ADORE

Equipping farms to restore biodiversity: applying a results-based approach

Métaprogramme BIOSEFAIR

Projet Report: 2021 - 2024

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The latest IPBES report (2022) makes the alarming observation that biodiversity continues to decline globally, despite several successive plans to protect it. In agricultural circles, the intensification of practices is the main pressure associated with this decline. Numerous initiatives have been launched across Europe over the last twenty years to support farmers who are motivated to welcome rich biodiversity onto their farms. The CAP's Agri-Environmental Measures (AEMs) are a key instrument in this regard. These measures are 'action-oriented' and come with financial incentives for farmers who commit to 'good' practices. However, the effectiveness of AEMs is controversial. As these approaches are mainly guided by a "means-based approach", some scientists suggest moving away from this approach, which has proven to be ineffective for biodiversity, and focusing clearly on delivering concrete results. In other words, making payments conditional on the achievement of results. This raises the following question: if past approaches and APMs have not had the desired effects, should we not take a different approach to preserving biodiversity? Would it not be better to think and act according to a different logic, namely a 'results-based logic'?

In a completely different context, an adaptive management approach based on results has been successfully tested in order to provide a high-quality water service in a catchment area involving several dozen farmers (Prost et al. 2018). With the ADORE project, we sought to

adapt this method to another service (the service provided by agriculture to biodiversity) and on another scale, the agricultural operation of the INRAE experimental unit in Saint-Laurent de la Prée (located in the marshes of Rochefort-sur-Mer in Charente-Maritime). Following the logic described by Prost and his colleagues in their regional project, we co-developed an initial project – as defined by Prost et al. (2018) – by mobilising stakeholders within the experimental farm, i.e. ecologists, farm workers (farm manager, tractor drivers, herd managers) and agronomists. This research team that runs the farm (known as 'the collective') is made up of engineers, technicians and students. It is supported by an agronomist researcher who ensures that the experimental unit team fully understands the approach and adapts it to biodiversity issues.

The multi-year approach consists of a series of annual cycles comprising four steps: 1. implementation; 2. monitoring of target species, their habitats and practices carried out; 3. analysis of results and lessons learned; 4. redesign of the project for the following year. Eleven 'target' species were selected. For each of these, the project has been formalised in the form of an action plan specifying the expected abundance of the species, the habitat required for that species, and finally the practices to be implemented to achieve that habitat and abundance. This action plan was then translated into a dashboard formalising the action plan, enabling the organisation of observations (monitoring) to determine the results obtained and the practices actually implemented, and finally to analyse these results and, in particular, to understand, where applicable, to what extent this agroecosystem did not produce the expected results.

ADORE enabled the analysis of the first three years of application of the approach on the farm (2021, 2022 and 2023).

Results

First results on the implementation of the approach

The analysis shows varying results depending on the target species, ranging from the rapid achievement of objectives for certain species such as the skylark to failure for the lapwing. ADORE enabled the step-by-step design process to continue, with more detailed formalisation of the dashboards for each of the 11 target species, as well as learning about the observations to be made and a collective analysis of the results obtained in Saint-Laurent de la Prée.

The approach revealed that the success of such a project depends on coordination between the very different professions involved in experimental farming, both for habitat and species observations and for the co-construction of the project and the establishment of appropriate governance. For each of the actors, the implementation of the approach required learning and adaptation in relation to their current practices.

Already, very tangible results are evident:

- Very quickly, the project to help the skylark was successful (Figure 1). This species is quite abundant on the farm thanks (among other things) to an initiative taken by the agents who mow the natural meadows, who took care to leave unmowed strips in these meadows or alfalfa fields. The farm can thus offer 'innovations' to marsh farms to help the skylark population.

- As for lapwings, there have been no breeding pairs on the farm for five years, whereas there were in previous years. However, in-depth analysis of the results reveals that the farm has been able to offer habitats that meet the desired criteria, and that the general trend in the

populations of this migratory bird is probably the reason for the lapwings' lack of 'response' to the habitats offered at La Prée.

- On the other hand, for other species (such as the Reed Warbler), the desired habitats, as well as the expected abundances, could not be achieved.

