

# TOCANTINS, Brazil

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Factsheet Transfer process, Tocantins State, Brazil



Responsible partner:



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Contact: Instituto Ecológica Palmas  
Associação (IE) – Brazil

Factsheet – English



*The capacity of civil society organisations  
and their networks in community based  
environmental management*

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## Introduction to case studies in the CiVi.net project

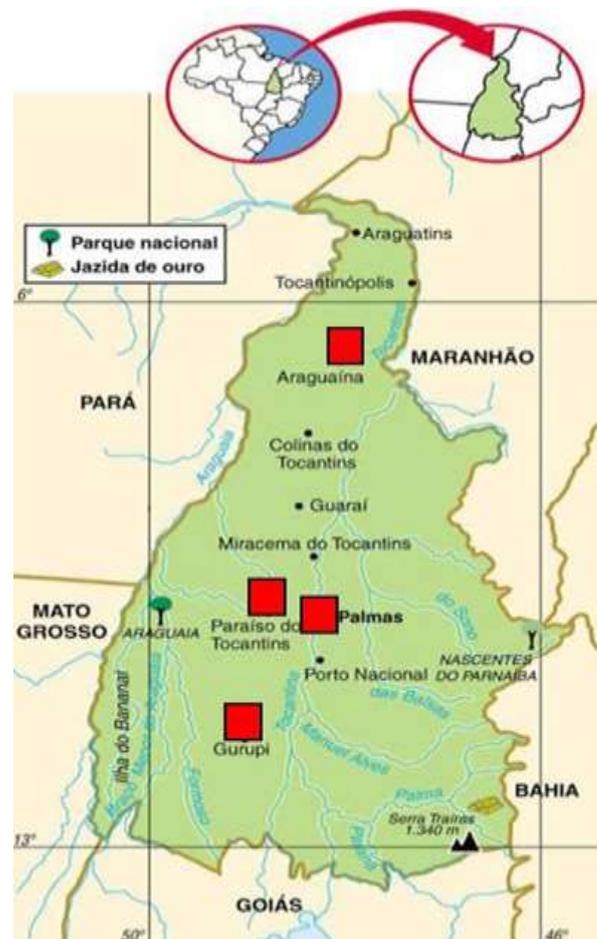
One of the main aims of the CiVi.net project is to identify 'success stories' of local communities where solution strategies have been developed for the effective management of commonly used natural resources. Therefore the project has taken an action research and case study approach, selecting a number of 'original' case study regions, i.e. communities where solution strategies have already been worked out. For each of the selected original case study regions possible 'transfer' regions are identified. The selection of transfer regions is done in consultation with local stakeholders of the original region, the project's advisory board and the European Commission.

More information on the CiVi.net project and the Spanish and Portuguese version of this factsheet can be found on the website of the project: [www.civinet.eu](http://www.civinet.eu). Information on the case studies and transfer regions is available via [www.civinet.eu/english/79277/5/0/100](http://www.civinet.eu/english/79277/5/0/100).

## The Tocantins Case study

Over 50% of the total area of the State of Tocantins is used for agricultural and livestock activities. Currently, the state is considered a major producer of cattle in Brazil being among the top 10 producers. In counterpoint to this information, deforestation in Tocantins is increasing due to the expansion of soybean crops and livestock: most of the soybean production is used as livestock feed.

In this scenario, the transfer process conducted by Ecologica Institute and the Swiss Federal Institute of Technology (ETHz) had the main objective of knowledge spreading and identifying the preference between REDD projects or Payment for Environmental Services (PES) relevant to the cattle farming properties in Tocantins.



Location of transfer: Tocantins, Brazil

## Cattle Ranching in Brazil

Cattle is raised in various ways in Brazil. Firstly in an extensive way where cattle are kept in pastures without supplementary feeding, and a large area of grassland with low cost and efficiency is needed. Secondly via semi-intensive grazing where cattle is kept in good pasture which is fertilized and irrigated during dry periods to increase their weight. Thirdly via intensive farming, where the largest number of cattle is kept in a smaller area: the better method for rapid weight gain.



