



Alianza  
**MéxicoREDD+**  
Con la gente por sus bosques



# THE MEXICO REDD+ PROGRAM IN THE FIELD

SUSTAINABLE RURAL DEVELOPMENT: PRODUCING AND CONSERVING



## Sustainable rural development: producing and conserving Redd+ in the field

With the support of the Mexico REDD+ Program, funded by the United States Agency for International Development (USAID), Mexico is promoting sustainable rural development on a landscape scale to reduce emissions from deforestation and forest degradation, thereby increasing carbon storage and tackling climate change. The aim is to improve the quality of life of the people living in forest ecosystems in a framework of respect for their rights.

To achieve sustainable rural development, the Mexico REDD+ Program, CONAFOR, specialized institutions, and social organizations promote an integrated management of the territory that, through the implementation of productive models with climatic effectiveness, stabilizes agricultural expansion, increases the value of forests, maintains existing carbon stocks, and avoids deforestation.

Integrated land management considers the different uses of land and offers cost-effective options to solve productive challenges, use or restore environmental services, and stabilize the agricultural frontier. When forests are lost, we also lose their carbon-storing power and their role in mitigating climate change. The combination of causes of deforestation and forest degradation is different in each region of the country.

### Productive models with climatic effectiveness



Climate effectiveness refers to the ability of a given management policy or practice to reduce the emission of greenhouse gases and to generate well-being to those who carry it out. In the context of REDD+, these are field actions that allow the forest to maintain and/or increase forest cover.



A productive model with climatic effectiveness, when developed in an integrated way and for a prolonged time, contributes to stop the expansion of the agricultural frontier, maintain carbon stores, and preserve the ecosystem functions of the forests.



The productive models promoted by The Mexico REDD+ Program are: agricultural conservation production system; agroforestry production system; silvopastoral production system; sustainable forest production system.

