GRAZELIFE REPORT

How European policies, especially the Common Agricultural Policy, can better support extensive grazing systems:

Synthesis of interviews with land users and experts

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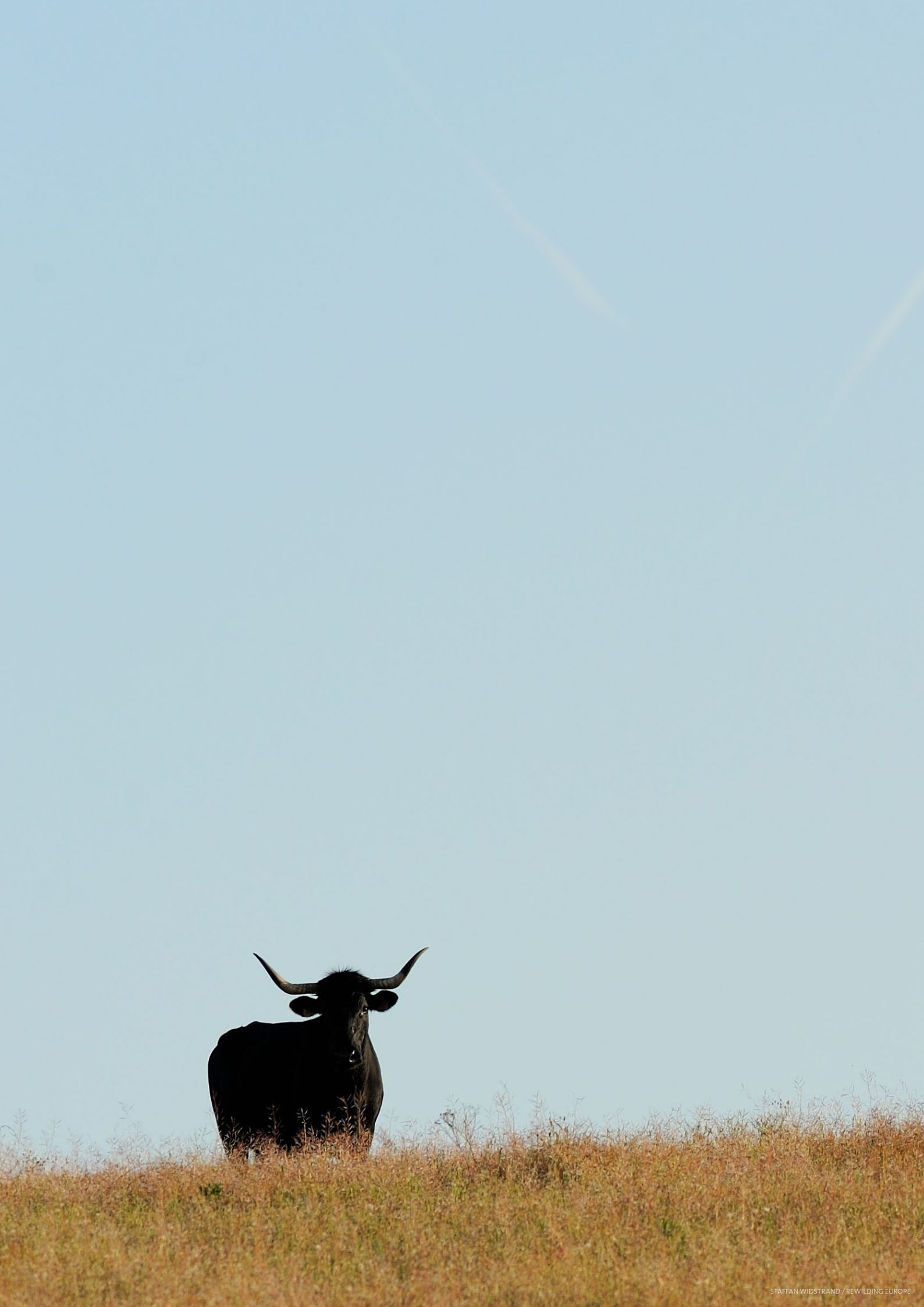

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List of Acronyms

AECM	Agri-Environment-Climate Measures
ANC	Areas facing Nature Constraints
AKIS	Agricultural Knowledge and Innovation Systems
CAP	Common Agricultural Policy
CC	Cross Compliance
DP	Direct Payments (Pillar 1)
ESPG	Ecological Sensitive Permanent Grasslands
EP	European Parliament
EU	European Union
GAEC	Good Agricultural and Environmental Condition
HNV	High Nature Value
MFF	Multiannual Financial Framework
MS	Member States
OECD	Organisation for Economic Co-operation and Development
PAF	Priority Action Framework
RDP	Rural Development Programme (Pillar 2)
WTO	World Trade Organization

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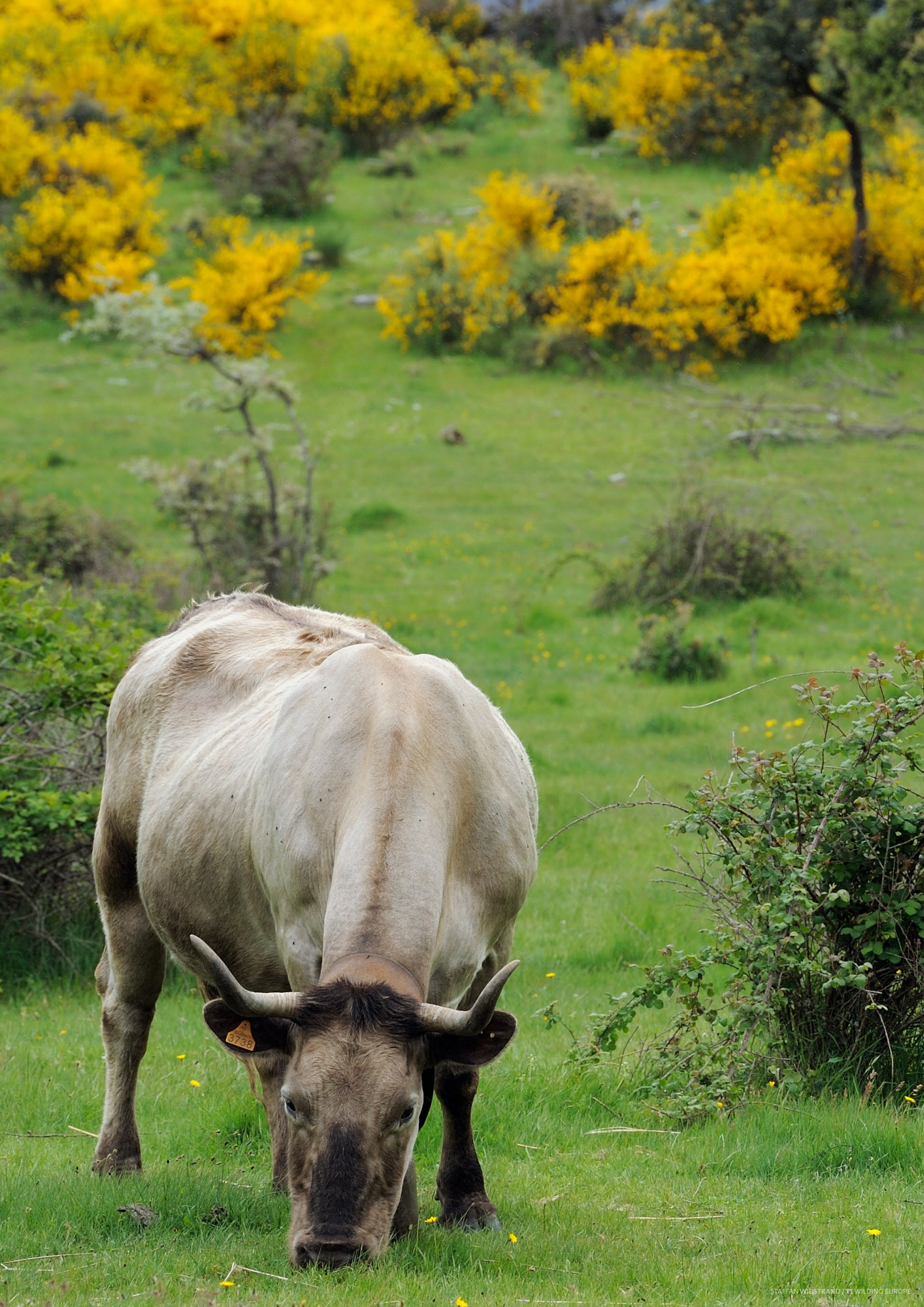

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Summary for policy makers

Within the EU LIFE preparatory project GrazeLIFE (www.GrazeLife.eu), 92 interviews were conducted with land-users and experts across eight case studies spanning 11 countries, covering various grazing systems by domestic, semi-wild and wild animals. This report summarizes the outcomes of over 60 interviews that contained inputs -regarding how European policies affect grazing and grazed systems and how policy can better support those grazing systems that can be considered sustainable from an environmental perspective.

The interviews, supported by a synthesis of the literature, indicate that **the Common Agricultural Policy (CAP) is the most central factor affecting grasslands and the management of large herbivores in the EU**. However, CAP often outcompetes extensive grazing practices with subsidies for less sustainable farming systems. It is offering insufficient help, or even poses some barriers, for addressing the challenges related to extensive grazing, pastoralism and the management of semi-wild and wild animals. Here, we provide evidence that the CAP has a broad range of instruments that can potentially support nature-friendly and sustainable grazing alternatives. However, much of this potential remains untapped.

Key challenges identified in the interviews were:

- **CAP definitions** regarding grasslands, as well as transitions between arable and permanent pastures, are not clear and inclusive enough for heterogeneous habitats like scrublands, wetlands, woodlands and wood pastures; and pose implementation challenges in dynamic systems like wetlands and floodplains. While the definitions do allow MSs to include other (micro-)habitats, they are easily misinterpreted or oversimplified when translated by MSs into eligibility criteria for Direct Payments, and management requirements under Cross Compliance ("GAEC"). This results in sanctioning instead of supporting the protection of valuable farmland habitats (e.g. scrubland), which should also be protected according to the EU's Habitats Directive, especially outside protected areas. The Commission's proposal of 2018 regarding grassland definitions may aggravate the problem by defining non-herbaceous vegetation as eligible for support only if it can be used as feed. This excludes the roles of scrubs, trees and landscape features in providing other needs (e.g. shade, shelter) and retaining habitat structure and resilience over time.

- **Agri-Environment-Climate Measures** (AECM) prescribe highly detailed requirements, yet often lack sufficient flexibility to adapt to regional/local conditions and habitat requirements. This can lead to inappropriate management, or ineligibility for farmers to apply for a potentially-suitable AECM. Additional challenges that were frequently listed were too low payment levels (especially when compared to more intensive land-uses), and lack of incentives for habitat restoration. These result, in part, from an overall limited budget for AECM, as well as from the way "income foregone" is calculated. Eventually, this leads to the too low uptake of the AECM to achieve sufficient environmental improvements.

- Payments in support of **organic farms** is important and attractive, and some grazing models are eligible for, and using such support. However, many farms in Europe, especially smallholders in remote areas, are either ineligible for support (e.g. pastoralism, or animals roaming in broader areas) or incapable of complying with the complex administrative requirements to

enroll in labelling and certification of their products. Many such farms make use of few or no chemicals, do not import feedstocks, retain animal-densities below the organic criteria, and support high biodiversity, yet still lack acknowledgement and support.

- **Direct Payments (DP)** are relevant for many farmers and land-users, both in terms of an income source to support implementation and through greening options (permanent pastures) supporting grassland management. However, eligibility criteria and management requirements (through Cross Compliance) generate inconsistencies with regards to the Habitats Directive (e.g. requirements differ in versus outside Natura 2000 areas). Moreover, payment levels are the same independently of grazing intensity (for decoupled payments), or even higher for "coupled payments". Consequently, DP support, directly and indirectly, intensive grazing management or even intensification rather than extensive grazing. Interviews also highlighted land-concentration as a pressure affecting small-holders and commons, and pointed at the area-coupled nature of direct payments as an indirect incentive to take over land in order to gain access to higher payment levels.

- **Controls and sanctions** relating to Cross Compliance mechanisms, are placing hurdles in heterogeneous habitats and wetlands, and create particular burdens on land-users working with pasture-roaming or semi-wild animals. While they are tightly affiliated with CAP definitions and eligibility criteria, sanctions often result from false or over-simplified interpretation by authorities. Some land-users also perceived sanctions as disproportional, e.g. when employed for unintended (small) errors, slight inaccuracies in implementation (e.g. mowing date) or uncontrolled situations where semi-wild animals roam beyond borders or cannot be monitored as closely as required. **Veterinary requirements** set particular hurdles when it comes to semi-wild animals as these are difficult to trace, capture, and mark or control. That organic farms are also bound to much more intense monitoring and frequent sanctions compared to other farm types, was considered disproportional given the marginal differences in payment levels e.g. for intensive farming under Direct Payments.

- The CAP provides insufficient tools and budgets to address **animal-wildlife conflicts** and in some cases even penalizes, instead of compensates, for damages (e.g. beaver dams leading to flooding and eligibility-losses).

- Incentives for intensive **forestry** generate conflicts with attempts to employ more sustainable land-use, where herbivores help halting vegetation-succession, retain a more open woodland, or reduce understory vegetation that can serve as fuel for wildfire. Instruments in support of forestry operations (also under the title of afforestation) generate land-use competition where intense forestry replaces a more natural process of habitat restoration or rewilding. Herbivores are excluded either deliberately to minimize damages, or undeliberately by creating unsuitable habitats.

- A large number of interviewees highlighted that the **current CAP (2014-2020) is worse compared to the previous period**, due to changes in eligibility criteria, setting more strict requirements on MSs or generating competition among CAP instruments, favouring more intense management or larger farmers. Eligibility criteria of relevance to the support of pastoralism, mixed herds or management with semi-wild animals have narrowed the range of support options. A reduction in the availability of broad and flexible AECM types, and tightening burdensome monitoring, results in a priority for administrative-oriented implementation over expert opinions. While the barrier is in implementation, risks of sanctions (to MSs) by the EU were mentioned as a driver of this shift.

- Only few land-users mentioned Areas of Nature Constraints or Investment measures. However, vast areas of the EU are potentially eligible to ANC payments. This marks ANC as a potentially important instrument for maintaining permanent grassland or grazed areas, particularly by

preventing their abandonment. Insofar, however, the implementation of ANC has been highly variable among MSs, some using it to assist small farms and traditional farming systems in HNV regions, with positive environmental impacts, but in many other Member States ANC are merely a form of Direct Payments in Pillar 2 (Alliance Environment 2019), often with undesirable outcomes (e.g. intensification in vulnerable regions, increase of soil erosion).

- The CAP post-2020 raises two critical **eligibility issues**. For Eco-schemes, **we note with concern that, unlike AECM, only "farmers or groups of farmers" may be eligible to apply. This creates a barrier for NGOs and other land-users** to employ Eco-schemes in relevant lands, and risks exposing valuable landscapes and farms to under-funded, or competitively-disadvantaged conditions. For the support of forest holders (Article 67), **we note with concern that the EU Council proposed amendments that limit support only to the forestry sector**. The removal of "other land managers" from the original text will exclude NGOs and other land-managers from eligibility, with negative impacts on restoration efforts and land-users engaged in implementing them.

With respect to other **policies and directives**, it is clear that the Birds, Habitats and Water Framework Directives play important roles in guiding the management of herbivores and grazed habitats, but their implementation is often dependent on CAP instruments, due to both regulations and budgets. Low integrity between the CAP and these directives leads to poor implementation within MSs.

Key recommendations for the CAP

Definitions

Improve definitions for grasslands and wetlands, and expand eligibility criteria to include (non-production) habitats that depend on grazing or support herbivores.

The Commission's 2018 proposal (*"may include other species such as shrubs or trees"* (Art. 4)) should be extended to cover Annex habitats of the Habitats Directive, including reed, temporary flooded areas, and rocky areas; to remove the requirement for *"herbaceous forage [zo] remain predominant"*, and to allow the presence of non-herbaceous vegetation not only for feed. For instance the definition of grassland *"may include other species such as shrubs, trees, reed or temporary flooded areas and rocky places which can be grazed or used by grazing animals"*. An extended grassland definition can take from the amendment proposals of the Council and the Parliament, as well as the European Court of Justice in its judgement of May 2019 in the case of Greece – which clearly stated that the key criterion for eligibility of payments should be grassland use, rather than vegetation type.

We further recommend the option to allow farmers to extend the 5-year period in which temporary grassland becomes permanent grassland, and potentially incentivise such a prolongation via AECM or Eco-schemes.

Clear definitions are needed for forests (to differentiate from plantations), **commons, wood pastures, and High Nature Value farmlands**, to ensure coherence with the Habitats' Directive and avoid vagueness that leads to misinterpretation and mismanagement.

Enhanced conditionality

Requirements for Good Agricultural Ecological Conditions (GAEC) need to be coherent with the nature directives (especially the Habitats' Directive, Annex I), both inside and outside protected areas.

- **GAEC 1 (Maintenance of permanent grassland):** the Commission's 2018 proposal should be improved by adding a reference to grassland quality (in terms of grazing intensity and management), and/or adding a ban on intensification. **GAEC 1 should be further improved by adding a reference to the biodiversity indicator** (status of species of Community interest), **a requirement to protect Ecologically Sensitive Permanent Grasslands (ESPG) and/or to set stricter rules in High Nature Value farmlands**.
- **GAEC 2 (Appropriate protection of wetland and peatland): The Commission's 2018 proposal should be retained, and the term 'appropriate' clarified.** The experience from GrazeLIFE's case studies clearly shows a need to a) define areas that are sensitive to flooding as "wetlands", b) include natural/ seasonal floods and other natural changes under "maintenance" in good conditions, and c) offer some form of compensation for grasslands that are flooded rather than sanctioning for (temporary or permanent) changes in land-cover, to support the urgent need of rewetting drained wetlands.
- **GAEC 9 (protection of landscape features and land devoted to non-productive areas):** The requirement level should optimally be set at **10%** in light of the recent baseline prior to the abolition of set aside in 2008. It **should apply to all "agricultural" areas** (rather than limited to "arable" land), since non-production areas are valuable, and necessary for grazers, also in grasslands and pastures (e.g. scrubs, trees, hedges, terraces, ponds etc.). In addition to feed, they offer shelter, shade for climate regulation, biodiversity and other ecosystem services (e.g. soil and water retention, pollination in neighbouring crop fields). Production-oriented options, like catch crop and N-fixing crops, may weaken and dilute GAEC 9 and should not be included.

- **GAEC 10 (Ban on converting or ploughing permanent grassland in Natura 2000 sites):** The ban should be extended beyond Natura 2000 sites, to cover **ESPG and grasslands in High Nature Value (HNV) regions**, and specifically cover the case of worsening grassland quality through intensification.

To fulfil GAECs 1 and 10, the Commission should demand MSs to engage in immediate mapping of HNV farmland areas and ESPGs, also beyond Natura 2000 sites, and set strict requirements for their protection in terms of both extent and quality.

Agri-Environment-Climate Measures:

Member states should secure, and optimally enhance, AECM budgets above current levels. To ease and incentivise such shifts, budget shifts from Pillar 1 into AECMs should be unlimited, and co-funding requirements could be reduced for Member States that demonstrate ambition in terms of allocating significant investments in so-called "dark green" measures. To improve remuneration of beneficial management options, calculations of "income foregone" should include transaction costs.

Greater flexibility needs to be (re)introduced, to allow for adaptation of schemes according to farming systems, local conditions and changing climate – including, *inter alia*, grazing season (starting and ending dates) and changes in animal densities over the season. To this end, we recommend a) MSs to retain a sufficiently large budget for AECM options that either allow high flexibility in implementation, b) adopt a result-based approach, and c) allow closer interactions with experts, accompanied by stronger mandate to accompany decision-making and performance-monitoring.

Specifically, local experts and well-trained consultants (biologists, ecologists, veterinary services) need greater mandate in defining habitat requirements, monitoring implementation, and "moderating" between land-users and administrators to issue exemptions or alterations in specific regulations where adaptive management is needed.

A result-based orientation is highly relevant and recommendable for extensive grazing systems, as it offers land-users more flexibility as to how to best meet AECM objectives in terms of biodiversity and climate.

For circumstances where continuity of good practice can maximise environmental benefits (such as Ecologically Sensitive Permanent Grasslands, and in areas under restoration or rewilding efforts), we also recommend MSs to adopt the (already existing) possibility of extending AECM contracts to 10 years or more.

To **reduce administrative burdens** in the context of extensive grazing, MSs and the EU can a) reduce controls and sanctions for smallholders (especially when consultants or in-situ experts can help confirming overall compliance with AECM objectives); b) ease the demands for ear-tagging or chipping for semi-wild herbivores given the difficulty to find and mark newly born calves; c) allow higher flexibility in terms of minimum and maximum stocking conditions under well-defined conditions (seasonal variability, mixed stocks or pastoralism), supported by local experts and well-trained consultants; and d) reduce the administrative complexities regarding wolf-attack damages in wolf areas. We further **recommend developing a clearer and simpler declaration system, which should operate on the farm level**. Altogether, controls and sanctions need to be revised with respect to semi-wild grazers, to acknowledge the unique management challenges that result from limited accessibility to habitats and animals.

Organic farming:

The potential to expand organic farming, in accordance with the EU's Green Deal aims, can be fulfilled more effectively by adopting a **broader perspective for organic farming that encompasses traditional forms of extensive management**. Entrance options are particularly needed for smallholders engaged in extensive grazing, as well as land-users engaged in pastoralism who, in fact, meet most criteria of organic farming without being certified. Such an approach may generate co-benefits for these types of farmers, for rare- and nearly-extinct forms of traditional farming, for biodiversity and for HNV regions in the EU.

Eco-schemes:

Eco-schemes could support several forms of extensive grazing, also in congruence with animal welfare objectives. **We recommend ensuring that a targeted measure is available to support grazing through semi-wild herbivores, as well as pastoralism** – i.e. the operation of bringing grazing herds to targeted areas. As the benefits of such management approaches increase over time, it would be important to offer a payment level that is attractive beyond one year and hence supports continuity of good management. Given their annual contracts and under a (so-far) too-broad range of possible options, Eco-schemes may have a limited role for habitat restoration or rewilding. However, one mechanism to achieve such aims is to support restoration or rewilding actions, e.g. by (re)establishing the population of wild or semi-wild herbivores, or supporting a transition toward reduced farming intensity (i.e. reducing herd size). Where restoration is sought, Eco-schemes should complement the non-productive "Investments" measure of Pillar 2.

To ensure a level playing field, **we strongly recommend making all types of land-users, and not only "farmers or groups of farmers", eligible to apply for Eco-schemes**.

Areas of Nature Constraints (ANC):

If ANC is listed by the EU under the budget envelope of "environmental instruments", we **strongly recommend sharpening their objectives and targets and developing clear guidance by the EU Commission as to what MSs can use ANCs instrument for**. A tight link to environmental objectives, as well as close monitoring for its implementation and impacts, can help ensure that ANC are used to target HNV regions and farmers therein, with a particular benefit for extensive grazing and traditional farming systems based on semi-wild animals and rare, robust breeds.

Payments for forest holders and afforestation efforts:

It is essential for CAP instruments that are aiming toward environmental objectives, particularly AECM for forest holders, as well as Eco-schemes, to focus on the protection and restoration of forests as a habitat, namely to improve biodiversity, carbon storage and resilience to climate change, and improved soil- and water-retention. Sustainable grazing management should be regarded as an inherent part of a functioning forest ecosystem and supported to this end. Particularly in light of climate change, with droughts and fires reaching increasingly higher latitudes, grazers can be used as "fire brigades" or fire management. This entails they should be listed as part of the forest- and forest-management prescription, and their management should be eligible for support – be it through rewilding, management of semi-wild or domesticated animals (e.g. through pastoralism and targeted grazing to reduce fire risks).

Choice of measures to support should include grazing models in forested areas that serve both biodiversity and climate adaptation, e.g. by introducing habitat heterogeneity and open spaces, creating natural fire breaks, or halting too quick or too homogeneous recruitment and expansion

of trees and shrubs. To achieve this, regulations need to be updated in MSs that have a legal ban on grazing in (designated) forest areas.

Payment levels should be increased for effective forest-environment measures, to increase their attractiveness in light of exceptionally low uptake levels. We recommend MSs to improve remuneration of forest measures that generate concomitant benefits for biodiversity, carbon storage and wildfire-prevention through, *inter alia*, extensive grazing management.

All types of land-users should be eligible to apply for "payments for forest holders", as proposed by the Commission. We further recommend extending the payment breadth to offer specific support for grazing management in forests, through extensive grazing, pastoral or targeted grazing, also by semi-wild and wild herbivores.

Direct Payments:

Coupled payments have been repeatedly shown to generate market-distorting effects, and there are strong indications of additional detrimental environmental impacts due to their support of intensive animal farming systems. We recommend **transforming Coupled payments toward supporting environmentally-friendly farming, by tying it exclusively for the support of extensive grazing, pastoralism or other forms of traditional, low-intensity farming**. Otherwise, coupled payments should be phased out, as suggested (among others) by the World Trade Organization and the European Court of Auditors.

Considering the CAP's overall priority for retaining Direct Payments despite their high inefficiency and lack of clear justification, combined with a stagnation of AECM or even potential erosion in the next funding period of the CAP, the most viable alternative is to **transform or phase out Direct Payments altogether** in favor of payments which better support the needs of farmers and the provision of public goods.

AKIS, LEADER, and the central role of experts and consultants

Investment must be made in expanding ecological knowledge and training among consultants, Farm Advisory Services as well as administrators and veterinary services working with grazers and herbivores. Ecologists and other experts need to be given (back) more mandate to moderate between CAP administrative demands and on-the-ground conditions, to either adapt the requirements to the local habitats or make justified exceptions where need be to avoid damages to habitats. Higher ecological support may resolve cases of doubt or uncertainty, help reduce administrative burden, while enhancing cooperation, trust, and CAP performance. We particularly recommend strengthening the role of scientists, nature-protection managers (e.g. rangers) and skilled consultants in training, in situ monitoring (of management and its impacts), and communication between land-users and regional authorities. Specifically, scientists and other experts should be better engaged in a) defining suitable requirements, b) advising farmers and land-managers, and c) acting as moderators during the implementation stages – to ensure that farmers and land managers are more closely supervised, are empowered with best knowledge, and engage in adaptive management, and concomitantly, avoid unnecessary or even counterproductive sanctions.

Key recommendations for CAP's implementation:

Coherence between CAP instruments is essential, especially in terms of payment levels and conditions across instruments. Payments for extensive farming or in protected areas should not be lower than intensive farming. One way to achieve this could be through the use of a point-based system to reward for the delivery of public goods, or inclusion of non-monetary transaction costs in the income-foregone calculation of AECM payments for complex schemes.

Landscape-level planning and implementation is key for large herbivores as these move over large areas and beyond well-bordered areas, as well as for managing grazed landscapes as a whole. Member States should maximise landscape-targeted payments and should be demanded by the Commission to demonstrate support for collectives, cooperating farmers, and commons in implementing landscape-level management plans. To enhance knowledge generation, we strongly recommend the further testing of (potentially) effective grazing models, that have already proven themselves on a smaller scale, on a larger landscape scale during the coming CAP period (2021-2027) in order to prepare for EU-wide implementation thereafter.

Improve MSs' guidance by the European Commission, by setting clear(er) requirements for Member States regarding the effective protection, support, and use of extensive grazing to maintain habitats and biodiversity. Improved guidance is also needed on how MSs should best use the available flexibility, e.g. when and how exceptions should be made when this can improve habitat management. Such guidance can accompany the development of strategic plans but also throughout the implementation period. Along this line, the European Commission should **demand MSs to demonstrate ambition** in terms of the targets, total budgets and selection of measures to support – to ensure that effective grazing management receives high priority and proper support. Member States should delineate, already in their strategic plans, how they intend to maximise the uptake of these.

To reduce animal-wildlife conflicts, the conditions for compensation, as well as the sums, need to be revised by the Commission and by Member States. Solutions could be sought either through the CAP or, when land becomes ineligible for CAP-support, through other national or EU instruments (e.g. national funds, or "fund for nature", see below).

Improving farmers' position in the value chain, in line with Objective 6(c) of the CAP post-2020, may aid the sustainability of farmers and other land-users engaged in extensive, and traditional, grazing models. This could be achieved, *inter alia*, by a) easing labelling and certification for products coming from extensive, biodiversity-friendly grazed systems, b) offering support for engagement in direct marketing, and c) easing veterinary requirements for small slaughterhouses.

Recommendations beyond the CAP

Birds and Habitats' Directives

To achieve the conservation objectives of MSs within the Natura 2000 network, MSs developed special Priority Action Framework (PAF) documents determining priority actions and estimating necessary funds and possible funding sources. CAP is frequently listed among them. In the design of the next financial cycle, MSs should maintain close linkages of AECM and Eco-schemes with the national PAFs, to improve coherence between the CAP and the Nature Directives.

More flexibility is needed for Natura 2000 payments, to allow higher responsiveness to changing conditions (e.g. weather) as well as to improve their targeting to the specific conditions in individual Natura 2000 sites. This is in contrast to the current design, which sets restrictions for the Natura 2000 payment scheme based on universal criteria for each country. Better targeting and flexibility can be achieved by defining specific management restrictions for each Natura 2000 site, and by involving advisory services or conservation administrators in the field.

In the future, the Birds and Habitats Directives can gain from a stand-alone budget that can reduce dependency on the CAP, such as a **fund for nature**.

The Forest Strategy

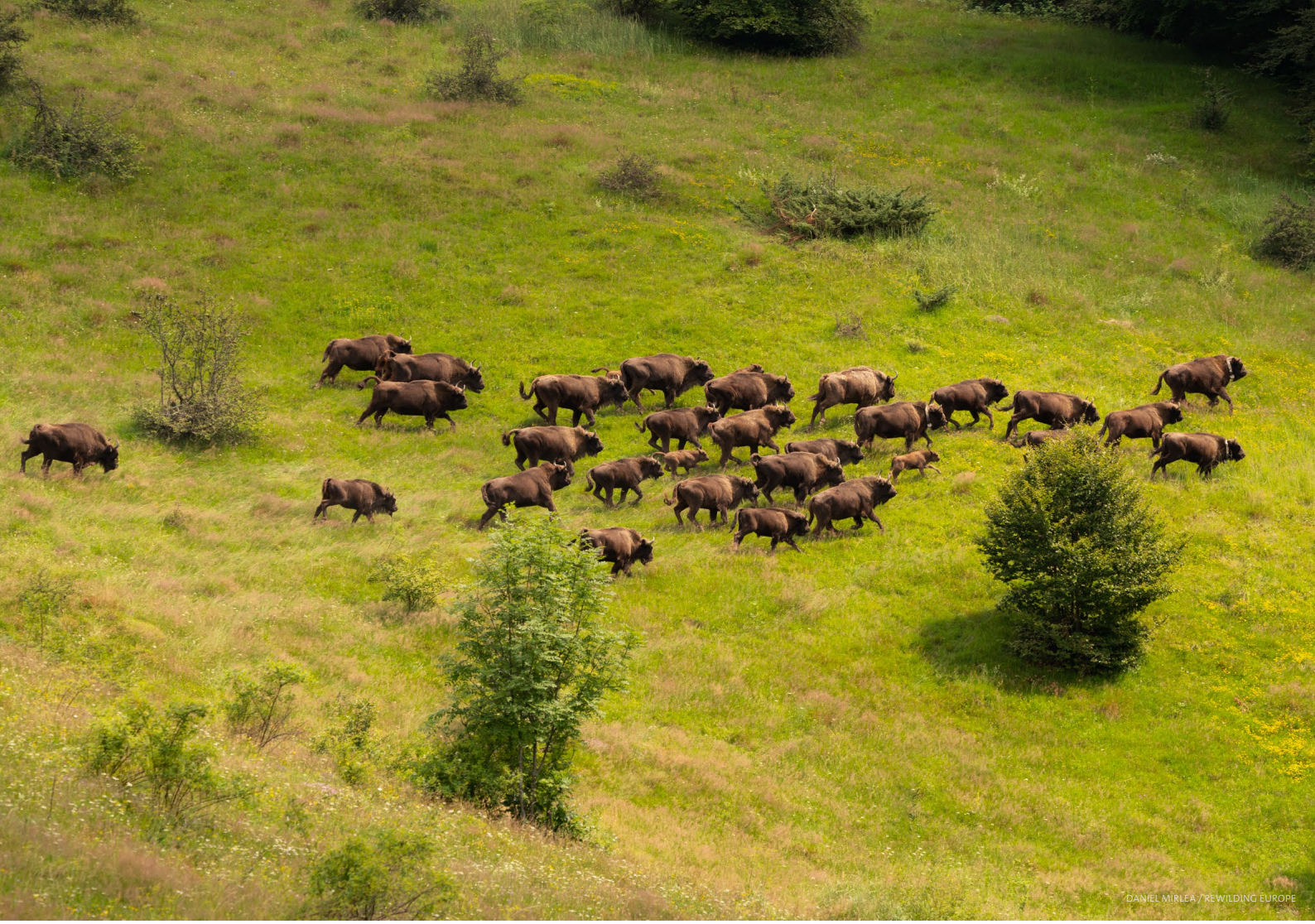
In the establishment of a forest strategy, it is important to ensure that forests are differentiated from plantations. Forests should be considered as complete ecosystems and respect the role of large herbivores in these systems. This will increase the added value of forests to biodiversity, climate change mitigation and adaptation, and other public goods. Specific grazing models can contribute to multifunctional forests in terms of a) reducing fire risks, b) improving carbon sequestration and storage, c) restoring mosaic landscapes and biodiversity therin, and d) aiding forest regeneration (e.g. through seed dispersal). Added benefits include reducing management costs, and generating incomes through eco-tourism.

Given the frequent confusion between forests and forestry in Europe, we further recommend the establishment of a Forests Directive, extending from the Habitats' Directive.

A broader and more holistic policy perspective

The CAP is certainly not the only funding mechanism for grazed landscapes: a broad range of policies and regulations, subsidies and other market instruments are available when seeking to protect and expand extensive grazing and rewilding efforts. These include, among others, public-private cooperation and national funding (for nature protection or compensation for environmental damages). Other schemes, such as LIFE projects or derivations of it, can be used for longer-term and broader-scale support of restoration, rewilding, and management of grazed ecosystems. A "Nature fund" can replace or complement parts of the CAP, especially in natural and semi-natural areas (and habitats) where good practice management can benefit from other forms of governance.

Other forms of market interventions, that focus on consumers' rather than producers' side, could emerge from the Farm-to-Fork Strategy. For instance, expanding labelling or certification systems could be used to encompass the special conditions of land-users working with semi-wild and wild animals, engaged in pastoralism, and/or using commons. . Thereby, land-users engaged in extensive grazing can gain higher visibility and public acceptance.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1 Introduction

1.1 Background

Grazing by herbivores is a key process for many ecosystems, ranging from grasslands and scrublands to forests. Large wild herbivores are often rare or missing in many natural and semi-natural ecosystems in Europe. Consequently, domesticated and semi-wild herbivores are – at least for the time being – key substitutes to ecosystem management. When protected, managed or (re-)introduced wisely, large herbivores serve in habitat maintenance, prevention of succession or shrub-encroachment, removal of woody vegetation as means of wildfire prevention/mitigation, and restoration of degraded habitats. On the other hand, intense grazing can lead to habitat degradation, soil erosion, nutrient leakage affecting water quality, and loss of cultural ecosystem services (Byrnes et al. 2018; Mcsherry & Ritchie, 2013; Milchunas & Lauenroth, 1993; Silva et al. 2019; Zhou et al., 2017). Such overgrazing is mostly associated with domestic animals, promoted by high production, consumption and export of meat and dairy products. Notably, livestock grazing (especially through methane-production and manure) contributes to 2/3rd of agricultural greenhouse gas (GHG) emissions, with additional, indirect contributions of associated land-use changes, such as tropical deforestation, due to the dependence on (often imported) feedstocks. Thus, it is imperative to assess how European policies affect grazing management in general, and particularly whether (and how) they can act to support environmentally-friendly, sustainable grazing systems. With the aim of assessing different grazing models in Europe, the project GrazeLIFE sets high priority to address this question.

We define "sustainable grazing" as forms of grazing that take place within the natural carrying capacity of their area, maintain or promote biodiversity, assist in climate change mitigation or adaptation, help reduce wildfire hazard and/or generate other ecosystem services such maintaining attractive landscapes or traditions, or generating jobs (such as in eco-tourism). For the ways in which grazing can achieve these aims, see Section 1.2 below "Grazing and ecosystem services".

