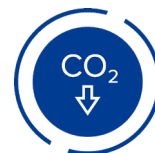




Over 300 years of cattle and sheep grazing have severely degraded the soil in the districts of Cerro Largo and Treinta y Tres in eastern Uruguay. The aim of the project is to convert this degraded grassland into a productive forest so that the intensively used soil can regenerate and absorb more water and nutrients in the future. In this process, valuable synergies in line with the silvopastoral production arise from livestock farming and forestry.

Afforestation with fast-growing eucalyptus species has already been completed. The resulting forest areas have been fully FSC-certified since 2013 and are managed sustainably according to these guidelines. They produce high-quality wood raw materials suitable for durable wood products. At the same time, the forest binds large amounts of CO₂ thus saving more than one million tonnes of CO₂ on average per year. The project contributes to a sustainable development by creating long-term jobs. In addition, the timber production offers new possibilities for services, which can lead to an industrial development in the region.



130,100 t CO₂
annual average



Uruguay



18,576 hectares
of forest



VCS and CCBS
validated



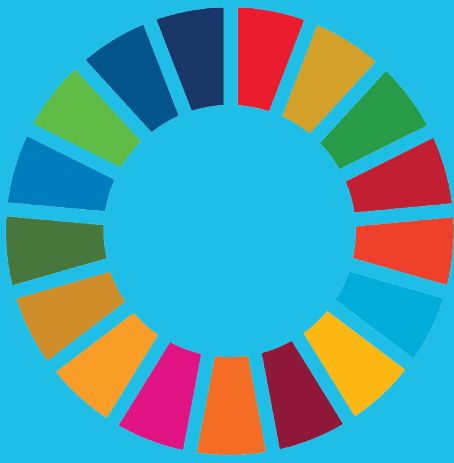
How does afforestation help fight climate change?

Forests are among the planet's most important carbon reservoirs and are home to an enormous diversity of species. However, global forest areas have declined sharply in recent decades due to increasing settlement, agricultural use, illegal logging, and mining.

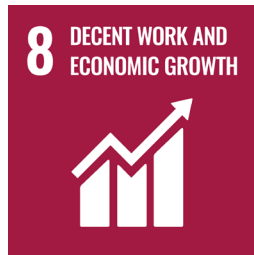
The afforestation of new or reforestation of degraded areas is an important contribution to increasing the biosphere's carbon storage

capacity. Afforestation takes place in different ways. Sustainable forestry is able to absorb large quantities of carbon due to the use of fast-growing species. Other projects aim at providing shade and soil improvement in agroforestry.

New forests create habitats for animal and plant species and opportunities for local people.



The project contributes to the United Nations' Sustainable Development Goals.





The project's contribution to a sustainable development according to the Project Design (PD):

- The project activities create employment opportunities in a region with a high unemployment and poverty rate. Compared to livestock farming, forestry in Uruguay creates **eight to ten times more jobs** per unit area.
- The quality of jobs is improving as well, as wages in forestry are usually higher than in other fields of work in rural areas. Therefore, the project decreases the **inland migration rate to large cities** or other regions which is one of the main reasons for the biggest social problems of the country.
- In relation to the wide-spread livestock farming, the project offers **more employment opportunities for women**, for example in tree nurseries, tree plantings or pruning. This can contribute to improving the stability of rural families. In addition, employees in the forest sector usually come home after every working day, which is an important improvement compared to the situation of livestock farmers: Here, the industry relies highly on employees who live on the farms, often far away from their families.
- The project activities also promote the development of services in the cities neighboring the project area. The **gross production value per unit area** will increase by six to eight times compared to extensive livestock farming, which can lead to an increased demand on different services.
- Forestry leads **to an increased tax income** compared to the previous land use, which is related to the higher gross production value, the increased number of employees and to the demand of services.
- **Biomass** is an energy resource with high strategic value for Uruguay as the country does not possess any fossil fuel resources. In 2010, 25 percent of the internally consumed energy was used in the form of biomass. The government created a policy to promote energy generation with biomass, which will increase this share in the coming years. The project activities will increase the supply of biomass through timber from thinning and residuals of timber harvesting. Thus, the project contributes to the energy security of the country.





