African Organic Agriculture Manual Booklet Series
No. 15 | Conversion

HOW DO I CONVERT TO ORGANIC FARMING ?

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Challenges on the way to organic farming

The closer the farm is to 'organic', the easier and quicker conversion will be.

Climatic, social, cultural and economic conditions vary from farm to farm. Therefore, challenges related to conversion to organic farming vary depending on the farm situation. The more, as a farmer, you rely on farm-own resources to maintain soil fertility, and on natural processes to manage pests and diseases, the closer your farm is to 'organic' making conversion easier and quicker.

Farms with high external input use
Intensively managed farms mostly grow a few annual or perennial cash crops relying heavily on the use of fertilizers for plant nutrition and pesticides and herbicides for pest, disease and weed control. On such farms crops are often grown without a planned rotation and farm animals are not integrated into the nutrient cycle. Diversification is usually low and trees are mostly removed to facilitate extensive mechanization.

What you can do:

- Establish a diverse farming system to enhance nature's ability to regulate itself.
- Restore natural soil fertility by providing organic matter to the soil.

What you can do to convert a high inp

- Stepwise abandon high input external fertilizers. This will probably result in yield depression in the first years of conversion, before soil fertility is re-establishes and yields rise again.
- Learn to observe crop development and dynamics of pests, diseases and natural enemies to improve timing and choice of crop protection measures.

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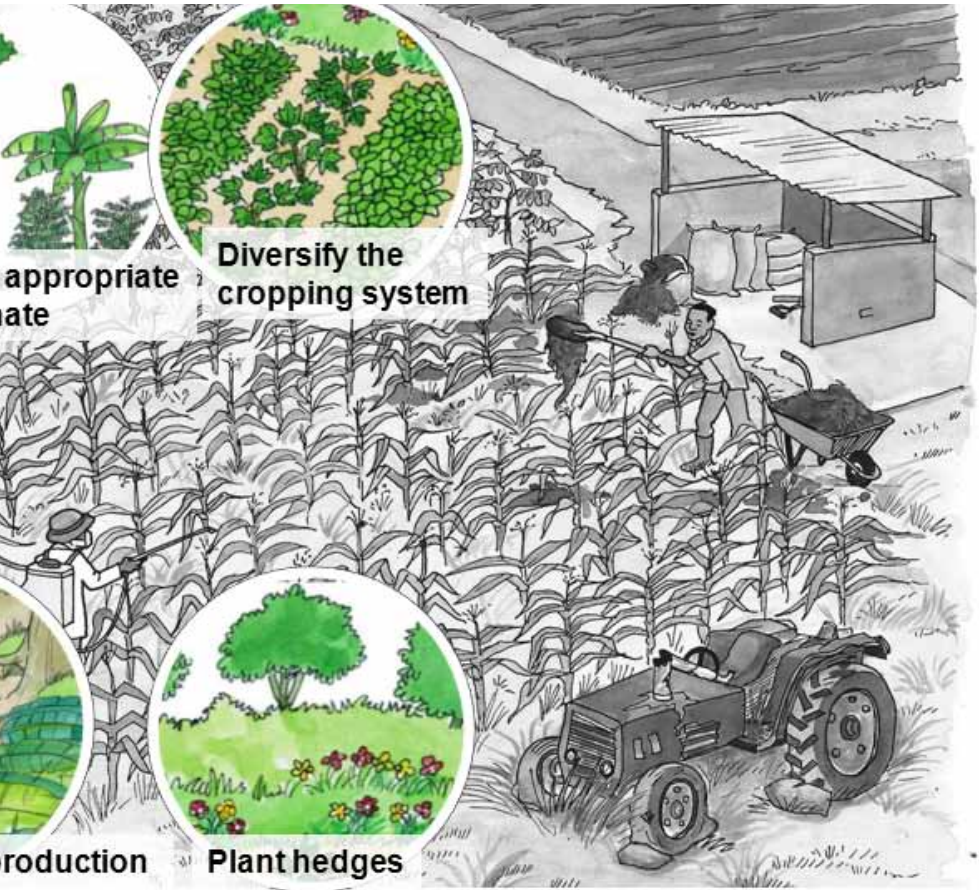

Conversion of a traditional farm

Traditional farming has much in common with organic farming. Nevertheless, from an organic perspective, it bears great potential for improving health and productivity of crops and animals.

If you farm with little external inputs, you basically fulfil organic farming principles by relying on farm-own resources, growing different crops simultaneously and managing diverse enterprises including animals. Using few or no synthetic farm inputs and genetically modified plant varieties is another practice that increases the similarities between such traditional farms and organic farms.

For conversion to organic farming though, you may have to address the following aspects:

- Avoid burning of crop residues after harvest as this is, in most cases, not a viable solution, since it destroys valuable organic material and damages soil organisms.
- Establish a well organised diversification including a 'planned' crop rotation and intercropping systems.
- Accumulate knowledge and practice regarding the efficient use of farm own resources for compost production and improving soil fertility.
- Indiscriminate tree cutting for firewood and charcoal burning.
- Establish a system to collect

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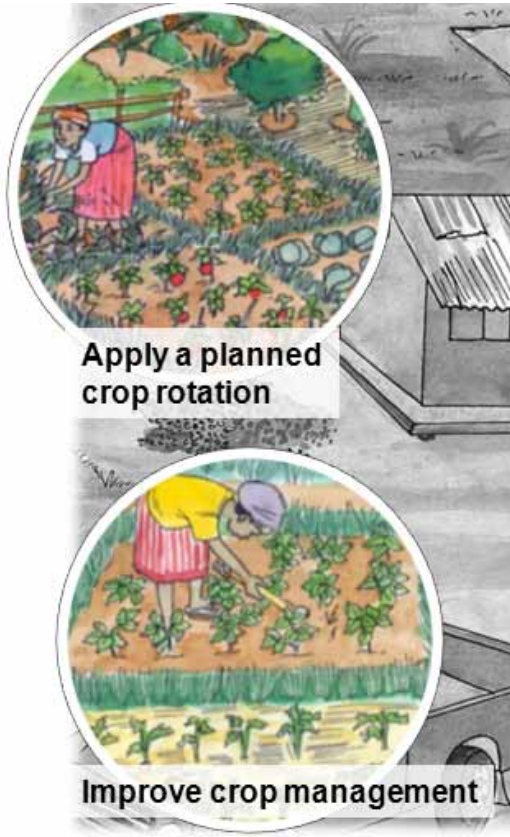

the animal manure for composting.
- Apply any measures to prevent loss of soil through erosion.
- Protect the soil from drying out.
- Gain knowledge on pest and disease cycles and preventive measures.
- Pay special attention to satisfy the feed and health requirements of the farm animals.
- Avoid losses at harvest and ensure proper storage.

