

„Economic and political conditions for a biodiversity-friendly agriculture

– An evaluation of the EU’s Common
Agricultural Policy (CAP)“

Sebastian Lakner

Chair for Agricultural Economics
University Rostock

10.Mai 2021
University of Hohenheim
Seminar “Rethinking Agriculture”



Outline

1. Introduction
2. The biodiversity problem of agriculture
3. The current CAP and biodiversity
4. Opportunities of the CAP-reform 2021
5. Conclusions and recommendations

1 Introduction

Science: Where have all the insects gone?

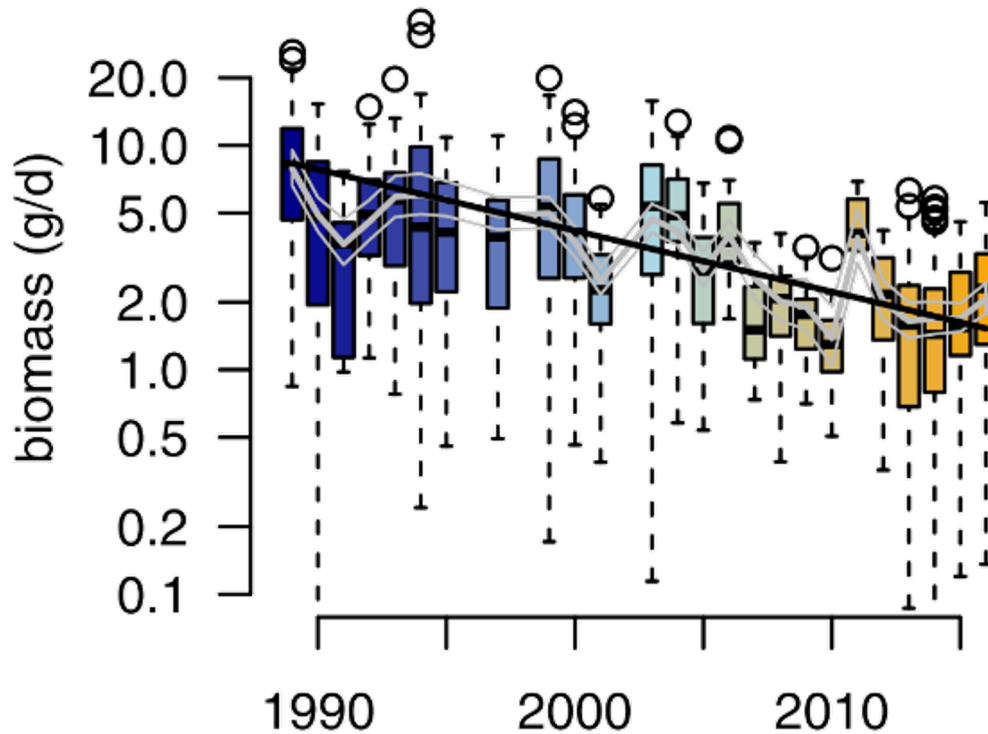


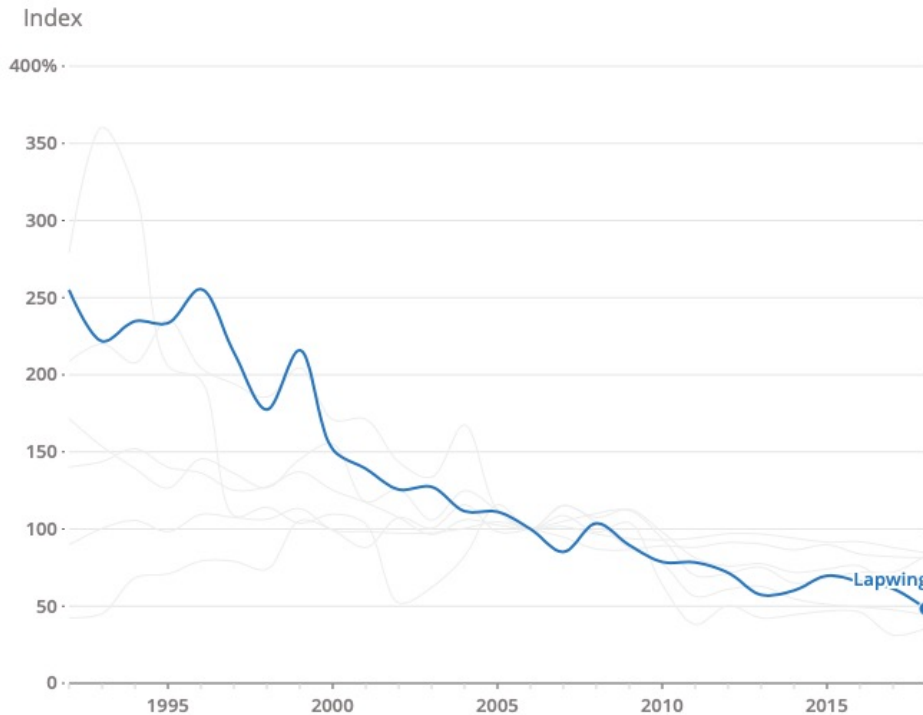
Figure: Temporal distribution of insect biomass in 63 conservation area 1990-2013

Source: Hallmann CA, Sorg M, Jongejans E, Siepel H, Hofland N, et al. (2017) More than 75 percent decline over 27 years in total flying insect biomass in protected areas. PLOS ONE 12(10): e0185809. <https://doi.org/10.1371/journal.pone.0185809>
see also <http://www.sciencemag.org/news/2017/05/where-have-all-insects-gone>

1 Introduction

Decline of farm bird species

Common bird species in agricultural landscapes



Source: Federal Agency for Nature Conservation 2018, up to date as of 08/2018; Data: Association of German Avifaunists 2017



Photo Screenshot Leopoldina 2020

Lapwing

A hundred years ago, the lapwing was so common that their eggs were collected by the basketful on the Lüneburg heath. Since 1990, 90% of the population has vanished.

Source: Leopoldina 2020: Biodiversity and Management of Agricultural Landscapes – Comprehensive action is urgently needed; Digital dossier. url: <http://interaktiv.leopoldina.org/artenvielfalt/#en>

1 Introduction

The role of agriculture?

- Decline of biodiversity has been sufficiently documented
- Agriculture as one important driver of decline

