

ÉCOLE POLYTECHNIQUE

MSc&T Data and Economics for Public Policy

Academic Year 2024-2025

Alfonso AWADALLA



**MINISTÈRE
DE L'AGRICULTURE,
DE L'AGRO-ALIMENTAIRE
ET DE LA SOUVERAINETÉ
ALIMENTAIRE**

*Liberté
Égalité
Fraternité*

Anticipating the CAP 2028-2034: Simulating the New Area-Based Support

Simulation and Analysis of the DABIS Scheme Using FSS-CAP Data

Internship Report

Referent Professor: Emmanuelle TAUGOURDEAU

Internship Tutors: Corentin PLOUHINEC / Felix PAQUIER

Internship Dates: 2 June 2025 - 19 December 2025

Declaration of Academic Integrity

Hereby I, Alfonso AWADALLA, confirm that:

1. The results presented in this report are my own work.
2. I am the author of this report.
3. I have not used the work of others without clearly acknowledging it, and quotations and paraphrases from any source are clearly indicated.

Name: Alfonso AWADALLA

Date: 26 November 2025

Signature:

A handwritten signature in black ink, appearing to read "Alfonso AWADALLA".

PREFACE

Over the past six months, I had the opportunity to intern at the French Ministry of Agriculture, working within the Bureau of Statistics on Agricultural Production and Accounting (BSPCA), part of the Ministry's Statistical Service (SSP).

I joined the team to support a major ongoing project: the Farm Sustainability Data Network (FADN or RICA in French), the largest survey after the Agricultural Census. The FADN plays a crucial role in providing data for the Common Agricultural Policy (CAP), and like most agricultural surveys in Europe, it is harmonized across countries to ensure consistency and comparability. Currently, FADN is undergoing a major transformation into FSDN (Farm Sustainability Data Network), which will operate until 2027 in preparation for the next CAP cycle. This change marks a shift from a primarily accounting-focused survey to one that also incorporates environmental and social indicators, reflecting the CAP's sustainable development objectives. Using other administrative sources (MSA, ASP), my role was to explore ways to obtain these new variables or to automate the collection of existing variables, which are currently gathered manually through a web application.

As part of this work, I drafted a detailed report/codes on matching MSA data (farmers' social security) with FADN, exploring the possibility of retrieving information on both salaried and non-salaried labour and integrating it directly into the survey. This required careful consideration of timelines, variable definitions, and data quality. I also developed a benchmarking tool to encourage farmer participation: as the survey grows more complex, a dedicated budget supports initiatives to motivate respondents. Using a machine learning algorithm (kNN), this tool allows each participating farm to compare itself with the ten most similar farms based on structural and accounting characteristics. Additionally, I produced scripts to generate supplementary datasets for submission to the European Commission in XML format, the standard format for official reporting.

When it came time to define my internship report, my supervisors proposed a research project that would be meaningful both for the bureau and for myself. Beyond managing European surveys, the SSP responds to internal requests, notably from the DGPE (Directorate General for Economic and Environmental Performance of Enterprises), which oversees CAP implementation in France through the national strategic plan, defining how subsidies are allocated. At the request of the DGPE, I was tasked with simulating the new area-based support system (DABIS) announced by the European Commission for the

upcoming CAP cycle. The project aims to anticipate the redistributive impact of this reform and provide evidence to support the DGPE when negotiating the details of the upcoming policy to better align it with the French context.

In addition to those projects, I had the chance to participate in bilateral meetings with colleagues from the Polish Ministry of Agriculture in Paris, and with the Spanish team in Madrid. These meetings were very instructive, allowing me to see how each country organises its work differently to achieve the same objective of producing the FSDN, and how each addresses challenges specific to its national context. This experience allowed me to work at the intersection of statistics, policy, and practical agriculture, giving me a deeper understanding of both the technical challenges and the strategic decisions behind large-scale agricultural surveys.

Acknowledgment

As this report marks the end of my master's degree, I would like to thank you, Franck and Pierre, for the great program you created, and for all the support and advice you have given me over the past two years. From this internship, I got more than I expected — whether in terms of tasks and responsibilities, which were always stimulating, the opportunities I was given (training sessions, bilateral meetings), or simply the great atmosphere in the office and everyone's willingness to answer my questions and share their knowledge. I am grateful that no one ever asked me to make coffee or print their documents (it was almost the opposite). Aside from the salary, I never felt like an intern and more like a special guest. A big thank you as well to Corentin and Felix, with whom I found the perfect balance between responsibility and autonomy, supported by thoughtful supervision that allowed me to learn a lot.

You will probably never read this, so I will simply list your names for me to remember: Youcef, Nicolas D, Nicolas C, François, Étienne A, Étienne H, Gérald, Tristan, Marie-Do, Dounia, Corentin, Felix, Vincent, Isabelle. With some of you, I ran, travelled, ate paella, played my best tennis, watched the lights at the Thoiry zoo, and walked 50 km through the Retz and Compiègne forests in the rain before ending the day in a tent in the freezing cold. I had unlikely debates about water brands, coffee, tea, reading, social masks, motivation, and many more... As Felix once said: “Il est un peu trop bien intégré ce stagiaire”, and I am very happy for that [end of the speech].

Abstract

This study shows that the introduction of the DABIS would broaden the coverage of area-based support — raising the share of beneficiary farms from 75% to 98% — while generating strong redistributive effects across sectors and farm sizes: small holdings and under-supported sectors such as viticulture and permanent crops would gain the most, whereas large livestock and arable farms would face moderate losses due to degressivity and capping. These results underline the importance of carefully designing the future French implementation to balance equity, efficiency, and political feasibility. To support this process, the simulation tool developed in this project offers a flexible framework: built on a fully reconstructed counterfactual dataset, it can calibrate alternative budget assumptions, modify the degressivity schedule, and simulate a wide range of policy configurations. Crucially, it also allows the introduction of additional scenarios with targeted support to specific groups — such as small farms, young farmers, women, or disadvantaged areas — making it a useful instrument for exploring future reform options beyond the baseline scenario analysed in this report.¹

¹All code and output files used in this report are available on my GitHub profile: <https://github.com/alfonsoawd/Project-SimulationAgricultureDABIS>.