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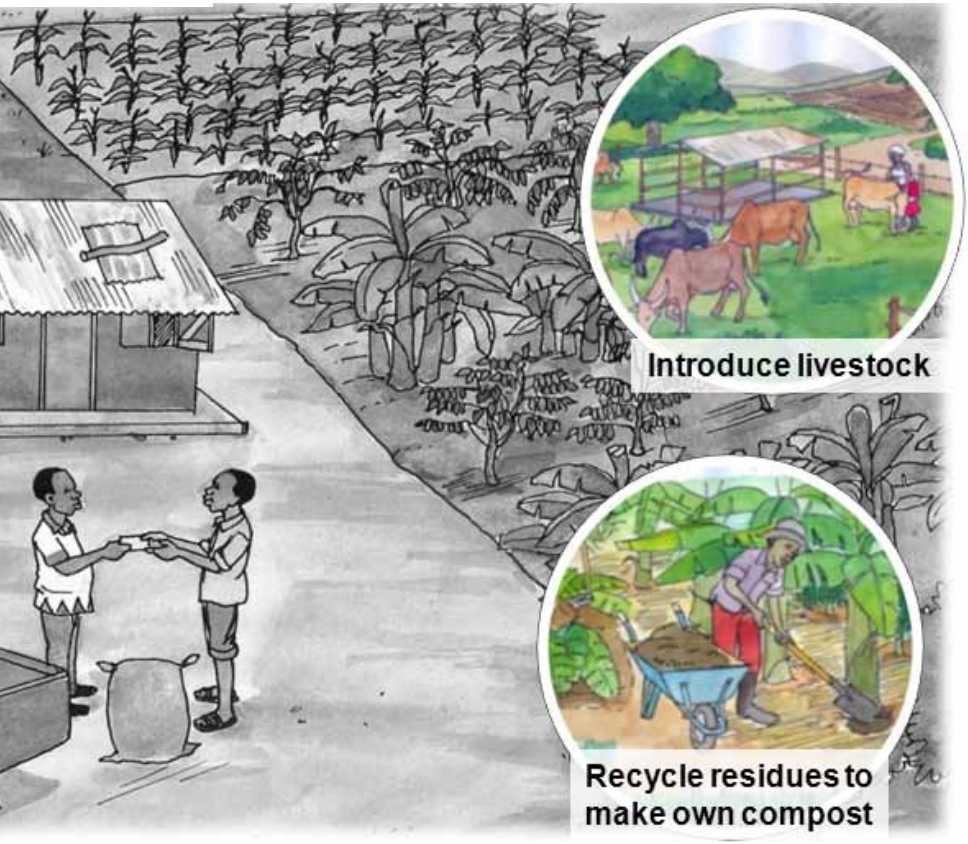

Conversion of a mixed farm

Mixed farms with integrated crops and animals mostly provide good conditions for conversion to organic farming, as recycling of nutrients is practiced in its basics.

If you manage a mixed farm, you

- propably collect the animal manure and use in the gardens after having kept it for a few weeks to rot,
- maybe mulch the perennial crops, and
- maybe occasionally use herbicides and pesticides to control weeds, pests and diseases in fruit and vegetable crops.

For conversion to organic farming though, the following **modifications** may be necessary:

- Instead of using herbicides in fruit orchards, grow a leguminous cover crop to cover the soil.
- In vegetable and arable crops implement a planned crop rotation that includes weed suppressing green manure crops.
- Improve recycling of farm own nutrients from animals and crop residues to make best uses of them by mixing them for making compost.
- Improve storage of animal manures to reduce nutrient losses.
- Make sure to use healthy seeds only and get familiar with

What you can do to convert a mixed fa

non-chemical ways of treating seeds.

- Further diversify the farming system to increase productivity of the land and reduce risks of crop failure.
- Regularly monitor development of pest populations.
- Get familiar with methods of natural pest and disease control.
- Improve on-farm feed production to enhance animal production.
- Diversify the sources of income to increase income security.

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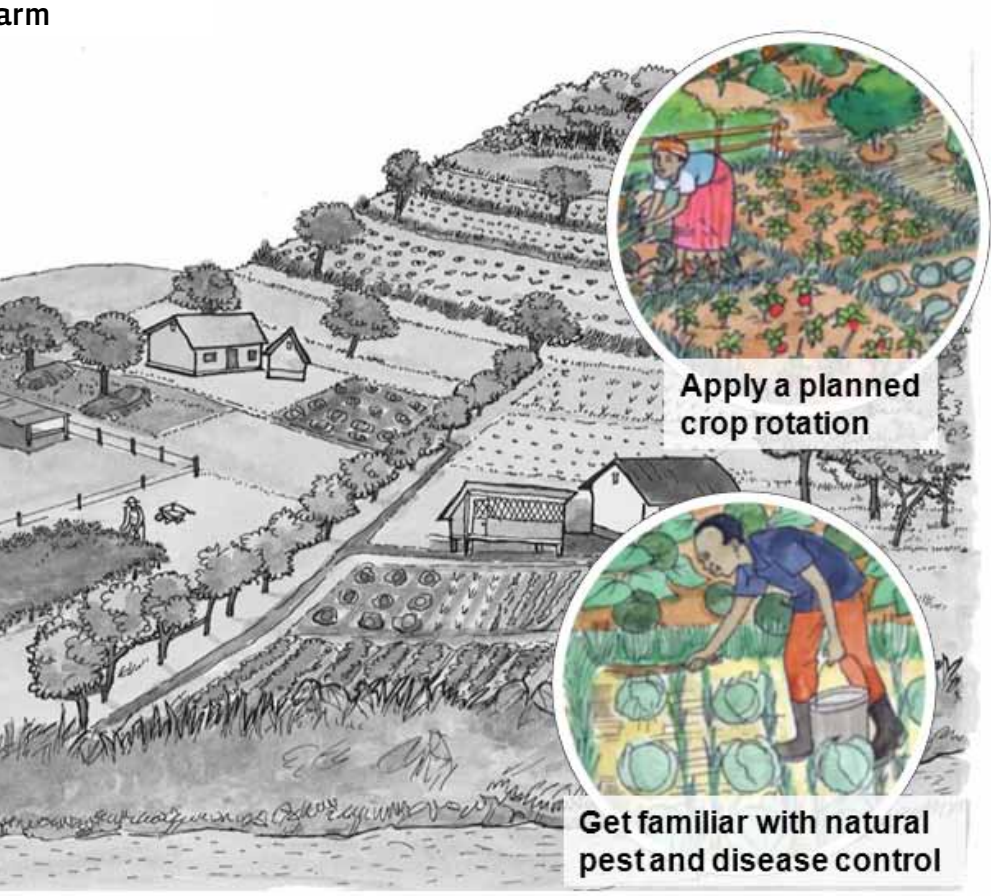


Conversion of degraded land

Organic farming is a promising approach to improve degraded land and bring it back into production. But restoring fertility of such land takes major efforts and patience.

