fast growing and will normally flower and give seed within the first year of planting. A good way to use trees is to follow these steps:

1. Select an area where soil fertility is relatively poor.
2. Raise the trees on this land for 1 to 3 years.
3. Weed your improved fallow plot as needed.
4. Protect the trees from animals and fire to ensure good growth and good results from the improved fallow.
5. After the period of fallow, the trees can be cut for fire wood.
6. Turn the leaves and twigs into the soil and plant maize or other rain-fed crops on the land.

Do you have sesban, tephrosia and pigeon pea in your area? If no, could they be grown? If yes, what are their local names?
1. List the benefits of an improved fallow system.

2. What challenges can you see in establishing an improved fallow field?

3. How can you deal with these challenges?

If you find agroforestry interesting you should know that there is a manual on agroforestry for you to study and practice from. Ask your study circle organiser or contact the Swedish Cooperative Centre or Kasisi Agricultural Training Centre.