



Future Direction to Support the Management of Protected and Natura 2000 Grasslands Results-based Payments



November 2023



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Date of publication: November 2023

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1. Introduction

The management of protected areas, including Natura 2000 sites, is a constant challenge for stakeholders. Nature is in a constant state of flux, which can be one-way or fluctuating, and the management of sites must adapt accordingly. The task is made even more difficult if the conservation objective is also changing, or necessarily changing, as circumstances and realities change. The need to adjust adaptive management to environmental conditions and their changes is not a new element in land management, but there are still limitations to its application.

Our previous paper¹ on adaptive protected area management presented in detail the relationship between the drivers that threaten habitats and species — in particular, climate change — and the socio-ecological system, the theory and importance of resilience, and the ecological, structural and financial challenges of management. It drew attention to the importance of cooperation and co-planning, the involvement of farmers in the process from the planning stage, and the importance of traditional organic management. In relation to adaptive management, the paper highlighted the lack of monitoring and data collection. Among good examples, our study presented good practices in adaptive forest management.

In the present study, we focus on grasslands, especially those of community importance, describing their current situation, the processes, threats and management implications. Future possible directions are highlighted and results-based payment is discussed in detail. The topic is particularly relevant since most Member States are in the process of planning agri-environmental schemes which provide an opportunity to launch pilot projects or establish a programme in several Member States in this financial cycle.

¹ CEEweb for Biodiversity. 2021. *Adaptive Protected Area Management – Creating and maintaining resilient social and ecological communities for people and planet*. URL: <https://www.ceeweb.org/publication.php?id=730>



2. Importance, Status and Management of Grasslands

Grasslands are an important component of landscape diversity throughout Europe, but also in the CEE region, providing a range of provisioning, regulating and cultural ecosystem services (e.g. forage supply, climate regulation, erosion control, pollination, tourism, biodiversity conservation) and playing an important role in maintaining traditional land use. Managed grasslands are habitats of many natural assets and are one of the richest habitats in Europe. In addition to environmental conditions (e.g. climate, soil, water supply) and land use (e.g. mowing and grazing practices, their intensity, changes in use or abandonment), the current economic and political situation also has a major influence on the area and condition of grasslands.

The area and condition of grasslands have been declining and deteriorating both at a European and regional level, its scale and timing varying between Member States and regions, but the fact is that over the last century, we have lost a large share of our grassland area, mainly due to the impact of agriculture and urbanisation.

The conservation status (i.e. distribution and condition) of Natura 2000 grasslands, as reported under Article 17 of the Habitats Directive for the period 2013-2018, shows that the status of grasslands of community importance covering a wide range of grassland types is unfavourable and deteriorating (EEA report No 10/2020). In the case of grasslands, the poor conservation status has a high proportion (49 %), and managed grasslands are in particularly poor condition. The deteriorating trend in the conservation status of grasslands is over 50 %. In particular, the conservation status of lowlands (6510) and mountain hay meadows (6520), and semi-natural dry grasslands (6210), which depend on sustainable management measures, is deteriorating. A large percentage (45 %) of grasslands is also affected by the loss of area, and the habitats mentioned above are particularly noteworthy in this respect.



The area of permanent grasslands, estimated from remote sensing data, showed no significant change between 2015 and 2018, covering 13 % of the EU territory.²

The most important threatening factors to grasslands are succession, the spread of invasive alien species, adverse changes in water balance, land drying, fragmentation and isolation, and changes in management, including both abandonment and intensification (e.g. mechanised large-scale farming). These threats are causing a loss of species richness and structural diversity in grasslands, and a loss of mosaic pattern at landscape scale. In many cases, grazing would be the ideal management of grasslands, but this is not feasible due to the significant decrease in the number of grazing animals. Without grazing, secondary mowing is not always able to maintain the desired condition.

The management of grasslands needs not only to consider several aspects — such as values to be conserved, conservation objectives to be achieved, the effect of current threats, the local effects of general drivers and local conditions — which make the uniform management of large areas less and less feasible, but rather the need for mosaic management to maintain habitat diversity. These are more feasible on a small scale, but with the cooperation of several farmers committed to nature conservation, they can be implemented on a regional or larger scale. Mosaic management to maintain landscape diversity and to promote nature conservation can only be truly effective if farmers are involved as much as possible. There is a general experience that farmers accept scientific arguments well if they understand what they need to do to conserve certain natural assets and why they need to do so.

