



ORO VERDE  
Tropical Forest Foundation



# ForestValues -

## Innovative Partnerships for Forest Restoration

The project aim is to restore and conserve at least 180,000 ha of forest in three protected areas in Guatemala based on ecologically and socially sustainable criteria. Due to various components, local value chains enable new possibilities of funding and donating which allow for a progressive promotion of forest restoration and conservation. A sustainable and socially compatible forest conservation must be promoted on a long-term basis, technically and financially. OroVerde and its partner organizations Defensores de la Naturaleza and Heifer International Guatemala tackle this challenge within the project “ForestValues - Innovative Partnerships for Forest Restoration”.

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### ForestValues- new ways in demand

The loss of forests, especially due to land use changes like in Guatemala, represents one of the biggest environmental problems of our time. In Guatemala, around 132,000 ha of trees are cut down every year (2006-2010). Deforestation is responsible for at least 50 % of national greenhouse gas emissions.

National programmes for forest conservation and restoration exist, but currently, there are not enough funds available for a large-scale restoration of forests. Thus, the demand for alternatives for long-term financing of forest conservation is higher than ever - in Guatemala and worldwide. The private sector is usually mentioned as the most important potential investor but can it pay for forest conservation and natural regeneration permanently? And how can the local population be involved successfully and sustainably? These questions have yet to be answered.

The topic is becoming increasingly important on an international level, too. Within the Bonn Challenge, for example, the global community targets to restore a total of 350 million

ha of forest all over the world until 2030. Smaller initiatives were founded which strive for the practical implementation of measures to reach this objective. Among them is the 20x20 Initiative of nine countries in Central and South America. Its goal is to restore 20 million ha of forest until 2020. Guatemala alone committed to restore 1.2 million ha over the next 20 years. The private sector is to play a key role in these initiatives, too, but still, how we can acquire new sources of permanent financing to ensure biodiversity conservation and the participation of the local population?

The joint project “ForestValues” addresses this very issue. Its core is innovation on different levels. Organic cultivation methods and new local value chains are established which create sustainable sources of income, promote the conservation and restoration of forests and contribute to the preservation of biodiversity. At the same time, financing models generating a ‘win-win-win situation’ for the environment, society and enterprises shall be realised. Within the framework of these project activities, ideas will be developed to show if and how forest conservation and restoration can be organised independently from donations and public funds.



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# Sustainable profit from forests - The project concept

## Motivation behind the project

Forest landscape restoration and conservation are important mainstays to protect biodiversity, the climate and, ultimately, human beings. In the last 40 years, Guatemala has lost almost half of its rainforest. This needs to stop. Only a cooperation with the local population allows for a long-term promotion of forest restoration and conservation and the concurrent establishment of alternative sources of income.



In order to conserve the biodiversity of Guatemala the rate of deforestation in the country has to decline.



Within the project “ForestValues”, OroVerde and its partners count on creative and highly innovative minds who want to make a difference: New innovative financing models for forest landscape restoration with i.a. the construction of value chains have to be developed, realised and brought to life. Because of longstanding experience derived from on-site projects and varied networks, the three project partners offer the expertise on how the project can be implemented in local communities. The initiatives are developed, discussed and realised together with the local population. Products for cultivation or production, processing and commercialization can be cocoa, honey and breadnut. The latter is still quite unknown worldwide but has a lot of positive characteristics. It is, for example, gluten-free and many different products can be made from it, some of which are already sold on local and national markets. These investment options shall be used to promote forest conservation and restoration.



Creating sustainable value chains to expand forest conservation and developing innovative financing models at the same time - on-site in Guatemala and in Germany.



## Long-term goals of the project “ForestValues”

- Better protection and monitoring of at least 180,000 ha of rainforest in all three project areas
- Restoration and sustainable use of 900 ha of degraded area in communities, i.a. by establishing agroforestry systems
- Sustainable management of 500 ha of already restored area (i.a. through agroforestry systems) and 3,000 ha of existing forests by the local population
- Innovative business concepts, value chains and marketing strategies for a sustainable forest landscape restoration



Diverse agroforestry systems provide a sustainable and ecological alternative to monocultures. Along with measures for reforestation, forest restoration in the communities can be promoted this way.

