EN 2020

13

Special Report

Biodiversity on farmland: CAP contribution has not halted the decline

EUROPEAN
COURT
OF AUDITORS

Contents

Executive summary

I In Europe, the number and variety of species on farmland – "farmland biodiversity" – has declined over many years. Since 1990, for example, populations of farmland birds and grassland butterflies have declined by more than 30 %.

II The Commission adopted a biodiversity strategy in 2011, in the aim of halting the loss of biodiversity and the degradation of ecosystems by 2020, and restoring them as far as possible. In particular, it committed to increasing the contribution of agriculture and forestry to maintaining and enhancing biodiversity. It did so in the context of an international commitment to this objective stemming from ratification of the United Nations Convention on Biological Diversity by all Member States and the EU itself.

III For the 2014-2020 period, the Commission planned to spend 8.1 % of the EU budget (€86 billion) on biodiversity; 77 % of this amount (€66 billion) coming from the common agricultural policy (CAP). The EU's role in protecting and enhancing biodiversity on farmland is crucial because the EU sets environmental standards through legislation and co-finances most of Member States' agricultural spending.

IV The purpose of this audit was to assess the contribution made by the CAP to maintaining and enhancing biodiversity. We examined the EU's efforts to achieve its 2020 biodiversity targets, and we provide recommendations to feed into the current legislative preparations for the 2021-2027 CAP and the implementation of the new EU biodiversity strategy post-2020.

V We assessed whether the EU designed its biodiversity strategy and the CAP legal framework for 2014-2020 to better conserve biodiversity. We also examined how the Commission has monitored and evaluated progress towards the 2020 agriculture target of its biodiversity strategy. Finally, we assessed the degree to which EU and Member State action has contributed to achieving the 2020 agriculture target.

VI We found that the formulation of the agriculture target and actions in the EU biodiversity strategy to 2020 makes it difficult to measure progress. We also found a lack of coordination between EU policies and strategies, one result of which is that they do not address the decline in genetic diversity. Lastly, we found that the Commission's tracking of CAP spending for biodiversity is unreliable.

VII Where known, the effect of CAP direct payments – 70 % of EU agriculture spending – on farmland biodiversity is limited. Some direct payment requirements, notably greening, and cross-compliance, have potential to improve biodiversity, but the Commission and Member States have favoured low-impact options. The EU's rural development instruments have greater potential than direct payments for maintaining and enhancing biodiversity. However, Member States relatively seldom use high-impact rural development measures such as result-based and "dark green" schemes.

VIII We recommend that the Commission:

(1) Improves coordination and design for the post-2020 EU biodiversity strategy – to this end also tracking expenditure more accurately;

(2) Enhances the contribution of direct payments to farmland biodiversity;

(3) Increases the contribution of rural development to farmland biodiversity; and

(4) Develops reliable indicators to assess the impact of the CAP on farmland biodiversity.

Introduction

Declining farmland biodiversity is a major threat

01 The global decline in biodiversity is widely recognised. In 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) warned that the decline is at rates unprecedented in human history – around one million animal and plant species worldwide are currently threatened with extinction[1]. In January 2020, the World Economic Forum classified the loss of biodiversity and collapse of ecosystems as one of the top five threats facing the world[2], in both likelihood and impact.

02 The 2019 State of the Environment report from the European Environment Agency (EEA)[3] found that agricultural intensification remains one of the main causes of biodiversity loss and ecosystem degradation in Europe. In many areas of Europe, intensification has transformed formerly diverse landscapes, consisting of many small fields and habitats, into uniform unbroken terrain managed with large machines and a highly reduced work force (see ***Figure 1***). This has led to a decline in the abundance and diversity of natural vegetation and, as a result, animals[4]. A 2017 study from Germany to measure total insect biomass, with traps deployed in 63 nature protection areas to provide information on the status and trend of local species, estimated a seasonal decline of 76 %, and a mid-summer decline of 82 %, in flying insect biomass over 27 years[5]. While the quantification put forward in this report has been challenged, other studies support the conclusion on the overall trend[6].

---

1 IPBES: "Global assessment report on biodiversity and ecosystem services", 2019.

2 World Economic Forum: "Global Risks Report", 2020.

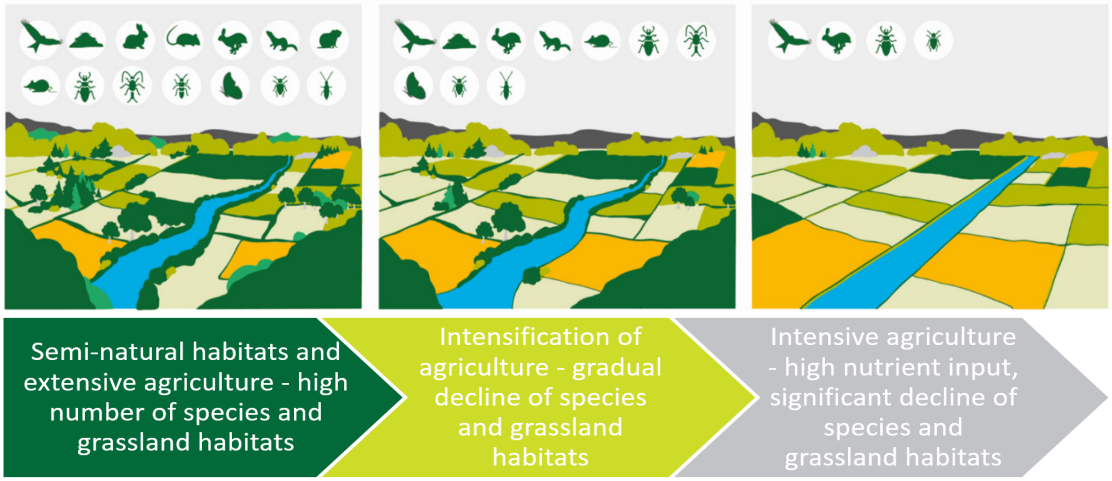
3 EEA: "The European environment – state and outlook 2020", 2019.

4 IPBES: "Regional assessment report on biodiversity and ecosystem services for Europe and Central Asia", 2018.

5 Hallmann et al.: "More than 75 percent decline over 27 years in total flying insect biomass in protected areas", *PLoS ONE 12*, 2017.

6 Early, C.: "Insect armageddon – the devil is in the detail", *Ecologist*, 3 November 2017.

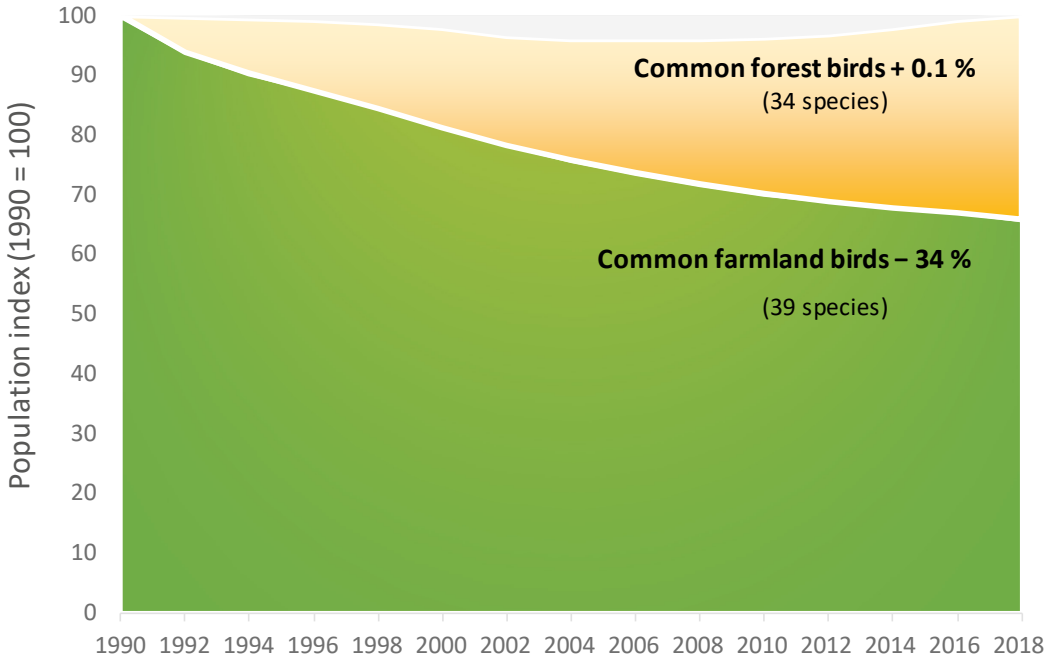
Figure 1 – Decline in farmland biodiversity due to intensification of land use



Source: ECA.

03 Farmland bird populations are considered to be a good indicator of changes in farmland biodiversity because birds play a significant role in the food chain and are found in many varied habitats. The most recently published aggregated bird population index shows that bird species have declined since 1990; most strikingly, the EU Farmland Bird Index (FBI) shows a 34 % decline among 39 species common on farmland. In the same period, the Forest Bird Index increased by 0.1 % – suggesting that agriculture is a significant driver for biodiversity loss (see ***Figure 2***).

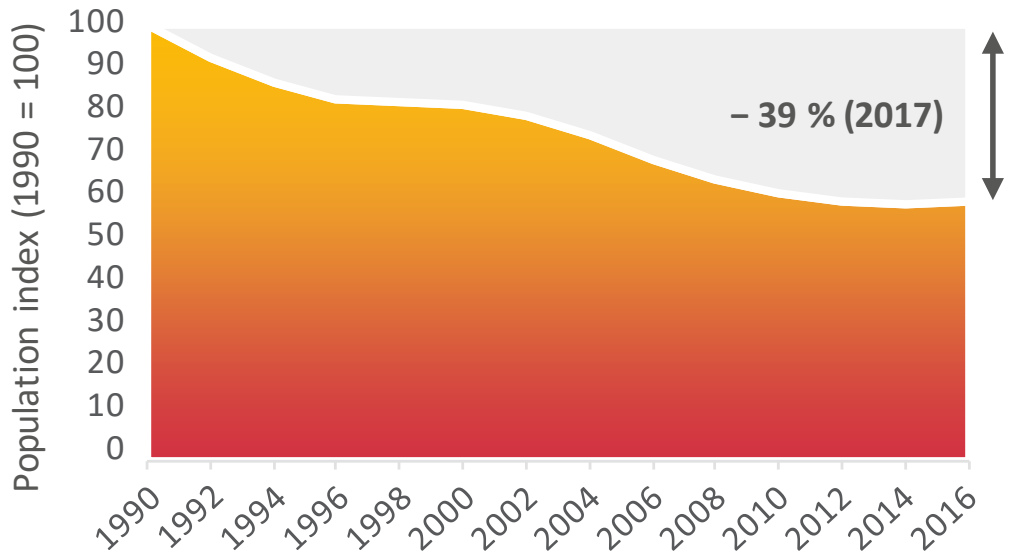
Figure 2 – Common farmland and forest birds – EU population Index



Source: ECA, based on Eurostat data (2020).

04 Like birds, butterflies occur in a number of habitats and respond rapidly to changes in environmental conditions. The Commission Staff Working Document, accompanying the mid-term review of the biodiversity strategy to 2020, states that butterflies are representative of many other insects[7]. The latest European Grassland Butterfly Index is from 2017. It shows that total numbers of 17 typical butterflies have declined by 39 % since 1990, indicating a considerable loss of grassland biodiversity (see ***Figure 3***), though the situation has stabilised since 2013. Fourteen Member States[8] contributed to the most recent butterfly monitoring data.

Figure 3 – European Grassland Butterfly Index



Source: ECA, based on EEA data (2019).

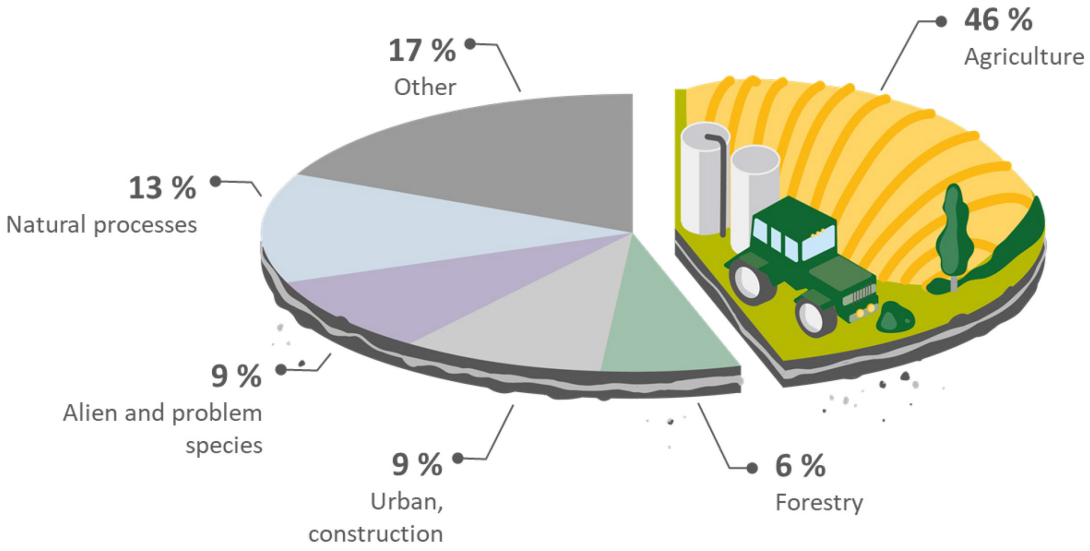
05 Natura 2000 is a network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types in the EU. The most recent reporting cycle for Natura 2000 and the related Habitats and Birds Directives, measuring the situation of species and habitats of EU interest during 2013-2018, shows that the situation had deteriorated in comparison to 2007-2012: the proportion

[7] Commission: Commission Staff Working Document – "EU assessment of progress in implementing the EU biodiversity strategy to 2020 (2/3)", SWD(2015) 187 final, accompanying the Report from the Commission to the European Parliament and the Council – "The Mid-term Review of the EU Biodiversity Strategy to 2020", COM(2015) 478 final, p. 20.

[8] Belgium, Estonia, Finland, France, Germany, Ireland, Lithuania, Luxembourg, Netherlands, Portugal, Romania, Slovenia, Spain and Sweden.

of habitats with an "unfavourable" conservation status rose from 69 % to 72 %[9]. The EEA reported in 2019[10] that agriculture was by far the main source of pressure on Natura 2000 protected grassland habitats (see ***Figure 4***).

Figure 4 – Key pressures on grassland habitats in Natura 2000 areas



Source: ECA, based on EEA data (2019).

