

Rainforests



What is a rainforest?

Over millions of years the rainforest has evolved into a highly complex ecosystem. The rainforests cover 6% of the earth surface, but it contains more than half of the earth's animals and plants.

Why do we need the rainforest?

- The plants, trees and animals in the rainforest are diverse and unique.
- The rainforest is responsible for regulating temperature, controlling weather patterns far beyond the rainforest itself, and stores a huge amount of carbon.
- The culture of the indigenous and local people is unique e.g. The Pygmies, Huli and Yanomami.
- We source medicines in the rainforest due to the high diversity of plants. About **70-80%** of all mankind depends on medicines from plants of the rainforest. **Two-thousand** of these plants have the potential to **fight cancer**.

Deforestation over the years:

The past: In the 1800's, the rainforests covered 3 billion hectares, that is 12% of earth's surface.

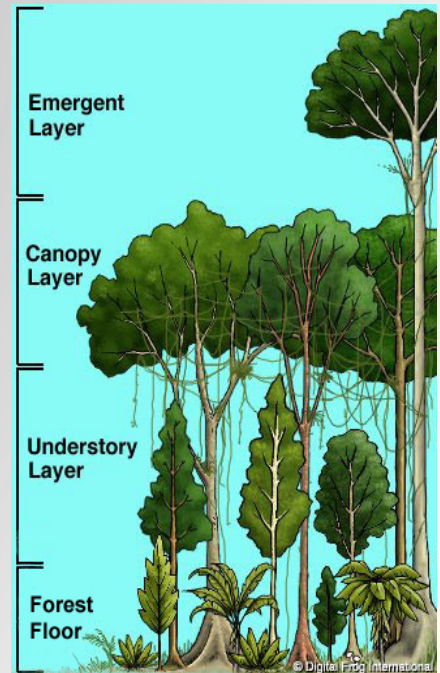
Now: In 2011 this number has halved. Today there is only 1.5 billion hectares left, that is **6%** of earth's surface.


Future: If current deforestation rates continue, there will be **20%** of all rainforests remaining by 2050.



The different layers of the rainforest:

- **Emergent layer:**
This layer contains the few trees that break through the canopy layer. These trees can be as tall as a skyscraper and undergo extreme conditions.
- **Canopy layer:**
About 90% of the animals in the rainforest live in this layer. This part forms the roof of the rainforest. The branches are very closely packed together, causing little sunlight and rain from reaching underneath it.
- **Understory layer:**
This part of the rainforest will be found at half the height of the tallest trees. Little sunlight reaches this layer (about 2-15%). Many of the plants that are found in this layer, are often used as houseplants.
- **The shrub layer:**
Sometimes the shrub layer is considered as part of the understudy layer. The plants on this part of the rainforest are 8 meters (25 feet) high and are often used in medicine.
- **The forest floor:** This is the lowest layer of the rainforest, only 2% of all the sunlight reaches this part of the rainforest. On the forest floor you find that plants are adapted to little sunlight. Mostly you find vines on young trees on the forest floor.





Facts about the rainforest:

- There are two kinds of rainforests; **tropical** and **temperate**.
- The tropical rainforests cover **6%** of the Earth's surface.
- **30 million species** of plants and animals live in the rainforest.
- Life in the rainforests is competitive and countless species have developed complex symbiotic relationships to survive.
- The rainforest provide food and other consumables for people all over the world.
- A third of the world's rainforest has been chopped down in the **last 50 years**.
- Deforestation rates:
 - Every second** . . . we lose an area the size of two football fields!
 - Every minute** . . . we lose an area 29 times the size of the Pentagon!
 - Every hour** . . . we lose an area 684 times larger than the New Orleans Superdome!
 - Every day** . . . we lose an area larger than all five boroughs of New York City!
 - Every week** . . . we lose an area twice the size of Rhode Island!
 - Every month** . . . we lose an area the size of Belize!
 - Every year** . . . we lose an area more than twice the size of Florida!
- If present rates of destruction continue, half **our remaining rainforests will be gone by the year 2025**, and **by 2060 there will be no rainforests remaining**.
- The biggest driver of deforestation is logging (often illegal) and agriculture. People cut down the forest to provide materials for paper, or for building purposes. Farmers burn the forest to create space to plant crops or grazing livestock.
- For every mahogany tree cut down, 28 other trees fall down by accident.
- Deforestation causes sun erosion, disruption of the water cycle, loss of biodiversity and climate change.