VCS and CCBS certified

All high-quality carbon offset projects are based on international standards. They provide the framework for the project design, set-up, CO₂ accounting and monitoring of a project. Recognized standards make the system of carbon offset projects and the projects themselves resilient, traceable, and credible. The afforestation project in Uruguay is certified by the Verified Carbon Standard (VCS) and the additional standard CCBS.



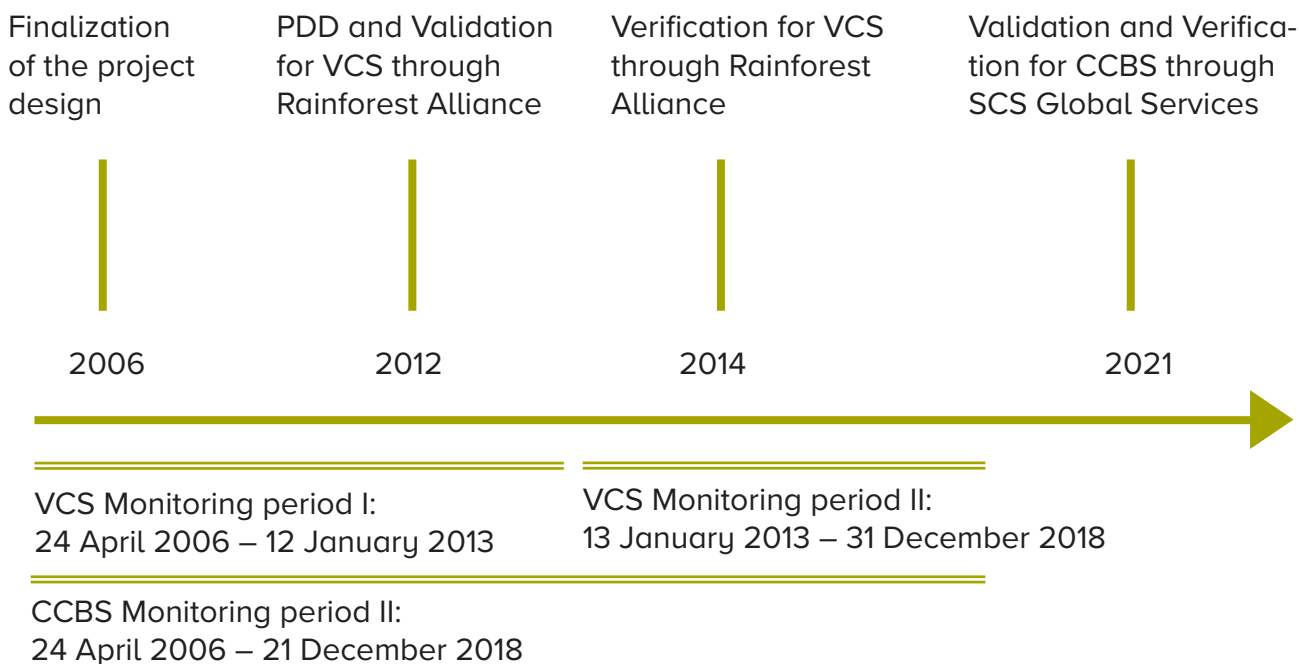
Well over half of all voluntary emission reductions worldwide are validated and verified according to the Verified Carbon Standard (VCS). The standard contains clear specifications for determining the CO₂ emission reductions for the various project types, such as reforestation, wind power or clean cookstoves. Projects must also be audited by independent third-party auditors, be transparent and conservatively calculated. Examples of these independent third-party auditors are TÜV, PwC or SCS Global. The certificates generated from these projects are called Verified Carbon Units (VCU). More information: <http://verra.org/project/vcs-program/>



The Climate, Community and Biodiversity Alliance (CCBA) was founded in 2003 by a cooperation of NGOs and research institutions. Their purpose is to support land use and forestry projects that fulfil other social and ecological criteria in addition to CO₂ reduction.