This document summarizes key outcomes of GrazeLIFE project with respect to policy-making, setting particular emphasis on how the EU's Common Agricultural Policy (CAP) and other relevant policies can better support sustainable grazing systems. The focus on the CAP emerges first of all from the fact that it was the most predominant policy mentioned by land-users working with grazers (see results below). It has a range of relevant instruments and potentials with respect to grassland and grazing management (see Alliance Environnement 2019), as well as large budgets to implement these. Other policies and directives, especially the Habitats, Birds, and Water Framework Directives, are of high importance as well, as they set guidance and a range of relevant regulations – but these are supported by limited budgets for implementation, and often depend on CAP instruments (especially Cross Compliance, Agri-Environment-Climate Measures and payments for farmers in Natura 2000 areas). Furthermore, the Habitats and Birds Directives have been extensively evaluated and discussed in other documents including Fitness Check evaluations (e.g. Milieu et al. 2016, Vermeulen et al. 2019). As the negotiations over the CAP post-2020 are still ongoing, we offer recommendations both for policy design (where such recommendations may still be relevant) and implementation by the Member States (MSs) later on.

The document is based primarily on the inputs provided by land-users and experts through 92 interviews conducted across eight GrazeLIFE case-studies (**Table 1**). The document synthesises policy-relevant aspects brought up by these interviews and this was the case using 63 of the 92 interviews. They are organized according to the policies (and policy instruments) they reflect on, and the types of challenges they encounter. For each problem, as described by the interviewees, we use the literature and expert knowledge to interpret the problems and develop recommendations. The report closes with a synthesis of the outcomes and recommendations, organized again according to key policies and instruments.

Table 1: GrazeLIFE Case Studies

Name	Countries	Main topic(s) addressed in case study	Interviews
Galicia	Spain	Ecosystem services and challenges of wild ponies vs afforestation, cattle grazing and abandonment with/without wolves	13
Oder Delta	Germany/ Poland	Comparing incentives for grazing among land users on both sides of border	13
Rhodopes mountains	Bulgaria	Diff. land use models in relation to vegetation structure and biodiversity	10
Danube Delta	Romania/ Ukraine	Comparison of vegetation structure in 4 landscapes with and without grazing	7
Rhine/Meuse	Netherlands/ Belgium	Transboundary challenges for sustainable grazing. Impact on vegetation and insect (dung beetle) fauna	13
Lithuania	Lithuania	Environmental impact of different land use models on 4 types of soil	16
Coa Valley	Portugal	Different grazing models in relation to wildfire prevention, soil, biodiversity	6
Velebit mountains	Croatia	Grazing models compared on carbon storage in soil and vegetation	14
8	**11**		**92**

1.2 Grazing and ecosystem services

Ecosystem services that are affected by grazing can relate to environmental sustainability but also to socioeconomic sustainability criteria. They include impacts on soil and water quality, carbon sequestration, and the moderation of extreme events such as floods or wildfires. They also affect multiple cultural ecosystem services such as the aesthetics of the landscape, attractiveness for tourism, or the sense of place and attachment to traditions. While some forms of grazing generate human-wildlife conflicts (such as through damages to crops or plantations), sustainable forms of grazing should associate mostly with beneficial impacts.

A literature review that was carried out as part of the GrazeLIFE project (Rouet-Leduc et al. in prep.) found that the ability of grazing managements to provide multiple ecosystem services, and to be environmentally and socially sustainable, depends on multiple parameters. These include grazing density, the duration of grazing, and animal types. It also depends on the environmental and climatic conditions where the grazing management takes place, such as the type of habitat and vegetation, the historical management practices, but also the climate and weather conditions like temperature and precipitation. One must also acknowledge that both synergies and trade-offs exist among ecosystem services provided by grazing. Since not all services can be simultaneously maximised, optimal management may need to set priorities for some services over others. Nonetheless, the literature (Foster et al. 2014; van Klink et al. 2015a; Herrero-Jáuregui & Oesterheld 2018)) generally points at the value of extensive grazing, i.e. grazing at low animal densities or a limited period over the year, for various ecosystem services (**Table 2**):

- Carbon capture: extensive grazing and low intensity grazing usually has strong, positive effects on the amount of carbon stored in the vegetation and soil compared to intensive grazing. Practices such as rotational grazing or low intensity grazing usually improve soil carbon contents compared to intensive grazing. By contrast, intensive grazing and grazing intensification have in general a negative impact on soil carbon storage compared to either ungrazed or extensively grazed situations, with additional negative consequences for soil erosion. More natural grazing systems, by wild and (semi-)wild herbivores, allows growth of shrubs and trees in grasslands and thus higher carbon storage in the vegetation and below-ground.

- Habitat for biodiversity: large herbivores are reported to have varied effects on biodiversity, especially depending on the intensity of grazing and the type of environment. Extensive or natural grazing can have positive effects on plant diversity and habitat quality. Grazing by large herbivores can create and maintain a mosaic of grazed and ungrazed areas, in which case preserving heterogeneity can enhance biodiversity. High herbivore density decreases diversity in most cases, because animals then graze non selectively, thereby creating too high disturbances, soil erosion, and vegetation homogeneity at the field and landscape levels.

- Prevention and moderation against wildfires: By removing vegetation, large herbivores avoid the build-up of fuel, thus mitigating wildfire damage. This can be especially beneficial in fire prone areas currently undergoing land abandonment (e.g. the Mediterranean), where browsing herbivores such as goats or ponies can counteract encroachment of flammable shrubs. It is important to note that grazing for wildfire prevention needs to be done with care, as too intensive grazing over large areas can drive soil degradation and erosion, and be detrimental to other ecosystem services (see also Rouet-Leduc et al., under revision).

- Traditional grazing systems like pastoralism, transhumance or extensive rearing of animals bring a sense of place and are part of traditional livelihoods. They bring social and cultural values and make an important contribution to social sustainability. Grazing by wild and semi-wild herbivores can also contribute to job-creation through eco-tourism (see Rouet-Leduc et al. Chapter 2, Interview-based report on grazing). By contrast, intensively grazed systems generally do not have a significant cultural value or contribution to a sense of place.

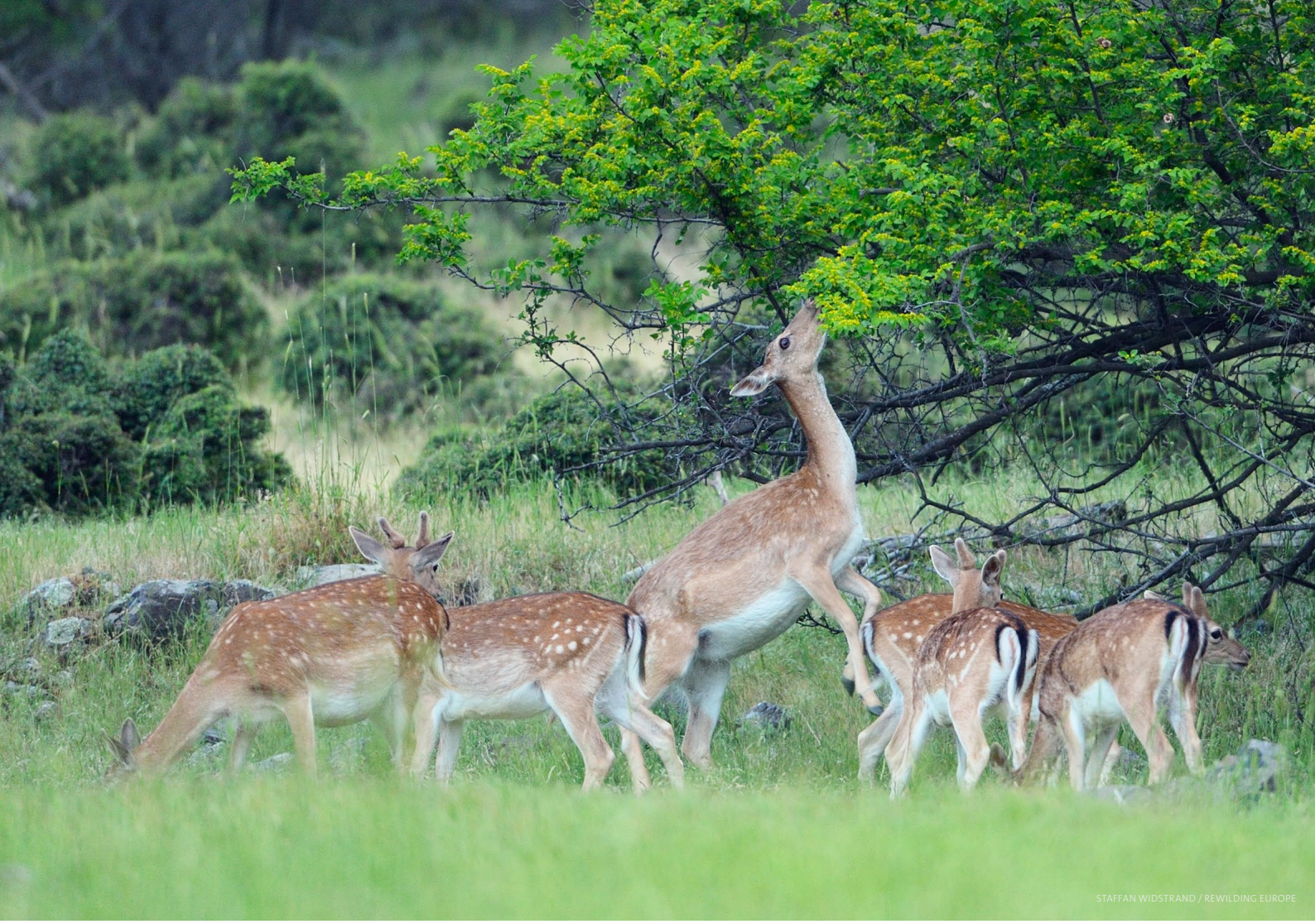

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Table 2: Summary of grazing impacts on key ecosystem services. We note that the mixed impacts of extensive grazing results from variations in animal types and densities, and varied use of deworming medicine. Source: Rouet-Leduc et al. in prep., Chapter 1).

	No grazing	Extensive grazing	Intensive grazing
Wildfire prevention	–	+	+
Soil organic carbon	+/–	+/–	–
Biodiversity	+/–	+/–	–
Cultural services		+	–

1.3 CAP instruments of relevance for supporting (sustainable) grazing

Among the various policies that can be considered relevant in affecting land-uses in general and grazing in particular, the CAP has the largest range of instruments. To set this report within a relevant context, we therefore hereby expand on key instruments and how they may affect grazing, positively or negatively, direct or indirectly. This section is based on a summary developed by Alliance Environment (2019, Table 5, pp 17-26) regarding the intervention logic of the different CAP instruments.

1.3.1 Agri-Environment-Climate Measures (AECM, Article 28, M10)

Formerly known as Agri-Environment-Measures (AEM), AECM are the most well-established instrument to support measures that are potentially beneficial for biodiversity, climate, soil and water. These measures are voluntary for farmers and require co-funding by Member States (MSs) and are typically based on 5 to 7-year contracts. The payments cover income-foregone, thus compensating for investments in natural capital compared to more intensive management. In the context of grazing, they include measures for (extensive) grassland management, be it by domestic or semi-wild animals. Semi-wild animals include animals that have been introduced to maintain the landscape or provide other ecosystem services, for example in rewilding projects, or animals that are semi-domesticated and get minimum human intervention and care (such as Galician ponies) . This means, in principle, that AECM are among the most suitable CAP instruments for supporting sustainable grazing systems. They have been shown to be effective when well-designed and implemented (Batáry et al. 2015), but they are associated with a range of administrative burdens on farmers and land managers (Wegener et al. 2011, Bezák and Mitchley 2014, European Commission 2016). In combination with the co-funding requirements on MSs, there are high thresholds both for MSs and for potentially interested land-users, with a risk of being outcompeted by simpler (but still subsidised) management options that are potentially less sustainable.

1.3.2 Organic farming (Art. 29), Payments for Natura 2000 (Art. 30)

Similarly to AECM, payments for organic farming and for farming operations in Natura 2000 aim to encourage sustainable farming systems, improve animal welfare, and compensate farmers and other land-users for costs and income foregone by such practices. Payments for Natura 2000 aid the implementation of the Birds, Habitats, and Water Framework Directives. In the context of grazing, it is relevant that these payments are associated with clear criteria for animal density (for both ecological and animal-welfare reasons), use of antibiotics or other chemicals, and sources of feedstock (e.g. limitations on imports out of the EU). While they have been shown to be effective for biodiversity and ecosystem services, these payments are restricted compared to the total area they need to cover, and offer relatively low per-Hectare payment (Pe'er et al. 2017). The coherence of organic farming payments with labelling and certification schemes improves communication to the public and access to markets, supporting the expansion of the organic sector and its market.

1.3.3 Payments to Areas facing Natural Constraints (ANC; Art. 31)

This instrument affects large areas and has a key role in providing income support to farmers in areas that might be experiencing natural constraints to their production. As a result, ANC is frequently mentioned as an important instrument for maintaining permanent grassland, especially in High Nature Value (HNV) regions, due to its role in preventing land abandonment (Alliance Environment 2019). In some MSs it is used to support wood pastures, pastoralism, and extensive grasslands. However, these payments "do not include any specific land management requirements that [specifically] benefit biodiversity conservation (beyond adherence to cross-compliance)" (Alliance

Environment 2019). Consequently, it can equally support agricultural improvements or intensification, with some indications that these payments may also yield negative environmental effects (e.g. intensification in sensitive regions and habitats).

In the context of grazing, ANC payments are particularly relevant for extensive, seasonal grazing models such as occupation of summer pastures in mountain regions versus winter pastures around valleys. Information regarding ANC and its implementation remains, however, largely anecdotal.

1.3.4 M15 Forest-environment (Art. 34)

This specific measure aims to support "commitment to enhance biodiversity, preserve high-value forest ecosystems, improve their climate change mitigation and adaptation potential, and reinforce the protective value of forests" (Preamble 28). This instrument, which is implemented by some but not all Member States, could potentially be relevant in the context of grazing in forest habitats, given that grazers are part of functioning forest ecosystems or needed for aiding their recovery, regeneration and regulation. While this scheme can be positive for grazing practitioners (or vice versa), there are also indications of negative impacts on extensive or semi-wild grazing systems. Furthermore, in some European countries (like Croatia) there is a legal ban on grazing in designated forest areas, or a requirement for their fencing (e.g. Germany).

1.3.5 Direct Payments

Generally, the support of farm income may affect not only farmers' decision whether to remain in farming, sell, lease or abandon an area but also on how to manage it (e.g. by using the financial support for buying machinery, agrochemicals, buying more land, etc.). We differentiate Direct Payments according to the differing intervention logic of a) decoupled support ("Basic Direct Payments"), b) coupled support and c) Greening.

Decoupled support

The key objective of Basic Direct Payments (hereafter, DP) is to support farm income. As such, the underlying assumption is that DP reduce employment-losses and, accordingly, changes in farm structure (i.e. shifts to larger farms) or land abandonment. However, evidence on the impacts of these payments is mixed, with some indications that they slow down (some) habitat losses but also allow, or even support, intensification (Pe'er et al. 2017, Alliance Environnement 2019). In the context of grazing environments, DP impacts are mostly relevant for areas that are not under the Greening measures, such as small farms, non-permanent grasslands, or arable areas that are seasonally grazed (including wetlands or floodplains).

Coupled support

Direct payments that are coupled with production, or so-called Coupled Payments, have been a target of criticism for their negative impacts on markets (OECD 2017); and there are some indications of environmental impacts through support of intensive farming (Pe'er et al. 2017). Strong pressures were placed on the EU by the World Trade Organization (WTO) and the European Court of Auditors (ECA) to phase out coupled payments, leading to a gradual decrease with the shift to decoupled support. However, in the 2013 reform the option for coupled payments has been reintroduced (allowing MSs to expand them), and currently they comprise a share of nearly 10% of the total CAP's budget (€4.245 bil. In 2017; (Pe'er et al. 2019, Supplementary Material pp. 17-18)). Coupled payments are highly relevant in the case of grazing, as the largest share of these (51%) support dairy and meat production, and take up a large share of farmers income (up to 70% of income, Matthews 2016, Matthews 2017) Matthews 2018). Moreover, while in the previous funding period (prior to the 2013 reform) it was possible to allocate payments also for extensive grazing, this option has been limited in the current (2014-2020) period.

Greening

Three Greening measures were introduced into Pillar 1's Direct Payments in the 2013 reform, namely Ecological Focus Areas, Crop diversification and the protection of Permanent grasslands. Among these, the latter is most relevant in the grazing context. Permanent grasslands are highly relevant for maintaining biodiversity and a range of Ecosystem services when sustainably grazed, and are at risk both by intensification and abandonment. While AECM defines management criteria for maintaining habitat quality, the permanent grassland protection measure only refers to grassland area (i.e., no quality criteria) and was set at the national level, allowing a maximum loss rate of 5% (above current loss rates in most countries; Pe'er et al. 2014). It was therefore criticised for its potential impact. Member States were advised to map and protect Ecologically Sensitive Permanent Grasslands (ESPG) beyond Natura 2000 areas, but "Only five Member States declared ESPG outside Natura 2000 areas, with data for four of these covering 0.32 million ha, only 1 % of permanent grassland outside Natura 2000 areas." (Alliance Environment 2019). Notably, the greening measure complements (and to some extent overlaps) AECM and Cross Compliance requirements (see below).

1.3.6 Cross Compliance

Cross Compliance (CC) is a horizontal instrument across the CAP, ensuring its coherence with other EU policies and directives, including the Birds, Habitats, Water Framework and Nitrates Directives, as well animal welfare policies. Through a list of Statutory Management Requirements (SMRs) and Good Agricultural and Environmental Conditions (GAEC), it sets standards that farmers and other land users have to comply with in order to be eligible for support. Thereby CC should contribute to sustainable farming (Alliance Environment 2019). With respect to grazing, CC include both direct and indirect requirements, including restrictions on management in relevant habitats of the Habitats Directive (SMRs 2,3), minimum land management to avoid soil erosion (GAEC 5), the protection of landscape features (GAEC 7), as well as requirements for the protection of soil and water. In the CAP post-2020, GAECs 1 and 10 both touch specifically on grasslands. Cross Compliance can arguably require extensification of grazing systems in favour of biodiversity, soil and water protection as well as for climate adaptation reasons. However, in practice it has been reported to see limited compliance by farmers, e.g. due to insufficient monitoring and low sanction levels (Pe'er et al. 2017 and references therein).

1.3.7 Forest measures

Notably, grazing/herbivory is important not only for grasslands but also for vegetation maintenance in forests, woodlands and wood pastures. Here, the CAP has several "Forest measures" (M8) including measures for afforestation (M8.1), agro-forestry (M8.2) and support for investments improving the resilience and environmental value of forest ecosystems (M8.5). The CAP also includes compensation payments in forest Natura 2000 areas (Measure 12.2) and forest-environment measure (M15).

1.3.8 Farm Advisory Services

Member States are required to offer advice to farmers in support of their eligibility and compliance with CC, AECM, and greening. Knowledge-support can be extended by MSs to farm diversification, transition or conversion to better address environmental issues. They have the potential to raise awareness and reinforce implementation. However, a range of assessments indicated insufficient knowledge-support for farmers and land-users, or even counterproductive support by extension services that lack training or recommend ineffective management (Zinngrebe et al. 2017). Notably, farmers are required to be aided by FAS for only selected topics, and may choose to do so for objectives other than environmental.

1.4 Other, non-CAP policy instruments of relevance for grazing

A range of EU Directives and Strategies have direct and indirect relevance to grazing systems in Europe, either by setting management requirements to maintain habitats, water or soil quality as well as to address issues regarding animal welfare. Here we list key directives.

1.4.1 Birds and Habitats' Directive

Grazing is an important factor shaping the conservation status and trend of species and habitats (Halada et al. 2011, Silva et al. 2019). Accordingly, the Birds and Habitat Directives set the basis, and define preconditions, that are necessary for developing specific management guidelines, some of which directly relating to grazing management and appropriate practices, either generally (such as lower and higher grazing densities) or specifically per habitats and species (e.g. eligible, or required, mowing time). Many of the requirements are met through the CAP (Cross Compliance and AECM), while others are achieved through national regulations.

In addition, conservation status of species, as well as hunting quotas, affect grazer densities and accordingly the status and trends of habitats.

1.4.2 Water Framework Directive (WFD)

Grazers, especially under intense production systems, affects water quality both directly and indirectly through

- nutrient leakage from intensive grazing systems (pesticides, fertilizers, manure, nutrients etc.) to ground- and surface water
- soil erosion may be enhanced by over-grazing but can also be reduced by targeted and/or extensive management;
- flood risks may be enhanced or reduced by different grazing systems. For instance, reduced flood risks can be achieved downstream through free flow of floods promoted by grazing compared to forests, and upstream through more storage of water in extensive grazed systems compared to intensive farmland.

Accordingly, the Water Framework Directive sets criteria for the reduction of grazers' pressure on water sources and defining upper quotas for grazing intensities. An attempt to scale up the WFD to address water-shed levels is also compatible with an ecosystem approach promoted for addressing other ecosystem processes.

The requirements of the WFD are further reflected by the CAP in its Cross Compliance mechanism.

1.4.3 EU Climate Law

As a signatory to the UNFCCC and, *inter alia* the Paris Agreement, the EU is obliged to cut its Greenhouse Gas (GHG) emissions and achieve climate neutrality at the earliest possible point. Accordingly, and in line with the EU Parliamentary resolution of March 2019 (European Parliament 2019) and the EU's Green Deal, in March 2020 the European Commission proposed a novel Climate Law (European Commission 2020b). A component of the proposal includes an Impact assessment of "all the key economic sectors, including energy, transport, industry and agriculture". The assessment aims "to better understand the transformation of and complex interactions between the energy, industry, buildings, transport, agriculture, forestry and waste sectors".

Animal-produced emissions, especially from intense farming, comprise a large proportion of agricultural GHG emissions (Pe'er et al. 2017, Scown et al. 2020b). Additionally, land-uses and land-use

changes that relate to grazing have direct and indirect contributions to climate change and its mitigation, both positively and negatively. In the context of GrazeLife project, relevant aspects that climate adaptation touches upon – beyond GHG emissions – includes wildfire mitigation (Rouet-Leduc et al. Under revision), flood risk reduction (see above), and carbon storage and sequestration in grazed landscapes (carbon storage both in soil and in vegetation, as well as avoiding carbon emissions through wildfires).

1.4.4 Forest(ry) strategy

The EU is on the process of devising a forest strategy, as an update of its existing forestry strategy. Such a strategy may provide an opportunity to address the inconsistencies among European policies touching on forests as habitats, versus forestry as a sector (Söderberg and Eckerberg 2013, Aggestam and Pülzl 2018, Eyvindson et al. 2018). The definitions and requirements, associated with diverse uses and interests, are inconsistent across policy instruments such as the Habitats Directive, the CAP, the existing forestry strategy and the EU's Biodiversity Strategy (European Commission 2020a), as well as within national regulations. The relevance of these differences in terminology and regulations to grazing is twofold: on the one hand, management requirements are applied to protect trees from the damages caused by browsers and grazers – leading to the exclusion of animals, to the better or worse; while the handling of understory vegetation and woody debris is shaping habitat structure and quality, and the way it can be used by animals. Often case, intensely planted plantations are unsuitable for grazers. Examples of relevant consequences include wildfire risks and the path of forest succession or regeneration.

2 Methods

Key inputs to this report are 63 semi-structured interviews with land-users and experts engaged with a range of grazing models, in six of the eight case studies of GrazeLife (see Table 1), which contained relevant inputs on policy impacts on grazed systems. To interpret the interviews and develop recommendations, we used the literature and expert knowledge as delineated below.

GrazeLife interviews cover eight countries (seven EU Member States and Ukraine). The aim of the interviews was to investigate how land owners and users, as well as local experts, perceive different grazing models in their area with regard to biodiversity, climate adaptation and other ecosystem services. We sought to identify challenges (e.g. economic, bureaucratic) regarding the implementation of their grazing regimes, as well as possible solutions. Interviews were conducted with farmers, land-managers and selected experts (e.g. from authorities, NGO's and scientific institutes) with experience in grazing and rewilding. The interviewees were asked, among others, about their motivations, how they managed their land, what kind of subsidies they received, and which challenges they experienced. Results were recorded and coded using MAXQDA. The coding system was developed independently by two people and then synthesised into one system. A selection of interviews was coded by three independent coders to assure they obtain replicable results.

Within interview texts, challenges related to the CAP fell into the following categories:

- Insufficient subsidies / income for sustainable grazing management
- Administrative burdens associated with sustainable grazing management
- Veterinary requirements
- Control of animals (e.g. animals crossing field boundaries, or causing traffic accidents)
- Controls and sanctions related to policy implementation (especially the CAP, Birds and Habitats Directives), and
- Policy design or changes in policy, i.e. any issues related to eligibility criteria, type of supporting instruments or regulations affecting management, and changes in these (especially in the transition between CAP funding periods, with the 2013-reform leading to some alterations during the 2014-2020 period).

Challenges and decision factors that go beyond policies, are mostly covered in a separate report (Rouet-Leduc et al. in prep.). The challenges were grouped into a) Land-use conflicts (competition with neighbouring areas or with other sectors), b) Infrastructure (lack of, or too much), c) Job-related and market challenges, and d) Changes in society (values, generational renewal); while socioeconomic factors beyond policies that can affect decision-making were grouped into a) Labels/certification, b) Inherent will or values, c) External support such as private incentives, and d) Other economic aspects such as market accessibility, prices or farm revenue.

Where interviewees offered recommendations, these were recorded as well.

When citing interviewees' in this report, names have been replaced by a code. The first letters represent the case study region (see Table 1), while the last represent the type (Land-user or Expert).

For **interpretation** and development of recommendations, we consulted the literature as well as experts from the case-study countries. Prime inputs from the literature with respect to the CAP were a Fitness Check assessment of the CAP as a whole (Pe'er et al. 2017), an assessment of the CAP's


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impacts on biodiversity (Alliance Environment 2019), and assessments of the Commission's proposal of 2018, containing also recommendations for improvements (Pe'er et al. 2019, Pe'er et al. 2020a). For the nature directives we consulted the respective Fitness Check (Milieu et al. 2016) and references therein. Targeted literature searches were made within the Fitness-Check literature database (link) to address issues relating to specific instruments and their performance. Finally, a literature review conducted within GrazeLife provided the ecological perspectives of anticipated impacts of different management regimes (Rouet-Leduc et al. in prep.). We used these sources to pinpoint how the issues raised by the interviewers may relate to, or illustrate, broader policy challenges – and what recommendations are available to address them.

3 Results

The largest number of interviewees referred to the Common Agricultural Policy (CAP) as the key factor, or policy instrument, which determines land-use and management on their land. It is guiding their management decisions but also offers important assistance in retaining economic viability. Some examples:

Galicia, Spain:

> ***the CAP's support is "essential to maintain the people living on cattle raising in these [remote] areas in the mountains."*** (GA_10_LU)**,**
>
> ***"The CAP subsidy is big help for the farmers."*** (GA_8_LU)**.**

Oder Delta:

> ***"if it wasn't for subsidies, extensive agriculture and smaller farms would disappear from the Polish landscape. Large industrial farms would remain. And also small, niche farms producing for their own needs"*** (OD_11_LU)**.**

Lithuania:

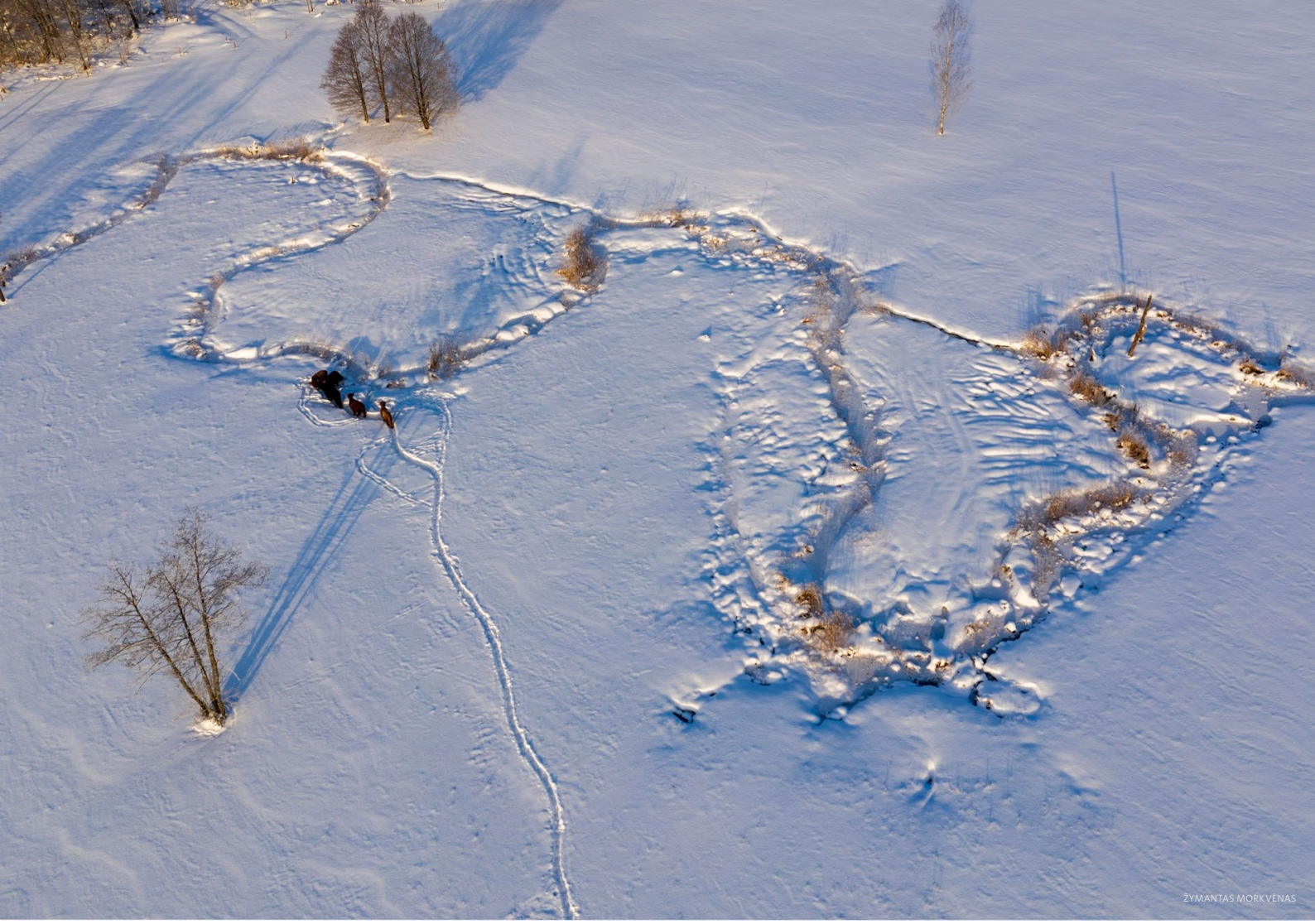
> ***"Without the payments, we would not have started farming. Because for the first few years, it was like a guarantee that helps you survive. It is more profitable for us to raise calves, which is why we started it."*** (LI_7_LU)**.**
>
> ***"The payments make a significant contribution to income ... payments make a pretty significant contribution to maintaining the farm because our land is poor, we have to buy mineral fertilizers."*** (LI_6_LU)**.**

While a large number of land-users mentioned reliance on AECM support, many other CAP instruments were mentioned, including payments for Natura 2000, Direct Payments, Areas of Nature Constraints and some forestry-related measures. The option of combining instruments or selecting among them, has also been identified as important for land-users.

Examples Lithuania:

> ***"Receives support for ... extensive grazing, extensive wetland management, some direct payments for meadows such as greening, or first 30 hectares"*** (LI_2_LU, extensive meat cattle farmer)**.**
>
> ***"Receives direct payments, payments for organic farming and extensive grassland grazing, investment support".*** (LI_5_LU, farmer)
>
> ***"declares areas for RDP measures, and writes applications for modernisation projects. Currently receives support for ... Stubble fields during winter, as well as areas with natural constraints".*** (LI_2_LU, meat cattle farmer)**.**

The role of regulations (CC, AECM etc.) was mentioned repeatedly, demonstrating a central impact of these on management decisions and practices, as farmers need to comply with these regulations; and to a certain extent compensated for these demands. For instance, a land-user engaged in extensive



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cattle grazing and recipient of AECM said: ***"I cannot increase the stocking density", but the payments compensate for this demands"*** (OD_12_LU).

While some expressed that the support is sufficient, others said it is not; and yet others said that ***"Money is not everything"*** (OD_11_LU) or that payments are sufficient ***"but… remember that we are not profit-oriented NGO"*** (OD_13_LU). The topic of motivations is covered in more detailed by Rouet-Leduc et al. (2021) in the report on land-users' perceptions.

Rhodope Mountains, Bulgaria:

> ***"we are not satisfied because we cannot manage with these subsidies. Every year they decrease the subsidies, there are penalties, the prices get higher … The subsidies don't cover our costs, they are not enough … We hope that the subsidies will increase otherwise a lot of people will give up the farming, do you know how many people give up and sell the animals".*** (RM_3_LU)

Interviewees highlighted a **large number of specific challenges** relating to the CAP. Accordingly, the following sections start by covering the CAP, and relevant instruments therein, followed by other policies and directives.

3.1 CAP basic definitions

3.1.1 Definition of grassland and pastures

3.1.1.1 Oversimplified definition excluding other vegetation types

While (semi-)natural pastures, grasslands and heathlands are most biodiverse when they are heterogeneous, CAP definitions and payments poorly acknowledge this heterogeneity and sanction for its maintenance. This is worsened by applying whole-farm requirements that can lead to landscape simplification (from a habitat perspective) or strong sanctions (from a farmer or land-manager perspective). Examples:

Rhodopes mountains, Bulgaria, receiving subsidies for rare breeds (AECM):

> ***[We must] "clean them [up from scrubs, otherwise] we get penalties... from 300 deciares they cut half as ineligible for subsidy because of the bushes and instead to receive subsidy we have to pay penalties. [...] The requirement to clean the pastures totally from shrubs is bad for us, the animals graze them, but the requirements are much stricter ... But the animals graze in the dry period the grass under the bushes ...and in the winter eat also the leaves and branches from the bushes... the shrubs are food resources for the animals in the winter when the grass is over and they press us to remove it."*** (RM_2_LU)

Rhodopes Mountains, Bulgaria (farmer handling semi-wild, rare cattle breeds):

> ***[I have] "To clean the pastures... [especially] in the winter ... they press me to mow the pastures. In the winter the animals graze "iskelik" but when the inspection from the fund came they press me to mow it because it was too high... Other problem in our area is Vicia sp. – in the summer and autumn the animals don't graze it ... The requirement is to keep the grass on the pastures under 30-35 cm and to cut the bushes. And so because of the requirements for subsidies I have to remove the natural food for winter for my animals. And I have to buy extra food for winter ... from the places with intensive agriculture – straw and hey with artificial fertilizers and chemistry. Instead to use the natural, clean food we have to buy food."*** (RM_5_LU)

Interpretation of the problem:

According to Article 4(h) of the CAP 2014-2020, ""permanent grassland and permanent pasture" (together referred to as "permanent grassland") means land used to grow grasses or other herbaceous forage naturally (self-seeded) or through cultivation (sown) and that has not been included in the crop rotation of the holding for five years or more; it may include other species such as shrubs and/or trees which can be grazed provided that the grasses and other herbaceous forage remain predominant as well as, where Member States so decide, land which can be grazed and which forms part of established local practices where grasses and other herbaceous forage are traditionally not predominant in grazing areas".

Article 4(i) defines that "grasses or other herbaceous forage" means all herbaceous plants traditionally found in natural pastures or normally included in mixtures of seeds for pastures or meadows in the Member State, whether or not used for grazing animals".

These definitions raise two key challenges. One is that the basic definition sets a strong emphasis on the dominance of herbaceous vegetation, implicitly excluding other types of vegetation. While the option exists for MSs to be more inclusive in their own definition of permanent grasslands and pastures, some MSs choose to exclude heathlands, scrubland and other habitats from eligibility of CAP support, and/or reduce payments for non-usable scrubland. For example, farmers in Galicia

reported that this reduces their level of support for ***"Cattle-CAP [from] 130€/ha on meadows [to] approximately 33 €/ha on shrublands"*** (GA_10_LU).

This narrow interpretation proceeds into over-simplification of the guidelines and requirements set by MSs leading to the request from farmers to clear shrubs to receive subsidies, or otherwise reduce payments. Note that the same heaths are protected in Natura 2000 sites (as the transformation to pastures threatens the habitat), generating a discrepancy between management requirements in or outside Natura 2000.

The second problem with the definition is that it implicitly excludes some habitats that are dependent on grazing and traditionally have been used as pastures, leading to their exclusion from CAP Direct Payments in some EU Member States. For instance, a number of Annex I habitats of the Habitats Directives, such as European dry heaths (4030), Fenoscandian wooded meadows (*6530), Juniper communis formations on heaths of calcareous grasslands (5130), all of which require grazing for their maintenance, do not qualify for CAP Direct Payments schemes according to the interpretation of permanent pastures definition. These habitats are consequently in unfavourable condition in MSs that exclude them from support, while concomitantly losing the tradition of maintaining pastures as they used to be.

These problems lead to inconsistency of the CAP with the implementation of EU nature directives, and limiting the possibilities of the CAP to contribute to achieving favourable conservation status of protected species and habitats that depend on grazing practices.