Management methods for habitats, including grasslands, are largely known, even if adapted to the needs of specific species. Management schemes are available for most habitats and the European Union has developed action plans for two habitat types at risk at a European level (4030, 6210) (Olmeda *et al.* 2020 & 2019). The challenge is not to apply

² Eurostat. 2023. *Permanent agricultural grassland in Europe*. URL: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Permanent_agricultural_grassland_in_Europe#Permanent_agricultural_grassland_at_EU_level



known methods but to adapt them to changing environmental and spatial conditions and to achieve the right conservation goal. Conservation objectives are achieved through management, but grassland management is only one element of this; cooperation and coordination with other relevant sectors are also necessary for effective management.



3. Policy context

An important element in achieving nature conservation objectives is the various agricultural subsidies — particularly, the agri-environmental schemes — which require a higher level of commitment from farmers.

The Common Agricultural Policy (CAP) for 2023-2027, in line with the European Green Deal, encourages climate and environment-friendly agricultural practices more. The new greening scheme will give priority to grasslands in order to preserve their area, carbon sequestration capacity and biodiversity. Since 2013, the CAP has been working to improve the ‘value for money’ principle (i.e. developing the efficiency of spending and demonstrating the environmental and nature-related impacts of subsidies). However, there has not been yet a real shift in subsidies away from supporting market functions towards supporting the production of public goods, such as agricultural landscape biodiversity, farm-level biodiversity, climate stability, soil health, food security, and animal welfare (Cooper *et al.* 2009). The majority of resources are still focused on improving farmers’ incomes and not on the environmental impacts achieved.

Widespread adoption of sustainable and environment-friendly agricultural practices can make a significant contribution to reducing biodiversity and ecosystem degradation and increasing the resilience of agricultural landscapes to climate change. The European Union’s Biodiversity Strategy for 2030 identifies results-based payments as a tool to support the long-term sustainability of nature and farming together and in which the Biodiversity Strategy should work closely with the new Farm to Fork Strategy and the new Common Agricultural Policy.



4. Results-based payments

Results-based payments is a new form of subsidies where, unlike the management-based schemes such as the most current schemes — including agri-environmental ones — the farmer does not choose from a predefined set of activities but selects the most appropriate means to achieve a predefined environmental and conservation status. (Maher *et al.* 2018) In this case, the payment does not replace lost income but rewards environmental outputs or initiatives of farming. In effect, results-based payments support the producing of public goods so that the level of payment is directly linked to the actual environmental output (as measured by indicators) and proportional to the level of ecosystem services. In management-based systems, monitoring focuses on the performance of the selected activities themselves and whether or not they meet their expected outcomes has no impact at all on the level of payment. By contrast, in results-based schemes, the environmental outcome is measured based on predefined indicators, so there is a direct link between the environmental outcome achieved and the payment. It is known and clear what the payment is for. (Keenleyside *et al.* 2014)

Results-based programmes benefit both farmers and the conservation objective. It gives farmers flexibility as they do not have to carry out predefined activities. On the other hand, the payment is proportional to the results achieved, which maintains their motivation and, at the same time, clearly helps to achieve the conservation objective.

4.1. Designing a programme

While designing a results-based programme, the first step is to define precise environmental and **conservation** (biodiversity conservation) **objectives**. This requires considering a number of aspects, including current and past farming practices, possible future changes, their impact, their temporality, the natural values to be protected and conserved, and good and bad farming practices for their conservation.





Image 1. Arrhenatherum hay meadow, habitat of Scarce Large Blue (*Phengaris teleius*).
Credit: Ildikó Varga.

Site-specific conservation objectives that fit in with the general conservation objectives are set out in the conservation management plans for

protected sites, in the Natura 2000 maintenance plans, and in conservation measure documents for Natura 2000 sites. The former propose specific management prescriptions, while the latter specify the conservation objectives related to designated species and habitats of the sites in terms of maintenance, development (e.g. increasing population, improving condition) and restoration of habitat distribution and condition, population size, habitat distribution and condition, and the means to achieve them. These provide a good basis for setting the environmental and conservation objectives for a results-based programme.