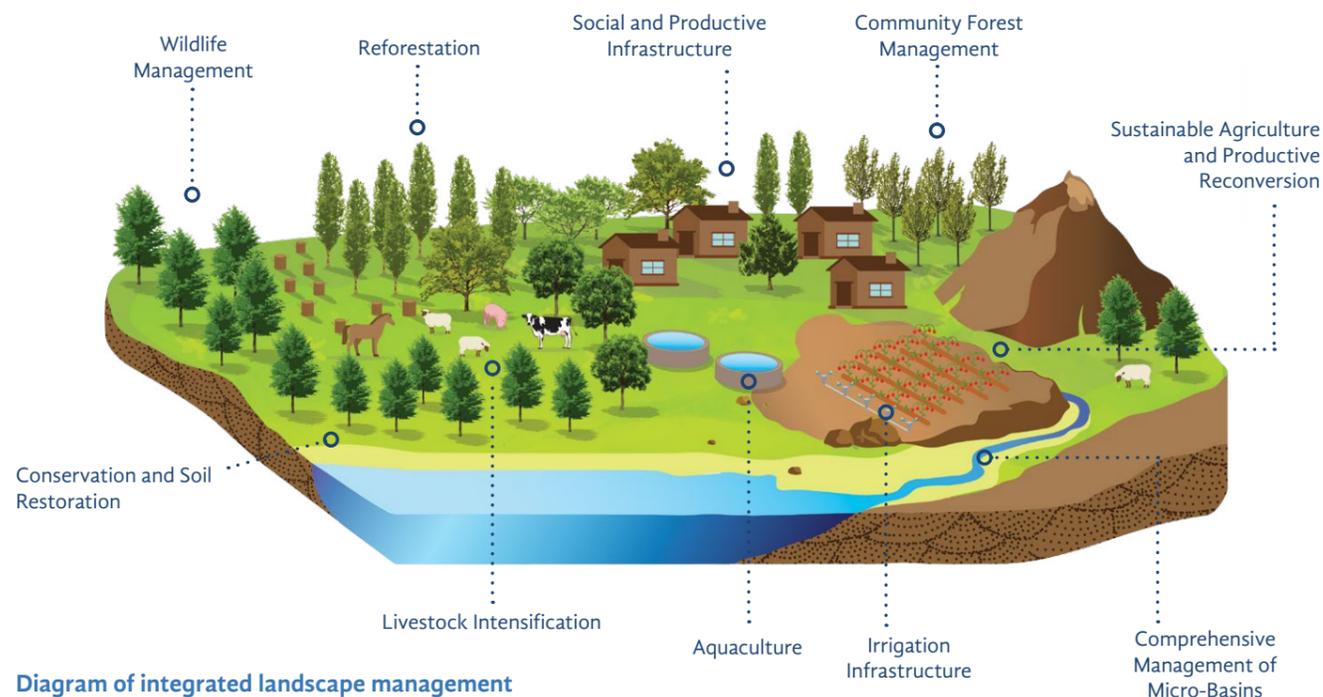


Diagram of integrated landscape management

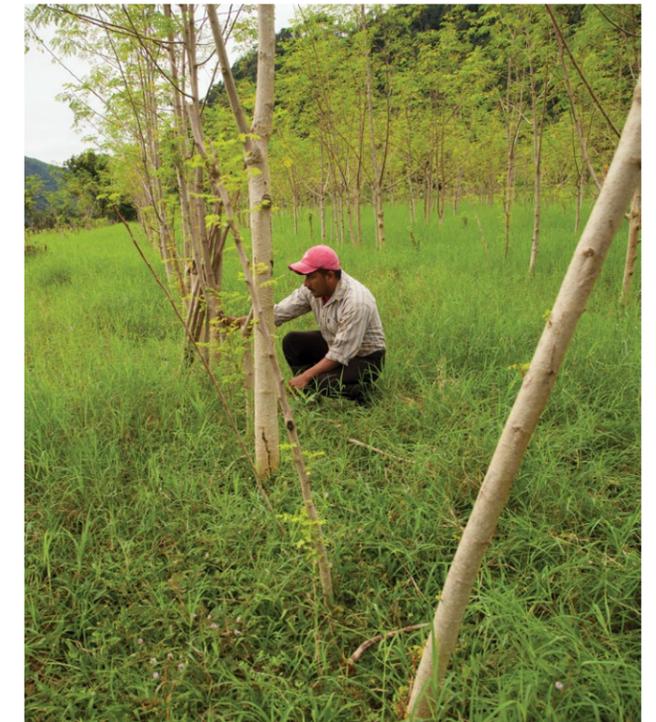
## Producing without deforesting and degrading natural ecosystems in times of climate change

When forests are lost, we also lose their carbon-storing power and their role in mitigating climate change. The combination of causes of deforestation and forest degradation is different in each region of the country. However, one of the immediate causes of deforestation is the expansion of the agricultural frontier.

Conventional production systems are inefficient: they degrade the soils, generate very low incomes, and lead to agricultural expansion and thus to deforestation.

To demonstrate this, we measured the costs and benefits of sustainable models and compared them with conventional models. The next example shows data of livestock systems. To know the results of the other models, you can visit

That is why we implemented a series of demonstration projects that allowed us to raise awareness and develop rural producers' capacities, to test productive models, and to improve local governance.

