

CAP 2021-2027 Study

CAP REFORM HIGHLIGHTS



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CEMA

European Agricultural
Machinery Association

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The views expressed in this study are those of the author.

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About CEMA

CEMA aisbl - www.cema-agri.org - is the association representing the European agricultural machinery industry. With 11 national member associations, the CEMA network represents both large multinational companies and numerous SMEs active in this sector.

The industry comprises about 7,000 manufacturers, producing more than 450 different types of machines with an annual turnover of about €40 billion (EU28 – 2016) and 150,000 direct employees. CEMA companies produce a large range of machines that cover any activity in the field from seeding to harvesting, as well as equipment for livestock management.

Table of contents

Foreword

1. The CAP

Introduction

1.1 Facts and figures

- a. A lower CAP budget**
- b. The impact of Brexit**

1.2 The future CAP : the 4 structural changes

- a. A new way of working**
- b. A better deal through better targeting of support**
- c. Higher ambitions on environmental action?**
- d. Greater use of knowledge and innovation**

2. Conclusions and Recommendations

3. Annexes

3.1 General EU legislative framework surrounding the CAP

- a. Functioning**
- b. Various restraints**

3.2 European context for implementing the CAP

4. Sources

Foreword

This study commissioned by CEMA analyses the main aspects in regards to the modernisation of the Common Agricultural Policy (CAP). It highlights the recent trends during CAP negotiations, pointing to changes in CAP strategic plans.

1. The COMMON AGRICULTURE POLICY (CAP)

Introduction

The CAP was introduced in 1962 as the first tool of European integration. Since then, it has tremendously grown, to become a core part of EU policies, under the control of DG Agriculture and Rural Development. Its two main components are direct payments (pillar 1) and rural development (pillar 2). Its purpose has thus shifted from reaching agricultural self-sufficiency of Europe, to adjusting agricultural production to market needs. In order to receive CAP funds, farmers need to comply with certain requirements, such as food safety, animal welfare, and environment protection.

DG Agriculture and Rural Development (AGRI) responsibility is to ensure an effective and efficient enforcement of the CAP. However, national envelopes allocated to CAP plans are slightly flexible. Three variables are highlighted below;

1. Discretion for transfers between the first and second pillars

Member States have a certain margin of discretion to allocate the funds. For example, during the 2014-2020 period (with an EU budget of €410 billion), €310 billion were distributed for direct payments and market measures (first pillar) and 100 billion € for rural development (second pillar). However, for 2015-2019, Germany chose to transfer 4,5% of its national envelop to various rural development programmes.

2. The criteria used to assess eligible farmers/farms

Countries have a certain leeway in choosing which farmers to subsidise. Of course, the main criteria are set out in the relevant EU directives and regulations, but there seems to be a margin of discretion left to Member States when granting the CAP funds. For instance, in the next Czech Strategic Plans, the Agriculture Ministry is considering changing slightly the way in which funds will be allocated (of course, such change will have to be approved by the EU Commission, once the strategic plans will be drafted). The proposal is as follows : Czech authorities would like to enlarge the categories of potential beneficiaries eligible for CAP funds, by allowing, not only landowners, but also service providers (such as companies renting trucks, or farming the land), to receive EU subsidies. This proposal seems unusual, and we would ask ourselves if it would fit within the current CAP framework? Meanwhile, it shows that Member States consider, to a certain extent, regain national power on CAP funds distribution.

3. The regional distribution of the funds

Each Member State has its own system and structure for implementing the CAP. From centralised states (eg. the Czech Republic) to strong regional authorities (ie. Finland or Germany), different mechanisms are used to distribute CAP funds. De-centralised systems are more difficult to monitor, as each paying agency has its own specificity. The example of Finland is an illustration of this diversity of structures: fifteen regional centres (ELOs) enjoy competencies related to the Ministry of Agriculture. However, they are not all similar in terms of services provided; two of these centres do not deal with CAP funds allocation. Hence, it demonstrates substantial differences and specificities for CAP funds distribution, not only between Member States, but also among regional authorities.

However, it should be noted that Member States do not have an absolute discretion concerning the allocation of CAP resources. Indeed, the budget is voted at a European level (see below) and, prior to receiving and distributing the funds, each Member State must receive the Commission's approval for its national strategic plans¹.

1.1 Facts and figures

The CAP budget for the present period (2014-2020) is about €410 billion, with €310 billion intended for direct payments and market measures, while €100 billion are designed to address rural development investments.

At EU level, the CAP is financed through two main authorities: the EAGF (European Agricultural Fund) providing direct support and funding market measures, and the EAFRD (European Agricultural Fund for Rural Development), financing rural development.

As the Member States are responsible for re-distributing the funds allocated, they also must publish a list of the recipients of these funds. The small beneficiaries are generally not mentioned on these data bases.

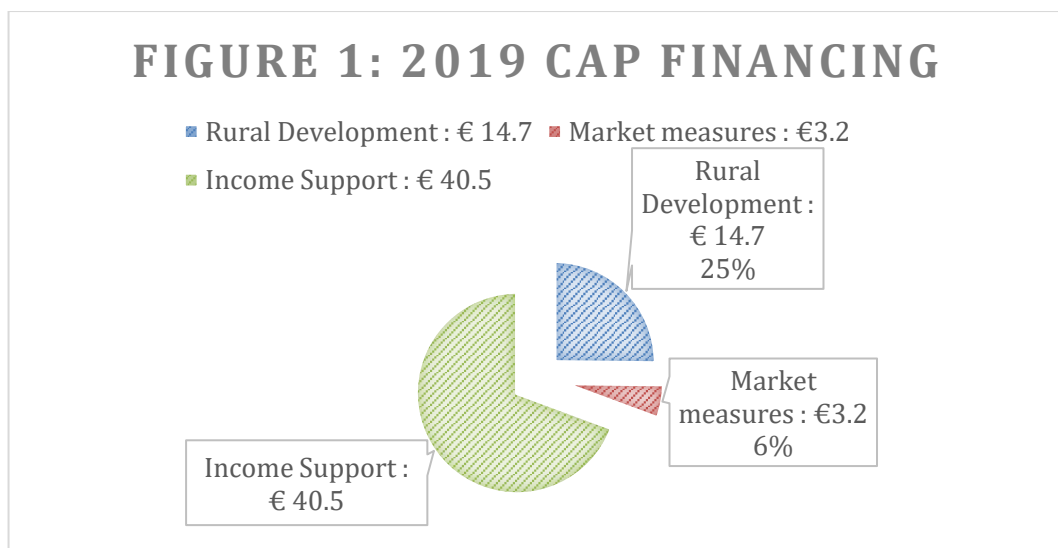


Fig.1

Source: <http://www.europarl.europa.eu/factsheets/ro/sheet/106/finantarea-politicii-agricole-comune>

¹ Section 5, Proposal for a Regulation of the EP and the Council establishing rules on support for national strategic plans, European Commission, June 2018.

The CAP represents a significant part of the EU total budget. See below, the proportion of EU funding dedicated to the CAP, for the 2019 period:

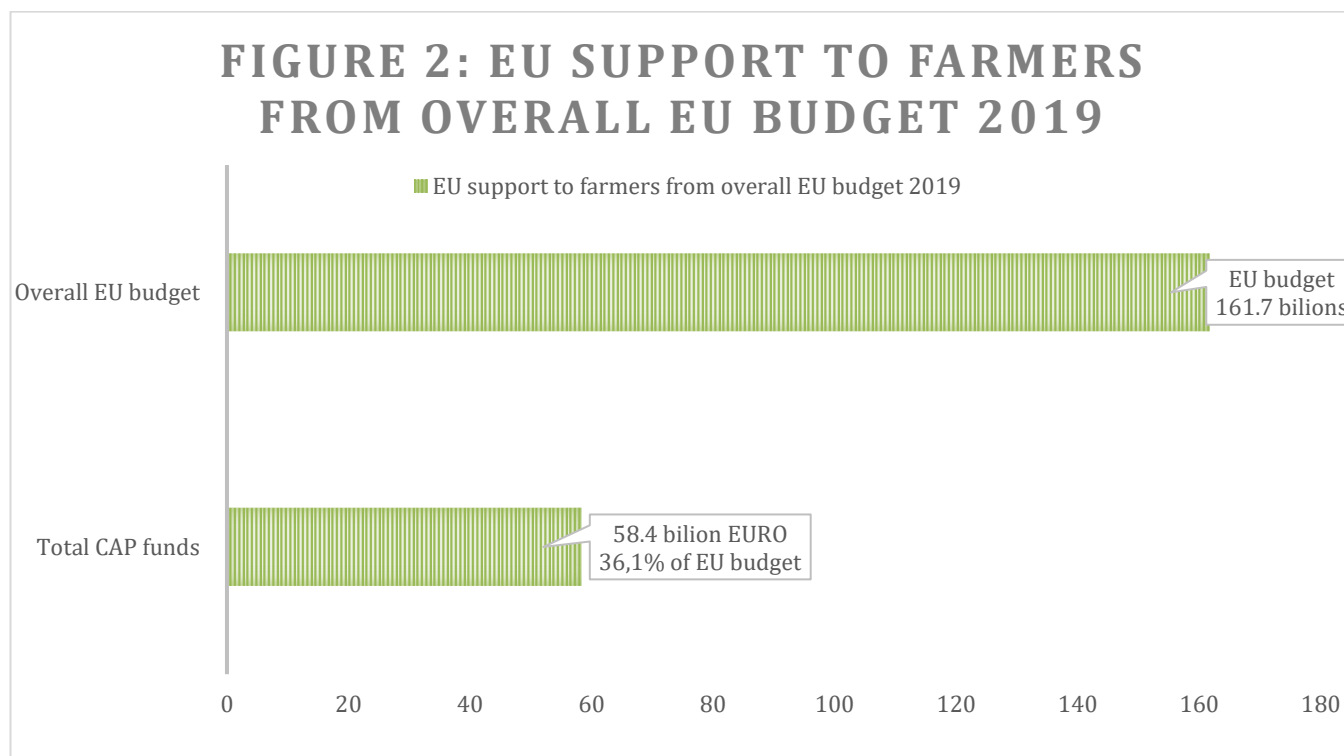


Fig.2

Source: <http://www.europarl.europa.eu/factsheets/ro/sheet/106/finantarea-politicii-agricole-comune>