The CCBS is an additional standard and can only be awarded if the project is already registered with the VCS. More information: <https://verra.org/project/ccb-program/>

Timeline of the project



All above listed documents are available in the Verra register under the project ID 959:
<https://registry.verra.org/app/projectDetail/VCS/959>

The Project Design Document, PDD:

To conceptualize a carbon offset project, the project developer creates a so-called Project Design Document, short PDD. This comprehensive document contains all of the basic information about the project, such as the objective, the project activities, the location and duration of the project as well as the calculation of the estimated emission reductions.

The validation:

To check whether all the premises set out in the PDD are feasible and correct, independent auditors check the underlying documents, facts and figures in a validation report. In a systematic and documented procedure, they assess, among other things, whether the project activities can achieve the planned results and whether there is any reason for objections.

The monitoring:

During the monitoring phase, the project developers monitor and document the data related to the project activities and progress of the project. The duration of the monitoring phase differs from project to project.

The verification:

After completion of the monitoring phase, an accredited verification body checks and assesses whether the values given in the monitoring report are correct. As with the validation, site visits to the project area are part of the verification process. Once the project activities and emission reductions have been verified, the project is entered in the registry as a carbon offset project. Only now is the project allowed to issue and sell emission certificates (carbon credits).

Verified results of the 2nd monitoring period

verified by: SDS Global Services
verified on: 05 April 2021



6,042,236 tonnes CO₂ saved during this monitoring period. This value is expected to turn out lower in the next monitoring phase due to the upcoming forestry activities. Detailed information on page 11 under 'Sustainable forestry and CO₂ reduction'.



220 members of the community were able to improve their skills through trainings within the project, 20 of them women.



Extrapolated* 430 full-time employees, 20 of them women, work in the project.



2,700 people with improved livelihood or income, which was generated by the project, 1,310 of them women.



18,576 hectares of forest area were created through afforestation within the project.



The project activities improved the well-being of 10,442 community members, 5,469 of them women.



Five of the world's endangered or threatened species are less threatened due to the project activities.

* The full-time equivalent is calculated as the total number of hours worked (by full-time, part-time, temporary, and/or seasonal workers) divided by the average number of hours worked in full-time jobs in the country, region, or economic area.





Livestock farming and forestry: Silvopastoral production

The Uruguayan pastoral farming is fully interconnected with forestry. Thereby, the union of sustainable timber production and livestock farming create a symbiosis:

1. Prior to site preparation, more cattle than usual will be herded into the project area to significantly reduce aboveground biomass. This minimizes the use of herbicides during site preparation for afforestation.
2. During site preparation and up to a maximum of two years after afforestation, cattle are not allowed to enter the afforested area to prevent damage to the still small trees - also because it is not uncommon for the animals to use the trees for scratching. During this time, the cattle move to neighboring pastures. Since the project was afforested in a staggered manner, sufficient alternative opportunities for grazing remain for the animals.
3. After two years, the cattle are allowed back into the afforested area, and from then on they are kept in a silvopastoral system with trees. Silvopastoralism combines trees with forage and livestock. The trees are cultivated to produce high quality saw wood and at the same time provide shade and shelter for cattle, reducing their stress.



Sustainable forestry and CO₂ reduction

The forests consist of *Eucalyptus grandis* and to a lesser extent *Eucalyptus dunnii* and *Pinus taeda*, which are harvested and processed after 22 years under sustainable forestry management (for part of the project area, a maximum of 16 years is expected). This process is fully mechanized and all residues, including bark, are left on site. Site preparation for replanting will begin immediately after the forest is harvested.