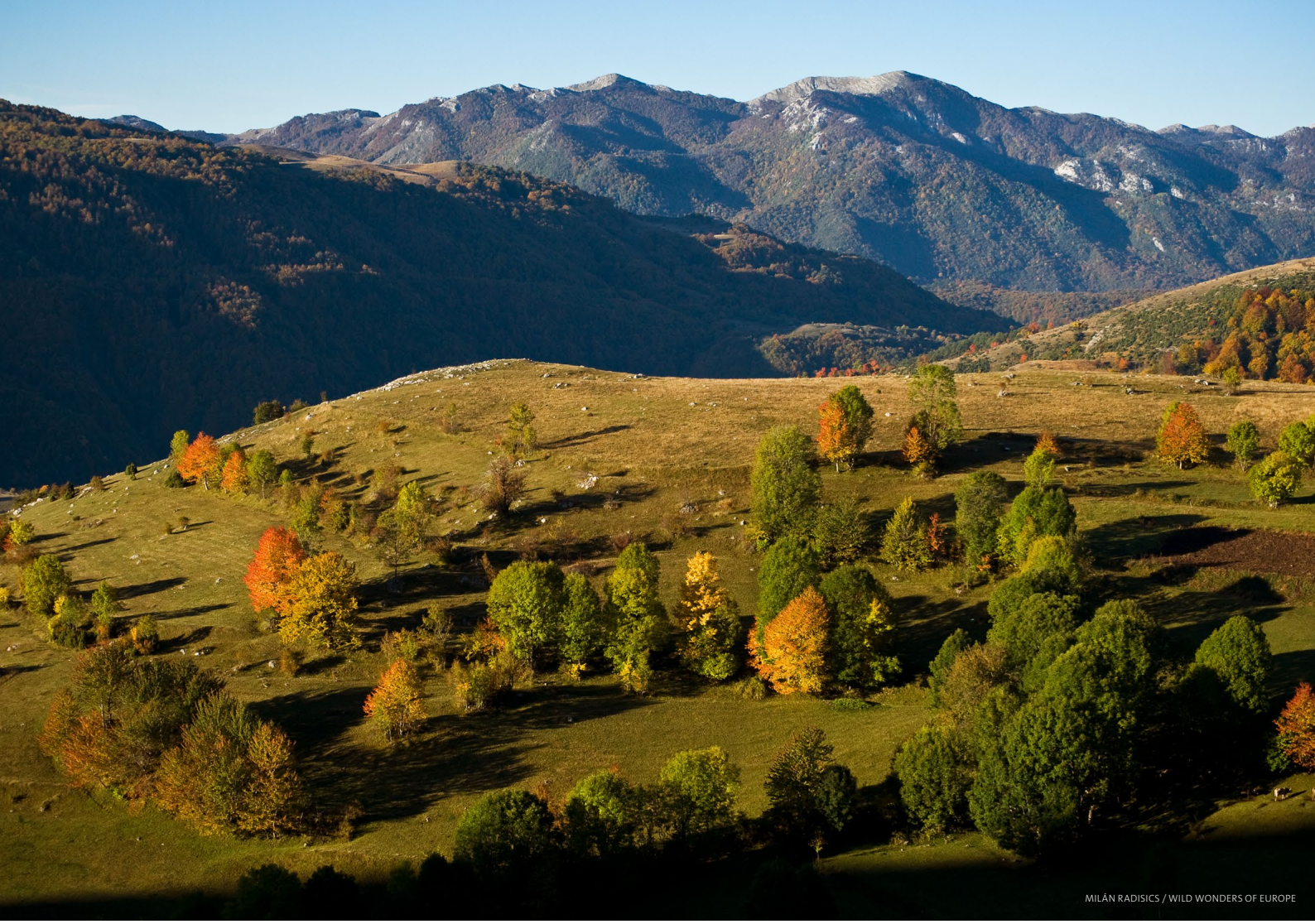
The CAP-2020 proposal of the European Commission largely retains the existing definitions, but may somewhat aggravate the problem since now the proposed definition of ***"permanent grassland and permanent pasture' (together referred to as 'permanent grassland') ... may include other species such as shrubs and/or trees which can be grazed or produce animal feed"***. This definition excludes vegetation types, and landscape structures, that are important for grazers for other purposes beyond feed, either by providing shade and shelter or because they shape the overall habitat and its long-term stability. Thus, the risk of narrow interpretation or misinterpretation by MSs remains relevant in the CAP post-2020.

The European Parliament's (EP), in its position from 23 October 2020, proposed a different definition of permanent grassland:

> ***"Member States may also decide to consider as permanent grassland:***
>
> ***(i) land which can be grazed and which forms part of established local practices where grasses and other herbaceous forage are traditionally not predominant in grazing areas; and/or***
>
> ***(ii) land which can be grazed where grasses and other herbaceous forage are not predominant or are absent in grazing areas which may include shrubs and/or trees and other resources consumed by animals (leaves, flowers, stems, fruits)".***

The Council in its position of October 20, has used a wider definition of permanent grassland which also allows the domination of non-forage grasses: Article 4 states:

> ***"(iii) 'permanent grassland and permanent pasture' (together referred to as 'permanent grassland') shall be land used to grow grasses or other herbaceous forage naturally (self-seeded) or through cultivation (sown) and that has not been included in the crop rotation of the holding for five years or more, as well as, where Member States so decide, that has not been ploughed up for five years or more, as well as, where Member States so decide, that has not been tilled for five years or more; it may include other species such as shrubs or trees which can be grazed and, where Member States so decide, other species such as shrubs or trees which produce animal feed, provided that the used to grow grasses or***



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> ***and other herbaceous forage naturally (self-seeded) or through cultivation (sown) remain predominant. It may include other species such as shrubs andff/or trees which can be grazed or produce animal feed Member States may also decide to consider as permanent grassland any of the following:***
>
> ***- land which can be grazed and which forms part of established local practices where grasses and other herbaceous forage are traditionally not predominant in grazing areas;***
>
> ***- land which can be grazed where grasses and other herbaceous forage are not predominant or are absent in grazing areas;"***

An important contribution to future interpretations of the grassland's definition comes from the judgement of the European Court of Justice released on 15 May 2019 in the case of Greece (European Court of Justice 2019). Figure 54 states that:

> ***"the decisive criterion in respect of the definition of 'permanent pasture' is not the type of vegetation covering the agricultural area, but the actual use of that area for an agricultural activity that is typical for 'permanent pasture'. Consequently, the presence of ligneous plants or of shrubs cannot, in itself, prevent classification of an area as 'permanent pasture', as long as their presence does not compromise the actual use of that area for an agricultural activity".***

The conclusion is that the main criterion is the use of the grassland rather than the vegetation type. It further implies that MSs can, and should, decide on a broader definition of grassland eligible for Direct Payments.

Recommendations:

Design: The definition of **permanent grasslands** as proposed by the European Commission should be improved and expanded, e.g. by relieving the requirement for dominance of grass under specific conditions that would be agreed with experts, and including scrubland and other types of natural and semi-natural habitats that go beyond direct animal feed and listed in the Habitats' Directive. These can include other landscape elements such as rocks, stones or water. A broader definition can encompass a large set of land that contributes significantly to biodiversity and climate but is not eligible for CAP support (Larkin et al. 2019, Rotchés-Ribalta et al. 2020), thereby enhancing coherence among the CAP and the Habitats Directive.

The scope of permanent grassland definition should also include landscape characteristics featured by the habitat types, which are protected under EU Habitats Directive, whose existence is directly linked with grazing practices.

Along this line, we can **strongly recommend to apply the wider definition as proposed by the Parliament, which includes grassland types, where the harvesting forage is not necessarily the most important purpose**.

EU guidance for implementation: EU guidelines are shaped both directly and through weighting calculations, or 'pro-rata' subsidies (i.e. adapting support levels based on the area that is eligible for support). These should be designed in a way that retains or even extends support for grasslands, scrublands and other forms of mixed vegetation if the overall design supports biodiversity protection, climate change mitigation and other environmental targets. In other words, heterogeneity and multi-functionality should be supported, e.g. through compensation (or support) of areas covered by shrubs instead of penalizing for these, given that such micro-habitats have an insurance value for long term production but their protection can still be considered as "income forgone".

Member State implementation: The fact that guidelines are demanding a highly-specific, short-term measure (which can be costly and nonetheless sub-optimal for the habitat) could be resolved through closer interaction with ecological consultants or local experts to identify and jointly define optimal management. Not only for AECM, but also for Eco-schemes, it would be important to include options that can secure more complex habitats.

3.1.1.2 An automatic change of arable land into permanent grassland after 5 years leads farmers to plough the area to avoid the change

Grasslands and fallow land change their status automatically to permanent grasslands after five years. To avoid this status-change (and increasing inflexibility in business operations), farmers "must" plough the area, thus damaging its ecological functionality. Examples:

Oder Delta:

> ***"Several fields in this region are in reality grassland, but still have the status of "arable land"... when the EU Commission invented the rule that arable land has to be ploughed and used for crops at least once during a period of five years – otherwise it would become automatically "permanent grassland", the farmers – and also we – had to start to plough these de-facto-grasslands".*** (OD_1_LU)

Interpretation of the problem

This administrative barrier has also been identified by previous authors, e.g. Pe'er et al. (2017) and Zinngrebe et al. (2017) in the context of greening: an automatic shift in status generates a disincentive to maintain fallow and grassland areas for more than few years, whereas ecological research shows that longer-term continuity is ecologically beneficial as it allows gradual recovery of biodiversity,

soil quality and other ecosystem services. In the next CAP, if the rule is retained as is, it will affect not only GAEC (Enhanced Conditionality) but also AECM and potentially Eco-schemes.

The Commission's proposal of 2018 does not resolve but rather maintains the same definition with this respect, Art. 4 (Sec. 1 letter b) iii) defines that permanent grasslands *"shall be land not included in the crop rotation of the holding for five years or more"*.

Recommendation

The dichotomous circumstance, where farmers face the choice between damaging the habitat or losing support as "arable land", could be avoided ether by relieving the automatic change of status (from arable to permanent grassland) under specific conditions, e.g. under an agreement with farmers on prolonged maintenance as a grassland; or by ensuring that the support level remains the same or higher once the plot receives status of permanent grassland. In both cases, AECMs may be the most suitable instrument for supporting such cases, given their longer-term contracts (5–7 years) compared to Eco-schemes (that are based on annual contracts).

3.1.2 Definition of wetlands, floodplains and peatlands

Floodplains are dynamic by nature. CAP eligibility criteria, however, do not support such dynamic landscapes, either by excluding marshes and riverbeds although they are used by grazers; or by sanctioning for circumstances where land-uses are seemingly unstable over time. Rigid criteria may even sanction farmers employing, or affected by, natural land dynamics. The problem is relevant both for areas that are registered as "permanent grasslands" and those declared as "arable land", as both lose support if they are flooded in a given time and hence not "permanent" in use. Examples:

Border Meuse area, Netherlands, expert:

> ***"The area is not eligible for [CAP] subsidy because it is a non-eligible nature type (marsh/river)."*** (BM_6_EX).

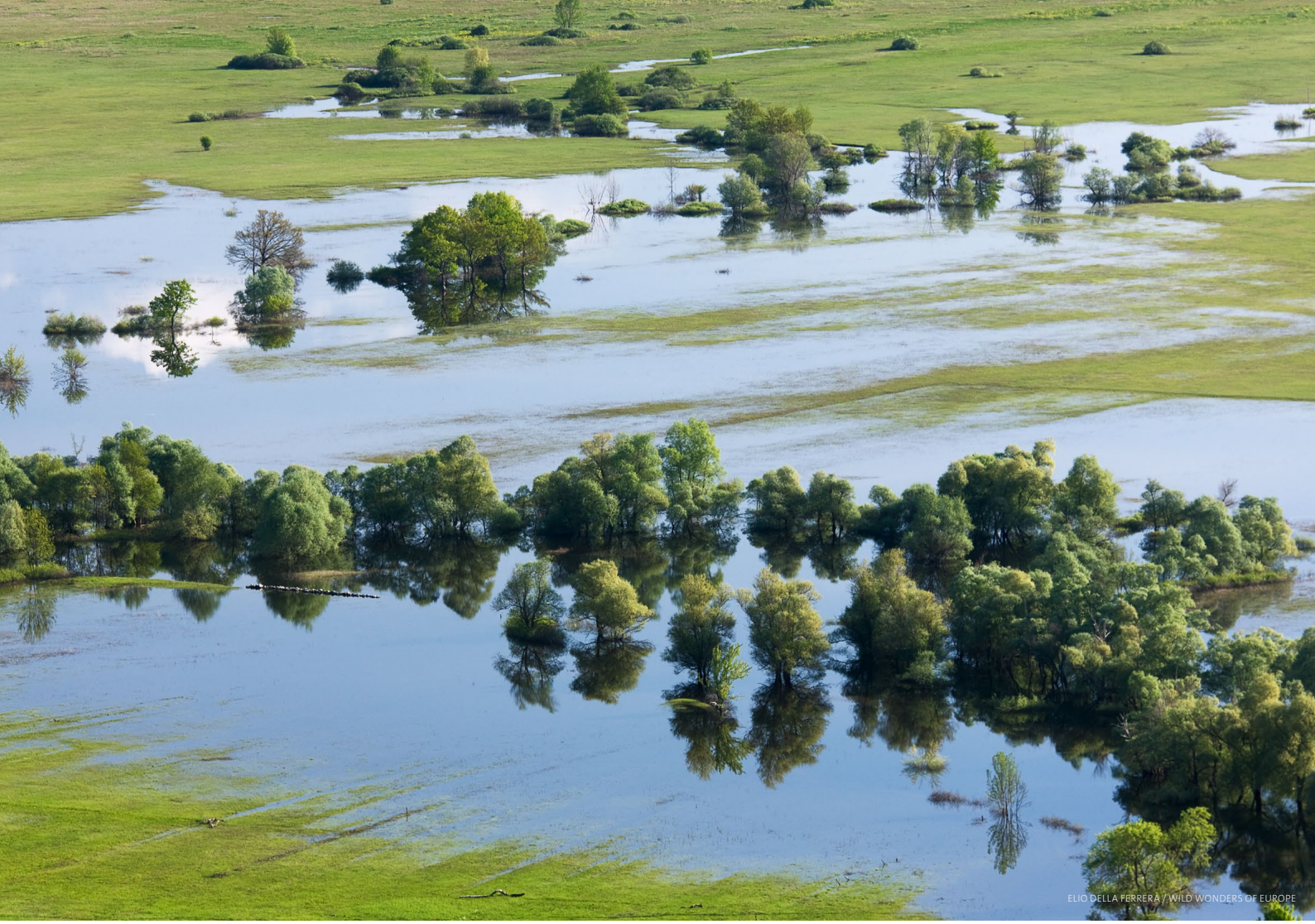
Oder Delta, land-user grazing by semi-wild herbivores:

> ***"For us it is bad that***
> ***- areas which are the whole year flooded***
> ***- areas where only reed is growing***
> ***- areas where only reed mace / bulrush is growing***
> ***are not accepted as agricultural areas and therefore cannot receive subsidies under the first pillar. [While at the same time] the water buffalos use the reed for food and resting... But reed is not accepted and financed as agricultural land under the first pillar... therefore [I am forced to] exclude these parts of my land when I apply for subsidies."*** (OD_5_LU).

Oder Delta, expert:

> ***"May 15th is the date of application for subsidies, therefore on May 15th the area needs to be without water. Water areas cannot be financed under the 1. pillar."*** (OD_4_EX)

In another example beyond the interviews conducted within GrazeLife, a farmer in the Oder Delta (Poland) recently lost part of his subsidies because his land was flooded for several years and unusable during this period. Once dried again, the area was no longer accepted as permanent grassland since it was not permanently used as such during the previous period. The case has been transferred to the EU Court of justice to discuss.



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Loss of CAP support may also occur if a farmland is flooded by beavers. For example:

> ***"Beaver is a major problem, because these areas which he floods are fully lost for the farmer, because he is not allowed to receive subsidies from the first pillar anymore", e.g. if "the beaver rewets his pastures"*** (OD_6_LU)***."***
>
> ***"We get no compensation payments [for beaver damages]. We asked for compensation payments, but then a lady from [xxxxx] came and asked if we could show from which populations the beavers came and so on, and all this was too difficult for us, so we stopped asking for compensation."*** (OD_6_LU)**.**
>
> The same person mentioned that damages by cranes are not compensated fully either.

Interpretation of the problem:

Member States presumably have flexibility to expand the definition of permanent grasslands in order to include floodplain areas – but this requires both farmers and administrators to accept temporary non-use, beyond 5 years (depending on context), as one of the options for acceptable "land-use" – especially in cases where this is temporary and caused by natural forces. The problem remains, however, that floodplain areas are not "grasslands" per se and deserve a definition of their own. Moreover, the problem indicates insufficient EU-level guidance to MSs as to how they should address such circumstances. The above examples and others therefore indicate on two potential loopholes that can be addressed at the EU level, one at CAP design (habitat definitions and eligibility criteria for flooded areas) and one regarding implementation, i.e., guidance to MSs.

With respect to the EU level, the problem results from two sources.

One is the definition of permanent grasslands and permanent pastures: "(together referred to as 'permanent grassland') shall be land not included in the crop rotation of the holding for five years or more, used to grow grasses or other herbaceous forage naturally (self-seeded) or through cultivation (sown). It may include other species such as shrubs and/or trees which can be grazed or produce animal feed; " (Article 4 sect. 1 letter b iii)

This definition does not explicitly mention permanently or temporarily-flooded areas used for agricultural purposes, while wetlands is specific habitat that can raise some confusion in terms of interpretation, while at the same time can be important for agricultural use.

The second problem relates to implementation, where MSs bear a realistic risk of sanctioning by the EC on Direct Payments, demanding payments back. An example is the court case between EU COM and Greece and Spain, related to Art. 44 Sect. 2 of the former Regulation Nr. 1782/2003. Here, the EU COM disagreed with these member states related to the definition of what permanent grassland means and demanded subsidies back from the MS. This legal procedure was concluded by the EU Court of Justice (2019), ruling that permanent grassland should be defined by agricultural use rather than its vegetation, meaning that the habitat may include shrubs (European Court of Justice 2019). The decision may help resolving similar cases in the future, as it calls for a broader interpretation by MSs.

The addition of a GAEC 2 in Enhanced Conditionality (in the CAP post-2020), aiming to protect wetland and peatlands, may help resolve this problem, but this remains dependent on the final legal text, as well as on MS interpretation and implementation. Furthermore, it remains unclear whether the CAP will offer specific support for rewetting drained wetlands or peatlands.

The case of damages and disturbances, such as flooding due to beaver damages, goes to a certain extent beyond the CAP as compensations are often bound to national regulations and funds (environmental and hunting funds). It thus raises the question where the CAP's role ends, and what land-uses (and non-uses) it should fund or support.

In its position from the 23th of October, the European Parliament proposed that the definition of "agricultural activity" (Article 4(a)) will go beyond the current definition (2014-2020) as well as beyond the Commission's proposal of 2018:

> ***"(a) 'agricultural activity' shall be defined in a way that it includes both the production of agricultural products listed in Annex I to the TFEU, including cotton and short rotation coppice and paludiculture, and maintenance of the agricultural area in a state which makes it suitable for grazing or cultivation, without preparatory action going beyond usual agricultural methods and machineries, including in agroforestry;"***

Here, paludiculture is included into agricultural activities, which are then eligible for Direct Payments. This is a welcome development, in line with scientific-based recommendations (Tanneberger et al. 2020, GMC 2021).

Recommendations:

The problem can be resolved first by updating both the definition of „permanent grassland and permanent pasture" in Article 4 (Regulation No. 1307/2013), by explicitly including wetlands and floodplains used for forage production or grazing. Secondly, the expanded definition of agricultural activity, as proposed by the Parliament, should be adopted. In addition, GAEC 2 should retain the original proposal of the Commission regarding protection of wetlands and peatlands, or optimally, improve the definition further to include flooded areas therein. This refinement can clarify the situation for flooded lands, also not necessarily on rich soils.

Ecological consultancy may also be useful in cases of doubts regarding the potential value of re-using flooded areas once dried out, and accordingly, eligibility for CAP support.

Otherwise, either in definitions or in **implementation**, it is important to identify situations where arable land and grasslands that are being under water should not automatically alter their status. To this end, closer interactions with the regional implementation bodies and experts, in the realms of AKIS and Farm Advisory Services, can resolve cases of uncertainty regarding optimal management, when this emerges from interpretation of definitions. For example, in the case of damages by beavers:

> ***"For us the best would be to get compensation areas for these areas which we lose to the beavers… Farmers should obviously be compensated for losses rather than sanctioned for them… This would raise the acceptance of beavers significantly"*** (OD_6_LU).

3.1.3 The definition of "Maintenance" under good agricultural ecological condition (GAEC)

A key definition that affects the implementation of Cross Compliance (enhanced conditionality in the next CAP) is the word **"maintenance"** of agricultural area *including* areas not used for production under "good agricultural ecological condition" (GAEC) (Art. 4 Sect. 1 letter 1, and Art. 12 Sect. 1 in European Commission (2018)).

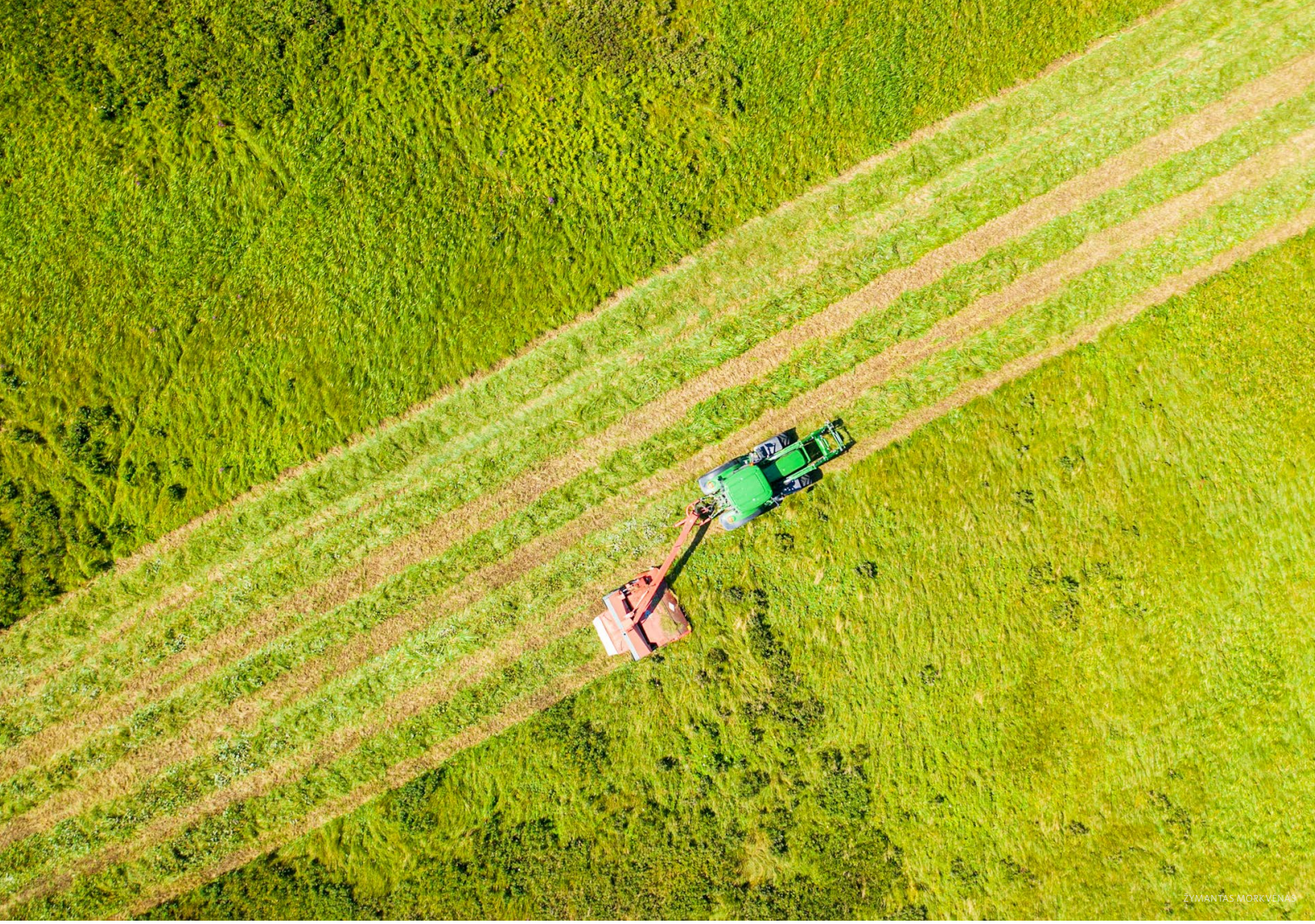
> ***Art. 4: „(a)'agricultural activity' shall be defined in a way that it includes both the production of agricultural products listed in Annex I to the TFEU, including … maintenance of the agricultural area in a state which makes it suitable for grazing or cultivation…".***
>
> ***Art. 12: „Member States shall ensure that all agricultural areas including land which is no longer used for production purposes, is maintained in good agricultural and environmental condition. Member States shall define, at national or regional level, minimum standards for beneficiaries… "***

This definition excludes non-grazing usage of habitats by animals, e.g. for shelter or shade, or usage in periods that do not match with inspection time (see above).

Recommendations

In Art. 12 Sect. 1 we recommend re-examining the text *"including land which is no longer used for production purposes"*, or exempting from this definition habitats that are under the Habitats Directives and can be demonstrated to be under proper management through other means.

In addition, especially with the Parliament's proposal to alter GAEC 2 legal text to "maintenance", this term must be well clarified to avoid the risk that farmers can retain dry peatlands or wetlands under poor conditions, i.e. without restoration or rewetting; or retain grasslands under intense management and poor conditions.



3.2 Agri-Environment-Climate Measures

3.2.1 Overly detailed prescriptions/requirements reduce eligibility and effectiveness and increases administrative burdens

A recurrent problem relates to the over-specificity of guidelines, either deterring farmers and land-users because of the risks of sanctions, eliminating eligibility for farmers and land-users.

Various land-managers mentioned that guidelines and requirements often too simple and/or rigid, placing on the one hand heavy administrative burden, and, on the other hand, forcing a management that is not fully suitable to the habitats where they are applied. Land-users can either follow the guidelines and damage habitats, or face sanctions, or risks of sanctions, if deciding not to follow the exact requirements. In some cases, land-managers eventually chose not to apply for AECM at all, and instead apply for other (non-CAP) funding sources such as national or private foundations to secure habitat quality. Examples:

Border Meuse region, land-user working with semi-wild living horses:

> ***"organizations that lean heavily on subsidies focus just on one plant species or have to hold on to one type of habitat… Subsidies can lead to a wrong kind of management of nature areas because it is driven by just one species or one area type (N2000), which sometimes doesn't fit the area". … By not applying for CAP support, we have "the freedom to really see what suits the local ecosystem".*** (BM_1_LU)

Oder Delta:

> *AECM for maintaining "extensive pastures" "allow dragging and rolling only until the end of March – but until the end of March our pastures are wet… if we would drag and roll in March, we would receive a lot of mud and dirt within the grass and therefore within the food for the cattle". Also the requirements for "mowing so late [entails] that we don´t receive sufficient protein and nutrients". The measures "for "extensive pastures" are not flexible enough for us", while another scheme (FP 506) "for "nature-conservation-adapted use of grasslands" is better, because it allows such a flexibility, which is defined by biologists… But this agri-environmental scheme can only be applied on [other], vulnerable areas in Mecklenburg-Vorpommern".*
>
> *We "don´t use the additional subsidy of the second pillar for animal welfare "summer pastures", because this subsidy is … not granted to farmers who already have their cattle out of the stable. This subsidy is also very difficult to fulfil, because the farmer has to exactly protocol when which animals are on which pasture, this is very difficult to conduct."*
>
> *We also "don´t use a payment for animals of old pet breeds, because this needs special experts and enthusiasts, and this would be viable for me if I would have such employees, who would be interested in this topic."* (OD_6_LU).

In consequence, the land-user ended up not using AECM at all.

Oder Delta, AECM requirements coming in direct conflict with species' requirements:

> *"We do not apply the agri-environmental schemes for extensive use of grasslands (FP 505) or for nature-conservation adapted use of grassland (FP 506), because these schemes are not flexible enough and can interfere with the goals of our nature conservation project …*
>
> *In case that the project manager responsible for nature conservation tells me that I have to mow an area in the core zone already in May in order to improve a habitat for a meadow bird, this would be forbidden under the Agri-Environmental Schemes, therefore we do not apply these."* (OD_1_LU)

Oder Delta, requirements insufficient for managing and preventing shrub encroachment:

> *"…the conditions are [that] – the first grazing within the year has to be conducted latest until July 31st; – you have to graze two times per year; – time between two grazing events has to be at least 60 days. This is […] really good, for insects etc. […] But if you want to stop shrub encroachment within the heath, you have to graze the second time latest already after 4 weeks … in order to halt and reverse shrub encroachment. But this is not allowed now in the new agri-environmental schemes. Within the old agri-environmental schemes, this exception could be allowed by the local nature conservation authority. Now, this is not possible anymore."* (OD_2_LU)

Oder Delta, expert (CAP administrator) on two examples:

> *"it is an enormous effort for the farmers to write down for each day and each animal when it was outside and when it was in stable, and on which area were how many animals etc… Each year less and less farmers use it, because for them the effort is much too high. We want to make it easier, but we don´t find a viable solution."* (OD_4_EX).
>
> *"strong regulations lead to the effect that the farmers are less and less interested in these schemes".* (OD_4_EX).

Oder Delta, organic farmer

> ***"Under the FP 508 for organic farming, one can only purchase a ram of the endangered sheep breed "Rauhwolliges Pommersches Landschaft" ("rough-wool pomeranian country-sheep") from another organic farm". This excludes purchases that do not originate from an organic origin. To "buy one of non-organic origin, [he must] prove that there are no others available – I need three declarations of non-availability of organic animals" while he is interested in buying "the best animal which exists – in order to save this endangered breed!... So, this regulation is adverse!"*** (OD_5_LU)***".***

Oder Delta, extensive cattle grazing, Poland:

> ***"the package selection [for AECM] is too small. It is also bad that there is no continuation and continuity between previous and current packages."*** (OD_11_LU)***.***

Oder Delta, extensive cattle grazing, Poland:

> ***"To be honest, I would consider this possibility [of transitioning to another grazing or land-management model]... Because of the restrictions ... This is still acceptable for now. I manage to meet the deadlines. But if the terms contained in the agri-environmental scheme packages limit me even more – I will give it up. ... Only these restrictions can prevent me from running a farm the way I want to do it"*** (OD_12_LU)***.***

Lithuania, organic beef cattle farmer:

> ***"It has been several years in a row that we appealed for the agency because their decisions did not correspond to reality, so we complained about the decisions. We were once sanctioned because they announced some changes a few weeks before the declaration started and it was unrealistic to be eligible."*** (LI_7_LU, organic beef cattle farmer)

Interpretation of the problems:

Member States have relatively high flexibility in determining AECM contents and guidelines, but often lack either administrative capacities, ecological knowledge/guidance and in some cases the will to develop refined sets of requirements.

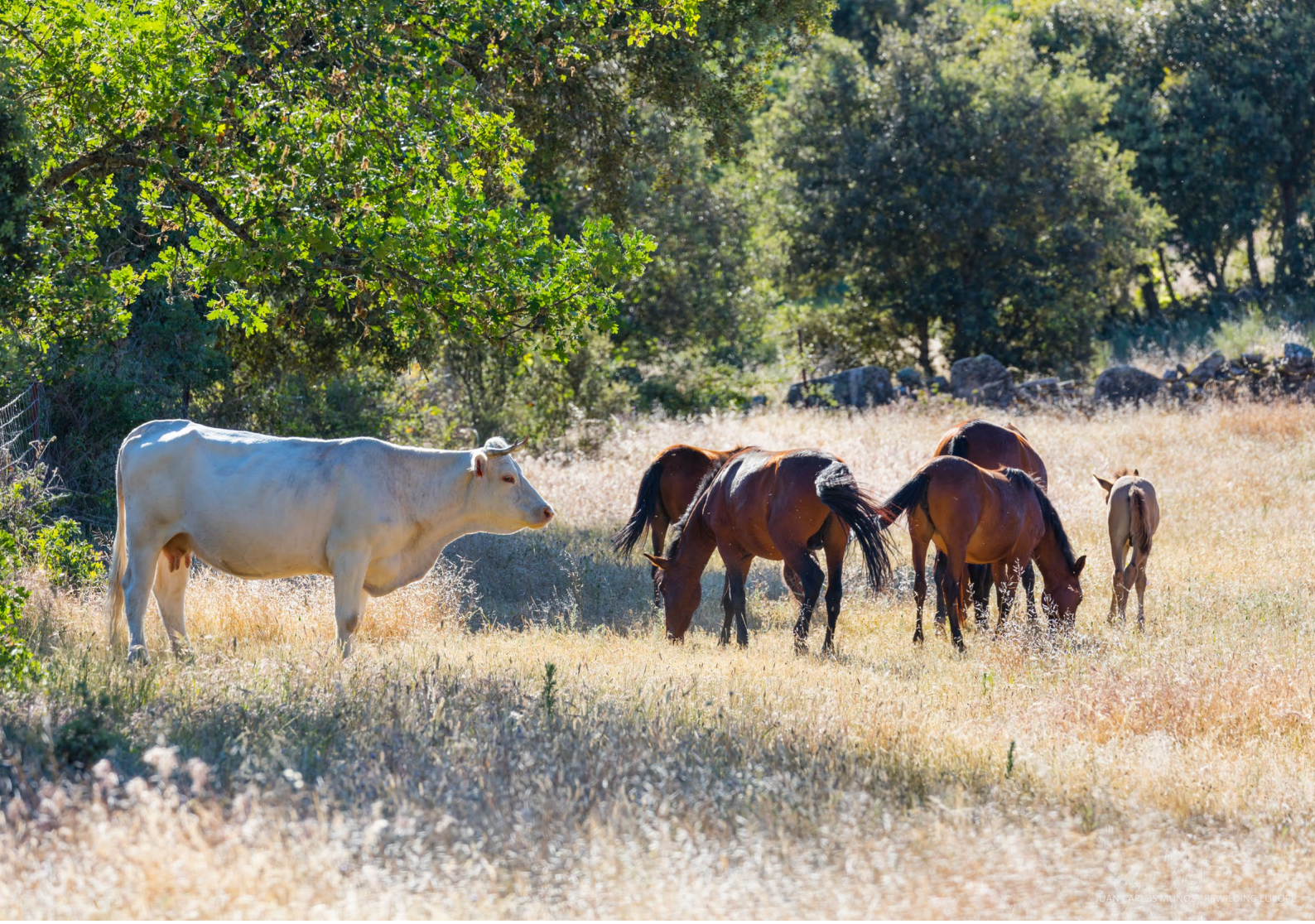
Lithuania, expert:

> ***"Current measures currently focus on how to legally absorb funds. The main decision on how funds are allocated is made by agricultural sector and not environmentalists. The measures are very superficial, not result-oriented. If one makes a proposal, then there is one universal answer to everything: administration is too expensive".*** (LT_Expert5(PK)_F28)

Notably, lack of flexibility is not only an administrative issue, but in the provided example emerges also from lack of adaptability to local and temporal conditions. A common case is the generality of the "late mowing" requirement which in some cases sets a barrier to effective conservation, especially for the protection of non-bird taxa that may be damaged by late or homogeneously-applied mowing. In fact, it may not only be destructive to habitats but also burdening farmers.

Lithuania, experts:

> ***"Strict universal mowing deadlines are not good. Currently the management requirements are not adjusted to different meadow types. The same rules apply for dry unproductive soils and wet grasslands with Phalaris arundinacea, which are the richest in biomass. Those meadows are completely different, but the requirements are adapted and simplified for***



inspectors and all must be managed equally. It is simpler for inspectors but does not make much sense from the perspective of nature management and farming". (LT_Expertl(ŽP)_B29)

"Such requirements for strict dates of mowing are based on protection of birds, but it is not considered that e.g. corncrakes like mosaic mowing, meaning when the whole field is not mowed at once. Large areas with many farmers have this effect because they mow differently" (LT_Expert4(VU)_E29)

"Such restrictions were needed to design measures and calculate benefits based on losses incurred. As if the later you start mowing, the greater the loss. It is a wrong approach". (LT_Expert4(VU)_E29)

One must consider that risk of sanctions in itself poses a barrier to uptake and, in a way, a transaction cost as well. Consequently, one expert (Oder Delta) mentioned that ***"Higher subsidies [in themselves] would not improve the situation".*** (OD_4_EX)

Discontinuity of the CAP, and complexity of constant changes, has also been discussed in recent studies as generating confusion and hampering effectiveness, efficiency and uptake (Rutz et al. 2014, Pe'er et al. 2019). Notably, the proposed CAP extends the definition of AECM and allows "other management criteria", but this is unlikely to resolve the problem unless clearer guidance is given as to what can or cannot be included under AECM.