Whatever the reason for soil degradation is – whether it is due to overgrazing, over-cultivation, deforestation, salinity after years of intensive irrigation with ground water, or water logging – in most cases, the increase of organic matter plays a key role to improve the quality of the soils. But usually it must be combined with soil conservation measures and adaptations in other farming practices.

On sloping land:

- Dig terraces or trenches along the contour lines and stabilize them with grasses and multipurpose agroforestry trees.
- Grow green manures on the terraces.
- Make and apply compost.

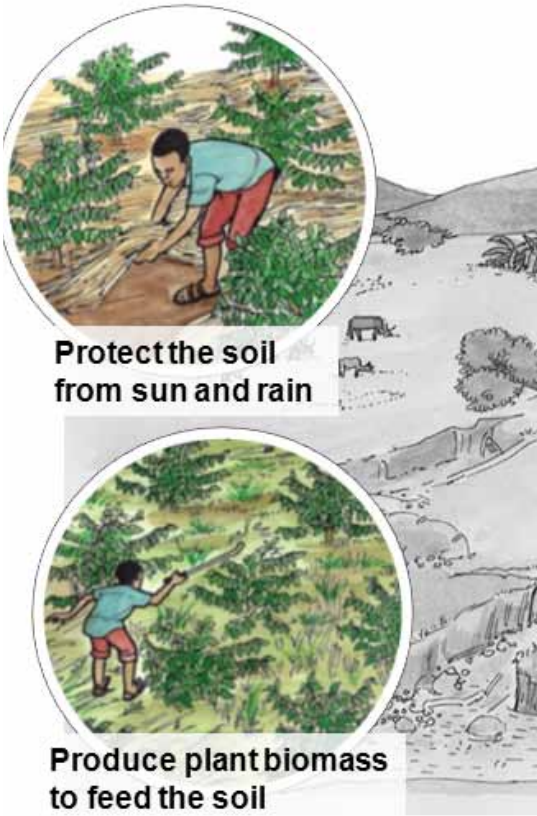
In saline soils:

- Collect rainwater for irrigation.
- Improve the soil structure by adding compost to the soil and allow natural drainage of the excess salts.
- In a first period grow salt tolerant crops.

In acid soils:

- Add lime and well-made compost.

What you can do to convert a degrade



In water-logged soils:

- Create drainage channels to drain off the excess water.
- Add compost to improve soil structure.
- Avoid working the soil when wet.

Do you observe land degradation on your farm? Do you take any measures against it?

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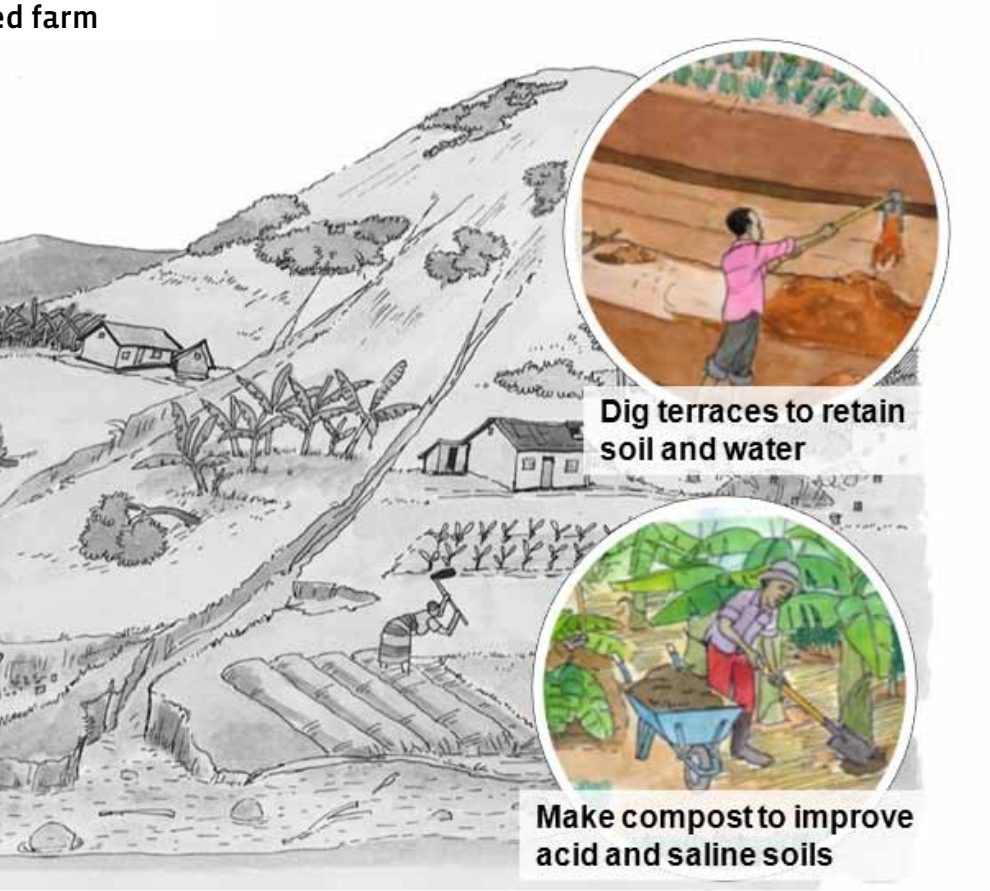


Conversion in dry and humid climates

The dryer, hotter and windier the climate, the more challenging adoption of organic farming – but also the higher the potential for improvement.

In very warm, dry and windy climate, losses of water are high. Also, the soils' organic matter content is generally low, as biomass production is low. This implies that the availability of nutrients to the plants is highly reduced.

What you can do:

› Protect the soil from strong sun and wind to reduce losses of water.