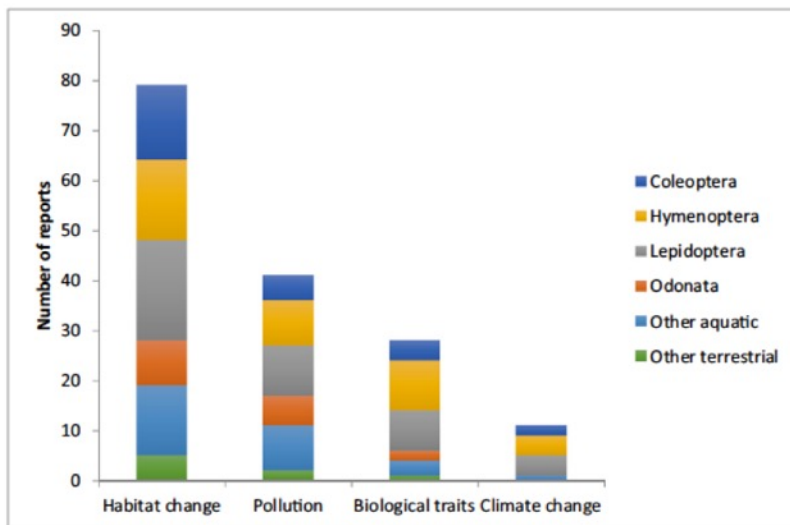
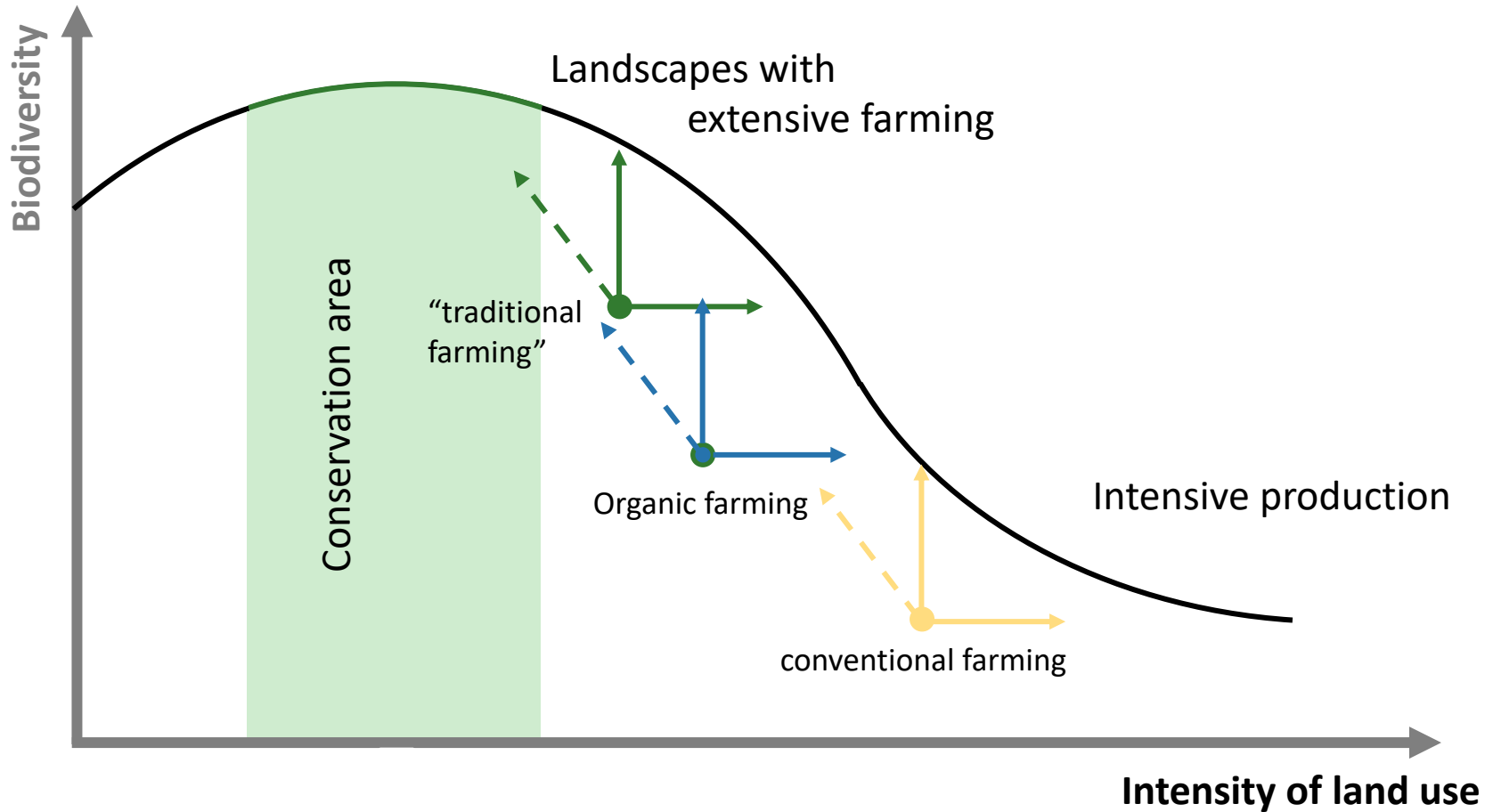


Fig. 5. The four major drivers of decline for each of the studied taxa according to reports in the literature.

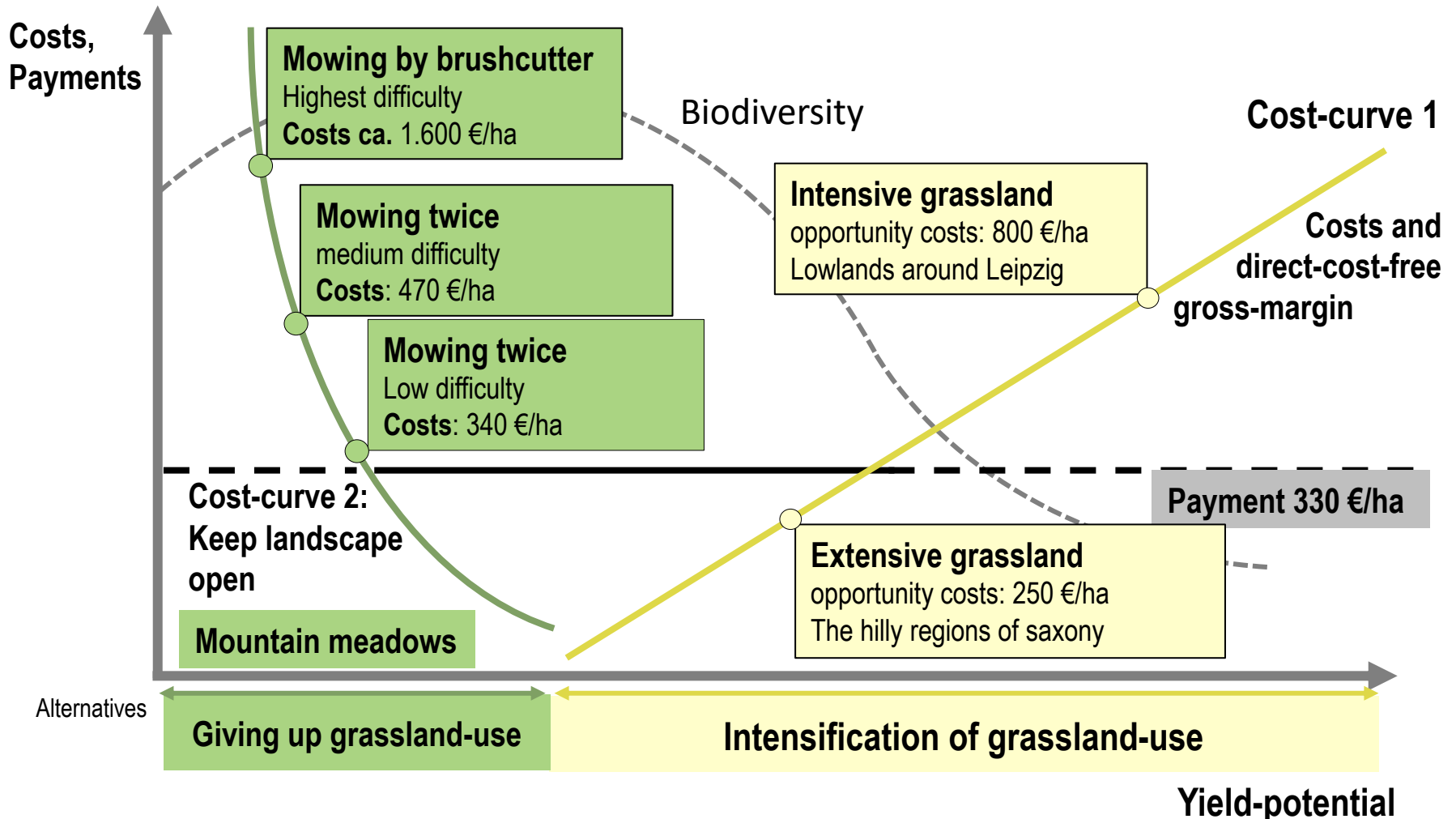
Source: Francisco Sánchez-Bayo & Kris A.G. Wyckhuys (2019): Worldwide decline of the entomofauna: A review of its drivers; Biological Conservation 232: 8-27

