



## Organic Cacao Agroforestry Manual

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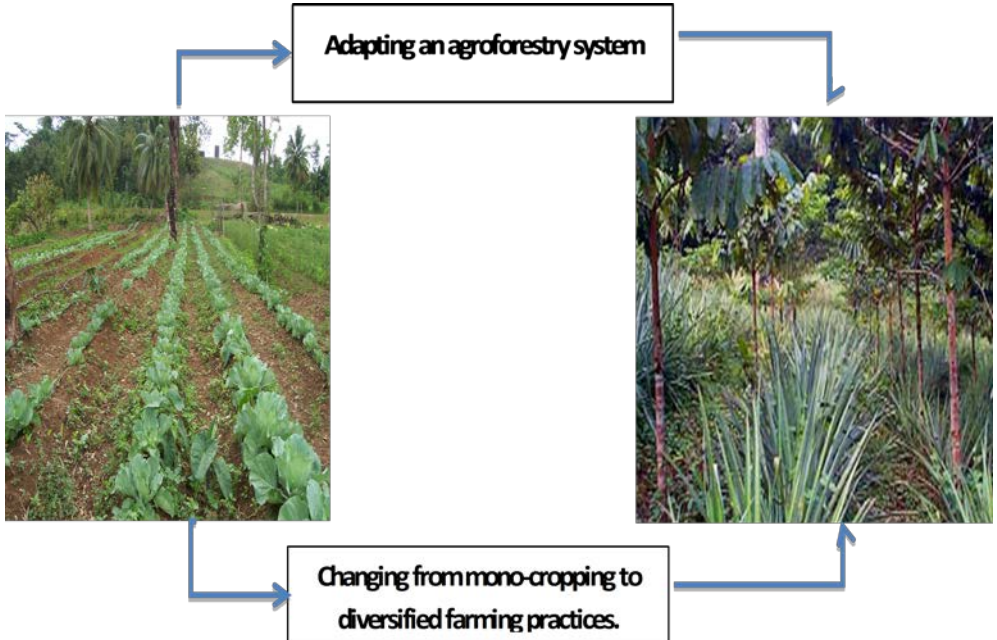
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## So, What Exactly is Agroforestry?

Agroforestry is the method of cultivation that combines agriculture with conservation of trees in the same system. As you plant temporary shade, permanent shade and other fruit trees, you are gradually turning your farm into an agroforestry system. This approach to agriculture creates a diverse and productive farm, while also creating a sustainable land-use system. This kind of systems is flexible in its application and the trees can serve diverse functions. Trees such as **Madre de cacao**, **leucaena**, and **moringa** provide nutrients back into the soil, while providing shade for the delicate cacao seedlings and trees.



The best agroforestry system is one that will provide you with:

- **Short-term crops** such as corn or plantain.
- **Medium-term crops** such as fruit trees and cacao.
- **Long-term crops**, which are the timber trees.

Additionally, you can use leguminous trees, which are a continuous benefit for the farm, as they will help fertilizing the soil on a continuous basis.

The usage of agroforestry is beneficial for the diverse needs of both the farmer and the environment: it helps alleviating environmental risks such as erosion, while also contributing to water management, and helping to battle climate change.

# What are the benefits of Agroforestry?



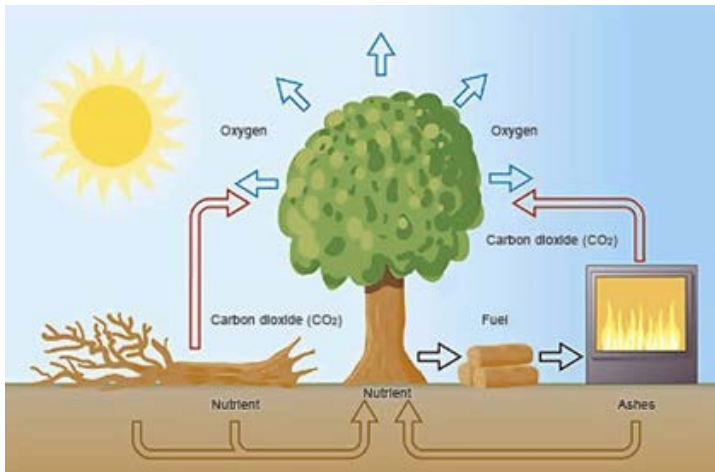
## It combats climate change

Currently there is an international concern over the amount of Carbon Dioxide ( $\text{CO}_2$ ) in the atmosphere. The high levels of  $\text{CO}_2$  have been linked to adverse weather patterns such as excessive rainfall, droughts, increased number and intensity of hurricanes, and a general increase of temperatures globally.

Activities that release large amounts of  $\text{CO}_2$  into the atmosphere include the burning of fossil fuels such as coal or gasoline, deforestation, and certain farming practices like slash-and-burn. The impacts of climate change are predicted to be the worst in developing nations, despite the fact that developed nations are the primary emitters of  $\text{CO}_2$ . Therefore, people everywhere need to do what they can to control the release of  $\text{CO}_2$  levels into the atmosphere.

Agroforestry is a good mechanism for carbon sequestration. The natural process of photosynthesis captures  $\text{CO}_2$  from the atmosphere and stores it in the tree as wood. As a result of this process, there is a tremendous amount of  $\text{CO}_2$  sequestered in cacao cultivation, and specially in that cultivated in agroforestry systems.