Recommendations:

Two complementary solutions are the relaxation of highly-specific requirements and an increase in payments for complex management options. The former would require a replacement by closer

consultancy, which can be important if not essential both to administrators (in developing their requirements and controlling for implementation and its impacts), as well as to land-managers. It is imperative to ensure that, in the case that maintaining habitat quality requires deviating from MS-defined requirements, there would be authorized persons or bodies that can control and confirm such deviations (e.g. external ecological experts).

Another recommendation to increase flexibility of process-based AECMs, while still maintaining the complexity which is necessary to meet nature conservation requirements, is to introduce matrix-based AECMs where farmers can choose the conservation measures that is most appropriate for the condition of the declared plot and farming model therein. The level of payment would be defined based on the chosen measure through a "basket" approach.

Other solutions, supported by a wealth of literature, are to expand the budget for AECMs in order to enhance its overall capacity to reward good practices (such as extensive grazing) in terms of the number of farms and the total area they cover, as well as the level of remuneration for practices that generate high environmental benefits yet are complex to implement and therefore unpopular. Reduction of administrative burdens relating to such practices, or including these in the transaction costs, are both foreseeable and possible even under the WTO's "Green Box".

Lithuania, experts:

> ***"One has to improve RDP measures, e.g. increase payments or remove administrative barriers (limitation on farm size, etc.). Seems like even artificial barriers were created that the agri-environmental measures would be unpopular and it would be possible to transfer money from pillar 2 to pillar 1 for direct payments.".*** (LT_Expert4(VU)_E28)
>
> ***"We should also recalculate the payments, they should be bigger (agri-environmental measures). The general mass of farmers firstly look at the support level. If it would be adequate they would be then willing to take on the commitments".*** (LT_Expert2(AP)_C28)
>
> ***"Current constraints do not provide necessary flexibility. The support system should take into account a lot of different management options. One should calculate payments and set requirements for all meadow types: according to fertility, moisture, soil chemical composition, etc. Yes, then the system becomes very complex both for farmers and inspectors".*** (LT_Expert1(ŽP)_B29)
>
> ***"I would also suggest that organic livestock farms be required to maintain natural meadows. There is no requirement for meadows now. The paradox now is that the number of organic farms is growing, but the biodiversity is not and the tendencies go into the opposite direction. Other ways to improve quality of pastures need to be found."*** (LT_Expert4(VU)_E28)

The examples also indicate that **the (re-)introduction of the conservation authorities to decision making** and eligibility criteria is essential. Particularly, it is important to establish clearer procedures as to circumstances where land-users can be allowed to deviate from the basic requirements.

Another recommendation is to **expand the option for land-users to apply for result-based payments**, focusing on biodiversity-orientation in some regions and conditions where this is feasible and potentially acceptable by farmers. This may potentially allow more freedom regarding on-the-ground implementation by farmers and other land-users.

Shifting to a result-based or "outcome oriented" approach allows setting the targets in terms of habitat quality or biodiversity targets. This could be assured by external quality evaluation of the proposed guidelines/requirements already at the stage of contract-establishment and later on in monitoring the outcomes and supporting adaptive management to reduce the risks (and perceived risks) of sanctions if targets cannot be achieved. Such uncertainties are known to generate scepticism among farmers and lead to low uptake levels, but an increasing number of successful pilots demon-

strate that approaches are rapidly developing to overcome such barriers (Schroeder et al. 2013, Birge and Herzon 2019, O'Rourke and Finn 2020).

Lithuanian experts:

> ***"It is discussed that the payment system should be transformed to be result-oriented. Strict rules are not always good … The meadow ecosystem is the most complex in Lithuania. A lot of factors need to be considered, the experts should firstly carry out overall evaluation of the current situation … and also they should develop a vision or set goals of what state can be achieved that would be best for nature and habitats, and how to align it with a farmer's needs"*** (LT_Expert1(ŽP)_B28)

> ***"Currently tested pilot result-based measure [within LIFE PAF-NATURALIT project] for biodiversity conservation is a right direction. Then farmers know exactly what result they should achieve, they know more about the biodiversity in their fields, learn to recognize the species and such way motivates farmers. Farmers are not enemies of nature, but one needs to work with them individually".*** (LT_Expert4(VU)_E28)

> ***"It would be necessary to provide recommendations on how to farm to achieve best results for species, habitats and ecosystems … Changes in ecosystems can take decades (e.g. to transform from arable land into natural meadow). If we mow and graze without looking at a long-term strategy, we will achieve nothing"*** (LT_Expert1(ŽP)_B28).

An alternative for supporting heterogeneous farms or diverse landscapes is to specifically **offer AECM or Eco-scheme options that promote diversification of management types**.

In practice, land-users as well have recommended that allowing decentralization of the decision-making process, where best-practice knowledge prevails, will be optimal. Examples:

Oder Delta, land-user referring to FP 505 (Agri-environmental scheme for extensive use of permanent grasslands):

> ***"we have areas, where I am sure that the nature conservation authority and we would agree together that a change of these regulations would lead to a better result for nature. Therefore I recommend for the future that the nature conservation authorities themselves can issue exceptions … it must be possible that the Nature Conservation Authority – in case that they agree with me – can issue an exception."*** (OD_5_LU)

Oder Delta:

> ***"it would be better if [higher] flexibility … could also be applied within the more general agri-environmental scheme for "extensive pastures".*** (OD_6_LU)

Oder Delta, land-user conducting extensive cattle grazing:

> ***"I would like to leave the area uncut for mowing grass after September 15. After this date, the uncut area does not fulfill its functions. [We also need] more varied agri-environmental scheme packages. The ability to combine more packages. A better incentive system for farmers to introduce an agri-environmental scheme."*** (OD_11_LU)

3.2.1.1 Lower and upper limits on livestock density (for both AECM and organic farming)

Restrictions on higher and lower densities of grazers, originating from animal welfare or habitat management grounds[1], require controlling by farmers – something which may be complex if the area is large, or animals move across space during the season. Such specifications can therefore be difficult to implement.

Expert, Oder Delta:

> ***"it is difficult for a farmer to comply to these restrictions: The farmer has to write down for each day how many animals were on which area, so it can occur that 10 days he has more than 2 livestock unit / ha on an area or less than 0,3 livestock unit / ha on another area, and then he didn´t comply to the restrictions".*** (OD_4_EX)

Interpretation of the problem:

Such criteria emerge from the underlying assumption that the number of animals as well as the closure area are relatively fixed over time. This is not the case for seasonal grazing and pastoralism, as well as for commons (see below). Additionally, the guidelines exclude the option of more targeted (but short-term) grazing pressure, which can be effective for habitat management, biodiversity and wildfire prevention (Rouet-Leduc et al. in prep.).

Limitations on livestock units per se also do not reflect differences in the ecological functioning of different herbivores: for instance, in Galicia semi-wild ponies maintain the heathland in good condition for cattle grazing by clearing gorse, the most vigorous shrub. Yet this generates a conflict since ponies generate low profits in themselves, but are needed to maintain cattle – yet as they count as livestock units, they limit the eligible number of cows.

Recommendation:

Requirements may need to be adapted for semi-wild grazers or shifting grazing systems and should be linked to the total acreage to which grazers have access throughout the grazing period, rather than being limited to individual parcels in fixed periods. Other options are to calculate grazers' density, where applicable, for the year or season, or to readjust the guidelines in consideration of the role of different herbivores or specific management applications requiring higher or lower densities.

3.2.1.2 Disproportional sanctions and penalties

Some land-users perceived sanctions as being disproportional to errors in implementation, thus deterring participation in AECM. Examples:

Oder Delta:

> ***"one farmer cut only one willow between March and October, … he got a penalty plus additionally 1 % reduction of all subsidies for his whole area! For the cutting of one willow! … This stops farmers to use agri-environmental schemes or other specific schemes".*** (OD_6_LU)

Oder Delta, Beef farmer receiving AECM:

> ***"It may happen that I do not receive subsidies or they will be reduced if I do not mow, or do not collect, e.g. because the area is flooded and equipment cannot enter."*** (OD_10_LU)

1 Especially Animal-Welfare Scheme FP 509 "summer pasture", some variants of AES FP 505 "Extensive Use of grassland" or some variants of FP 506 "nature conservation-adapted use of grassland", all under Pillar 2

Oder Delta, expert:

> ***A farmer who "by accident brought his animals already after 58 days – so only two days less than the 60-days-condition – for the second grazing period onto the area… got a sanction of 50 % reduction of all his subsidies from this agri-environmental scheme for the whole year and for all areas"*** (OD_4_EX).

Lithuania:

> ***"In order to make extensive grazing more attractive to farmers, excessive burden of administration of the support system and absurd sanctions should be removed, because people are afraid to make mistakes or get involved and then they don't want to farm in such way anymore"*** (LI_8_LU, manager of feed production company)

Interpretation of the problem:

In some situations, fines or sanctions are applied either when administrators strictly adhere to over-specific requirements (see above), or act under the seeming assumption that applicants for subsidies are knowingly try to fool the system. That said, the literature does not indicate that this is a broad-scale problem or that excessive sanctions is a key barrier in the case of AECMs.

Recommendations:

Considering that applications for AECM are made on a voluntary basis and place high burdens on both land-users and administrators, errors should be better differentiated from deliberate contract violations. Higher incorporation of experts in monitoring and consultation may increase knowledge-transfer, trust and cooperation, and reduce the risks of either misunderstandings or disproportionate sanctions.

In addition, discounts and fines for ineligible elements in the field, or shortcomings in animal identification and registration systems should be proportional to the size of the parcels or the number of animals for which these shortcomings are identified.

3.2.1.3 Lack of flexibility imposed by long contracts

Registration of herd sizes and requirements relating to these seem to be rigid and generate problems within the context of AECM's longer contracts as well as investment measures (see below).

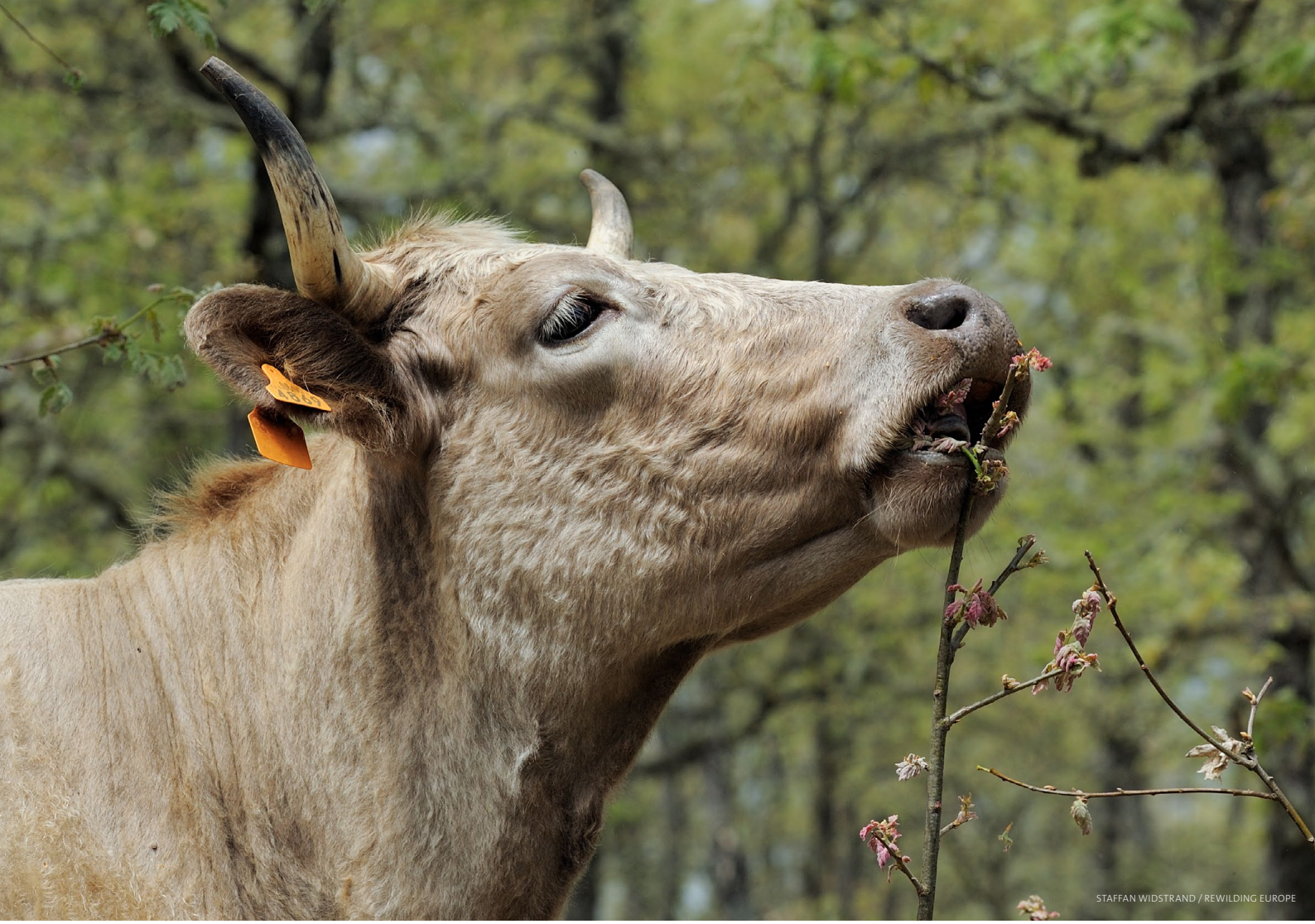
Danube Delta, Romania:

> ***"No possibility to increase a herd within 5 years from registration of a size of a herd. The only way to increase a herd is to register a separate herd for a next kin".*** (DD_2_LU)

Interpretation of the problem:

The current system seems to lack sufficient flexibility to adjust to changes in the number of animals either due to demographic reasons (reproduction, deaths) or in response to environmental conditions (e.g. droughts or changes in the suitable area). This entails lack of capacity to employ sufficient adaptive management to adapt the number of grazers for the changing status and needs of grazed ecosystems.

We note, however, that these two examples are relatively unique and may not represent a broader problem. In fact, longer contracts per se are often perceived as a merit rather than a challenge with respect to achieving longer-term ecological targets (Berendse et al. 2004), as well as offering some payment-stability for land-users; albeit longer contracts do pose some risks or barriers for some farmers and land-users that, affecting the uptake of AECMs (Reed et al. 2014).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Recommendation:

Allow an application for AECM based on a range rather than a given number of animals, and/or consult experts to define, and update if needed, the (potential) carrying capacity of the relevant area. A result-based approach, defining the aims of grazing in a given area (e.g. fire suppression, preserving biodiversity or prevention of bush encroachment), can be beneficial as well. Administrators should also allow land users to adjust the number of animals over the contract period, with proper justification, consultation, and monitoring.

3.2.1.4 Limited eligibility for specific support:

Eligibility for some specific AECM types (e.g. FP 506 agri-environmental scheme for "nature-conservation-adapted use of grassland") may depend on an a-priori designation of the region where farmers can apply for it. This may be suboptimal for potential farmers and land-users in other areas that cannot apply to these.

Example Oder Delta:

> ***"farmers can only receive this subsidy if their area is part of the official surface scene for Mecklenburg-Vorpommern where special areas of highest important for nature conservation are chosen. We would be glad if we could take part in the selection of this official surface scene, because we are sure we also have many of such areas, but we don´t know who designs this surface scene".*** (OD_5_LU)
>
> After examining a range of options, none of which was found suitable to his habitat, that land-user decided to give up on applying to AECM altogether.

Cattle (buffalo) farmer in the Danube Delta, Romania, receiving Coupled Payments ("Per head for cattle farming") to maintain his grazing management. When asked if he/she would consider transitioning to another land-management model, the reply was:

> ***"Yes, towards environmental subsidy. But the land system at the polder is not eligible due to small area and the polder status. Inundated polders are not eligible for environmental schemes of subsidy".*** (DD_4_LU)**.**

Interpretation of the problem:

Spatially-targeted AECMs have been shown to be effective from an environmental perspective and efficient from an economic perspective (Westerink et al. 2017). Thus, that a certain AECM type is designated to a given region is quite beneficial in itself. However, it is ineffective if farmers that interested in a certain AECM (or more precisely, in the set of measures that are prescribed by a given AECM) and find them relevant for their habitat, cannot apply to these. While this may happen because MSs have a limited budget for AECMs, restrictions should not be placed on farmers and land-users trying to employ best management practices in their land. Notably, in the previous CAP implementation period (until 2013) sufficient flexibility did exist for farmers to join on more general AECM types, or alternatively to adapt AECM to local needs. This restriction thus seems to indicate administrative rigidity that may yield undesirable outcomes, as well as an undesirable outcomes of overall-limited budgets for AECMs.

Recommendation:

Alternative options for improvement are to expand the budget (and hence spatial coverage) of specific AECM options; to allow farmers and land-users to apply for an AECM option even if its core area is limited; or to include more flexibility in the applying for more general AECMs and adapting them to local needs.

Where spatial limitations of AECM result from budget limitations, an alternative approach can be to recruit AECM applicants through an auction-based system. In such systems, bids are competing by level of expected payment as well as environmental features of the plot, which can lead to different environmental effects of the applied measure. As auction-based principle selects the proposed bids based on the best price offered and the biggest environmental benefit achieved, such an approach can increase the cost-effectiveness of the AECM facing budgetary limitations.

3.2.1.5 Challenges for pastoralism to be considered as "organic"

> ***Oder Delta: [it is] "difficult for shepherds who conduct organic farming, because it is difficult for them to graze land of conventional, normal farmers. If this will not be changed, an organic shepherd cannot conduct pastoralism anymore, because he cannot cross normal fields with his sheep! And when he crosses normal fields which are flowering areas at the moment, or where no pesticides were applied, it should be allowed for him to cross these fields."*** (OD_5_LU)**.**

Interpretation of the problem:

Because the regulation regarding "organic" farming places a range of limitations on the use of agro-chemicals, potentially-sustainable farming practices such as pastoralism, but also food produced from wild and semi-wild animals that move across large areas cannot be labelled as organic or obtain support through this instrument.

Recommendations

Solutions to this challenge may include support under AECM instead of Organic farming, but also complementary labelling which considers other aspects of sustainability.

In the case of pastoralism, a farmer in the Oder Delta asked for ***"a regulation which defines when and under which circumstances a shepherd can also cross fields from conventional / normal farmers"*** (OD_5_LU).

3.2.1.6 Support of habitat maintenance but not for restoration

A land-user from the Oder Delta perceived AECM as an instrument which generally supports conservation management but not suitable for restoration actions, partly due to measure design and partly due to the level of payments.

> ***"the conditions of the second pillar only support conservation management, but they do not open any space for development management. The biggest problem occurs in the nutrient-poor heathlands"... "really good [for conservation management], for insects etc. ... But if you are within the development management where you want... to halt and reverse shrub encroachment... this is not allowed now in the new agri-environmental schemes."*** (OD_2_LU)
>
> For grassland restoration,
> ***"turning arable land into permanent grasslands [covers] Today ... only 1200,- Euro / ha for a time of only five years. But in order to turn a field which has a market value of 25000 Euro / ha into a grassland which has a market value of less than 12000 Euro/ha, higher subsidies are needed which compensate this loss fully, and for at least 20 years. And on this new grassland, only extensive land use should be allowed, otherwise there would not be a significant improvement.***
>
> The farmer noted that most of the grassland under the AECM option of
> ***"turning arable land into permanent grasslands" covers, in fact, "already existing permanent grassland"*** (OD_2_LU).

Interpretation of the problem:

The problem described here may be relevant to both Pillars 1 and 2, but does not seem true for all countries, regions and habitats. We note, for instance, that some AECM options, as well as non-productive Investment measures in Pillar 2, can be used for restoration. In the Netherlands, for instance, a farmer can receive 85% of the value of his or her land, to be paid over a period of 30 year, to change it from farmland into nature (while staying the owner), but the parcels then lose their agricultural status. That stated, the restoration of wetlands or wilderness areas still pose a challenge given that their rewetting or restoration may lead, in fact, to ineligibility of CAP support. Thus, a challenge remains as to how such areas (or habitats) should be supported in the longer term.

Recommendation 1:

It is important to ensure that **AECM, Investment measures and Eco-schemes include (complementary) measures specifically to support restoration** – such as introduction of (extensive) grazing by domestic and semi-wild grazers, reintroduction of wild herbivores, or restoration of landscape features and habitats.

For instance, currently in Lithuania habitat restoration can be supported through investment measure M04 (support for non-productive investments linked to the achievement of agri-environment climate objectives). Under this measure, applicants from the targeted areas can apply for one-year funding (up to 80 000 eur) to restore breeding habitats of Aquatic warbler. After restoration

is performed, applicants are obliged to continue maintenance of the habitat through special AECM dedicated for this species. In the future, it is foreseen to expand this investment measure also for habitat restoration of other protected species and habitats.

Recommendation 2:

Payments per ha for habitat restoration need to be increased to go beyond pure compensation for income losses. Here, "transaction" costs could be considered in the payment level. Longer-term support could then be warranted either through the CAP or other policy instruments, such as a "fund for nature" to support Natura 2000 and/or habitats under the Habitats Directive, especially for cases where changes in land-use result in ineligibility to obtain CAP support.

3.2.2 Low payments and competing instruments

3.2.2.1 Insufficient payments for valuable but complex measures lead to low uptake or preference of simpler but less effective (or even harmful measures)

AECM are known to receive low uptake by farmers and other land users, especially in the case of valuable but complex options where payment level is insufficient to cover the full range of costs or guarantee uptake (Alliance Environment 2019). This results in choosing simpler AECM options, preferring other instruments, or falsely reporting management actions. Examples in the grazing and rewilding contexts:

Rhodopes, Bulgaria (payments for rare breeds):

> ***[we need to] "keep certain number of animals, we keep the number but the subsidies decrease every year... The subsidies don't cover our costs")*** (RM_3_LU)
>
> ***"...many people give up and sell the animals from here... a lot of people sell their animals – someone in Ivaylovgrad area sells all his 150-200 cattle because there is no sense and it is not profitable".***

Oder Delta, Germany, organic farmer:

> ***"is a problem that I receive the same amount of subsidies as a farmer who conducts intensive land use."*** (OD_5_LU)
>
> ***... "At the moment, every organic farmer can receive the same subsidies from the second Pillar: FP 508 (Organic Farm) and FP 505 (extensive use of permanent grassland), no matter if he conducts grazing or mowing. Therefore, there are many fake-organic farms who only mow"*** (OD_5_LU)**.**

Oder Delta, Germany:

> ***"The most profitable way would be to fully stop grazing and to only conduct mowing for subsidies! This would bring the highest profit for my investor of the farm. This would mean that all employees would lose their jobs, all animals are away. But we have a social responsibility, I cannot fire my employees!"*** (OD_6_LU)**.**

Lithuania:

> ***"The support they receive is certainly not sufficient and does not cover the costs incurred, hardly sufficient to pay out salaries"*** (LI_1_LU, Dairy farming company)
>
> ***"All the payments go for the cattle feed. So no, such income is not enough and one has to have an additional job or income generating activity. ... subsidy is barely enough to cover***

feeding expenses." "Maybe farmers who have more land can make more feed themselves but it also costs additionally" (LI_3_LU, employee of a biosphere reserve directorate)**.**

"These benefits are not enough to cover the costs, but it can offset some of the costs for the feed and equipment". (LI_10_LU)

Interpretation of the problem:

MSs often over-simplify their cost-calculation, accounting only for lost revenue in the case of a decrease in the area used for farming or in the intensity of farming in the case of grazing. However, from an economic perspective there is no reason to do so, as one can include transaction costs in the income-foregone calculation – namely, social and administrative barriers, as well as labour costs.

Another issue is the "coupling" of payments to area (or to the number of cows), meaning that the total support is small in case of small farm-holders.

Recommendations:

Support for highly-beneficial measures should be proportional to their benefits and cover transaction costs (beyond monetary costs). The approach may follow a pointing system as proposed by farming organizations in Germany, an Auction-based approach as employed e.g. in Ireland, or an experimental design to respond on uptake (e.g. offer higher payments for beneficial measures that were not yet taken up).

Rhodopes Mountains, Bulgaria:

"hope that the subsidies will increase otherwise a lot of people will give up the farming... people who practice more natural friendly livestock breeding should receive more money". (RM_3_LU)

Oder Delta:

"grazing on permanent grasslands [should] receive a higher subsidy than those who only mow". (OD_5_LU)

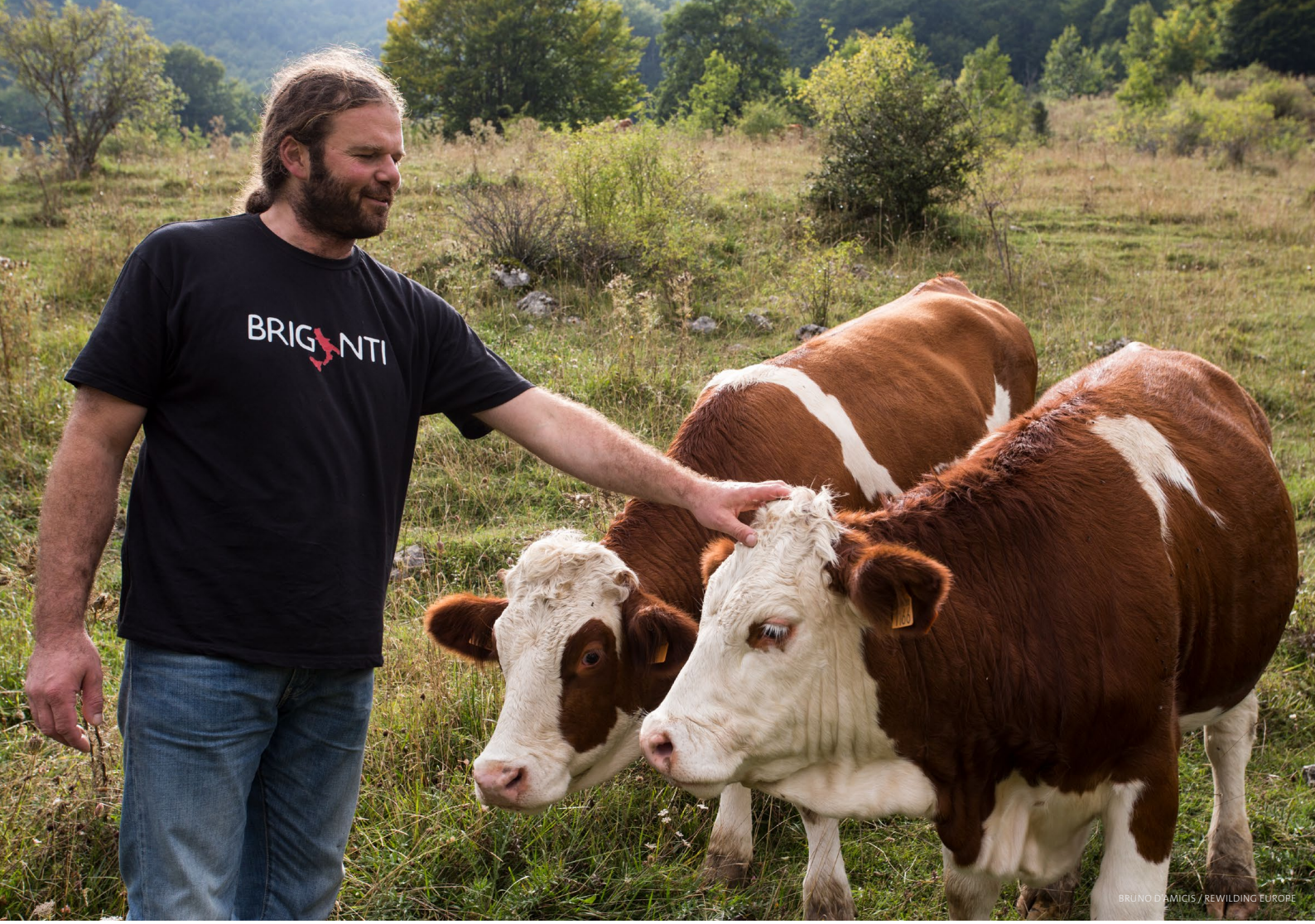
"it would be great if our whole loss of costs and ideally our whole loss of revenue would be compensated, and not only the loss of food for our animals. It would be great, if farmers could really earn money by conducting nature conservation, and not only receive compensation payments for a part of their costs." (OD_6_LU)

Lithuania:

"There could be a simpler declaration and payment system, e.g. there could be one single payment which enables to maintain a normal debt-free farm throughout the year". (LI_4_LU, a dairy farmer)

Practically, calculation of AECM costs can be done either in much closer **consultancy with ecologists** and administrators to overcome barriers to uptake, or updated in response to (low) uptake of desirable measures. De facto, **increased payment rates, to overcome transaction costs**, should be possible and justifiable under WTO's "Green box", and can refer to well-founded studies (e.g. TEEB 2010)

A viable alternative for small farms or economically less profitable farms (where income foregone is low) may exist through Eco-schemes if these employ a top-up approach. In that case, a pointing system that rewards for the delivery of public goods may be more attractive.



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Another solution which was proposed by a land-user in the Oder Delta was to support direct marketing:

> ***"I would be glad if there would be [subsidies] which would reward direct marketing conducted by the farmer (and not only subsidies which finance a part of the construction of the farm shop). Direct marketing is also important to bring consumers in contact with agriculture. But direct marketing is of course more cost-intensive than normal marketing ways. And we need more freedom, there are adverse regulations."*** (OD_5_LU).
>
> The farmer specifically recommended establishing a support instrument (e.g. in the CAP or elsewhere) for the establishment, or for the running costs, of an organic shop. This would be ***"improving the competitiveness of organic farmers, related to conventional farmers"***. (OD_5_LU). This could generate jobs, and improve revenue from products.

While specific support for direct marketing is to our knowledge not available through the CAP, we note that improving the farmers' position in value chains is an official objective in the CAP post-2020 (Art. 6(c)). Thus, be it for the sake of coherence with the CAP's own objectives or the CAP's coherence with the EU's Green Deal and Farm to Fork Strategies, support of direct marketing of sustainably-produced goods is a relevant and viable means of enhancing the economic sustainability of land-users engaged in extensive, environmentally-friendly grazing.

3.2.2.2 Other competing payments and alternative instruments

The problem that AECM are often less attractive than other sources of payments is well known from the literature (Pe'er et al. 2017 and references therein). While this issue was not frequently mentioned explicitly by interviewees, one land-user in Lithuania did mention that

> ***"We do not declare for the agri-environmental measures for management of specific meadows and extensive grazing because they are unprofitable and declaring for organic farm is more profitable."*** (LI_7_LU, organic beef cattle farmer)

Competition may also come indirectly through markets:

Lithuania:

> ***"Currently the prices of milk purchasing are extremely low which makes it difficult for dairy farmers to survive and a lot of them go bankrupt."*** (LI_1_LU, Dairy farming company)

Interpretation

This is not a direct impact, but availability of support for cattle and intensive production allows high production level and, indirectly, leads to lowering prices. This has been a key source of criticism especially on Coupled Payments, due to market-distorting impacts (Pe'er et al. 2017 and references therein). While these impacts have been reduced with the decoupling of payments following the 'green box' requirements of the World Trade Organization, they have not disappeared completely: first, animal-production still receives high share of CAP in total revenue; and secondly, coupled payments have not been fully phased out and their share has even increased following the 2013 reform (Pe'er et al. 2019). As coupled payments are to remain in the coming CAP, and the relative budget of Direct Payments is to see an increase, we can anticipate this challenge to remain prevalent.

Recommendation:

Higher remuneration through AECM may assist. However, in the longer term, competing instruments and incentives warrant the phasing out or complete transformation of coupled payments (Pe'er et al. 2019, Pe'er et al. 2020a).

3.2.2.3 Coherence between AECM and Direct Payments

A problem is the lack of coherence between Direct Payment regulations and those of AECM, or the addition of larger sets of requirements for farmers engaged in both (i.e. using AECM as complementary to DP, as typically done).

Recommendation:

Some experts proposed that, for areas that are hardly used and are of high value for nature conservation (i.e. under very extensive grazing, e.g. by wild or semi-wild animals), one can employ subsidies only from Pillar 2 without subsidies from Pillar 1. As the total payment is low, this may be ***"only viable for such nearly-not used areas of high value for nature conservation"***. (OD_4_EX)

3.3 Direct Payments

3.3.1 Area-based payments supporting land-concentration

Direct Payments support large(r) land owners as well as land concentration processes where land-owners and farmers are taking over land. This has a particular impact on commons, I.e. land managed by, or used by, communities.

Danube Delta, Romania:

> ***"large farmers size who hog up the entire land available for grazing of communities".*** (DD_1_LU)**.**
>
> ***"Before 2013 there were community subsidies for associations only and hence the system is still rather communal ... Subsidies [now] are administered individually but the management is common."*** (DD_3_LU)
>
> A farmer who is not supported by CAP mentioned that
> ***"There are UA national subsidies available now but a few farmers applied, mainly large cattle farms".*** (DD_6_LU)

Interpretation of the problem:

A key characteristic of Direct Payments is that the amount of support payment grows with area. This may be beneficial for the management of large areas, but can also generate, indirectly, incentives for overtaking larger tracts of land (land-concentration) – a problem that is particularly severe in new Member States and poorer regions of the EU (but not exclusive to the EU).

Capping and redistribution of Direct Payments have been proposed as a mechanism to reduce this risk, by limiting the possible payments above a certain level. However, but this mechanism is not effectively designed and implemented (Pe'er et al. 2017), and there is no guarantee that it will be improved in the next funding period (Matthews 2018, Pe'er et al. 2020a,b). Furthermore, such mechanisms are easy to circumvent by establishing separate business units under larger (multinational) corporations.

It is potentially particularly problematic in cases where the land is rented from land-owners.

Recommendation:

If capping and redistribution mechanisms are adopted as the EU's solution for the overall biased and inefficient distribution of Direct Payments, then they need to be obligatory and strict, i.e., without degressivity and/or without reducing salaries from calculations, as otherwise, de facto the payments continue increasing with area.

The case of commons needs to be further inspected, and either clarified in terms of regulations or definitions, or receive additional support specifically to secure the status for land that is used by many and benefits them. Regulations to prohibit change of use, and ensure continuity for communities to access them, seem important.

If the definitions and requirements of the CAP post-2020, e.g. with respect to "genuine farmers" improve or worsen this situation, should be critically inspected asap.

3.3.2 *Eligibility criteria and definitions*

3.3.2.1 Freedom for MSs to set own definitions for permanent grasslands may result in excluding valuable habitats

Alliance Environment (2019) highlighted that Member States have a certain level of flexibility regarding the definition of "permanent grassland" used in the context of Direct Payments, with the option to "exclude areas of land which are naturally kept in a state suitable for grazing (for instance, by wild deer) from eligibility for CAP support by setting other minimum activity requirements." (p. 31) This option may hamper efforts for rewilding, and place production requirements in places that can otherwise be managed through and for wild grazers.

In practice, both succession per se, and oversimplification of grassland definitions, may be counter-productive for habitat protection and restoration under Pillar 1 support.

Example Oder Delta, land-user managing wilderness area:

> ***"areas which are used less, so that their value for nature conservation grows, are more and more excluded from subsidies under the first pillar – due to the changes of their vegetation structure ".*** (OD_3_LU)

Interpretation of the problem:

Vegetational succession may be a problem (e.g. if leading to biodiversity loss, or reduction of possible grazing area) or a benefit if it promotes habitat recovery – forest recovery, scrubland restoration or enhanced habitat heterogeneity – and in some forms, such habitats may continue supporting grazers and/or benefit from grazing (Rouet-Leduc et al. in prep). However, the design of Direct Payments and, within them, the greening measure for protection of permanent grasslands, aimed at area-retention, placed no requirements with respect to habitat quality, and did not address restoration or succession. This gap could potentially be addressed in the design of Eco-schemes.

Recommendation:

Where well managed and serving desirable aims, structural changes in habitats (e.g. through natural succession, accompanied by grazing) should be fundable under the CAP. Optimally this should be achieved through both Enhanced Conditionality (particularly GAECs 1 and 10) and Eco-schemes. Specifically, conditions should be defined for diverting from a clear "grassland", and conditions should be supported for Eco-scheme support of succession or rewilding.

3.3.2.2 Eligibility for DP support to manage semi-wild and wild grazers

A challenge that was raised up by an expert in the Border Meuse area, Netherlands, relates to eligibility in terms of recipients of CAP payments with respect to the management of semi-wild cattle herds in a natural area:

> ***Since subsidies are only for "farmers and herd management companies", NGOs trying to access this support are "dependent on a 3rd party to get access to this money". "The risk of needing a 3rd party is [among others] that when the herd managers stop, they take away the herd and the experience".*** (BM_6_EX)**.**

A land manager of a wilderness area in the Oder Delta noted eligibility problems as well:

> ***"more and more areas cannot be subsidised any more under the first pillar, so that he wants to try in the future to subsidise them fully under the second pillar.".*** (OD_3_LU)**.**

The same person related the problem to strict implementation of Cross Compliance and clearly ***"not a result of an "unwillingness" of the regional authorities"***.