Contents

1 Introduction: The Common Agricultural Policy	6
1.1 The origins of the CAP	6
1.2 Reforms under Budget, Market, and Legitimacy Pressures	6
1.3 Evolution of Area Based Income Support	8
1.3.1 From the Fischler Reform to the Single Payment Scheme (2003–2014)	9
1.3.2 The Transition to the Basic Payment Scheme (2015–2022)	10
1.3.3 Adjustments of Area-Based Income Supports in the 2023-2027 CAP	11
1.3.4 The Proposed Reform for 2028-2034: Toward the DABIS	11
1.4 Objectives and Contributions of This Paper	12
2 Construction of Counterfactual Data	13
2.1 Data Sources	13
2.1.1 FSS/ESEA Survey Data	14
2.1.2 CAP/ASP Administrative Data	14
2.2 Computing the Counterfactual ABIS	15
2.3 Matching FSS and CAP data	16
2.3.1 Matching Diagnostic	16
2.3.2 Impact of FSS Sampling	17
2.3.3 Comparing UAA and Eligible Area	18
2.4 Estimation of an Eligible Area for Non-CAP Declarants	19
3 Simulation of the DABIS Scheme	21
3.1 The Simulation Tool	22
3.2 Impact of DABIS: Results and Analysis	23
3.2.1 Analysis by Farm Production Type	24
3.2.2 Analysis by Farm Economic Size	27
3.3 Conclusion	29
References	30
Appendix A	32
Appendix B	34

1 Introduction: The Common Agricultural Policy

1.1 The origins of the CAP

Before getting into the focus of the study, it is essential I believe, to give some background on agricultural policies in France, which are closely linked to the European context. After the damage caused by the Second World War, the six founding countries of the European Economic Community (EEC), including France, started discussions to build a common approach to agriculture. The aim was to restore food production, improve farmers' working conditions and income, and harmonise agricultural policies to make competition fairer between member countries (Council of the EU).

In 1962, a real market-control system was put in place, with guaranteed prices, production-linked support, and taxes on foreign products. In terms of production, the CAP was a success — maybe even too much. The support system encouraged farmers to produce more and more, which led to huge surplus stocks, especially for milk ("butter mountains"²). This was eventually brought under control in 1984 with the introduction of production quotas.

But when looking at competition and how efficiently the budget was used, the results were more mixed. As the EEC grew, so did the number of countries in the CAP, creating a sort of agricultural micro-system where competition with countries outside the CAP could be seen as unfair. Toward the end of the 1980s, during the Uruguay Round negotiations, the United States — through the GATT (which later became the World Trade Organization in 1995) — started putting pressure on Europe, saying that no deal could be reached on other topics without an agreement on agriculture (Mahé & Guyomard, 1992).

1.2 Reforms under Budget, Market, and Legitimacy Pressures

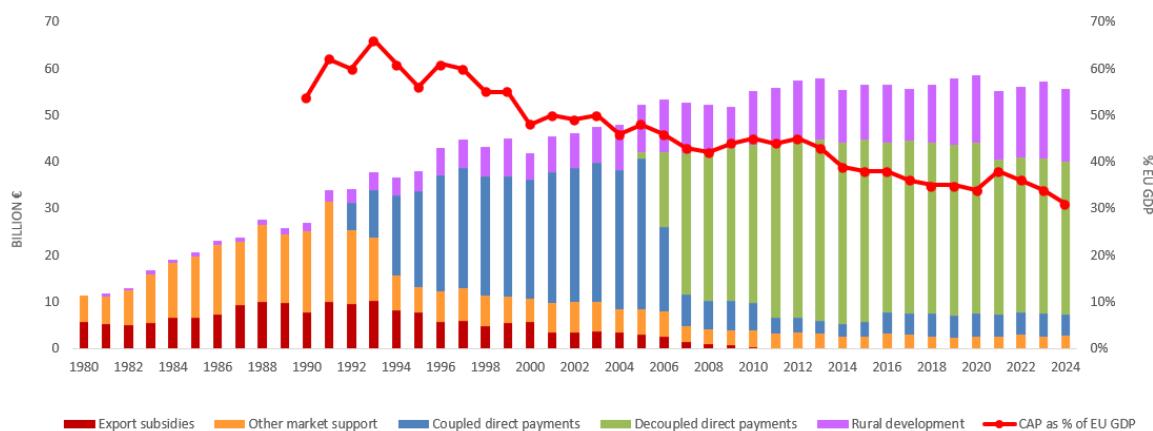
In 1992, the MacSharry reforms were signed. They helped, at least partly, to better meet the expectations of the GATT and global trade, but also to better control subsidised production which, despite quotas and with the arrival of new member states, was pushing the CAP budget higher. Guaranteed prices — indirect support that ensured farmers a minimum selling price — were reduced, since these export-supporting mechanisms were the main issue raised by the GATT. To compensate, direct payments were introduced for

²The "butter mountain" refers to the surplus of butter produced in the EU due to the policies that guaranteed prices and aimed to ensure sufficient milk supply. Similar surpluses occurred for wine, beef, grain, and were often sold cheaply within the EU or abroad.

the first time, including payments decoupled from production³, proportional to the size of the farm, and conditioned by environmental and quality requirements (Gaillard, 2022).

The next major CAP reform took place in 1999 with the Berlin reforms. By this time, the CAP accounted for nearly 50% of the European budget (Figure 1), the EU was preparing to welcome 10 new Eastern European member states, and the World Trade Organization (former GATT) was putting increasing pressure on European agricultural policy. Additionally, the CAP was being questioned for its productivist approach and environmental impact, making a major reform necessary. The reform further reduced guaranteed prices, bringing them closer to world market levels, and only partially⁴ compensated farmers with new direct payments (Glavany, 1999). To reinforce the CAP's legitimacy, funding was also allocated to rural development, promoting farmers' diversification of activities and the multifunctionality of agriculture: farming was no longer seen only as a way to produce food, but also as a way to maintain landscapes, biodiversity, and local traditions (Gaillard, 2022).

Figure 1: CAP Total Expenditure and Reform Path (Current Prices)



Source: CAP expenditure: European Commission, Directorate-General for Agriculture and Rural Development (Financial Report). GDP: Eurostat. Annual expenditure in current prices.

Reading: The CAP budget has grown in absolute terms but fallen as a share of the overall EU budget, largely due to successive enlargements of the Union. Export subsidies have disappeared, and production-coupled payments have almost entirely been phased out. Today, most payments are decoupled or directed toward rural development, with a smaller share supporting markets and specific sectors.

³This concept of payments decoupled from production is debatable, as they are still calculated based on a historical reference yield for the region and type of production. Even if less directly, these subsidies still provided incentives to produce.

⁴This partial compensation was accepted as part of the broader objective of reducing the European budget allocated to the CAP.

The 2003 Luxembourg agreements followed the logic of the previous reforms and brought the CAP even closer to the World Trade Organization requirements. They introduced full (or almost⁵) decoupling of payments through the creation of the Single Payment Scheme (SPS, DPU in French) (Boinon et al., 2006). Under this system, payments were no longer linked to what the farm produced, but to the farm's historical average support (over the previous three years), converted into a per-hectare amount. Unlike the direct payments introduced in 1992, the SPS no longer influenced farmers' production choices, since the level of support was the same regardless of what they produced⁶.

It is important to note that these reforms have been controversial among the agriculture community. Many farmers viewed it as a form of state dependency, while French unions (such as the FNSEA) worried that it reduced the government's ability to regulate certain sectors and markets (Alavoine Mornas & Giraud, 2008). The European Commission nevertheless allowed flexibility in how Member States implemented the SPS, in how payments were calculated, and in whether some production-linked support could be partially maintained. This helped make the transition smoother and align better with international trade pressures.