06 The situation of biodiversity in Europe varies, and Member States therefore face different challenges. For example, in Bulgaria and Romania, which are still widely considered to have a rich biodiversity (due to, among other things, more traditional non-intensive farming practices and smaller farms), some studies have concluded that it was sufficient to maintain the existing biodiversity status[11]. In other Member States, such as the Netherlands and Germany, where intensive farming is far more common, scientists see a need to re-establish biodiversity in areas where species and rich natural habitats have disappeared in recent decades[12].

---

[9] https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu/article-17-national-summary-dashboards/conservation-status-and-trends.

[10] EEA: "The European environment – state and outlook 2020", 2019.

[11] Sutcliffe et al.: "Harnessing the biodiversity value of central and eastern European farmland", *Diversity and Distributions*, 21, 2015.

[12] Erisman et al.: "Agriculture and biodiversity: a better balance benefits both", *AIMS Agriculture and Food*, 1(2), 2016; BfN: "Agriculture Report: Biological diversity in agricultural landscapes", 2017.

07 In March 2020, the Commission published an evaluation report on the impact of the CAP on habitats, landscapes and biodiversity[13]. According to the evaluation, an overall impact assessment was not possible owing to the lack of suitable monitoring data. The evaluation concluded that Member States have not made sufficient use of the available CAP instruments to protect semi-natural features, in particular grassland, or to ensure that all semi-natural habitats that could be farmed are eligible for direct payments. It also found that Member States could have used a wider range of CAP measures to support the co-existence of agriculture with biodiversity. In addition, the design and funding of agri-environment-climate measures (AECMs), which provide support for intensive cropping farms, has been insufficiently attractive to bring about the necessary management changes to improve biodiversity performance.

08 The influence of the CAP on the situation of farmland biodiversity is not known for the EU as a whole. However, a study published in 2019[14] on the situation in Czechia provided evidence that agriculture markedly intensified after the country joined the EU in 2004, and that farmland bird populations have declined since the same date. The Danish Farmers Association has found, meanwhile, that the steep decline in insect populations described in two German studies from 2017 (see paragraph ***02***) and 2019[15] was most strongly connected with the withdrawal of obligatory set-aside from the CAP rules in 2009[16]. The European Economic Community introduced set-aside in 1988 to help reducing the large and costly surpluses produced in Europe under the guaranteed price system of the CAP and to deliver environmental benefits. Farmers were required to leave a proportion of their land out of intensive production.

---

[13] Alliance Environnement: "Evaluation of the impact of the CAP on habitats, landscapes, biodiversity", November 2019.

[14] Reif et al.: "Collapse of farmland bird populations in an Eastern European country following its EU accession", *Conservation Letters*, 2019.

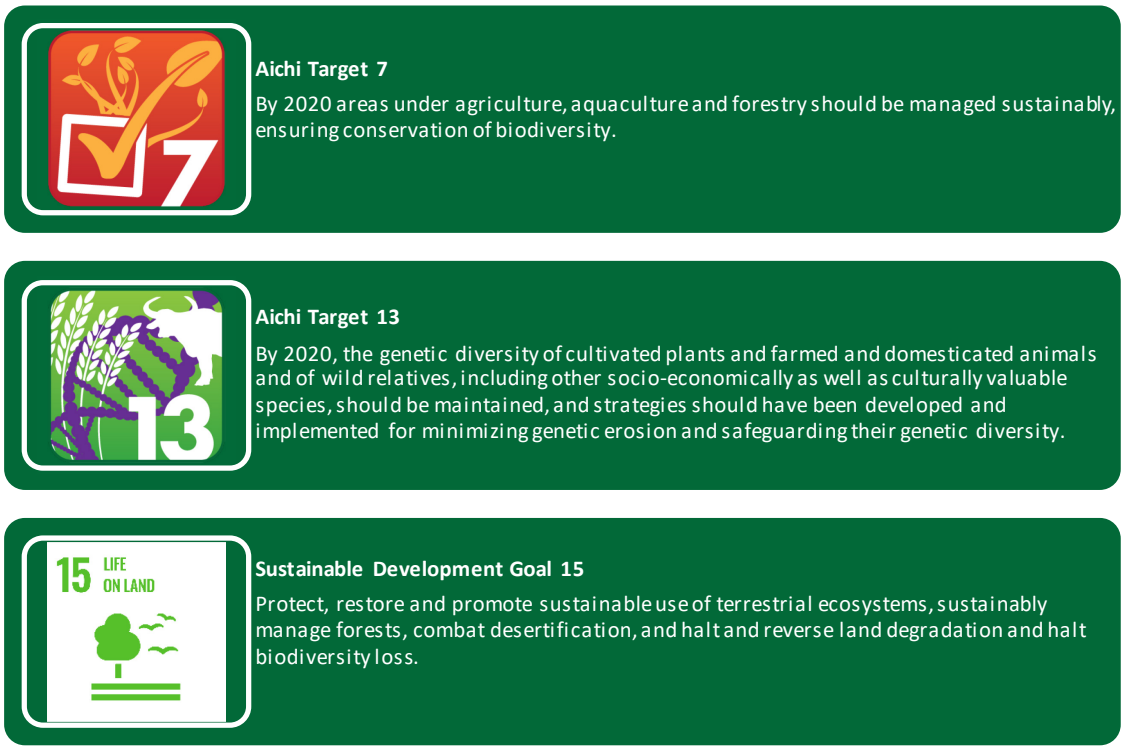
[15] Seibold et al.: "Arthropod decline in grasslands and forests is associated with drivers at landscape level", *Nature*, 2019.

[16] Deter, A.: "Insektenrückgang: Dänischer Bauernverband sieht Zusammenhang mit EU-Agrarpolitik", *TopAgrar Premium*, 2019.

International and EU action to halt biodiversity loss

09 The EU and the Member States each signed the United Nations Convention on Biological Diversity (CBD) in 1992 and 1993. The European Council (Council) approved the CBD in 1993[17]. All parties to the CBD, including the EU and its Member States, committed to the "Aichi" biodiversity targets in 2010, setting the global framework for priority action on biodiversity for the period to 2020. The main coordination mechanism in the EU is the Council's Working Party on International Environment Issues (Biodiversity). The 2030 Agenda for Sustainable Development and its 17 goals (SDGs), adopted by the UN in 2015, also provided new momentum for biodiversity. The main "Aichi" targets and SDGs relevant to farmland biodiversity are shown in ***Figure 5***.

Figure 5 – Main 2020 Aichi targets and 2030 SDGs relevant to agriculture



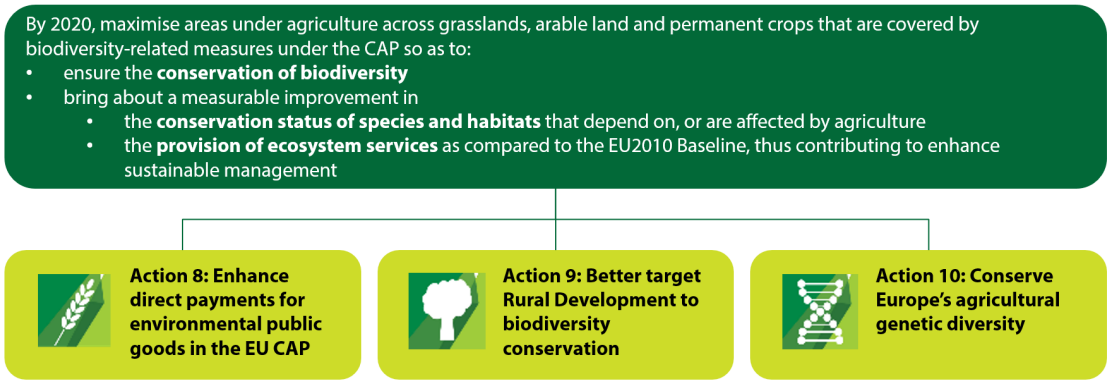
Source: ECA, based on UN publications.

10 To meet its commitments under the CBD, in 1998 the Commission adopted a Communication on a European Biodiversity Strategy. In 2001, it produced its first action plan, which it updated in 2006, and then replaced in 2011 with an EU

[17] Council Decision of 25 October 1993 concerning the conclusion of the Convention on Biological Diversity (93/626/EEC).

biodiversity strategy for the period to 2020. The Council (in 2011)[18] and the European Parliament (in 2012)[19] endorsed the strategy, which contains six targets. Target 3 focuses on increasing the contribution of agriculture and forestry to maintaining and enhancing biodiversity. Target 3a, the agriculture target, includes a general commitment, three actions and five sub-actions (see ***Figure 6***).

Figure 6 – Agriculture target 3a of the EU biodiversity strategy to 2020 and related actions



Source: ECA, based on Commission information.

11 At the Commission, the Directorate-General for Environment (DG ENV) has overall responsibility for proposing and implementing environmental legislation and policies. The Directorate-General for Agriculture and Rural Development (DG AGRI) deals with agricultural legislation and policies. Member States are required to develop and oversee efforts to achieve the target.

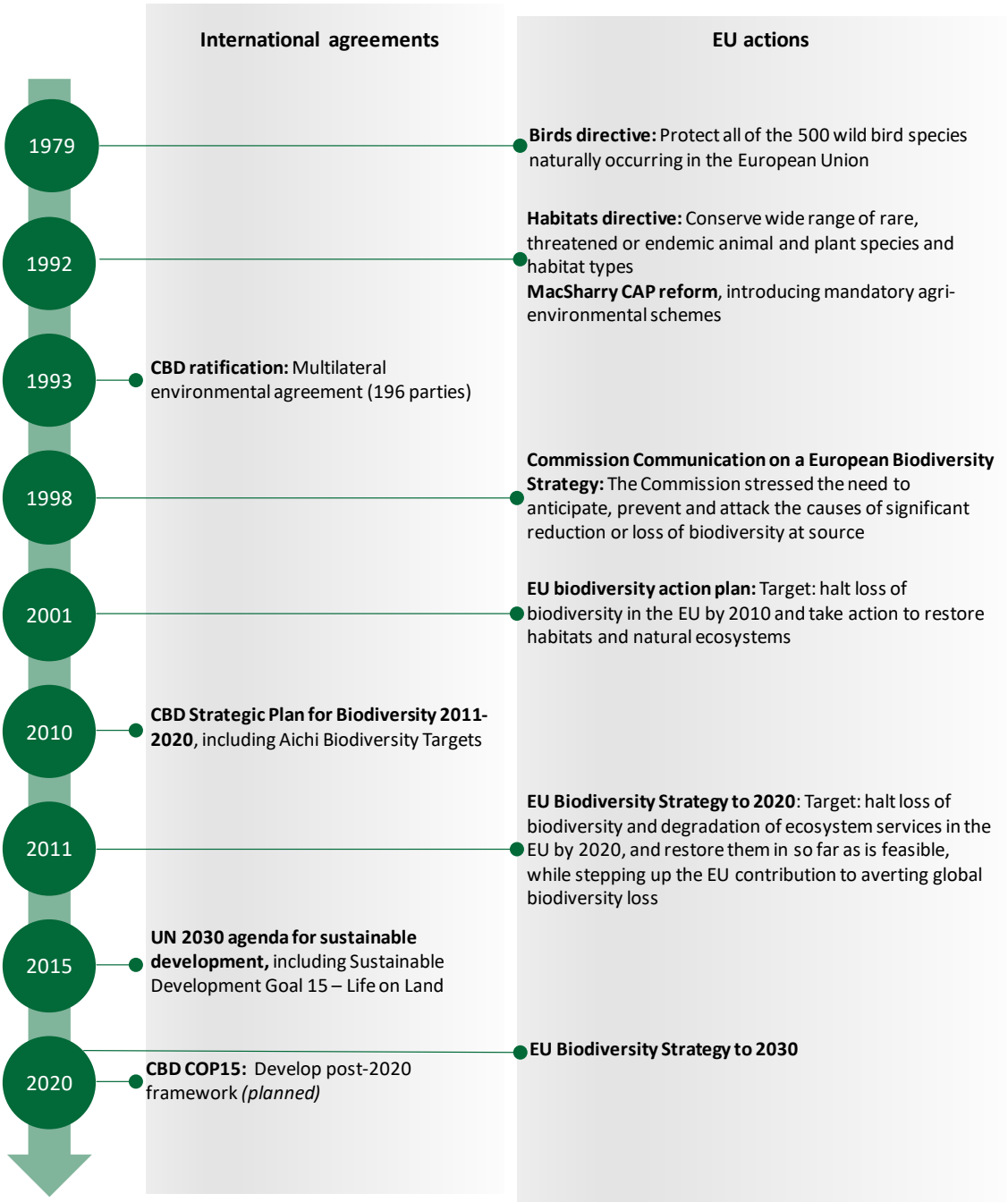
12 As the current biodiversity strategy is to lapse this year, the Commission announced in its European Green Deal that it envisaged issuing a new strategy for the period to 2030. The new strategy was published in May 2020. It outlines general principles and sets the scene for the CBD Conference of Parties (COP15). To give practical shape to the new strategy, the Commission plans to issue follow-up actions and measures in 2021.

---

[18] EU Biodiversity Strategy to 2020 – Conclusions adopted by the Council (Environment) on 21 June 2011 (ST11978/11).

[19] European Parliament resolution of 20 April 2012 on our life insurance, our natural capital: an EU biodiversity strategy to 2020 (2011/2307(INI)).

Figure 7 – International agreements and EU action on biodiversity



Source: ECA.

13 The EU sets environmental and agricultural standards through EU legislation and supporting financially the agricultural sector. For the 2014-2020 period, the Commission reports that it has allocated 8.1 % of the EU budget (€86 billion) to biodiversity. The Commission mentions in its Statement of budget estimates 2020 that biodiversity funding from the common agricultural policy (CAP) will be €66 billion (77 % of biodiversity spending) over the entire 2014-2020 period.

Audit scope and approach

14 The purpose of this audit was to assess the role of the CAP in maintaining and enhancing biodiversity under Target 3a of the EU biodiversity strategy to 2020. We chose this topic because of the high rate of biodiversity loss in Europe, the major role played by agriculture in that loss, the large share the CAP takes of the EU budget and recent negative assessments of the way the strategy, and the agriculture target in particular, have been implemented in the EU. This special report complements our special report on Natura 2000[20].

15 Our aim was to provide recommendations to feed into the current legislative preparations for the 2021-2027 CAP, the new EU biodiversity strategy to 2030, and discussion and decision-making at the COP15. The content of the new strategy was not part of the audit, neither was the degree to which the EU has made progress on its international commitments on biodiversity. The audit also does not cover pollinators, as we will issue a separate report on this topic. The estimated direct yearly contribution of insect pollinators to European agriculture is €15 billion[21].