- Landscape and habitat quality as main influencing factor
- Pollution also important (fertilization, pesticides)
- Action needed at different levels (Pe'er et al. 2019: Action needed for the CAP; People & Nature; <https://doi.org/10.1002/pan3.10080>)
- A challenge for society (Leopoldina 2020: Biodiversity and Management of Agricultural Landscapes - Comprehensive action is urgently needed)
- What is the potential of the CAP?

2 The biodiversity problem Conflict of targets



2 The biodiversity problem

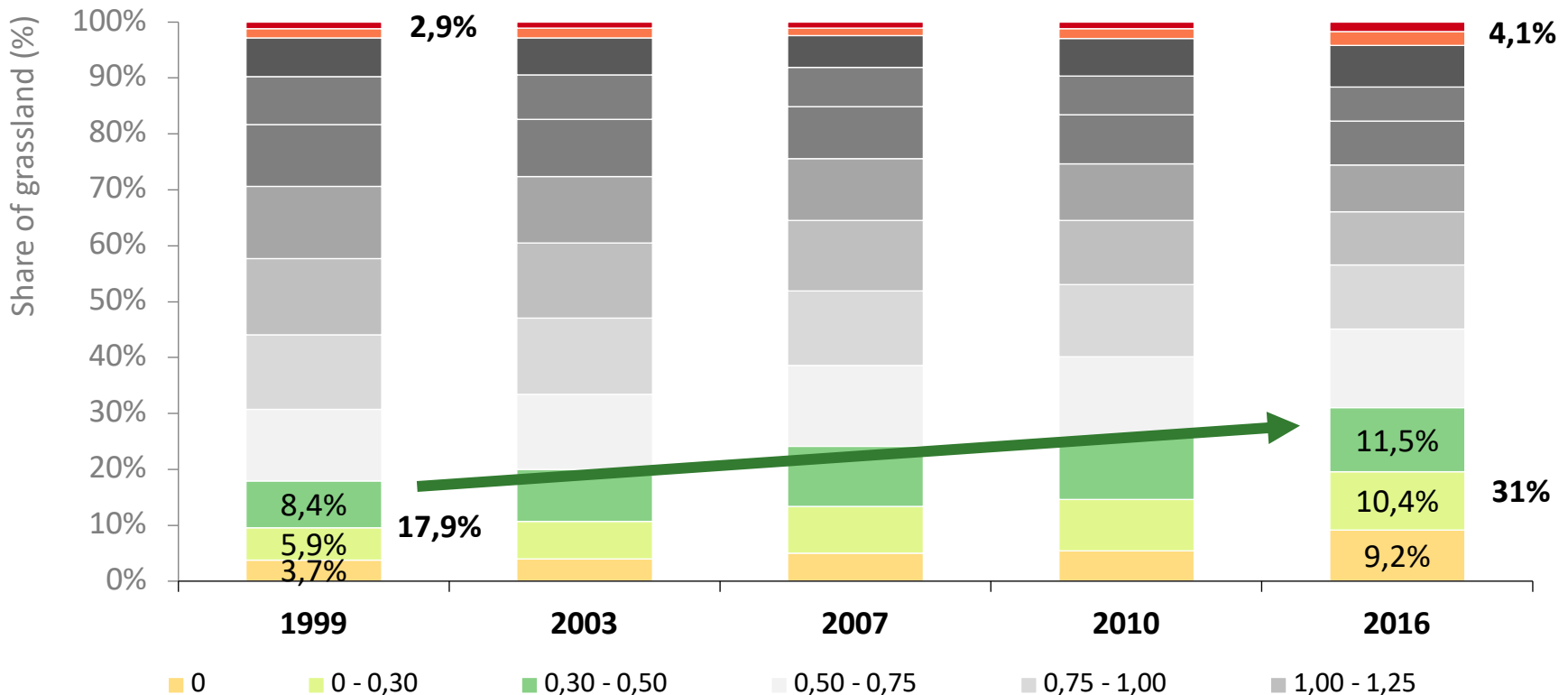


Source: own presentation; See Lakner 2020; Loccumer Tagungsband

2 The biodiversity-problem

The role of extensive permanent grassland

Grassland with different Animal densities (AU per hectare)



Source: See Lakner 2020: Loccumer Tagungsband; Data from Röder 2020 and the federal statistical office

3 The current CAP and biodiversity

One CAP, €59 Bil./yr, multiple objectives

Treaty on the functioning of the European Union (TFEU, Article 39)

Title III Agriculture and Fishery

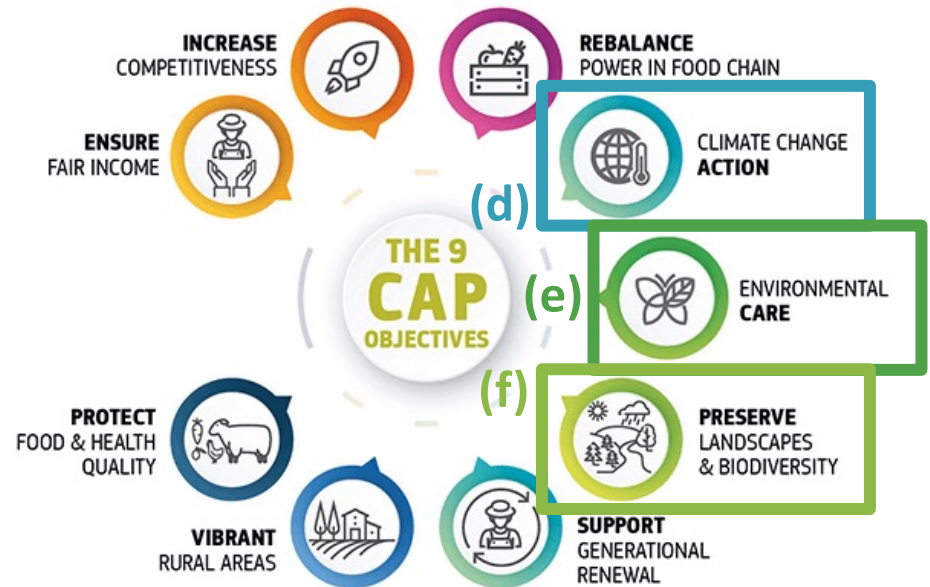
Article 39 (ex 33)

(1) The objectives of the common agricultural policy shall be:

- a) to increase agricultural productivity
- b) thus to ensure a fair standard of living for the agricultural community
- c) to stabilize markets;
- d) To assure the availability of supplies;
- e) to ensure that supplies reach consumers at reasonable prices.