1.3 Evolution of Area Based Income Support

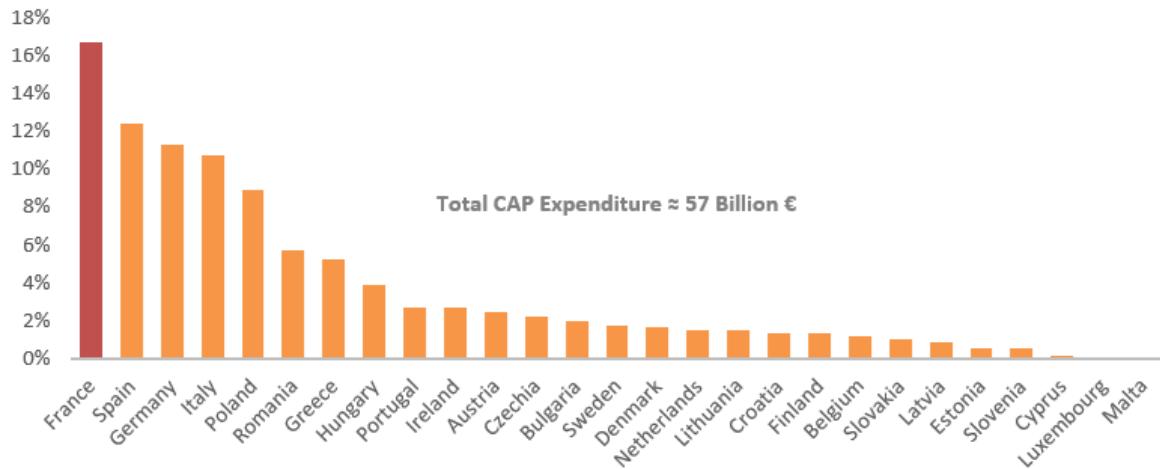
The CAP is a complex subsidy system, organised into two pillars since the 1999 reform. The first pillar covers direct income support (including the Single Payment Scheme, now Basic Payment Scheme) as well as market management measures (a few sectoral aids, crisis management, etc.). The second pillar funds rural development, supporting ecological transition, farm modernisation, and the vitality of agricultural territories.

France is the largest agricultural country in the European Union, with nearly 27 million hectares of farmland and a highly diversified agricultural sector. In 2023, France remained the main beneficiary of the CAP: out of a total budget of €57 billion, it received almost 17%, or more than €9 billion, ahead of Spain, Germany, and Italy (Figure 2).

⁵Council Regulation 1782/2003 allowed Member States to maintain a limited number of production-coupled payments. France chose to use this flexibility and still allocates coupled support to certain sectors today (see: <https://agriculture.gouv.fr/les-aides-couplees>).

⁶Member States again had flexibility in how they calculated SPS entitlements. In France, they were based on historical references. In this sense, payments were decoupled from current production, but still reflected past production levels, which created inequalities and controversies.

Figure 2: Share of Total CAP Expenditure by Country (2023)



Source: European Parliament (Rossi, 2025)

Reading: The total CAP budget for 2023 is €57 billion, of which around 17% (€9 billion) is allocated to France.

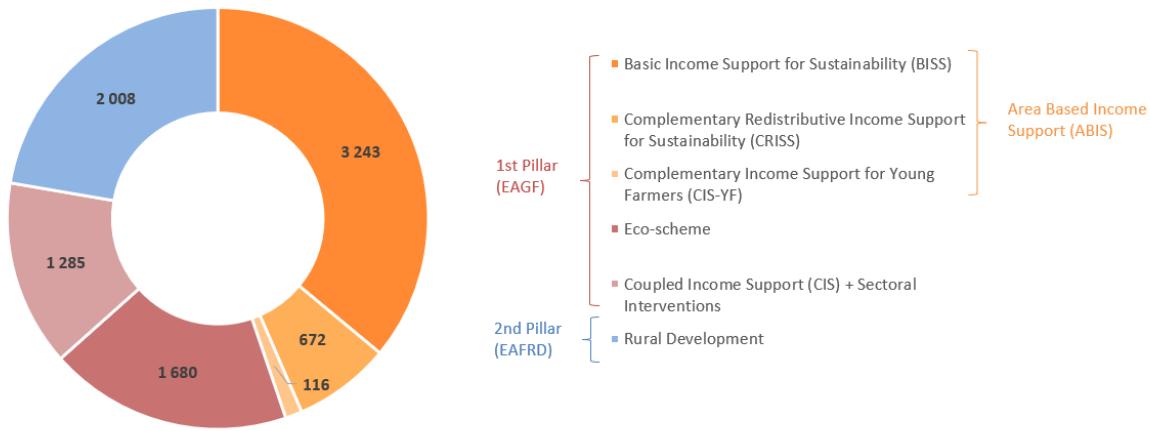
Over the 2023–2027 CAP cycle, France allocates an average of €4 billion per year - almost half of its CAP budget - to what can be called the Area-Based Income Support (ABIS) (Figure 3). The three components of ABIS (the basic payment, the redistributive payment, and the young farmer payment) are central to this paper and are expected to be reformed in the next CAP programming cycle. Before presenting that reform, it is useful to retrace the evolution of decoupled area-based payments since the early 2000s.

1.3.1 From the Fischler Reform to the Single Payment Scheme (2003–2014)

The Single Payment Scheme (SPS) emerged from the 2003 Fischler reform and was implemented in France starting in 2006. Farms were allocated *Droits à Paiement Unique* (DPU), corresponding to their historical average level of support (calculated over the previous three years) and converted into a per-hectare entitlement. These DPUs were not subsidies per se but rights held in each farm's portfolio that needed to be activated to trigger payment. For example, a farmer with 13 DPUs and 10 eligible hectares (reduced eligible are over time) could activate only 10 DPUs and would therefore receive support corresponding to those 10 entitlements⁷.

⁷In reality, the process is more complex, including potential penalties; new farmers can also apply for DPUs, but this captures the essential mechanism. Full information on DPBs, today's equivalent of DPUs, can be found on this source (DGPE/SDPAC, 2025).

Figure 3: CAP Payments in France (Avg. Annual 2023–2027, Million €)



Source: French Ministry of Agriculture (DRAAF Nouvelle-Aquitaine, 2023)

Reading: The three categories in orange shades represent what is called the Area-Based Income Support (ABIS, 45% of the french annual budget). Orange and purple shades correspond to the first pillar (78%), while the rural development budget (22%) is shown in blue. Total french budget is around €9 Billion.

Note: Part of the second pillar budget comes from the State and is not shown in this graph. Categories have been aggregated to highlight the most relevant information.

While the European Commission initially sought to introduce a Single Area Payment Scheme (SAPS) - a flat rate payment per hectare - only the new Member States with no historical reference support were required to adopt it. Most EU-15 countries, including France, were granted some flexibility and chose to calculate DPU values based on historical support references.⁸

The allocation and value of DPUs could be perceived as unequal, reproducing historical disparities. According to (Sotte, 2007), the SPS did not fulfil the objectives officially assigned to it. Instead, Sotte argues that it was “above all an aid to the past,” functioning as an economic rent based on historical entitlements rather than current behaviour. Its real purpose, he suggests, was to “reconstitute the pre-reform distribution” and secure political support for the Fischler reform, rather than to serve coherent economic or social policy goals.