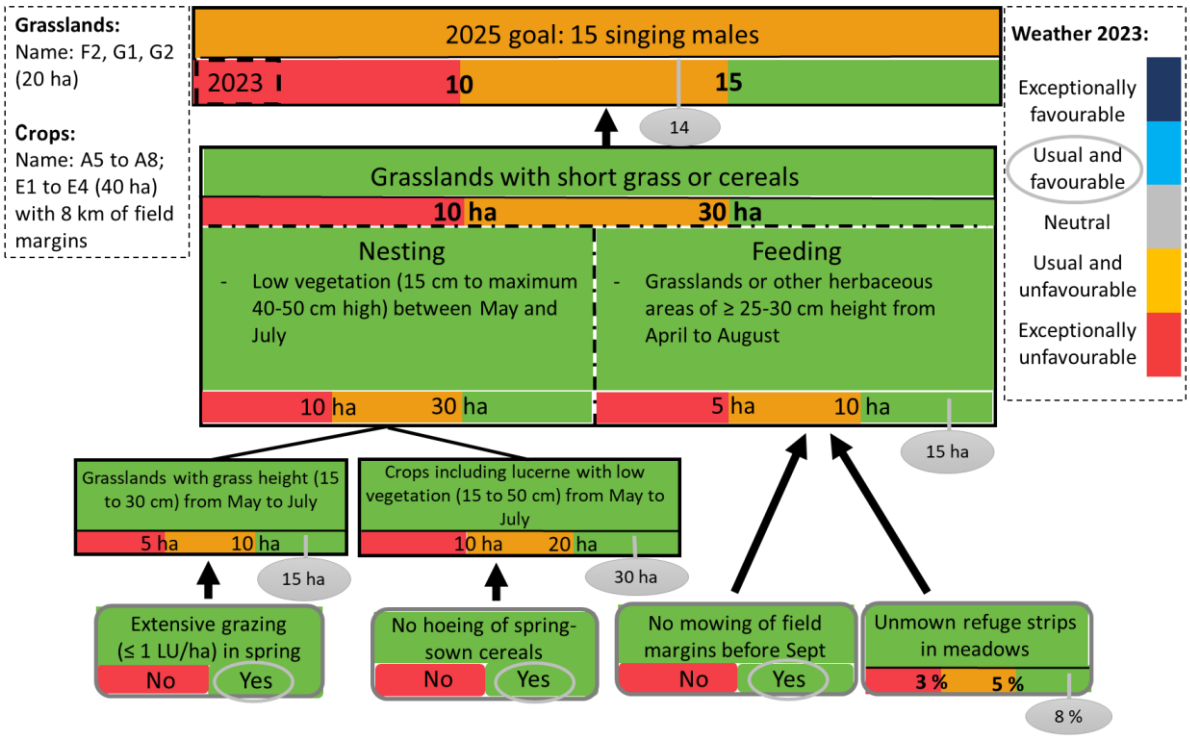

Figure 1: Example of the 2023 results dashboard for the meadowlark. A green box means that the result has been achieved, while an orange box means that it is moderately satisfactory.

Taking biodiversity into account on 'real' farms

ADORE also aimed to analyse the conditions for potentially rolling out the approach to 'real' farms, or even to several farms within a small agricultural area. Surveys of farmers revealed what biodiversity is currently taken into account on farms and how. Initial results show that biodiversity is not seen as an economic issue for farms (farmers do not expect it to add value when marketing their produce). On the other hand, the farmer's personal background (their training) seems to influence the nature of the biodiversity taken into account ('ecosystem' versus a few species perceived as being of functional interest or not) and to be a strong factor in the level of reasoning behind practices to conserve biodiversity. This shows that if we want to integrate biodiversity conservation as an objective of farming (on a par with production), farmers need to reclaim knowledge that they have not been taught or have been taught very little about, and to recontextualise it. Biodiversity then takes on a new meaning and tells us something about the agroecosystem they manage. Moving from 'imposed' biodiversity to 'appropriate' biodiversity therefore requires the ability to observe it and to have management indicators to support action.

Reference

Prost, L., Reau, R., Paravano, L., Cerf, M., & Jeuffroy, M. (2018). Designing agricultural systems from invention to implementation: the contribution of agronomy. Lessons from a case study. Agricultural Systems, 164, 122-132.https://doi.org/10.1016/j.agsy.2018.04.009

Valorisation

Durant, D., Lemaire, N., Teynié, A., Kernéïs, E. et Reau, R. (2025). Préserver la biodiversité sur les fermes : et si nous pensions et agissions dans une logique de résultats ? Sciences Eaux et Territoires, N°48, DOI :10.20870/Revue-SET.2025.48.8249

Durant, D., Lemaire, N., Teynié, A., Kernéïs, E., Reau, R. (2025) et Ancelin, J. (2025). Sketchnote – Préserver la biodiversité sur les fermes : et si nous pensions et agissions dans une logique de résultats ? Sketchnote - Sciences Eaux et Territoires, N°48, DOI : 10.20870/ Revue-SET.2025.48.9485