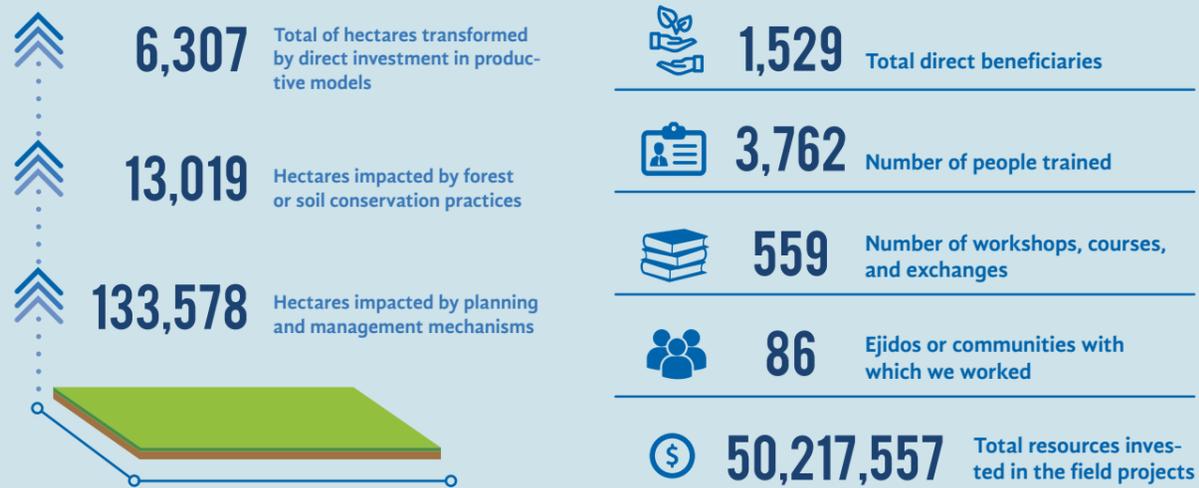


Protein bank on the plot of Felipe Canseco, Oaxaca

INDICATOR		Conventional livestock farming	Silvopastoral System
ECONOMIC \$	Benefit-cost ratio in 50 ha (profit for every peso invested)	-0.69	0.54
	Social NPV in 50 ha (social benefits translated into pesos in the place of the activity)	-2,265,288	6,175,984
	How to implement it according to the classification of the cost-benefit analysis tool	Do not implement	Through Public-Private Partnership
PRODUCTIVE 🌱	Carrying capacity (animal/hectare)	1	3
	Milk production (liters/animal/day)	4	7
	Milk production (liters/hectare)	4	21
	Milk production (liters/ha/year)	1200	6300
	Meat production (kg/animal/day)	0.3	0.7
	Meat production (kg/hectare)	0.3	2.1
ENVIRONMENTAL 🌳	Meat production (kg/ha/year)	110	766.5
	Carbon emissions per cow		50 kg less than conventional

Comparison of economic and productive indicators between the conventional livestock system and the silvopastoral system with proven climatic effectiveness in the Yucatan Peninsula. (The following economic indicators exclude subsidies and support programs.)

### Impact of the REDD+ field projects



With the field projects, we have modified practices that represent a risk for the sustainable and integrated management of the territory, for the conservation of the natural ecosystems and their environmental services, as well as for the quality of life of the inhabitants and producers of the areas where we work.

*It is possible to reduce deforestation and forest degradation and improve the quality of life in rural areas by changing the production models.*



The Mexico REDD+ Program and organizations from six states of the country have coordinated the advance of productive models with climate effectiveness.

*Field projects provide solutions to producers, improve profits, and promote productive intensification without deteriorating forests.*

### Mexico bets on sustainable rural development

The diversity of ecosystems in Mexico and the different ways we use them led the Mexico REDD+ Program, specialists, social organizations, and producers from different states of the country, to test different production systems that can solve production challenges, restore environmental services, improve productivity and profitability, and stabilize the agricultural frontier.

During our experience in the states of Yucatán, Campeche, Quintana Roo, Chiapas, Oaxaca, Mexico, Michoacán and Chihuahua, we were able to sustainably intensify production, recover land for conservation, plan land use, and develop and strengthen capacities.

### Field projects and public policy

The states that participate in REDD+ already have their State Strategies and Investment Programs, planning instruments that guide and prioritize actions in the states. Field projects revealed strengths and opportunities that will be leveraged and prioritized in these programs.

Mexico also presented the Emissions Reduction Initiative to the World Bank's Forest Carbon Partnership Facility, which incorporates climate-proven production models tested in the field projects by the Mexico REDD+ Program as eligible activities according to their Investment Programs.

*Sustainable rural development promotes an integrated management of the territory with productive models with climatic effectiveness, highly profitable, and that avoid the change of land use.*

#### Actions to achieve the adoption of productive models with climatic effectiveness:

- Diagnosis of social, environmental, and cultural issues
- Selection of good practices that provide alternatives to local problems
- Collaboration with ejidos, communities, and resident groups
- Strengthening local governance to promote self-management
- Capacity building with a cross-cutting and multi-sectoral approach
- Establishment of practice and learning communities
- Cost-benefit analysis of productive activities
- Compliance with safeguards
- Promoting conditions in favor of gender equality

Production of organic fertilizer



### Productive models backed by REDD+ and their main results

#### Production system: Conservation agriculture

It seeks minimal soil disturbance, it incorporates stubble and other organic matter, and crop species are diversified and grown in sequence and associations.