The EU budget for 2019 provides a total of EUR 161.7 billion in commitment appropriations. Direct payments represent 25% of loans (EUR 40.5 billion), rural development measures represent 9.1% (EUR 14.7 billion) and other expenditures 3.2%. In total, for the CAP, in 2019, 36.1% of the Union budget is allocated (EUR 58.4 billion).

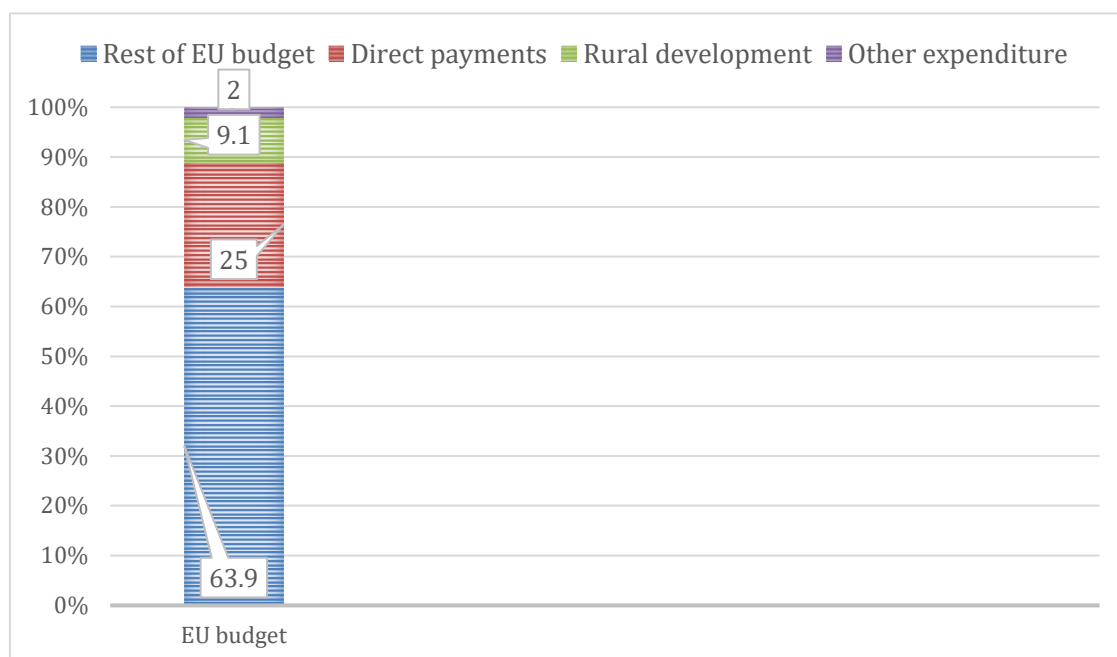


Fig.3 : Percentage of CAP segments in the EU budget

a. A lower CAP budget

Farming is unlike most other businesses, as the following special considerations apply:

- despite the importance of food production, farmers' average income is around 40% lower compared to other EU citizens' average income
- agriculture depends more on the weather and the climate than many other sectors
- there is an inevitable time gap between consumer demand and farmers being able to supply – growing more wheat or producing more milk inevitably takes time.

While being cost-effective, farmers should work in a sustainable and environmentally friendly manner, for maintaining their soils fertility and preserving biodiversity. Business uncertainties and public goods provided by farmers (maintaining the countryside) is commonly accepted reason for the public sector to financially support farmers.

The CAP main support measures are:

- Income through direct payments which ensures income stability, and remunerate farmers for environmentally friendly farming and delivering public goods not normally paid for by the markets
- Market measures to deal with difficult market situations such as a sudden drop in demand due to a health threat, or a fall in prices as a result of a temporary oversupply on the market
- Rural development measures with national and regional programmes to address the specific needs and challenges facing rural areas.

As we can see agriculture is an area of activity that presents many risks and many variables over time. Due to these factors of influence that are constantly changing and affecting agriculture, farmers cannot have income security. Thus, **the CAP represents a stability factor for all farmers**, allowing them in case of a difficult year to maintain the business for profit, and in a normal year to bring an extra income to the farm. This helps farmers to make investments in modern equipment that will allow them to become as efficient as possible and at the same time to carry out more sustainable farming practices.

b. The impact of Brexit

Another way, finally, in which the CAP policy will drastically change for the next period, concerns budget matters. Indeed, as the UK is finalising the Brexit process, it is evident that the EU will lose a significant part of its funding.

In its June 2018 proposals for reforming the CAP, the EU Commission suggested a substantial cut in the CAP budget. Whether such cut will be accepted by the EU is a separate question, but it has surely raised questions and debates throughout Europe. Indeed, the farming sector is currently facing a crisis where the farming population is both declining and ageing. For example, in Hungary, the area-based agricultural funding available during the 2021-2027 period is likely, according to the proposals, to be cut by 16.4% compared to the current period. Also, CAP funds for rural development (for the new period) are set to decrease by 26.6%. The Hungarian Minister of Agriculture István Nagy, qualified changes of this magnitude as "unacceptable".

It is obvious that the farming sector has seen a gradual reduction of CAP fundings over the past years, compared to other spending and investments in the EU budget.

While the European Commission's main communication and the various accompanying factsheets clearly compare the current and the next MFF for many spending items – such as research, investments, digital transformation, migration and border management, security, defence, and neighbourhood and the world – no document presents a comparison of current and future spending on agriculture and cohesion spending.

This is rather surprising, given that these two areas together account for 60% of the proposed EU spending in 2021-2027, and one of the key principles of the proposal is transparency.

Such lack of clarity on the actual changes to the EU's agricultural and cohesion spending could potentially lead to confusion, partly because there are at least three different ways to measure the changes in spending between the current and the next MFF:

- euro values ("current prices"),
- inflation-adjusted euro values ("constant prices" or "real terms"),
- share in total EU budget spending.

In this respect, we need to clarify these numbers.

The shares of agriculture and cohesion in the total EU budget spending show a downward trend according to the MFF proposal, as an interesting chart of the EU Commission report shows:

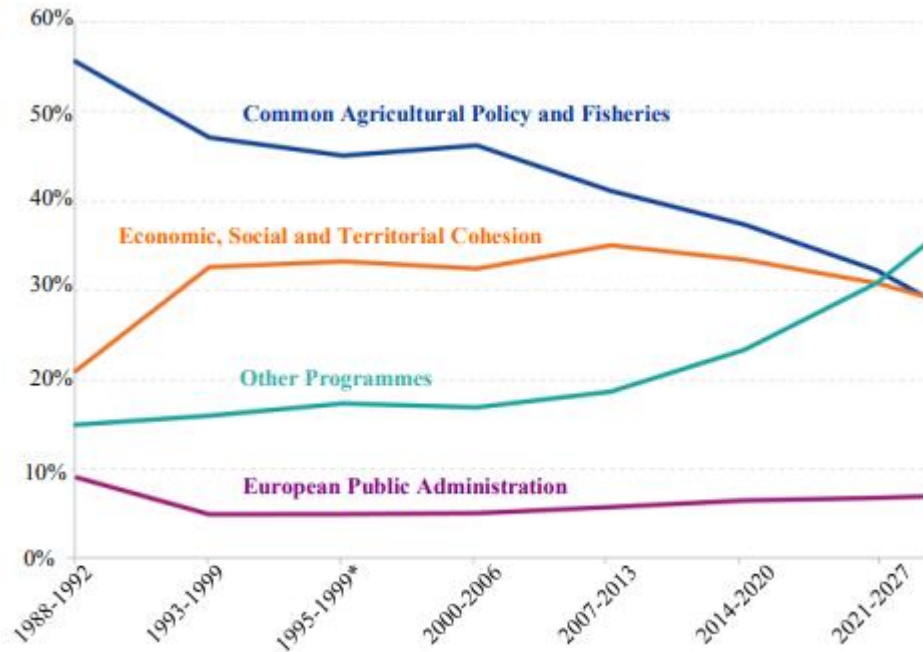


Fig. 4: Evolution of main policy areas in the EU budget (in % of the total budget)

Source: https://ec.europa.eu/commission/sites/beta-political/files/communication-modern-budget-may_2018_en.pdf

According to DG Agri's literature, the EU budget has to **make a meaningful contribution in many to the new priority areas, in particular where new instruments are being created. For these new goals current levels of funding will need to be increased.** Investing now in areas such as research and innovation, young people and the digital economy will pay rich dividends for future generations.