1.3.2 The Transition to the Basic Payment Scheme (2015–2022)

In 2015, the Basic Payment Scheme (BPS) replaced the SPS. The new *Droits à Paiement de Base* (DPB) were calculated using the same historical basis as the former DPUs but

⁸As noted by (Boinon et al., 2006), the socio-political context of countries played an important role. In those with strong agricultural unions, such as France (FNSEA), retaining DPUs based on historical support was a way to facilitate acceptance of the reform.

coupled with an explicit objective of fairness: a progressive convergence of entitlements toward a more uniform per-hectare payment and a reduced influence of past reference periods (Ministère de l’Agriculture, 2022).

Environmental conditionality was strengthened, and access to the DPB opened the door to complementary supports, including the redistributive payment, the young farmer payment⁹ and the green payment. Moreover, only “active farmers” were eligible, aiming at better targeting and redistributing support.

1.3.3 Adjustments of Area-Based Income Supports in the 2023-2027 CAP

The Basic Income Support (BISS) under the current CAP cycle remains largely unchanged from the previous one. Two convergence steps were applied to the Basic Payment entitlements (DPBs), in 2023 and 2025, after which each DPB equals at least 85% of the national average value (around €129 per hectare). The redistributive payment is also very similar to that of the previous CAP cycle, with minor adjustments in values and modalities (Préfecture d’Indre-et-Loire, 2023).

The Young Farmer Payment keeps the design of the 2015–2022 CAP but is now paid as a lump sum of €4,469 per farm, instead of a per hectare bonus. It remains available to farms that include a young farmer and have activated at least a fraction of their DPBs.

In addition to these ABIS components, the most significant change is the “green” payment, which has been replaced by the eco-scheme (Préfecture du Cher, 2024). This is a fixed-amount payment with complex rules tied to environmental good practices. As this paper focuses primarily on ABIS, the eco-scheme is not discussed in detail here.

1.3.4 The Proposed Reform for 2028-2034: Toward the DABIS

In July 2025, the European Commission presented its proposal for the 2028 - 2034 EU budget. A major simplification of the CAP architecture was announced: the two-pillar structure would disappear, and a new instrument - the *Degressive Area-Based Income Support* (DABIS - would replace the current ABIS (European Commission, 2025).

The DABIS would merge the three existing ABIS components (basic, redistributive, and young farmer payments) into a single per-hectare payment applied to all eligible hectares, regardless of the number of DPBs held. It will also introduce a degressivity

⁹For farmers activating at least one or a fraction of DPB, the redistributive payment is a fixed per-hectare top-up on the first 52 hectares, while the young farmers’ payment provides an additional per-hectare bonus on up to 34 hectares for a maximum of five years (Ministère de l’Agriculture, 2015).

mechanism to gradually reduce payments for large farms, along with a ceiling of €100,000 per holding and per year, with the aim of improving the fairness of the distribution. Member States would still be allowed to adjust the per-hectare amount for specific groups (e.g., women, small farms, young farmers) or to complement it with a lump-sum payment.

Although this proposal still needs to be approved, it is highly likely that the DABIS will be adopted. How will this translate into the French National Strategic Plan? Will France, or other EU countries, be able to retain the DPB concept to target specific farms, or will it have to distribute the support universally across all eligible hectares? This paper presents a simulation and potential impacts of such a reform.

1.4 Objectives and Contributions of This Paper

This paper simulates the proposed DABIS reform using the current system as a counterfactual and presents initial findings. In the longer term, the tool developed for this exercise will enable further simulations by introducing additional targeting options (e.g., specific population groups, adjustments to the degressivity schedule). Its ultimate purpose is to help anticipate the effects of the likely DABIS reform and inform the design of its detailed architecture in the French National Strategic Plan of the next CAP.

2 Construction of Counterfactual Data

Before running any simulation, we must prepare the dataset that will serve as the counterfactual. The two key variables are the *eligible area* and the ABIS payments received in the counterfactual year. Large agricultural surveys generally rely on the *Utilised Agricultural Area* (UAA, SAU in French), which corresponds to the total area actively used for agricultural purposes, excluding non-agricultural land (buildings, wetlands, roads), low-productivity grasslands, and grazed forests (Ministère de l’Agriculture, 2023).

However, for farms receiving direct area-based payments (i.e., registered under the CAP), the relevant concept is the eligible area (surface admissible in French). This represents the portion of the farm’s declared land that meets all eligibility conditions for support, i.e., land officially recognised by the administration as qualifying for payments. In practice, the eligible area is always less than or equal to the UAA, since some agricultural lands are not considered for direct payments (European Commission, 2024).

Individual ABIS payment data will first allow us to calculate the total counterfactual ABIS budget, which can then be redistributed according to the new criteria. This also allows a comparison between counterfactual payments and those under the reform scenario, enabling an assessment of the redistributive impact of the DABIS.

ABIS and eligible area data are naturally available only for CAP declarants. Under the DABIS reform, however, all farms would be able to receive support based on their eligible area. The main objective of this section is therefore to estimate the eligible area for non-declarant farms using their UAA and to prepare a complete dataset covering all farms in metropolitan France¹⁰, which will be used for the simulation in the next section.

2.1 Data Sources

For the preparation of the counterfactual dataset, we rely on the Farm Structure Survey (FSS, or ESEA in French), which is representative of farms in metropolitan France and the overseas departments (DOM). These survey data are matched with administrative CAP data, originating from individual declarations submitted by farmers and managed by the ASP (*Agence de services et de paiement*) in France.

The Agricultural Census (AC) is a comprehensive survey conducted every ten years in all EU countries, but it has limitations in terms of timeliness, as its data quickly become

¹⁰In the French overseas departments and other outermost regions of the European Union (such as the Azores or the Canary Islands), the ABIS/DABIS does not apply. A specific programme (POSEI) replaces the first pillar to account for insular contexts and local specificities (European Commission).

outdated given the rapid evolution of agricultural structures. To overcome this, the FSS was designed to provide more regular monitoring of farms through a representative sample. For this analysis, the FSS is used and provides more recent data (2023) relative to the last AC (2020).

2.1.1 FSS/ESEA Survey Data

The ESEA covers over 57,000 farms in metropolitan France and the DOM, representing around 350,000 farms in 2023. After excluding the DOM, which are not affected by ABIS, 50,414 farms are retained for analysis. All data were accessed via the ministry's virtual cloud. The ESEA is divided into 13 files, of which three are used here:

- **ESEA2023_structsimple:** Main file containing key structural variables of the farms, including sampling weights, identification number (PACAGE), economic size class (CDEX), technical-economic orientation (OTEX), geographic location, and total utilised agricultural area (UAA).
- **ESEA2023_mo_chef_coexpl:** Provides information on non-salaried labour (farmers and co-farmers), used here to extract the sex of the farmers, which could be useful for targeting payments toward women.
- **ESEA2023_financements_euro:** Includes data on European funding, with a variable indicating whether a farm is in a disadvantaged area, potentially useful for targeted support.

