Session 2: WHAT IS SUSTAINABLE AGRICULTURE?

Objective
To understand the meaning of sustainable agriculture.

Discuss the questions below before you start on this session:

1. Share with the group the practices you use for adding fertility to the soil and for controlling pests and diseases.

2. How are these practices affecting the state of the land, your finances and social relations? Do you see the conditions on the farm becoming better or worse?

3. Explain the statement that change is part of life. Think about the changes that have occurred in agriculture.

A brief look at conventional farming

Farming has undergone many changes throughout the years. Some of these changes have not been in our interest. The introduction of chemical fertilisers and synthetic pesticides is one example. The overuse of chemical fertilisers and synthetic pesticides has led to unwanted and negative effects. Here are some examples of the negative effects of using too much chemical fertilisers or synthetic pesticides:

◆ What is sustainable agriculture?
Agricultural yields have dropped in areas where chemical fertiliser is the main yield-enhancing input. This has especially lowered the yield of maize.

The use of chemical fertilisers and synthetic pesticides has increased soil erosion by wind and water.

Synthetic pesticides have become less and less effective on pests and diseases because of pest resistance.

1. Discuss your experience of using chemical fertilisers and synthetic pesticides.

2. Give examples of fertiliser and pesticide products that you have used or that you know about. Do you agree with the points raised above? Can you think of other negative effects of over-using chemical fertilisers and synthetic pesticides?

3. Give examples of practices you believe are bad. Why are they bad?

4. Give examples of good changes and improved methods in your agriculture.

We should learn to take in only the good new practices and dare to stop using the bad ones. There are traditional practices that have proved to be negative for our farming. One such example is burning of residue and organic material.
Why burning of residue is not good

Burning vegetation to prepare land for cultivating crops is a common practice. The advantages are immediate, because burning fallow vegetation or crop residues with weeds saves a lot of labour. The fallow or weed vegetation is largely gone and no felling or cutting has to be done. The ash contains many nutrients in a directly usable form. The first harvest after burning fallow vegetation is usually a good one.

After a few seasons, however, a negative effect of burning can be seen in the level of nutrients and in the soil fertility. This has a number of reasons. Large amounts of nitrogen (N) and sulphur (S) are lost during the burning process. These are therefore no longer available for the plants.

After burning, some of the nutrients that were stored in the vegetation become available in the soil moisture, but they cannot be completely utilised all at once. In heavy rains, large amounts of nitrogen will be leached from the soil. Phosphate in mineral form becomes fixed to the soil particles and is then no longer available for the crop.

Regular burning of crop residues decreases the supply of fresh organic material and thus results in a decreased level of organic matter in the soil, which has negative long-term effects on soil fertility.

After burning, the soil is unprotected and therefore susceptible to crust forming and to water and wind erosion. Ash is very light and is therefore easily carried away by wind and water. Ash plus many nutrients are lost, leaving the soil without nutrients for the next crop.

Since the soil is uncovered, the soil temperature during the day can become very high, which is very unfavourable for soil organisms and for seed germination. The soil also dries out faster this way. As a result, the soil is hot, dry, and empty of soil organisms, rather than cool, humid, and rich in soil life, as the plants would like it to be.

Source: Agromisa, 1998
Many of the conventional agricultural methods involve a constant battle with nature. We remove the trees, rip and tear the soil apart, grow large areas of one single crop and use chemicals at ever increasing rates to control weeds, insects and diseases. To turn this development around, many farmers start looking at ways in which yields can be increased without using or depending on chemical fertilizers and synthetic pesticides.
Sustainable Agriculture

The idea behind sustainable agriculture is that farmers should cooperate with nature and not fight against it. Sustainable agriculture encourages a more gentle approach to farming.

**What does “sustainable” mean?**

The Oxford dictionary says “sustainable” means avoid using up natural resources. We can also define it as the capacity to remain productive while maintaining the resource base.

**Can you think of other ways to describe the word “sustainable”?**

**Are there words in your language that mean the same thing as “sustainable”?**

**What does “sustainable agriculture” mean?**

Our next task is to define sustainable agriculture. It is usually defined as a way of farming that is environmentally friendly, economically viable and socially just. These words may be difficult to understand but take a look at the box below and use your own words to describe sustainable agriculture. Perhaps it will be easier if you give examples of agriculture that is not sustainable and from there discuss how to change these practices into being more sustainable.
Sustainable Agriculture

A way of farming that is environmentally friendly, economically viable and socially just.

Environmentally friendly means that the quality of natural resources is maintained. Resources are used in a way that minimises losses of nutrients, biomass and energy, and avoids pollution. It also means that the viability of the entire eco-system is enhanced. The eco-system includes humans, crops, animals and soil organisms. This is best ensured when the soil is managed and the health of crops is maintained by natural nutrients.

Economically viable means that farmers can produce enough for self sufficiency and gain sufficient cash to pay for labour and other costs of production.

Socially just means that it is an equitable system for all people including those yet to be born.
As you may see sustainable agriculture is not only about how to manage the land. The economic and social aspects are just as important.

Sustainable agriculture emphasises the improvement and preservation of the land while increasing productivity and decreasing dependency on external inputs.

**Who is using sustainable practices?**

Sustainable agricultural practices are not new. You might be farming using sustainable methods already but want to improve your practices. In fact, many large commercial farmers in Europe and North America are shifting to sustainable agriculture. It has become evident all over the world that intensive farming systems that require high inputs of chemical fertilisers, pesticides, hybrid seeds and mechanised irrigation systems are not only too costly for farmers but are also leading to soil degradation.
Have a discussion on why farmers shift towards using more sustainable methods, and why YOU should do so.

Next session will give you an overview of the most important practices in sustainable agriculture. Before you go into that session it is good if you share some of your knowledge on how to improve and preserve your land, what you do to increase productivity and how you try to decrease the costs of buying inputs. You can also share your experience on methods you have heard about or methods that your neighbours use. Try to identify farmers in your area who seem to know a lot about sustainable methods. Plan to visit such a person’s farm.

1. Give examples of how you can:
   - Improve the soil
   - Increase productivity
   - Preserve the land
   - Reduce dependency on external inputs

2. Do you think it is possible to achieve all these things at the same time?