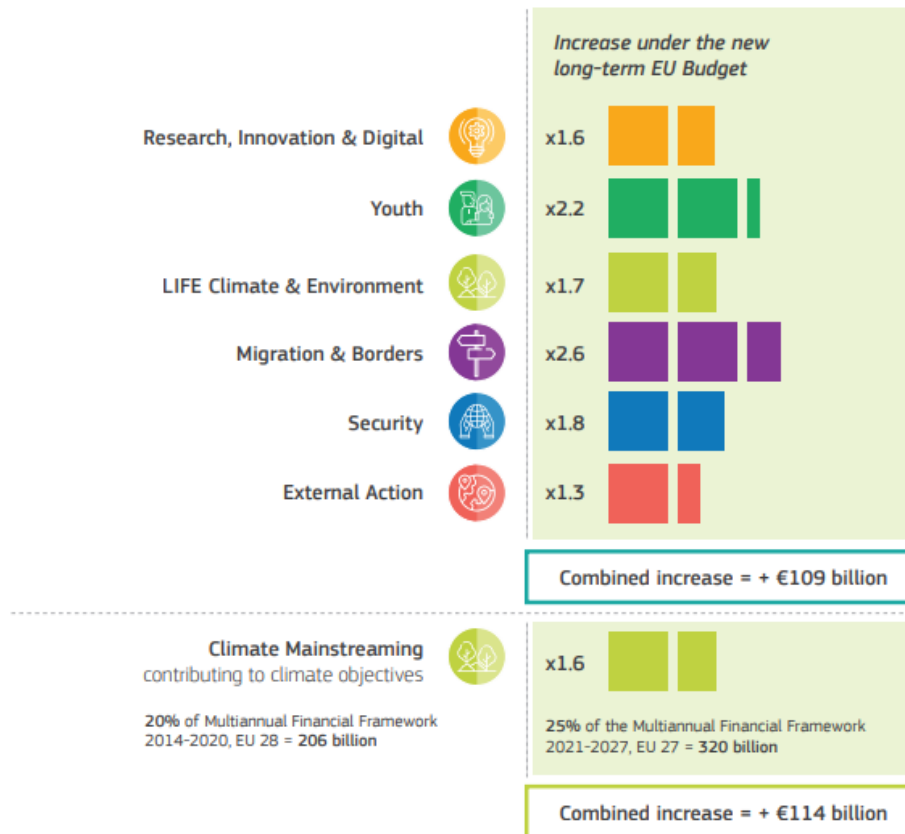


Fig.5 : The increasing EU budget to achieve its goals

Note: Compared to the Multiannual Financial Framework 2014-2020 at EU-27, including the European Development Fund

Source: https://ec.europa.eu/commission/sites/beta-political/files/budget-proposals-modern-eu-budget-may2018_en.pdf

THE NEW MULTIANNUAL FINANCIAL FRAMEWORK 2021 - 2027 A BUDGET FOR A UNION THAT PROTECTS, EMPOWERS AND DEFENDS

In billion euro, current prices

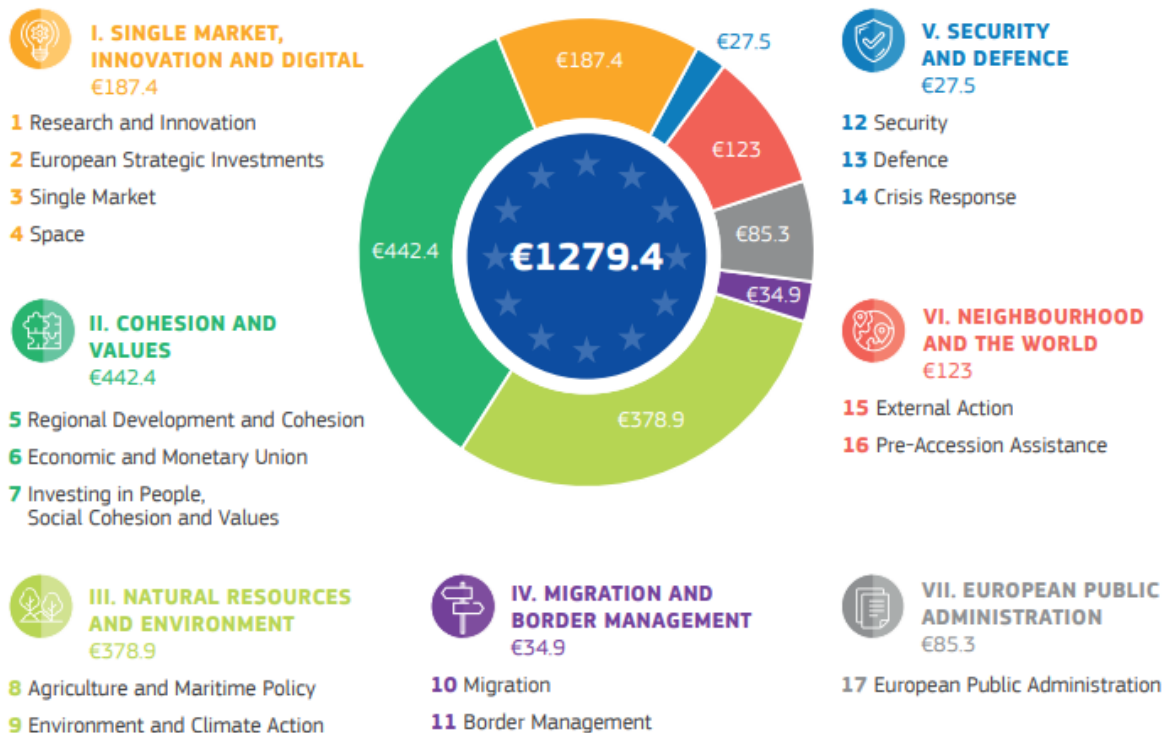


Fig.6: The possible EU budget for 2021-2027

Source: https://ec.europa.eu/commission/sites/beta-political/files/budget-proposals-modern-eu-budget-may2018_en.pdf

1.2 The future CAP: the 4 structural changes

a. A new way of working

i. The National Strategic Plans (NSPs)

According to the Commission's proposals, greater subsidiarity will be present in the reform, to such an extent that the French Parliament, when handing in its opinion on the proposals, even mentioned that this degree of leeway was too important to be compatible with reasonable subsidiarity (August 25, 2018).

The best manifestation of this degree of subsidiarity is in the way the countries will have to implement the CAP. Indeed, the Commission published its 9 objectives (including protecting food quality, ensuring fair income to farmers, fighting climate change, etc). EU Member States are responsible for reaching these objectives, through the drafting of national strategic plans. These should be handed to the Commission, with a clear description of how the plans intend to fulfil these objectives.

Based on nine objectives, the future CAP will continue to ensure access to high-quality food and strong support for the unique European farming model.



Fig. 7: The nine clear objectives of the future CAP

Source: https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap_en

The nine objectives of the future CAP are meant:

- to ensure a fair income to farmers
- to increase competitiveness
- to rebalance the power in the food chain
- climate change action
- environmental care
- to preserve landscapes and biodiversity
- to support generational renewal
- vibrant rural areas
- to protect food and health quality

To explain the reasoning behind each of these 9 objectives, the European Commission has produced a series of briefs. These briefs summarise the main facts, as well as the policy relevance of each objective.

Health, Food & Antimicrobial Resistance



"The overall sales of veterinary antimicrobials across 25 European countries have decreased by more than 20% between 2011 and 2016"

Key objective: Improve the response of EU agriculture to societal demands on food and health, including safe, nutritious and sustainable food, reducing food waste, as well as animal welfare.

This brief focuses on the challenges posed by antimicrobial resistance (AMR) in animal husbandry, the close links between animal welfare, animal health and food-borne diseases, and EU actions that can support farmers and the Member States in the fight against AMR.

Ensuring viable farm income



"In 2017, farmers earned on average just under half of what could be gained in other jobs, from a third a decade ago"

Key objective: Support viable farm income and resilience across the Union to enhance food security.

The brief examines the current situation with EU farm income, the role of the CAP in supporting it and the differences among Member States and sectors. Additionally, it discusses which combination of measures are needed to serve the key objective of supporting viable farm income.

Efficient soil management



"Agricultural soils in the EU contain the equivalent of 51 billion tonnes of CO₂ which is significantly more than the greenhouse gasses emitted annually by EU Member States"

Key objective: Foster sustainable development and efficient management of natural resources such as water, soil and air.

The brief focuses on soil as one of the most important natural resources, supplying essential nutrients, water, oxygen and support for plants. It also examines the concerns related to soil health and highlights the importance of policies which promote soil protection.

Agriculture and climate mitigation



"EU agriculture has a key role to play in helping to reach the commitments of the Paris' agreement and EU strategies on sustainability and bioeconomy by stepping up its ambition in terms of GHG emissions"

Key objective: Contribute to climate change mitigation and adaptation, as well as sustainable energy.

This brief examines the role that agriculture can play in the reduction of greenhouse gas emissions through new farm and soil management techniques. Additionally, it explores the risk that climate change poses to agriculture.