16 The audit covered the design, implementation, results and monitoring of EU actions to halt biodiversity loss on farmland in the EU. We focused on those components of the EU and national biodiversity strategies that are relevant to agriculture, and on their implementation by means of various instruments, notably the CAP. We looked mainly at the current programming period (2014-2020), though for comparative purposes we also examined the design, implementation and results of analogous CAP instruments from the previous period (2007-2013). Lastly, we took account of the Commission's legislative proposals for the CAP for the post-2020 period.

---

[20] See ECA special report 1/2017: "More efforts needed to implement the Natura 2000 network to its full potential".

[21] Potts et al., "Status and trends of European pollinators. Key findings of the STEP project", 14 January 2015.

17 The main audit question was: "Has the CAP contributed positively to maintaining and enhancing biodiversity?" In order to answer this question we assessed:

- whether the EU designed its biodiversity strategy and the CAP legal framework for 2014-2020 to better conserve biodiversity, and how the Commission has monitored and evaluated progress towards the 2020 agriculture target of its biodiversity strategy;
- whether direct payments have had a demonstrable positive impact during the 2014-2020 CAP period; and
- whether CAP rural development action in 2014-2020, notably through AECMs, has focused on biodiversity.

18 We collected audit evidence through:

- a review of data and documents, including scientific, strategic, legislative, policy and guidance documents relating to farmland biodiversity in the EU and in a sample of Member States and regions;
- interviews with staff of five Commission directorates-general (Agriculture and Rural Development, Environment, Eurostat, the Joint Research Centre, Research and Innovation) and the European Environment Agency, representatives of NGOs (BirdLife Europe, COPA-COGECA, IEEP Brussels, Eurogroup for Animals) and of national and regional authorities, farmers' organisations and other entities;
- visits to five Member States with different biodiversity, agricultural and landscape profiles (Cyprus, Germany, Ireland, Poland and Romania);
- farm visits and discussion with 78 farmers in 14 Member States (see ***Annex I***);
- a survey of national and regional authorities of nine other Member States/regions (for details see ***Annex I***).

In addition, in October 2019, we organised a panel discussion on farmland biodiversity with scientific, policy and administrative experts in this area. The panel helped us to verify and develop our audit findings. Staff from DG AGRI and DG ENV observed the discussion.

Observations

Gaps in design of the EU biodiversity strategy, its coordination with the CAP and its monitoring

19 We examined whether the 2020 agriculture target in the EU biodiversity strategy is specific, measurable, achievable, relevant and time-bound and whether the EU's action is consistent with it. We also checked whether the CAP 2014-2020 legislation is aligned with the EU biodiversity strategy to 2020 and national initiatives, and whether the Commission's tracking gives reliable information about EU biodiversity spending.

EU biodiversity strategy lacks rigour in relation to target 3a, and related indicators show weaknesses

20 As shown in ***Figure 6***, the EU strategy consists of targets and actions. It was set for a ten-year period, whereas the EU budget and agricultural policy framework follow a seven-year policy cycle. The 2011 impact assessment accompanying the Commission's EU biodiversity strategy to 2020 stated that the "indicative" agriculture target (3a) would need "to be translated in concrete terms in the design of the CAP reform, to deliver on the 2020 biodiversity target"[22]. The performance of CAP measures for 2014-2020 are measured in relation to three objectives, including sustainable management of natural resources and climate action, with a focus on greenhouse gas emissions, biodiversity, soil and water[23].

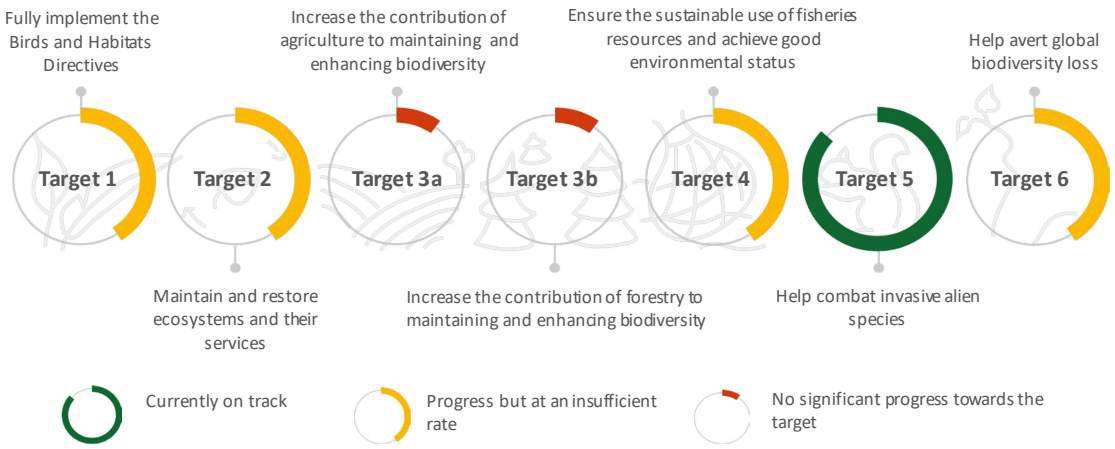
---

[22] Commission: "Impact Assessment Accompanying the Communication—Our Life Insurance, Our Natural Capital: an EU Biodiversity Strategy to 2020", SEC(2011) 540 final.

[23] Article 110(2) of Regulation (EU) No 1306/2013 on the financing, management and monitoring of the common agricultural policy.

21 The Commission reported in its 2015 mid-term review of the biodiversity strategy to 2020 that there had been no significant progress, especially towards Target 3 on agriculture (target 3a) and forestry (target 3b), and that "greater efforts" were needed to meet the deadlines (see ***Figure 8***). Recent scientific findings[24] also confirm, as reported in paragraphs ***03*** to ***05***, that there has been no measurable overall improvement towards Target 3 since 2015, and that it will not be met by 2020.

Figure 8 – Mid-term assessment of the six targets of the biodiversity strategy



Source: ECA, based on Commission 2015.

22 The Commission tabled its CAP legislative proposals for the post-2020 period in 2018. One of the nine specific objectives is for the CAP to contribute to biodiversity protection, better ecosystem services and the preservation of habitats and landscapes[25]. The schedule for the new biodiversity strategy to 2030 in place at the time of the audit (a general outline in 2020, followed by an action plan in 2021) made it difficult to take the new strategy into account when designing CAP measures covering the EU. However, it will be available for Member States to use when developing their own CAP strategic plans in 2021.

---

[24] See e.g. Langhout, W.: "The EU Biodiversity Strategy to 2020. Progress report 2011-2018", 2019; Simoncini et al.: "Constraints and opportunities for mainstreaming biodiversity and ecosystem services in the EU's Common Agricultural Policy: Insights from the IPBES assessment for Europe and Central Asia", *Land Use Policy*, Volume 88, 2019; EEA: "The European Environment – state and outlook 2020", 2019.

[25] Article 6(1)(f) of Proposal for a Regulation of the European Parliament and the Council establishing rules on support for strategic plans to be drawn up by Member States under the Common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and by the European Agricultural Fund for Rural Development (EAFRD), COM/2018/392 final.

23 The agriculture target (3a) of the strategy to 2020 is broken down into distinct action areas and has a clear deadline; hence we consider it specific and time-bound. However, it presents weaknesses in terms of achievability and relevance and is not itself quantified, which limits the scope for measuring how well it is being achieved. Instead, the strategy stipulates that the agriculture target must also contribute to Targets 1 and 2, which do have target values. Target 1 relates to Natura 2000 areas and is measurable. It states that, by 2020, assessments of species and habitats protected by EU nature law should show better conservation or a secure or improved status for 100 % more habitats and 50 % more species. Target 2 includes the goal of "restoring at least 15 % of degraded ecosystems". It is not clear from the strategy how to measure achievement of the 15 % objective or the contribution made to it by agriculture. The Commission stated in the mid-term review of the 2020 strategy that the restoration target for water bodies had "probably" been achieved (18 % restored), but did not give a percentage for any other ecosystems.

24 In 2005, the Commission began to establish "Streamlined European Biodiversity Indicators" (SEBIs), to assess progress towards the EU biodiversity targets. The most relevant SEBIs for the agriculture target and/or farmland biodiversity are listed in ***Annex II***. The Commission has regularly updated five of these indicators, but eight of them go back six years or even longer. For example, the latest available data for "livestock genetic diversity" reflects the situation in 2005 and covers just five Member States, while the "high nature value area" indicator shows the situation in 2006. These data gaps make it impossible to track progress for the SEBIs as a whole. Three regularly updated indicators show either an unfavourable trend (farmland birds, grassland habitats) or are stabilising (butterflies). The other two cannot be used to monitor trends. In the first case (species of European interest), results were distorted by a change in methodology, and in the other (nitrogen balance) the most recent data is from 2015.

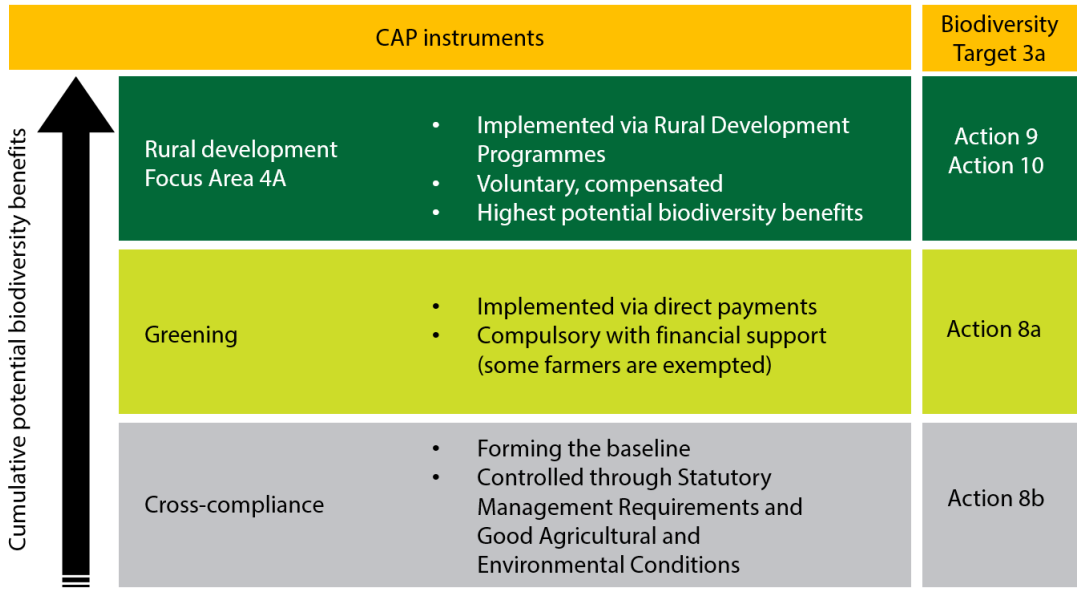
25 Indicators for monitoring the impact of the CAP on biodiversity are found within agri-environment indicators and the common monitoring and evaluation framework (CMEF). As an example, the Commission uses "high nature value" (HNV) farming and farmland indicators to measure farmland biodiversity in the EU in the scope of the 2014-2020 CAP (see ***Annex II***). Apart from conserving biodiversity through low-intensity agriculture, HNV farming seeks to provide societal and environmental benefits, such as carbon storage, clean water, wildfire prevention, enhanced genetic diversity and protection of cultural values. As shown in ***Annex II***, all three sets of indicators include the HNV concept.

26 The Commission introduced three HNV-related indicators in the CMEF for 2007-2013. In the 2014-2020 period, it has kept an HNV farming indicator, which is used to show both context and impact. As of 2017, according to a Commission survey, six Member States (Czechia, Greece, France, Latvia, Malta and Romania), and a further 24 EU regions in Belgium, Spain, Italy and Portugal, had neither identified HNV farming nor initiated any regular monitoring. The latest rural development progress reports to the Commission from Member States and regions (June 2019) confirmed the situation: only two thirds of the reports contain quantified information about HNV farmland. Certain national and regional authorities, such as Cyprus or Germany, have built up their own means of collecting HNV data. HNV indicator values are not comparable between Member States, but reflect the Member State's definition. The Commission has not included the HNV indicator in the post-2020 CAP framework.

27 The impact assessment[26] ahead of the Commission's legislative proposals for the 2014-2020 CAP acknowledged the importance of incorporating biodiversity concerns into the agricultural sector to meet the agriculture target of the biodiversity strategy. The Commission states in the assessment that it expected a major contribution to the strategy to come from the 'greening' component of CAP direct payments (see paragraphs ***51*** to ***60***). The Commission and Member States mainly address the agriculture actions in the EU biodiversity strategy through direct payments (action 8) and rural development programmes (action 9) (see ***Figure 9***).

[26] Commission: "Common Agricultural Policy towards 2020", SEC(2011) 1153.

Figure 9 – CAP instruments and their link to the EU biodiversity strategy to 2020



Source: ECA.

No EU strategy for conservation of genetic diversity

28 Action 10 of the EU biodiversity strategy to 2020 required the Commission to encourage the uptake of AECMs for the conservation of genetic diversity and to look into developing a related strategy (see ***Figure 10***).

Figure 10 – Action 10 of the EU biodiversity strategy to 2020

Source: ECA.

29 The increasing uniformity of food production systems and our limited diet have contributed not only to biodiversity decline but also to other unwelcome consequences[27]. Fewer genetic resources mean less natural resilience to pests, diseases and severe environmental changes[28].

30 The Commission has continued to support national efforts to reverse the loss of genetic diversity through agri-environment climate measures (AECMs) and research projects. Member States such as Poland, Denmark and Estonia have developed national strategies or programmes on animal or plant genetic diversity. A study from 2016, contracted by the Commission, recommended that the EU develop a comprehensive strategy, in line with its biodiversity strategy, towards the conservation and sustainable use of genetic diversity[29]. The study identified agricultural intensification as the major driver for the loss, with its focus on high-yielding breeds and new land management patterns (with a strong decline in grazing) leading to almost 50 % of all European livestock breeds becoming extinct or assuming endangered or critical status. Eight out of nine authorities we surveyed were in favour of a strategy for the conservation of genetic diversity.