 **Places where conservation agriculture projects were carried out:**

In Yucatan: Ejido San Agustín.  
In Campeche: Bolonchenticul, Xkobenhaltun Alfonso Caso, San Juan Tekax, Huacpelchen, Ejidos Ramón Corona and Francisco Mujica.



#### Work performed

- Soil quality analysis
- Soil tilling
- Soil scarification
- No-tillage
- Integrated pest management that favors biological control
- Precision seeding
- Crop rotation



#### Useful benefits for farmers

- Decreased incidence of pests and weeds
- Natural control of pests and weeds
- Beneficial insects
- More fertile soil
- Better soil moisture retention
- Productive diversification increases trade options
- Better profitability and yields



#### Environmental benefits

- Ecological restoration of soils
- Increase in agrobiodiversity
- Carbon retention
- Less pollution from forest fires or gas emissions
- Better recharge of aquifers
- It allows stabilizing the agricultural frontier



Practices of conservation agriculture in the Ejido Francisco Mujica, Campeche

#### Production system: Agroforestry

It combines agricultural crops with forest or fruit trees within a joint management plan in the plot.



 **Places where agroforestry production has been promoted:**

In Yucatan: Ejido San Agustín. In Chiapas: FIECH Cooperatives, Triunfo Verde, Comon Yaj Nop Tik, Ejido Nueva Jerusalén, Sub-basins of Santo Domingo, San Pedro and Buenavista, Ejido Villahermosa and Ejidos of the Nueva Palestina Basin. In Oaxaca: Ejidos Santa Fe y la Mar, San Cristóbal la Vega, and San Martín Soyolapam. In Campeche: San Agustín, Yucatán and Ich Ek.



#### Actions done

- Diversification of crops in agricultural plots (annual crops, shrub species and fruit trees) in various schemes (milpa intercropped with fruit trees (MIFT), milpa, multistrata, coffee growing)
- Managing shade coverage percentage
- Restoration of soils through the use of organic fertilizers, mycorrhizae and soil conservation practices
- Implementation of agronomic practices that improve crops such as pruning of corn spikes, and the use of rust-resistant coffee varieties
- Encourage added value to production (coffee processing, improved stoves)



#### Useful benefits for farmers

- Prevents land degradation
- Reduces the incidence of pests that occur in monocultures
- Diversifies and increases production
- Improves fertility
- Increases moisture retention
- Reduces the growth of weeds
- Produces firewood as an energy source



#### Environmental benefits

- It promotes the intensification and diversification of production that allows agricultural stabilization
- Restores degraded areas
- Stores carbon
- Maintains the nutrient cycle
- Favors species diversity including beneficial insects
- Reduces erosion by water and wind
- Improvement of soil quality
- A more stable microclimate



Cultivation of maize with moringa in Xpujil, Campeche

## Production system: Silvopastoral

Livestock production is combined with the planting or management of trees, shrubs, and grasses.



Places where silvopastoral systems were implemented:

In Yucatan: Ejidos Xul, Becanche, San Juan Tekax, Ek Balam. In Campeche: Ejidos Ramón Corona and Francisco Mujica. In Chiapas: Locality of Salitral y Sajonia, Ranchería las Toronjas. In Oaxaca: Community of El Barrio de la Soledad.



### Work performed

- Forage production in tree (live fences, trees in paddocks), shrubs (planting leucaena in paddocks and protein banks), and herbaceous strata (high productivity pastures, energy bank)
- Forage conservation (silage, nutritional blocks)
- Restoration and reforestation of released livestock areas
- Design of paddocks & rational grazing (electric fences)
- Livestock management



### Useful benefits for farmers

- Increase in animal load
- Increase quantity and quality of fodder throughout the year
- Improved growth and milk production per animal
- Availability of food during the dry season
- Less heat stress
- Increased fertility and reduced use of fertilizers
- Increased profitability and competitiveness
- More agroforestry products.
- Recovery of degraded pastures
- Better use of the forage produced