2.1.2 CAP/ASP Administrative Data

CAP administrative data are organised into several thematic files provided by the ASP via an online tool called *Télécac*, to which the ministry has access through secured credentials. The extractions used for this project are:

- **Surfaces-2023_dossier-pac:** Provides information on eligible areas for each CAP-declaring farm.
- **Campagne-2023_paiement_premier_pilier:** Contains all information on payments (basic, young farmer, and redistributive) for each CAP-declaring farm.
- **DPB-2023_portefeuilles:** Provides information on Basic Payment Entitlements portfolios for each CAP-declaring farm.

These extractions were accessed in October 2025, which is important for replication, as CAP data are continuously updated due to on-farm inspections, resulting in corrections, penalties, and other adjustments.

2.2 Computing the Counterfactual ABIS

As explained in Section 1, the DABIS corresponds to the sum of the basic payment, the young farmer payment, and the redistributive payment. The latter two have not changed in methodology between 2023 and today. However, we noted that a convergence step of the DPB values—necessary to compute the basic payment—was applied starting in 2025.

To represent the current ABIS as accurately as possible, the basic payment is therefore recalculated using the full CAP administrative data, following the steps detailed here (full details in Appendix A):

- (i) We first apply the 2025 convergence mechanism to each farm’s DPB portfolio. At the end of this process, each DPB equals at least 85% of the national average value (approximately €129 per hectare).
- (ii) We then follow, in a simplified manner, the official computation method for the basic payment using these converged DPBs (DGPE/SDPAC, 2025).
- (iii) A convergence parameter X —present in the DPB convergence formula—is calibrated so that the total basic payment obtained using the 2023 DPB values matches the total obtained with the new 2025 converged values. The calibrated value of X is approximately 25.40%.

At the end of the current CAP cycle, in 2027, DPBs are expected to reach full convergence, resulting in a single uniform DPB value for all farms. To evaluate the impact of the DABIS reform under this full-convergence scenario, a second counterfactual ABIS is constructed. The basic payment is recalculated using a single DPB value calibrated so that the total basic payment budget remains similar before and after full convergence. After calibration, this uniform DPB value is approximately €128.02 per hectare.

Using those two re-constructed basic payments: (i) 2025 convergence, and (ii) 2027 full convergence, the amount of area-based income support is computed as:

$$ABIS(i) = \text{Basic Payment}(i) + \text{Redistributive Payment} + \text{Young Farmer Payment}$$

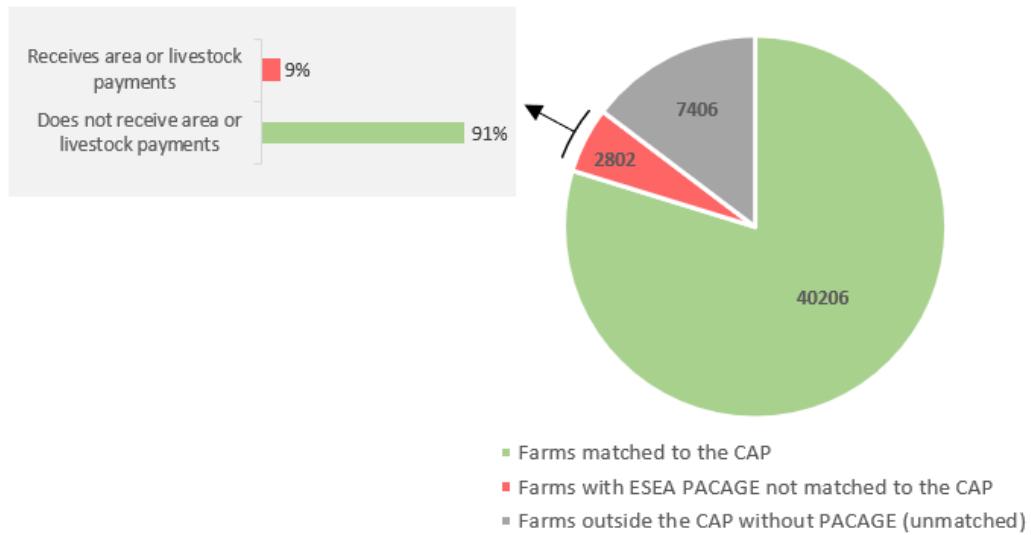
These counterfactuals provide two relevant baselines for comparison with the simulated DABIS scenario: one relative to the CAP as implemented nowadays, in 2025, and another relative to the situation expected in 2027, just before the start of the next CAP cycle.

2.3 Matching FSS and CAP data

2.3.1 Matching Diagnostic

Matching between the two data sources was performed using the farm PACAGE number, or, in case of entry errors, the SIRET identifier. In total, 40,206 farms were successfully matched to the CAP database, representing 80% of the sample. Simultaneously, 7,406 farms (15%) do not appear in the CAP database, as they do not submit subsidy requests (Figure 4).

Figure 4: Correspondence between FSS and CAP farms



Source: ESEA 2023; CAP data 2023, extractions from October 2025. **Scope:** Metropolitan France

Reading: Among the metropolitan ESEA Farms, 40,206 are matched to the CAP, while 7,406 are not due to the absence of a PACAGE number. However, 2,802 holdings have a PACAGE number in ESEA but do not appear in the CAP: according to ESEA, 91% of them indeed receive no area-based or livestock payments, while 9% do receive such support.

Note: Among the holdings not found in the CAP using the PACAGE identifier, 40 were identified through their SIRET number.

However, 2,802 farms (5%) have a PACAGE number in the ESEA but are not found in the CAP database, neither via PACAGE nor SIRET. These could correspond to obsolete or inactive PACAGE identifiers. The ESEA contains a variable indicating whether a farm receives European aid, either for land or livestock. As shown in Figure 4, 91% of these 2,802 farms indeed receive no aid, while 9% (255 farms) do. Although it is unclear whether this discrepancy originates from the ESEA or CAP data, it is unlikely to affect the representativeness of the ESEA for total ABIS mass, as these 255 farms account for only 0.6% of PAC-matched farms.

2.3.2 Impact of FSS Sampling

The FSS/ESEA sample is a balanced survey, stratified according to three key variables—CDEX, OTEX, and department—to ensure representativeness of farms by size, production type, and location¹¹.

It was not certain that the ESEA, even after weighting, would be fully representative of all French farms in terms of total payments received under ABIS or in terms of eligible area. To verify this, these two indicators were compared between the exhaustive CAP database (approximately 300,000 farms) and the ESEA sample matched to CAP and weighted, using the same CAP-derived variables.

The results show an excellent match for total ABIS payments between the two sources, with a relative difference of only 0.18% for the 2025 converged ABIS and 0.15% for the 2027 converged ABIS (Table 1). Although the two ABIS counterfactuals are identical in the exhaustive CAP dataset (as they were calibrated under a constant budget), a small difference of approximately €1 billion appears in the weighted ESEA sample. This minor discrepancy can be attributed to sampling variability and remains negligible in magnitude.

Table 1: Comparison of ABIS Totals and Eligible Area: CAP vs Weighted FSS

	CAP Exhaustive	Weighted ESEA	Relative Difference
Total ABIS (2025)	3 967 655 436 €	3 960 612 578 €	-0.18%
Total ABIS (2027)	3 967 655 436 €	3 961 594 585 €	-0.15%
Total Eligible Area	26 538 934 ha	25 900 735 ha	-2.40%

Source: ESEA 2023; CAP data 2023, extractions from October 2025.

