

Sustainable Livestock through Innovation in the Amazon

A silvopastoral project in Brazil shows the way of livestock farming with a sustainable approach



Cows thinning the shrubs on the Mona Lisa farm in Brazil

Brazil contains 63% of the Amazon forest with a rich diversity of species. But in the last fifty years it has been cleared to a large extent, releasing carbon emissions and driving climate change. Brazil's landscapes and topographies have undergone massive changes. A large percentage of virgin forest has been converted for industrial agricultural production and cattle ranching. Due to unsustainable management of grass monoculture pastures, the land is degraded, farm productivity has decreased and the biodiversity disappeared. Although a decreasing trend, deforestation is still continuing in the Amazon. Almost 50 % of grass-based systems for beef cattle production are degraded or in the process of degradation in Brazil.

However, there are projects, which are working against this and bringing life back to the bare landscapes. Through reforestation, new ecosystems are created that offer particularly good space and feed for cows – so called silvopastoral systems. As a sustainable alternative, silvopastoral systems can increase forage biomass production and quality, enrich biodiversity, increase animal welfare and ensure a better income for farmers.

One of these projects is the Mona Lisa farm at the west of the state of Maranhao in Brazil. The tropical climate and the rainy season during summer offer a good basis for beef cattle

production and environmental conservation. The farm has 900 ha composed of native trees, shrubs and grasses.

The Mona Lisa farm (beef production, breeding, yearling and fattening) is located at the west of the state of Maranhao, 45 km from the city of Imperatriz, Brazil. It has 900 ha, of which 500 ha is in a silvopastoral system, developed by natural regeneration of native trees and shrubs. Grasses (*Braquiaria* and *Panicum* species) and shrubs (*Tithonia diversifolia*) are part of the system to increase forage biomass. The other 400 ha are used as natural reserve. No chemical fertilizer is applied on grassland, only natural phosphate and limestone. The groundwater is the only source of water. There are four families living and working at the farm in different activities. The farm is self-sufficient in terms of energy as it has photovoltaic solar panel system that can generate 2400 KW per month which fulfill the farm requirement and the surplus generates extra income for the farmer. They also have 60 honey boxes for pollination and honey production. The farm has 1150 animals (Nelore and cross breed Nelore × Angus) divided into 548 cows, 359 calf (50% male and 50% female approximately), 95 heifers (1 to a 2 years), and 96 males from 1 to 2 years old. Every year 480 animals are produced being 540 kg live weight for male and 450 kg for female. Pasture is the main feed but annually according to the market price, some animals are fattened using silage, produced at the farm (12 ha = 500 tons) as the main diet. All year round, the animals receive mineral mixture and during the dry season they are supplemented with urea.

The higher biomass available for animal nutrition is linked to higher income for the farmer. The natural regeneration of native trees also increases the financial stability and social security. The silvopastoral system delivers environmental services including increased biodiversity, increased carbon sequestration and a high standard of animal welfare. It is expected that the economic, social and environmental benefits of silvopastoral systems could be used for further policies and payment for ecosystem services.

This strategy could also increase the adoption of the system by other farmers and consequently improve the sustainability of livestock production in the tropics.

The Mona Lisa project is led by a cooperation of different organizations (CIPAV, Agribenchmark and UFSJ) working under the Action Network “Restoring Value to Grassland” of the Global Agenda for Sustainable Livestock, a multistakeholder partnership, which acts towards more sustainability in the livestock sector worldwide. Consisting of 107 member organizations and 9 Action Networks, the Global Agenda brings stakeholders from the livestock sector together through the facilitation of dialogue, assembling evidence and advocating for changes in practice and policy.

Its annual multistakeholder partnership meeting in September 2019 in Kansas USA is dedicated to innovation in sustainable livestock systems, where examples such as the Mona Lisa farm will be in the spotlight. The meeting is open for all interested participants.

[Video of the Mona Lisa farm](#)

[Global Agenda for Sustainable Livestock](#) and the [MSP Meeting in Kansas](#)