Taking into account the need to support areas for cattle breeding in Brazil, in recent years deforestation rates were extremely high: reaching 83% of all deforested areas in Brazil occupied by pastures. The State of Tocantins is the second largest producer of cattle in Brazil and the second state with respect to deforestation in the country: in 2012 there were approximately 200,000 hectares of deforested areas in total.

Extensive livestock is responsible for 93% of the cattle herd in Brazil, however, different studies indicate that of the 172 million hectares of pasture in Brazil, more than 60% is degraded. In pastures in the Cerrado area, it is estimated that 50 million hectares have some level of degradation. Aiming to adapt to environmental rules of the international market, or to provide the necessary production of meat, one sees that the recovery of degraded pasture areas should be a priority in the livestock sector, since the expectation in 2018 is an increase of over more than 5 million hectares to support an increase of about 20 million animals.



The process of intensification in cattle breeding aimed at better use of pastures has been analyzed by the livestock sector because it becomes a fairly simple and inexpensive solution, being possible to produce the same amount of cattle on less land, combining production and environmental conservation.

## Transfer process: the cattle game

Given this scenario, the transfer process conducted by the Ecologica Institute and the Swiss Federal Institute of Technology (ETHz) sought primarily to gather information about the Tocantins cattle sector with producers, researchers and technical assistance institutions. The objectives were to identify the pattern of the use of pastures and to account the existing exceder in the native area properties. With all the information reviewed, it was possible to provide information on the feasibility of replacing the livestock extensively for more intensive production, thus contributing to decreased replacement of native ecosystems and enabling the

implementation of projects of Payment for Environmental Services (PES ) and REDD in the cattle ranching properties in Tocantins.

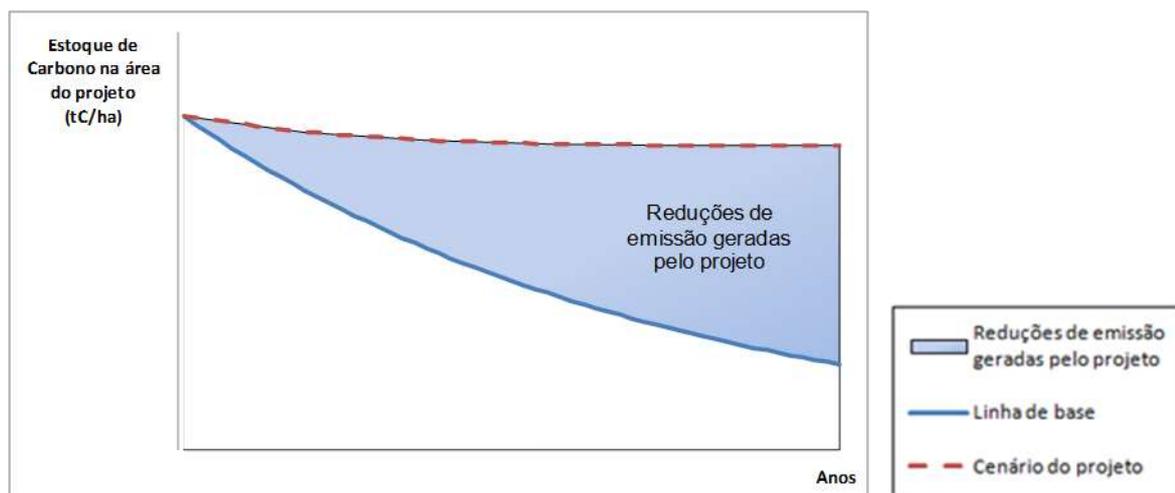
The transfer process was carried out through a computer program developed by a technician from the Swiss Federal Institute (ETH), where the program or game simulates the farming scenario characterized by livestock in extensive grazing. The game consists of economic decisions taken on the intensification of pasture Payments for Environmental Services (PES) and Reducing Emissions from Deforestation and Forest Degradation (REDD). The software was installed in tablet devices and made available for the target audience, consisting of farmers and technicians as well as students of Forestry, Agronomy and Environmental Engineering.