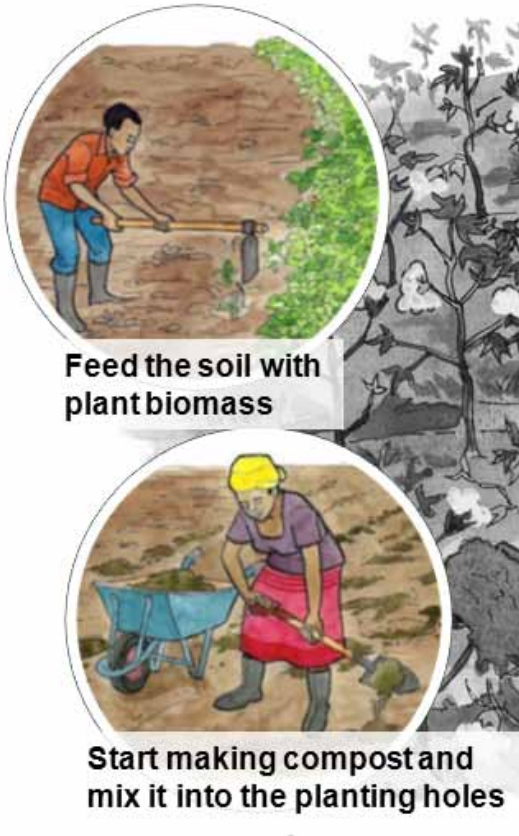
› Increase soil organic matter content through addition of compost and cultivation of green manures. In the case of compost production the challenge is to increase production of plant biomass, which is needed for compost production.

In warm and humid climate, high aboveground biomass production and rapid decomposition of soil organic matter imply that the nutrients are easily made available to the plants. At the same time this involves a high risk that the nutrients are washed out and lost.

What you can do:

› Protect the soil by creating a diverse and multi-layer cropping system including trees, nitro-

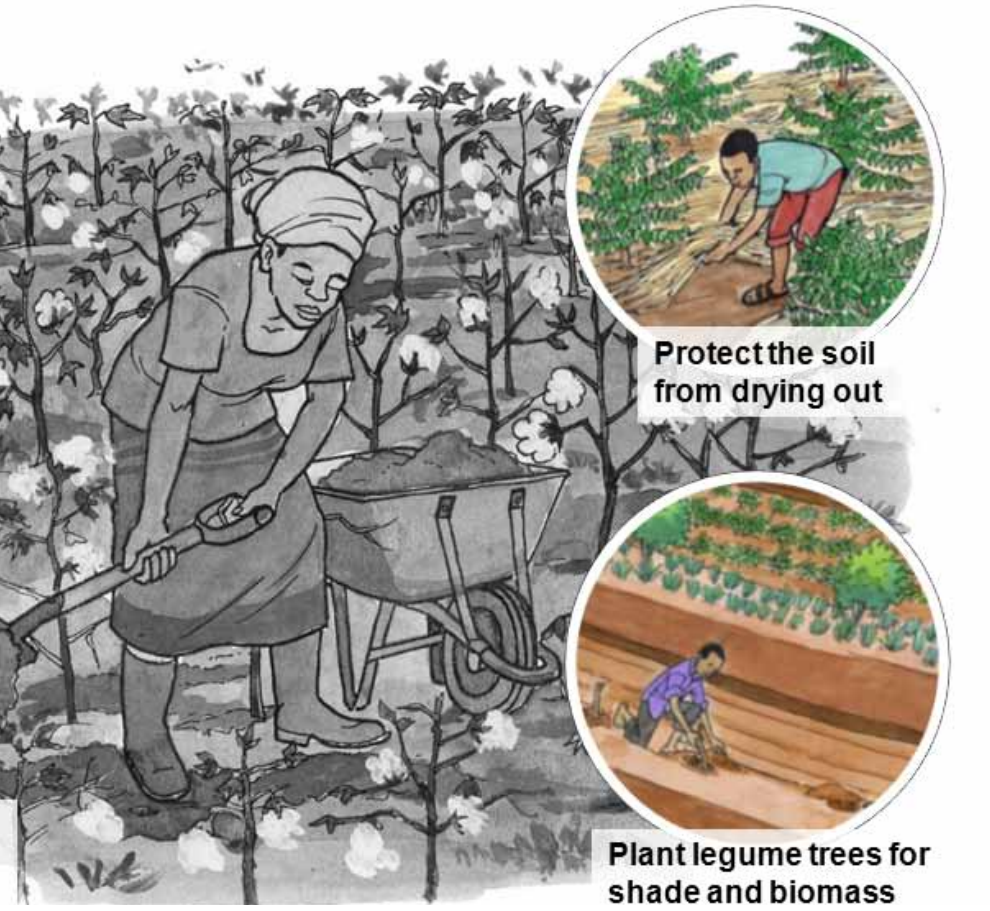
What you can do in dry climate



gen-fixing cover crops within annual and perennial crops.

› Apply compost to enrich the soil with organic matter and in this way increase its capacity to retain water and nutrients.

What measures do you take on your farm to minimize negative impacts of unreliable or excessive rains?

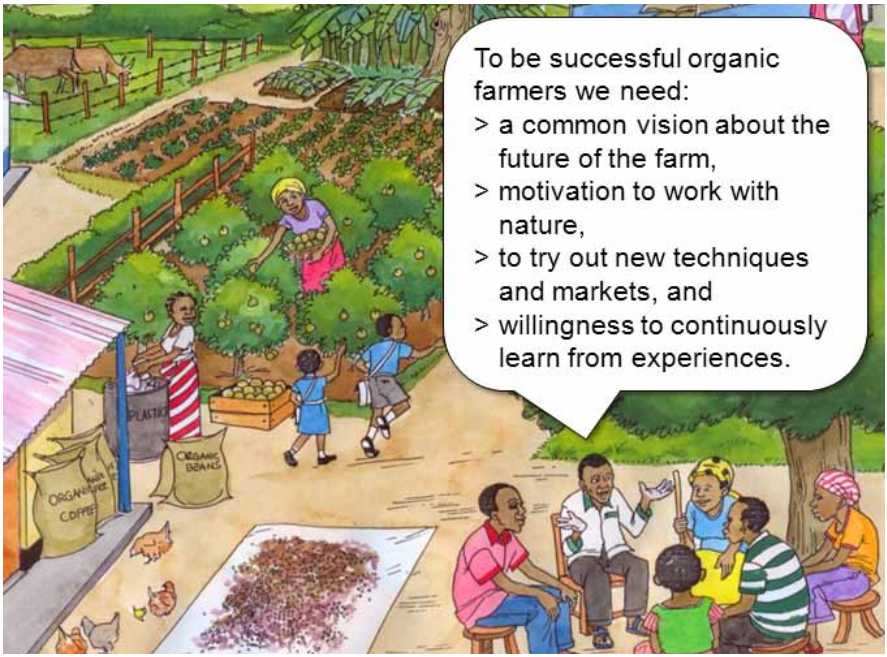


Social and cultural challenges

Farming is commonly a communal and social activity. Decisions regarding what, how and where to grow are taken by either the whole family or the community. Therefore, changes in farming, such as the introduction of organic farming practices, need to be discussed with the family and the community.