The Commission overestimates how much it spends on biodiversity

31 The Commission tracks annually how much it budgets for biodiversity, but it has no target in this regard. It publishes biodiversity financing figures in its reports to the CBD and annually in the draft general budget of the EU. In 2019 and 2020, the EU has planned to spend around 8 % of its total budget on biodiversity (about €13.5 billion per year). The CAP share of this is €10.3 billion per year. The Commission applies coefficients of 0 %, 40 % and 100 %, which are adapted from the "Rio markers" from the Organisation for Economic Co-operation and Development (OECD). The Commission's criteria for these coefficients are less conservative than the OECD's (see ***Table 1***).

---

[27] FAO: "The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture", 2010; FAO: "The State of the World's Biodiversity for Food and Agriculture", 2019.

[28] EEA: "The European environment – state and outlook 2020", 2019.

[29] Commission "Preparatory action on EU plant and animal genetic resources", Final Report, 2016.

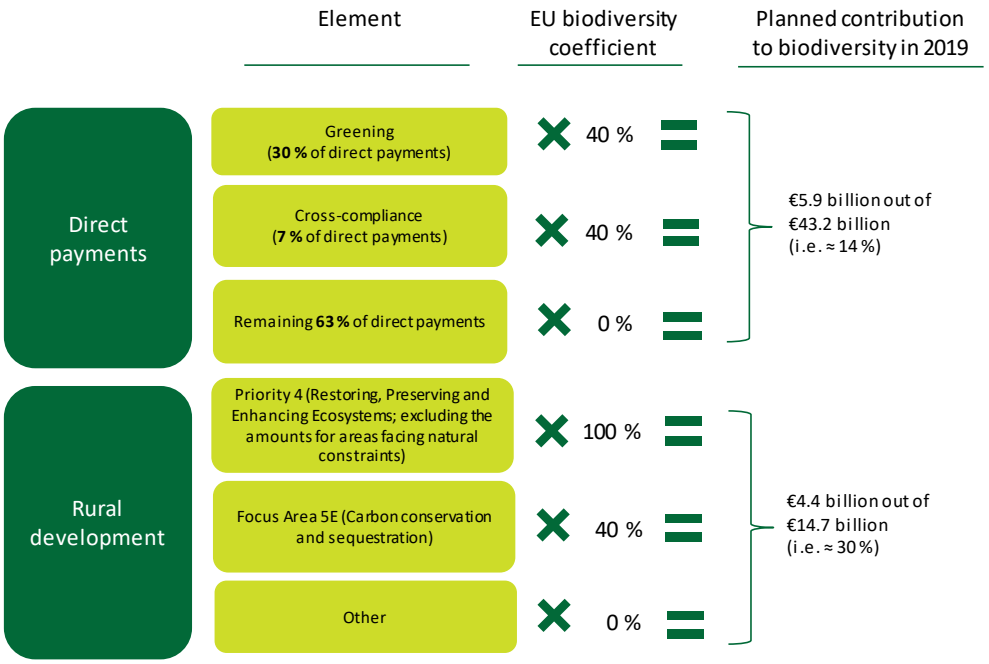
Table 1 – OECD categories and EU biodiversity coefficients

OECD		EU	
Category	Activities	Biodiversity funding coefficient	Criteria used
2	Expenditure for activities for which biodiversity is the **principal** (primary) objective.	100 %	The support makes a **significant** contribution towards biodiversity objectives.
1	Expenditure for activities for which biodiversity is a **significant**, but not the principal, objective.	40 %	The support makes a **moderate** contribution to biodiversity.
0	Expenditure not targeting biodiversity.	0 %	The contribution of the support is insignificant.

Source: ECA, based on Study on biodiversity financing and tracking biodiversity-related expenditures in the EU budget, Commission, 2017; Statement of estimates 2020, Commission, 2019.

32 *Figure 11* shows how the Commission applies these coefficients to CAP spending. The Commission does not track and offset expenditure from schemes that could have a negative impact on farmland biodiversity.

Figure 11 – Overview of the method used by the Commission to calculate biodiversity funding from the CAP



Source: ECA, based on Commission data.

33 The Commission applies a 100 % coefficient, in line with the OECD approach, to rural development expenditure on "Restoring, preserving and enhancing biodiversity" (focus area 4A), which specifically targets biodiversity. It also applies a 100 % coefficient to expenditure on "Improving water management" (4B) and "Preventing soil erosion and improving soil management" (4C). As biodiversity is not the principal objective of these two focus areas, they do not meet the criteria for the 100 % coefficient.

34 The Commission applies a coefficient of 40 % to all greening payments even though their positive impact on farmland biodiversity cannot be clearly demonstrated (see paragraphs ***51*** to ***60***). Moreover, greening requirements are generally undemanding and largely reflect normal farming practice. We estimated in our special report 21/2017: "Greening: a more complex income support scheme, not yet environmentally effective" that farmers created the greening elements on only around 3.5 % of arable land, i.e. no more than 2 % of all EU farmland. Additionally, new greening requirements relating to permanent grassland had resulted in a change in farming practices on only 1.5 % of EU farmland.

35 The impact of the cross-compliance element, a sanction system, on farmland biodiversity raises some difficulty and is further discussed in paragraphs ***41*** to ***50***. To account for the contribution made by cross-compliance, the Commission applies a 40 % coefficient to 10 % of the other direct payment components (around 70 % of direct payments; see ***Figure 14***). This is not applied to rural development schemes such as funding for areas facing natural or specific constraints, which is not any more beneficial to farmland biodiversity than the basic payment scheme. The cross-compliance coefficients may generally overstate the cross-compliance contribution.

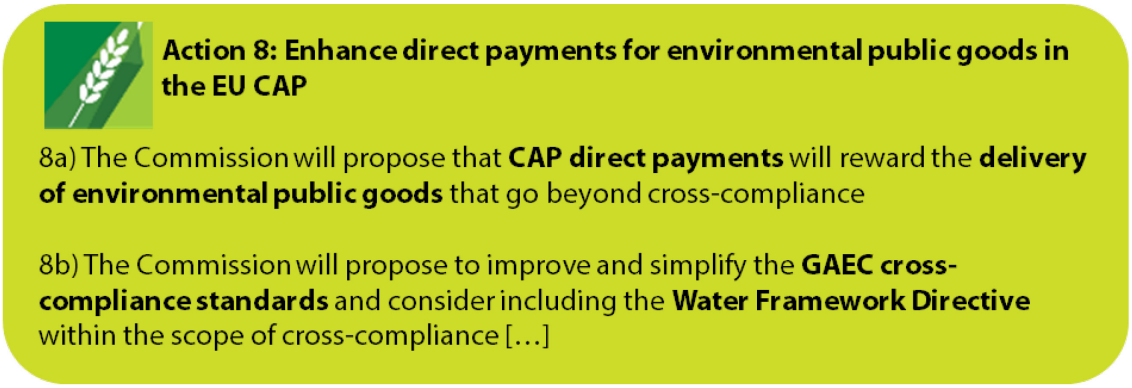
36 Cyprus, Ireland and Germany did not consider the Commission's methodology accurate. Ireland and Germany, when developing their own biodiversity tracking systems, have therefore not used it. They each carried out one tracking exercise, based on scientific evidence. In its National Biodiversity Expenditure Review, Ireland used six coefficients (0 %, 5 %, 25 %, 50 %, 75 % and 100 %).

37 We find that the Commission's quantification of around €10 billion, resulting from the use of only three coefficients (0 %, 40 % and 100 %), is not entirely robust or reliable. Our findings are in line with those of independent studies carried out in 2015[30] and 2017[31].

Most CAP funding has little positive impact on biodiversity

38 We examined whether, in the 2014-2020 period, direct payments, including greening, and cross-compliance, have had a measurable positive impact on biodiversity, as required by action 8 of the EU strategy. Action 8 is split into two sub-actions (see ***Figure 12***).

Figure 12 – Action 8 of the EU biodiversity strategy to 2020 and its sub-actions



Source: ECA.

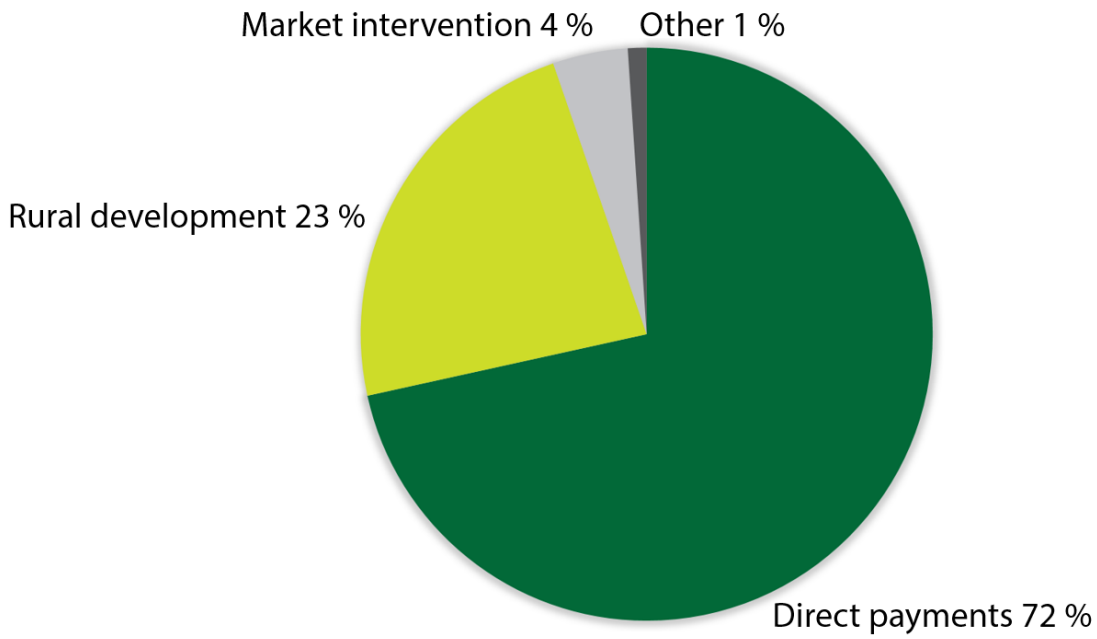
[30] Medarova-Bergstrom et al.: "Tracking Biodiversity Expenditure in the EU Budget, Final Report for the Commission", 2014.

[31] Ernst&Young: "Study on biodiversity financing and tracking biodiversity-related expenditures in the EU budget", 2017.

Most direct payments do not maintain or enhance farmland biodiversity

39 At more than €40 billion, direct payments accounted for over 70 % of all EU agricultural expenditure in 2019 (see ***Figure 13***). Direct aid schemes include the basic payment scheme[32], under which farmers activate payment entitlements in proportion to the eligible land they declare, the single area payment scheme[33], in which payments are also made on the eligible area which farmers declare, and the 'greening' arrangements (see paragraphs ***51*** to ***60***).

Figure 13 – EU agricultural budget – payments (2019)



Source: EU budget 2019.

40 According to the Member State authorities we met, the great majority of direct payment schemes in the EU have no direct measurable impact on farmland biodiversity. According to scientists, voluntary coupled support may have a negative impact. This mechanism ties around 10 % of the EU budget for direct payments to the production of specific crops or animals (see ***Figure 14***). It thus gives an incentive to maintain (or increase) levels of the supported activity[34].

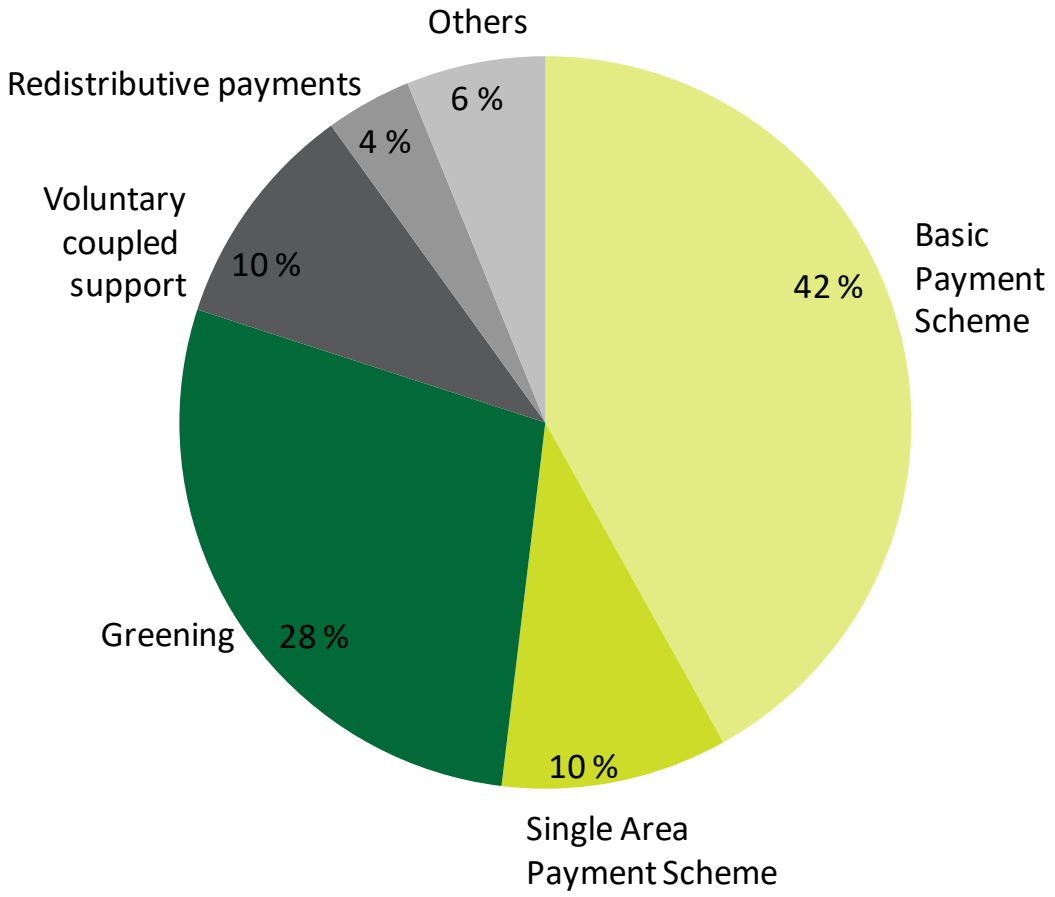
---

[32] See ECA special report 10/2018: "Basic Payment Scheme for farmers – operationally on track, but limited impact on simplification, targeting and the convergence of aid levels".

[33] See ECA special report 16/2012: "The effectiveness of the Single Area Payment Scheme as a transitional system for supporting farmers in the new Member States".

[34] Brady et al.: "Impacts of Direct Payments – Lessons for CAP post-2020 from a quantitative analysis", 2017.