Source: Treaty on the functioning of the European Union, simplified. url: <https://bit.ly/3kbug8G>

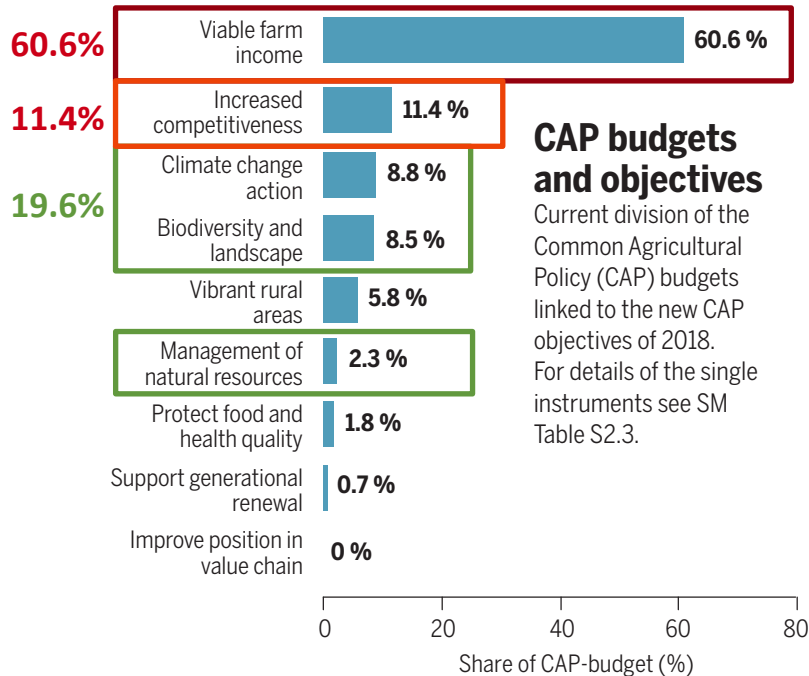
Proposal CAP post 2020, Article 5/6



Source: EC 2017: Future of the common agricultural policy; <https://bit.ly/355UFgn>, EC 2018: CAP-Reform Draft

3 The current CAP and biodiversity

CAP-Budget 2017 & CAP-objectives



CAP budgets and objectives

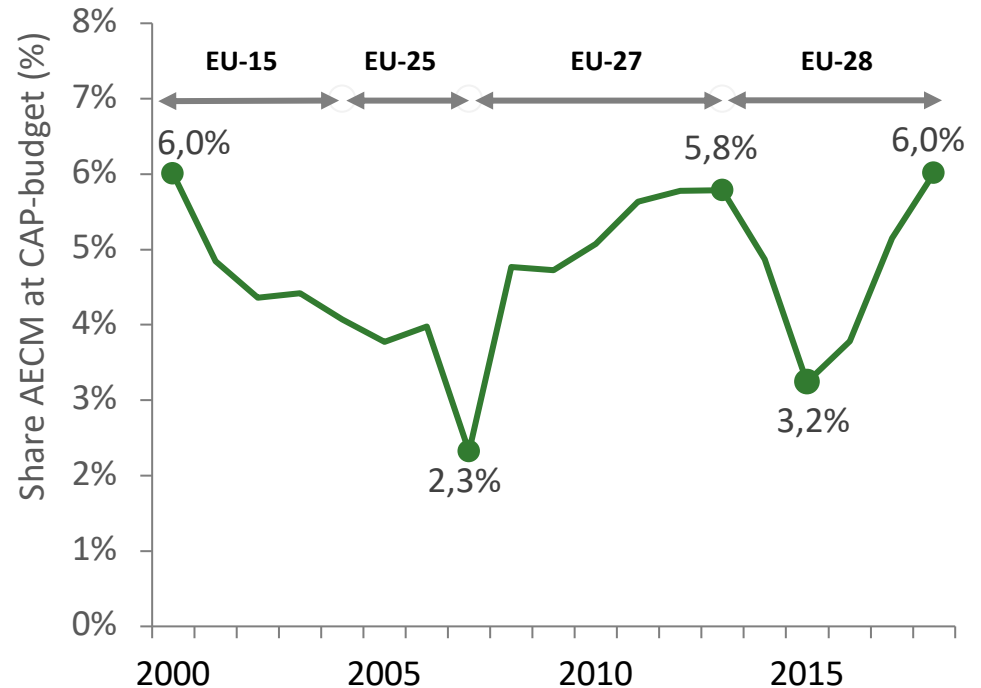
Current division of the Common Agricultural Policy (CAP) budgets linked to the new CAP objectives of 2018. For details of the single instruments see SM Table S2.3.

Data: EU Budget 2017, RDPs 2014-2020
RDP data as of January 24, 2019
Data contains only budget-positions, which could be linked to CAP-objectives

Source: Pe'er, G., S. Lakner et al. (2019): A greener path for the EU Common Agricultural Policy, Science 10.1126/science.aax3146

Share spending agri-environmental programs in the EU agricultural budget 2000-2018

(In Mio. EUR; 2000-2003 EU-15; 2004-2006 EU-25; 2007-2012 EU-27; 2013 ff. EU-28)



Source: Lakner, S., C. Schleyer, J. Schmidt & Y. Zinngrebe (2021): Agricultural Policy for Biodiversity: Facilitators and Barriers for Transformation, Kapitel in Review.

3 The current CAP and biodiversity

Environmental instruments of the CAP

- Direct Payments + Cross-Compliance 176 €/ha_{UAA}
- Greening: 30% of Direct Payments 84 €/ha_{UAA}
 - Crop diversification
 - Maintenance Grassland => *calculatory*
 - Ecological Focus Area (EFA) 800 €/ha_{EFA}
- Agri-environmental and climate measures
 - AECM arable 100-800 €/ha_{AECM}
 - AECM grassland 100-400 €/ha_{AECM}
 - Organic farming 200-400 €/ha_{AECM}
- LIFE program & Natura 2000
 - Habitat directive (FFH), Birds directive
- State conservation programs

No scientific justification

Maintenance Grassland: no impact
Crop Diversification: no impact
Ecol. Focus area: low effectiveness
(ca. 20%) + not efficient

Regionally differentiated
Partly effective ...
... but not always
(=> dark green/light green)
Complex for farms
High administrative burden

No Coherence AECM

targeted, low budgets

3 The current CAP and biodiversity

Collaboration between EFA and AECM?

Table 1: Technical requirements for the combination of AECM* and EFA* in some selected federal states of Germany

	Requirement regarding			Own LPIS** parcel	utilization possible?
	Width (in m)	Plot size (in ha)	Extent per farm		
Requirements of Ecological Areas (EFA)					
Field Margin	[1-20 m]	n. a.	EFA should not exceed 7-8% of arable area	no	no
Buffer Strip	[1-10 m]	n. a.		no	some
Forest Margin	[1-10 m]	n. a.		no	some
Fallow Land	n. a.	> 0.1 - 0.5 ha		yes	no
Agri Environmental and Climate Measures (AECM) as flowering strip and flowering plot combined with Ecological Focus Area (EFA)					
North Rhine-Westphalia	$\left(\begin{array}{c} [6 - 12 \text{ m}] \\ \text{and} \\ < 20\% \text{ of the plot} \end{array} \right)$	or $\leq 0,25 \text{ ha}$	-	yes	no
Lower Saxony	$[(6-30 \text{ m})]$	or $\leq 2 \text{ ha}$	and $\leq 10 \text{ ha}$		
Thuringia	$[5-36 \text{ m}]$	or $\leq 4 \text{ ha}$	-		
Saxony-Anhalt	$\left(\begin{array}{c} \text{width} > 5 \text{ m} \\ \text{and} \\ \text{length to width} > 2:1 \end{array} \right)$	or $\left(\begin{array}{c} \leq 2,5 \text{ ha} \\ \text{and} \\ < 20\% \text{ of the plot} \end{array} \right)$	-		
Mecklenburg-West Pomerania	-	-	$\leq 5 \text{ ha}$		
Bavaria	-	-	$\leq 3 \text{ ha}$		
Baden-Wurtemberg	$> 5 \text{ m}$	-	-		