A guideline for public institutions, potential investors and NGOs shall be elaborated which is to serve as an indicator for the development of a business plan for the promotion of forest landscape restoration. This internationally valid guideline shows in which regards the business approach has to be examined to ensure sustainability and social compatibility.

In cooperation with the local population, alternative sources of income will be created by the cultivation of different products. This way, 2,000 families benefit from the project.

Due to a monitoring system, the conservation of forest and biodiversity in the three protected areas can be improved and possible impacts of the project on biodiversity and the communities are documented.

## Project committee

To promote these activities in Guatemala, discuss new financing approaches and, most importantly, create a link to the private sector, a committee in Germany provides support by offering its expertise and knowledge. Experience and examples for best practice are particularly vital when dealing with enterprises.



# Target region: Three protected areas in Guatemala



All three project regions, the Sierra del Lacandón National Park, the Biosphere Reserve Sierra de las Minas and the Wildlife Refuge Bocas del Polochic, are protected areas with a high biodiversity.

## Sierra del Lacandón National Park

This national park in the north of Guatemala was established in 1990 and belongs to the core zone of the Maya Biosphere Reserve. Apart from lowland and highland rainforests, it also contains wetlands and grasslands. The nearly pristine rainforests of the core zone are home to animals like the jaguar, although its population is decreasing. Around half of the park borders on Mexico and functions as a biological corridor between various protected areas. More than ten communities live within the park. Since they already settled there before the land was declared a protected area, they have a historical right to stay. Some even own land titles. The forest is highly endangered due to slash-and-burn farming and resulting fires, illegal settlements, logging and poaching and extensive livestock farming.

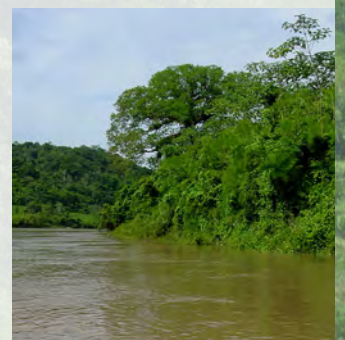
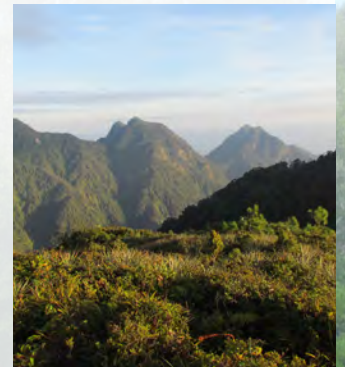
## Biosphere Reserve Sierra de las Minas

The mountain range Sierra de las Minas is situated in the east of Guatemala. Biodiverse cloud forests grow up to a height of 3,010 m. They are home to more than 885 bird, mammal, reptile and amphibian species. Furthermore, the biggest habitat of the quetzal, the national bird of Guatemala, is located here. Over 60 rivers originate in the wet cloud forests and supply the region with water. More than 200 communities live in this area. Just like the national park Sierra del Lacandón, local forests are endangered by the ongoing threat of fires, illegal logging, settlements, poaching and spreading agriculture. Mining represents an additional problem.

## Wildlife Refuge Bocas del Polochic

The river Polochic is the vital line of the wetland Bocas del Polochic which is situated at the foot of the mountain range Sierra de las Minas and merges into the large Lake Izabal where rare sea cows and other animal species live. Because of its international importance as a habitat for water and wading birds, the area was declared a RAMSAR wetland by the UNESCO, meaning that it is especially worth protecting. A high pressure of land use endangers the region which is mainly driven by agro-industry such as sugar cane or palm oil plantations and mining. Additionally, the high demand of firewood in local communities decimates woodlands and natural resources.

The expansion of agriculturally cultivated fields, an illegal and often not-sustainable use of resources and fires due to slash-and-burn farming are usually caused by a lack of economical alternatives in the communities. Therefore, the project promotes a sustainable use and marketing of non-timber products like cocoa, honey and breadnuts in cooperation with the local population. This contributes to the families' income, supports the restoration of degraded areas and prevents further deforestation.