Figure 14 – Direct payments (2018)



Source: ECA, based on Commission: Annual activity report 2018 – Agriculture and Rural Development, June 2019.

The cross-compliance sanctions scheme has no clear impact on farmland biodiversity

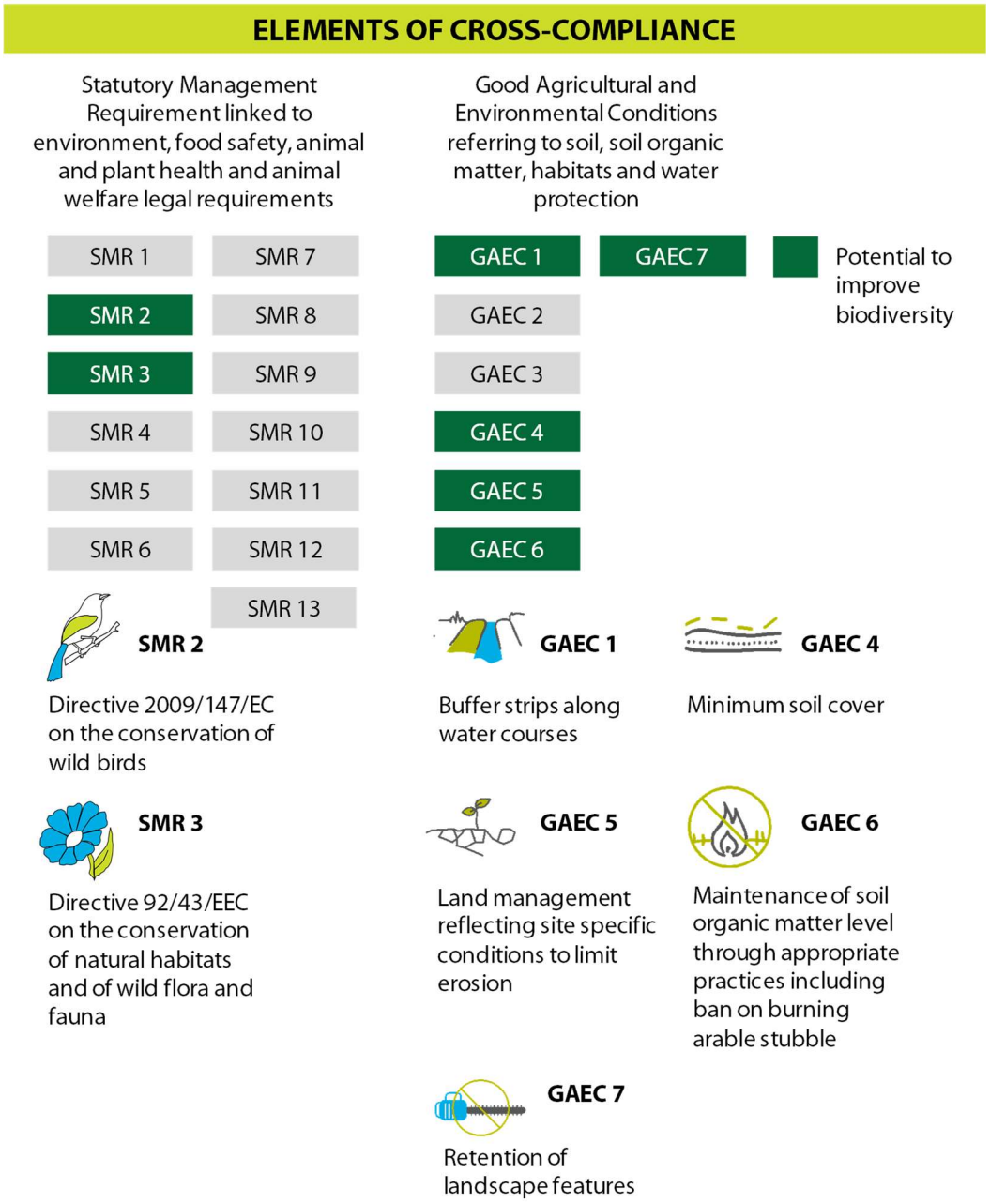
41 When paying agencies detect that a farmer receiving CAP subsidies does not meet basic statutory management requirements (SMRs) and standards of good agricultural and environmental condition (GAEC) they should in general reduce the payment made to the farmer by between 1 % and 5 %. However, the requirements and standards do not apply to all EU farmers, such as those participating in the Small Farmers Scheme. SMRs derive from the application of relevant articles of legislation (e.g. those relating to Natura 2000, plant protection products and nitrates), and therefore replicate existing rules. The legislation on which SMRs are based applies independently of the cross-compliance mechanism. It applies to all farmers in the EU whether or not they claim CAP subsidies. Farmers that fail to meet their obligations may also be penalised under national law. At times the second penalty may exceed the first.

42 The legislative framework gives Member States a high degree of flexibility to define the content of GAEC standards. Member State choices on environmental ambition, the definition of farms subject to the GAEC standard, the way farms should apply the standard and the way national authorities check compliance thus determine a standard's value for biodiversity. In most cases, paying agencies check between 1 % and 2 % of farms subject to a specific GAEC standard, and impose penalties for around 1 % of those checked. For example, for four out of the five Member States we visited, paying agencies identified around 1 million farmers as subject to the conditions of GAEC standard 4 (minimum soil cover). They inspected around 16 000 farms and applied penalties to 270 subsidy payments. In most cases where they applied penalties, they reduced payment by 1 %.

43 In a previous audit[35], we observed significant variations between Member States in the application of penalties for infringements. We found that infringement rates for several requirements and standards were below 1 %. The SMRs concerned related to the conservation of wild birds and natural habitats, while the GAEC standards were GAEC 6 on soil organic matter and GAEC 7 on maintaining soil structure and the retention of landscape features. All of these have high potential, on paper, to contribute to farmland biodiversity (see ***Figure 15***).

[35] ECA special report 26/2016: "Making cross-compliance more effective and achieving simplification remains challenging".

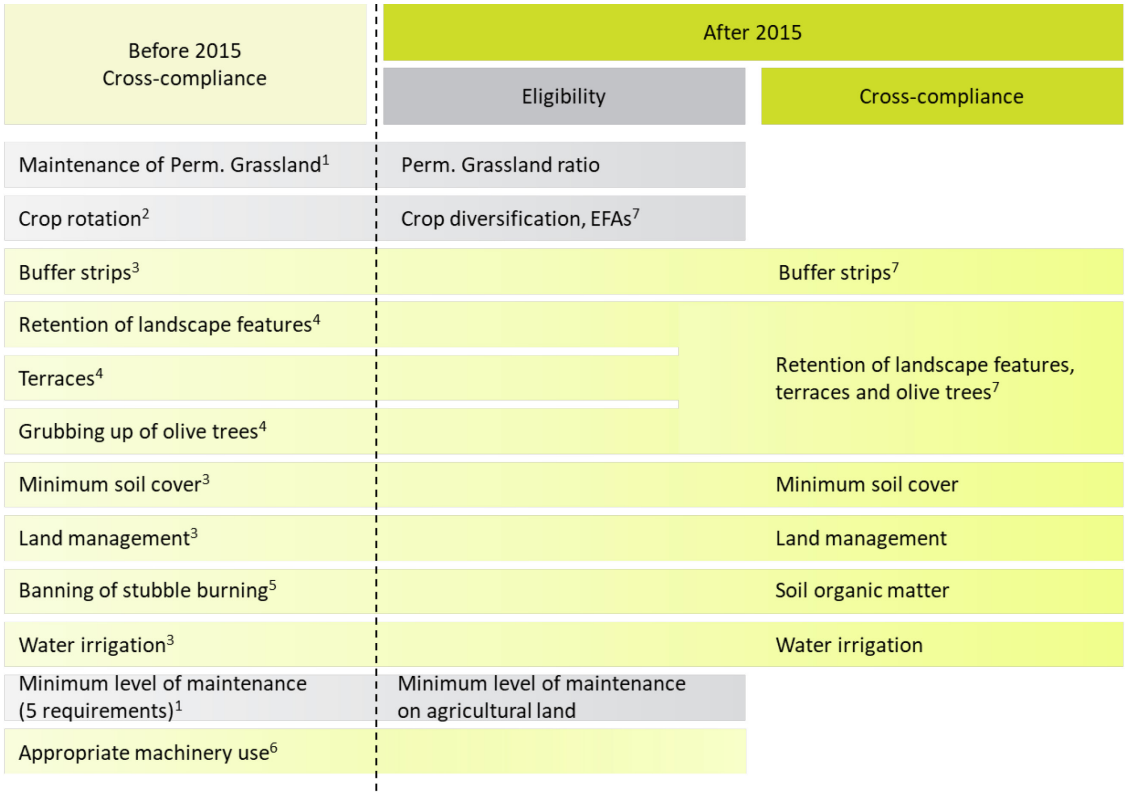
Figure 15 – The potential of cross-compliance to improve biodiversity



Source: ECA.

44 Through action 8b of the EU biodiversity strategy, the Commission committed to improving and simplifying the biodiversity-related GAEC standards. It changed the structure of cross-compliance in 2015. Certain GAEC standards became part of the eligibility rules, and others have changed (see ***Figure 16***).

Figure 16 – GAEC standards before and after 2015



1 Continued (with modifications) outside of cross-compliance
2 Discontinued and replaced outside of cross-compliance
3 Continued
4 Merged and continued inside cross-compliance
5 Continued (with modifications) inside cross-compliance
6 Discontinued
7 Certain elements designated by Member States as EFAs and cross-compliance protected features are congruent

Source: ECA, based on Commission information.

45 The 2013 CAP reform transferred the permanent grassland maintenance requirement and the GAEC standard on crop rotation from cross-compliance to greening. This meant it applied to fewer farmers. Crop rotation became crop diversification (which has less value for biodiversity – see paragraph ***54***). The aggregation of certain standards has not altered their substance: the creation of a new standard on soil organic matter did not improve the scheme because the protection of soil organic matter was already part of the legal framework when cross-compliance began in 2005.

46 In 2014, the Commission accepted a recommendation we made to include the Water Framework Directive in the scope of cross-compliance along these lines in our special report 4/2014: "Integration of EU water policy objectives with the CAP: a partial success". The directive is still not part of cross-compliance, although it does appear in the Commission's proposals for the post-2020 CAP.

47 The SMR component of cross-compliance (see paragraph ***41***) did not provide farmers with an additional obligation to maintain and enhance farmland biodiversity. However, inclusion within cross-compliance does provide a regular inspection regime for these requirements and does make the farmers aware of the conditions to be complied with.

48 In the cross-compliance framework, GAEC standards 1 and 4-7 have the greatest potential in terms of the agriculture biodiversity target (see ***Figure 15***). Only one Member State we visited was able to demonstrate a concrete impact, however: the German authorities reported that mowing bans under GAEC 4 have benefited breeding birds, and that GAEC 5 anti-erosion practices have also promoted biodiversity. GAEC 7 has protected around two million separate landscape features in Germany, including one million hedges and 150 000 wetlands. This is valuable given the long-term decline in European hedgerows during the past century (see ***Box 1***).

Box 1

Destruction of hedges in the 20th century

After the second world war, national governments encouraged hedge removal to increase food self-sufficiency and allow the use of machinery unable to manoeuvre in small fields. The availability of financial incentives resulted in the widespread destruction of hedgerows[36]. For example:

- in France, nearly 70 % of hedges were destroyed between 1945 and 1983;
- in Belgium, up to 75 % of hedges were destroyed in certain regions during the 20th century;
- in the Netherlands, the figure was 30 % to 50 % from 1960 to 1994;
- in Italy, up to 90 % of hedges have disappeared in the Po region;
- the Irish regions have removed 15-30 % of their hedges.

[36] Philippe et al.: "Soixante années de remembrement: Essai de bilan critique de l'aménagement foncier en France", 2009; Pointereau et al.: La haie en France et en Europe: "Evolution ou régression, au travers des pratiques agricoles", 2006; Hickie et al.: Irish Hedgerows: Networks for Nature, 2004; Bazin et al.: La mise en place de nos bocages en Europe et leur déclin, 1994.

49 The CMEF includes only two output indicators for cross-compliance[37]: "Number of hectares subject to cross-compliance" and "Share of CAP payments subject to cross-compliance". According to the EEA, the share of utilised agricultural area covered by the various schemes provides an indication of outreach and of the theoretical potential to improve biodiversity, but not of effectiveness[38]. The Commission has no result or impact indicators that could measure the specific effects of cross-compliance on farmland biodiversity. In our 2016 audit on cross-compliance[39], we also concluded that the available information did not allow the Commission adequately to assess the effectiveness of cross-compliance.

50 None of the Member States we visited, with the exception of Germany (see paragraph ***48***), provided concrete information about the impact of cross-compliance on farmland biodiversity. Studies[40] of the effectiveness of action to promote farmland biodiversity have not found either positive or negative effects from cross-compliance. Some experts have criticised the lack of ambition of the cross-compliance scheme and its inadequacy for promoting farmland biodiversity[41].

The potential of greening to improve biodiversity is underdeveloped

51 Greening comprises three farming practices aimed at benefiting the environment and climate (see ***Figure 17***).

---

[37] Commission: "Technical Handbook on the Monitoring and Evaluation Framework of the Common Agricultural Policy 2014-2020", 2015.

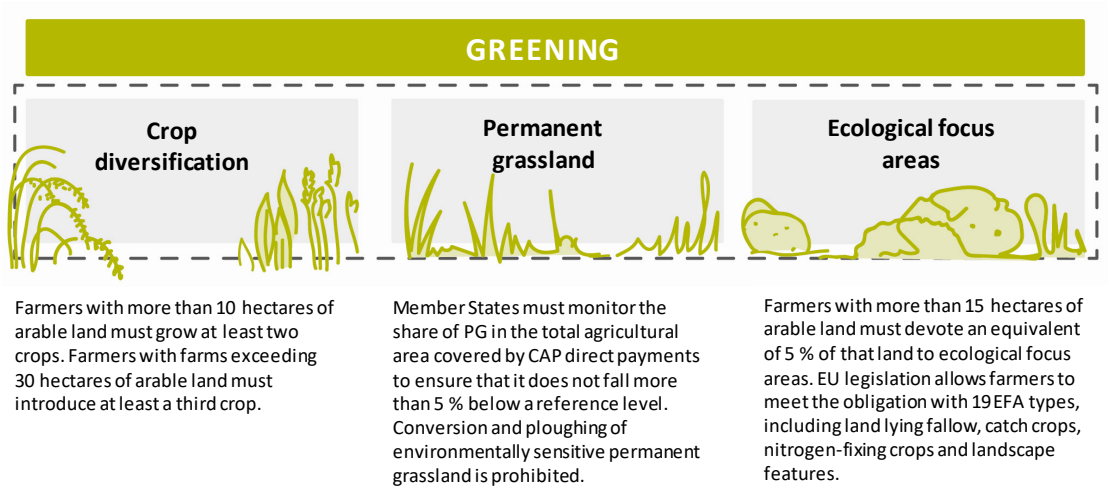
[38] EEA: "The European environment – state and outlook 2020", 2019.