Sun erosion:

- When forest areas disappear, the soil is exposed to the sun. The sun is made infertile, due to the disappearance of nutrients such as nitrogen. Other nutrients will also disappear, because of the rainfall that washes it away into the waterways. Merely replanting trees may not help solve this problem, because the soil will be totally devoid of essential nutrients. In the end, cultivation of the land will also be impossible.

Disruption of the water cycle:

- Trees are very important in maintaining the water cycle. They draw up water via their roots, which is then released into the atmosphere.

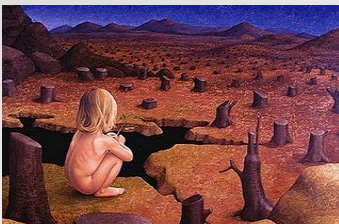
- A large part of the water that circulates in the ecosystem resides inside the plants of rainforests. When these trees are cut down, it results in the climate becoming drier in that area.

Loss of biodiversity:

- The biodiversity of the rainforest is very unique; even though the rainforests make up only just six percent of the earth, more than half of all the species that plant, insect and plant species every day, that is **50,000 species in one year**.
- **Each species that disappears from the ecosystem may weaken the survival of another.** The loss of one of the keystone species live on earth exist in tropical rainforests.
- Many animal and plant species cannot survive the deforestation that destroys their homes.
- Experts estimate a loss of 137 could cause significant disruption to the entire system.

Climate change:

- It is well known that one of the main causes of global warming is greenhouse gases (like carbon dioxide). But what is not well known is that deforestation of the rainforest is one of the main causes of carbon dioxide emission into the atmosphere.
- The trees of the rainforest are a very important storage place for carbon dioxide because they absorb carbon dioxide from the atmosphere, of which they use CO₂ for growth.



Causes of deforestation:

Agriculture and cattle:

Rainforests are cut down for many reasons, but the main reasons of deforestation is driven by the need for money and to provide food for their families.

The biggest cause of deforestation is agriculture.

Farmers cut or burn forest down to provide space for crops or for grazing livestock.



After a few years the land becomes infertile and they have to repeat the same process all over again. This kind of farming is also known by the name “slash and burn” agriculture.

Rainforest areas make room for production such as rice, palm oil, coffee and rubber.

Logging:

A big cause of deforestation is logging, much of which is illegal, to provide wood and paper for people globally.

Wildfires:

Wildfires can be caused by natural or human acts. Often a great amount of forest is burned down. Wildfires are often followed by subsequent overgrazing, which may prevent the growth of young trees, so the land remains empty.

Hydropower:

Hydropower is used to supply energy, but behind these electricity producing dams there is an abundance of flooded land.

Not only do animals lose their homes, but also the land where native people live and grow food are also destroyed.

Mining:

In many of the rainforests are metals like copper and gold, as well as diamonds. A lot of areas are cleared for mining.

Roads:

Roads are made to reach villages, logging areas and mines.

The costs of deforestation:

- Deforestation causes many troubles for the climate of the world; sun erosion, disruption of the water cycle, loss of biodiversity and climate change.
- Plants that could cure diseases disappear and native people lose the land they live on.
- Land is left infertile and can never be replaced as it is permanently infertile.
- Native people are banned from their homes and work places.
- In the end only the rich company's get richer.

WHAT WE CAN DO

- Our project bases span tropical rainforests on three continents- Asia (Sri Lanka, Vietnam, Malaysia), Africa (Ghana, Sierra Leone) and South/ Central America (Honduras, Bolivia, Brazil). We have the possibility of forest rejuvenation projects in all of these countries.
- Our tree planting programme works in conjunction with children in the communities in which we work. They plant seeds in nurseries we help to establish and then look after the saplings as they grow. As long as they keep at least 100 saplings on the go we will pay the cost of their education. As the saplings get strong enough we transplant them and the children replace them with more seeds. If they manage to grow 1000 trees whilst growing up then we will fund their university education. Trees can be for replenishing jungle habitats, for fruit production and products and fast growing 'firewood' trees.
- In conjunction with this programme we run rainforest educational workshops in schools and we promote the sale of flower seeds where the plants originate in these forest habitats, so completing the circle.
- **We can**, for Pounds/ Euro 1000, plant 10,000 trees and at the same time fund 100 children through 10 years of their education!!!. 10,000 trees is several hectares of forest, visible from space- **we can** name it in the name of the sponsor!