Farmer position in value chains



"Agriculture is characterised by a stagnant and low share of value added in the value chain, due to high input costs, variation in production and incorporation of new services"

Key objective: Improve farmers' position in the value chain.

The brief examines how the future CAP can strengthen the position of farmers through such measures as strengthening cooperation among farmers, increasing market transparency and ensuring effective mechanisms against Unfair Trading Practices (UTPs).

Jobs and growth in rural areas



"The CAP plays a major role in alleviating some of the unemployment and poverty pressures on rural areas. A recent study by the World Bank demonstrated the positive role played by the policy in reducing poverty"

Key objective: Promote employment, growth, social inclusion and local development in rural areas, including bio economy and sustainable forestry.

This brief explores the role of the CAP in the rural economy and looks at how income support and rural development spending helps maintain employment rates and standards of living.

Simplifying the CAP



"Administrative costs are the result of oversight to ensure taxpayers' money is used for what it is intended for. The proportionality of the burden in relation to the benefits is key: an efficient policy will minimise costs, including bureaucracy, to the highest possible effectiveness"

Key objective: Simplify the CAP

The brief lays out the facts about administrative burden under the CAP and explores the potential for and challenges to simplification.

In its first reading of the proposals (May 2019), the European Parliament suggested that the transfer of funds between pillars should be capped at 5%, while the EU Commission initially proposed to cap these payments between both pillars at 15%. A middle ground will probably be found during the negotiations (this possibility of transfer between pillars is completely different from the other possibility of transferring funds on a voluntary basis, for environmental purposes, see below).

ii. The new delivery model (NDM), or monitoring of these plans

Another point worth noting in the new CAP plans, is the creation of the PMEF (Performance Monitoring and Evaluation Framework), replacing the existing CMEF (Common Monitoring and Evaluation Framework). Although this change may seem anecdotal, it follows the core change of the CAP plans; a focus on performance, and not just compliance anymore. The new PMEF will thus examine the performance of the Member States but, more specifically, it will look closer at how Member States enforce the nine specific goals of the EU which the CAP is supposed to carry out.

b. A better deal through better targeting of support

Most probably the CAP will now focus on better targeting of support, meaning medium and small sized farms. This change is primarily designed to address the issue of direct payments.

The main reason that led to the appearance of the capping of subsidies is the fact that **80% of the money granted** for the development of agriculture and the fulfilment of all the established targets is granted to 20% of the farmers. Thus, over three quarters of the total amount reach to a small part of the agricultural holdings.

Member States shall reduce the amount of direct payments to be granted to a farmer for a given calendar year in excess of €60,000, as follows:

1. At least by 25% for the bracket above €60,000 and below €75,000;
2. At least by 50% for the bracket €75,000 - €90,000;
3. At least by 75% for the bracket €90,000 - €100,000;
4. 100% in the case of amounts over €100,000.

Member States shall deduct from the amount of direct payments which they agree to be granted to a farmer under this this scheme of payments in a given calendar year:

[a] the wages related to an agricultural activity declared by the farmer, including taxes and social contributions related to employment

and

[b] the equivalent cost of the permanent and non-salaried legal workforce of an agricultural activity practiced by persons working on the farm in question and who do not receive a salary or receive a remuneration lower than the amount normally paid for

the services provided, but which are rewarded by the economic result of the agricultural enterprise.

In calculating the amounts referred to in points (a) and (b), Member States shall use the average standard wages related to agricultural activity at national or regional level, multiplied by the number of annual work units declared by the farmer concerned.

However, there has been some debate between the EU Commission and the AGRI Committee of the EU Parliament over this topic, about the capping issue. To date, this topic remains a real bone of contention. The Czech Republic and Slovakia, perceive this capping policy as very harmful since their agriculture is organised around large farms. A capping mechanism would literally sink these countries' systems. Other countries were also against capping from the start of negotiations: Germany, Romania, Slovakia and Sweden.

Area of holding	Number of holdings ²	% of total holdings	Utilised Agricultural area (ha)	% of Utilised Agricultural Area
<2 ha	4 706 370	44.1%	3 578 030	2.0%
2 – 4.9 ha	2 307 300	21.6%	7 313 240	4.2%
5 – 9.9 ha	1 277 230	12.0%	8 940 870	5.1%
10 – 19.9 ha	888 540	8.3%	12 442 190	7.1%
Sub-total <20 ha	9 179 440	86%	32 274 330	18%
20 – 29.9 ha	374 870	3.5%	9 134 540	5.2%
30 – 49.9 ha	387 730	3.6%	14 974 730	8.6%
50 – 99.9 ha	388 680	3.6%	27 264 410	15.6%
>100 ha	366 740	3.2%	90 965 810	52.1%
Sub-total → 20 ha	1 488 020	14%	142 339 490	82%
Total	10 667 460	100.0%	174 613 820	100.0%

Fig. 8 : Distribution of agricultural holdings by area (2013)

Source : Eurostat

Note: As can be seen in the table above, much of the agricultural land is exploited by large farms, farms that adopt and practice an efficient and high-performance agriculture with a high yield in terms of the quality of the obtained products and with a lower impact on the environment. Thus we can deduce that a subsidy cap would be harmful to these farms and they will not be able to maintain such a high level of performance. If in the new CAP it is desired to support small farmers, this should be done by other methods.

		Belgium	Czechia	Denmark	Germany	Spain	France	Italy	Hungary	Netherlands	Austria	Poland	Romania	Slovakia	U.K.
Less than 5 ha (including farms that are 0 ha)	2005	13.700	22.380	1.750	88.000	577.210	147.680	1.271.660	588.770	22.130	54.310	1.740.220	3.735.820	59.530	68.580
	2007	12.220	19.840	1.680	83.570	551.360	130.440	1.230.690	499.830	19.680	54.470	1.626.440	3.451.160	57.700	29.010
	2010	9.670	3.530	2.330	27.360	525.580	138.760	1.182.320	458.800	19.000	46.380	823.420	3.459.120	15.010	12.520
	2013	5.480	4.870	2.080	24.600	506.550	116.370	592.720	377.310	16.790	42.250	770.360	3.281.180	12.360	11.710
From 20 to 49.9 ha	2005	29.320	13.460	33.350	217.290	402.530	219.620	418.250	13.970	22.760	34.200	96.780	16.120	1.110	46.680
	2007	27.020	12.990	27.680	201.560	391.360	199.860	408.730	12.380	20.990	33.330	101.370	16.110	1.350	46.450
	2010	24.160	12.500	25.050	186.540	360.550	185.310	393.880	15.390	19.220	32.260	95.280	17.940	1.430	42.380
	2013	23.560	14.280	22.930	175.050	356.680	164.910	372.310	15.840	17.870	31.340	102.480	18.730	1.500	41.230
From 50 to 99.9 ha	2005	6.700	2.150	9.030	54.220	50.130	112.950	25.710	5.650	8.900	7.860	13.470	4.900	0.630	35.670
	2007	6.810	2.310	7.090	53.380	50.100	106.650	27.010	5.660	9.210	8.000	15.790	4.740	0.740	34.910
	2010	6.780	2.420	5.920	51.620	52.470	97.780	29.210	6.410	9.130	8.430	16.840	7.480	0.780	32.990
	2013	6.530	2.460	5.380	50.220	49.960	93.330	30.180	6.590	9.280	8.730	20.570	7.260	0.790	32.470
100 ha or over	2005	1.820	4.260	7.550	30.380	49.540	86.880	12.910	6.040	1.790	3.010	7.230	8.930	1.980	38.810
	2007	1.980	4.260	8.180	31.980	51.080	90.410	13.010	6.490	1.950	3.280	7.850	9.660	2.160	39.060
	2010	2.260	4.420	8.080	33.620	51.190	94.250	15.490	7.450	2.210	2.850	9.650	13.730	2.210	39.240
	2013	2.190	4.630	7.880	35.160	51.820	97.600	15.100	7.640	2.390	2.570	10.950	13.080	2.310	40.980
Total	2005	51.540	42.250	51.680	389.880	1.079.420	567.140	1.728.530	714.790	81.830	170.640	2.476.470	4.256.150	68.490	286.750
	2007	48.010	39.400	44.620	370.480	1.043.910	527.350	1.679.440	626.320	76.740	165.420	2.390.960	3.931.350	68.990	226.660
	2010	42.850	22.860	41.360	299.130	989.800	516.100	1.620.880	576.810	72.320	150.170	1.506.620	3.859.040	24.460	185.200
	2013	37.760	26.250	38.280	285.030	965.000	472.210	1.010.330	491.330	67.480	140.430	1.429.010	3.629.660	23.570	183.040

Fig.9 Farm structure in EU

Source: Eurostat

Note: In the table above we can see the evolution of farms in the EU space during the last 15 years. As can be seen in the table, the tendency of EU farms is to increase the areas they are exploiting. Also, there is a decrease in the number of small farms and an increase in the number of large farms. This is beneficial because large farms are the ones that make the performance with a low impact on the environment. However, the EU wants to support small agricultural producers through a series of measures that will be present in the CAP 2021-2027 in order to prevent the depopulation of the rural environment.