The planted forests remove carbon dioxide from the atmosphere and store it in various carbon reservoirs (living above-ground and below-ground biomass, organic carbon in the soil, litter, and dead wood). All of these carbon stores are considered in the allocation of VCUs. However, due to methodological constraints, only aboveground biomass, litter, and dead wood are monitored. Thinning, subsequent clearcutting, and replanting result in annual fluctuations in CO₂ reductions.

The project saved 6,042,236 tons of CO₂ in the period from 2013 to 2018. The detailed explanation of the underlying CO₂ calculation can be found in the monitoring report as of page 47. The monitoring report is publicly available in the Verra register under the project ID 959.

The CO₂ savings were reviewed and verified by SCS Global Services. In the associated verification report, they confirm that 'the evidence used to determine greenhouse gas reductions and removals was quantitatively sufficient and of appropriate quality.' Further, SCS Global Services confirms that 'greenhouse gas emission reductions were correctly quantified in accordance with the project description and methodology used.'

Year	CO ₂ -reduction (tCO ₂ e)
2013	1,347,916
2014	1,432,789
2015	1,132,918
2016	764,317
2017	662,259
2018	702,036





Impact spotlight: Community

The creation of jobs is one of the main social benefits of the project. Typically, livestock farming employs 1.4 people per 1,000 hectares. The project is expected to increase this number by more than ten times. In addition, the project contributes to the development of the region and the country according to the priorities established by the Uruguayan government support for small family farms, increase in exports, eradication of rural poverty, integration of technology, increase in national added value, development of new production chains, and geographic decentralization of development, as follows:

Support for small family farms and creation of employment opportunities

At the time of the reporting, the project has created 362 indirect and 64 direct employment opportunities. This is expected to increase to 700 jobs when the sustainable timber production starts. In this regard, most employees will be hired by contractors. Most of the outsourced

contractors currently working with the project are registered in Uruguay as „PYMES“ (small and medium enterprises) and are mostly family businesses.

Internationally tradable products

The entire production of the project (wood and carbon credits) is sold on the national and international market. The meat of the animals is produced on the project site by local livestock farmers and their product is also tradable internationally. Livestock production is carried out by third party companies that lease the project's land that is not used for forestry. Thus, this activity is not displaced from the area, but rather generates synergies with the forest. Priority is given to former landowners of the project area to lease the land. In this way, the ranchers who sold their land do not have to move to other places. This has an enormous social impact on the communities.

Rural poverty alleviation

The greatest contribution to rural poverty alleviation is the creation of high-quality and sustainable jobs in a region where poverty is particularly high. A study by Carámbula and Piñeiro (2006) shows that forestry projects focused on the production of high-quality timber have a major positive impact on poverty alleviation in rural areas and reverse the process of internal migration to large cities. As mentioned in the previous section, this creates jobs not only in forestry but also in livestock.

Integration of technology

The project will use the best available and affordable technologies to optimize timber productivity and quality through seed selection, site preparation, planting, herbicides and pest control, forest management, timber harvesting, and logistics to achieve the sustainability goals. The project has an applied research program where various practices are continuously tested to achieve steady improvement over time. All forestry workers in the project use the technologies (forestry technology, GPS, drones, vehicles, tools), increasing their work capacity beyond the project.

Increase in national added value in forestry outputs

The project produces wood that can be used for high-value products. There is currently (CP note: in 2018) no wood industry within reach of the project site. However, the presence of the project and other similar initiatives in the region could cause industries to locate in the region in the future. And even if not, the sawlogs and veneers produced here can be exported through the port of Montevideo at prices higher than those obtained through the sale of pulpwood, Uruguay's traditional wood product. In addition, the forest management applied here increases the amount of carbon sequestered by the trees, thus increasing the carbon value contained in the wood products.