Indicators should be selected to measure the environmental output and the effectiveness of management. These should respond to the threats identified for a given grass type and be sensitive to management practices. On the other hand, the indicator should be easy to measure and explicit, so that even farmers themselves can assess and judge it. Self-monitoring by farmers is both a motivating factor and an important learning process. (Allen *et al.* 2014)

For **calculating the payment** — since the value of public goods is difficult to quantify and they are not operational in a market environment — two common methods are generally used. The first is based on the activities needed to achieve the objectives. Their compensation is calculated in the same way as for management-based schemes. But in this case, the calculated payment is not based on the activities carried out, but on the



environmental and conservation results achieved. The result achieved is determined on the basis of farm-level monitoring based on the measurement of predefined indicators. In the second option, no activity is taken into account at all, but the score reached based on the monitoring of the achieved result is the basis for the payment. For a given score, a specific financial value (i.e. EUR/point) is assigned, which is multiplied by the total score obtained for the total area of the farmer. The determination of the unit value is a critical point, as it is the key factor in determining whether a farmer is willing to join the scheme and whether it is worthwhile for him to join.

4.2. How can results-based programmes be integrated into the current agri-environmental schemes?

Results-based programmes can complement the existing horizontal, management-based agri-environmental schemes, and the two systems can build on each other. However, it is also conceivable that the area receiving the results-based payment could be excluded from all other payments (i.e. not eligible for any “traditional” agri-environmental payments). From a management point of view, and perhaps also from a practical point of view, a hybrid system is preferable. In this case, the traditional agri-environmental scheme only includes the basic standards, while all other activities to achieve the objective, adapted to local conditions, are financed by the results-based scheme. In a hybrid system, the “traditional” agri-environmental payment gives a secure basic income, while the results-based system adds a variable payment depending on the results achieved. (Berkhout *et al.* 2018; Králl 2016)

Regarding the **applicability** of the results-based payments, it is important to stress that its introduction is more realistic where there are small family farms and where there is scope for cooperation between farmers. Among the *constraints*, from a methodological point of view, the preservation and improvement of a given grassland in good ecological condition is easier to implement with results-based payments, while they are less suitable for the restoration of degraded habitats; the existing schemes are based on the former. The availability of current, reliable and up-to-date biotic data is also important for the development and subsequent operation of a results-based system in a given area.



In the context of concrete implementation, it is of particular importance to maintain continuous contact with farmers, to assess their preliminary needs, to establish **cooperation and co-creation** to support their land management with professional information, advice, guidance documents and training.

Considering that the results-based payments is based on a well-defined conservation objective and on the cooperation between farmers, a **pilot project** should be implemented prior to its introduction, in which the objective and the related indicators are collectively defined and tested, and cooperation with farmers is established. Each region may have specific characteristics that make it impossible to adapt a functioning programme to local conditions, which is why proper preparation and implementation of a pilot project is necessary. (O'Rourke and Finn 2020)



5. Functioning results-based programmes in Europe

Ongoing results-based payments³ have so far been almost entirely concentrated in Northern and Western Europe, with pilot projects in the Central and Eastern European region (e.g. Estonia, Lithuania, Romania, Hungary) examining the feasibility of introducing this new type of support. In Austria, the first programme was launched in 2007 and there are now three different programmes. In addition, beyond the conservation of species-rich grasslands and semi-natural grasslands, the northern and western European programmes include examples of programmes for the conservation of mosaic habitats, vineyards, orchards and farmland birdlife. The conservation objectives are usually linked to a species or group of species and aim to maintain or improve habitat diversity. The indicators are, therefore, either individual character plant species or complex habitat quality indicators where, in addition to character species, habitat structure indicators are also included, or, in case of the arable land programmes, for example, the nesting success of selected bird species.

In addition to biodiversity as the main objective, there are additional objectives, such as landscape amenities, water quality and climate change mitigation. The programmes are funded from various sources. Most of it comes from the Rural Development Programmes, which differ from the agri-environmental programme, and from agri-environmental funds and national public funds. There is also a small proportion from the LIFE programme, pilot projects funded by the European Parliament, and some by private funding.

In Romania, a pilot project⁴ funded by the European Parliament was launched in 2015, testing the feasibility of introducing RBP on 150 hectares of high nature value grassland in two biogeographical regions of landscape importance.