Level and composition of CAP payments varies across the EU. Total CAP payments differ widely by country. In addition, countries have some freedom over the allocation of these funds between Pillar I (direct payments) and Pillar II (rural development). Most countries and regions prefer to spend CAP funds on Pillar I. The majority of direct payments are area-based, and 30 percent are linked to farmers with land use that can be defined as “greening”. Nevertheless, there is clear heterogeneity on allocations of CAP funds within and across countries.

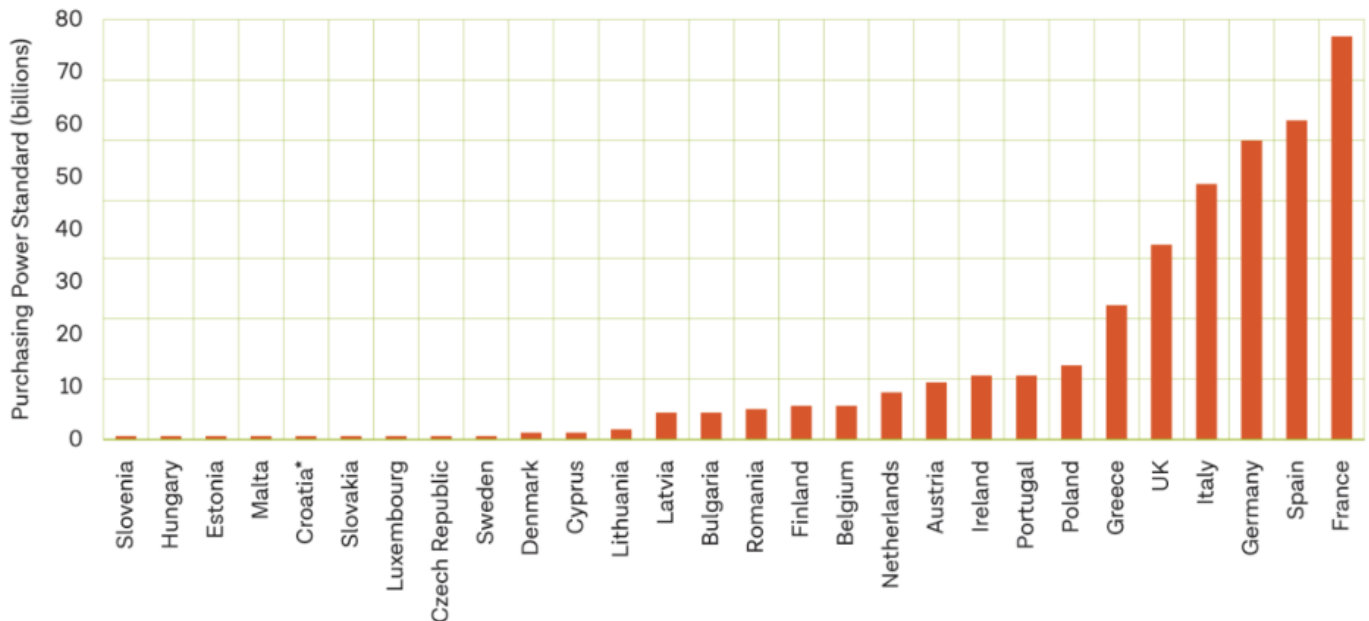


Fig.10: Levels of CAP funds received by different Member States.

Source: DG AGRI (2017) Clearance Audit Trail System (CATS) database provided by the European Commission.

Note: Data available only for 2013. Total CAP Payments (2008–2013).

As it can be clearly seen the funds received by different Member States are drastically different.

Support to Young Farmers

Finally, a better targeting of support also means that young farmers should be encouraged to start their own business. This is why the new CAP aims at compelling Member States to use at least 2% of their direct payments as subsidies to young farmers.

Again, there is a lively debate about who should be considered as a "young" farmer. Different ages in the farming population could potentially mean more investment from country to country.

The Young Farmer Payment (YFP) is a compulsory scheme for Member States to implement. It targets **farmers of no more than 40 years of age** who are setting up for the first time an agricultural holding as head of the holding, or who have already set up such a holding during the five years preceding the first application for the scheme. In countries implementing the Basic Payment Scheme, young farmers also benefit from a priority access to the national or regional reserve. This is important for young farmers who do not have payment entitlements or have less payment entitlements than hectares. It is mandatory for Member States to keep this priority access to the reserve for young farmers (and new entrants). The entry eligibility conditions for the young farmer top-up payment and for the access to the reserve under the young farmer category are identical: Article 50 of Regulation (EU) 1307/2013 sets out the general rules for natural persons, namely setting

up for the first time an agricultural holding as head of the holding and are no more than 40 years of age in the year of their first application. Member States may introduce additional eligibility criteria related to appropriate skills and training.

Based on the notifications as they stand after the August 2015 revision, Member States have estimated that a total of 2.6 billion Euro will be spent to grant the YFP under pillar 1 in the EU in the period 2015-2019. Accordingly, in 2016 the needs for the YFP have been estimated at 1.23% of total DP (in comparison to 1.33% in 2015) for the EU as a whole, or around 513 million Euro. These amounts are not necessarily the maximum amounts that will be paid at the end. In fact, in case the estimated amount is insufficient but still below 2% of the national ceiling, Member States must satisfy all claims up to the maximum 2%.

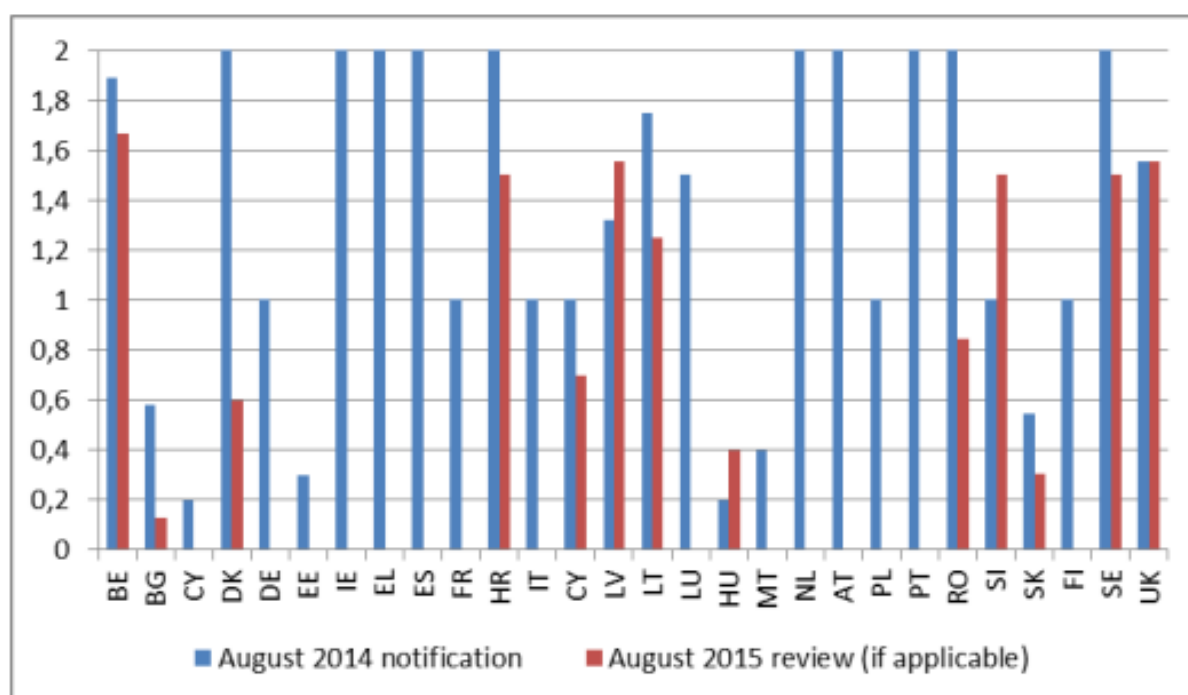


Fig. 11: Percentage of the national ceiling allocated to the financing of the YFP in 2016 – notification in August 2014 and review in August 2015 (if applicable).

Source : The Young Farmer Payment under Pillar I of the CAP Policy Choices and Decisions taken by Member States.

It is worth noting that these measures concern direct payments ; as a consequence, farmers can combine these payments with those they receive under pillar II.

c. Higher ambitions on environmental action?

Most observers and experts criticise the new CAP for its lack of ambitions concerning green policies, while the initiators of the CAP actually argue it has never been more ambitious.

Under the current CAP, the environmental measures are called "greening" measures. This means that under direct payments, farmers must comply with a set of three main conditions in order to receive 30% of their direct payments (such as crop diversification, conserving minimum 5% of areas of ecological interest or measures having or at least the equivalent benefit for environment and maintaining permanent grassland).

Under the new CAP, this compliance is not small, but central to receiving CAP funds. If these conditions are not complied with, then 100% of the direct payments will not be transferred to the farmer.

The new CAP introduces an ambivalent concept: the eco-scheme (under pillar I). Under this scheme, Member States will have to encourage farmers to go beyond the mandatory requirements, in order to be as 'green' as possible.

This means the eco-scheme is mandatory for Member States (they must be able to offer support to farmers), while it is optional for farmers. Many criticise this dual system. A system by which farmers will only receive compensation for their losses to invest further in environmental practices is unlikely to be beneficial and well-accepted.