[39] ECA special report 26/2016: "Making cross-compliance more effective and achieving simplification remains challenging".

[40] Hodge et al.: "The alignment of agricultural and nature conservation policies in the European Union", *Conservation Biology*, 29(4), 2015; Hauck et al.: "Shades of greening: Reviewing the impact of the new EU agricultural policy on ecosystem services", *Change and Adaptation in Socio-Ecological Systems*, 1, 2014.

[41] Brunk et al.: "Common Agricultural Policy: Cross Compliance and the Effects on Biodiversity", 2009.

Figure 17 – Greening architecture



Source: ECA.

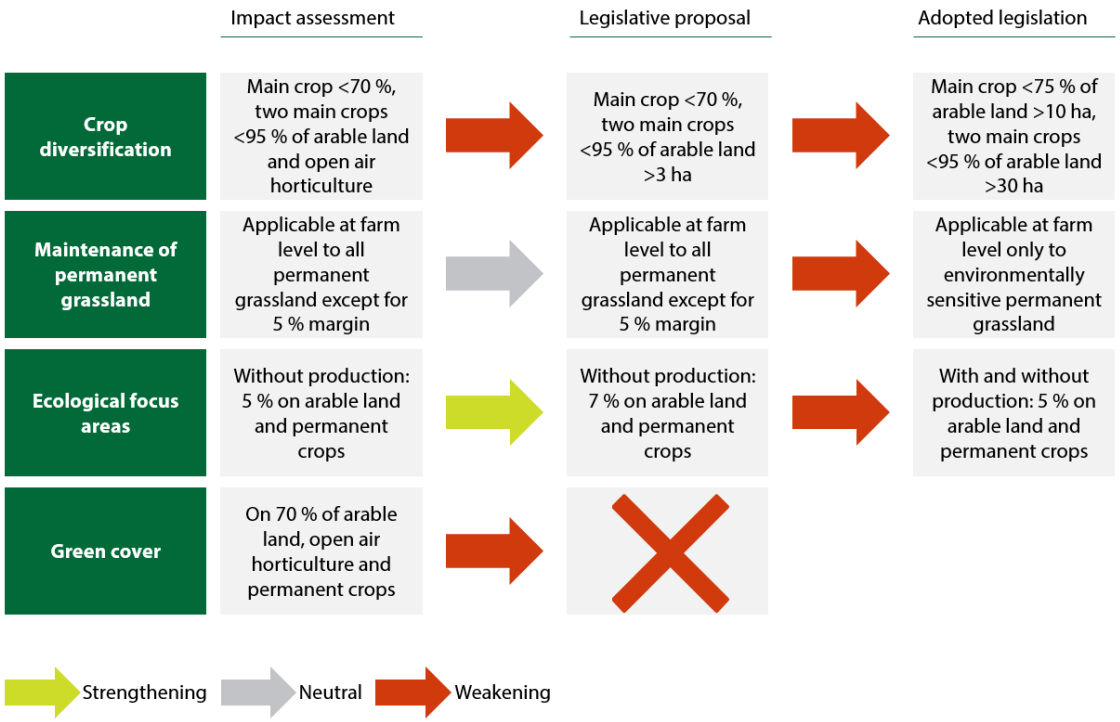
52 Greening requirements do not apply to holdings in the small farmers' scheme or farms considered 'green by definition', such as organic holdings or holdings with over 75 % of permanent grassland. In 2015, at least one greening obligation applied to 24 % of EU agricultural holdings, representing 73 % of all EU farmland[42]. The aim of greening is to provide rewards for crop rotation and the protection of permanent pasture, green cover, ecological set-aside and Natura 2000 areas, as required by action 8a of the EU biodiversity strategy. The Commission included all of these elements in its 2010 Communication "The CAP towards 2020"[43]. However, they were not all part of the impact assessment or the 2011 proposal for the 2014-2020 CAP[44], which subsequent negotiations further watered down (see ***Figure 18***).

[42] ECA special report 21/2017: "Greening: a more complex income support scheme, not yet environmentally effective".

[43] Communication from the Commission: "The CAP towards 2020: Meeting the food, natural resources and territorial challenges of the future", COM(2010) 672 final.

[44] Proposal for a Regulation of the European Parliament and of the Council establishing rules for direct payments to farmers under support schemes within the framework of the CAP, COM(2011) 625/3 final.

Figure 18 – Greening: from first thoughts to final text



Source: ECA.

53 We concluded in our 2017 special report[45] that greening had little measurable effect: it has led to changes in farming practices on only around 5 % of all EU farmland, knowledge of the baseline situation is fragmentary and it is unclear how greening is expected to contribute to the EU biodiversity targets. The Commission confirmed in 2018[46], citing its own greening evaluation from 2017[47], that Member States and farmers could improve their implementation of greening to deliver better on its objectives. Scientific papers have reached similar conclusions[48].

---

[45] ECA special report 21/2017: "Greening: a more complex income support scheme, not yet environmentally effective".

[46] Commission: "Implementation of the CMEF and first results on the performance of the CAP", COM(2018) 790 final, 2018.

[47] Commission: "Evaluation study of the payment for agricultural practices beneficial for the climate and the environment", 2017.

[48] Ekroos et al.: "Weak effects of farming practices corresponding to agricultural greening measures on farmland bird diversity in boreal landscapes", *Landscape Ecol* 34, 2019, pp. 389-402; Pe'er at al.: "Adding Some Green to the Greening", *Conservation Letters*, 2017, pp. 517-530.

54 **Crop diversification** rarely leads to a change in land management practices[49]. A Commission Staff Working Document[50] has concluded that it is the greening measure with the fewest environmental benefits.

55 The maintenance and protection of **permanent grassland** is important for farmland biodiversity even if the main purpose is the removal of carbon. Studies have shown[51] that plant diversity levels are much higher where grassland is farmed non-intensively, e.g. mown only once a year or grazed more sparingly.

Picture 1 – Non-intensive cattle farming on permanent grassland in Ireland

Source: ECA.

[49] ECA special report 21/2017: "Greening: a more complex income support scheme, not yet environmentally effective", Figure 5.

[50] Commission: Commission Staff Working Document – "Executive Summary of the Evaluation of the Regulation (EU) No 1307/2013", SWD(2018) 479 final.

[51] Plantureux et al.: "Biodiversity in intensive grasslands: Effect of management, improvement and challenges", *Agronomy Research* 3(2), 2005; Marriott et al.: "Long-term impacts of extensification of grassland management on biodiversity and productivity in upland areas. A review", *Agronomie*, 24(8), 2004.

56 Member States may allow ploughing of permanent grassland, which is detrimental to biodiversity. In Poland, farmers can, in principle, convert such grassland into arable land, as long as the country's 5 % overall ceiling is not breached (see ***Figure 17***). In Germany and Ireland, farmers need administrative authorisation before they can plough, and must reseed an equivalent area with grass, if they are to meet the permanent grassland requirement. Although studies indicate that newly seeded grassland has lower environmental and biodiversity value[52], this is a common practice: 17 out of 44 farmers with grassland whom we interviewed had ploughed and reseeded some of their grassland since 2015.

57 Farmers are not allowed to plough where land has been designated environmentally sensitive to conserve areas of significant biodiversity or maintain the benefits of carbon sequestration. In the Member States, this category represents only a small part of all permanent grassland, mainly within Natura 2000 areas. In 2016, the area of permanent grassland subject to the greening measures was 47.7 million hectares, with 7.7 million hectares of environmentally sensitive permanent grassland in Natura 2000 areas. The Commission's data from 2018 showed that only four Member States/regions (Belgium-Flanders, Czechia, Latvia and Luxembourg) had designated environmentally sensitive permanent grassland in non-Natura 2000 areas: a total area of less than 0.3 million hectares.

58 The potential of **ecological focus areas** to deliver biodiversity benefits depends on the types of EFA implemented and how farmers manage them. The options preferred by German, Polish and Romanian farmers in the most recent information published by the Commission (2017) are mostly those which numerous scientific studies have identified[53] as being least beneficial for farmland biodiversity, notably the sowing of nitrogen-fixing crops and catch crops. The situation in Ireland is anomalous, in that over 95 % of farmers are exempted from greening due to the natural abundance of grassland. Around 60 % of Cypriot farmers have chosen to meet their EFA obligations through the biodiversity-friendly option of fallow land; however, the figure for the EU as a whole is less than 20 % (see ***Figure 19***). In 2017, the share of arable land in EFAs varied between Member States from 0.2 % to 20 %, and the ratio of

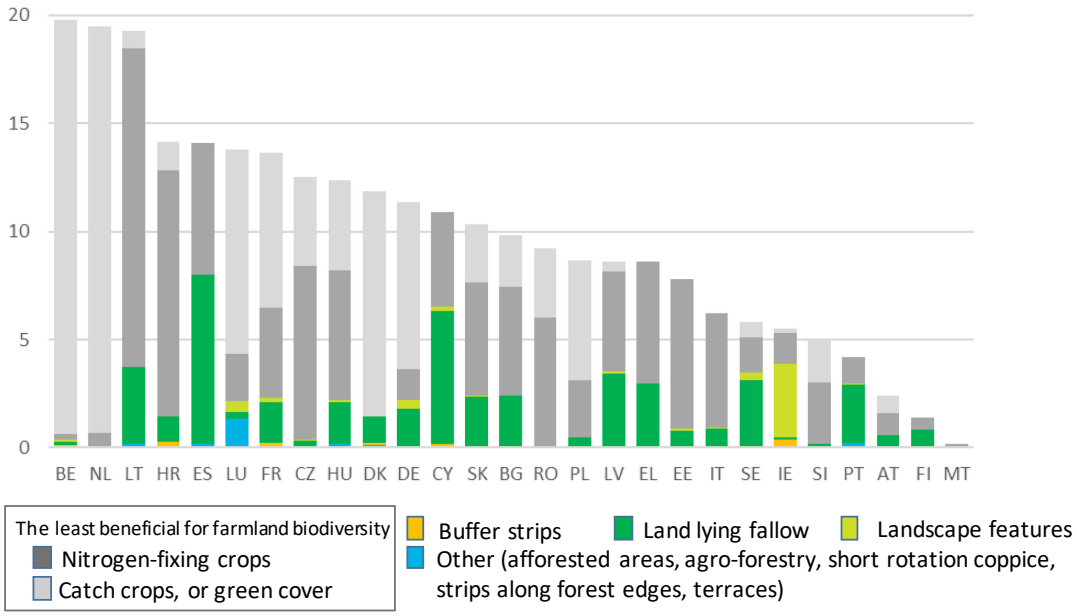
---

[52] BfN: "Agriculture Report 2017: Biological diversity in agricultural landscapes", 2017; Plantureux et al.: "Biodiversity in intensive grasslands: Effect of management, improvement and challenges", *Agronomy Research* 3(2), 2005.

[53] Nilsson et al.: "A suboptimal array of options erodes the value of CAP ecological focus areas", *Land Use Policy* 85, 2019; Ekroos et al.: "Weak effects of farming practices corresponding to agricultural greening measures on farmland bird diversity in boreal landscapes", *Landscape Ecol* 34, 2019.

arable land to total agricultural area also varies significantly (see examples in paragraphs *68* and *69*).

Figure 19 – Various EFAs as a share (%) of arable land, 2017



Source: ECA, based on Commission data.

59 The CMEF[54] includes 22 output and result indicators related to greening. The Commission does not have any impact indicators with which to measure the effects of greening on farmland biodiversity.

60 Our survey corroborates the above findings. One third of the authorities that responded felt that none of the current greening instruments had improved farmland biodiversity. Around half of the authorities stated that the greening requirements need to be strengthened in the post-2020 CAP as part of the increased emphasis on biodiversity through "enhanced conditionality". This arrangement, intended to replace greening and cross-compliance, should comprise a number of SMRs and 10 GAEC standards – three more than in the current CAP. The Commission has also proposed a new instrument known as "eco-schemes". It will be mandatory for Member States to design and offer one or more "eco-schemes" covering agricultural practices such as enhanced management of permanent pastures and landscapes, nutrient management, food and nesting packages for pollinating species, and organic farming.

[54] Commission: "Technical Handbook on the Monitoring and Evaluation Framework of the Common Agricultural Policy 2014-2020", 2015.

Some rural development schemes have potential for improving farmland biodiversity

61 We examined whether the Commission's and Member States' rural development action, especially their use of agri-environment-climate measures, now focuses more on biodiversity conservation, as required by action 9 of the EU strategy (see ***Figure 6***), and whether its impact is adequately monitored. Action 9 is split into two sub-actions (see ***Figure 20***).

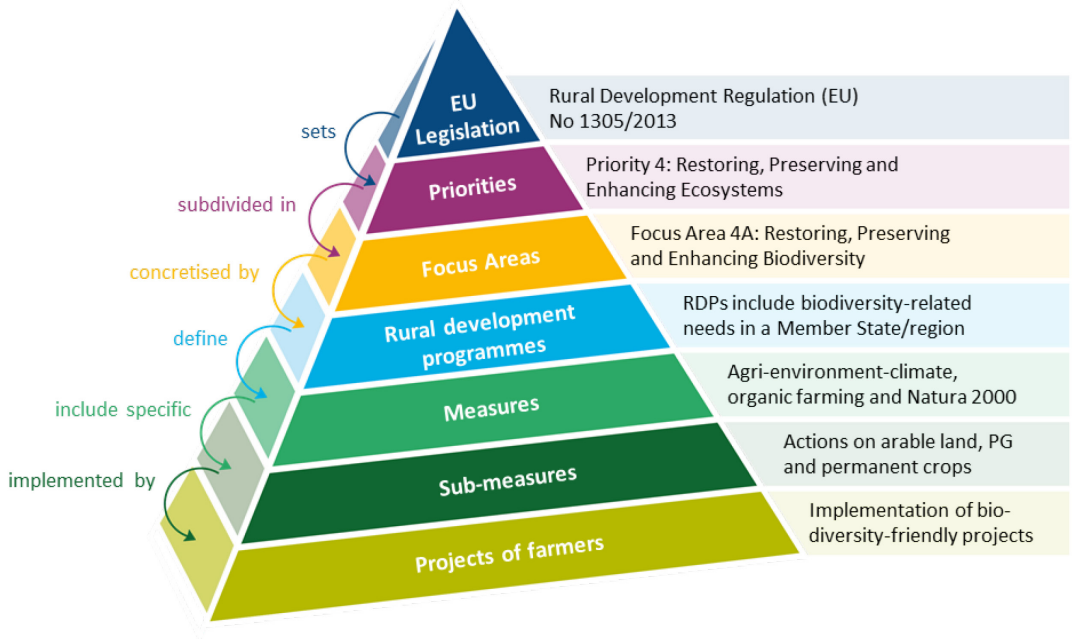
Figure 20 – Action 9 of the EU biodiversity strategy to 2020 and its sub-actions

Source: ECA.