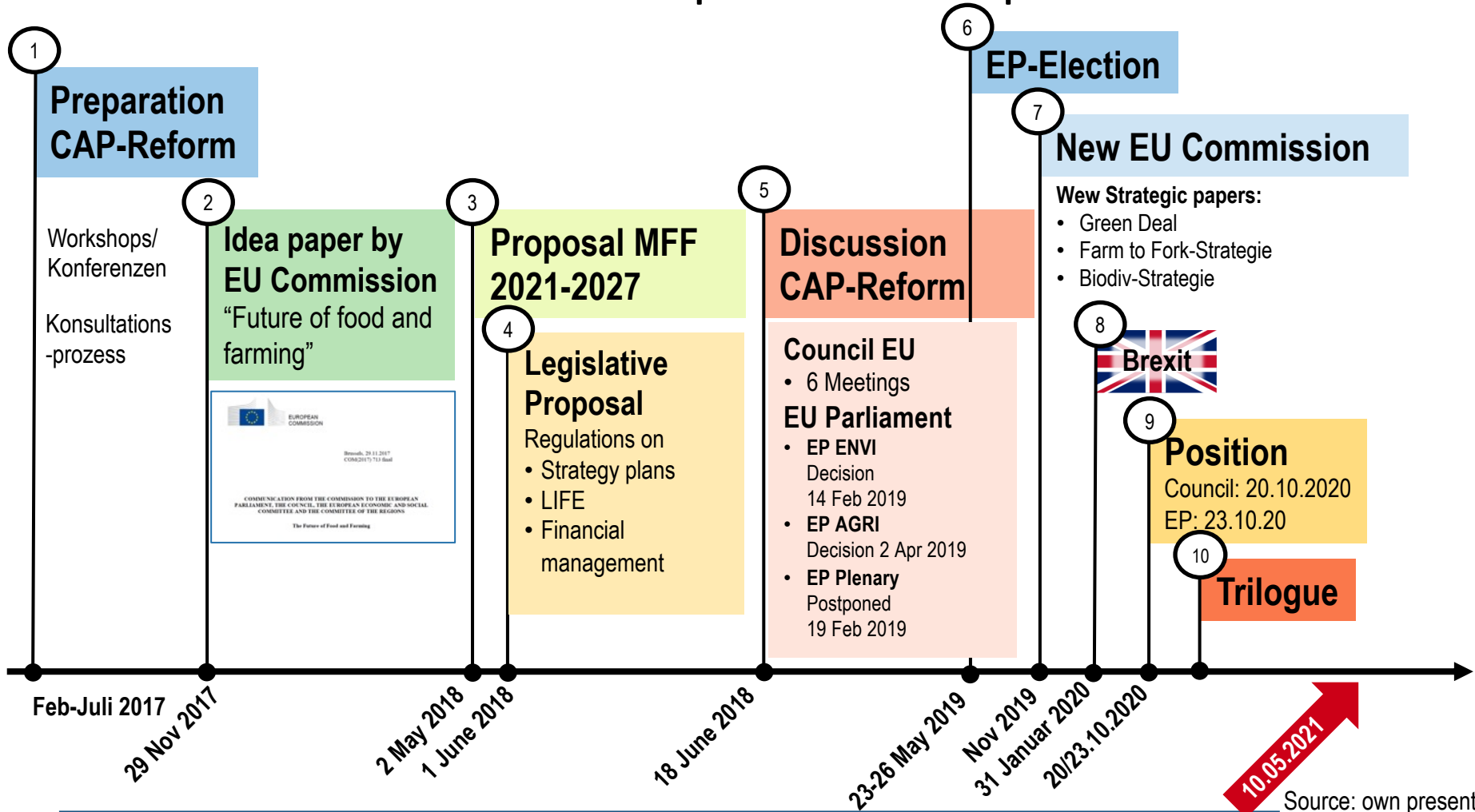
Source: own presentation based on the regulation in the federal states;

* Combination of AECM types a.) flowering strips and b.) flowering areas combined with EFA types a.) buffer-strips and b.) fallow land; ** LPIS = Land parcel identification system.

Source: Lakner, S., N. Röder, S. Baum & A. Ackermann (2017): What we can learn from the German implementation of the Greening – Effectiveness, Participation and Policy Integration with the Agri-environmental Programs , Conference paper at the 57th Annual Conference of the German Association of Agricultural Economists (Gewisola), September 13-15, 2017, Technical University Munich, in Freising-Weihenstephan. <https://bit.ly/2FMLwSw>