The eco-scheme and the CAP's green architecture:

Following the principle introduced in the 2013 reform that environmental and climate support should be available under both Pillars 1 and 2 of the CAP, the new legislative proposals also set out mandatory environmental interventions in both pillars (voluntary for farmers), underpinned by mandatory environmental conditions.

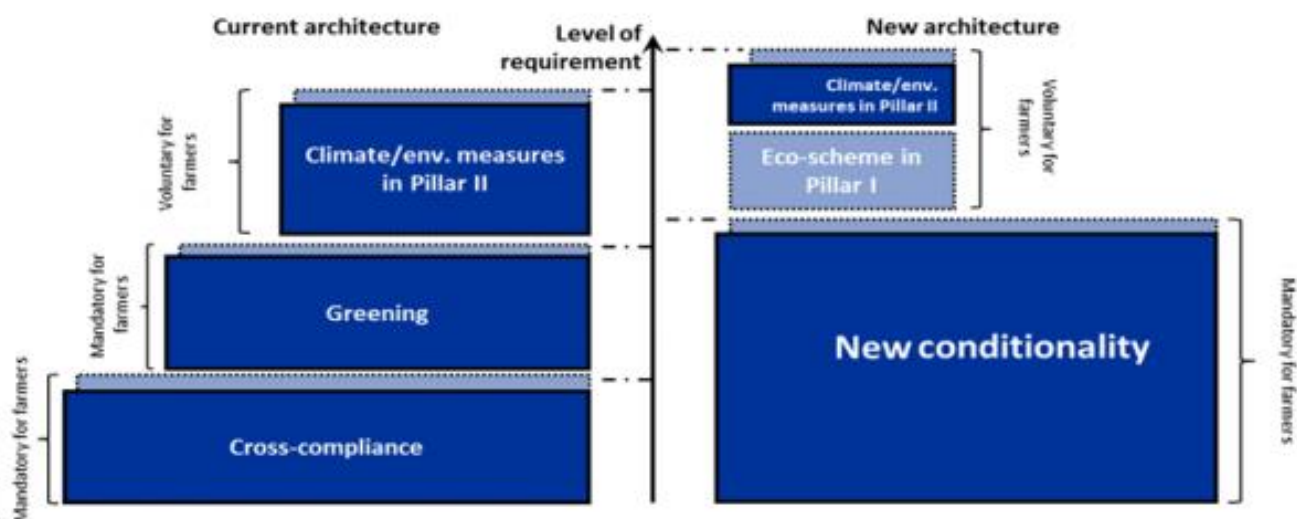


Fig.12: Comparison of the CAP's current and proposed new green architecture

Source: https://www.ifoam-eu.org/sites/default/files/ifoam_eu_eco-scheme_report_final.pdf

The proposal for the eco-scheme under Pillar 1 constitutes the main new feature of the green architecture, replacing the green direct payments introduced in the 2014-2020 CAP. Under the proposals, Member States are required to put in place the eco-scheme, designed to address their regional or national environmental and climate needs and contribute to CAP's environmental and climate objectives. This moves away from the approach taken with the green direct payments whereby Member States implemented a common set of practices with detailed rules set at EU level, applicable to all eligible farmers in receipt of direct payments. The proposed eco-scheme measures therefore gives Member States more autonomy to define the actual content of environmental and climate actions supported under Pillar 1. The other key difference is that, unlike the green direct payments regime, which was mandatory for eligible farmers to participate in if they wished to receive payments, **the eco-scheme would be voluntary for farmers to enter into**. A comparison

of the green direct payments under the current CAP and the eco-scheme proposals in the context of the 'new delivery model' is set out in Figure 13:

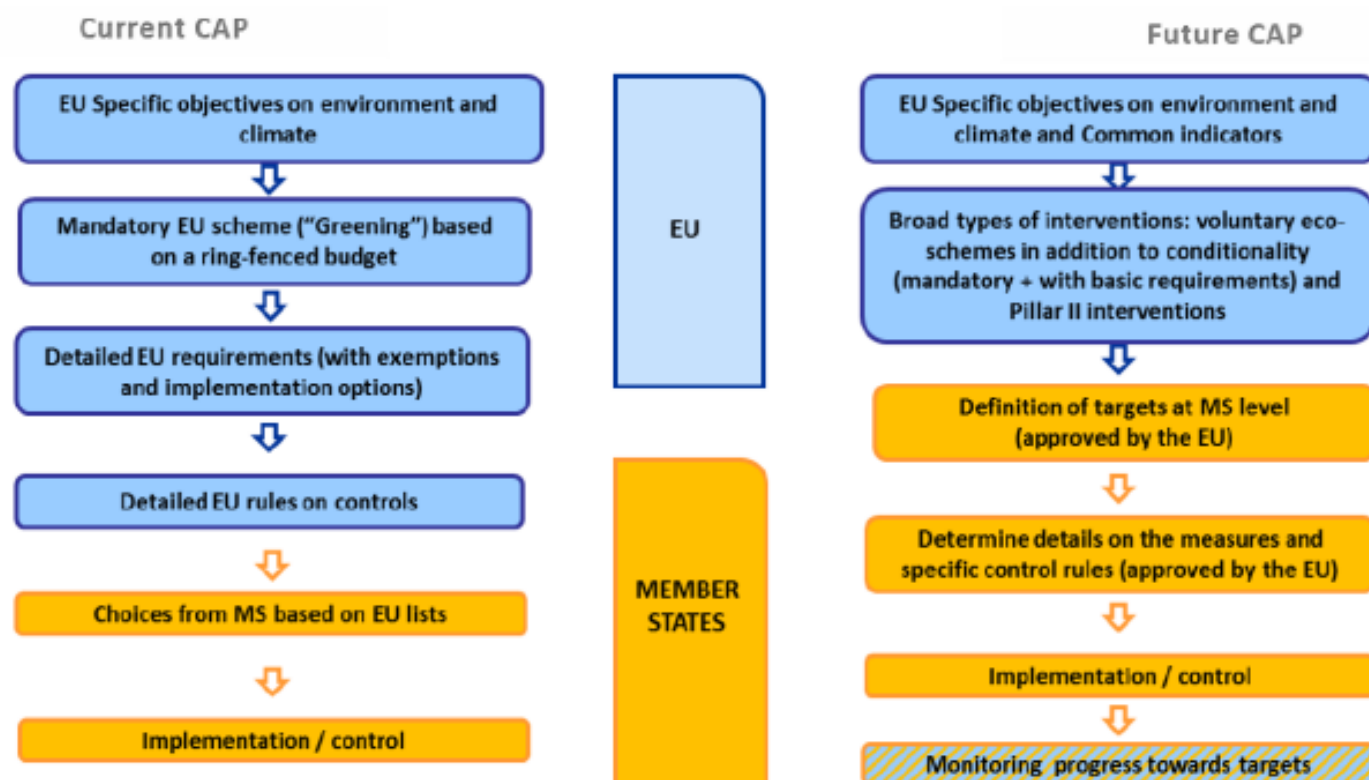


Fig.13: Comparison of Greening and the eco-scheme under the new delivery model

Source :https://www.ifoam-eu.org/sites/default/files/ifoam_eu_eco-scheme_report_final.pdf

Other parts of the new green architecture include:

- the requirements and standards (related to environment and climate, public, animal and plant health, etc.) set out under 'conditionality', which all farmers receiving direct payments must fulfil. These conditions lay the foundations for the design of the eco-scheme as well as for voluntary environmental and climate area based schemes for farmers under Pillar 2 ;
- the well-established Pillar 2 agri-environment-climate schemes, which remain a requirement for Member States to design and run under RDPs.

Another "green" measure of the new CAP is the possibility for Member States to transfer 15% of direct payments to pillar II for environmental projects and purposes (this possibility of transfer is completely separate from the other 15% which can be freely transferred between pillars). It is worth noting that the AGRI Committee from the European Parliament suggested this second type of transfer should be capped at 5%; what this means, is that, if the new Parliament does not vote in favour of the new CAP and a trilogue is initiated, it is possible that the capping level will go down (between 5 and 15%).

Extract from Article 6 “Specific objectives” of the Strategic Plans:

The new CAP 2021-2027 plans the achievement of general objectives through specific objectives including environmental protection measures:

- (a) support viable farm income and resilience across the Union to enhance food security;
- (b) enhance market orientation and increase competitiveness, including greater focus on research, technology and digitalisation;
- (c) improve the farmers' position in the value chain;
- (d) contribute to climate change mitigation and adaptation, as well as sustainable energy;
- (e) foster sustainable development and efficient management of natural resources such as water, soil and air;
- (f) contribute to the protection of biodiversity, enhance ecosystem services and preserve habitats and landscapes;
- (g) attract young farmers and facilitate business development in rural areas;
- (h) promote employment, growth, social inclusion and local development in rural areas, including bio-economy and sustainable forestry;
- (i) improve the response of EU agriculture to societal demands on food and health, including safe, nutritious and sustainable food, food waste, as well as animal welfare.

When pursuing the specific objectives Member States shall ensure simplification and performance of the CAP support.

Extract from Article 68 “Investments”: Member States may grant support for investments under the conditions set out in this Article and as further specified in their CAP Strategic Plans. The Member States may only grant support under this type of interventions for tangible and/or intangible investments, which contribute to achieving the specific objectives set out above. Support to the forestry sector shall be based on a forest management plan or equivalent instrument. Also, they can establish a list of ineligible investments and categories of expenditure which will not be funded.