Interpretation of the problem:

The problem resides with different instruments being affiliated with different beneficiaries, some of which only available to so-called "genuine farmers". While this definition aims (potentially) to reduce problems of land leasing and leakages of payments to non-farmers, it generates a barrier for organizations that do try to manage the land sustainably – being forced to establish companies or rent out management rights. This generates both administrative barriers and burdens.

In the CAP post-2020, this problem may be worsened for the Eco-schemes by the proposal to allow only "genuine farmers" to apply for these. This may exclude NGOs and some types of farmers from being able to implement Eco-schemes.

Recommendation

Allow any farmers and land managers to apply to all relevant subsidies that enhance sustainable grazing or the sustainable maintenance of natural and semi-natural habitats, including grasslands, scrublands and wetlands.

3.3.3 Other issues regarding Direct Payments including Coupled Payments

A large number of farmers and land-users regarded Direct Payments as an overall important instrument they are using to support their land-use. Some (e.g. in the Danube Delta, Romania) mentioned that they receive ***"Per head for cattle farming"*** (DD_3_LU , DD_4_LU), indicating that they are recipients of Coupled Payments. One of the farmers mentioned these payments are ***"Important source for maintenance of the herd"*** (DD_4_LU), but would have preferred to shift to a more ***"environmental subsidy"*** if it was eligible.

One expert said, however, that ***"if there were no subsidies anymore, there would be not too much changes"*** (OD_4_EX). When asked about barriers to adopting sustainable (extensive) grazing, the expert proposed that ***"farmers – especially those who have sheep and goats, but also those having suckler-cows – would be glad if we would invent again coupled payments"***, i.e. per animal, partly due to wolf damages (OD_4_EX). The same expert acknowledged, however, that coupled payments also have negative impacts e.g. by affecting market prices.

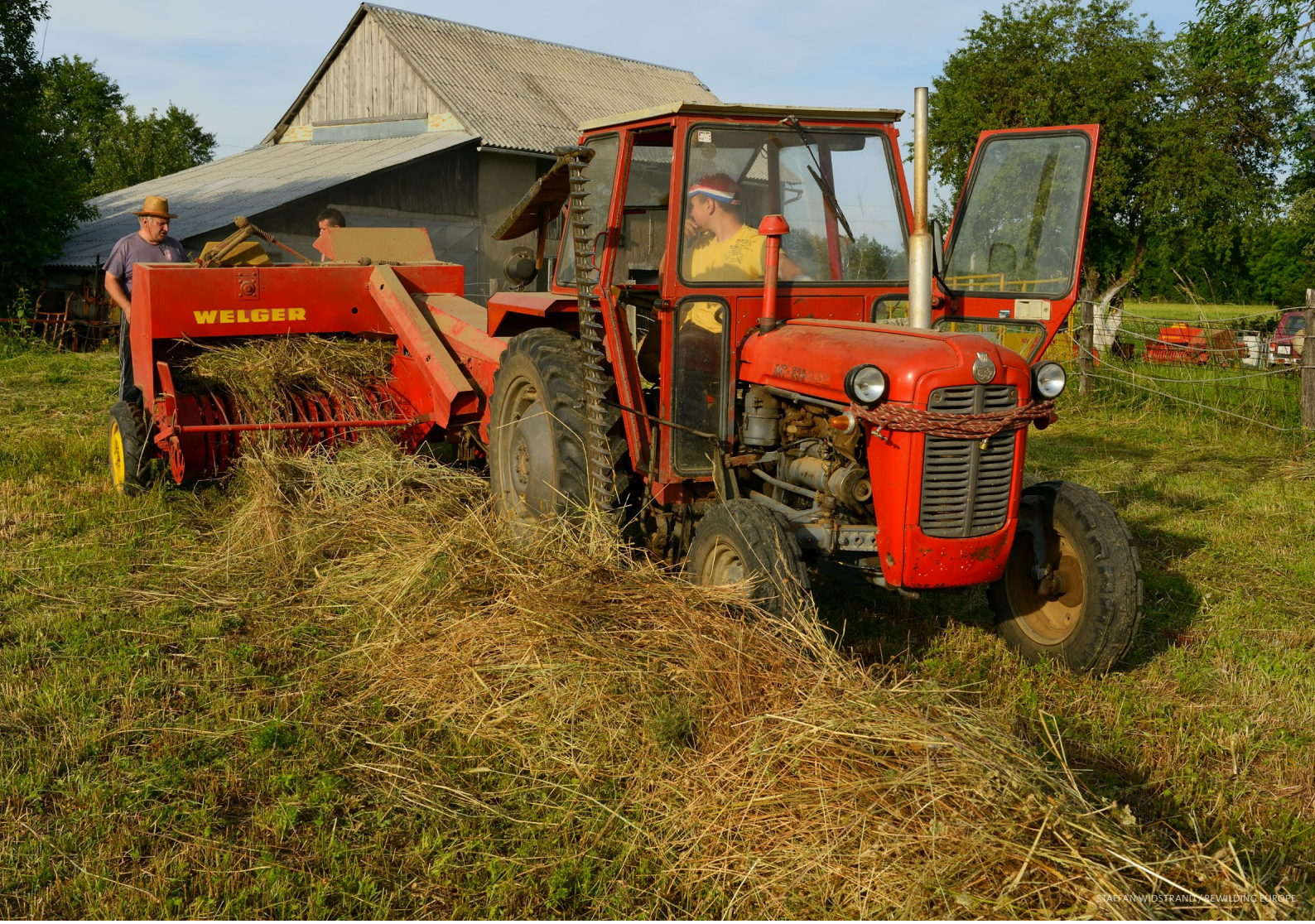
Oder Delta, farmer handling animals in wetland areas:

> ***"The biggest problem occurred when the coupled payments for animals were stopped… so that there are no subsidies for the animals anymore… therefore it is easier and more profitable for a farmer to just mow instead of having cattle! And now, we have the problem that we have a lack of sheep, shepherds, a lack of cows etc. in our ecosystems"*** (OD_6_LU).

Another issue, well known from the literature (Ciaian et al. 2014, Graubner 2018, Olagunju et al. 2019, Varacca et al. 2021) and affecting extensive grazing sector as well, relates to payment leakages and consequent a) increase in the costs for land leasing, and b) incentive for land-purchases by investors (land concentration).

Oder Delta:

> ***"land lease and purchase grow higher and higher. So, many land leasers who lease permanent grassland (have to) do organic farming, but they only conduct pseudo-organic farming, where they only conduct mowing".*** (OD_5_LU).



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A land-user in Danube Delta, Romania was mentioning as well the risk for commons, i.e. areas used by communities of farmers, due to large farmers taking over land.

Interpretation of the problem:

Both the coupling of payments with the number of animals, or with area, produce barriers for effective implementation if they are oversimplified and/or lack a clear link to (environmental) objectives. This is partly because the benefits generated by such payments do not scale up linearly with either area or number of animals, and partly because – especially for the case of coupled payments – this results in market distortions and (indirect) incentives to intensify. It is worth noting that, in the past (prior to 2013 reform) it was possible to use coupled payments for supporting extensive farming systems, but due to pressure from MSs this is no longer possible. In consequence, coupled payments should be regarded a harmful subsidy.

Recommendations

A key issue in the EU relates to the alternative futures of Coupled Payments. The only two viable alternatives are either to complete the phasing out process, as also demanded by the World Trade Organization, or to tightly link coupled payments to environmental standards and criteria – potentially even to a full transformation in the form of "negative correlation", i.e. enhanced payments for reduced grazing pressure.


STAFFAN WIDSTRAND / REWILDING EUROPE

Oder Delta:

> ***"I think especially for sheep – they are very important for ecological reasons and also for soil fertility – there a coupled payment should be invented... [but] To be honest, I think for sheep and pastoralism it is already too late. The few last shepherds are so old..."*** (OD_6_LU)

With an overall lack of clear justification for Direct Payments as a whole, combined with a stagnation of AECM (Pe'er et al. 2019, Supplementary Material) or even potential erosion in the next CAP, an even more viable alternative is to phase out Direct Payments altogether.

Lithuania, Expert:

> ***"Direct payments should be eliminated and redistributed to organic farming and extensive farming. If you pay higher payments for extensive farming and farmers see that it is no longer worth doing intensive farming, then they will switch to less intensive practices automatically."*** (LT_Expert1 (ŽP)_B28)

3.4 Cross Compliance – Controls and sanctions

3.4.1 Organic farming: Removal of minimum livestock units may result in succession or a shift to mowing regime

> ***Oder Delta: grazing "declines because the obligatory minimum density of animals, the minimum of 0,3 livestock unit / ha do not exist anymore… Therefore several farmers change their pastures into meadows which they mow."*** (OD_1_LU).

Another land-user however mentioned that the removal of this minimum unit in Mecklenburg-Vorpommern was beneficial to reduce complexities e.g. for poultry farmers and organic farms (OD_5_LU).

Interpretation of the problem:

Different opinions prevail with respect to the (needed) minimum or maximum grazing density, and discussions as to how these are calculated. From a GAEC perspective, since farmers must "maintain" the area under "good agricultural ecological conditions", they must either maintain grazing to ensure not losing the status of "permanent grassland", or mow the land to avoid succession, and, with it, loss of Direct Payments. Yet this results in potential loss of ecosystem qualities since maintenance through grazing versus mowing presents a drastic alteration for biodiversity and some ecosystem functions and services.

While Alliance Environment (2019) mentioned that some NGOs proposed to abolish the setting of minimum grazing densities, the report does not take a stand on this question.

The mixed types of inputs on this topic indicates complexity that may not be resolved without acknowledging local-scale differences – i.e. setting a minimum grazing density may be essential under some conditions but not optimal, or not enforceable, in others. Complete abandonment may lead to succession and loss of valuable grasslands, but such habitats can also be managed through active rewilding (as well as passive, monitored rewilding), namely by allowing the recovery of wild grazers, reintroduction of wild populations or by introducing semi-wild grazers. Furthermore, in some cases succession (e.g. from a formerly intensely used habitat) may be desirable (see also (Perino et al. 2019), Alliance Environment 2019).

Recommendation:

Setting requirements for minimum (or maximum) grazing management should be replaced by a broader perspective and a wider range of management options, that is more targeted toward specific habitats and objectives, and allowing complete exemptions in some habitats or conditions. Alternatively, or additionally, a result-oriented approach should be adopted more frequently, so that the requirement would be more tightly linked to the overarching objective of retaining habitats and their quality (using selected indicators), rather than how. That said, mowing should not become a priority over grazing.

Alterations of Enhanced conditionality to address such habitat- and regional specificity could be achieved e.g. by defining the aim or optimal management of grasslands (such that management through grazers is prioritised); or banning the worsening of habitat management in ecologically sensitive permanent grasslands (e.g. alteration from grazing to mowing); or allowing conditions for continuation of payments where natural succession is eligible. Another solution could be to register wild and semi-wild grazers for assessment of "grazing density".

3.4.2 Organic farms under heavier Cross-Compliance controls compared to "normal" ones.

Oder Delta (Mecklenburg-Vorpommern, Germany), organic farmer engaged in extensive cattle grazing:

> ***[We receive] "At least two controls per year, maximum was 7 controls per year. The controls are related to everything, it seems that organic farms are very often controlled as "risk farms". We hear that some farms have no control for five years, we don´t belong to these farms..."*** (OD_1_LU)

Interpretation of the problem:

Differences among farming types in terms of the burdens of CC controls may emerge, in part, from the differences in management requirements placed on these. For many farming systems under support from Direct Payments, as well as sectoral payments, the demands are relatively simple – yet the literature indeed indicates insufficient monitoring, and low sanctioning level, leading to low farmers' compliance with CC (Milieu et al. 2016). Organic farming is indeed under strict controls, contributing to the credibility of organic farmers from the consumer's point of view. According to Gambelli et al. (2012, 2014), strict certification leads to as much as 50% of organic farmers being subject to the category of "slight sanctions", that can result even from minor issues such as bureaucratic requirements like correct bookkeeping.

In addition, these controls may relate to regional authorities interpreting natural dynamic processes as potential infringements of the Cross Compliance regulation. This goes back to GAEC definitions in themselves being static, i.e., not allowing for natural dynamic processes such as succession, natural flooding and changes in grazing and foraging due to natural dynamics.

Recommendations:

Monitoring, controls and sanctions need to be more balanced across farming types, to better account for negative impacts of less-heavily-controlled farming systems.

GAEC definitions need to allow for natural dynamic processes. This can be achieved by altering the "Minimum maintenance Rule" for areas not used for production and for permanent grassland (see Section 3.1.2 "Definitions of wetlands, floodplains and peatlands"). This would reduce the risk that they would have to pay back payments to the EC. Otherwise, GAEC Regulations (Art. 12 Sect. 1) should clarify that incidents that result from natural processes should be inspected case-by-case rather than sanctioned automatically as infringements on Conditionality.

It is also important to refine mechanisms to differentiate between "harmful" and "non-harmful" infringements (e.g. based on their potential impacts).

3.4.3 Overly strict controls and disproportional sanctions

Some farmers and land-users expressed the perception that sanctions are disproportionate, or that fear of sanctions may lead to over-simplistic and consequently sub-optimal management.

Oder Delta:

> ***"regional authorities have become more and more strict related to the regional implementation of EU law, because it seems to me that the EU has a more liberal view related to these***

EU laws.". The person speculated that this is "to avoid that the EU Commission demands any subsidies back". (OD_3_LU)

"A land user can not only receive a reduction of all his subsidies as a sanction, he additionally can receive a fine where he has to pay additionally a fine which has the same amount of money as these subsidies which he had to pay back! This means that his sanction was doubled: The first half contains the pay-back of the subsidies, the second half contains the fine which has the same level as the subsidies had which he had to pay back! So, these financial sanctions can really destroy the existence of a farmer!" (OD_3_LU)

"we can [get] cross compliance sanctions for destruction of structural elements, when trees are chopped by beavers" (OD_1_LU).

Interpretation of the problem:

Sanctions may be perceived as unfair when land-users' judgement of the situation is that they were unjustified or disproportional to the situation. However, the literature actually indicates low sanctioning levels as being a key factor limiting farmers' compliance with CC requirements (Milieu et al. 2016). Thus, one needs to carefully consider whether these examples represent a broader picture or specific exceptions.

That said, cases of disproportional or even unjustified sanctions do occur, as demonstrated by the case of beaver damages, where removal of trees led to "infringement" of GAEC 9 (*"Ban on cutting hedges and trees during the bird breeding and rearing season"*). Yet it should be self-evident that a ban on cutting trees cannot be placed on a non-human actor. Therefore, such cases may indicate either a misinterpretation by administrators, or issues of trust between administrators and land-users, rather than a problem in the regulation itself.

Recommendation:

Closer interactions of both land-users and administrators, and greater engagement of external evaluators and ecological consultants, may help overcoming misinterpretations or unjustified sanctions.

3.5 Animal control and veterinary requirements

3.5.1 *Veterinary requirements for semi-wild grazers are hard or impossible to meet*

Ear tagging and marking with microchips:

A recurrent issue relates to the requirements that are placed on the management of wild and semi-wild animals, despite the fact that they graze freely. Particular burden emerges for instance from the requirement to identify, capture and ear-label newly born individuals, or to immediately replace an ear-label if it loses its earmark – tasks that are exceedingly difficult on animals that are close to wild.

An expert in the Border Meuse, NL:

> ***"grazers are not farm animals and with subsidies they get the label of farming animal… "Especially the earmarking within 7 days is a bottleneck if treated like a farm animals. [we have] arranged with the ministry of LNV [Agriculture, Nature and Food quality] that this only needs to be done once a year. Jointly with the DNA sampling. Also when a farm animal loses its earmark it has to be replaced immediately. Not with these seminatural grazers."*** (BM_3_EX)

To avoid the barrier, they avoid applying for CAP support, and instead are supported in fulfilling nature goals. In consequence

> ***"We have no financial connection and are more free [compared to others who receive CAP payments] in that sense. They come less often for inspection to our herds and they cannot put us under pressure by threatening to reduce the subsidies if they do not agree with our management. It is more a conversation on equal basis in that case."*** (BM_3_EX)

Oder Delta:

> ***"If a farmer has semi-wild animals, for example a water buffalo living in reed, and when he sees that a water buffalo cow must obviously have born a calf, it is impossible for him to drive into the reed and to put earmarks on the calf, because within the reed the farmer can nearly see nothing, so it can happen that he kills the calf by accident"*** (OD_5_LU).

> An expert (administration) confirmed that ear marks/tags are ***"especially difficult for farmers who conduct grazing the whole year round"*** (OD_4_EX).

Another farmer from the Oder Delta was mentioning the combination of tight regulations and harsh sanctions is exceptionally difficult to address for pasture-grazing animals.

> ***"if an animal misses its earmarks – or if a farm announces too late the death of an animal or the selling of an animal", one gets "1 % less subsidies for the whole area and for the whole year, and the farm is labelled as a "risk-farm". – If this happens again in the next year,… the farm receives additional 3 % less subsidies for the whole area"*** (OD_6_LU).

> ***[If] "an animal lost its earmarks because of bushes or thorns, the farmer loses between 1 and 3 % of all subsidies for his whole area… And if an animal has left the farm [or died but] the farmer does not [report within 7 days], all his subsidies for his whole area, including subsidies for nature conservation and everything, are reduced between 1 and 3 %… [This] is a much too high fine."*** (OD_6_LU).

Land-users from Galicia, Spain, reported that, beyond the difficulty to place microchips on semi-wild ponies, a challenge especially for people using commons is that some owners do not place microchips on their ponies, in order to avoid exceeding the allowed quotas.

Interpretation of the problem:

These examples represent a broad challenge, with various examples reported across case studies within GrazeLife (e.g. Lithuania) and beyond it. Generally, the requirements are not well-adjusted to the real-life challenges of marking and following semi-wild animals, as well as insufficient acceptance of the natural dynamics of their changes in densities and ecological impacts. Notably, the EU does allow for exceptions regarding identification (microchip) of semi-wild grazers such as ponies, but the decision resides with national authorities, which are often reluctant to consider or allow such exceptions (as reported, e.g., in Galicia). The issue is thus primarily with interpretation and implementation.

Recommendations:

The requirements with regards to the timing of animal marking needs to be adjusted to the special circumstances of wild-grazing animals. The number of marking events and timing of controls may best be determined jointly with experts rather than defined a-priori in the regulation. The eligible grazing quotas may also need to be adapted given seasonal changes and differentiated impacts of different animals, to allow more flexibility for adaptations to local conditions and animals. This should optimally be clarified by the Commission when guiding implementation by the Member States (e.g. during approval of Strategic Plans), as well as improved at the national level.

A land-user from the Oder Delta recommended that:

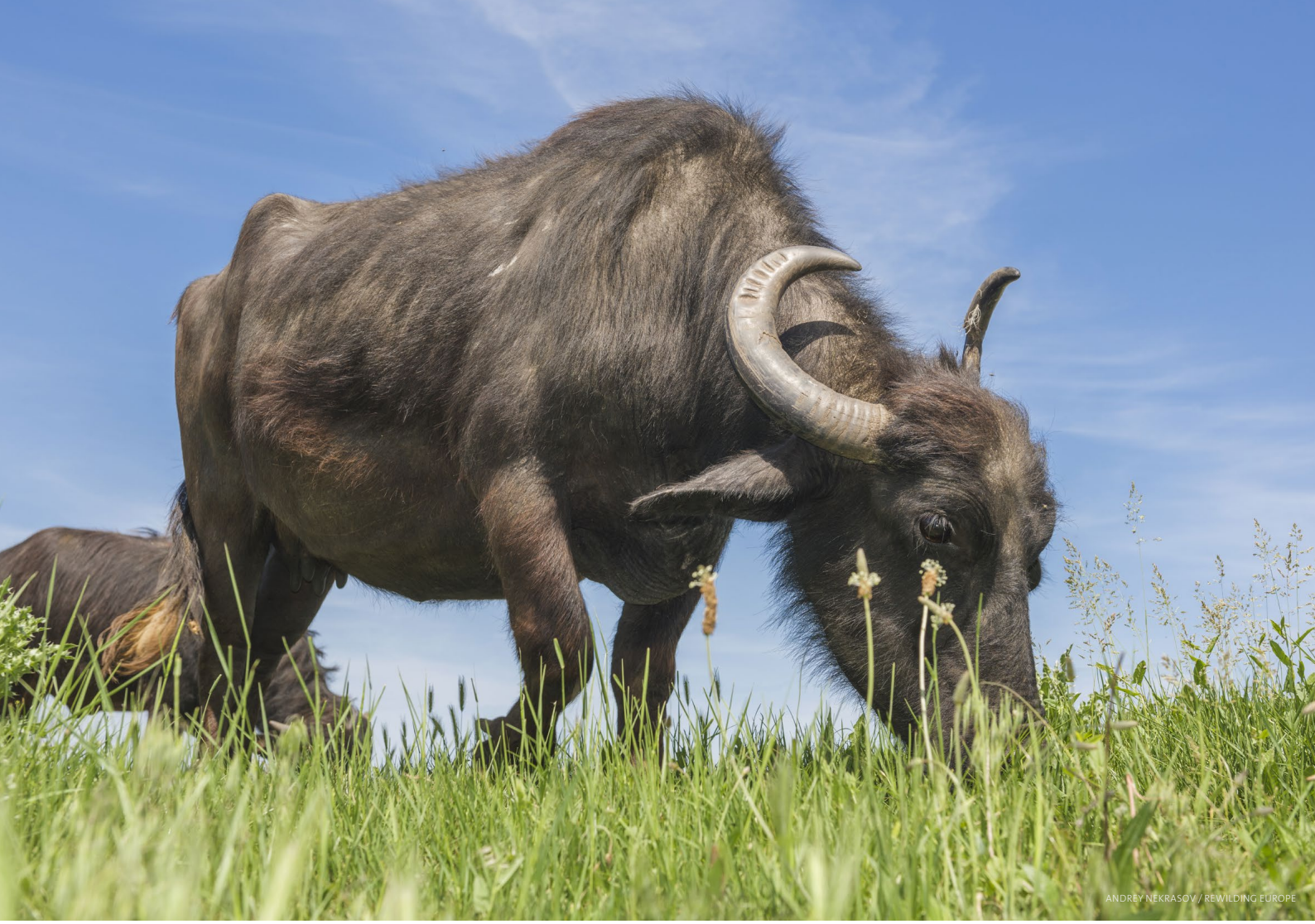
> ***"- Earmarks need to be put on the animals 1-2 times per year, but not more often***
>
> ***- Every animal which leaves a farm for sale of course must have earmarks***
>
> ***- When a calf gets an earmark, a piece of its skin is always automatically taken to check whether it has BVD [Bovine viral diarrhea virus], this check is already conducted today in every case. Therefore I would also like to suggest that this piece of skin shall also be used for a DNA-test"*** (OD_5_LU)

3.5.2 Veterinary requirements and the use of deworming agents

The system of veterinary guidance and control places a constraint on farmers who want to minimise the use of deworming agents on one hand (not wanting to apply to all animals), and places burden on veterinary on the other hand (i.e. a specialized visit per single animal if ill).

Oder Delta, organic farmer:

> ***"our organic farming controller was putting us under pressure … [he] tells us …we are not allowed to use this medicine for another animal [although] it is easy for us to see which animal is ill … The veterinarian agrees in this proceeding, [which] is also actual state of the art in science. But the organic controller [opposes this procedure and demands that we] "dispose this medicine after use, and when the next animals are ill, we shall ask again the vet to come. But we don´t want to dispose the non-used medicine, and we also don´t want to apply the medicine to all animals. But … we have fear that the organic farm controller applies a notation!".*** (OD_5_LU)


ANDREY NEKRASOV / REWILDING EUROPE

Interpretation of the problem:

The situation described in the Oder Delta example is an important point in case, resulting from the tension between veterinary capacities, accessibility, and farmers' needs. Farmers and land-users, especially in less accessible regions, cannot be supported for inspection of every single animal for inspection. If they are not allowed to employ medicine by own observation, the only alternative is a sweeping use of deworming agents to entire herds. Indeed, the quantitative section of our GrazeLife interview demonstrates that most farmers and shepherds use deworming medicines by default.

There is an increasing bulk of evidence indicating a major ecological impact of this management. For example, Verdu et al (2018) found a stark impact of Ivermectine, the most commonly used medicine, on insect fauna in manure.

The ecological impacts of over-using deworming agents in livestock management may well be underestimated. From interviews conducted by ARK, most herd managers are also not aware of self-medication that can be achieved through eating deworming herbs in their fields.

Recommendation:

Deworming agents need to be included in the EU's Green Deal targets for reducing chemical use in agriculture. Clear guidelines and regulations must be employed that go beyond AECM and organic farming, and reach a clear and coherent strategy in terms of a) a critical reduction of the use of deworming medicines in protected areas, b) minimizing use to semi-wild herbivores, c) offering significant training for land-users for recognition and careful application of agents, and d) allowing more flexibility for land-users to take better responsibility in their application – possibly with close

consultancy. Monitoring of deworming use must be improved as well. Organic (herb based) alternatives for chemical anthelmintics must be sought, especially for herbivores in more intensive grazing systems. A land user in the Oder Delta expressed that ***"we need more freedom related to the application of medicine"*** (OD_5_LU) – but obviously, such freedom needs to be granted under specific conditions, in a way that would help reducing and targeting their use.

3.5.2.1 Inconsistencies in veterinary regulations affecting cross-border grazing

In several parts of Europe, relatively-free roaming herds of livestock are approaching national borders or crossing them. One example provided by GrazeLife (ARK Nature and Meissner 2020) is the case of the floodplains of the Dutch/Belgium river Meuse. As veterinarian rules are often different between countries this situation causes serious problems for the owners of the livestock. Despite being one (seemingly) coherent nature reserve at both sides of the border, these veterinarian differences force herd-owners to take action to avoid the mixture of herds on both sides and restrict their natural behaviour (e.g. dispersal or mate-search behaviour (link), such as by installing fences.

It was further reported that the different veterinarian rules on two sides of a border generates frustration and reduce the ambition to create larger connected nature areas in which herbivory plays an important role in structuring the natural landscape.

Recommendations:

Align veterinarian regulations at the EU level to avoid conflicts for neighbouring countries. As long as this is not achieved, special status is necessary for transboundary conservation areas, to generate a coherent regulation for the management of grazing areas and the animals therein.

Some individuals and organizations also proposed that semi-wild animals should be granted the status of "wild". We note that this may entail a potential loss of support by CAP subsidies. Alternatively, easing the veterinary requirements – something that could also be beneficial for domestic animals under extensive management (as well as small farmers), may be a more efficient alternative, especially if employed in a joint process with consultants, rangers and relevant agricultural- and nature-conservation authorities.

3.6 Other CAP instruments

3.6.1 Sectoral payments (e.g. for biofuels) and (production-oriented) investment measures leading to land-use intensification or poor management

Competing CAP instruments may lead to increasing pressure on land – particular, support for the production of feed and fuel, as well as sectoral subsidies without environmental criteria attached to them. In the case of grazing, main impacts are land-use intensification.

Land-user, Lithuania:

> ***"...some farmers try to get as much as possible from the land and due to subsidies grow crops such as rapeseed. Then they fertilize a lot. Now with some changes and additional payments they started to sow in some radish or mustard seeds as catch crops to get payments ... they learn to bend the rules to cheat the system."*** (LI_2_LU, meat cattle farmer).

Experts, Lithuania:

> ***"Looking at the trend of a longer period, ... while plots are being taken back from abandonment, it is usually done only for the sake of getting payments, as no real production is being produced, for example, the ameliorated wetland is being sown by several cultures and then the yields is not harvested, the fields are ploughed again. Some of the grasslands are only mulched. So it is an imitation of agriculture".*** (LT_Expert3(OG)_D10).

> ***"now as support payments increase, it becomes financially viable to farm in poorer lands again. But they do that mostly for payments and sow buckwheat crop which is suitable for poor soils and sometimes do not even harvest the yield but only collect the payments".*** (LT_Expert5(PK)_F10)

> ***"After the EU began support, payments, declaring land and buying tractors. Some went in the direction of intensification, others in the direction of abandonment and the third in the direction of afforestation of inefficient agricultural areas. In the middle of the country is very productive land so there intensive farming developed, practically no more natural meadows left there, only small areas in the Nevėžis and Dubysa valleys."*** (LT_Expert1(ŽP)_B10)

Interpretation of the problem:

CAP instruments that are not designated toward nature conservation have a broad range of environmental impacts, some of which negative. These, however, are difficult to trace and evaluate (Milieu et al. 2016, Pe'er et al. 2017, Alliance Environment 2019). In the CAP post-2020, enhanced conditionality may potentially address the case for wetlands (GAEC 2), and may improve the situation for sectoral payments, but is unlikely to affect productive investments.

Recommendation:

The need to eliminate harmful subsidies has been part of the Convention for Biological Diversity (CBD) and generated much criticism on the CAP, focusing particularly on Coupled Payments, productive investments and sectoral payments (Pe'er et al. 2019,2020). For an effective improvement of the status of grazed habitats, GAECs 1, 2, 9 and 10 should be retained as proposed by the Commission, or expanded as discussed above. A reference to GAEC standards may need to be added in the conditions for payments, or demanded from the Commission at their assessment of Strategic Plans.

To address the knowledge gap on the impacts of several CAP instruments on land-management, in-situ monitoring needs to be expanded especially for biodiversity – and resources allocated to this aim need to be expanded (see, e.g. Geijzendorffer et al. 2016)

3.6.2 Investments

The use of the "investments" instrument of Pillar 2 has been mentioned by several land-users, however, usually without an indication of the impact of these payments. In most of the cases, it seems that "non-productive" investments have been used as additional instrument toward land-management and restoration aims. These, according to the literature, should have a generally-positive impact on biodiversity (Alliance Environment 2019).

Example Lithuania:

> ***"Receives direct payments, payments for organic farming and extensive grassland grazing, investment support"*** (LI_5_LU)

Expert, Lithuania:

> ***"An investment measure has started in Lithuania to support farmers to buy and install fences of all kind, to prevent from wolf attacks. ... I think the measure is quite successful."*** (LT_ExpertI(ŽP))

Nonetheless, at least one farmer in Lithuania, engaged in (intensive) dairy farming and receiving a mix of AECM, ANC and "investment" support, mentioned hurdles relating to changes in cattle density, including when one may want to reduce grazing intensity where this is needed and beneficial.

> ***"Due to the money you receive from projects [GP/EM: likely, investment projects for farm and machinery modernisation], you are not flexible to change the way you farm and reduce your cattle head count or area size. It is difficult sometimes and does not make a lot of sense because what if it's a draught season and you have no possibilities to feed the cattle properly, why are there restrictions on the headcount?"*** (LI_1_LU, Dairy farming company)

3.6.3 Areas of Nature Constraints (ANC)

Only few land-users mentioned ANCs as one of the sources of funding, especially in Lithuania. However, these usually did not highlight specific challenges relating to the instrument itself; rather, a change in funding possibilities.

Lithuania:

> ***"in our region, payments for less-favoured areas have been stopped"*** (LI_7_LU, organic beef cattle farmer)**.**

Project partners from Lithuania are reporting a key challenge with payments for ANC, where in the eligible areas, where soil fertility is lowest, farmers are eligible to ANC payment in addition to other payments depending on their agricultural practice. Attempts to reiceve the highest possible payments from CAP, with least effort in terms of management, is an important driving force for agricultural pracices in the area. From this perspective it may be more profitable for farmers to do crop farming in these areas because these payments combined give high returns – so that even if yields are low, it is still easier to engage in subsidised crop farming than keeping livestock and (extensive) grazing. This results in a situation that the grasslands are often ploughed for crop farming in these areas due to more attractive subsidy option. The possibility to receive ANC payment in arable lands thus stimulates pressures on grasslands and leads to increasing soil errosion.

3.7 Handling of, and compensation for, human-wildlife conflicts

Problem: aid for prevention measures not sufficient

Land-users in several case studies indicated the prevalence of compensation funds for damages, but insufficient support to prevent these damages – either in terms of eligibility criteria, or conditions to provide the support.

Oder Delta, Germany:

> ***"Prevention measures are only financed when I can prove that a wolf attack already happened on my farm. This is totally crazy: When the animal is already dead, I receive money for prevention!"*** (OD_1_LU)

See also: https://wolf-mv.de/schutz-vor-uebergriffen/

Another example from Bulgaria shows that free roaming horses and cattle learn to defend themselves against wolves, with less losses (see: https://grazelife.com/blog/herbivore-societies/). However, improved support is still sought.

Bulgaria:

> ***"people who practice more natural friendly livestock breeding should receive more money ...And also compensations for wolf damages"*** (RM_3_LU)

Lithuanian experts mentioned, however, that improved measures are taken for prevention, and yet, wolf damages should first and foremost be under the farmers' responsibility – i.e., to use RDP support more effectively to protect their sheep. It was mentioned that the problem is less relevant for cattle farmers as wolves avoid bulls.

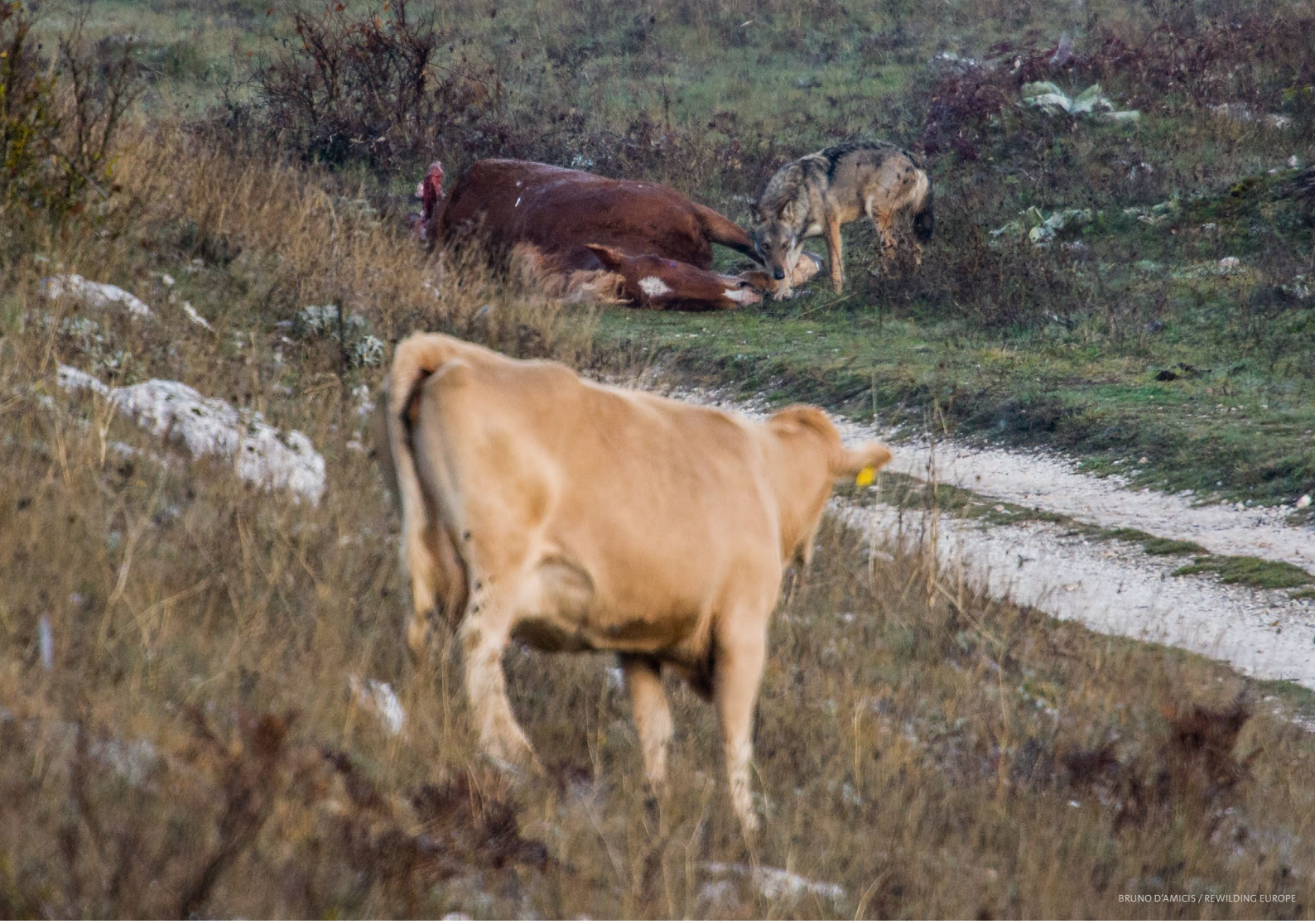
> ***"It is a farmers' problem not wolf's... one must insure or install better protection measures (e.g. appropriate fencing). ... If the fencing is insufficient, the farmer must be responsible for installation of a more powerful one; if one shepherd is not enough, hire five. But it is the farmer who must take adequate action. They receive funds from the RDP, etc. but want to invest the minimum amount ... They must take responsibility for investing more in the protection of their livestock, and stop blaming wolves. It is certainly not a wolf problem. Wolves are hunted, we cannot drive them to extinction for sheep. ... Also it is not common for a wolf to attack cows."*** (LT_Expert1(ŽP))

> ***"An investment measure has started in Lithuania to support farmers to buy and install fences of all kind, to prevent from wolf attacks ... Farmers in certain municipalities can get this support. It seems that it helps farmers to some extent ... I think the measure is quite successful."*** (LT_Expert2(AP)_C26)

Interpretation of the problem:

The example of Lithuania demonstrates that the problem of insufficient support, or ineffective regulation regarding support-provision, is a regional problem, i.e. results from the way in which the regulations are interpreted and solutions implemented, rather than an EU-level problem. However, it may indicate lack of sufficient guidance by the EU as to how to address such cases.

