

Unlocking multifunctional agroecosystems: innovations for sustainable agriculture

This project works on multifunctional landscapes by simultaneously promoting agricultural productivity and environmental restoration. We will use satellite information, modelling and communication strategies for a sustainable transition



2 Performance and stakeholder maps



2 Spatially explicit predictive models



1 Arthropod biodiversity database



+4 Redesigned productive establishments



1 Knowledge management and communication platform



+4 Communicable information-educational elements



6 Training workshops for farmers and technicians



+2 Articles published in popular science journals



A pathway to sustainable production models through biodiversity integration and conservation

The implemented initiative

In recent decades, the Pampas biome has experienced significant changes in land use, leading to the displacement of natural environments and emphasizing the need for biodiversity conservation. This project focuses on Uruguay and Argentina, both of which have similar production systems and face common rural and socio-cultural challenges. Our goal is to convert uniform systems into multifunctional landscapes that yield long-

term benefits. With the support of FONTAGRO, we aim to establish a multidisciplinary platform involving experts from Argentina (UNRN) and Uruguay (SARAS, CEUTA) to analyze and apply knowledge to the production systems of the Pampas biome. We will collaborate with producer groups, national research institutions, and family production promoters.

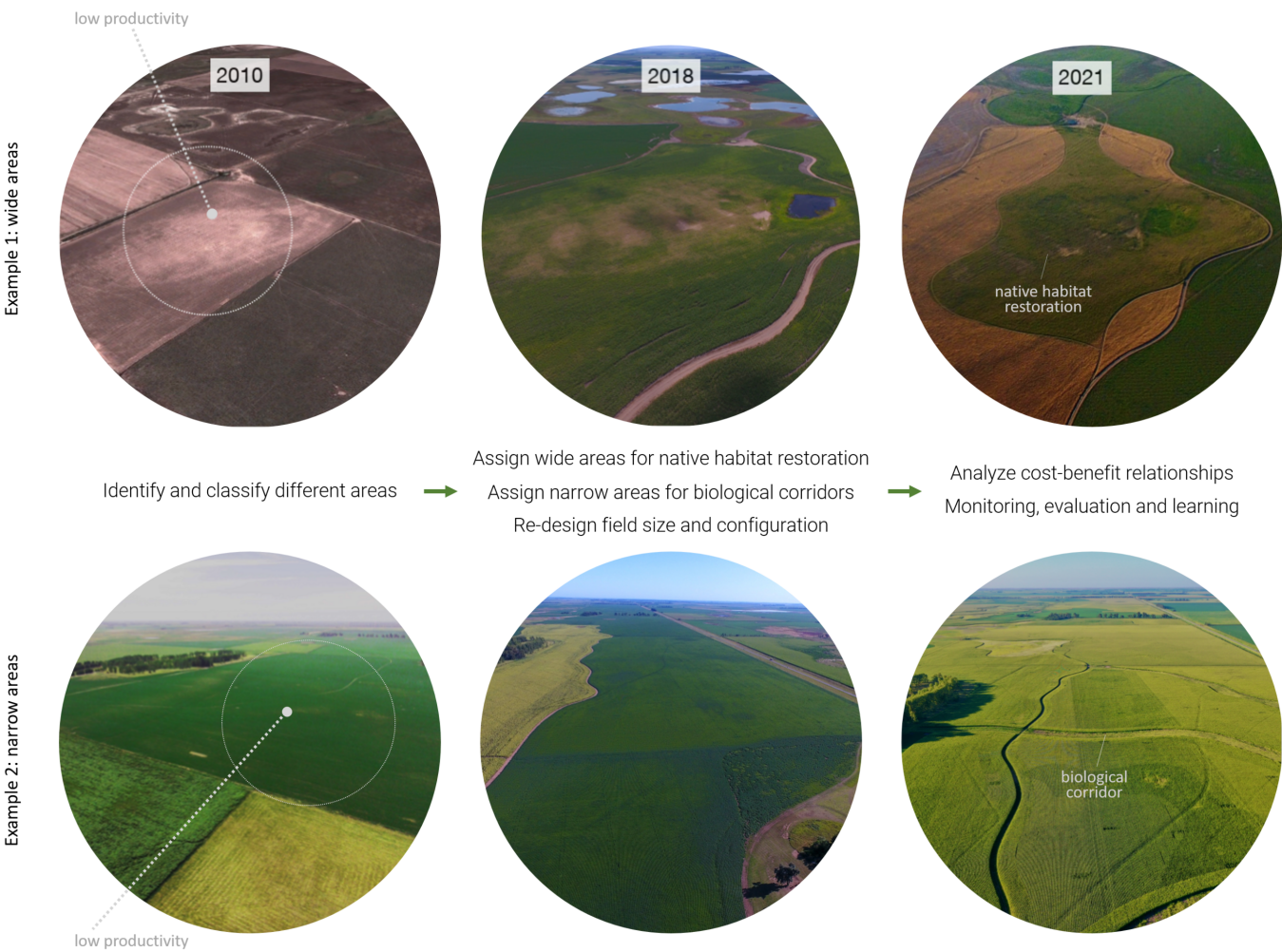
Innovative strategies and tools in Uruguay and Argentina

The technological solution

The project will strengthen the capacity to harness big data and improve the governance system through participatory mechanisms for the generation of public policies and private agreements. Sustainable transition issues will be addressed through strategies such as the dissemination of existing environmental and socio-economic information and its rapid analysis. Collaboration between academia and the productive sector will help identify the main needs of producers and broaden the scope of transitions. Edge effects will

be studied through precision agriculture, models for the design of multifunctional landscapes will be developed, and aspects studied in the field will be implemented and evaluated. Beneficiaries will include the public and private sector, educational institutions and civil associations of producers. The project is expected to have positive economic, environmental and social impacts, contributing to national development and improving production, the added value of products and producers' incomes.

Transition to multifunctional landscapes in large-scale agriculture



Results

Developing a methodology to model various natural contributions in productive systems with different edge configurations. This includes creating crop performance maps and assessing how landscape configuration influences performance. Also, selecting and evaluating an appropriate predictive model (Comp 1). Identifying and describing relevant variables for performance, as well as the frequency and intensity of pest damage, and creating spatially explicit predictive models (Comp 2).

Evaluating agricultural redesign elements and redesigning establishments to improve functional diversity and increase natural contributions. This will benefit crop performance and stability while reducing the use of external inputs (Comp 3). Reviewing the latest developments and interactions between multifunctional landscape design, academic trends, production techniques, and policies. Creating an actor map and developing key messages for all involved stakeholders. Presenting the tool (Comp 4).

MÁS INFO