**Agroforestry helps to combat climate change and its effects by accumulating Carbon Dioxide in the trees.**





## It adds value to the land

Agroforestry adds value to the farmland in many ways. For instance, agroforestry increases productivity and sustainability on already existing farmlands. Sustainable farming enables the farmer to continuously cultivate the area in a way that will cause little or no impact to the environment, and it provides a cyclical activity that will maximize the use of all products in the farm. In a sustainable agroforestry setting there is very little or no waste: all that would traditionally be considered waste will have its own use. Agroforestry's main aim is to "Buy less and sell more".



**Deforested area converted  
into a productive area.**





## It creates habitat for wildlife

Many farmers have areas in their farm that are left uncultivated or unused. These areas could be a good living space for wildlife, providing food and habitat for animals and plants, while also providing extra income. Most of the areas that are left uncultivated are areas nearby roads, streams and borderlines. A farm can be designed to avoid uncultivated land, and the unused areas could provide homes, for example, to migratory birds, hence increasing the value of the land. For the farmer, this means that he/she could plant multipurpose trees in these areas that support both their family and biodiversity, opening also an opportunity for ecotourism.



**Converting overused land to productive land that provides habitat and food for wildlife.**





## It reduces water, land and air pollution

Many of the current farming practices are done conventionally, meaning that large quantities of synthetic fertilizers and pesticides are used. This way of farming has led to an increase in production, but overuse and mismanagement of natural resources leads to run-off of chemical substances that poison the water and land. This method also causes soil degradation over years and, therefore, depletes soil fertility and leads to massive erosion. The eroded soil ends up in our streams and rivers, which increases sediment runoff into the sea, damaging the coral reefs that are so important for fisheries.

Agroforestry can help to prevent all of these undesired events. Farmers can create natural organic pesticides and fungicides by using leaves from trees that exist on the farm; and fertilizers by using livestock manure and molch.

Agroforestry can keep your soil fertile by:

- Increasing organic matter in the soil, due to the decomposition of plant residues and nutrient recycling.
- Planting nitrogen-fixing trees (leguminous trees).
- Preventing erosion.



**From Conventional farming to the organic and sustainable farming:**

**Organic farming is practiced by using all the animal wastes by turning them into organic fertilizers.**



## Agroforestry as part of Integrated Landscape Management

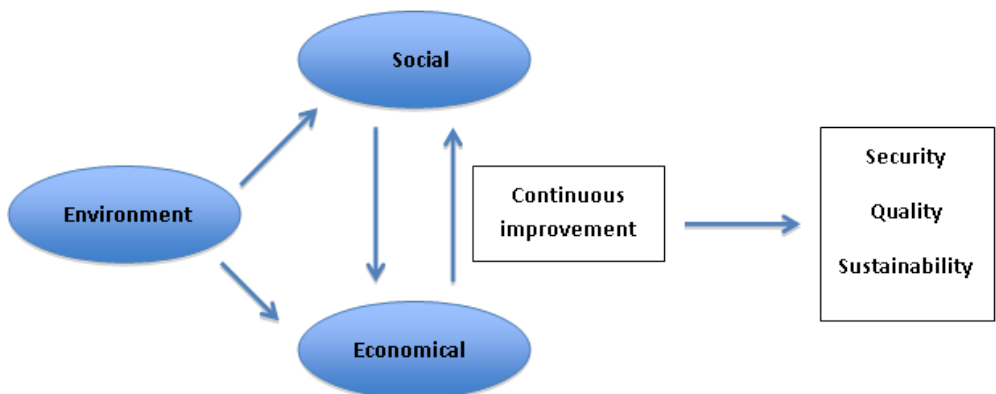
Agroforestry is one part of an integrated farming system, a broader concept that helps to form an even bigger vision of integrated landscape management.

### Integrated farming systems

An integrated farming system is a holistic view of the activities on a parcel of land that looks at how each feature interacts and integrates with each other. Agroforestry is just a single part of an integrated farming system. In other words, an integrated farming system may contain many small sectors of the farm such as livestock, root crops, cash crops, vegetables, agroforestry, aquaculture, apiculture and processing, and all of these sectors complement one another. This concept of farming takes into consideration three main aspects: the environment, society and economics.

### Integrated landscape management

In a wider view of sustainable land use, an integrated landscape management (ILM) approach is the answer to many of the unwanted activities that occur within a given area. Agroforestry and integrated farming systems are just part of an ILM approach. ILM includes all the acting stakeholders and the entire ecosystem and how each one of them interacts with each other. ILM is a balance of the impact to the environment as it relates to any activity that is undertaken. ILM focuses on the People, Planet and Profit: to ensure the comfort of people one must understand how each fulfills its needs and works around it to lessen the impact to the environment.





**Environment:** Agroforestry causes little or no harm to the environment.

**Social:** Agroforestry is a family activity and not only for men.

**Economical:** Agroforestry provides higher income generation for the family and community.

Therefore there is continuous improvement in the farm, increasing its security, quality and sustainability.





## Vision:

Harmony between nature and human development for the benefit of both.

## Mission:

Ya'axché is a Belizean organization which aims to maintain healthy forests, rivers and reefs for the benefit of all through protected area management, advocacy, and working hand in hand with communities to develop capacity for the wise use of land and natural resources in and around the Maya Golden Landscape in