Agri-environment-climate, Natura 2000 and organic farming measures have most potential to maintain or enhance farmland biodiversity

62 Rural development programmes (RDPs) which Member States and regions developed for the 2014-2020 CAP should contain measures to meet the economic, environmental and social challenges identified for the geographical area it covers, including challenges to biodiversity (see ***Figure 21***). So far, the EU has provided around €100 billion in rural development funding for 2014-2020, with a further €61 billion coming from Member States.

Figure 21 – Rural development and biodiversity



Source: ECA.

63 The national authorities in the Member States we visited considered that, of the measures included in rural development programmes, AECMs, followed by organic farming and Natura 2000 measures, offer the greatest potential to contribute to the agriculture target of the biodiversity strategy (see ***Box 2***). The available scientific research corroborates this view[55].

Box 2

Rural development measures contributing most to biodiversity

Farmers signing up for an **AECM** voluntarily commit for at least five years to environmentally friendly farming practices that go beyond the relevant legal obligations.

The **organic farming** measure provides per hectare support for farmers who convert to or maintain organic farming practices and methods.

The **Natura 2000** measure provides annual per hectare compensation payments to farmers for the additional costs they incur and the income they forego due to the disadvantages resulting from the application of the Birds and Habitats Directives.

---

[55] See for example CEEweb for Biodiversity: "Rural Development Programmes Performance in Central and Eastern Europe: Lessons learnt and policy recommendations", 2013.

64 The authorities we surveyed confirmed the potential and usefulness of these rural development measures for biodiversity conservation, as they contribute to the strategy's agriculture target and allow some progress on the major challenges facing biodiversity.

Less demanding agri-environment-climate measures have higher participation rates

65 "Light green" measures include more farmers across a wider area, make relatively modest demands in terms of farming practices, and pay less. "Dark green" measures focus on site-specific environmental and biodiversity issues and therefore target fewer holdings, require more effort from farmers and pay more for the services provided.

66 Scientists and NGOs consider that "dark green" schemes deliver greater biodiversity than "light green" measures[56]. However, we found that simple but effective lighter green AECMs, such as reducing grazing intensity, limiting the input of chemical fertilisers or herbicides and a ban on mowing during nesting periods, do not require much time and effort from farmers but also have potential to improve biodiversity. We found good examples of both "light green" and "dark green" measures with a high potential biodiversity impact in terms of species and habitats in all the Member States we audited (see examples from Romania and Cyprus in ***Box 3***).

[56] Lakner et al.: "A CAP-Reform Model to strengthen Nature Conservation – Impacts for Farms and for the Public Budget in Germany", *Journal of the Austrian Society of Agricultural Economics*, December 2018; Goetz et al.: "New Perspectives on Agri-environmental Policies: A Multidisciplinary and Transatlantic Approach", 2009.

Box 3

Examples of "light green" and "dark green" agri-environment-climate measures

"Light green" measures

In **Romania**, "light green" measures target biodiversity through, for example, non-intensive or traditional farming practices on grasslands: chemical fertilisers and pesticides are prohibited and grazing is limited to a maximum of one livestock unit per hectare. In **Cyprus**, one measure requires specific documentation, bans the use of chemical pesticides and fertilisers and demands mechanical weeding on designated crops.

"Dark green" measures

Romania offers measures protecting designated species of birds and butterflies. **Cyprus** has two measures specifically targeting HNV farming areas. One addresses the maintenance and repair of dry stone walls, and the other covers a number of environmental practices in HNV areas, such as active soil enrichment for perennial crops or a ban on grazing during the main flowering season.

67 Farmer participation rates were lower for "dark green" than for "light green" AECMs: we estimate that in Cyprus, Germany (Rhineland-Palatinate) and Romania, no more than about 15-20 % of all AECMs are "dark green". The authorities, backed by scientific evidence[57], mainly gave the following explanation:

- In highly intensive and profitable farming areas, full compensation for "dark green" measures would have to be so high that the Member States would be unable to fund a sufficient number of other measures and actions.
- The current system of calculating compensation payments on the basis of "income foregone/costs incurred", especially in non-intensive farming areas, prevents Member States from paying farmers their real costs where not much income is foregone; this is because the calculation omits transaction costs, undervalues the quality of outcomes and is based on averaging the cost to multiple farmers.

[57] Barnes et al.: "Alternative payment approaches for noneconomic farming systems delivering environmental public goods", 2011; Berkhout et al.: "Targeted payments for services delivered by farmers", 2018.

Arable farmers are less likely to commit to biodiversity-relevant agri-environment-climate measures

68 Scientists recognise that intensification of arable systems has led to a decline in biodiversity on arable farmland in the EU[58]. In addition, studies across Europe have found that species decline on grasslands is particularly associated with neighbouring arable farming practices[59]. We found that in Ireland and Germany (Rhineland-Palatinate), biodiversity AECMs on permanent grassland outweigh those on arable land by both number of applications and hectares. The same goes for Romania, even though arable land represents around two thirds of the country's agricultural area. In Germany (Rhineland-Palatinate – 60 % arable), our sample showed that, where farmers do sign up for a measure on arable land, they tend to restrict it to unproductive parcels rather than to those that are larger, more productive and more intensively farmed.

69 Over 70 % of Cypriot farmland is arable. In 2018, even though Cyprus offered four biodiversity AECMs for arable farmers, these accounted for only 7 % of all AECMs entered into that year. Some 85 % of all applications were for permanent crops, such as nuts, fruit trees and carob trees.

Result-based schemes have positive effects but are rare

70 Only two biodiversity-relevant AECMs we examined in the Member States in our sample for the 2014-2020 period were result-based. A low share of result-based schemes is also common overall[60]. Under the other 44 AECMs in our sample of Member States, farmers were paid for committing to (or refraining from) certain activities but not for the results they achieve. The national and regional authorities we met considered that result-based rural development schemes can be more beneficial

---

[58] Boatman et al.: "The Environmental Impact of Arable Crop Production in the European Union: Practical Options for Improvement", November 1999; Ahnström et al.: "Farmers' Interest in Nature and Its Relation to Biodiversity in Arable Fields*", International Journal of Ecology*, 2013.

[59] Ekroos et al.: "Optimizing agri-environment schemes for biodiversity, ecosystem services or both?" *Biological Conservation*, 172, 2014; Seibold et al.: "Arthropod decline in grasslands and forests is associated with drivers at landscape level", *Nature*, 2019.

[60] Russi et al.: "Result-based agri-environment measures: Market-based instruments, incentives or rewards?" *Land Use Policy*, 54, 2016; Herzon et al.: "Time to look for evidence: Results-based approach to biodiversity conservation on farmland in Europe", *Land Use Policy*, 71, 2018.

for biodiversity. They underlined that, although such schemes require more effort to design and develop, they can generate better monitoring data. One example is the design and use of a scoring system showing how many different plant species can be found on a given parcel. Result-based schemes (see examples in ***Box 4***) give farmers greater freedom to decide how to manage their land, and therefore more ownership of their results[61].

Box 4

Result-based AECM

The Burren programme in **Ireland** focuses on conserving the unique farming landscape in a specific area. It has been part of the Irish RDP since 2016. Environmentalists head up the scheme, which offers payment both for actions and for results. Advisors help farmers to draw up a plan of activities to maintain or increase the conservation status of agricultural parcels. Results are assessed annually. If they score too low no payment is made. Higher scores result in higher payments. The overall biodiversity performance of the areas/parcels under the scheme has gradually improved every year since inception.

Burren landscape in Ireland
Source: ECA.

In **Germany** (Rhineland-Palatinate), the regional authorities set up a specific nature protection programme for permanent pasture. This requires participating farmers to count and document the plant species on their land. No payment is made if the number of plant species on a parcel is below a given threshold.

[61] Ibid.

Few rural development indicators focus on results and many have not been updated recently

71 The CAP rules[62] require Member States to assess *"to what extent RDP interventions [have] supported the restoration, preservation and enhancement of biodiversity including in Natura 2000 areas, areas facing natural or other specific constraints and HNV farming, and the state of European landscape".* There is just one CMEF result/target indicator in place to help them do this: "percentage of agricultural land under management contracts supporting biodiversity and/or landscapes". No CMEF impact indicator measures the effect of rural development policy on farmland biodiversity. For the post-2020 CAP, the Commission has proposed three result and three impact indicators for assessing farmland biodiversity. However, as we stated in a recent opinion[63], these elements should be presented as part of a coherent framework (see ***Figure 22***).

[62] Annex V of Regulation (EU) No 808/2014 laying down rules for the application of Regulation (EU) No 1305/2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD).

[63] ECA opinion 7/2018 concerning Commission proposals for regulations relating to the common agricultural policy for the post-2020 period.

Figure 22 – Farmland biodiversity-related result and impact indicators for post-2020 CAP

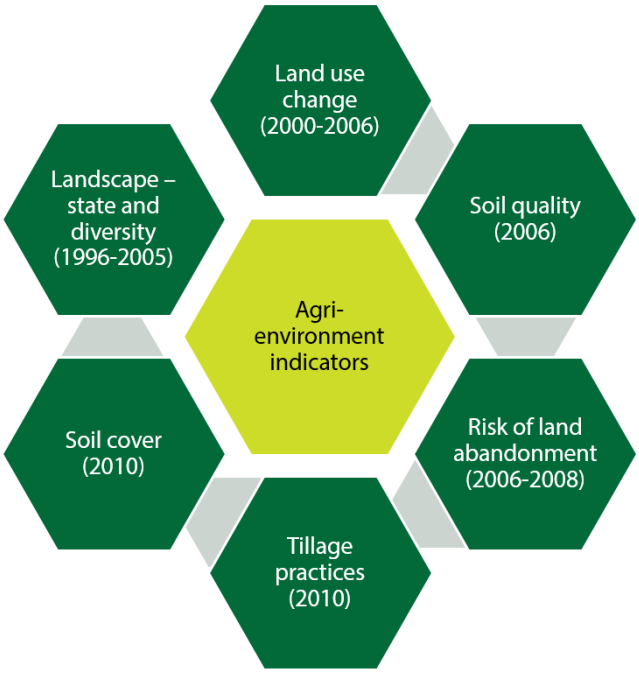
What the Commission intends to measure	How the Commission proposes to measure it	Comments made in ECA opinion 7/2018
Result indicators		
R.27 Preserving habitats and species	Share of agricultural land under management commitments supporting biodiversity conservation or restoration	We acknowledge that results relating to biodiversity are challenging to measure and that immediate changes are often not evident. However, if R.27, R.28 and R.29 are to be considered as result indicators, there needs to be scientific evidence supporting the expected results of the measures taken. Moreover, despite the often significant differences in the commitments' contribution to biodiversity, each hectare counts equally for the indicators. Differentiating between these hectares depending on their contribution to the objective, based on scientific evidence, would make these indicators more meaningful. It is not clear why, for R.28, the absolute area is taken instead of the share as for the other two indicators.
R.28 Supporting Natura 2000	Area in Natura 2000 sites under commitments for protection, maintenance and restoration	
R.29 Preserving landscape features	Share of agriculture land under commitments for managing landscape features, including hedgerows	
Impact indicators		
I.18 Increasing farmland bird populations	Farmland Bird Index	In our view, a coherent performance measurement framework should link objectives, interventions and indicators. Annex II of our opinion aims to present such a framework for the 9 specific objectives proposed for the CAP after 2020. The proposed way of measuring I.20, the share of UAA covered with landscape features, is an output indicator and does not measure impacts.
I.19 Enhanced biodiversity protection	Percentage of species and habitats of Community interest related to agriculture with stable or increasing trends	
I.20 Enhanced provision of ecosystem services	Share of UAA covered with landscape features	

Source: ECA, based on COM(2018) 392 final.

72 Member States are free to develop further indicators with which to measure the impact of their RDPs on biodiversity. None of the five Member States we visited has developed additional result or impact indicators to demonstrate measurable changes in farmland biodiversity.

73 In addition to the CMEF, in 2006 the Commission developed a set of 28 agri-environment indicators to track the integration of environmental concerns into the CAP[64]. For certain indicators the most recent Eurostat data is at least ten years old (see ***Figure 23***), and for two indicators ("HNV farmland" and "genetic diversity") the Commission has never published any data.

Figure 23 – Agri-environment indicators not updated since 2010 or earlier



Source: ECA, based on Commission data.

[64] Commission: "Development of agri-environmental indicators for monitoring the integration of environmental concerns into the CAP", COM/2006/0508 final, 2006.

Conclusions and recommendations

74 We examined the contribution of the CAP to maintaining and enhancing biodiversity and whether the agriculture target (3a) of the EU biodiversity strategy is likely to be reached. The target stipulates that there must be a measurable improvement in biodiversity. Overall, we found that this was not the case: neither the Commission's evaluation nor our audit revealed any such improvement. In fact, the available data on farmland biodiversity in the EU unambiguously shows a decline in recent decades.

75 The agriculture target and actions in the EU biodiversity strategy are not measurable, making it difficult to assess performance. The Commission has not ensured that the design and implementation of the agricultural part of the biodiversity strategy to 2020 was satisfactorily coordinated with international commitments in this area. Genetic diversity in farm crops and animals is in continuing decline in the EU (paragraphs ***20*** to ***30***).

76 The Commission's tracking of CAP spending benefiting biodiversity is unreliable because of methodological weaknesses: some coefficients were set at higher levels than suggested by OECD methodology, and the tracking arrangements include certain expenditure types without clear proof that they are beneficial for biodiversity (paragraphs ***31*** to ***37***).