From cloud forests in the Sierra de las Minas to lowland rainforests at the border river Usumacinta in the Sierra del Lacandón, the project regions couldn't be more diverse.



# Promotion of a sustainable use of non-timber products

## The Mayan Nut

The breadnut tree (*Brosimum alicastrum*), also known as Ramón, used to be one of the main energy suppliers of the Maya people. The Maya are said to have planted a breadnut tree on each grave so that the deceased person would not lack anything in the afterlife.

The breadnut can produce up to ten times more protein on one hectare of land than, for example, maize. The evergreen deciduous tree can reach a height of about 30 m and grows in the biodiverse forests of Northern Guatemala. At the age of four, it yields fruit for the first time. The fruits are called Mayan Nut, too, and are very nutritious. Besides protein, it contains a lot of calcium, vitamin C, vitamin E, zinc, folic acid and iron and only little fat (less than 1 g in 100 g of raw fruit).

Dried breadnuts can be ground into flour for the preparation of biscuits, bread, cakes and more. It is also used to make a beverage powder similar to grain-based coffee.



After being harvested, the Ramón seeds (left) are dried and ground. The flour is used to prepare different products such as biscuits (right).

## Cocoa - the 'Brown Gold'

The cocoa tree (*Theobroma cacao*) is suitable for diverse agroforestry systems. It requires shade and, thus, grows well in the shelter of bigger, native trees like the breadnut or other plants. In comparison to conventional plantations with no or only few trees providing shade, the risk for diseases and pest infestation decreases as there is more space between the plants impeding the transmission of pathogens. On top of that, the diverse vegetation attracts beneficial insects. There is no need to use pesticides or chemical fertilisers since trees and other plants providing shade in agroforestry systems improve the soil and allow for an organic cultivation. The processing after the harvest is the key factor for the quality and selling price of cocoa. Even though organic cultivation and processing involve an extensive amount of work, the costs for means of production are lower while selling prices are higher.

The yield of other plants in agroforestry systems such as fruit, vegetables, herbs and timber contribute to the local food security and/or alternative sources of income. At the same time, diverse agroforestry systems prevent erosion and landslides and, thus, help communities to adapt to negative effects of climate change.



Cocoa is especially suitable for agroforestry systems. Currently, possibilities for the commercialisation are being examined.

## Honey from the rainforest

The third local value chain planned within the project is a sustainable production of honey. Numerous farmers have learned about apiculture for quite some time. They have their own bee colonies and already harvested honey. Many beehives are integrated in existing agroforestry systems, to the benefit of farmers and bees alike. The bees have access to a wide selection of nectar sources nearby and pollinate the plants, which then yield crops.

Currently, the production volume is still quite small and the quality has to be improved. For most of the farmers, apiculture is unknown territory but through special trainings, they can make quick progress. In addition, more families need to be inspired and involved.



Apiculture can be integrated into agroforestry systems. The honey is harvested and processed on-site.

Besides Ramón, cacao and honey, products such as timber and cardamom could be at the centre of future value chains. These can be included into agroforestry systems as well. The more diverse a system the better crop failures, diseases and other difficulties with one plant species can be compensated by other products.



# Implementation of the project - Three strong partners for ForestValues



**ORO VERDE**  
Tropical Forest Foundation

## OroVerde - Tropical Forest Foundation

is a non-profit foundation which has been initiating as well as actively supporting and promoting projects for the conservation of rainforests since 1989. Carefully chosen and reliable partners on-site are responsible for the implementation. Specialists from OroVerde provide permanent support and supervise the use of the financial resources. Main components of the projects are reforestation, environmental education, the adoption of a sustainable forest management and establishment of protected areas. Capacity building is the underlying principle - lend people a hand until they can act independently. In Germany, the foundation focuses on environmental education, information about tropical forests and the promotion of information exchange between nature conservation organisations, economy, science and politics. Different campaigns in Germany contribute to the sensitisation for the topic of tropical forests.