As a farmer interested in organic agriculture, invite your family or the community to sit together and discuss ideas, aims and expectations about the future of farming. Here are some questions that may guide you in the process of clarifying social goals:

- How can we strengthen collaboration in order to obtain higher benefi ts?
- Is the work load properly shared among the family members?
- How can we increase availability of food for own consumption?
- How can we increase the amount of firewood produced on the farm?



Economic challenges

The decision to farm organically is in most cases a commitment for the future way of farming. Commonly, when farmers and their families decide to convert, they aim to improve their incomes and livelihoods. However, the period of conversion to organic farming bears some economic challenges, too.

Possible investments:

- Purchase of appropriate equipment for soil cultivation, weed control or compost production
- Purchase of animals or specific seeds in order to diversify production
- Improvements on animal housings, in facilities for storing manures and farm products
- Setting up a marketing infrastructure, for example building an on-farm store

Time and labour:

- Additional labour for constructing erosion control structures and for composting
- Building knowledge
- Finding buyers of organic products

A three step approach – 1st step:

For conversion to organic farming generally a three step procedure can be recommended starting by thorough information on principles, approaches and practices.

The step-by-step approach

The procedure of conversion of a farm commonly consists of three steps:

1. In a first step, it is recommended that you collect information on appropriate organic farming practices.
2. In a second step, try out the most promising organic practices on selected plots or fields.
3. In a third step, fully implement organic procedures on the entire farm.

Support from an experienced extension officer or farmer for guidance through the process is usually very helpful.

Good information first

Successful organic farming requires considerable knowledge on the functioning of natural processes and the possibilities of a farmer to support natural processes to sustain and improve harvests.

For adoption of organic farming you must know:

- how to maintain and improve soil fertility on a natural base.
- how to enhance crop health, monitor pests and diseases, and control them using natural products.

Where to get information on organic a

Good information

- how to best increase diversity in the farm.
- how to promote health of livestock.
- how to successfully sell organic products.

Do you know any experienced organic farmer or extension officer that can give you first hand information on organic farming?

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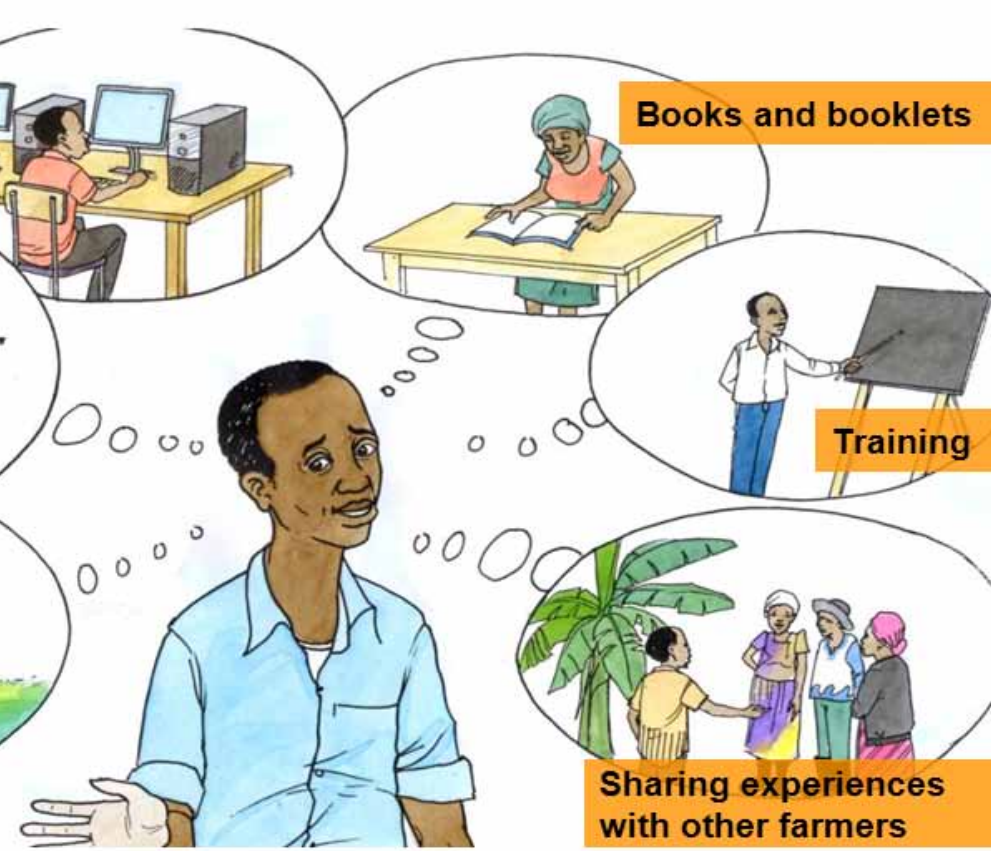


2nd step: Trying out organic practices

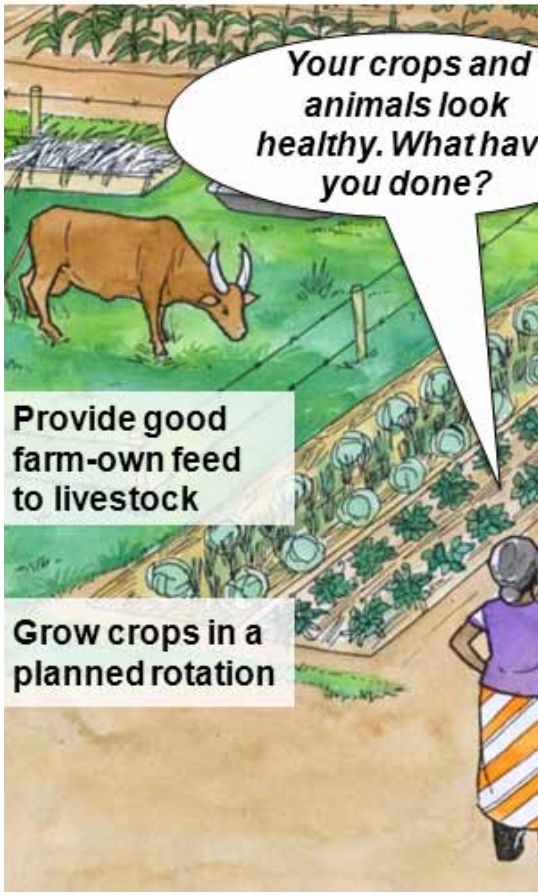
Selecting appropriate practices at a time and testing them on selected plots and animals only proves to be most successful.