The Bulgarian and Galician examples indicate at the possible evolution of innovative co-existence between herbivores and large predators, where herbivores either learn to defend themselves or reach a certain equilibrium in areas with relatively high densities of large predators. Financially, this may lead to lower dependency on compensation-measures.



BRUNO D'AMICIS / REWILDING EUROPE

Recommendation:

Taking lessons from areas of the world where predator populations are much higher (e.g. Canada), investments should be made into education, training and prevention measures. Member States should be asked to demonstrate in their Strategic Plans how compensation measures are allocated and applied, and how they support the expansion of grazing models – legally and financially – that rely less heavily on fences and guarding dogs, and more on acceptance and long-term resilience of herbivores where these are less vulnerable for predation by large carnivores. Such support can be allocated through investments, AECM and Eco-schemes, depending on their specific aims and benefits.

3.8 Conflicts with forestry

Grazing is important for the structuring and functioning of forests, as highlighted by an expert in Lithuania:

> *"Recently we did habitat inventory in Punia forest and mapped a number of one of the most valuable ancient habitats there such as very rare Fennoscandian wooded pastures (habitat code 9070). … The development of these habitats stopped because the deer grazes down sprouting trees, but there is no species that would graze down the grass. If it would be grazed then the plant diversity would recover. … Dūkštai oak forest is only the result of grazing. People used to graze there. Oaks are light-loving trees, and animals do not like to eat them, they eat the surrounding shoots of other trees and provide conditions for oaks to grow. Grazing forms a park-like landscape with old broadleaf trees and grass cover."* (LT_Expert4(VU)_E11)

However, investments in forestry and afforestation compete with other land uses such as grazing areas by semi-wild animals, with both ecological and economic negative impacts. In some cases, however, support for agroforestry and forest management is important for land management, but is insufficient.

For instance, land-users in Galicia, Spain, reported of problems with forestry in areas where semi-wild ponies are grazing:

> *"Subsidies for forestry… condition certain forestry systems very focused to production… This is a recent production model and they say that the subsidies are promoting this models with a minimum density of trees per ha which they consider very high to be compatible with the pony grazing."* (GA_3_LU).

A land user involved with afforestation (forestry) indicated it as being chosen due to economic criteria:

> *I "would prefer other models, but the afforestation for eucalyptus timber production is the most profitable and that is what people want"* (GA_4_LU).

Another person, involved in sylvopastoral forestry, mentioned that subsidy levels are far too low:

> *"little subsidy for forestry: silvicultural works to reduce the risk of fire. Just 10% of the cost. They pay 90% of the work". Yet the same person commented that "they are actually no subsidies, they pay for works [such] as shrub cutting, trees pruning in order to reduce the risk of wildfire."* (GA_8_LU)

Lithuania, experts:

> *"After the EU began support, … Some [farmers] went in the direction of … afforestation of inefficient agricultural areas."* (LT_Expert1(ŽP)

> *"There were large areas of abandoned land. Ten years ago, when they changed the laws allowing changing land use in areas overgrown with woody vegetation to arable land, the farmers noticed that they can get a benefit for cutting young forest not older than 20 years, and change the land use type into agricultural land. As a result the abandoned areas that were overgrowing with forest were transformed into agricultural land and almost disappeared. … it is more expensive to keep the forest on the former agricultural land, because then the land is considered abandoned. This is [one] incentive to cut the young trees. [The other] incentive mechanism [is that] if you do not want to cut down the regrown forest, you have to change land use type … [and] make it formally a forest. … where farmers are rich or*

the land is poor and unproductive, there is a tendency to change the land use category to forest. New farmers tend to cut the forest" (LT_Expert5(PK)_F10)

"Currently grazing is allowed in private forests, except for young forests that are up to 20 years. It is prohibited in state forests, except in cases prescribed in nature management plans. … Private forest owners avoid allowing grazing but sometimes patches of young forests are enclosed in pastures". (LT_Expert4(VU)_E11)

Interpretation of the problem

CAP support for afforestation and forestry exists through several instruments. One problem is that, basic definition of a "forest" does not differentiate natural forests from forestry areas – resulting in the exclusion of grazing in so-called forests to avoid damages to trees. An additional problem is a lack of overarching guidance as to best use of abandoned land – with forestry as one option to re-use landscapes for production. A lack of prioritization, according to both ecological and economic criteria, may lead to suboptimal land-use, reducing biodiversity and ecosystem services and potentially leading to fewer beneficiaries benefiting from the land. A particular problem is the creation of densely-planted monocultures, de facto functioning as plantations, instead of resilient (mixed-woods and/or more open) habitats where both herbivores and humans manage the land.

Forest subsidies in the CAP, especially under the proposed change to make only the forestry sector eligible for support as "forest holders", create an uneven playing field between strategies that lead to more intensive wood and pulp production compared to strategies that also focus on other values of forest (biodiversity, landscape and recreational values, carbon storage).

Recommendations:

Afforestation efforts need to be clearly separated from forestry, to avoid either confusion or conflicts between restoration efforts and the interests of an economic sector. This applies both to the CAP and the currently-developing forestry strategy.

It is highly advisable to offer support levels (through AECM, payments for forest holders or even Eco-schemes) that generate a level playing field between active afforestation (by planting trees) versus the (much more cost-efficient) spontaneous reforestation under wild and semi-wild grazing. If a pro-rata subsidy for spontaneous reforestation will be added to a pro-rata subsidy for grassland (as earlier mentioned) it will make land-users/owners more relaxed about the natural dynamics between these two landscape types in a more natural grazed system. This can lower the threshold to implement a management model which serves more ecosystem services.

Galicia, Spain:

"Subsidies to forestry that not promote a forest management with such high densities that interacts negatively with pony grazing". (GA_3_LU)

Danube Delta, Romania (Land-user):

"allow grazing in forest" (DD_1_LU).

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3.9 Changes in the CAP between funding periods

The CAP reform of 2013 introduced a range of changes to the CAP, including the installation of greening measures into Pillar 1 (of which the protection of permanent pastures is the most relevant for the case of grazing), the expansion of Pillar 2 measures to cover a larger set of options (and with it, a change from AEM to AECM), but also changes in the total funding for AECM.

When asked to compare the previous to the current funding period, land-users frequently indicated that the ***"previous payment period was definitely better"*** (OD_10_LU).

Specifically with relation to the management of rewilding efforts, an NGO-representative, managing a wilderness area in the Oder Delta, mentioned that

> ***"The period 2007-2013 was more favourable than the current one [because] The subsidies were higher, there was no degressiveness. The agri-environmental scheme was closer to the environment than to the agricultural economy", and "the previous period was better for grazing"*** (OD_13_LU).

Oder Delta, expert:

> ***"From the farmer's and nature protection's point of view, the previous period (2007-13) was better"*** (OD_7_EX).

Rhodopes Mts., Bulgaria, land-user working with rare (semi-wild) cattle breeds:

> ***[in the current MFF] "They decrease[d] the subsidies [so] it is not enough"*** (RM_4_LU).

Oder Delta, with respect to Direct Payment:

> ***"...worsened the conditions for receiving payments in the current period" [for semi-wild animals by] "eliminating the possibility of cattle grazing all year round. This forces us to move animals to areas not covered by payments. It is not easy because these animals are considered almost wild at the moment"*** (OD_9_LU).

Changes in definitions and regulations have also led to exclusion of formerly-eligible areas resulting in sanctioning by the Commission, e.g.:

> ***"the EU Commission demanded money back from Greece, not only because the land parcels were mapped inappropriately, but also because the vegetation of these areas did not fit to the older EU regulations".*** (OD_3_LU)
> (see European Court of Justice (2019))

A decrease in subsidies for environmentally-friendly farming (extensive grazing) has been described also in Lithuania:

> ***"The subsidies are a very important part of the income, but it is declining, seven years since it started and the money at that time was higher. We have formed an environmental farm association and we are trying to influence the policy making because many people do not care about the environment. There would be no environmental protection without subsidies. Many farms are now switching from dairy farming to beef cattle and so on. ... Currently, support for environmental farming is inadequate and does not support such a farm even in terms of fuel. Not only you have to care about the environment, but you have to buy taxed fuel and pay taxes to the state."*** (LI_8_LU, manager of feed production company)

Changes in eligibility for specific support by AECM:

> ***"in the past the agri-environmental scheme for "nature-conservation-adapted use of grass-lands" existed; – which had 400,- Euro / ha ; – and which was more flexible, farmers could talk with the responsible biologists and agree together with them where and when grazing***

and mowing could be conducted; – and this agri-environmental scheme could be applied also in more areas, this agri-environmental scheme was good." [I] "understand that this agri-environmental scheme is now focused on these areas of highest priority for nature conservation, so that it is more effective." (OD_6_LU)
– but consequently, no AECM option was relevant to this person.

Some farmers, however, described improvements over the recent (2013) reform.

Lithuania, organic beef cattle farmer:

"The requirements are now not as tight as they used to be." (LI_7_LU,)

Oder Delta, land-user involved in extensive grazing:

"it is better for me that the stocking density per hectare is slightly higher than in the previous period. In addition, in the current program the mowing dates are better – from the production side. You can mow these meadows a little earlier and collect better hay." (OD_12_LU).
We note here that, in this case, the changes seem positive from the farmer's perspective (production), they do not seem favourable from an environmental perspective.

Lithuania, a reduction of the availability of relevant funding, e.g. Areas of Nature Constraints (formerly Least Favoured Areas):

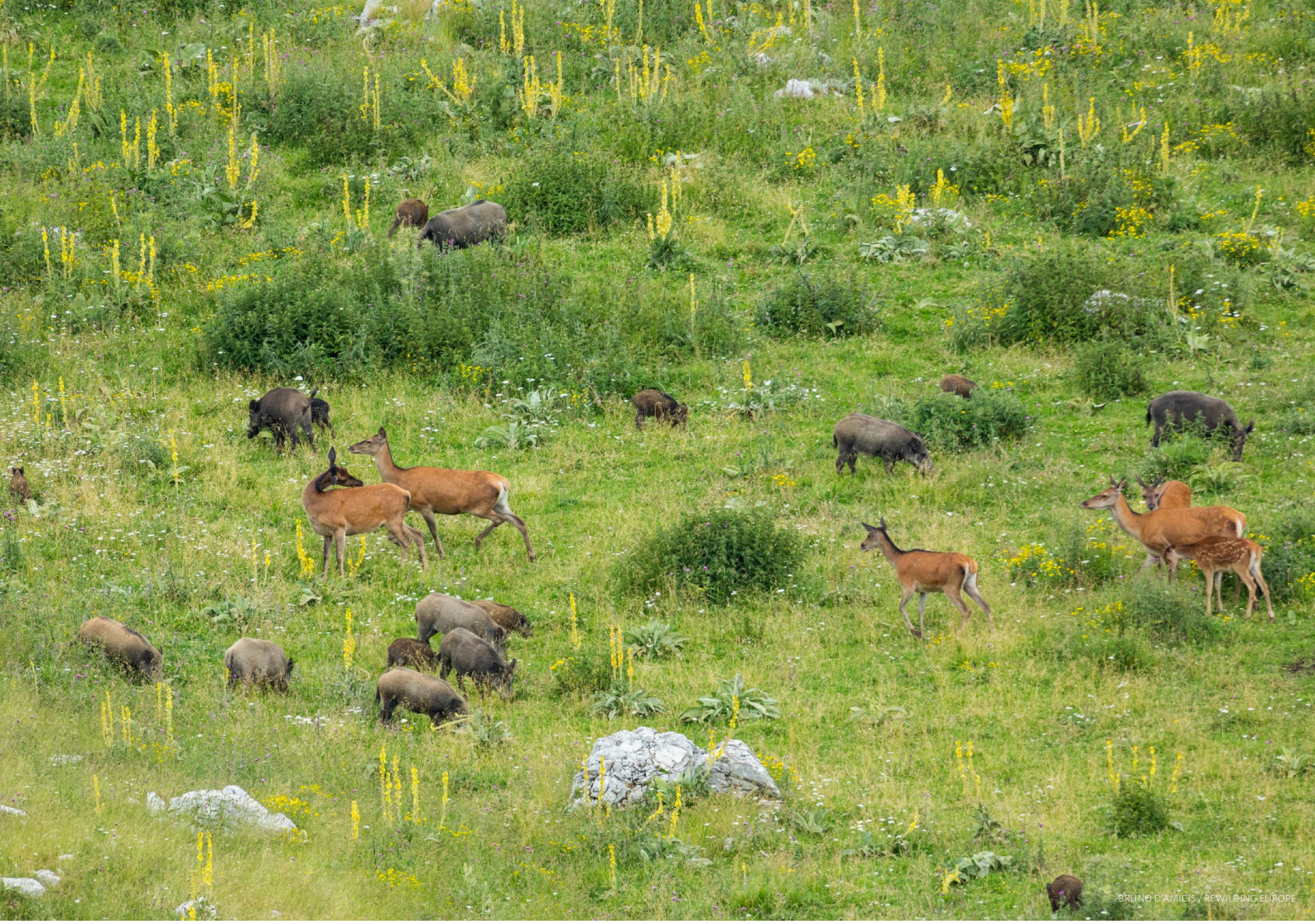
"Projects are ending, some payments are being cut off, for example, in our region, payments for less-favoured areas have been stopped" (LI_7_LU, organic beef cattle farmer)

Lithuania, manager of a feed production company:

"In the past, the support used to cover the costs, but now some amount was reduced or taken away. The taxes and profit tax increases, so profitability is close to zero. All the current changes are only making things worse in Lithuania. Agricultural policy is such that environmental protection is unsupported because environmental farmers are seen as mulchers, sofa farmers and so on. Natural meadows will be in a bad position as farmers grow older, requirements increase and farming becomes difficult as the number people in the countryside decreases. It is very difficult to invest and expand as the cost of the equipment varies, everything goes up, rent goes up, land tax goes up and so on, the support amount doesn't change and there may come a time when you will not pay off to do farming." (LI_8_LU, manager of feed production company)

Interpretation of the problem:

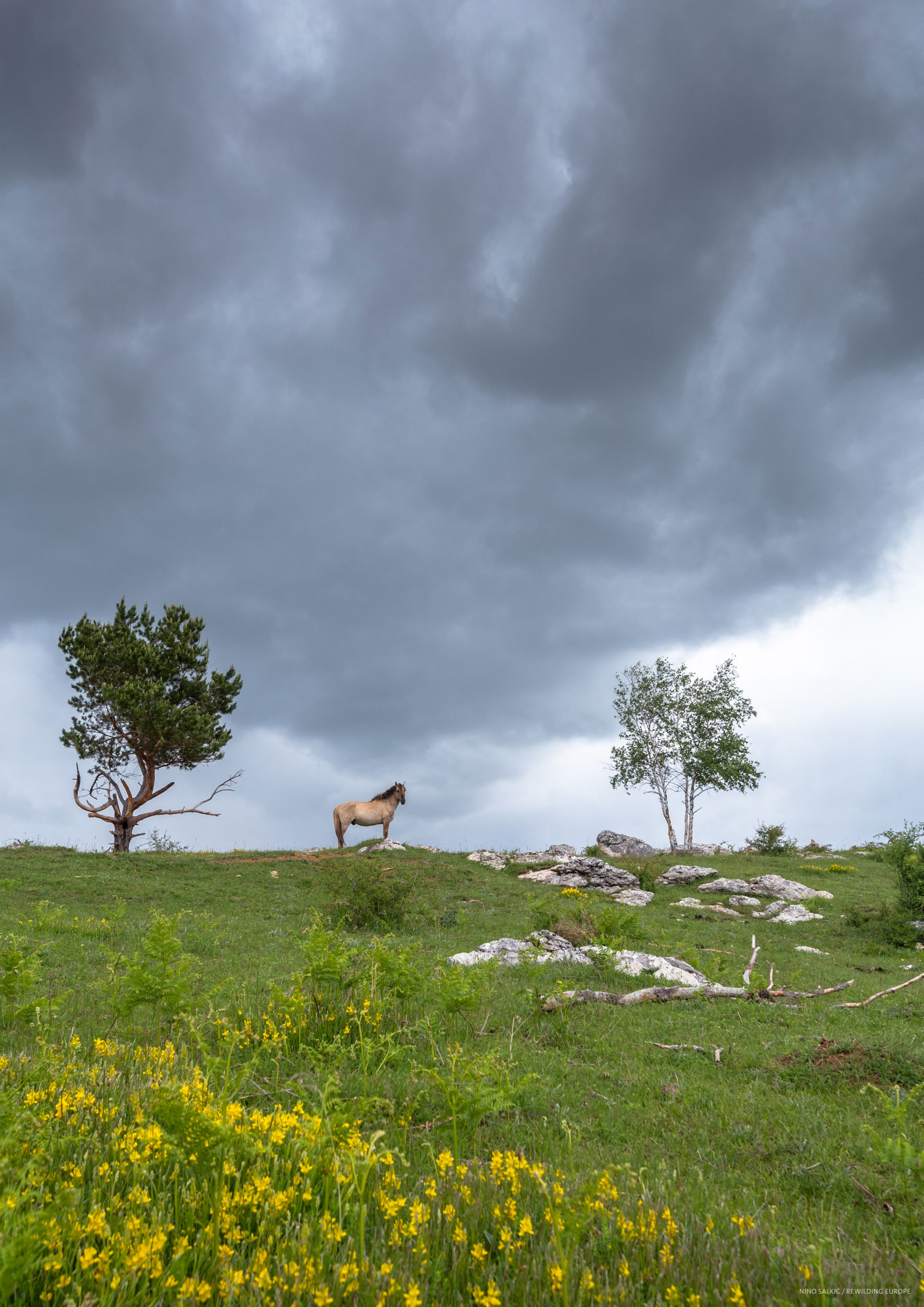
The combination of comments and perceptions presented here depict an interesting overall picture where the 2013 reform may have generated worse, rather than better, conditions for biodiversity in general and extensively grazed systems in particular. The 2013 reform placed a key emphasis on the Greening of Pillar 1 (Direct Payments), yet the introduction of greening measures have seemingly resulted in the worsening of conditions along several other lines and instruments. Analysis of the greening measures already pointed at a weak design with respect to grasslands (Pe'er et al 2014), primarily focusing on area rather than quality; yet a greater concern, verified in later analyses, was that MSs may reduce their financial investments in AECM and designated payments for Natura 2000 (Pe'er et al. 2017) – resulting in a narrowing rather than broadening spectrum of programs to apply for. Moreover, the interviews here suggest additional burdens in terms of reduced flexibility, tighter controls and sanctions, and thus an erosion of the attractiveness and profitability of engaging in extensive grazing systems. We note that the above-mentioned changes in "Areas of Nature Constraints" relates to decisions made by Member States, using the flexibility which the MSs have with regards to CAP implementation.



Recommendations:

A call for expanding budgets for Pillar 2 (and AECM therein) has been repeatedly made by scientists (e.g. Pe'er et al. 2019, 2020, Guyomard et al. 2020). The changes in habitat definitions as proposed by the Commission (EC 2018), and the proposal to enhance flexibility to MSs with respect to implementation, may lead to some improvements over the next funding period. It is therefore highly recommendable to retain the Commission's proposal, to enhance efforts and budgets for knowledge-support (to allow more flexibility and adaptability in implementation) and to ensure that Eco-schemes operate in a coherent and complementary way to AECM, bringing about a synergy among instruments of the CAP's Green Architecture.

For wild and semi-wild animals, land users called specifically to restore the option of supporting year-round grazing (e.g. OD_9_LU). Another land-user proposed to establish a subsidy for non-use (OD_3_LU), since any farmer or land user managing a wilderness area has a clear loss of income from this part of the land. This recommendation is also in line with other calls to expand eligibility of CAP support to farmland habitats that are listed in the Habitats Directive but are currently not eligible for support. Possibly, a payment at the farm level that better accounts for such non-productive elements (in line with GAEC 9) can fall into the category of "lost revenue" and thus fitting as an option in AECM, payments for Natura 2000 or Eco-schemes. See also Merckx and Pereira (2015)



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3.10 Other CAP-related challenge: Instability due to land rentals

Many farmers and land-users are using a land which is rented on the basis of a yearly contract. A land user in Rhodopes mountains, Bulgaria, receiving subsidies for rare breeds (AECM), reported:

> ***"we cleaned around 40 deciares – we hired gypsy loggers to cut it and on the next year this area was rented to another person". The outcome was a large investment in time and actual expenses that was fully wasted. This is because the contracts for rent of pastures are for one year only.*** (RM_2_LU)

Interpretation of the problem:

The requirement to clear a biodiverse scrubland of its scrubs, relates to suboptimal grassland definitions (as highlighted above) generating detrimental ecological effects. Yet the fact that the land-rental contract has been discontinued, represent a broad problem for many farmers and land-users – which generates, among others, a barrier to their engagement in AECM. The introduction of Eco-schemes may allow farmers and land-owners to engage in one-year activities, yet notably, many ecological benefits – especially in grasslands – are still achieved only through continuity of good management over a longer time period. Thus, the problem of short-term contract requires a solution beyond the CAP.

Recommendations:

Beyond the recommendation to avoid operations that are evidently detrimental to sensitive habitats, it is highly advisable to ensure that land-use operations, e.g. for habitat restoration, are encored (where needed) with longer-term contracts. In cases of leased land, it may be needed to find a way to establish contracts that include the land-owners – to ensure that such operations are not reverted or remain unused, resulting in lost efforts and financial investments.

3.11 Other policies and directives

3.11.1 Birds and Habitats Directive

A range of interviewees mentioned the Birds and Habitats' Directive as important factors for management requirements and guidelines. Many of them also operate, fully or partly, within Natura 2000. Indeed, the requirements set by these directives are often defined either directly (e.g. through regulations in Natura 2000) or through the AECM, or CAP payments for Natura 2000, that farmers and land-users can apply for. Moreover, some of the Cross Compliance (GAEC) requirements are directly related to the Nature Directives and Natura 2000 areas. Accordingly, these have been frequently mentioned by interviewees. Examples

Lithuania:

> ***"There are deadlines for grazing, mowing. Also grazing density restrictions 1SLU/ha. Grazing starts from may 1st. Mowing is allowed from july 15th. The delayed mowing is important for corn crake populations. Before these requirements the mowing used to be in june and then a lot of chicks used to die because they were still too young and unable to escape the machinery".*** (LI_8_LU)
>
> ***"The main aim is to maintain habitats, to mow on time, to take care of the birds, to allow them to hatch."*** (LI_8_LU)
>
> ***"Restore and maintain habitats in wetlands, Natura 2000 sites and to conserve aquatic warbler and other species"*** (LI_3_LU)***.***
>
> ***"Mowing dates, grazing density must not be too high, meadows must not be ploughed, mowing must be delayed until July 15, fertilizers must not be used in natural meadows, all sorts of requirements"*** (LI_8_LU)

Oder Delta:

> ***"We have a core zone of 130 ha which totally dedicated to nature conservation as part of a compensation measure. In this core area the agency which administrates the compensation measure defines what we have to do".*** (OD_1_LU)
>
> ***"Agri-environmental scheme payments are a refund of costs – for performing in our case to keep good conditions for birds."*** (OD_9_LU)

Galicia, Spain:

> ***"Natura 2000: they say they are not allowed to cut the shrub in the heathlands."*** (GA_8_LU)

Note the discrepancy between the management requirements of heathlands inside Natura 2000 where they must be preserved, versus out of protected areas where they must be removed if eligibility for CAP support is desired. (as discussed above).

3.11.1.1 Over-detailed management prescription, controls and risk of sanctions

A challenge for land-users is the large set of highly-specific requirements, leading to frequent controls and sanctions; but also limiting the range of options for (potentially-beneficial) actions. Examples for the case of the Birds and Habitats' Directives:

Border Meuse region, Belgium:

> ***[We need to do] "Grazing; Conducting management and supervision of the area; Opening the area to public; … adhere to the obligations for the nature type 'mosaic nature', by***

> ***performing certain management measurements; …file in an annual report in which they describe the management measurements they have used in that year".*** (BM_4_LU)**.**

Lithuania:

> ***"…difficulties with management of grasslands, when grasslands dry out due to weather conditions and the fact that in Natura 2000 territories it is difficult to restore them"*** (LI_7_LU)

Another example relates to the **strict dates for mowing/grazing**, which may have positive impact on certain species or taxonomic groups, but negative impacts on others. Some land-users explicitly mentioned that this may be suboptimal for a range of relevant species in their habitats.

Interpretation of the problems:

The large set of requirements placed in the context of the Nature Directives, especially in Natura 2000 areas, has been widely discussed as generating resistance to environmental regulations among farmers. Compensation payments for these disadvantages are, by and large, insufficient (see below).

The application of sweeping guidelines regarding grazing and mowing (especially mowing dates) has been discussed in the literature for its negative impacts, as "optimal" conditions may differ according to target species or taxa, and even these strongly depend on local site and weather conditions or soil type, so that even in a given site, the specific "optimal" date for a given species or group of species may vary according to the weather in a given year. This is acknowledged, for instance, in Portugal through a technical committee that defines harvesting dates on an annual basis, depending on climate. Given the varied ecological requirements of different species, habitat heterogeneity (e.g. as achieved through grazing rather than mowing) is becoming well-established for its positive impact on biodiversity (Udy et al. 2021). Therefore, setting a narrow range of requirements for mowing and grazing dates may in itself be counter-productive in a wide range of conditions.

Beyond these challenges, mismatches between the Nature Directives and the CAP emerge due to inconsistency in eligibility criteria and prioritization of management practices – resulting in a limited mandate of the Nature Directives to guide grazing practices and habitat management outside protected areas.

Recommendations:

Management guidelines should be better tailored to yearly conditions, local settings and the objective of retaining habitat heterogeneity, especially where mowing complements or replaces grazing; or where seasonal grazing is limited by strict regulations. Decision making, i.e., enhanced flexibility to perform yearly adaptations of farming operations, can be aided by a (national or regional) technical committees, as in the example of Portugal, decentralized to the lowest possible level, and include a mix of administrators, farmers and ecologists. Closer consultancy with ecologists and ecologically-trained consultants may enable better tailoring habitat management requirements, and on-the-ground activities, to the needs of species and biodiversity. The aim should be not only to address single species, but rather, a suit of species including both those listed in the Annexes of the Nature Directives as well as non-target species (Pellissier et al. 2020). In the context of grazing and pasture management, it is likely that this will result in higher flexibility for land-users in terms of decision-making and anticipation on different weather-conditions for the benefit of biodiversity.

An alternative, more centralized approach (requiring less administrative efforts) could involve GIS infrastructure of the declaration system for targeting specific requirements in the Natura 2000 areas. The online declaration system can set specific requirements to each Natura 2000 site or even more localized plots to determine specific requirements based on conservation objectives set for each Natura 2000 site and/or physical criteria of the area (e.g. type of soil, degree of slope or type of

grassland). Such an approach would ensure better targeting of environmental requirements without significant increase of administration costs.

Generally, extensive grazing should be preferred to mowing, and the latter should not be conducted synchronously over large areas (see, e.g., Konvicka et al. (2008)). Where mowing is applied, the more traditional management approach of gradual mowing (e.g. for the provision of fresh fodder) should be prioritized and supported.

3.11.1.2 Insufficient funding

The Birds and Habitats Directives in themselves do not finance land management per se. Four key sources of funding in this context are: Cohesion Fund, national sources of funding, CAP support through payments for farmers in Natura 2000 areas, and LIFE projects' funding. Among the interviewees, only the former two were mentioned, with a dominance of CAP payments for Natura 2000. Some of the land-users regarded these payments as much needed but insufficient. Example Lithuania:

> ***"These benefits are not enough to cover the costs, but it can offset some of the costs for the feed and equipment."*** (LI_10_LU)

At least one land-user (Border Meuse, Belgium) mentioned that they receive national funding not only for area management per se but also for biodiversity monitoring and enhancing accessibility:

> ***[We] "receive three kinds of subsidy: a basis subsidy for management tasks to realizing nature targets, a subsidy for monitoring and a subsidy for making the area accessible to visitors … [The] area has the status of a nature reserve, which brings in money. They receive subsidy for the nature type, not for grazing specifically. It is important which type of nature is present in the area: at current it is mosaic nature. Extensive grazing is specified as a management measurement, for which they receive subsidies … sometimes [they also] receive subsidies for placing fences etc. These subsidies are bound to specified projects".*** (BM_4_LU)

However, the same land-user clearly stated that the funding

> ***"does not cover the cost by a long shot. They have some trouble with financing it. They receive some money from donations and subsidies for personnel."*** (BM_4_LU).

Two experts in the Border Meuse area, Netherlands, noted a challenge that land-users must decide between two alternative sources of national funding as one cannot apply for both:

> ***"If it is possible to get GLB [GP: CAP support], you should not be able to get SNL [GP: Subsidy scheme for Nature and Landscape] as well, since the former is for agriculture and the latter for nature. SNL is not meant for agricultural management. So if a farmer leases "If you receive more subsidies, you can also perform better on other points, often money is tight".*** (BM_5_EX).
>
> ***lands for which [one gets] SNL subsidies, the farmer cannot get GLB [CAP] subsidies for those same lands. "*** (BM_5_EX).
>
> ***[The CAP subsidy is] "much more than the amount for SNL riverine type", but farmers and herd management companies can top up this payment by a "subsidy of 165 per cow" [GP: coupled payments] so that the total "very well covers the costs of the herd management"*** (BM_6_EX).

Interpretation of the problem:

Funding in support of the Nature Directives has repeatedly been flagged as a key barrier to effective management, both in Natura 2000 areas and beyond them (Milieu et al. 2016). Targeted CAP payments for farmers in Natura 2000 only range around 18-70 Euros/ha, an order of magnitude lower than

AECM (circa 240 Euros/ha) and greening measures (circa 780 Euros/ha; see Pe'er et al. 2017). While different calculations yield somewhat different numbers, studies consistently show insufficient funding, and overall poor economic performance of extensive and traditional grazing systems, compared to much higher funding rates for much less effective measures – or even, measures that are loosely (or not at all) attached to habitat quality (e.g. greening).

Recommendations:

Higher payment rates for extensive management of grasslands should reflect the multiple benefits of such farming systems given their capacity to provide multiple ecosystem services, as well as the economic challenges for farmers and other land-users engaged in such practices. A point-based system could be used to calculate the support (Pe'er et al. 2020), and multiple instruments should be eligible to use for topping up the support for a given parcel to cover not only for income foregone but also for transaction costs related to the burden of adhering to (multiple) management requirements. An alternative option, already piloted in some areas (e.g. Poland), is a 'Payment for Ecosystem Services' approach (Barnes et al. 2011, Hodge et al. 2015), where payments could exceed the costs.

To reduce dependency on CAP support, and yet enhance financial support for protected habitats such as pastures, it is beneficial to establish longer-term, stand-alone funding mechanisms such as a "fund for nature" or restoration funds.

Notably, a recommendation attached to the CAP reform of 2013 with respect to grasslands was to map Ecologically Sensitive Permanent Grasslands (ESPG) also beyond Natura 2000 areas, and allocate clear management guidelines to these. Most MSs have not followed this recommendation (Alliance Environment 2019). Thus, it is highly recommendable to engage in urgent mapping of ESPG, and allocate both clear requirements and dedicated funds to support their improved management – be it through AECM or Eco-schemes – in support of the high prevalence of rare and protected species in these habitats, as well as overall habitat quality.

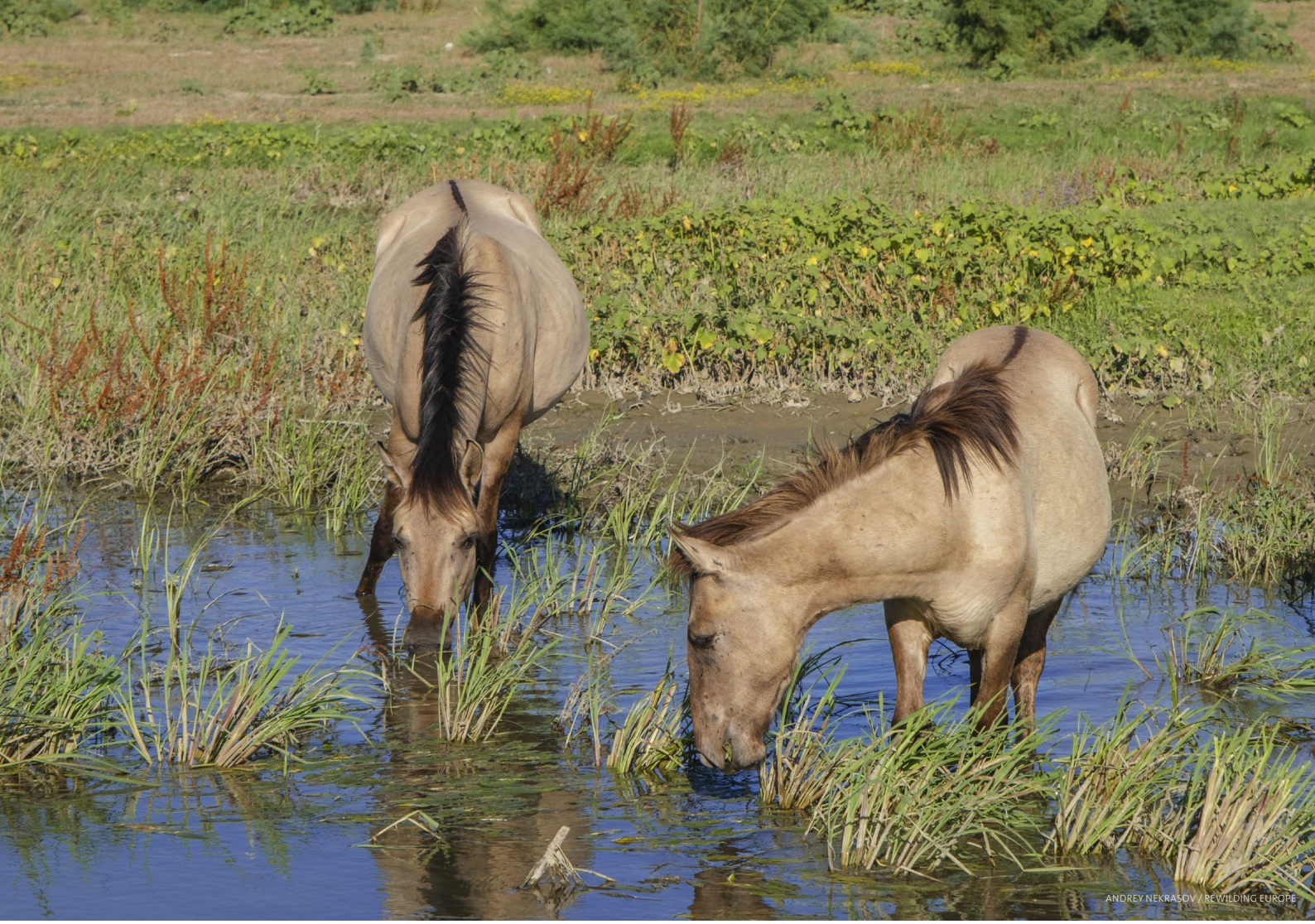
3.11.2 Water Framework Directive (WFD) and Nitrate Directive

While the WFD was not mentioned explicitly by land-users and managers, Cross Compliance in the CAP often relates to coherence with it – with implications especially for wetlands, peatlands and other water bodies.

One related challenge was a perception of overly-cautious restrictions for grazing near water bodies. An expert in Lithuania said:

> ***"It is forbidden to graze along water bodies. If a creek flows through the pasture, a farmer cannot water the animals there, they must bring water to pastures. If the cattle would wade into a stream, then they would also graze down some biomass. It should be permitted for animals to go into the water. In Estonia, the Netherlands, Hungary, Finland, they allow herds to go everywhere, even the sea. Maybe where the herds are very large then yes that could cause erosion or nutrient pollution, but otherwise farmers should be permitted to do so." (LT_Expert5(PK))***

An additional challenge mentioned by one of the land-users in the Oder Delta was an ***"obligation to pay fees to … the Water and soil management authorities / associations. This fee is the main difficulty: Especially for areas situated in lower, water-influenced terrain"***, with the risk that ***"a private land owner has to conduct land use, in order to refinance the high fee"***. (OD_3_LU)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While not mentioning the Nitrate Directive explicitly, the topic of fertilizer use was mentioned by several farmers in Lithuania – one relating to the necessity of using fertilizers in poor soils, while two others mentioning the problems that this is generating.