Geographic decentralization of development

The socioeconomic benefits that the project will bring will mainly affect the surrounding area, which is currently one of Uruguay's less developed areas. This would create a development hub away from Montevideo and other areas where most of the country's economic activity is currently concentrated.

Improvement of the well-being of the local community

The project is committed to promoting the well-being of the community. To this end, it has implemented a program to support local communities, public schools, public institutions (fire department, police) or other stakeholders, where material goods (firewood, tools, school supplies), staff hours (educational presentations in schools) or, in some cases, financial donations are provided by the project. A complete and detailed list of donations was available to SCS Global Services at the time of verification.

The monitoring plan

A detailed overview of the monitoring plan can be found in the monitoring report starting on page 78.





Impact spotlight: Biodiversität

The project also considers biodiversity in the PDD as well as in the monitoring report, where it addresses, among other things, protection against invasive species, changes in biodiversity, mitigation measures, and positive impacts on biodiversity. The statements documented in this regard were reviewed by SCS Global Services in the verification process.

Protection against invasive species

The eucalyptus species *Eucalyptus grandis* and *Eucalyptus dunnii* planted in the timber forest are not native plants in Uruguay. Nevertheless, they are cultivated here because they ensure a reasonable level of productivity and are suitable for processing high-value wood products, which is not the case when other wood species are used. To prevent the unintentional spread of the planted eucalyptus plants, the project voluntarily adopts the application of the National Code of Good Forestry Practices. Likewise, an environmental management system is being implemented, aiming at continuous improvement, and following the FSC (Forest Stewardship Council) standard. Based on the environmental impact studies conducted, no negative environmental impacts are expected as a result of the use of *E. grandis* and *E. dunnii*. The project is

classified by DINAMA as Category A (lower impact). After pruning of the growing plants, the areas aside from the commercial forest were controlled and no residues from pruning and thinning of eucalyptus plants are allowed in these areas.

During the verification of SCS Global Services, the verification team conducted a site visit and confirmed that the species listed in the Project Design (PD) and Monitoring Report (MR) were indeed planted throughout the project area. In addition, the verification team reviewed literature provided by the National Environmental Directorate of Uruguay (<https://www.mvotma.gub.uy/component/finder/search?q=Eucalyptus&Itemid=1014&b28b8241e720772e9caef6e063b5e063>) and confirmed that the species are adapted to the region and have low risk of invasiveness. In addition, the team has no reason to disagree with the VCS validation showing that the species used are not genetically modified. Finally, the team noted that areas adjacent to the project area are regularly monitored for the spread of the planted species.

Changes in biodiversity, risk reduction measures and positive effects through the project

The afforested area represents 45-50% of the entire project area. The remaining area consists of lowlands, biological corridors, roads, rocky areas and settlements. The project provides buffer zones to protect natural areas while allowing for biological corridors, resulting in limited changes to native forest areas.

Wildlife species that commonly use greenways will continue to find protected areas. As described in the PD and MR, and as evidenced by biological surveys in the project area, wildlife species use forested areas even if they have historically used only grasslands for habitat. Fishing, hunting, and any damage to the forest is prohibited in the project area, which, along with soil conservation practices, has positive impacts on the biodiversity in the project area. The project does not undertake fire ordinances, and row preparation preserves inter-row areas as much as possible.

The monitoring report also comments on what measures are being taken to counteract negative impacts. For example, fences are installed

to prevent cattle from entering the protected areas.

During the verification, the audit team found that areas have been fenced and buffer zones for native forest are being monitored. In addition, SCS Global Services concluded that the assessment described in the MR and supporting documents regarding the relative impacts of the project on biodiversity is adequate and detailed. The pasture and grassland areas converted to forest are degraded and have relatively low biodiversity, while the project activities are expected to reduce impacts on native forests and have no significant impacts on grassland species or degradation from conversion.

The monitoring plan

A detailed overview of the monitoring plan can be found in the monitoring report starting on page 92.