Once you have collected information about organic farming practices, you should start to learn from own experience. To minimize risks of crop failure and losses of animals, and avoid frustrations, you are recommended to implement organic practices in a progressive way on selected plots and selected animals only.

Which practices to start with?

Start by applying practices that are of low risk and investment, require little specific knowledge, limited additional labour, and are with high short-term impact. Here are some examples:

- **Cover the soil** with dead plant material to control weeds and protect the soil from erosion and moisture loss.
- Grow a leguminous crop like beans or a green manure crop in alternating rows with maize or another cereal crop or vegetable.
- Start compost production. Collect plant materials and animal manures for making compost.
- Sow fast growing leguminous plants that build a lot of biomass for animal feed or incorporation into the soil.
- Monitor pests weekly. Make

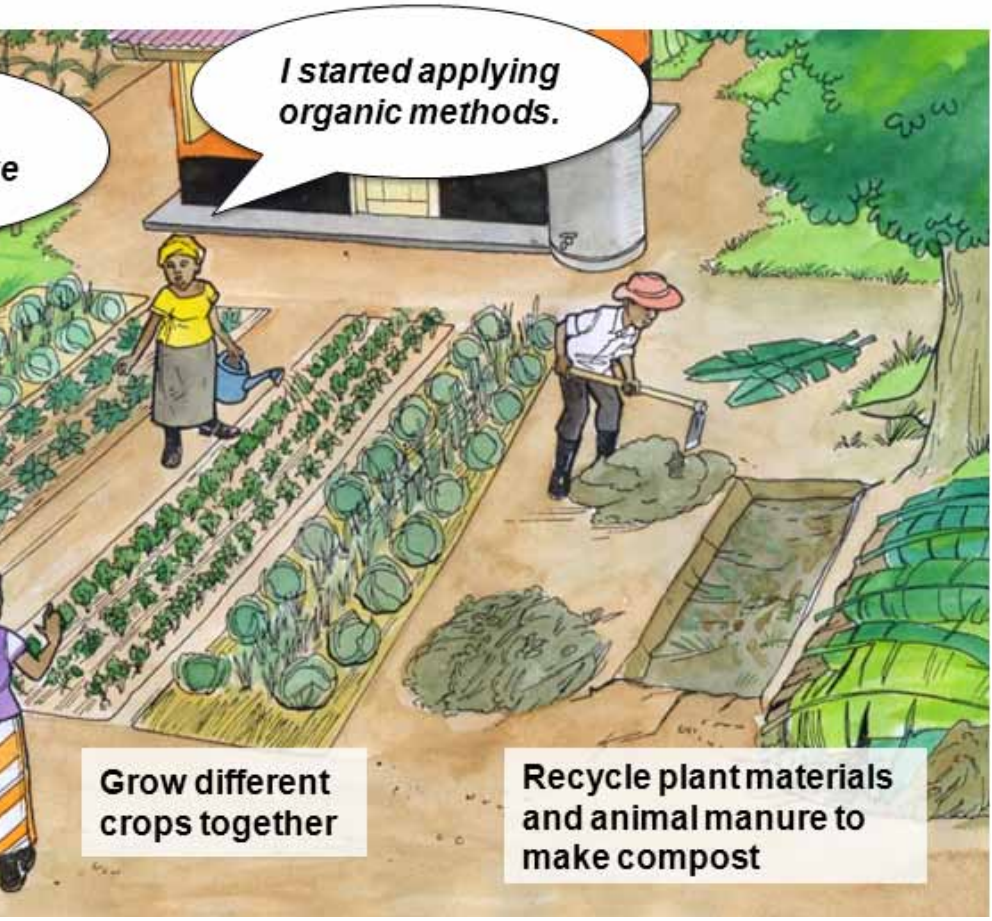


treatments based on the threshold level of the crop only, using natural remedies on a limited surface first.

› Plant leguminous trees such as gliricidia, calliandra and sesbania to generate fodder for livestock.

› Construct terraces and soil bunds along the curves of hills to conserve soil.

› Ask your customers which products they would be interested to purchase in organic quality and what price they would pay.



3rd step: Full conversion to organic farming

Implementation of organic practices in the entire farm marks the beginning to a process of continuous improvements and learning.

When sufficient experience with different practices has been gained, implementation of organic practices throughout the entire farm can be considered. When organic practices are implemented throughout the entire farm, you can claim to be an organic farmer.

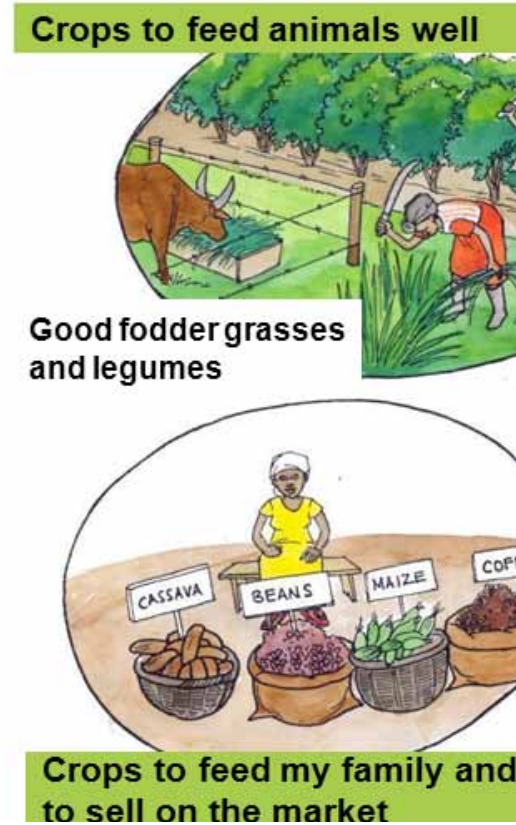
Consistent application of organic practices is only the beginning to a long process of improving the production system by:

- improving soil fertility based on the recycling of farm own organic materials and enhancement of farm own biomass production.
- encouraging positive interactions between all parts of the production system to enhance self-regulation of pests and diseases.
- optimizing the balance between farm-own feed production and livestock.
- further diversifying the farm to increase the sources of income.

Which crops to grow?

The focus does not lie on cultivating specific crops only, but rather on choosing crops that contribute to the improvement of the existing farming system and to a diverse family diet, and ideally are in good demand in the market.