### Payments for Environmental Services - PSA and REDD

In these days, PES is an economic tool used to financially compensate those who enable environmental services to occur. Some authors estimate that the value of the environmental services provided by forests is considerably high, especially because its loss will bring great risk to humanity. Forests provide environmental services, not only carbon, but also watershed protection, flow regulation, nutrient recycling, rainfall generation and disease regulation. REDD also has the potential to tackle rural poverty, contributing to the conservation of biodiversity and maintaining all the mentioned ecosystem services (Parker et. al., 2009).

About 77% of Brazil's total CO<sub>2</sub> emissions are resulting from deforestation and forest degradation (BRASIL, 2010). In 2009, the creation of the National Policy on Climate Change (NPCC) set national targets to reduce the emission of greenhouse gases, with a primary focus on reducing deforestation. Thus, REDD models are able to ensure a balance between environmental conservation and economic development, while contributing to improving the quality of life of the communities involved in the projects.

REDD can be separated into two types of projects. The first encompasses activities that reduce or avoid planned and legally authorized deforestation. In this design, the information about the size of the area that would be cleared is acquired and from this, the amount of emission reductions to be generated by the forest conservation project can be calculated. The second type is to avoid and reduce unplanned or illegal activities that cause deforestation. In this category, the agents of deforestation are the result of socioeconomic pressure on the forest, combined with the lack of oversight by government agencies and bad use of property rights over land (Verified carbon standard 2012; Shoch; Eaton; Settlemyer 2013).



*This figure shows that the proposed forest conservation (REDD) results in a smaller loss of carbon stock in the project than would occur in the baseline (without the project) scenario, area whose loss varies according to a certain rate annual deforestation estimated for the project.*

Even after being widely debated, today, the so called REDD projects are still not fully accepted within the Kyoto Protocol, but only in the voluntary carbon market. According to Peters - Stanley and Yin (2013), from all transactions that occurred in the voluntary carbon market in 2012, 32 % were from forestry projects.

Regarding the voluntary market, there is a growing historical trend of demand for carbon credits from forestry projects. The turnover in the forestry market has doubled every three years, since the main demand is for those projects located in Latin America, featured in Brazil, which led the market in 2011. This demonstrates the great opportunity that the country has to generate revenue through carbon credits arising from the forestry sector. At the same time, there is a large potential to increase participation in this market, since Brazil has the largest concentration of the world's rainforests, which unfortunately is also threatened by the highest rate of deforestation.

## National Policy on Climate Change, Brazil

The main Brazilian public policy focusing on the issue of climate change is the National Policy on Climate Change, NPCC, establishing a national voluntary commitment to reduce GHG emissions to be achieved by 2020. This was one of Brazil's steps next to the UNFCCC and the global society. The main sector responsible for achieving the proposed goals is to change the use of land and forests, which still lacks public policies for this purpose.



Thus, economic instruments that act exactly in the change of the land use and forestry sector can be an important ally to, and help to achieve the goals established by NPCC, enhancing the reduction of deforestation and ensure the long-term benefits. Since it already has the predominance of forest carbon market, Brazil could use REDD to its advantage to further reduce the planned deforestation in 2020 and thus obtain a greater reduction than the desired goal of reducing GHG emissions. This would emphasize the importance of REDD in Brazil and its impacts on the climate change negotiations.

In the current stage of development in which most Brazilian states are currently in, and mainly Tocantins, one of the last agricultural frontiers of the country, it is needed to achieve credibility among farmers so that they can finally invest in projects of the size of REDD and PES. For this purpose greater efforts are still needed, as well as working in a partnership with the state subsidizing the creation and reformulation of legislation may provide an additional back up for payment for environmental services projects, benefiting producers who invest in the conservation process.

## More information

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The CiVi.net project is part of the Seventh Framework Programme of the European Union, with a focus on community based management of environmental challenges. Theme: ENV.2011.4.2.3-1 / Project ID: 282750



The CiVi.net project aims to analyse, transfer and disseminate successful and sustainable community based solutions with regard to ecosystem service management in Latin America. The role of civil society organizations (CSOs) within these governance models is thereby at the core of the research.