> ***"payments make a pretty significant contribution to maintaining the farm because our land is poor, we have to buy mineral fertilizers. If we do not fertilise the fields, then the grass will not grow on time and that means that we will not have sufficient feed."*** (LI_6_LU, dairy farmer)

> ***"...some farmers try to get as much as possible from the land and due to subsidies grow crops such as rapeseed. Then they fertilize a lot."*** (LI_2_LU, meat cattle farmer)

> ***"the organic aspect of farming is problematic because of fertilizing. The question is how to close the cycle to maintain productivity in an environmentally friendly manner."*** (LI_5_LU, farmer, researcher)

Interpretation of the problem:

The problems described reflect two issues. One is a general problem of water pollution by intensive grazing systems, affecting sensitive water bodies that should be protected through the WFD and, accordingly, the CAP's cross compliance mechanism. Intense animal production (high-density herbivory) leads to the pollution of soil and water and eutrophication of water bodies; and the over-use of N-fertilizers is a key issue leading to the establishment of the two directives. Thus, where restrictions exist, they may often be justified (we note, in this context, that the above-mentioned restrictions in Lithuania have been removed in 2018).

A second, more regional problem is that even extensive grazing may generate negative or positive impacts depending on site design. Negative impacts occur when drinking- and resting-sites, where high activity density takes place, occurs in close proximity to water bodies. In such cases they can locally lead to soil erosion, pollution and eutrophication. In other sites, however, extensive grazing help diversify water-related vegetation and reed in a way that can support biodiversity; and in such cases, grazing that is remote or disconnected from water bodies may lead to a suboptimal management.

Notably, the recent Fitness Check assessment of the WFD and N-Directive generally indicates them to be "fit for purpose". Thus, implementation barriers should be pointed primarily to the CAP.

Recommendations:

Considering that herbivores move over large areas and affect large surfaces, it has been repeatedly proposed that management planning should be scaled up to the landscape level, e.g. to the scale of an ecosystem or a catchment, due to potential downstream effects of (intense) grazing. Much closer monitoring is needed, especially for more intensely grazed systems. To ensure coherence of the CAP with the WFD and N-Directive, we recommend MSs to develop more detailed, and broader-scale, plans for protection of sensitive water bodies from overgrazing and eutrophication, antibiotics (deworming medicine), as well as fertilizer and pesticides.

Where extensive grazing can generate benefits for vegetation regeneration and biodiversity, a more relaxed approach needs to be taken, allowing grazing in and near water bodies and bank vegetation.

3.11.3 Climate Directive

Land users/stakeholders were asked about the role of extensive grazing for climate change mitigation in the quantitative parts of the interviews, and a large number acknowledged the benefits of extensive grazing for climate change mitigation of them. However, this was not brought up by land users in the qualitative sections of the interview. Extensive grazing can contribute to carbon sequestration in soil and vegetation (Rodríguez-Murillo 2001, Bagella et al. 2013, Conant et al. 2017, Byrnes et al. 2018), and is used in some of the case studies for flood prevention and wetland management. In light of increased frequency and severity of wildfires in Europe due to climate change and land-use changes, large herbivores can contribute to reduce these risks by impacting fuel loads, structure and moisture levels in the vegetation. These aspects are covered in GrazeLIFE's literature review and further analyses of the interviews (Rouet-Leduc et al. in prep.). In contrast to extensive grazing, intensive grazing has widespread negative effects on soil carbon sequestration (Rouet-Leduc in prep.), elevates methane emissions and is dependent on fodder inputs with associated deforestation (Cuypers et al. 2013, Rajão et al. 2020) and consequent Carbon emissions. Reducing such emissions requires addressing both the production- and consumption-sides of the value chain (see e.g. Fuchs et al. (2020), yet these aspects are beyond the scope of this report.

Notwithstanding, several land users highlighted necessary adaptations in regulations and management-guidelines in light of climate change.

Oder Delta:

> ***"The climate is changing and it maybe could be possible to extend the grazing time. This would improve the living conditions of the cows. These deadlines should be more flexible. Maybe weather dependent. It would help better organization of grazing."*** (OD_12_LU)

> ***"all peatlands need to be fully rewetted, a drainage of peatlands is not justifiable anymore, especially not in times of climate change."*** (OD_2_LU)

Recommendations:

Oder Delta, land users:

> ***"use of drained peatlands must not be subsidised anymore"*** (OD_2_LU)
> – with implications for GAEC 2 of the CAP (see above)

Oder Delta, Expert:

> ***"Not limiting the grazing season to October 15 – as is the case now. Because more and more often winters are so mild that there is no need to lock animals in buildings. One should not make the receipt of subsidies conditional on grazing dates – which does not make sense in mild winters – it even harms animals. If grazing is extensive and well planned, it should also not harm (damage) pastures (meadows)"*** (Expert, Oder Delta OD_7_EX)

3.11.4 The Forest Strategy

Limitations on grazing and grazers exist both in forest and forestry areas, as mentioned also in Section 3.8 (Conflicts with forestry). These relate not only to the CAP but also to the EU's forestry strategy, and specific national regulations, dictating restrictions on grazing in forest(ry) areas.

Example Lithuania:

> ***"Restrictions on enclosures … you cannot cut the trees nor graze. Although for the sake of animal welfare these trees are good, forests are a salvation for the cattle on a hot day. Grazes all areas everywhere but receives sanctions …"*** (LI_5_LU)

Interpretation of the problem:

At least in some countries and circumstances, forest grazing is not allowed. This hinders the development of complex ecosystems (with forest, thickets and grasslands as part of one coherent ecosystem). Forest plots where animals graze cannot be declared as "grasslands" either (see CAP Definitions section above), as this would require clearing out bushes to be able to declare the land – thereby damaging the habitat and biodiversity therein.

In Lithuania, these problems are acknowledged through a proposal in the new forest law, that grazing would be allowed in forests that are included in the nature management plans.

Recommendations:

The conditions for inclusion or exclusion of grazers in forest and afforestation areas need to be carefully delineated and revised in the EU's new forest strategy. Grazing and browsing should be permitted, and fencing removed, in forests designated as forest habitats (as opposed to forestry areas), as well as afforestation areas where grazers and browsers may help create a more open woodland rather than a dense forest. Large herbivores should be managed as a natural part of forests, with an important contribution to their biodiversity (including disturbances generating forest openings) – and this should be acknowledged in the new forestry strategy (see also Perino et al. 2019).

3.12 The role of consultancy

The role of consultants, supervisors and administrators in accompanying decision-making and implementation was highlighted by a large number of land-users and experts across case studies. In some cases, land-users particularly emphasised the role of ecologists in evaluating the ecological condition of relevant plots and advising how to manage farms in order to improve the status of biodiversity. A repeated issue, however, was raised relating to the weakening of consultancy's mandates over the last funding period (2014-2020), reducing flexibility while increasing the domination of purely-administrative decision-making over the opinions of experts.

Example Lithuania:

> ***"It has been several years in a row that we appealed for the agency because their decisions did not correspond to reality, so we complained about the decisions. ... The people who work there have no agricultural education and look at the template rules and fail to evaluate properly."*** (LI_7_LU)

Oder Delta:

> ***"the veterinary said that our animals have to be treated with a specific medicine, ... of course he agrees that we treat only the ill animals and that we can apply this medicine also later, when we see that another animal is ill. But the organic controller tells us that we are not veterinarians, so that we are not allowed to use this medicine for another animal"*** (OD_5_LU).

One land-user also mentioned lack of sufficient training and knowledge due to which some forms of advice can be counterproductive.

Lithuania:

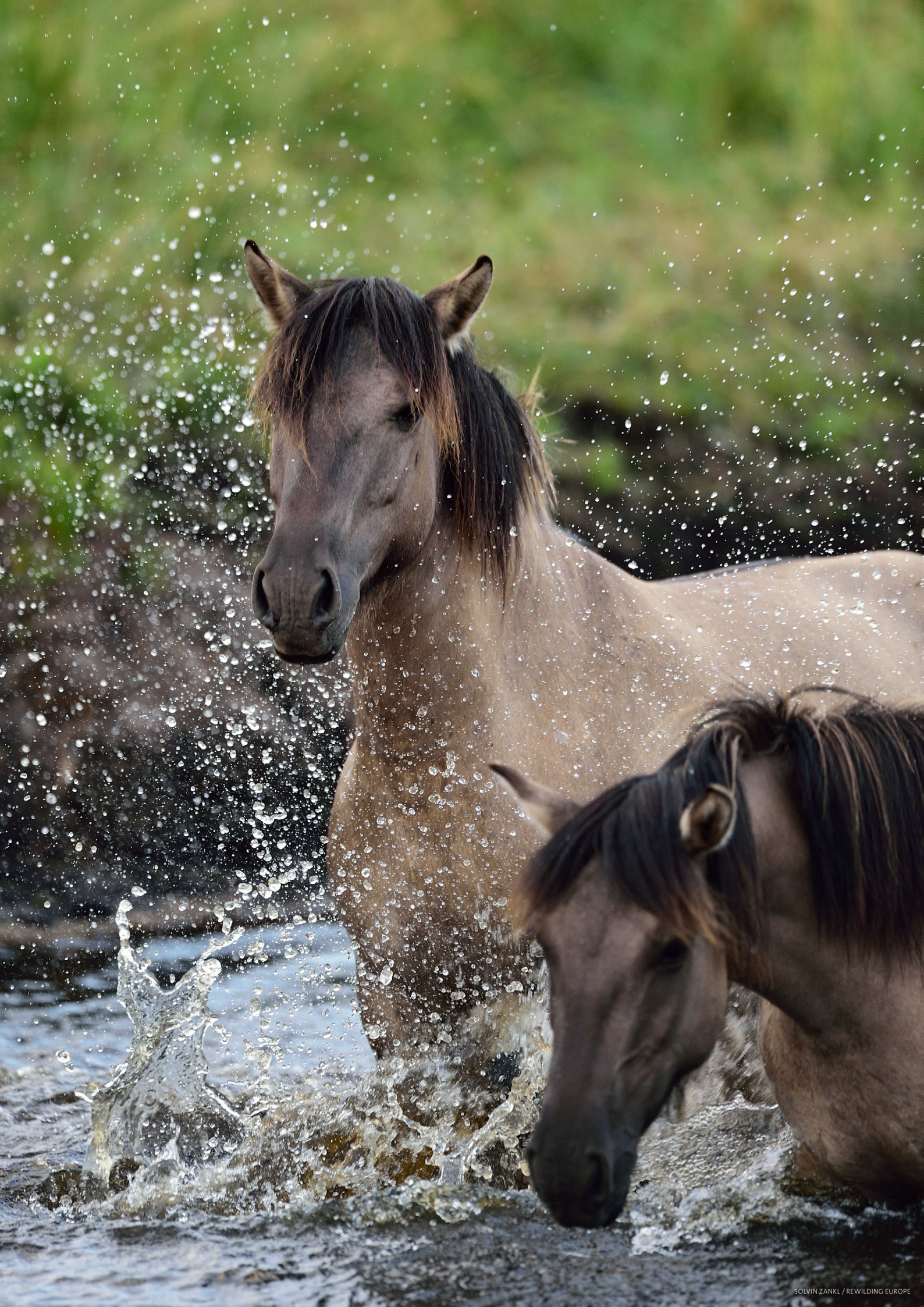
> ***"There are also really absurd interpretation of conditions by inspectors such as that the cattle will hurt themselves because there are bushes and that is violation of animal welfare. So veterinary inspectors should get proper trainings about beef cattle, to learn that they are stronger than dairy cows, that they can graze throughout winter and that the animal welfare does not suffer from this."*** (LI_5_LU).

Interpretation of the problem:

As mentioned above, lack of training among consultants and administrators, combined with insufficient mandate for consults and local experts (including veterinarians) leads to suboptimal handling of animals and habitat management. We are also aware from other studies (e.g. Zinngrebe et al. 2017) that Farm Advisory Services sometimes offer counteractive advice, i.e. they may recommend farmers to select on measures that are attractive from an economic perspective and simple to manage, but some of these measures yield marginal biodiversity benefits. In such cases, consultants may help improve farmers' benefits (or cost-efficiency) but hamper the efforts to meet environmental objectives.

Recommendations:

Both the EU and MSs must invest in capacity building through broader ecological training, especially of consultants, farmers and land-users, to reduce the risks of management errors resulting from misinterpretation of policies. Accordingly, greater cooperation and exchange may help building the necessary trust that is needed if mandate is increased for such local moderators or mediators in decision-making. Capacity building should also include ecological training for inspectors and administrators. Overall, investment in the EU's Agricultural Knowledge and Innovation Systems (AKIS), LEADER programs and their Community led local development (link) over the next CAP period. Such efforts should start already during the transition period, as also proposed by the EU.



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4 Concluding discussion and recommendations

4.1 CAP: an important instrument with much untapped potential

Among the various policies and directives, interviews with land owners and managers clearly highlighted the CAP as the most dominant policy factor affecting them, as it provides both the financial support for managing domestic and semi-wild herbivores, and guidelines and criteria as to how animals, and relevant habitats, need to be managed. A large number of interviewees pointed at the value of CAP payments, across instruments, for maintaining the grazing model that they have been implementing, thus demonstrating the necessity and usefulness of such payments.

The literature review and interviews point at a broad range of instruments that can potentially support nature-friendly and sustainable grazing – but also indicating that much of this potential remains untapped. Many of these grazing systems, and the people managing them, remain economically unsustainable and poorly supported (see also Scown et al. 2020a) suffer from limitations due to eligibility criteria and definitions, or affected by suboptimal requirements.

Many of the problems with implementing nature-friendly grazing systems are well-known in the literature and covered by synthesis reports (such as Nature Alliance 2019). They include insufficient funding (either at MS level, i.e. total budget for the relevant instruments) to help overcome economic disadvantages (e.g. of extensive grazing compared to more intense use of the land), and low funding rates that often do not exceed transaction costs. Added to the requirement of Pillar 2 co-financing by MSs, incentives are lacking for both MSs and land-users to invest in, or take up, the instruments that are potentially most effective for supporting extensive and traditional grazing systems.

In addition, many interviewees confirm the problem of excessive administrative burdens (especially for AECM and organic farming). In some cases this relates to too complex requirements, yet in others, lack of administrative capacities or knowledge result in rather over-simplistic requirements that fail to meet ecological requirements. Both cases may lead to either undesirable impacts (i.e. forcing counter-productive management such as ploughing) or to sanctions on land managers if failing to comply with such requirements. Some of these situations emerge from EU-level definitions and guidelines, but many result from misinterpretation of the CAP by Member States or regional authorities. Namely, to a great extent the CAP already now offers sufficient flexibility to employ smarter definitions (e.g. for grasslands) or AECM that are better suited to local needs. However, regional authorities do not always hold sufficient capacities or knowledge to develop such (more complex) solutions.

4.2 Recommendations for the CAP's design and implementation

To set our recommendations in the most relevant policy context, we here consider that the negotiations over the CAP post-2020 have not yet been completed. We thus refer to the European Commission's proposal of 2018, for a revised "Green Architecture" of the CAP. Key elements of the proposal are:

- An expanded set of compulsory requirements for Good Agricultural Ecological Conditions (GAEC) under the so-called Enhanced Conditionality, combining the former "Cross Compliance" mechanism with some elements of the current (2014-2020) Greening. Most relevant in the grazing context are GAECs 1, 2, 9, and 10.
- Pillar 2 mechanisms including AECM, Natura 2000 payments, support of organic farming, as well as forest-related instruments, are largely retained albeit with a potentially-expanded list of AECM management options, and likely, a reduced budget.
- Pillar 1 "Eco-schemes", listing a set of voluntary measures that farmers can adapt beyond Cross Compliance, potentially complementing AECM and other instruments. While the final design of Eco-schemes remains open, the initial proposal of the Commission regarding "flagship Eco-scheme" types include agro-ecological options that are relevant for grassland and pasture management, as well as potentially for habitat restoration.

The Commission also proposed a new delivery model, allowing more flexibility to Member States as to how they meet their goals; with a focus on strengthening AKIS (Agricultural Knowledge and Innovation Systems). For comments on the Commission's proposal of 2018 (Pe'er et al. 2019, Pe'er et al. 2020a)

In addition to these, in their votes of October 2020, the EU's Parliament and the Council proposed a large number of amendments to the Commission's proposal. It was also proposed that Areas of Nature Constraints will be listed as part of the budget envelope of environmental instruments, i.e. as part of the Green Architecture. For comments on the Parliament's and Council's positions see Pe'er et al. (2020b).

4.2.1 Key guiding principles

Coherence among instruments, both in aims and functioning, is critical. Particularly where several benefits are possible to obtain from a given instrument, the support should be higher to incentivise farmers. This is especially relevant for extensive grazing systems that are beneficial from ecological, climatic, cultural, and animal welfare aspects. A coherent set of instruments would entail fair remuneration and eligibility criteria, to avoid land-use conflicts or dis-incentivising farmers engaged in environmentally-friendlier but less profitable farming.

Lithuania:

> ***"Payments for extensive farming should be equal to intensive farming. Both farming models should be placed on equal conditions from the support side."*** (LI_11_LU, farmer)

One way to achieve this would be to use a "points-based system" (Neumann et al. 2017), as proposed also by farming organizations, to enhance support to farmers according to the range of public goods they provide. This way, the "provider gets" principle can be enhanced in line also with the CAP's new delivery model and the concept of Eco-schemes.

Another means to achieve this is to enhance the remuneration of complex AECM options in order to surpass non-monetary transaction costs for farmers and land-users, namely, to compensate for complexity in terms of administration and controls.

Upscaling of good agricultural practices to the landscape level has been repeatedly highlighted for its importance and value for maximising ecological benefits (Merckx et al. 2009, Westerink et al. 2017, Pe'er et al. 2020a), and particularly relevant in the case of large herbivores as animals move over large areas and often beyond well-bordered areas. To this end, a range of CAP instruments (AECM, Eco-schemes, ANCs) could be used but this would require recommending, if not demanding, Member States to offer landscape-targeted payments and assistance for collectives to implement them.

Lithuania:

> ***"support system should combine everything not only with the environment but also the animal welfare. It should be agreed upon to encourage people to adopt this type of farming also for the landscape. … a document need[s] to be developed highlighting what strategically we want to promote and then support those who follow it with more money."*** (LI_6_LU, dairy farmer)

> ***"if you want to promote this kind of farming that is more environmentally friendly, then payments should increase. Such farming is more relevant to small farms and should be encouraged."*** (LI_7_LU, organic beef cattle farmer)

European Commission must demand MSs to demonstrate ambition both in total budget available to relevant, effective, voluntary measures, and particularly delineate, already in their strategic plans, how they intend to maximise the uptake of these. EU-MS interactions could be improved by requiring adaptive policy management, namely, requiring MS to demonstrate how they change their implementation if uptake of AECM and Eco-Schemes is too low. Enhanced ambition in the context of grazed areas should include targeted efforts to map Ecologically Sensitive Permanent Grasslands, and improve their protection, and enhance support for extensive grazing therein.

4.2.2 Definitions and eligibility criteria

4.2.2.1 Grasslands, pastures and wetlands

The current terminology for grasslands and wetlands pose barriers to a range of habitats, and to natural changes in their status (e.g. through succession or floods). The 5-year threshold, in which a grassland turns into a "Permanent grassland", is further leading farmers to disturb the habitat or manage it (e.g. through ploughing or temporary use as arable land) to avoid this transition.

The Commission's proposal of 2018 retains a somewhat limited definition of grasslands, by setting the requirement that the grasses or/and other herbaceous forage "remain predominant", and otherwise, allows extending the definition only when non-herbaceous vegetation can be used as animal feed. Definitions should thus be further refined to list Annex habitats of the Habitats Directive, including reed, flooded areas, and rocky areas. In this sense, the proposals for amendments made by the Parliament and the Council, to extend grassland definitions and remove the requirement of predominance, are much welcome.

An alternative refinement of Art. 4 can be to state that grasslands "may include other species such as shrubs or trees which can be grazed or used by grazing animals, as well as other natural vegetation and landscape features". Overall, the main criterion – as determined by the judgement of the European Court of Justice (2019)- should be the agricultural use of the grassland rather than the specific vegetation therein. We therefore **recommend both Art. 4 and the guidance to MSs to follow the wider definition in a way that adjusts to local requirements and conditions, and improves coherence with the Habitats Directive and the CAP's environmental targets**.

The 5-year threshold could potentially be surpassed by allowing farmers to apply for the prolongation of using a (non-permanent) grassland, or a fallow-land, without the relevant land-parcels changing

their status. Possibly, this could even be remunerated in itself, e.g. through Eco-schemes if applied for one year or AECM if applying to do so for a longer time. Benefits of such conditions could be that either biodiversity could recover in the case of a pasture, or the habitat could be restored for the case of (guided, deliberate) self regeneration toward a forest. Conditions for the success of such an option may be that farmers cannot be supported without any action (e.g. proper management of grazers in the habitat) or evaluation of the habitat and its quality, in order to avoid a loophole where complete abandonment is funded without ensuring ecological benefits.

The case of natural, temporary habitat change, in which (permanent) grasslands are being disturbed or flooded, could be addressed either by including a clear definition for wetlands (in coherence with the RAMSAR definition) and expanding eligibility criteria to cover them under the CAP.

4.2.2.2 Missing definitions: Forest, Commons, Wood Pastures, High Nature Value farming

CAP definitions are lacking for key terms that affect both eligibility and management of critical habitats.

Forest: the lack of differentiation between forest (a habitat) and forestry areas (as a business sector) places afforestation efforts, and good management therein, at risk. It may also lead to the exclusion of grazers from both forests and forestry areas where these can promote to effective and cost-efficient management. We strongly recommend the inclusion of a forest definition that is coherent with the Habitats Directive, with particular emphasis on native species and retention of ecological processes, including grazing. Such a distinction is critical since CAP texts refer at various places to afforestation and forests, with several instruments to support them; as well as in light of emerging land-use conflicts and sub-optimal management (e.g. due to the exclusion of natural and semi-wild grazers).

Commons: In two case studies (Spain and Romania), challenges were specifically mentioned with respect to Commons, i.e. communal areas used by multiple farmers and/or other land-users. Challenges included overgrazing, administrative barriers affecting responsibility and liability, and loss of management rights due to ownership-changes (land-concentration). A clear definition of Commons, accompanied by designated instruments and guidelines by the EU, may help addressing the challenges for such increasingly-rare forms of land-use in support of community-based conservation efforts.

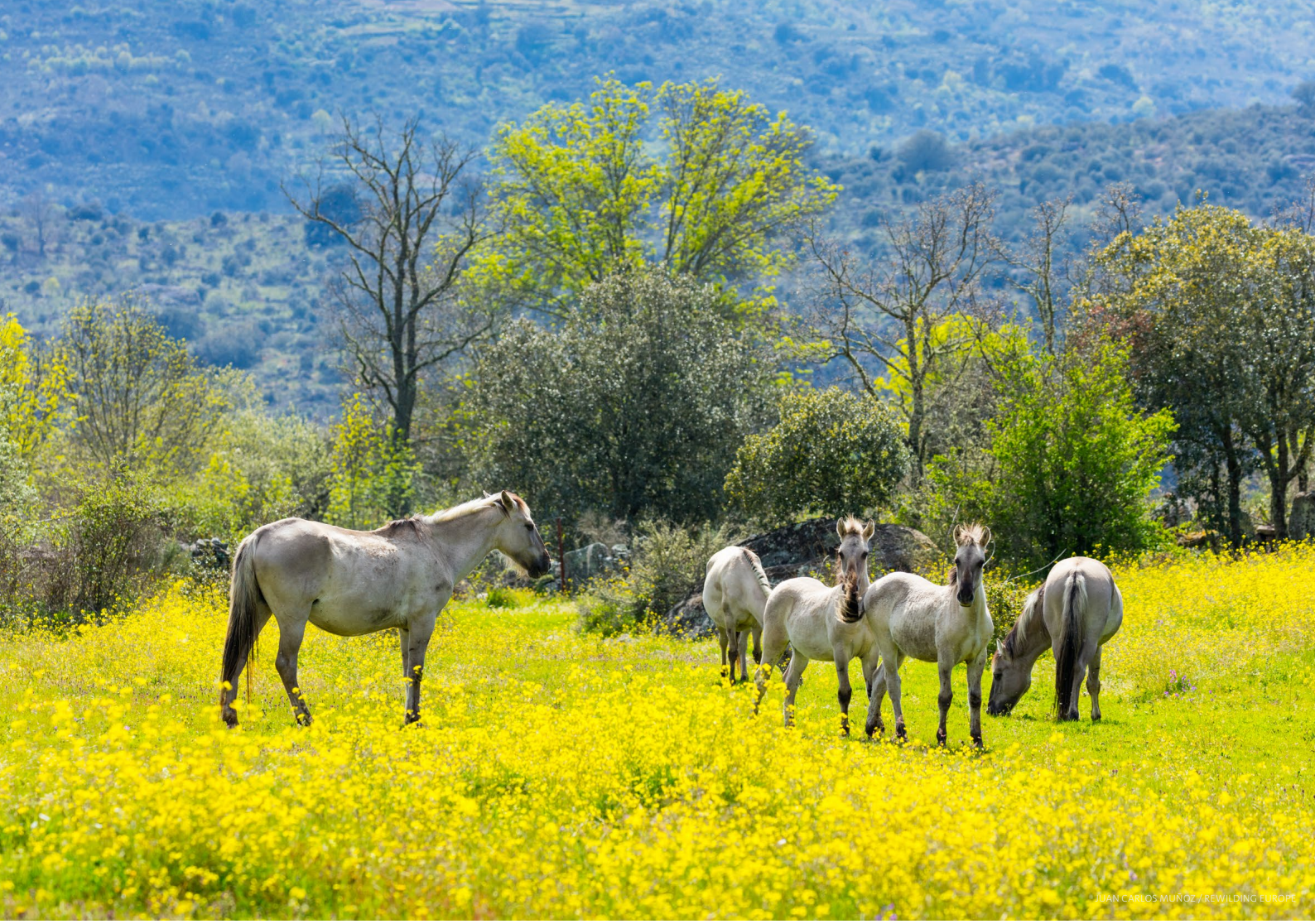
Wood pastures: grassland and pasture definitions have been expanded so that potentially they can be considered now as addressing such culturally-valuable and biodiversity-rich environments. However, it may be desirable to provide a specific definition of these habitats.

High Nature Value farmland areas: Given the discussion around mapping and protection of High Nature Value areas, and appropriate support and management of these, it is somewhat surprising that the term (including HNV farm, farming, farmland or other derivations) does not occur anywhere in the CAP's legal text. We thus recommend defining HNV farms, farming systems, and HNV regions – also for the purpose of setting the right indicators and monitoring their state.

4.2.3 Enhanced Conditionality (formerly Cross Compliance)

The CAP post 2020 places Enhanced Conditionality at the core of its Green Architecture, with an extended list of GAECs, including a much-needed GAEC 2 for wetlands and peatlands, and GAEC 9 for maintaining (and possibly, restoring) landscape features and non-productive areas.

Weaknesses of the Commission's proposal of 2018 remain regarding GAECs 1 and 10, both touching on grasslands.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For one, the formulation of the Greening measure for grassland protection explicitly recommended MSs to map and protect **Ecologically Sensitive Permanent Grasslands** (ESPG), also beyond Natura 2000. The vast majority of MSs did not do so (Alliance Environment 2019). This important recommendation, however, was not retained in the shift from Greening to enhanced conditionality. This entails that the status of ESPG may remain critical in the next CAP unless clarified. A mandatory requirement from MSs to map them and place them under such protection, is necessary in order to overcome a mismatch between MS-level and farm-level requirements. This issue needs to be resolved in formulation of the next CAP, with direct implications as to grazing requirements for sensitive grasslands.

Specific recommendations:

GAEC 1 (Maintenance of permanent grassland): The Commission's 2018 proposal lacks a reference to grassland quality (e.g., intensity of use, through grazing density or mowing frequency), and does not mention ESPG. The Council's and Parliament's amendment proposals weaken it further by allowing a change in the proportion of grasslands to arable, thereby opening the possibility for MSs to convert permanent grassland to arable land. While this may not be detrimental in intensively used grasslands, it is critical for extensively used pastures. Moreover, the Parliament shifts the baseline year to 2018 (ignoring recent habitat loss) and allows 5% variation while loss levels in most MSs are within this proposed range (Pe'er et al. 2014, EEA 2019) – thus allowing continuation of habitat loss and degradation. **We recommend using the Commission's 2018 text proposal as a baseline, and improving it by adding a reference to grassland quality in terms of grazing intensity, management, and/or a ban on intensification. GAEC 1 could be make a clear reference to the biodiversity indicator (status of species of Community interest), and requirements to protect ESPG especially in HNV regions.**

GAEC 2 (Appropriate protection of wetland and peatland): The requirements may not be effective without clarifying the term "appropriate". The Parliament proposed replacing "protection" with "maintenance" – a term which may allow continuation of poor (drained) conditions. In both cases, GAEC 2 lacks a solution for dynamic regions where the habitat changes in a natural way over time and therefore not "maintained". **We recommend the retention of the Commission's original text, as well as clarifying the meaning of 'appropriate'.** The experience from wetland case studies in the GrazeLife project clearly shows a need to a) define areas that are sensitive to flooding as "wetlands", b) including natural/ seasonal floods and other natural changes under "maintenance" in good conditions (see below, definitions), and c) offering some form of compensation for grasslands and arable lands that are flooded rather than sanctioning for changes in land-cover. In the long term, CAP support for farming on a land use of drained peatlands.

GAEC 9 (protection of landscape features and land devoted to non-productive areas): The Commission's proposal lacks a target level. Amendment proposals of the EU Parliament and EU Council have limited GAEC 9 to arable land, and introduced productive options. Under these amendments, GAEC 9 is unlikely to achieve any benefits. **We strongly recommend GAEC 9 to cover all agricultural areas including grasslands and pastures, acknowledging the critical role of non-production areas (scrubs, trees, hedges, terraces, ponds etc.) for grazers and their wellbeing** – offering water, diverse food sources, shelter, shade for climate regulation. They are additionally important for biodiversity and a range of ecosystem services (e.g. soil and water retention, pollination in neighbouring crops). We further **recommend setting the requirement to 10%** in light of the recent baseline prior to the abolition of set aside, as well as the need to retain and restore landscape heterogeneity, also in grasslands and particularly ESPG. Finally, we **recommend not to include production-oriented options, like catch crop and N-fixing crops, in GAEC9**, to avoid diluting the requirements.

GAEC 10 (Ban on converting or ploughing permanent grassland in Natura 2000 sites): The Council proposed to alter the text into *"Ban on converting or ploughing permanent grassland designated as environmentally-sensitive permanent grasslands in Natura 2000 sites"*, thus limiting protection only to a smaller subset of grasslands, while the Parliament proposed *"Appropriate protection of permanent grassland in Natura 2000 sites according to the site specific management plan"*. Both amendment proposals would allow MSs to open the regulation under specific conditions and weaken GAEC 10 inside protected areas; and all proposals ignore the need to expand the mapping and protection of ESPG beyond protected areas. We highlight that the ongoing decline in grassland extent and quality, especially due to intensification of animal production, is leading not only to rapid biodiversity declines but also to loss of carbon-sequestration potentials, alongside a degradation of the cultural values of rich pastures. **We therefore recommend using the Commission's proposal 2018 (i.e., continued protection of grasslands in Natura 2000) and extending it through a ban on intensification in ESPG also outside protected areas.**

To achieve the necessary protection of ESPG, the Commission should demand MSs to set an achievable and near target for mapping HNV farmland areas and ESPGs, also beyond Natura 2000 sites, and set stricter regulations through GAEC 1 and GAEC 10 in these areas.

Furthermore, some definitions relating to GAEC (Article 12) are not sufficiently clear. Particularly, **we recommend to clarify the definition of "maintenance"**, by including natural processes such as flooding, succession, grazing and foraging by wild and semi-wild animals and natural disturbances as "natural maintenance".

In terms of implementation, we recommend MSs to ensure that controls and sanctions are more balanced across farm types. We note that monitoring in many cases is insufficient, and the literature indicates sanction levels often to be too low to achieve compliance. Therefore, with Enhanced Conditionality becoming a key CAP instrument to ensure good practice, we strongly recommend much expanded monitoring efforts, combined with greater differentiation of sanction levels depending on conditions and severity of infringements.

4.2.4 AECM

A large number of farmers and land-users are aided by Agri-Environment-Climate Measures, clearly indicating that AECM is an irreplaceable instrument. However, in the next funding period, MSs may prioritize their investments in Eco-schemes while cutting on AECM (as was the case in Greening; Pe'er et al. 2017). Concomitantly, the range of AECM options may be extended but their budget may reduce – especially if Member States can choose whether to invest in AECM or ANC. A **key recommendation is therefore to secure or enhance the budgets for AECM**, and to remove any limitations on MSs from shifting budgets into Pillar 2 (and within it, AECM). If Eco-scheme budgets remain unused due to low uptakes, these should optimally be invested in AECM. We further propose reducing or cancelling the co-funding requirements for Member States, especially if they demonstrate ambition, e.g., decide for significant budget shifts into AECM and investing in so-called "dark green" measures (i.e. those shown by evidence to be effective).

In light of the WTO's Green Box and the question what is "income foregone" and how to calculate it, we see a positive proposal by the EU Council to explicitly list transaction costs as one of the issues to compensate for. We recommend adopting this proposal as means to help increasing the remuneration of low-intensity grazing and transition to it (i.e. extensification). Additionally or alternatively, a **"Payment for Ecosystem Services" approach** could be used to remunerate beneficial practices beyond the levels of "income foregone". This approach is particularly useful where farm incomes are low to start with.

Implementation:

The new delivery model offers an opportunity in restoring or even increasing flexibility for farmers, land users and AECM-administrators with respect to implementation of AECM and assessment of performance against their objectives. A result-based orientation, or at least a closer-to-optimal management, could be achieved by **restoring and expanding the mandate for local experts and consultants**, such as biologists, ecologists, or veterinarians, who could help defining habitat requirements, monitor implementation and its on-the-ground impacts, and "moderating" between land-users and administrators to issue exemptions or support adaptive management. Such assistance is particularly useful in dynamically changing habitats (e.g. under succession or following restoration), or where optimal habitat management may differ from the prescribed option (e.g. grazing season, mowing dates).

This recommendation has been made by ample land-users, expressing discontent about loss of this flexibility in the current CAP implementation period (2014-2020), resulting in various cases of suboptimal management or sanctions. Especially in light of the emphasis of the new (post-2020) CAP on knowledge-support, we reiterate this recommendation to emphasise the role of scientists and naturalists, including citizen scientists, in improving the CAP's implementation and expanding in situ monitoring. Specifically, scientists and other experts should be better engaged in a) defining suitable requirements, b) advising farmers and land-managers, and c) acting as moderators during the implementation stages with respect to monitoring, to ensure that farmers and land managers are more closely supervised, are empowered with best knowledge to conduct the best management, and most importantly, to avoid unnecessary or even counterproductive sanctions.

Since some AECM options are more flexible than others, we recommend **retaining a sufficiently large budget for AECM options that either allow such flexibility or adopt a result-based approach** (i.e. based on jointly-agreed outcomes). Establishment of new AECM contracts should allow a participatory process where administrators, land-users and experts jointly define the targets, means and indicators for success in the form of a "project".

One example is to offer specific support to land that is not used for production. Such an option can support the EU Green Deal's (and Biodiversity Strategy) target of reaching 10% non-productive

farmland – and can be beneficial for land management with semi-wild and wild grazers including rewilding efforts.

Examples proposed by land-users that can fall into such a category:

> Oder Delta: ***"agri-environmental scheme for fallow land (wilderness)"*** (OD_6_LU).
>
> Bulgaria: ***"subsidies for improving of food base for game"*** (RM_1_LU).

For landscapes where continuity of good practice can maximise environmental benefits (such as Ecologically Sensitive Permanent Grasslands, and in areas under restoration or rewilding efforts), we recommend the possibility of establishing AECM contracts for 10 years or more – an option which is permitted by the legal texts (Article 28 section 5) but is scarcely applied. This is particularly important in the coming funding period, given the transition of two years and hence an implementation period of merely five years.

Administrative burdens are a heavily-discussed challenge, and one that has repeatedly led to calls for simplification. Here we summarize key examples on how to reduce such burdens in the context of extensive grazing management:

- Reduced controls and sanctions for smallholders or when consultants/in-situ experts can help confirming overall compliance with the aims of AECM and its intentions
- Reduced demands for ear-tagging or chipping for semi-wild and wild herbivores given the difficulty to find and mark newly born calves. Marking or chipping could be done yearly or in agreed times
- Allowing flexibility in terms of minimum and maximum stocking conditions under well-defined conditions, such as seasonal variability, mixed stocks or pastoralism, supported by local experts and well-trained consultants.
- A clearer and simpler declaration system which operates at the farm level.
- An expert in the Oder Delta also proposed to allow farmers and land users, that manage nature-oriented farming or rewilding areas, ***"to finance wilder areas by the only use of subsidies from the agri-environmental schemes from the second pillar, without the use of subsidies from the first pillar."***. (OD_4_EX)

4.2.5 Organic farming support measure

Organic farming in the grazing context is highly beneficial given the support for farmers that employ nature-friendly farming, limited use of chemicals and carefully-inspected sources of feed; with benefits also from an animal welfare perspective where extensive grazing is employed.