4 Opportunities of the CAP-reform 2021

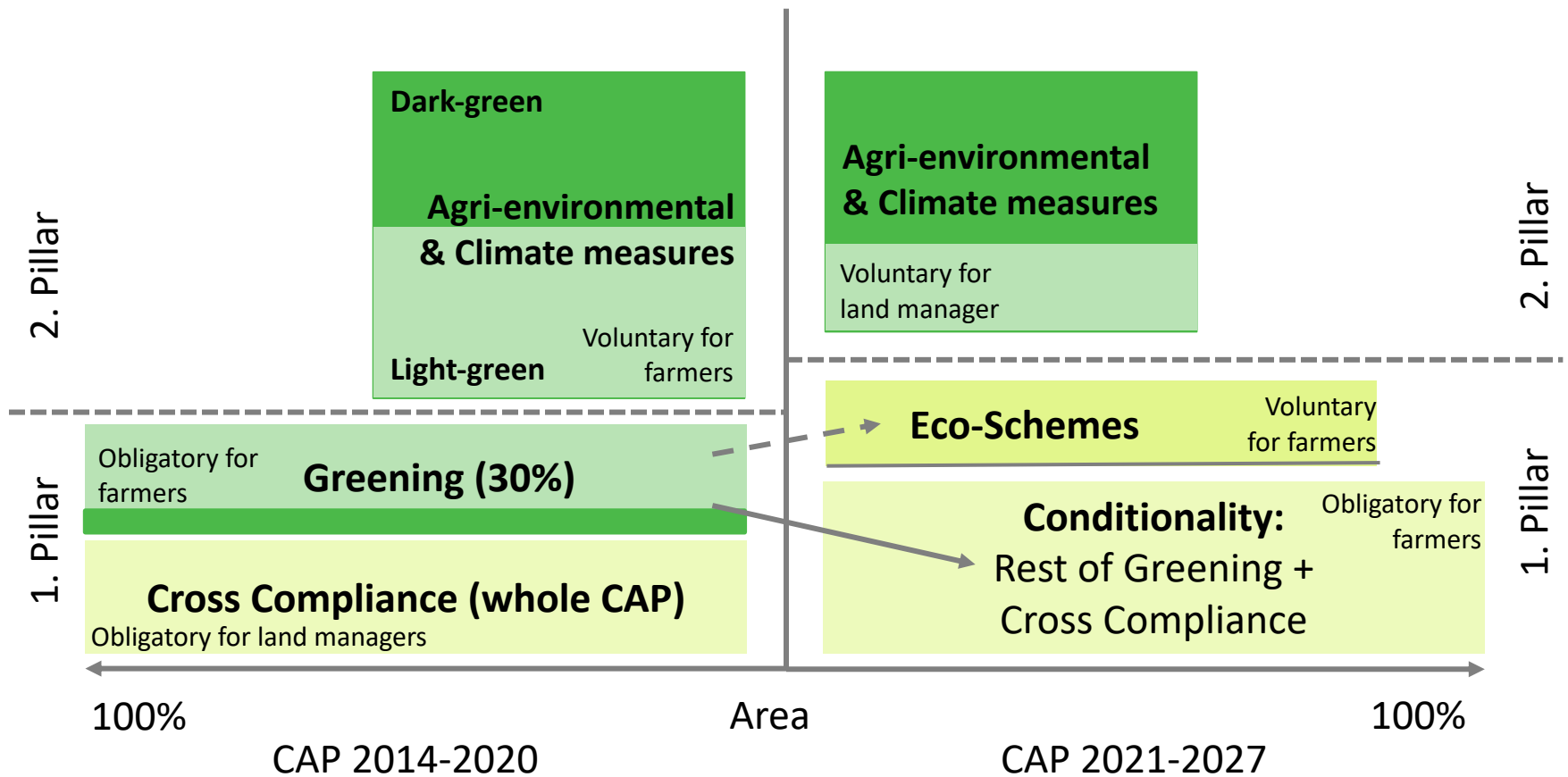
Timeline: Reform-process CAP post 2020



Source: own presentation

4 Opportunities of the CAP-reform 2021

The new green Architecture



4 Opportunities of the CAP-reform 2021

Evaluation of Instruments 2021-2027

	Potential	Problems
Conditionality	<ul style="list-style-type: none"> • Simple implementation • Combination with other instruments? • Secures minimum share 	<ul style="list-style-type: none"> • Reaction of farmers • No specific targeting! • Quantity, not quality • Fixes the use of direct payments
Eco-Schemes	<ul style="list-style-type: none"> • Easy money in pillar 1 • Simple yearly Eco-schemes , => as door opener 	<ul style="list-style-type: none"> • Duration of measures • Fluctuating uptake • Coordination with AECM?
AECM	<ul style="list-style-type: none"> • Established instrument • Often effective, but not always • Focus on specific targets • Regional implementation • Includes evaluation 	<ul style="list-style-type: none"> • Acceptance as problem • Controls and bureaucracy • High administrative costs (30%) • No top-up for profits • Little innovation

Sources: own presentation; Lakner 2020; <https://bit.ly/3mwRIPR>

4 Opportunities of the CAP-reform 2021

The German implementation (1)

- **Compromise** of state agricultural ministers (AMK) and Federal Ministry for Agriculture (BMEL) [26.03.2021](#)
- **Compromise** of Federal Environmental Ministry (BMU) and Federal Ministry for Agriculture (BMEL) [13.04.2021](#)
- **Legislative act in Bundestag** this week ([May 10, 2021](#))?
- **Final “Super-Trilogue”** on [May 25/26, 2021](#)
=> Portuguese presidency is ambitious
- **Strategic plans** before the federal election, [26.09.2021](#)
- **Deadline** strategic plans [31.12.2021](#)
- **New implementation** starts [01.01.2021](#)

4 Opportunities of the CAP-reform 2021

The German implementation (2)

Measures for Eco-Schemes in pillar 1:

- | | |
|---|-------------------------------|
| <ol style="list-style-type: none">1. Increase in the non-productive area beyond GAEC 9
<i>(fallow land, flower strips, landscape elements and old grass strips on grassland)</i>2. Planting of flowering areas and strips on arable land & permanent crops3. Diverse Cultures in arable farming, incl. 10% legumes + five main crops.4. Support of Agroforestry on arable land | AMK-options
March 26, 2021 |
| <ol style="list-style-type: none">5. Permanent grassland extensification (for the entire farm)6. Permanent grassland managed for results (4 regional indicator species)7. No chemical-synthetic pesticides on Arable and permanent crops8. Support of Nature 2000 grassland | BMU-options
Of April 2021 |

Source: Lakner 2021: AMK-Beschlüsse: Ein Schritt in die richtige Richtung?

In German: <https://slakner.wordpress.com/2021/04/07/amk-beschlusse-ein-schritt-in-die-richtige-richtung/>

In English: <https://www.arc2020.eu/cap-strategic-plans-germany-taking-steps-in-the-right-direction/>

4 Opportunities of the CAP-reform 2021

The German implementation (3)

- **Transfers to Pillar II (6-15%)**

2021/22	2023	2024	2025	2026/27	Average 2023-27
6%	10%	11%	12.5	15%	12.7%

Largely for agr-environmental and climate measures (AECM), animal welfare and payments for areas with natural constraints (ANC)

- **Coupled payments for grazing premium (2%)**

- **Redistribution: the first hectare (12%)**

69 EUR/ha for the first 40 hectares and 41 EUR/ha for hectare 41-60

- **Young-farmers (2%)**

- **Eco-Schemes (25%)**

Source: Lakner 2021: AMK-Beschlüsse: Ein Schritt in die richtige Richtung?

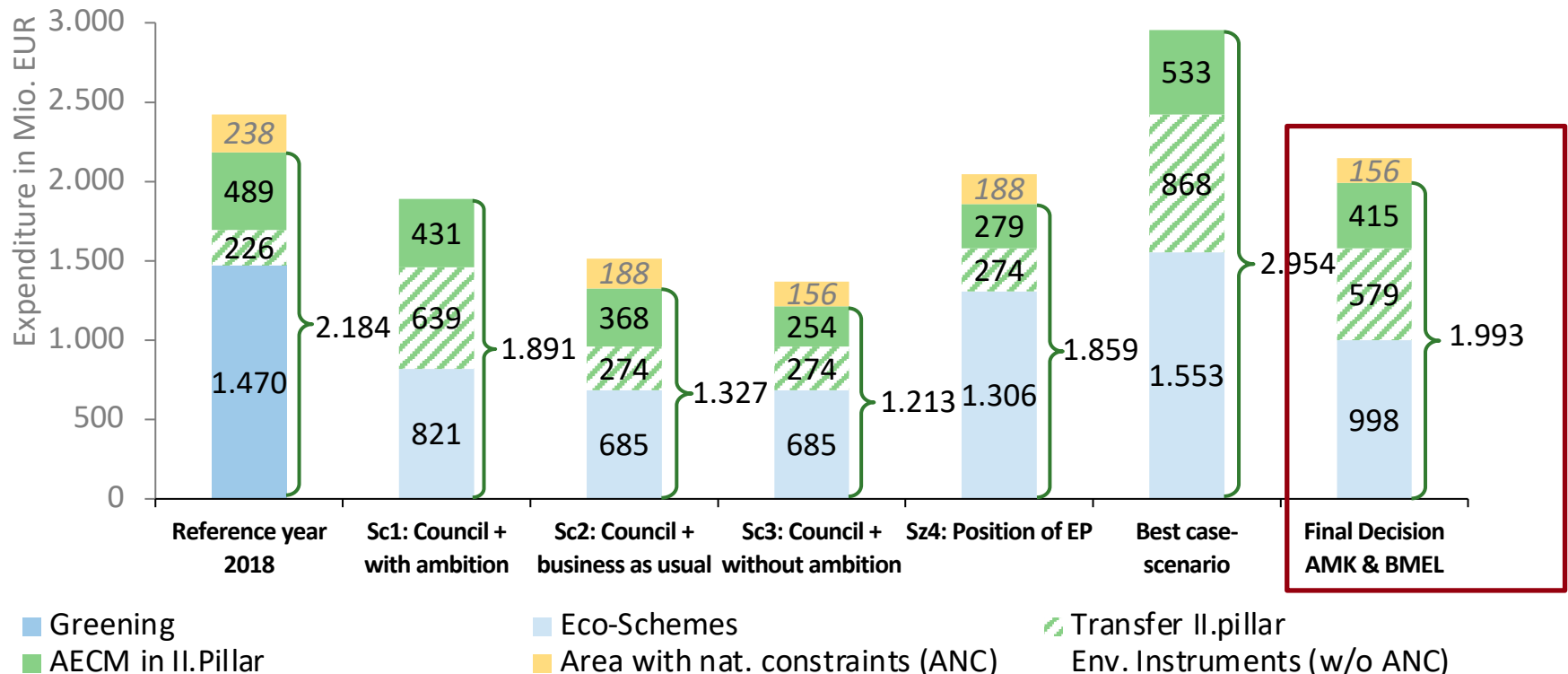
In German: <https://slakner.wordpress.com/2021/04/07/amk-beschlusse-ein-schritt-in-die-richtige-richtung/>