Member States shall limit the support to the maximum rate of 75% of the eligible costs. The maximum support rate may be increased for the following investments:

- (a) afforestation and non-productive investments linked to the specific environmental- and climate-related objectives set out in the points (d), (e) and (f) of Article 6(1);
- (b) investments in basic services in rural areas;
- (c) investments in the restoration of agricultural or forestry potential following natural disasters or catastrophic events and investments in appropriate preventive actions in forests and in the rural environment.

d. Greater use of knowledge and innovation

Knowledge and innovation are essential for a smart, resilient and sustainable agricultural sector. The CAP of the future will both encourage increased investment in research and innovation and enable farmers and rural communities to benefit from it.

Therefore, it is essential to build stronger agricultural knowledge and innovation systems (AKIS) to boost initiation and development of innovation projects, to disseminate their results and to use them as widely as possible.

Including national AKIS strategies in CAP strategic plans will incentivise the structuring and organisation of the national innovation ecosystem. Ensuring that well-functioning

AKIS exist throughout the EU avoids duplication of efforts, saves costs, increases the impact of EU and national/regional funding and speeds up innovation.

Successful AKIS strategies include four main group of actions

1. enhancing knowledge flows and strengthening links between research and practice
2. strengthening all farm advisory services and fostering their interconnection within the AKIS
3. enhancing cross-thematic and cross-border interactive innovation
4. supporting the digital transition in agriculture

The European Commission has proposed to set aside €10 billion from the Horizon Europe programme for research and innovation in food, agriculture, rural development and the bioeconomy. The agricultural European innovation partnership (EIP-AGRI) will continue to pool funding sources from Horizon Europe and rural development to foster competitive and sustainable farming and forestry.

Successful EU initiatives promoting research in agriculture

In the 2014-2020 period, the European Commission (EC) implemented new tools to stimulate innovation and development of knowledge useful for practice. The EIP-AGRI is a major policy and networking initiative designed to speed up innovation on the ground.² The EIP-AGRI is entirely based on the interactive innovation model. This model promotes targeted collaboration between a set of actors (e.g. farmers, foresters, advisors, entrepreneurs, end-users of project results, consumers, researchers, etc.) to make best use of their complementary types of knowledge (scientific, practical, organisational, etc.) in view of co-decision and co-creation all along the project of solutions/opportunities which are ready to implement in practice. The interactive innovation model aims at increasing projects' impact through starting by identifying the end-users' needs, and creating co-ownership during the project for all involved. The model also pays great attention to fully developing all ways to communicate on the project and disseminate the developed solutions and opportunities with all means and at all levels (geographical, sectorial, working with multipliers joining the project etc). The EIP-AGRI benefits from a unique set of measures and instruments funded under two European policies working in close synergies: Horizon 2020 and the rural development pillar under the Common Agricultural Policy (CAP). Operational Groups are the cornerstone of the EIP-AGRI under the CAP and support the development of innovations by groups of relevant actors in a bottom-up manner. These groups hold great potential for creating innovative solutions that will make farming smarter, more efficient and more sustainable. Today, more than 1000 OGs have started under the rural development programmes. It is expected that the amount of OGs will have tripled by the end of the RD period 2014-2020 . While OGs are working at regional and national level, over 180 European and international research and innovation projects funded under Horizon 2020 are dealing with similar issues related to agriculture and rural areas.

² CEMA experts participated in the 1st Focus Group on Precision Farming - <https://ec.europa.eu/eip/agriculture/en/publications/eip-agri-focus-group-precision-farming-final>

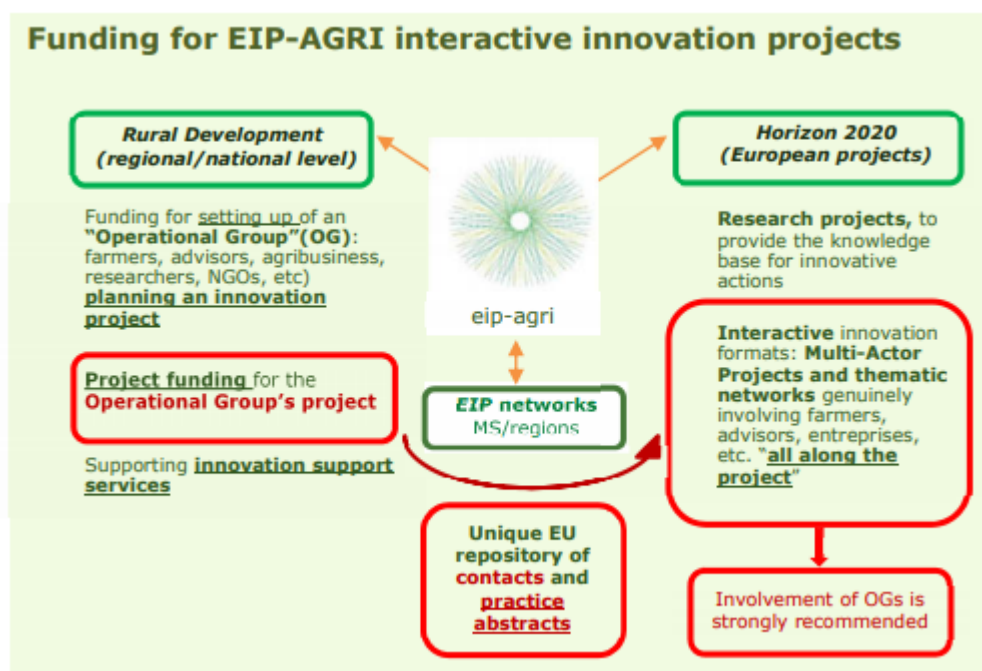


Fig.12 : Synergies between Horizon 2020 and the CAP in the period 2014-2020

Source: https://ec.europa.eu/info/system/files/food-farming-fisheries/key_policies/documents/report-preparing-for-future-akis-in-europe_en.pdf

Moving forward towards the post-2020 EU programming period in which AKIS functions receive special attention. In the Commission proposal for the Horizon Europe Specific Programme, increased attention goes to co-creation and the Multi-Actor Approach, covering a broader number of societal challenges in the Cluster 'Food and Natural Resources'. The Commission proposal for the future CAP regulation 2021-2027, presented by the EC in June 2018, comprises even a cross-cutting objective, which seeks the modernization of the sector through the promotion of knowledge, innovation and digitalisation in agriculture and rural areas, in particular by means of CAP Strategic Plans made up by Member States (MSs).

With regard to AKIS, this includes:

- (i) a description of 'the organisational set-up of the AKIS designed as the combined organisation and knowledge flows between persons, organisations and institutions who use and produce knowledge for agriculture and interrelated fields', as well as ;
- (ii) a description of 'how the advisory services, research and CAP networks will work together in the framework of the AKIS, and how advice and innovation support services are provided.' The support for EIP-AGRI Operational Groups is continued, and further improvements added, such as advance payments and the collaboration between existing Operational Groups becoming more easy. Also the support for innovation through CAP funded networks will continue and be enhanced (see above). In short, whereas in the 2014-2020 period the focus was on funding impactful innovation projects, in the 2021-2027 period there is attention for the complete innovation ecosystem, including project funding but also stimulating supporting services. The outcomes presented in this report allow to feed this

process and provide ideas and proposals for the different actors engaged in the future development of EU AKIS's.

2. CONCLUSIONS AND RECOMMENDATIONS

Use of farming technologies to comply with CAP rules

The ambitious changes of the new CAP will of course need real changes and big investments. The only way to achieve such high targets is to make use of big data and new techs. For example, an area where machinery manufacturers might make profits is as regards to satellite technologies and geo-localisation. Indeed, in the new CAP, as the award of funding will depend upon performance and the correctness of predictions, farmers will see their financial supports cut if they make wrong forecasts. More specifically, the EU Commission will not tolerate wrong estimates in calculation of farm areas going beyond 20cm. Such wrong estimates will inevitably lead to cuts in CAP funding.

The extent of these cuts is not confirmed yet. What is certain is that, in most Eastern Europe countries, farmers simply do not have the tools the technologies that would prevent such wrong estimates.

Towards a higher European convergence

This gap between advanced and less modern countries is the source of a phenomenon called external divergence. It means that, although efforts are made to harmonise Europe, big differences still remain between countries, in terms of wealth and development. Some Member states propose to establish the right to derogate to these high standards. A possible way in which the situation might evolve would be as follows: European authorities could set high targets for advanced and developed countries, and a safe harbour slightly below, a sort of grey area where less modern countries are allowed to maintain their standards before being able to catch up the economic gap. For the time being, this is just a proposal made by some Member States including the Czech Republic. Time is at stake. In a context where the European Parliament is experiencing the populist wave, it is possible that it will desire more decentralised policies, and will be willing to adopt this proposal.

Horizon 2020 - Strong Research Budget to boost modern agriculture

Regarding innovation, a €10 billion euros budget, from the EU's horizon research programme for innovation in food and agriculture, will be used. The purpose of this fund is to enhance the development of new, cutting-edge technologies throughout Europe so that it remains competitive.