Recommendation 1 – Improve coordination and design for the post-2020 EU biodiversity strategy and track expenditure more accurately

The Commission should:

(a) work with the Member States to define concrete and measurable actions, to be implemented by a given date, for the agriculture chapter of the post-2020 EU biodiversity strategy and subsequent related actions;

(b) assess how to better coordinate and create synergies between the agriculture components of Member States' biodiversity strategies and the agricultural chapter of the post-2020 EU biodiversity strategy, and give genetic diversity a prominent place both in the post-2020 EU biodiversity strategy and in subsequent actions;

(c) revise its biodiversity budget tracking to align it with new legislative changes, supported by scientific evidence, and closely aligned with the approach of the OECD.

Timeframe: 2023

77 CAP direct payments represent around 70 % of the EU's agriculture expenditure. However, the impact on biodiversity of the requirements associated with direct payments, including greening, and cross-compliance, is either negative (for example for some voluntary coupled support schemes), limited or unknown. The Commission has not improved the value of cross-compliance for promoting biodiversity since 2011, and the Water Framework Directive is still not part of the scheme. Certain cross-compliance standards could make a significant contribution to biodiversity, but neither the Commission nor the Member States have measured their impact, and these provide weak incentives. There are no standard cross-compliance penalties corresponding to biodiversity-relevant SMRs and GAECs, and penalties for detected infringements are low (paragraphs ***39*** to ***50***).

78 The Commission designed the greening scheme to meet, among other things, its commitment, under the biodiversity strategy, to reward farmers for environmental measures that go beyond cross-compliance. However, biodiversity benefits little from greening. Crop diversification rarely brings favourable changes in farming practices. The benefits of permanent grassland depend on farming practices, which Member States do not track. Ecological focus areas can benefit biodiversity, but Member States

and farmers typically favour low-impact options such as catch or nitrogen-fixing crops. The greening scheme has triggered few changes in farming practices (paragraphs *51* to *60*).

Recommendation 2 – Enhance the contribution of direct payments to farmland biodiversity

As the Commission committed to enhance CAP direct payments for environmental public goods, in particular biodiversity, when assessing Member States' CAP strategic planning for the post-2020 period, the Commission should now ensure that the set of all CAP instruments acting together, and including specifically the direct payment schemes, the new "enhanced conditionality" and eco-schemes, are more ambitious and deliver more for biodiversity than the instruments available in the 2014-2020 period.

Timeframe: 2023

79 The EU's rural development instruments have greater potential than direct payments for maintaining and enhancing biodiversity. The most suitable are agri-environment climate measures, followed by organic farming and Natura 2000 payments (paragraphs *62* to *64*).

80 Member States offer farmers various AECM options. "Light green" schemes are more common, more accessible and more popular among farmers, but less beneficial to biodiversity. Less frequent, and less popular, are "dark green" schemes, which are more focused and demanding but deliver greater environmental benefits. Permanent grassland schemes are more common, and take-up is higher, than schemes to preserve biodiversity on arable land. Action-based schemes are also more common, though less effective, than schemes which reward farmers for achieving results (paragraphs *65* to *70*).

Recommendation 3 – Increase the contribution of rural development to farmland biodiversity

The Commission should:

(a) consider linking the level of co-financing for different measures more closely to their assessed biodiversity impact;

(b) when approving Member States' CAP strategic plans, ensure that, wherever necessary, they include ambitious biodiversity-friendly rural development interventions and commitments addressing the most relevant biodiversity issues and needs, and that the Member States make these schemes attractive for both arable and grassland farms.

Timeframe: 2023

81 We found that there are no reliable indicators for measuring the results and impacts of direct payment schemes and rural development programmes in relation to biodiversity. The only mandatory CMEF rural development indicator for measuring the degree of farmland biodiversity is an output indicator. The few available agri-environment indicators for tracking the integration of environmental concerns into the CAP are not always up-to-date (paragraphs ***71*** to ***73***).

82 The recently published study, contracted by the Commission to support the evaluation of the impact of the CAP on habitats, landscapes and biodiversity confirms our findings. It concludes that, due to a lack of data, it is not possible to estimate the net combined impact on biodiversity of CAP instruments and measures. Overall, however, the results of biodiversity monitoring strongly suggest that the CAP has not been sufficient to counteract the pressures on biodiversity from agriculture, either in semi-natural habitats or on more intensively managed farmland.

Recommendation 4 – Show the impact of CAP measures on farmland biodiversity

The Commission should develop reliable farmland biodiversity indicators with which to assess the positive and negative impacts of the CAP instruments, allowing it then to establish a baseline for the reformed CAP and contribute to developing more effective post-2020 CAP payment schemes and instruments, such as “enhanced conditionality”, eco-schemes and rural development measures.

Timeframe: 2022

This Report was adopted by Chamber I, headed by Mr Nikolaos Milionis, Member of the Court of Auditors, in Luxembourg at its meeting of 19 May 2020.

For the Court of Auditors

Klaus-Heiner Lehne
President

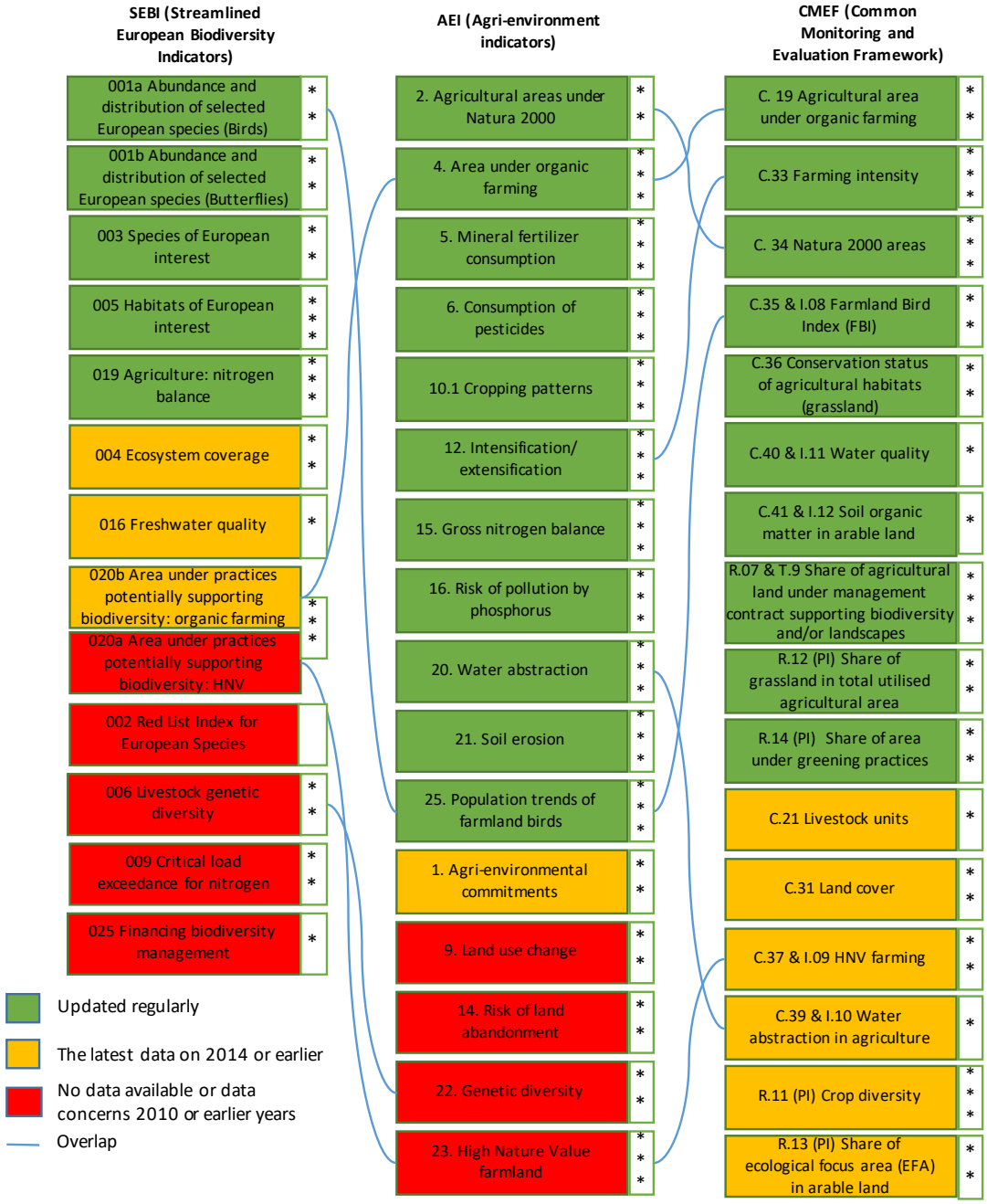
Annexes

Annex I – Main audit work at Member State level

Member States covered	Basis for selection	Audit work
Visits to Member States		
Cyprus, Germany, Ireland, Poland, Romania	Features: • almost 30 % of all declared EAFRD expenditure; • a wide range of farming practices; • different shares of agricultural land under intensive farming.	• Interviews with authorities and NGOs; • Visits to farms, including structured interviews with 21 farmers about agricultural practices.
Survey		
National: Bulgaria, Denmark, Estonia, Italy, Portugal Regional: Flanders (Belgium), Wallonia (Belgium), Campania (Italy), and Lombardy (Italy)	State of nature and farmland biodiversity, efforts made to favour biodiversity, geographical characteristics and farming practices.	• The response rate for the 9 questionnaires sent to national and regional agricultural and environmental authorities was 100 %; • The questionnaire covered the EU biodiversity strategy, the CAP, and farmland biodiversity monitoring and financing.
2019 Statement of Assurance audit		
Czechia, Germany, Denmark, Spain, France, Hungary, Ireland, Italy, Poland, Portugal, Sweden, United Kingdom	Statistical sampling.	Structured interviews on agricultural practices with 57 farmers.

Source: ECA.

Annex II – Biodiversity indicators



Situation as of 19 February 2020.

Each * marks a Directorate-General of the Commission who indicated that the indicator is relevant for biodiversity or Target 3a. In total we asked three Directorates-General.

Note: the graph does not include CMEF output indicators.

For C.21, C.39/I.10, R.11 more recent data can be available, but not updated in agri-food portal yet.

Source: ECA, based on Commission data.

Terms and abbreviations

AECM: Agri-environment climate measure. Any one of a set of optional practices going beyond the usual environmental requirements and entitling farmers to payment from the EU budget.

CAP: Common agricultural policy. The EU's single unified policy on agriculture, comprising subsidies and a range of other measures to guarantee food security, ensure a fair standard of living for the EU's farmers, promote rural development and protect the environment.

CBD: UN Convention on Biological Diversity. Multilateral treaty on the conservation of biodiversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the use of genetic resources.

CMEF: Common monitoring and evaluation framework. The rules and procedures for evaluating the performance of the common agricultural policy.

DG AGRI: Commission Directorate-General for Agriculture and Rural Development.

DG ENV: Commission Directorate-General for Environment.

EEA: European Environment Agency.

EFA: Ecological focus area. An area of land on which farmers apply agricultural practices benefiting the climate and the environment.

FAO: UN Food and Agriculture Organization.

FBI: Farmland bird index. An indicator of changes in bird numbers and species on farmland over time.

GAEC: Good agricultural and environmental condition. The state in which farmers must keep all agricultural land, especially land not currently used for production, in order to receive certain payments under the CAP. Includes issues such as water and soil management.

HNV: High nature value. The characteristic of non-intensive farming which reflects its benefits for wildlife and the natural environment.

IPBES: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. An international body open to all UN countries, which, in response to requests from decision-makers, assesses the state of biodiversity and of the ecosystem services it provides.

JRC: Joint Research Centre. The Commission's science and knowledge service, providing scientific advice and support for EU policy.

OECD: Organisation for Economic Co-operation and Development.

Permanent grassland: Agricultural land on which grasses or other herbaceous forage crops are grown for more than five consecutive years.

RDP: Rural development programme. A set of national or regional multiannual objectives and actions, approved by the Commission, for the implementation of EU rural development policy.

SEBI: Streamlined European Biodiversity Indicators. An EU initiative to develop a single comprehensive set of data for assessing and reporting on progress towards the targets and commitments of the EU biodiversity strategy to 2020 and other international agreements.

SMR: Statutory management requirement. An EU or national rule on the management of farmland to safeguard public, animal and plant health, animal welfare and the environment.

Replies of the Commission

https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=53892

Timeline

https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=53892

Audit team

The ECA's special reports set out the results of its audits of EU policies and programmes, or of management-related topics from specific budgetary areas. The ECA selects and designs these audit tasks to be of maximum impact by considering the risks to performance or compliance, the level of income or spending involved, forthcoming developments and political and public interest.

This performance audit was carried out by Audit Chamber I, which is headed by ECA Member Nikolaos Milionis. The audit was led by ECA Member Viorel Ștefan, supported by Roxana Banica, Head of Private Office and Olivier Prigent, Private Office Attaché; Robert Markus, Principal Manager; Jan Huth, Head of Task; Liia Laanes, Deputy Head of Task; Maciej Szymura, Ramona Bortnowschi, Ioan Alexandru Ilie, Michail Konstantopoulos and Anna Zalega, Auditors. Marika Meisenzahl provided graphical support. Thomas Everett provided linguistic support.

PDF	ISBN 978-92-847-4731-3	ISSN 1977-5679	doi: 10.2865/336742	QJ-AB-20-012-EN-N
HTML	ISBN 978-92-847-4760-3	ISSN 1977-5679	doi: 10.2865/303309	QJ-AB-20-012-EN-Q

In Europe, the number and variety of animal species on farmland – "farmland biodiversity" – is in marked decline. Yet the EU committed to stop biodiversity loss by 2020. To do this, The Commission planned to allocate €66 billion from the common agricultural policy between 2014 and 2020.

We assessed whether the EU's agricultural policy has helped to maintain and enhance farmland biodiversity. We found that the formulation of the agriculture targets in the EU biodiversity strategy makes it difficult to measure progress; the way the Commission tracks biodiversity expenditure in the EU budget is unreliable; the impact of CAP direct payments is limited or unknown; and the Commission and Member States have favoured lower-impact rural development measures.

We recommend that the Commission improves the design of its next biodiversity strategy, enhances the contribution made to biodiversity by direct payments and rural development action, tracks biodiversity-related expenditure more accurately and develops reliable indicators that are suited to monitoring progress in farmland biodiversity.

ECA special report pursuant to Article 287(4), second subparagraph, TFEU.

EUROPEAN COURT OF AUDITORS

Publications Office of the European Union

EUROPEAN COURT OF AUDITORS
12, rue Alcide De Gasperi
1615 Luxembourg
LUXEMBOURG

Tel. +352 4398-1

Enquiries: eca.europa.eu/en/Pages/ContactForm.aspx
Website: eca.europa.eu
Twitter: @EUAuditors