In English: <https://www.arc2020.eu/cap-strategic-plans-germany-taking-steps-in-the-right-direction/>

4 Opportunities of the CAP-reform 2021

Environmental expenditure in the CAP in Germany for 2018 and 2023-2027

(Source: own estimation; Constant prices 2018 = 100%; 1.0% Inflation assumed)



Source: Lakner, S. (2021): Neustart oder Rückschritt? Wie die Zukunft der EU-Agrarförderung in Deutschland gestaltet werden kann ; Studie im Auftrag von Greenpeace e.V.

5 Discussion and Conclusions

- 1. Planning at landscape-level
- 2. collective implementation



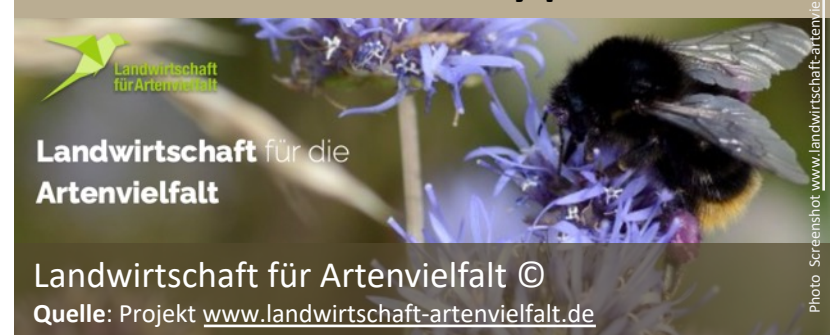
- 3. Result-based measures
- 4. Conservation consultancy



5. Field margins and



6. Use market-potentials for conservation-friendly products



5 Discussion and Conclusions

Utilize reform-potentials

- **Multifunctionality and public goods** as guiding principles of the CAP
- **Phasing out** direct payments and coupled payments
- **Strengthening environmental policy** (biodiversity and climate)
 - **Dark green** measures
 - **Coherence** between instruments
 - **Innovative measures**
 - **Nature conservation sector**: profit mark-up necessary.
 - **Simplification** (WBAE 2019, administrative simplification, EAFRD Reset 2011).
 - **Expenditure on management and administration** is necessary under the rule of law. => Goal: More cooperation between authorities and agriculture for nature conservation
 - **Implementation of Natura 2000**, FFH protected areas, management
 - **Control with monitoring and advice**
 - **More cooperation in agriculture**, and with authorities, environmental associations

Source: own presentation, Lakner (2020), partly from Pe'er, Bonn, Bruelheide, Dieker, Eisenhauer, Feindt [...] & Lakner (2020): Action needed for the EU Common Agricultural Policy to address sustainability challenges, People & Nature, <https://doi.org/10.1002/pan3.10080>

For further reading...

POLICY FORUM

AGRICULTURE

A greener path for the EU Common Agricultural Policy

It's time for sustainable, environmental performance

By Guy Pe'er^{1,2*}, Yves Zinngrebe³, Francisco Moreira⁴, Chéla Sirami⁵, Stefan Schindler⁶, Robert Müller⁷, Vasilios Bontzorlos⁸, Dagmar Clough⁹, Peter Bezák¹⁰, Aletta Bonn^{11,12}, Bernd Hansjürgens^{13,14}, Angela Lomba¹⁵, Stefan Möckel¹⁶, Gioele Passoni¹⁷, Christian Schleyer¹⁸, Jenny Schmidt^{19,20,21}, Sebastian Lakner²²

The Common Agricultural Policy (CAP) of the European Union (EU) is one of the world's largest agricultural policies and the EU's longest-prevailing one. Originally focused mostly on supporting production and farm income, the CAP has progressively integrated instruments to support the environment.

Nonetheless, there is considerable agreement among EU citizens that the CAP still does not do enough to address ongoing environmental degradation and climate change (90% of nonfarmers, 64% of farmers) (7). In May and June 2018, the European Commission (EC) published the financial plan and legislative proposal for the CAP post-2020 (2), prompting numerous proposed amendments that the newly elected European Parliament (EP) will now have to consider. With an eye toward the next and final reform stages, including budget discussions and "trilogue" negotiations between the EC, the Council, and the EP to begin in autumn 2019, we examine whether the proposed post-2020 CAP can address key sustainability issues and meet societal demands for higher environmental performance.

The Lisbon Treaty on the Functioning of the EU requires the inclusion of environmental protection measures in all EU policies. The CAP thus has an obligation to address environmental pressures (e.g., biodiversity loss) linked to agriculture. Yet the official, constitutionalized CAP objectives have not changed since 1957. These focus

2017, a basic income support given to farmers within "pillar 1" based on the number of hectares farmed. In the 2013 reform, an attempt was made for "greening" DPs by incorporating three obligatory measures to support environmentally friendly practices, but it has been ineffective (3, 4). A smaller share of the CAP budget goes to the Rural Development Programme (RDP or "pillar 2": €14 billion in 2017), including agri-environment-climate measures (AECM, €4.5 billion in 2017) to compensate for income foregone associated with environmentally friendly practices (e.g., buffer strips, extensive grazing, or organic farming).

In February and April 2019, the Environmental and the Agricultural Committees of the EP proposed two opposing sets of amendments to the EC's proposal for CAP post-2020, the first substantially strengthening environmental safeguards, the second substantially weakening them. The EP will have to consider both proposals when progressing the reform process, but experience from previous reforms suggests that the final negotiation stages bear a substantial risk of watering down environmental ambitions (5). Accordingly, we here analyze the main challenges and provide recommendations to help put the CAP onto a greener path.

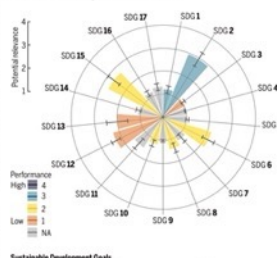
ALIGN CAP WITH SDGs

[see supplementary materials (SM) 2] Although political priorities of many European countries regarding the CAP may not focus on sustainability, the EC endorsed the United Nations' Sustainable Development Goals (SDGs) and identified 13 SDGs to which the CAP could contribute (6). This requires commitment of all member states (MSs). We estimate that the CAP can make a substantial contribution to nine SDGs, yet its current instruments provide some support only to SDGs 2 (zero hunger) and 1 (no poverty), and limited to no support to all other SDGs (see the first figure).