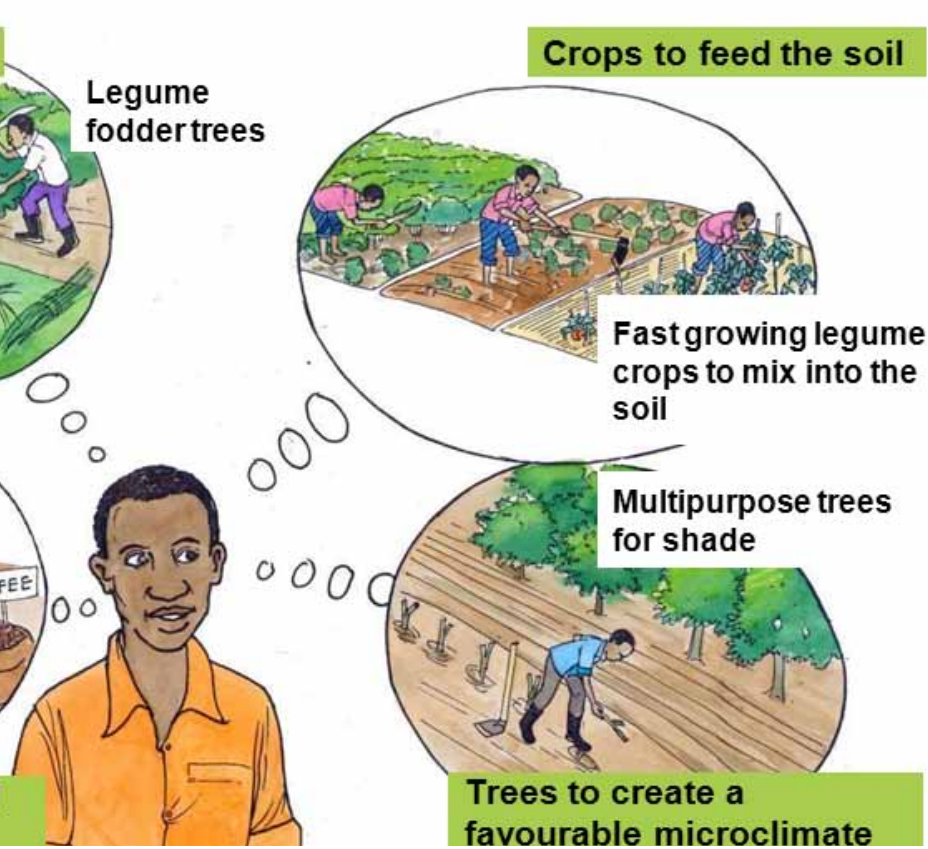
Finding out which crops to grow



Introduce leguminous cover crops to provide high-protein feed for livestock and to be used as green manures to feed the soil.

Plant trees for shade, as windbreak, for firewood, feed, mulching material or for other uses.

Do you grow leguminous plants already? Do you see any possibilities to further increase their use?



Avoiding contamination

As an organic farmer you are responsible of protecting your fields and harvests from contamination.

It is in the responsibility of all organic farmers to protect their fields from being sprayed with synthetic pesticides and contaminated by GMO.

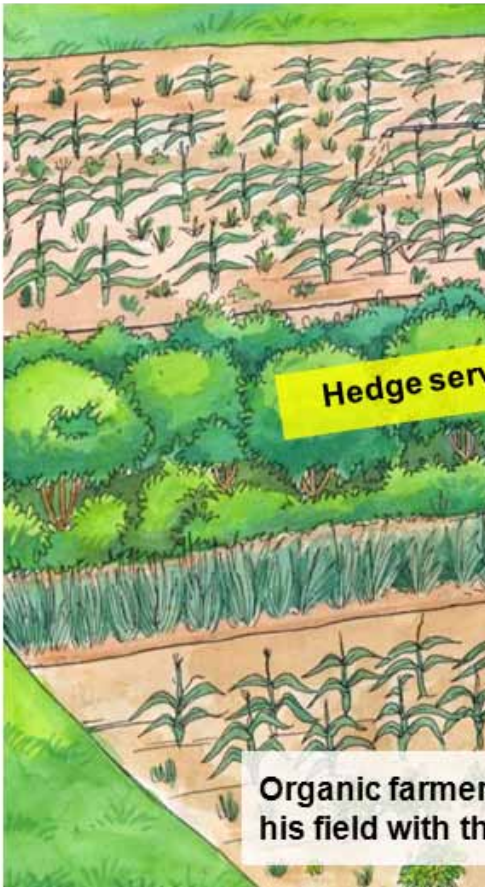
Pesticide drift from neighbouring fields is a common problem in smallscale farming. To avoid pesticide drift onto their crops, organic farmers should safeguard the organic fields by using any of the following measures:

- Plant natural hedges on the boundary to neighbouring fields to avoid pesticide spray drift through wind or run-off water. The wider the border area around the fields, the better.
- To avoid runoff from upstream fields containing pesticides, divert the water away or talk to the farmers upstream about how to work together to minimize the risk of contamination through water.

To avoid GMO contamination of your crops:

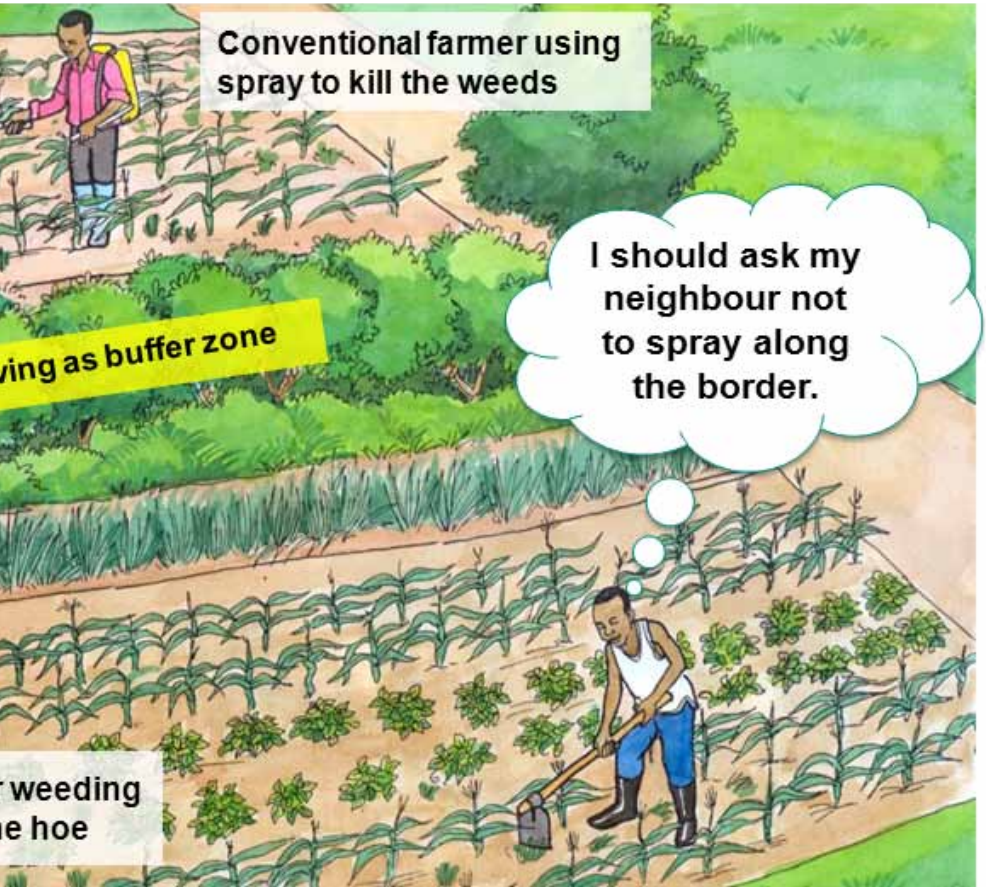
- use certified organic seeds or seeds known to be GMO-free,
- avoid planting the same crops as your neighbours, if they potentially grow GMO crops.