Scope: Metropolitan France and DOM for farms declared to the CAP.

Reading: The ABIS computed using the 2025 converged basic payment is approximately €3.968 billion with the full CAP data. Using the same variable on the ESEA sample, extrapolated with the coefficient, yields about €3.961 billion, a relative difference of 0.18%, attributable to sampling bias

Note: The comparison covers all holdings, Metropolitan France and DOM. The relative difference for ABIS remains unchanged (DOM do not receive DPB), while that for eligible area changes from 2.4% to 2.7% when excluding DOM.

The comparison for total eligible area is also very satisfactory, with a difference of just 2.40%. Overall, these results confirm that the ESEA sample is representative of the key characteristics required for this analysis.

¹¹CDEX (Classe de Dimension Économique) classifies farms by economic size, based on standard output. OTEX (Orientation Technico-Économique) categorises farms according to production type and technical orientation. See (Agreste) for details.

2.3.3 Comparing UAA and Eligible Area

This subsection compares, for the 40,000 ESEA farms matched with the CAP, the Utilised Agricultural Area (UAA) from the ESEA with the CAP's eligible area, in order to assess the consistency of UAA and the distribution of differences.

Table 2: Summary Statistics — UAA (ESEA) and Eligible Area (CAP)

	Mean	Robust Mean*	1st Quartile	Median	3rd Quartile
UAA	128 ha	119 ha	38 ha	93 ha	181 ha
Eligible Area	127 ha	118 ha	37 ha	92 ha	180 ha

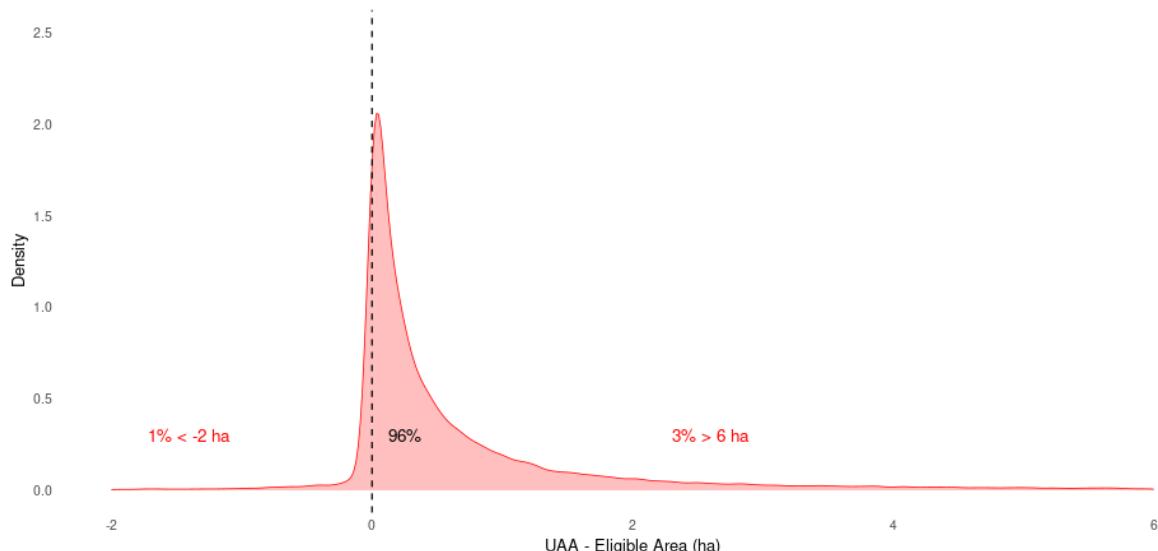
Source: ESEA 2023; CAP data 2023, extractions from October 2025.

Scope: Metropolitan France for farms declared to the CAP.

Note: These statistics are not weighted by sampling coefficients. * Robust mean calculated by excluding the lowest and highest 2.5% of the distribution to limit the impact of extreme values.

Table 2 presents the overall characteristics of UAA (ESEA) and the eligible area for farms declaring CAP in metropolitan France. The UAA is very close to the eligible area, with differences averaging only 1 hectare across all statistics.

Figure 5: Distribution of Differences (UAA – Eligible Area)



Source: ESEA 2023; CAP data 2023, extractions from October 2025.

Scope: Metropolitan France for farms declared to the CAP.

Note: The labels indicate the percentage of farms outside the visible boundary of the axis on the graph.

Comparing the distributions of differences between UAA and eligible area (Figure 5) shows that, in most cases, UAA exceeds the eligible area, as expected. A small part of the distribution shows UAA below the eligible area, likely because the eligible area can include summer grazing areas (estives) while UAA does not¹².

Extreme or inconsistent values were not analysed in detail. For the 40,000 CAP-declaring farms, the eligible area—the key variable for this study—is directly extracted from CAP data. The next section focuses on estimating the eligible area for the remaining 10,000 non-CAP farms using the empirical relationship observed between UAA and eligible area among CAP-declaring farms.

2.4 Estimation of an Eligible Area for Non-CAP Declarants

The objective of this step is to estimate an eligible area from UAA for ESEA farms that do not declare to the CAP (10,000 out of 50,000), in order to obtain a homogeneous variable across metropolitan France. This relationship between UAA and eligible area highlighted previously is used to impute an estimated eligible area for non-declarants by constructing average UAA/EA ratios from farms matched to the CAP. These ratios are then applied to non-declarants with similar characteristics (region, OTEX, CDEX).

(i) Data cleaning and preparation

Farms in the ESEA sample matched to the CAP were first filtered to ensure the consistency of surfaces used in calculating the UAA/eligible area ratio. The following observations were excluded:

- Observations with missing or zero eligible area.
- Cases where UAA was smaller than the eligible area.
- Extreme values with a UAA/eligible area ratio greater than 10 (34 observations).

On the cleaned sample, the UAA/eligible area ratio was calculated and used as the basis for imputation.

(ii) Hierarchical computation of average ratios

To obtain representative ratios while minimising missing values, four levels of cross-classification were used, from the most detailed to the most aggregated:

1. Region × CDEX × OTEX (full cross-classification)
2. OTEX × CDEX

¹²Among non-CAP farms, which are generally smaller, only 5 farms include estives. Since we directly use the eligible area for CAP-declaring farms and almost no non-CAP farms have estives, we do not expect any bias in the estimations.

3. Region × CDEX
4. Region × OTEX

At each level, the mean of individual ratios is calculated. This captures the empirical relationship between UAA and eligible area within groups of farms sharing similar structural characteristics (production type, economic size, and location). Table 5 shows that overall corrections remain small, with an average difference of 3–4% and a median between 1–2% depending on the aggregation level, confirming the consistency between ESEA’s utilised agricultural area and CAP’s eligible area.

Table 3: UAA / Eligible Area Ratios by Hierarchical Level

Hierarchical Level	Mean	1st Quartile	Median	3rd Quartile
Region × CDEX × OTEX	1.039	1.005	1.011	1.032
OTEX × CDEX	1.037	1.009	1.021	1.043
Region × OTEX	1.029	1.007	1.016	1.036
Region × CDEX	1.034	1.011	1.021	1.039

Source: ESEA 2023; CAP data 2023, extractions from October 2025.