[www.oroverde.de](http://www.oroverde.de)

### OroVerde's part in the project

Besides the overall coordination, OroVerde takes responsibility for the development and discussion of financing models and marketing strategies as well as international networking. Furthermore, OroVerde supports local activities in Guatemala and on-site monitoring. It also establishes contacts to the German and international private sectors. OroVerde is responsible for defining, discussing and distributing the criteria on international level.



**DEFENSORES**  
DE LA NATURALEZA

## Fundación Defensores de la Naturaleza (FDN)

is a non-profit private foundation for sustainable development and nature conservation in Guatemala. For more than 25 years, it has been managing various protected areas, launching initiatives for biodiversity conservation and ecosystem services and promoting the sustainable

development of local communities. This includes measures such as reforestation, alternative sources of income, the reduction of deforestation, patrols and the monitoring of the forested areas. FDN has been collaborated with local communities for over 20 years and has worked in the field of sustainable forest management for 15 years.

[www.defensores.org.gt](http://www.defensores.org.gt)

### FDN's part in the project

Within the project, FDN is responsible for the restoration and conservation of forests, for example by means of forest enrichment planting and the establishment of agroforestry systems, as well as for the monitoring of the project region in the communities and in the core zone of the protected areas. FDN coordinates the cooperation with the communities and activities in Guatemala and contributes to the elaboration, discussion and distribution of the criteria.



**HEIFER**<sup>®</sup>  
INTERNATIONAL  
GUATEMALA

## Heifer International Guatemala

is a non-profit organisation belonging to Heifer International, which is fighting poverty and starvation worldwide. It primarily specialises in agriculture and integrated production systems (animals/plants) and, thus, contributes to food security. For more than 10 years, Heifer International has been dealing with agroforestry and agro-production and, recently, with the topic of value chains, too. Since 1970, Heifer International is also represented in Guatemala. The basic principle of projects with Heifer is the model of 'Passing on the gift' - animals are given to families who agree to pass on the animals' progenies to other families.

[www.heifer.org](http://www.heifer.org)

### Heifer's part in the project

First of all, Heifer carries out studies about value chains. This includes the documentation of all relevant participants and links of the value chains. Heifer then plans, develops and realises a strategy to strengthen the connections of value chains of a) production, b) storage, c) processing and d) commercialization of selected value chains.



# First steps in Guatemala

## Get together - first exchange in Guatemala

The opening events of the project “ForestValues” in the three protected areas, Sierra del Lacandón National Park, Wildlife Refuge Bocas del Polochic and Biosphere Reserve Sierra de las Minas, offered the first opportunities for project partners on-site to meet with local communities and further relevant participants. Furthermore, these events made first dialogues between members of communities and governmental as well as non-governmental organisations possible and introduced the aims, key aspects and planned activities within the project.

Local councils took place to present details of the project “ForestValues” on local level and explain to small farmer families how they can participate in the project and benefit from forest restoration, sustainable cultivation of products and the establishment of value chains.

The first reactions were positive. The communities want to participate actively and understand how they and their families can benefit from the project. So right from the beginning, the target group demonstrated a high level of commitment.

On national level, the project was presented in an official opening event as well. That way, public authorities, ministries and national institutions dealing with the management of natural resources as well as non-governmental organisations working on local development and biodiversity conservation in the three target regions could acquaint themselves with the initial situation and planned project activities. Important prerequisites for a successful implementation are good networking and a regular exchange of information on local and national level.



The environment minister of Guatemala, representatives of the German embassy and others participated in the official project opening in Guatemala City.

## Kick-off in the field

One of the first activities in the communities was to examine the parcels owned by the families to identify suitable areas for the establishment of agroforestry systems. In the communities which already agreed on participating in the project, small family-owned or bigger community nursery gardens were already founded to grow cocoa and other native tree seedlings that are planted for reforestation and restoration and in agroforestry systems.

In the **Sierra de las Minas**, the project participants are highly motivated because they already benefited from support when establishing cocoa-agroforestry systems in earlier projects. Seven communities now have their own family nursery gardens.

