5

SOWING BIODIVERSE PASTURES

Context

In Southern Portugal's Montado area, decades of harmful agricultural practices, through the intensive use of fertilisers and ploughing, has degraded the permanent pastures. Research showed the area had less than 1% of soil organic matter, associated with decreased carbon sequestration, soil degradation and biodiversity loss.

To deal with these issues, the SME Terraprima carried out the Sown Biodiverse Pastures project between 2009 and 2012. The Portuguese Carbon Fund funded this project, as it contributed to Portugal's national objectives of the Kyoto Protocol.

Activities and results

Between 2009 and 2012, 1.000 farmers sowed biodiverse seed mixtures across 50.000 hectares of grasslands. These seeds require no ploughing, and further management of the biodiverse pastures is based on livestock grazing to avoid shrub invasion, thus reducing fire risk and the need for mechanical shrub removal.

The seed mixtures contain a large number of local plant species – up to twenty, including both grasses and legumes, adapted to each area and soil type – to create biodiverse permanent pastures. Legumes provide a renewable source of nitrogen, which increases pasture productivity and allows higher stocking rates. Soil organic matter increased with an average rate of 0,2% per year, thanks to the plants' dense root systems and grazing, through which biomass returns to the soil by animals trampling the plants and manuring. Moreover, the resulting permanent pastures do not need reseeding for at least 10 years.

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The farmers involved in the project received between 140-200€ per hectare and had to meet several obligations such as no ploughing, using the right seed mixtures, and no use of nitrogen fertilisers. To ensure the project's success, farmers were monitored and provided with a clear implementation plan including technical support and field visits, e-mail, and phone contact.

Conclusion

The project contributed to the sequestration of 1 million tons of CO2. Additional environmental benefits were improved soil organic matter, improved soil fertility, increased water retention, reduced erosion, and conservation of grassland biodiversity. Moreover, the project also positively impacted livestock breeders, as animal production increased. As farmers contributed to the ecosystem service of carbon sequestration, they were remunerated by the Portuguese Carbon Fund.

Innovative aspect

This project shows how to successfully make use of funds set up to comply with (inter)national agreements (such as the Kyoto Protocol in this case) to finance climate change actions, while indirectly also creating additional long-term benefits, such as the conservation of grasslands and increased sustainable livestock production.

6

GRASSLANDS AND LIVESTOCK FARMING ADAPTATION TO CLIMATE CHANGE

Context

In the Massif Central region in France, grasslands cover about 85% of the total surface and store more than 2 million tonnes of carbon each year. Grasslands play a beneficial role in the fight against climate change while preserving open herbaceous environments. In particular, in this territory, the effects of climate change are putting pressures on the functioning of livestock and mixed farming systems.

Activities and results

The Adaptations of Cultural Practices to Climate Change project (AP3C) was born from the desire of agricultural stakeholders to no longer have to only react to climate change but to be able to anticipate it. During the project (2015-2019), € 1,2M was allocated to partners within the framework of the Interregional Convention of the Massif Central by the Ministry of Agriculture, the Auvergne-Rhône-Alpes Region and the New-Aquitaine Region. The project focuses on adaptation of grasslands in the Massif Central. It aimed at obtaining localized information allowing detailed analysis of the impacts of climate change in the territory, with a view to adapting the production systems and raising awareness among all stakeholders. To this end,