The support for organic farming can be regarded a policy success in terms of the coherence among subsidies, labelling and certification options (Pe'er et al. 2017). An onward expansion is thus desirable, and in line with the EU's Green Deal aiming to reach 25% UAA under organic farming by 2030. However, this rewarding system remains largely inaccessible to many farms in remote parts of Europe that don't use chemicals at all, don't import sources of feed at all, have animal-densities below the organic criteria and support high biodiversity on their land, but are unable of withstanding the certification procedures – either due to economic or administrative barriers.

Entrance options are needed for smallholders engaged in extensive grazing, as well as land-users engaged in pastoralism who practically meet most or all the criteria of organic farming, without being certified. These may generate co-benefits for these types of farmers, for rare- and nearly-extinct forms of traditional farming, and for HNV regions in the EU. This can be achieved by expanding eligibility criteria, listing relevant options under targeted forms of organic farming (i.e., widen the definition of "organic"), or under specific support through Eco-schemes.

4.2.6 Eco-schemes

In light of the cancelling of Greening measures, and establishment of Eco-schemes as a new instrument in Pillar 1, it is worthy to consider what can be the role of Eco-schemes either in supporting existing nature-friendly measures, or transitioning to more sustainable farming forms (in our case, more sustainable grazing). Given their annual contracts and under a so-far too-broad range of possibilities as to what counts as Eco-schemes, it is unlikely that Eco-schemes can play a significant role in habitat restoration or rewilding. More likely, non-productive investment measures or AECM can achieve more. However, we can foresee several ways in which Eco-schemes can support extensive grazing systems, extensification, and rewilding.

Options include payments for extensive grazing per se, specific options to support grazing through semi-wild herbivores, or a targeted support for pastoralism (i.e. the operation of bringing grazing herds to a given area). Since the benefits of such measures increases over time, it would be important to offer payment levels that are attractive over more than one year, and hence supports continuity of good management even if contracts are annual.

Another mechanism is to use Eco-schemes for the support of restoration or rewilding actions, e.g. by (re)establishing the population of wild or semi-wild herbivores, or to support farmers in a transition toward reduced farming intensity (i.e. reducing Herd Size) and, hence, more sustainable grazing level. To this end, Eco-schemes should be complementary to the (non-productive) "Investments" measure of Pillar 2.

We note with concern that, unlike AECM, **only "farmers or groups of farmers" will be eligible to apply for Eco-schemes. If approved, it will create a barrier for NGOs and other land-users to employ Eco-schemes in relevant lands, and risk exposing valuable landscapes and farms to under-funded, or competitively-disadvantaged conditions**. Such circumstances stand in contrast to Eco-schemes' role in fostering sustainable farming and supporting the CAP's environmental objectives. **To ensure a level playing field, we strongly recommend making all types of land-users eligible to apply for Eco-schemes.**

4.2.6.1 Result-based payments

The option of result-based payments is discussed at various EU levels and for implementation in specific regions. Result-based schemes are being piloted in several MSs and projects, and is possibly implementable both through AECM and Eco-schemes. Various land-users and experts, as well as the literature, strongly supports the application of a result-based approach in (extensively) grazed systems.

Lithuania:

> ***"Farmers should get subsidies for carbon sequestration or humus not for planting cultures. Soil tests could be funded for farmers."*** (LI_10_LU. Part time farmer)

> ***"There is a need to give the farmer a choice, result-based measures are one way, but the risk is that it is not the farmer's fault and due to natural causes there are no desired results."*** (LI_5_LU, farmer, researcher)

One farmer (Oder Delta) proposed that a requirement for non-deterioration of habitats could work if there was an additional payment for high quality performance of the habitat:

> ***"...an additional part which is only paid to farmers who really ensure a high quality of nature on their land, e.g. related to target-/goal-oriented nature conservation, or related to non-deterioration of a species etc.". This would work if it is attractive for farmers, i.e. if "they could really earn fair money for their work for nature".*** (OD_6_LU)

4.2.7 Areas of Nature Constraints (ANC)

While only few farmers and land-users explicitly mentioned support from ANC payments, we note that "the ANC measure… covers approximately 57% of the EU's agricultural area in 2018" (Alliance Environment 2019). This figure indicates the vast areas that are eligible for these payments, as an additional income support to farmers in remote or less accessible areas. This marks ANC a potentially important instrument for maintaining permanent grassland or grazed areas, particularly by preventing their abandonment.

Insofar, however, the implementation of ANC has been highly variable among MSs, some using it to assist small farms and traditional farming systems in HNV regions, with positive environmental impacts, but in many other Member States ANC are merely a form of Direct Payments in Pillar 2 (Alliance Environment 2019), often with undesirable outcomes (e.g. intensification in vulnerable regions). Altogether, *"decisions made by Member States to make the new greening measure and ANC funding accessible to farmers with minimal if any changes to existing management practices [are] needed"* (Alliance Environment 2019). With such varied implementation across the EU, we **strongly recommend sharpening the objectives and targets to be set for ANC (i.e., to which purpose it is used) and developing overarching guidance by the EU Commission as to what MSs can use the instrument for**.

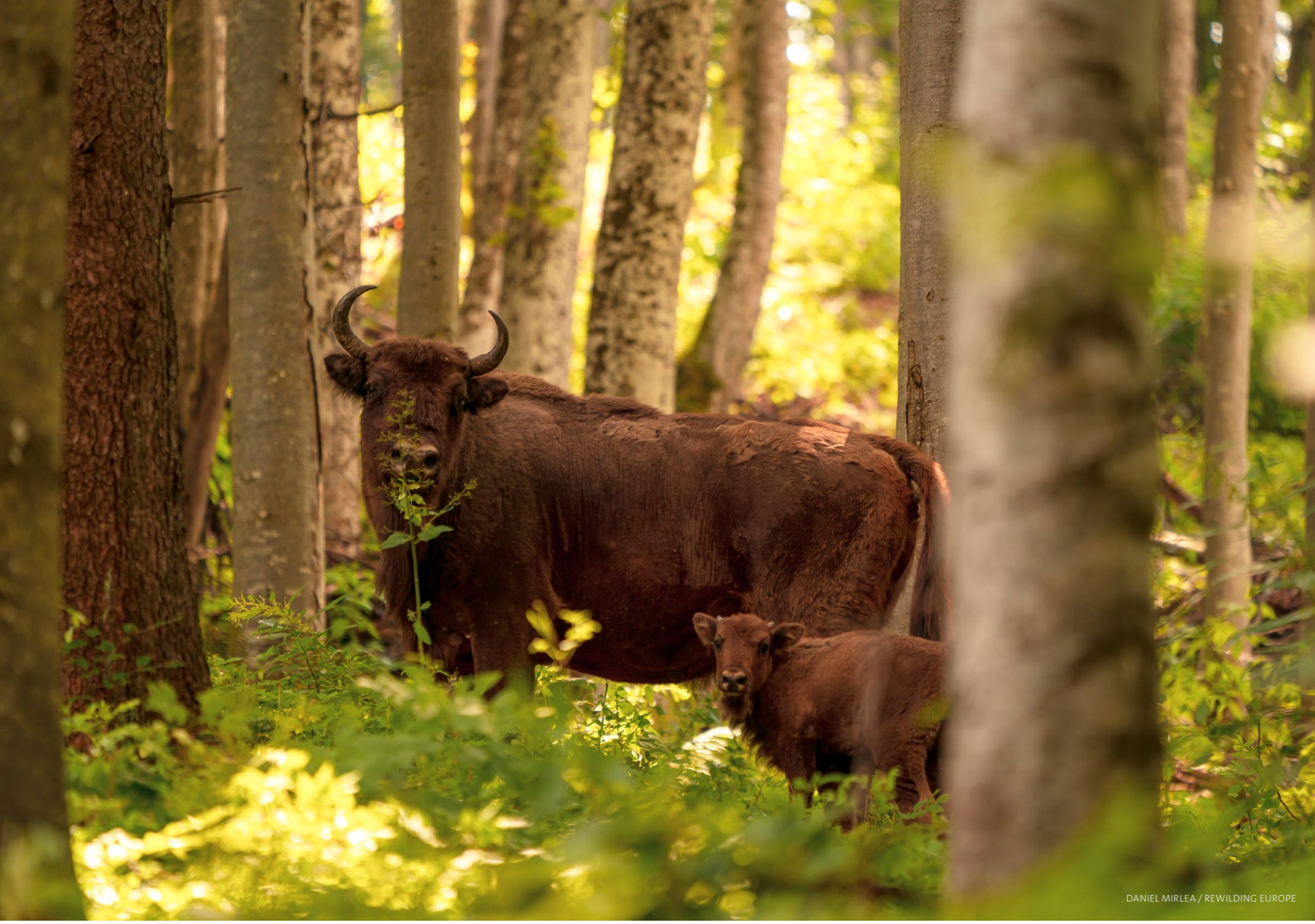
While the official objectives of ANC are not environmental in essence, the EU Council and Parliament proposed, in their 10.2020 vote, to list ANC as part of the envelope for environmental investments (i.e., making it part of the CAP's Green Architecture). If this happens, without linking ANC officially to environmental requirements and monitoring, ANC may not only fail to achieve its aim but also compete with AECM and risk their performance. Thus, if ANC is indeed to be listed under "environment", it must be tightly linked to environmental objectives, and monitored for its implementation and impacts. If ANC can be used effectively in support of HNV regions, and targeted for supporting sustainable farming (both socioeconomic and environmentally), it could become an effective instrument.

A specific recommendation with respect to grazing emerges from the fact that Member States are required to set minimum stocking density requirements for grasslands, but no such requirement exists for arable land in ANC areas. In consequence, "grassland can be converted to arable and still receive the payments, leading to biodiversity losses where semi-natural habitats have been affected. NGOs have therefore called for grassland of EU importance to be exempt from the livestock grazing criterion" (Alliance Environment 2019).

4.2.8 Forest measures

Large herbivores should be part of the management of forest habitats, as well as areas with reforestation and afforestation potentials. They have key roles in opening forests and woodlands, fostering forest regeneration, and reducing fire risks. Given that fires are an emerging problem in Europe, with droughts and fires reaching increasingly higher latitudes, the use of grazers should be perceived as cost-efficient "fire brigades" for fire management. To this end, relevant CAP instruments need improvements from three perspectives.

First, the CAP needs to better differentiate forests as a habitat from the support of forestry as a sector (Söderberg and Eckerberg 2013, Jonsson et al. 2015). For instruments whose core objective is environmental protection (particularly, payments for forest holders and Eco-schemes), it is important to acknowledge herbivores as an inherent part of the ecosystem. This entails that **management through grazers should be eligible for support and included in the definition of appropriate forest management and restoration** – be it through rewilding, management of semi-wild or domesticated animals (e.g. through pastoralism and targeted grazing to reduce fire risks).



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Secondly, MSs should allow, and prioritize, grazing models in forest areas that serve both biodiversity and climate adaptation, e.g. by introducing habitat heterogeneity and open spaces, creating natural fire breaks, or halting too quick or too homogeneous recruitment (as well as bush encroachment). To achieve this, **regulations need to be updated in MSs that have a legal ban on grazing in (designated) forest areas**.

Finally, forest-environment measures have so far received exceptionally low uptake, since "applicants have been put off by the low level of payments" (Alliance Environment 2019). We therefore recommend to **increase payment levels for effective forest-environment measures, in order to enhance their attractiveness**. Improved remuneration can be based on the principles of Payments for Ecosystem Services, considering the concomitant benefits for biodiversity, carbon storage and wildfire prevention through extensive grazing management.

In terms of eligibility for support, **we note with concern that the EU Council proposed amendments into Article 67 (support of forest holders), to limit support only to the forestry sector**.

> ***"In the forestry sector payments shall only be granted to forest holders, forest managers and their associations."*** (Council of the European Union 2020, p. 109).

The proposed amendment removes "other land managers" from the Commission's 2018 proposal, thereby potentially excluding NGOs and other land-managers from eligibility for this support. We strongly **recommend retaining the original text proposal of the Commission (2018) or extending it to offer support for grazing management in forests, through extensive grazing, pastoral or targeted grazing, by semi-wild and wild herbivores**.

4.2.8 Direct Payments in general

Within Direct Payments, those coupled with production ("voluntary coupled support" (VCS), aka Coupled payments) have been strongly criticised for their market-distorting effects, with strong indications of additional detrimental environmental impacts by supporting intensive animal farming systems (Pe'er et al. 2017). We therefore **strongly recommend transforming coupled payments toward supporting environmentally-friendly farming including extensive grazing and pastoralism, and otherwise, phasing out coupled payments at the earliest possible point**.

Yet also decoupled Direct payments place challenges for land users engaged in extensive grazing management, especially if working with wild or semi-wild animals. A key challenge is the independence of support level from land-use intensity, implicity favouring intensive over less intensive grazing for any given area. In addition, Alliance Environment (2019) mentioned that *"Member States may exclude areas of land which are naturally kept in a state suitable for grazing (for instance, by wild deer) from eligibility for CAP support by setting other minimum activity requirements."* This hampers efforts for managing landscapes using semi-wild or wild herbivores, and places production requirements in habitats or regions that can otherwise be equally, or even more effectively, managed through (and for) wild and semi-wild herbivores.

Taking a broader perspective at the CAP as a whole, Direct Payments are taking the lion's share of budget, and their distribution is biased toward large farms over smallholders, GHG-emission-areas over low-emission areas, and biodiversity-poor rather than HNV regions of the EU (Scown et al. 2020b). The Greening measures, beyond being ineffective toward grassland protection (Pe'er et al. 2014, EEA 2019), allowed MSs to shift budgets away from AECM and consequently away from more effective options for biodiversity protection in general, and grasslands in particular (Pe'er et al. 2017). The same can be anticipated for the CAP post-2020, i.e. the establishment of Eco-schemes – with high uncertainty regarding their potential effectiveness – may hamper MSs' investments in AECM. In the absence of clear justification for the continuation of Direct Payments, and with a clear indication that their prevalence in itself generates a barrier to in-depth policy reform, we see the most viable options either in **fully transforming Direct Payments into payments for public goods, or phasing them altogether**.

Lithuania, Expert:

> ***"Direct payments should be eliminated and redistributed to organic farming and extensive farming. If you pay higher payments for extensive farming and farmers see that it is no longer worth doing intensive farming, then they will switch to less intensive practices automatically. It is difficult because there are a lot of farmers. It is a political issue. For farmers it does not really matter how they farm, what matters most is what's the final profit. Redistribution of funds could achieve a lot and that is a matter of agricultural policy. If it pays off, they will start grazing."*** (LT_Expert1 (ŽP)_B28)

4.2.9 Other CAP-related recommendations

4.2.9.1 Improving farmers' position in the value chain

Since farmers and land-users that are engaged in extensive grazing are often economically disadvantaged, it is important to offer assistance beyond mere subsidies. One means to do so, as expressed by several land users and experts, is to provide assistance in accessing markets. Such assistance should be in accordance with Objective 6(c) of the CAP post-2020, "to rebalance the power in the food chain" (i.e., to improve the position of farmers in the value chain).

This can be achieved through Direct support for engagement in direct marketing, but also indirectly by easing some conditions, such as veterinary requirements for small slaughterhouses.

Lithuania:

> ***"good to have like a business and own a slaughterhouse nearby so the farmers could sell meat (but then loads of veterinary requirements would burden a lot relating to slaughter and meat processing), therefore, the veterinary requirements should not be so strict"*** (LI_3_LU, employee of a biosphere reserve directorate)**.**

4.2.9.2 Monitoring and controls

Various farmers and land-users mentioned overload of controls, especially in the contexts of AECM and CC. Some, however, raised the issue that controls are often biased in a way that is either demotivating or dis-incentivising especially for farmers providing public goods. Stricter monitoring and controls are thus essential on farmers that exert environmental pressures, following the "pollution pays" principles. Examples:

Lithuania:

> ***"There should also be stricter controls, as honest farmers see that some other farmers who do nothing still receive payments and then there is great disappointment and loss of motivation.*** (LI_4_LU, a dairy farmer)

Oder Delta:

> ***[We receive] "At least 2 controls per year, maximum was 7 controls per year. The controls are related to everything, it seems that organic farms are very often controlled as "risk farms". We hear that some farms have no control for five years, we don´t belong to these farms..."*** (OD_1_LU)

4.3 Other policies and directives

4.3.1 Birds and Habitats Directives

The Birds and Habitats Directives were, explicitly and implicitly, mentioned by land-users with respect to management requirements and guidelines – with the clear indication that extensive grazing is often required, or highly beneficial, for valuable species and habitat types listed under these Directives.

However, implementation of the Nature Directives in farmlands is mostly indirect, namely, through the CAP and its administration. It thus points again to the CAP as a crucial policy instrument to achieve conservation objectives for a significant share of habitats and species that are protected under the Birds and Habitats Directives – yet to a great extent, CAP implementation on the national level still lacks integrity with requirements of the nature directives (Milieu et al. 2016). Various land-users also mentioned that administrative requirements dominate over knowledge-based ones, e.g. when the opinions of experts, rangers or consultants differs from those prescribed by CAP or Natura 2000 requirements. A multitude of examples were given to illustrate how this results in suboptimal management.

Emergent recommendations:

In the context of implementation of conservation objectives within the Natura 2000 network, EU Member States developed special Priority Action Framework (PAF) documents determining priority actions and estimating necessary funds and possible funding sources. CAP is frequently listed among them. In the design of Rural Development Programmes for the new financial cycle, it is advised to maintain close linkages with national PAFs to improve integrity between these sectoral policies on implementation level. PAFs provide assessment of the conservation status for habitats and species, defines most threatened ones, and sets action priorities. Therefore it is advised to use PAFs as a close reference to set up objectives of the RDPs and defining supported farming practices, which can have a positive effect to the conservation of targeted farmland species and habitats.

PAFs indicate habitat types, which depend on the farming practices as it was traditionally used by farmers. However, some of these protected and farming related habitat types[2] are not eligible for direct payments due to national interpretation of the grasslands and pastures definition and other CAP requirements. It is highly recommended to define such habitats as eligible for direct payments following the guidance of CAP regulations at EU level and promote continuity of farming practices with help of eco schemes or agri-environmental measures.

With regard to Natura 2000 payments it is recommended to allow more flexibility in its requirements as a response to changing conditions (e.g. weather) as well as ensure its better targeting to the specific objectives of individual Natura 2000 sites. Currently, restrictions set in the Natura 2000 payment scheme are rather universal for every Natura 2000 site within the country. Therefore the restrictions may not correspond to actual needs of protected species/habitats in the area and are too general. This also leads to a small payment level and might set unnecessary restrictions. Better targeting can be achieved by: a) defining specific management restrictions for each Natura 2000 site in the GIS based system collecting declaration applications; b) involving advisory services and/or interaction of conservation administration in the field, which could assess relevance and validade required management flexibility.

In the longer term, dependency on the CAP can be reduced by establishing a stand-alone Fund for Nature.

2 E.g.: European dry heaths (4030), Fenoscandian wooded meadows (*6530), Juniper communis formations on heaths of calcareous grasslands (5130)

4.3.2 The Forest Strategy

The establishment of a forest strategy is an important policy process that should be addressed with care. Particular attention needs to be given to differentiating forests from plantations. In many forest and forestry areas, herbivore numbers are regulated through hunting, culling or exclosures, to avoid damage on trees (browsing tree saplings, debarking older trees). Although understandable from the perspectives of forest regeneration and timber production, this may reduce the potential influence of herbivory on the structure and biodiversity of forests, e.g. as a natural disturbance factor or a generator of habitat heterogeneity.

Given the frequent confusion between forests and forestry in Europe, we further **recommend the establishment of a Forests Directive, extending from the Habitats' Directive**.

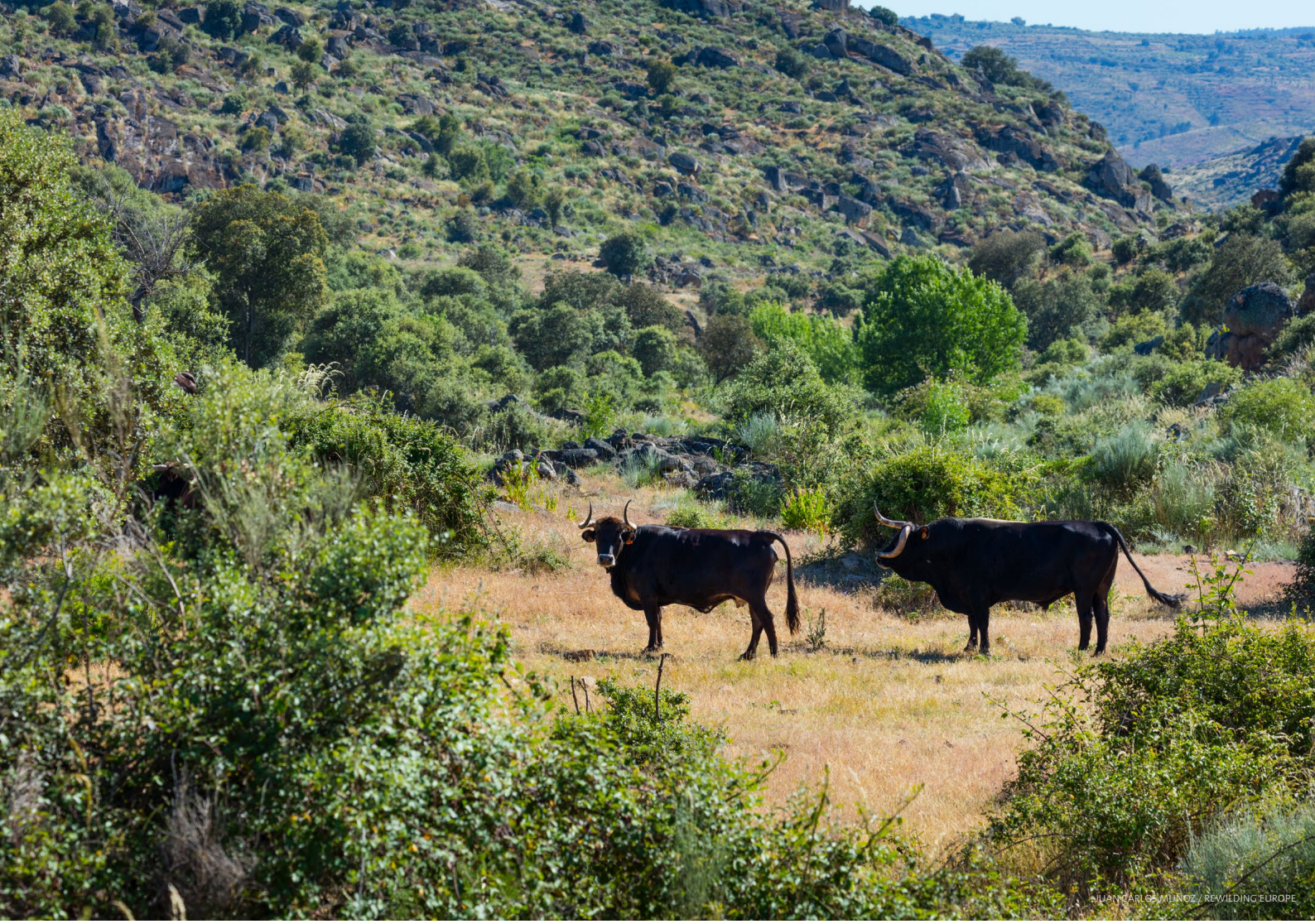
With the ambition to develop more forests on the European continent (in line with the EU Green Deal), a Forest Directive can help consider forests as complete ecosystems (more than just tree plantations (Jonsson et al. 2015)), while also prioritising landscape-scale development of natural forests with naturally occurring populations of herbivores. It is important to support the entire life cycle of natural forests, in which processes such as storms, fires, diseases, debarking and harvesting are balanced by spontaneous regeneration and local planting of key species. This will increase the added value of forests to biodiversity, climate change mitigation and adaptation, and other public goods, as elaborated below.

Management of fire risks: Homogeneous landscapes with forest plantations or shrubby vegetation are more vulnerable to large-scale or impactful fires than grazed habitats and mosaic landscapes because of the abundance of fuel and the absence of fuel breaks or fire breaks. Large herbivores can remove understory vegetation, thereby preventing the build-up of fuel for catastrophic fires and creating natural firebreaks. As such, large herbivores often represent a cost-effective, nature-based solution for fires that can replace or complement other types of management (eg. controlled burning, thinning, etc.). Adapting the type of herbivore (grazer, browser, mixed-feeder) to the vegetation is important to reduce fuel loads. Combinations of herbivore species with different feeding behaviours (i.e. mixed herds) can be especially effective at reducing fuel loads in environments with a diverse vegetation. Targeted grazing, i.e. short and intense grazing as performed in pastoral systems, can be particularly effective as means to remove understory vegetation and reduce fire risks.

The forest strategy should therefore seek to support and expand the support for mixed herds, especially in areas currently undergoing land abandonment. Payments for Ecosystem Services related to fire management by grazing should be available to herd managers and included in CAP and/or fire-related policies.

Carbon storage and sequestration: Natural forests (particularly old-growth forests) have large carbon storage capacities. Natural grasslands as well have the ability to sequester carbon, and are sometimes more effective at this in the long-term than forests. This is due to the lower fire risk and the rapid intake of carbon in fast growing herbs and its accumulation in the soil via herbivores and dung beetles. This is particularly relevant for extensive grasslands. **The forest strategy should prioritize carbon storage over carbon sequestration**, given the large storage capacities of natural forest mosaics and old-growth forests; and seek to generate open woodlands that retain a mix of forest and open vegetation with extensive (rather than intensive) grazing therein.

Biodiversity: A mosaic of forests and grassy vegetation, which is associated with extensive grazing practices, creates habitat heterogeneity and thereby promotes biodiversity. Large herbivores not only help maintain such ecosystems but also add unique features to these landscapes, such as dung pellets, trails and wallows, that form habitats for a large range of animal and plant species. At high densities animals graze non-selectively, causing excessive disturbance and erosion and leaving only a few unpalatable plant species. Plant and animal diversity is therefore diminished. **The forest strategy**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should therefore seek to allow and support landscape mosaics containing forests and grasslands across successional stages, to support the heterogeneity required for healthy ecosystems.

Natural forest regeneration: In most parts of Europe, soil quality and the seed sources of trees are good enough to allow natural forest regeneration, also in naturally grazed landscapes. Despite damages to seedlings and young trees, and debarking of (older) trees, grazers assist seed dispersal and germination. Notably, however, real "grazers" are missing in many European forests as the dominant herbivores (deer) are rather browsers. Some levels of grazing, including reintroduction of grazers, should therefore be considered beneficial over intensive anthropogenic intervention (e.g. when ploughing and digging for planting trees). The forest strategy should therefore revisit the plan to focus on planting trees and instead set higher priority in supporting natural forest recovery, accompanied by naturally-occurring and reintroduced populations of herbivores as natural ecosystem managers, to achieve landscape-scale development of natural forest ecosystems.

A larger scale (landscape-level) planning should support the entire life cycle of natural forests, in which processes like storms, fires, diseases, debarking and harvesting are in balance with spontaneous regeneration and small-scale planting of missing species. Notably, as salaries are a major contributor to forestry costs, spontaneous regeneration and grazing of forests can significantly reduce management costs associated with planting and prescribed burning.

4.4 Other instruments and approaches

Despite the dominance of the CAP in the responses of land-users, farmers and experts, It is important to acknowledge that a broad range of policies and regulations, subsidies and other market instruments are available when seeking to protect and expand extensive grazing and rewilding efforts. In fact, several land managers regarded the CAP, including AECM, as counter-productive for nature protection because they set over-simplistic (or even wrong) management prescription; while other instruments could guide and support restoration and rewilding.

Border Meuse:

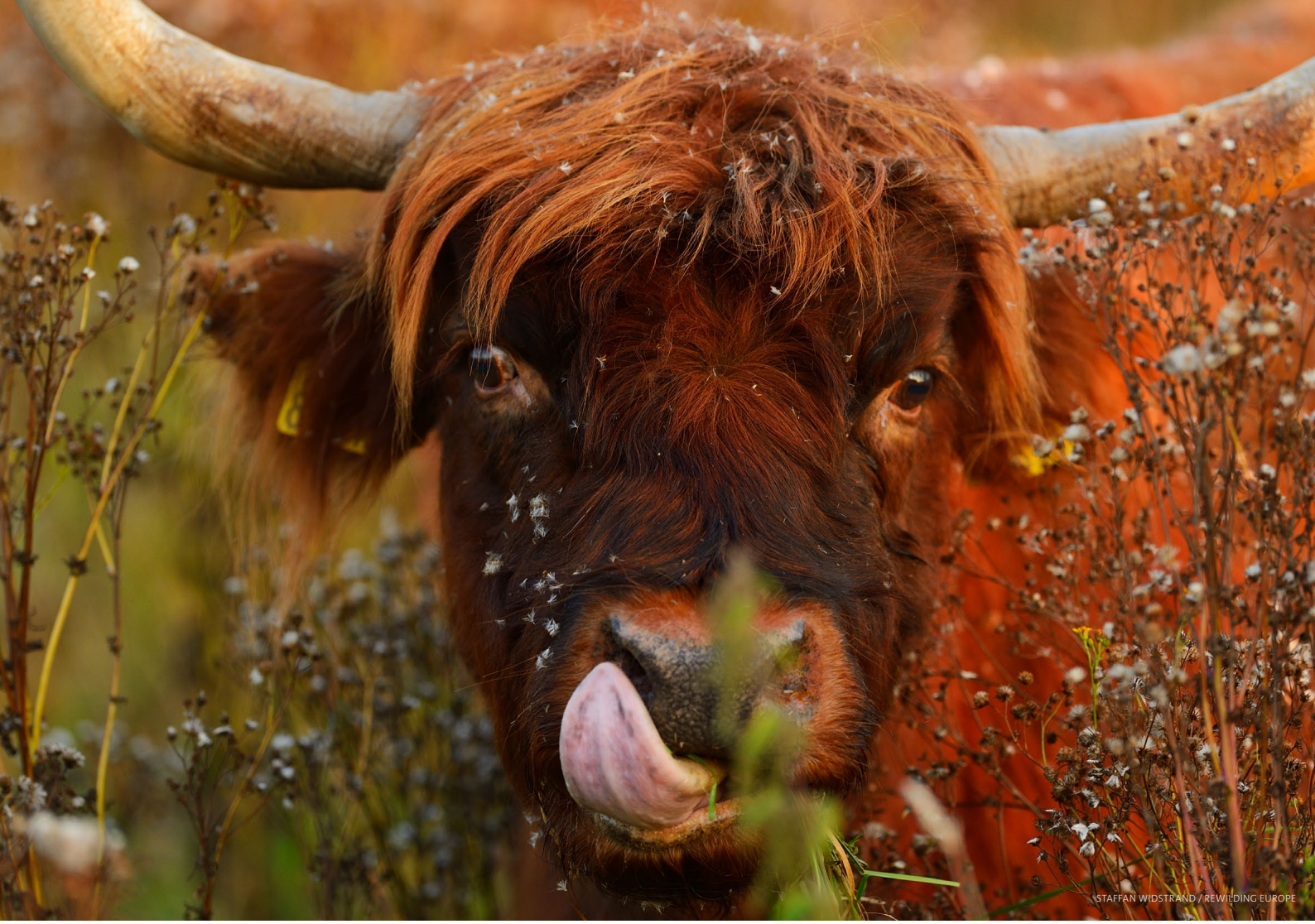
> ***"Subsidies can lead to a wrong kind of management of nature areas because it is driven by just one species or one area type (N2000), which sometimes doesn't fit the area".*** (BM_1_LU)

From a funding perspective, alternatives include public-private cooperation and national funding (for nature protection or compensation for environmental damages). LIFE support, or derivation of it, can be used for longer-term and broader-scale support of restoration, rewilding, and management of grazed ecosystem. An alternative longer-term option can be the establishment of a so-called "Fund for Nature", to replace or complement (parts of) the CAP in natural and semi-natural areas (and habitats) where, likely, better management can be achieved through an alternative form of governance.

Other forms of market interventions, that focus on consumers' rather than producers' side, could emerge from the Farm-to-Fork Strategy. One type of such intervention is to develop alternative or additional labels, or to expand the breadth of existing certification schemes, so as to encompasses the special conditions of land-users working with semi-wild and wild animals, engaged in pastoralism, or using commons. Thereby, land-users engaged in extensive grazing can gain higher visibility and public acceptance.

Other means to improve the economic viability of such land users is by supporting income diversification, for example through ecotourism or assistance in direct marketing (mentioned by several land-users and experts). Support for this avenue could come from Rural Development Programmes (Pillar 2 of the CAP), cohesion funds or other funding mechanisms.

A mix of the above-mentioned solutions, and potentially others beyond the scope of this report, can help ensure that "extensive" grazing is truly "sustainable", also from a socioeconomic perspective. In this way, sustainability can be achieved from both environmental perspectives and for the long-term viability of farmers and land-users engaged in implementing it.



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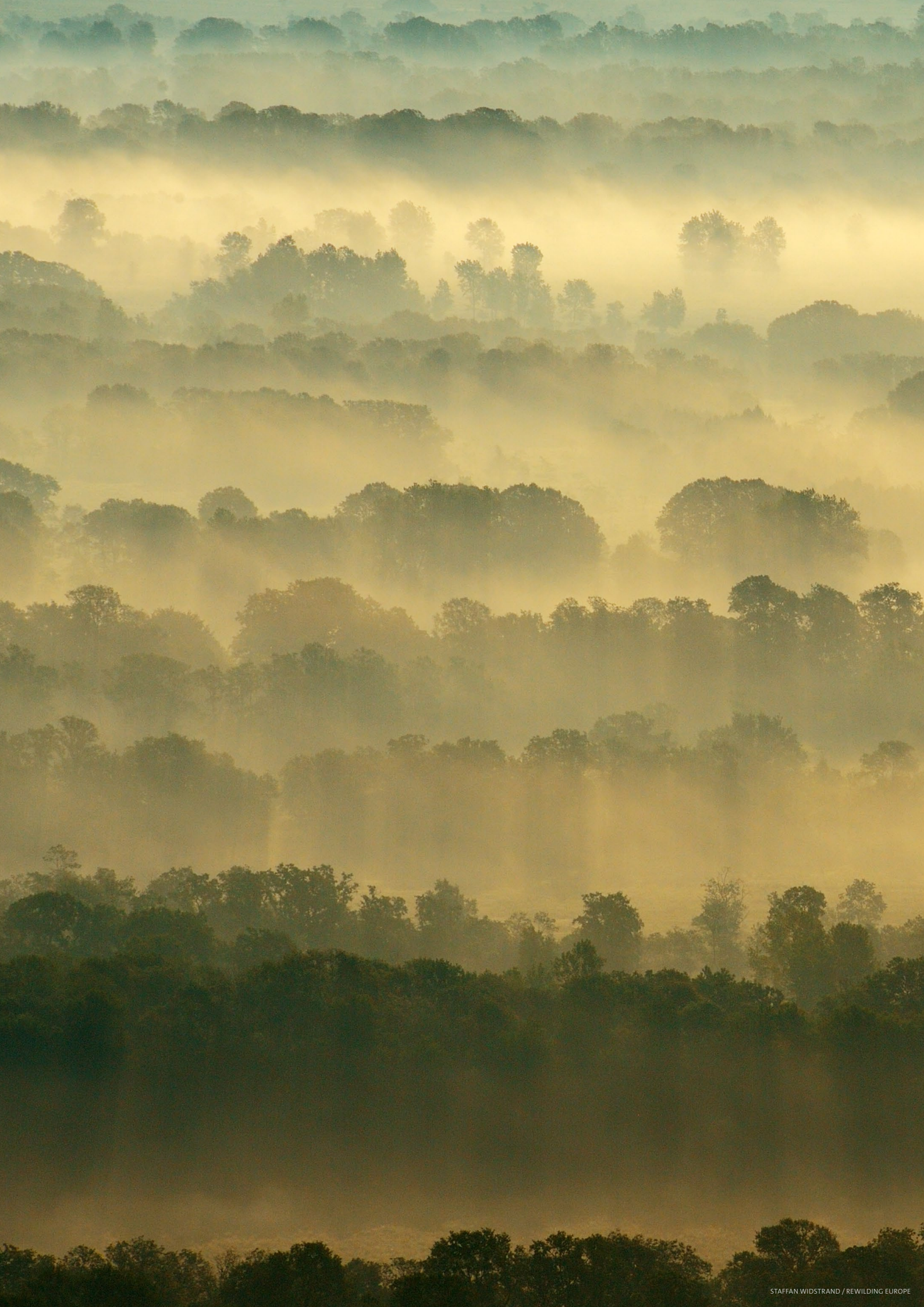

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