How to prevent pesticide drift



› Practice a wide crop rotation.

Species which cross-pollinate, such as rapeseed or maize, or insect pollinated crops, such as soybean or cotton, are at a higher risk of being contaminated by a nearby genetically modified crop. Species that are mainly vegetative pollinated such as potatoes, cassava or banana are at lower risk of GMO contamination.



Conversion for organic certification

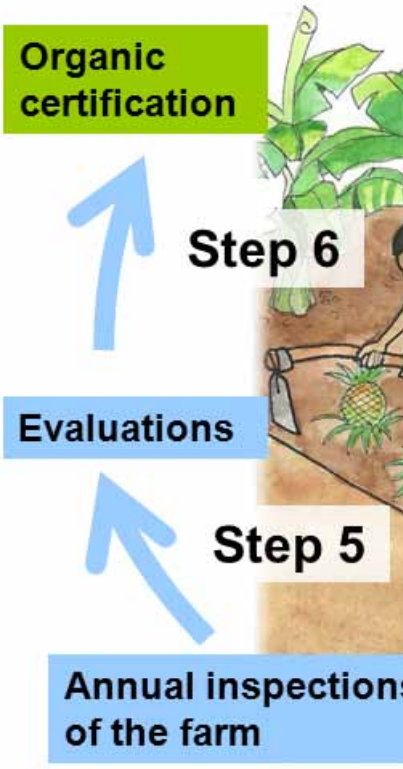
From the point of view of certification, conversion starts when a farmer manages his or her farm in accordance with the organic regulations and the certification contract.

This means that conversion starts when you as a farmer renounce the use of synthetic pesticides, fertilizers and GMO or treated seeds. Stepwise reduction of agrochemicals is not considered part of the conversion period.

The conversion period is accomplished after the third year or third harvest is certified as organic by a certification body. Nevertheless, even if the formal conversion period is accomplished, the adaptation of the farm is not finished. It usually takes several years to establish a well-balanced farm ecosystem and restore natural soil fertility.

According to the basic regulations of the International Federation of Organic Agriculture Movements (IFOAM), the entire farm must be managed organically. This is true for all private organic labels as well. Whereas most governmental regulations allow farmers to certify a part of the farm as organic and still manage the rest of the farm conventionally. Such separation, however, involves risks and, therefore, also some restrictions and constraints.

The procedure for organic certificatio



Generally, for small farms, only conversion of the entire farm is recommended, as the organically managed farm unit would become too small to enable establishment of a diverse production system, allow implemenation of a proper crop rotation and introduction of livestock.

Do your markets require organic certification? How much extra income will you get as a result?

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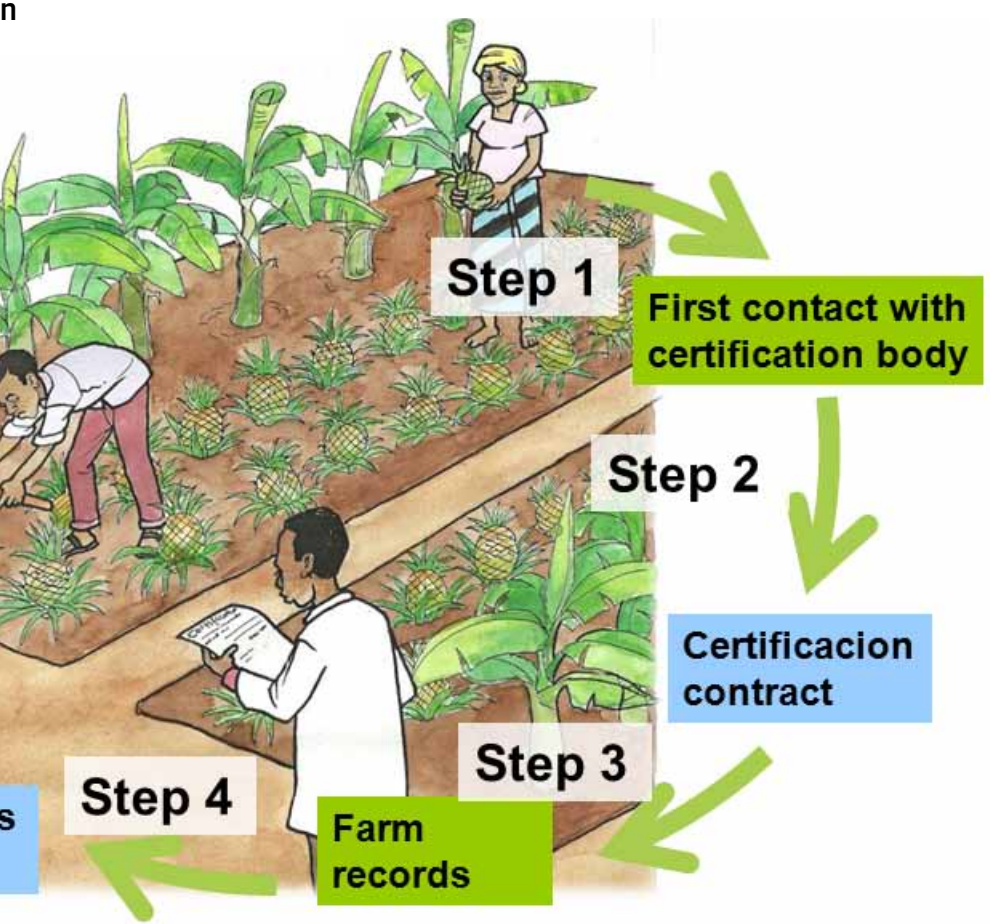

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