³ Results-based Payments Network. URL: <https://www.rbpnetwork.eu/>

⁴ ADEPT. 2015. *RBAPS – Results-Based Payments for Biodiversity: A New Pilot Agri-Environment Scheme for the Tarnava Mare and Pogány Havas Regions*. URL: <https://fundatia-adept.org/projects/rbaps-results-based-payments-for-biodiversity/>



In Hungary, in the framework of the Contracts2.0 Horizon Europe project,⁵ preparations have been made for the introduction of results-based payments. Local stakeholders were involved in the planning from the very beginning, and an innovative workshop was held to define the objective of the payment: the conservation of species-rich, well-managed grasslands. Indicators were developed to measure environmental outcomes, which included species indicators that provide a good indication of the ecological condition of the grassland, structural indicators of the habitat diversity of the grassland, and management indicators of poor management practices. Plant species and butterfly species were selected as species indicators of good ecological condition of the grassland, while weed and moth-tolerant plant species were selected as negative species indicators of poor ecological condition of the grassland. The indicators have been selected so that they can be measured by the farmers themselves. An ideal model contract for a results-based system has been developed, the grassland has been assessed based on the selected indicators, and the amounts of payment have been determined. The indicators were field tested. As a result of the project, it can be concluded that the Órség is suitable for the introduction of results-based payments and a pilot project can be launched already in the 2023-2027 cycle. (Podmaniczky and Szentirmai 2023)

⁵ Contracts2.0 project. URL: <https://www.project-contracts20.eu/>



6. Summary

The proper management of grasslands — important elements of landscape diversity providing many essential services — is challenging. Their area and condition are decreasing and deteriorating all over Europe. Without maintenance and adequate management, these unfavourable processes cannot be stopped. In the current policy context, when the widespread adoption of sustainable and environment-friendly agricultural practices can make a significant contribution to reducing biodiversity and ecosystem degradation and increasing the resilience of agricultural landscapes to climate change, grasslands are given the priority role. On the other hand, the positive environmental outcome of subsidies and their measurability are increasingly emphasised.

The introduction of results-based schemes goes back a long time — namely, to the 1990s — but their territorial and biogeographical coverage is still relatively small and uneven. In Central and Eastern Europe (CEE), only some pilot projects were implemented. The European Union's Biodiversity Strategy for 2030 identifies results-based payments as a tool which can support the long-term sustainability of nature and farming together.

What are the main advantages of results-based payments?

- They support the production of public goods; payments are directly linked to the actual environmental output.
- They can reach EU requirements and targeted schemes more easily, with less 'burden'.
- Results are monitored based on predefined indicators; there is a direct link between the environmental outcome achieved and the payment.
- They give enough flexibility to farmers so that they do not have to choose from a predefined set of activities but select the most appropriate means to achieve a predefined environmental and conservation status.
- Payment is proportional to the results achieved, which maintains the motivation of farmers and, at the same time, clearly helps to achieve the conservation objective.



- Close cooperation between conservationists and farmers, supporting them with guidelines, training and continuous consultation — farmers understand what and why they need to do, they remain motivated.
- Monitoring of the results can be done by the farmers themselves, avoiding additional burden to authorities.

A well-operating results-based programme has some important preconditions, such as defining precise environmental and conservation objectives, identifying effective and sufficiently sensitive indicators, cooperation and co-creation with affected stakeholders, and implementing pilot projects.

As for the future direction, the introduction and application of results-based schemes by more CEE countries and increasing their territorial and geographical coverage can really contribute to maintaining the area and good ecological status of valuable grasslands and enhancing their resilience in changing environmental conditions.

In the current climate crisis and in a period of increasing water scarcity, it would be important to work out and introduce results-based payment schemes for water conservation and wetland protection on agricultural lands. In this case, the area of wetlands, the area covered by water, and the period of water coverage could be indicators of good management.



7. Recommendations

For decision-makers:

- Based on the results of projects aimed at implementing the RBP, launch a results-based programme in the concerned Member States — at least zonally — and in selected regions in the 2023-2027 cycle.
- Where a pilot study to introduce and justify the RBP was not implemented, the opportunity should be created and supported to develop and implement a pilot project using national or EU funds.
- In connection with the introduction of results-based payments, but in the longer term as well, more intensive involvement of farmers and strengthening of cooperation and co-creation, with professional conservation supervision, are needed, as well as the establishment of an advisory network of conservation experts for direct access and training of farmers and the setting up of an institutional and financial framework for the operation.

For NGOs:

- Enhance the advocacy activity of NGOs so that decision-makers have adequate information and data on the benefits of results-based payments.
- In cooperation with conservationists, NGOs should play a greater role in raising awareness of the RBP, promoting it, communicating with farmers, training and producing educational materials.



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