Scope: Metropolitan France for farms declared to the CAP.

Note: These statistics are not weighted by sampling coefficients.

(iii) Imputation of missing eligible areas

The UAA of non-CAP declarant farms is then adjusted using these ratios according to the hierarchy defined above. For each farm, the most specific available mean ratio was applied using the formula:

$$Eligible\ Area = \frac{UAA}{ratio_{UAA/EA}}$$

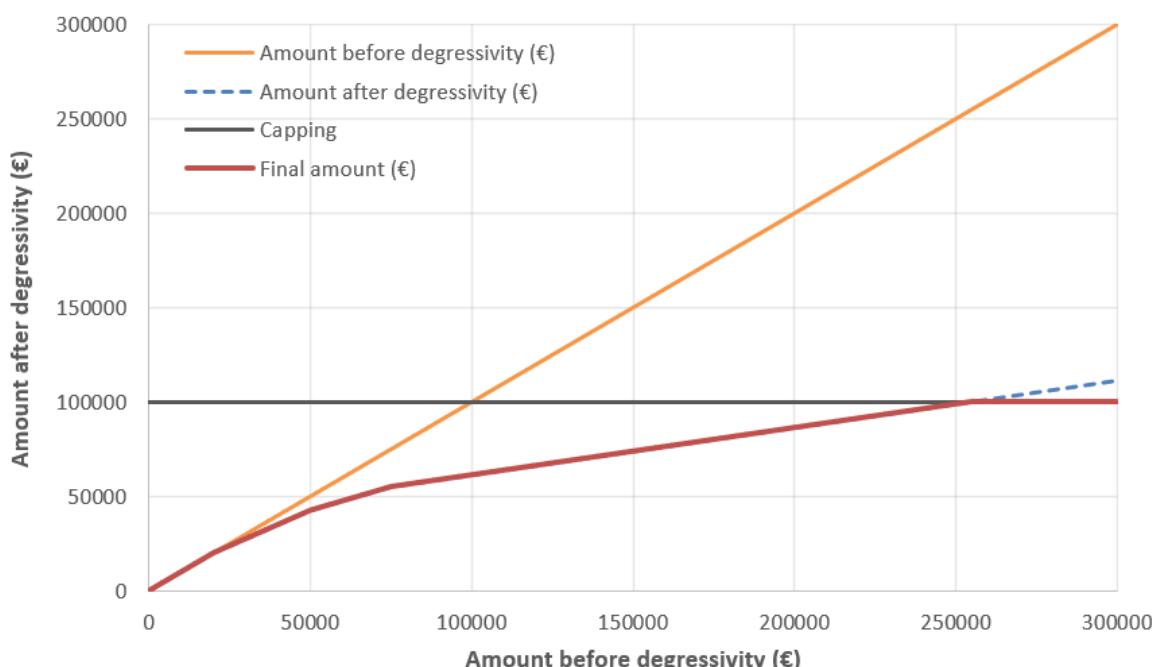
Overall, 9,674 farms (95%) were adjusted using the full cross-classification (Region × CDEX × OTEX), representing an excellent coverage at the finest level. An additional 520 farms were adjusted at the second level (OTEX × CDEX), and 14 farms at the third level (Region × OTEX).

This results in a complete eligible area variable for all ESEA farms in metropolitan France, which can subsequently be used to simulate different reform scenarios. The weighted average UAA is 77.58 hectares, while the average eligible area is 76.98 hectares.

3 Simulation of the DABIS Scheme

Now that the counterfactual dataset is prepared, this section focuses on the simulation of the Degressive-Area-Based-Income-Support (DABIS). The main objective was to develop a flexible simulation tool that can be reused in the future, at the request of the DGPE, for additional simulations. The tool incorporates various features, including the potential targeting of specific populations. Some targeting options have been suggested by the European Commission (European Commission, 2025), but are currently not a priority for the DGPE.

Figure 6: Effect of Degressivity and Capping on the Final (D)ABIS Amount



Source: European Commission Proposal.

Reading: This figure illustrates the degressivity and capping scheme used to derive the DABIS from the ABIS. The raw amount (ABIS) is shown by the orange line. Applying degressivity produces the dotted blue line, which is then capped at 100k (grey line). The final amount (DABIS) is shown in red.

The scenario they are interested in - the one presented in this section - applies the total budget across all metropolitan farms, covering all eligible area, with degressivity and capping (see Figure 6) applied to the 2027 counterfactual ABIS (i.e., full convergence)¹³. This is done under constant budget: the uniform per-hectare payment is calibrated such

¹³The 2025 ABIS (partial convergence) could also have been used to compare the current situation with the DABIS reform. In both cases, the total budget is identical, so the simulated scenario gives the same results. What changes is the comparison with the counterfactual, which appears to be marginal.

that, after applying degressivity and capping, the total budget remains equal to the counterfactual one. In other words, all savings generated by degressivity and capping are reallocated into the per-hectare DABIS payment¹⁴.

3.1 The Simulation Tool

The whole project is available in the following GitHub repository: github.com/alfonsoawd. It is structured into four scripts written in RStudio :

- `01-preparation_donnees_ctf.R` → This script loads all data sources described in Section 2.1, applies the transformations detailed in Section 2, and produces the final counterfactual dataset.
- `02-fonction_simulation_scenario.R` → This script defines the architecture of the simulation function. The function takes as input the counterfactual dataset from the previous script, along with several parameters that allow full customisation of the simulation (degressivity schedule, reinjection of savings, custom total budget, custom per-hectare payment, targeting of specific groups, etc.). It returns the same dataset augmented with a new DABIS column.
- `03-fonction_compar_scenario_ctf.R` → This script defines the function used to compare the counterfactual scenario with the simulated DABIS scenario. It takes as input the dataset produced by the previous script and generates a comparison table broken down by several categories (CDEX, OTEX, departments, regions, farm size) with key summary statistics. Each statistic is weighted by the sample coefficient.
- `04-fonction_formatage_excel.R` → This script defines the function that generates the final Excel file. It takes as input the comparison table from the previous step and an Excel template containing predefined sheets (readme, final tables, figures). The function fills the template with the simulated results and produces the final Excel file, ready for analysis.

The counterfactual dataset is constructed once and saved in the `data` folder. To run a simulation, the three functions are called sequentially within a dedicated script, where all simulation parameters can be customised. The final Excel file is then generated in the `output` folder. Each simulation—whether stored in the `program` folder or the `output` folder—has its own subfolder (e.g. `Simulation_1`), ensuring clear organisation and easy navigation across all simulated scenarios.

¹⁴Alternatively, these savings could be redirected as targeted support to specific groups, as suggested by the European Commission.

3.2 Impact of DABIS: Results and Analysis

The partial table of results is provided in Appendix B (key rows and columns were selected to fit the page). A first important observation is that among the approximately 349 000 Metropolitan French farms, only about 75% (263,000) received a positive ABIS before the reform. In the new scenario, this share increases to 98%, corresponding to all farms with eligible area. The remaining 2% are farms without any admissible land, mainly off-ground livestock breeding.