In **Bocas del Polochic**, the project started at a suitable time: The fire risk was very high back then so people were aware of the importance of protecting natural resources. Presently, six communities are preparing for the establishment of family nursery gardens for both cocoa and native tree species and agroforestry systems.

In the **Sierra del Lacandón**, the status quo of existing agroforestry systems was investigated and problems caused by climatic impacts and partly insufficient management could be identified. In some parts, it was necessary to replace dead tree seedlings by new ones, which were provided by the project. In the future, the seedlings should primarily be sourced from the newly established local nursery gardens in the communities and families.



Seedlings for agroforestry systems are grown in nurseries within the communities.

Further training on the establishment and management of agroforestry systems is required as well.

An additional activity in the Sierra del Lacandón was the identification of areas in the community primary forests where producing breadnut trees are growing. The harvest method and processing of the fruit were demonstrated to participating community members. Furthermore, the project staff as well as representatives of the communities already take part in the round table for the implementation of breadnut production in the Departamento Petén.





To promote the production of honey, the capacities of the new beekeepers in the communities shall be strengthened. They participate in apiculture trainings and learn about different honey products at exemplary beehives which are being set up in the communities in the three protected areas. On top of that, opportunities for dialogue and participation in existing forums concerning the commercialization of honey are offered, such as the round table for the implementation of honey production in the Departamento Petén.

One of the most important goals of the project is to get local people involved as much as possible. They should be part of the initiatives because this boosts the project's effectiveness. For some communities, participating in initiatives is new territory. Therefore, the approach was to work with a few community members at first who serve as role models to others and who can convince more families to join.

### Learning to pass on knowledge - further training for project staff

A special training for project staff and other employees



The first coordination workshops take place.

in the field was developed to ensure that the funded local production processes match the characteristics and demands of the three protected areas. All necessary knowledge and skills obtained during the training can then be passed on to community members. Furthermore, coordination meetings with relevant

participants of the three value chains (cocoa, honey and breadnut) were organised to guarantee for an exchange of information and the establishment of cooperations. For the breadnut value chain, contacts to the Guatemalan cooperatives El Esfuerzo Yaloch, La Lucha and Rainforest Alliance could already be established.

The first step of strengthening the capacity of cocoa consisted of an exchange of individual experience and knowledge about cocoa by project staff. In addition, successful production systems managed by organisations with a long experience in cocoa cultivation were visited, such as Fundalachuá in Alta Verapaz, Guatemala, and the Honduran foundation for agricultural research.

The next step is to expand the skills of the project staff in the cultivation of breadnut, cocoa and apiculture.

### Basic knowledge about the products and possibilities of commercialisation

As additional measures to field activities and trainings for communities and project staff professional studies are developed to support a sustainable implementation of the measures to establish value chains and promote the conservation and restoration forests:

- Socio-economic baseline studies, especially regarding the situation within the communities
- Actualization of the analysis of framework conditions of the value chain and business plan for the breadnut
- Analysis of framework conditions of the value chain as well as a business plan including commercialisation possibilities for honey
- Analysis of possible impacts of apiculture on biodiversity
- Investigation of the production capacity of cocoa cultivation
- Business plan for possibilities of the commercialisation of cocoa

Based on this and additional studies, pilot projects within the "ForestValues" initiative can be planned and realised.



Besides cocoa many more plants contributing to food security can be cultivated in the agroforestry systems.





## The ForestValues Symposium - Innovative Partnerships for Forest Restoration

The German opening event of the project in early November was a great success! The conference took place at the offices of the radio station Deutsche Welle in Bonn.



The interested participants have all sorts of backgrounds - private sector, authorities, banks and civil society representatives. Three presentations in the morning gave an interesting insight into the topic of 'Tropical forest conservation and economy'. Afterwards, small groups examined the financing models Financial Involvement, Cooperatives, Crowdfunding, Impact First Fund and Guaranteed Purchase. These think tanks lead to many exciting ideas and points of discussion. As an added bonus, many participants offered to support the project with their expertise and to become part of the project committee.

## Project financing

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**Further information about the project:**  
[www.oroverde.de/restoration](http://www.oroverde.de/restoration)

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