### Environmental benefits

- Releases livestock areas that can be reforested
- It allows stabilizing the livestock frontier and reduces GHG emissions
- Maintains or increases carbon stores
- Prevents soil degradation
- Conserves natural resources and biodiversity
- Maintains the nutrient cycle
- Retains and filters water



Silvopastoral ranch in La Herradura, Chiapas

## Production system: Sustainable forest management

Actions and procedures for the management, cultivation, protection, conservation, restoration, and exploitation of forest resources, respecting the functional integrity and interdependence of resources without reducing their productive capacity.



Places where sustainable forest production systems have been implemented:

In Yucatan: Ejido San Agustín, Yaxhaxen, Knil. In Chiapas: Microcuencas Villahermosa and Nueva Palestina, Municipality of Villaflores. In Chihuahua: Ejido Aboreachi, Cuenca Río Turuachi, Ejido Chinatú, Ejidos Nopal, Cathedral and Trinidad.



### Actions done

- Promotion of integrated and low-carbon forest management plans (firewood management, implementation of low impact logging practices (RIL-C), consideration of forest conservation and protection activities)
- Fire management
- Enrichment of acahuales or understory with commercial species (parlor palm)
- Soil conservation practices
- Forest monitoring with CONAFOR and Community-Based Monitoring protocols
- Reforestation of degraded forest areas
- Modification of forest management plans



### Useful benefits for farmers

- Higher profitability
- Diversification of the income
- Increased value of the forest
- Economic benefits for the long term
- Water, soil, and air quality
- Reducing the chances of losing forests by fire
- Conservation of the forest capital



### Environmental benefits

- Carbon stores are maintained or increased
- Preserves ecosystems and biodiversity
- Prevents soil erosion
- Reduces flooding and siltation of water bodies
- Maintains the nutrient cycle
- Retains and filters water



Fire management is fundamental for forest conservation

## Testimonials from the field



**Hermelinda Juan Castro**  
Farmer  
Oaxaca

*"We are a group of six women who like the countryside. We work because we enjoy it. We are a team and we work as such. We collaborate and work together in each other's land. It's a partnership, a team, we have to do it this way. Everyone must work as much as the other."*



**Israel Cárdenas**  
Ambio Cooperative  
Chiapas

*"In the places where we have polycultures and we have trees, the pressure on forests is reduced. The producer now uses the wood that is in its own plot and it is no longer necessary to go and collect from conservation areas. Producers now realize that having coffee and trees, in 20 or 30 years, the coffee will produce an economic income, and they will be able to exploit the wood. And, even if they don't get to see it themselves, they now think on leaving this for their children, and that changes their whole perspective. They are even recovering abandoned and degraded areas by planting trees."*



**Feliciano Castillo**  
Rancher  
Chihuahua

*"Before, during the dry season, we had to buy one ton of forage for 20 animals, and now, we only buy half a ton. Why? Because we now rotate pastures and the REDD+ group is helping us do it. This is showing great results for us."*



**Isaías Ku Marín**  
Commissioner of the ejido 20 de Noviembre  
Campeche

*"Where there is a management plan, there is a jungle. We now see the purpose of having a management plan. We work on livestock farming and agriculture, but now all areas are well-defined and the majority is forested."*

## Lessons for the future

The sustainable productive projects that we promote show positive results: organizations have better management capacities and working relationships with government institutions and organizations from the civil society. They have diversified their sources of financing and are recognized in their region.

The producers got access to new financing, reduced their costs, and increased their income possibilities.

The projects are a mosaic of experiences and valuable lessons. The most important lesson is to recognize that it is possible to produce more, with better quality, fewer resources, less territory, and without cutting down the forest.

We have also identified challenges, and the Mexican organizations that we have worked with are the seeds that will spread this experience throughout the country, thus identifying the productive vocation of each region, creating the necessary partnerships, and engaging more young people and women. The path is now ready and we, at the Mexico REDD+ Program, contributed to the strengthening of the social fabric in various regions of Mexico that pursue sustainable rural development.

*Increased productivity allows land to be released for its regeneration*





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