The Commission proposals also advocate for more connectivity and competitiveness in the rural world, through investments in broadband material. In France, where president Macron made campaign promises concerning broadband and high connectivity investments in rural areas, it is likely that this policy will be put implemented.

Horizon 2020 is the largest research and innovation program ever undertaken by the EU. It will lead to more capital innovations, discoveries and world premieres, bringing great ideas from laboratories to the market. Financing of EUR 80 billion over 7 years (2014-2020) is available - in addition to private and national public investments on which this funding will attract them.

Thanks to EU research funding under previous framework programs, scientists and industry representatives from Europe and around the world have joined forces to find solutions to a wide range of challenges. Their innovations have contributed to improving the standard of living, protecting the environment and increasing the sustainability and competitiveness of European industry. Horizon 2020 is open to researchers from all over the world.

Scientific excellence: Horizon 2020 will support the EU's position as a world leader in science, attracting the brightest minds and helping our scientists to collaborate and share their ideas across Europe. The program will help the talented and innovative businesses to boost Europe's competitiveness, while creating jobs and contributing to a higher standard of living that we should all benefit from.

Border research funded by the European Council for Research (ERC): Some of today's most important inventions are the result of our natural curiosity about how the world around us works. Although curiosity-driven research at the frontiers of knowledge rarely explicitly supports the development of commercial products, scientific discoveries stimulate countless innovations. However, border research is often the first area for which funding is reduced in times of economic difficulties. Therefore, through the ERC, the EU wants to stimulate the level of investments. Excellence is here the only criterion for EU funding, granted to individual researchers or teams of researchers. Financing: EUR 13.095 billion.

Marie Skłodowska-Curie Actions: Career training and development actions contribute to the evolution of renowned researchers. Support is provided to young and experienced researchers to strengthen their careers and skills through training or internships in other countries or in the private sector. Thus, they gain new knowledge and experiences, which allow them to fully develop their potential. Financing: EUR 6.162 billion.

Future and Emerging Technologies: Maintaining the ability to develop new cutting-edge technologies will help Europe maintain its competitiveness and create new, highly skilled jobs, representing a proactive approach and thinking ahead of others. EU funding is meant to help Europe become the best environment for responsible and dynamic multidisciplinary cooperation on new and future technologies. Financing: EUR 2.696 billion.

World-class infrastructure: Research equipment can be extremely complex and costly, so a single team of researchers - or even a single country - cannot afford to acquire, build or operate them on its own. Examples include: high-power lasers that serve a diverse research community, from medicine or materials science to biochemistry; specialized advanced technology aircraft; or a monitoring station on the seabed for observing climate change. They can cost millions of euros and require the skills of world-class experts. EU funding helps pool resources for such large-scale projects, giving researchers in Europe access to state-of-the-art infrastructure to make new and fascinating research actions possible. Financing: EUR 2.488 billion.

Innovation actions within Horizon 2020: Innovation benefits from significant support through Horizon 2020 for prototype creation, testing, demonstration, pilot project creation, large-scale product validation and market replication. Supporting demand development is another important feature, especially regarding the public procurement of

innovations prior to commercialization and the first commercial procurement of innovations, as well as regulations designed to stimulate innovation and standards development. The new forms of innovation in the public and social sectors, as well as pilot actions for private sector products and services are also targeted.

SMART FARMING – The way to go for a modern and sustainable EU agriculture

Smart Farming represents the application of modern Information and Communication Technologies (ICT) into agriculture, leading to what can be called a Third Green Revolution.

Following the plant breeding and genetics revolutions, this Third Green Revolution is taking over the agricultural world based upon the combined application of ICT solutions such as precision equipment, the Internet of Things (IoT), sensors and actuators, geo-positioning systems, Big Data, Unmanned Aerial Vehicles (UAVs, drones), robotics, etc.

Smart Farming has a real potential to deliver a more productive and sustainable agricultural production, based on a more precise and resource-efficient approach. However, while in the USA possibly up to 80% of farmers use some kind of SFT, in Europe it is no more than 24%.

From the farmer's point of view, Smart Farming should provide the farmer with added value in the form of better decision making or more efficient exploitation operations and management. In this sense, smart farming is strongly related, to three interconnected technology fields addressed by Smart AKIS Network:

- **Management Information Systems:** Planned systems for collecting, processing, storing, and disseminating data in the form needed to carry out a farm's operations and functions.
- **Precision Agriculture:** Management of spatial and temporal variability to improve economic returns following the use of inputs and reduce environmental impact. It includes Decision Support Systems (DSS) for whole farm management with the goal of optimizing returns on inputs while preserving resources, enabled by the widespread use of GPS, GNSS, aerial images by drones and the latest generation of hyperspectral images provided by Sentinel satellites, allowing the creation of maps of the spatial variability of as many variables as can be measured (e.g. crop yield, terrain features/topography, organic matter content, moisture levels, nitrogen levels, etc).
- **Agricultural automation and robotics:** The process of applying robotics, automatic control and artificial intelligence techniques at all levels of agricultural production, including farmbots and farmdrones.

Smart Farming applications do not target only large, conventional farming exploitations, but could also be new levers to boost other common or growing trends in agricultural exploitations, such as family farming (small or complex spaces, specific cultures and/or cattle, preservation of high quality or particular varieties...), organic farming, and enhance a very respected and transparent farming according to European consumer, society and market consciousness. Smart Farming can also provide great benefits in terms of environmental issues, for example, through more efficient use of water, or optimisation of treatments and inputs.

3. Annexes

3.1 General EU legislative framework surrounding the CAP

a. Functioning

The legal basis for the CAP is present in the TFEU (art38-44 and Annex I). Besides, 4 regulations provide more specific information concerning every stage of the CAP :

1. Rules for direct payments (Regulation (EU) 1307/2013)
2. A Common Market Organisation (CMO) for agricultural products (Regulation (EU) 1308/2013)
3. Support for rural development (Regulation (EU) 1305/2013)
4. Financing, management and monitoring of the CAP (Regulation (EU) 1306/2013)

It is likely that, under the proposals for reform submitted by the Commission on the 1st of July 2018, some structures already in place will be kept. But the exact changes to be implemented, and the extent of these, will only be known after the European Parliament's vote (with the possibility of a trilogue).

b. Various restraints

The various restraints on the current CAP strategic plans are as follows :

- **Directive 2009/147/EC** of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds;
- **Council Directive 92/43/EEC** of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora;
- **Directive 2000/60/EC** of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy;
- **Council Directive 91/676/EEC** of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources;
- **Directive 2008/50/EC** of the European Parliament and of the Council on ambient air quality and cleaner air for Europe;
- **Directive (EU) 2016/2284** of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC;
- **[Regulation XXXX** of the European Parliament and of the Council on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry into the 2030 climate and energy framework and amending Regulation No 525/2013 of the European Parliament and the Council on a mechanism for monitoring and reporting greenhouse gas emissions and other information relevant to climate change];

→ regulations/directives with "X"s are proposals of regulations, not yet enacted (they are therefore not binding yet, and their content, if enacted, is subject to change)

- [**Regulation XXX** of the European Parliament and of the Council on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 for a resilient Energy Union and to meet commitments under the Paris Agreement and amending Regulation No 525/2013 of the European Parliament and the Council on a mechanism for monitoring and reporting greenhouse gas emissions and other information relevant to climate change];
- **Directive 2009/28/EC** on the promotion of the use of energy from renewable sources;
- [**Directive XXX** of the European Parliament and of the Council amending Directive 2012/27/EU on energy efficiency];
- [**Regulation XXXX** of the European Parliament and of the Council on the Governance of the Energy Union, amending Directive 94/22/EC, Directive 98/70/EC, Directive 2009/31/EC, Regulation (EC) No 663/2009, Regulation (EC) No 715/2009, Directive 2009/73/EC, Council Directive 2009/119/EC, Directive 2010/31/EU, Directive 2012/27/EU, Directive 2013/30/EU and Council Directive (EU) 2015/652 and repealing Regulation (EU) No 525/2013];
- **Directive 2009/128/EC** of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides.

Nota bene

* These constraints on CAP strategic plans are only for the current period. Although they might not be immediately replaced/amended regarding the next CAP period, they will be binding in 2021-2027 unless further legislative action is taken.

These various restraints are interesting, concerning the future CAP strategic plans, because they highlight the recent positions taken by the EU towards the environment. This tendency is strengthened by the new composition of the EP : more green policies are to be expected at an EU level.

One of the criteria for eligibility introduced under the new CAP is the 'Greening' rule. According to it, 30% of the direct payment envelope (paid per hectare) is dependent upon the fulfilment of three green practices by farmers : crop diversification, conserving min 5% of areas of ecological interest or measures having at least the equivalent benefit on nature, and maintaining permanent grassland.

Such environmental measures are likely to be reinforced in the next strategic plans, for example through the imposition of similar, if not higher standards.

3.2 European context for implementing the CAP

As discussed above, the main changes for the CAP are quite drastic, and concern a new delivery method, clear capping levels, better targeting of the support, and a different monitoring mechanism.

Concerning the main criticisms on the new CAP, many voices have made clear that defects should be remedied. For example, regarding the environmental aspects of the CAP.

It is now necessary to go through each country, as the coming CAP gives them more leeway to build policies suited to their own needs. This is the primary objective of national strategic plans.

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