Acknowledging public demands, the EC's post-2020 CAP proposal (2) expresses clear commitment to environmental sustainability and to supporting the SDGs and introduces nine new objectives targeting different dimensions of sustainability. However, several objectives conflict with each other and with original 1957 objectives, and the proposal does

CAP and the SDGs

The potential relevance, and current performance of the Common Agricultural Policy (CAP) toward supporting the Sustainable Development Goals (SDGs). The mean and standard error of relevance (size of bar) were estimated by expert knowledge, ranging from low (1) to high (4). Performance (color coding) was assessed based on (3), ranging from little or no support (1) to high support [(4), but no such cases found]. For methods, see SM 1.



Sustainable Development Goals

- 1 No poverty
- 2 Zero hunger and food security
- 3 Good health and well-being
- 4 Quality education
- 5 Gender equality
- 6 Clean water and sanitation
- 7 Affordable and clean energy
- 8 Decent work and economic growth
- 9 Industry, innovation and infrastructure
- 10 Reduced inequalities
- 11 Sustainable cities and communities
- 12 Responsible consumption and production
- 13 Climate action
- 14 Life below water
- 15 Life on land
- 16 Peace, justice and strong institutions
- 17 Partnerships for the goals

S. Lakner (2020): Was kann die Gemeinsame Agrarpolitik der EU (GAP) zum Biodiversitätsschutz beitragen? Preprint: Tagungsbeitrag zu den Loccumer Protokollen: „Biodiversität und die Reform der Gemeinsamen Agrarpolitik“ Loccumer Landwirtschaftstagung: 7.-9. Februar 2020; doi: 10.13140/RG.2.2.13880.40641

Was kann die Gemeinsame Agrarpolitik der EU (GAP) zum Biodiversitätsschutz beitragen?

Sebastian Lakner¹

1 Einleitung

Der Sektor Landwirtschaft muss sich in zunehmendem Maße Umweltproblemen und gesellschaftlichen Herausforderungen stellen. Die zurückgehende Artenvielfalt stellt seit 2017 im Fokus der öffentlichen Debatte, ausgelöst durch die sog. Krefeld-Studie (Hallmann et al., 2017), in der in verschiedenen Naturschutzgebieten in Deutschland ein Rückgang der insekten Biomasse festgestellt wurde. Während jedoch die Auswahl der Flächen in der Studie teilweise für Kritik sorgte, bestätigen andere Studien den Trend der rückläufigen Artenvielfalt, etwa eine Studie auf den sog. Biodiversitäts-Exploratorien. Die Studie von Seibold et al. belegt auf 150 Grünland-Flächen und 140 Forstflächen, dass die Biomasse, Vorkommen und Anzahl von Arthropoden (Gliederfüßer) zwischen 2008 und 2017 um 67%, 78% und 34% zurückgegangen ist (Seibold et al., 2019).

Der Rückgang der Biodiversität ist inzwischen hinreichend belegt und es zeigt sich, dass Landwirtschaft einer der wichtigen Ursachen für den Artenrückgang ist. Eine Meta-Analyse von Sánchez-Bayo und Wyckhuys (2019) zeigt, dass Habitat-Veränderungen der wichtigste Treiber des Artenrückgangs sind. Der Verlust von Landschaftselementen und mangelnde Qualität in produktionsbegleitenden Habitaten werden als wichtige Ursache identifiziert. Pflanzenschutz und Düngung spielen ebenfalls eine Rolle, werden aber in Studien weniger häufig genannt. Der Handlungsbedarf ist dabei vielfältig und findet auf unterschiedlichen Ebenen statt. Nicht nur die Wiedereinrichtung von Landschaftselementen ist wichtig, sondern auch deren Qualitätsverbesserung. Die Umsetzung solcher Maßnahmen erfordert Motivation und Bildung der Akteure, Informationen müssen von Seiten des Naturschutzes bereitgestellt werden. Eine Kurztzulegenahme der Leopoldina Akademie der Wissenschaften weist darauf hin, dass der Erhalt der Biodiversität eine gesamtgesellschaftliche Aufgabe ist (Leopoldina, 2018).

Grundsätzlich stellt sich die Frage, in welchem Maße die Gemeinsame Agrarpolitik zum Erhalt der Biodiversität bereits beiträgt und welche Änderungen vorgenommen werden, um den Zustand der Artenvielfalt zu stabilisieren und mittelfristig wieder zu verbessern. Die Verfolgung von Umweltzielen ist in zunehmendem Maße eine Begründung für die Gemeinsame Agrarpolitik der EU (GAP). Gleichzeitig zeigen Erjavec und Erjavec (2015), dass zwar die Argumente in der Kommunikation gerne genutzt werden, wenn es jedoch zu den entscheidenden Budget-Entscheidungen kommt, dass Produktivitäts-Narrative die Debatte dominieren. Eine gezieltere Förderung über die GAP erscheint auch angesichts des Vertragsverletzungsverfahrens der EU-Kommission gegen die Bundesrepublik Deutschland angezeigt. So moniert die EU-Kommission erst Anfang 2020, dass in den FFH-Gebieten Deutschlands nicht in ausreichendem Maße detaillierte und quantifizierte Erhaltungsziele festgelegt wurden. Des Weiteren sind in sechs Bundesländern die Managementpläne der Öffentlichkeit nicht ausreichend zugänglich (EU-Kommission, 2020). Insgesamt deutet sich hier ein Umsetzungsdefizit in der deutschen Biodiversitätspolitik an. Im folgenden Beitrag geht es daher um die Möglichkeiten im Rahmen der GAP, den Erhalt der Biodiversität effektiver und effizienter zu fördern.

¹ Lehrstuhl für Agrarökonomie, Agrar- und Umweltwissenschaftliche Fakultät, Universität Rostock; Justus-von-Liebig-Weg 7, 18059 Rostock; sebastian.lakner@uni-rostock.de



2020
Stellungnahme

Biodiversität und Management von Agrarlandschaften

Umfassendes Handeln ist jetzt wichtig



Nationale Akademie der Wissenschaften Leopoldina | www.leopoldina.org
acatech – Deutsche Akademie der Technischen Wissenschaften | www.acatech.de
Union der deutschen Akademien der Wissenschaften | www.akademienunion.de

Pe'er, G., Y. Zinngrebe, F. Moreira, C. Sirami, S. Schindler, R. Müller, V. Bontzorlos, D. Clough, P. Bezák, A. Bonn, B. Hansjürgens, A. Lomba, S. Möckel, G. Passoni, C. Schleyer, J. Schmidt & S. Lakner (2019): A greener path for the EU Common Agricultural Policy - It's time for sustainable, environmental performance; Science 365 (6452): 449-451; doi: 10.1126/science.aax3146

Lakner, S. (2020): Was kann die Gemeinsame Agrarpolitik der EU (GAP) zum Biodiversitätsschutz beitragen?; in J. Lange: Biodiversität und die Reform der Gemeinsamen Agrarpolitik. Loccumer Protokolle, 03/2020; Evangelische Akademie Loccum, url: <https://bit.ly/3mwRlPR>

Leopoldina (2020): Biodiversität und Management von Agrarlandschaften, Stellungnahme der Nationale Akademie der Wissenschaften Leopoldina vom Oktober 2020, Halle/Saale

Universität Rostock



Traditio et Innovatio

Thank you for your attention!

Sebastian Lakner
Universität Rostock

 @SebastianLakner

 <http://slakner.wordpress.com>