Another notable result is that the new beneficiaries are predominantly the smallest farms. Among farms with less than 10 hectares of eligible area and receiving DABIS, only 15% were already receiving ABIS before the reform. By contrast, for farms with more than 30 hectares of eligible area, over 90% of those receiving DABIS had already been ABIS beneficiaries.

Geographical disparities also emerge (see Appendix B): in the PACA region, roughly half of all farms are new beneficiaries, and slightly fewer in the Grand Est. In comparison, the share of new beneficiaries is much lower (around 10%) in Île-de-France, Hauts-de-France, and Bretagne. These disparities can be explained by regional specialisation in particular production sectors, which themselves receive varying levels of support (viticulture, market gardening, and arboriculture being less subsidised than livestock and arable farming). The redistributive effects by production type and by economic size of farms are discussed in the following subsections.

Four effects of this reform can already be anticipated:

1. **Negative impact on the largest farms** due to degressivity and capping, while the smallest farms experience a neutral effect.
2. **Positive impact on farms that previously had fewer DPBs than eligible hectares:** with the extension of aid to all eligible hectares, these farms receive higher payments. Farms with DPBs roughly equal to their eligible area experience a neutral effect.
3. **Positive impact on all farms through an increase in per hectare value:** savings generated by degressivity and capping are redistributed, raising the per-hectare value for all farms.
4. **Negative impact on existing beneficiaries** who must share the total budget with new beneficiaries, who gain fully, resulting in a reduction of the per-hectare payment.

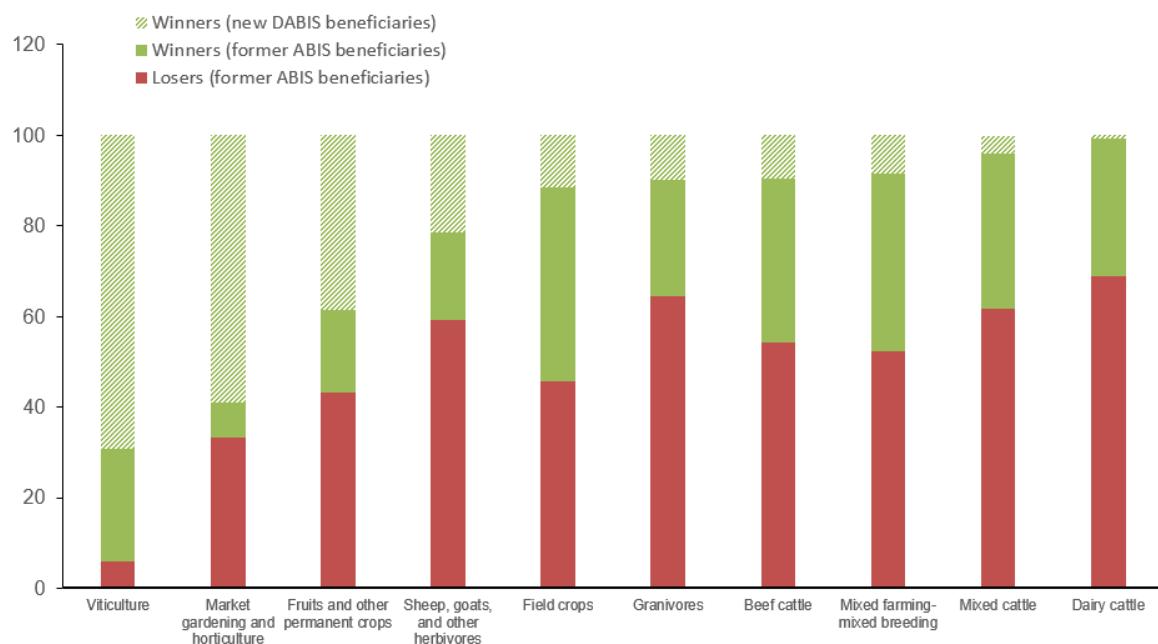
These four effects may offset each other or accumulate. It can be expected that the

largest farms will be the main losers, the smallest farms will be the relative winners, and the effects on medium-sized farms are more uncertain. The impacts by production type will therefore depend on the correlation between production type and farm size.

3.2.1 Analysis by Farm Production Type

Viticulture shows the highest share of new beneficiaries: 69% of farms are new recipients, 25% are existing beneficiaries who gain, and only 6% lose (Figure 7). Similarly, in the market gardening sector, 59% of farms are new beneficiaries, while among the 41% of existing beneficiaries, only 8% experience gains. Fruit production and other permanent crops account for 39% new beneficiaries. These three sectors also have the lowest average eligible areas, with 13, 20, and 25 hectares, respectively.

Figure 7: Share of Winners/Losers under the DABIS Scheme, by Production Type



Source: ESEA 2023; CAP data 2023, extractions from October 2025.

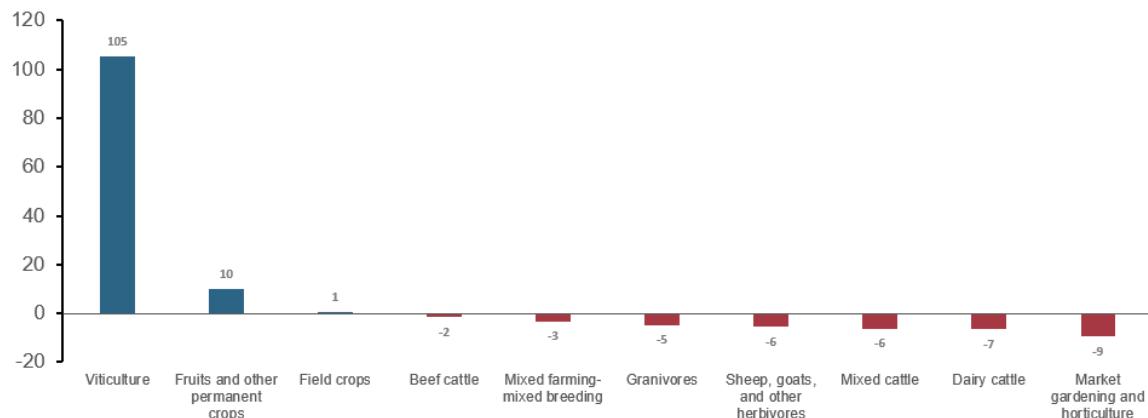
Scope: Metropolitan France

Note: The bars are sorted by category, starting with the one with the largest share of winners (new beneficiaries).

In contrast, livestock farms — including mixed, cattle, herbivore, and granivores — experience the largest losses, with 60–70% of farms negatively affected. Arable crops, the largest agricultural sector, show almost equal shares of winners and losers among existing beneficiaries, and 12% of new beneficiaries. A clear correlation with farm size is also

observed: the sectors most negatively impacted have the largest eligible areas, averaging around 100 hectares for most of these productions.

Figure 8: % Change in (D)ABIS Total Payments, by Production Type



Source: ESEA 2023; CAP data 2023, extractions from October 2025.

Scope: Metropolitan France

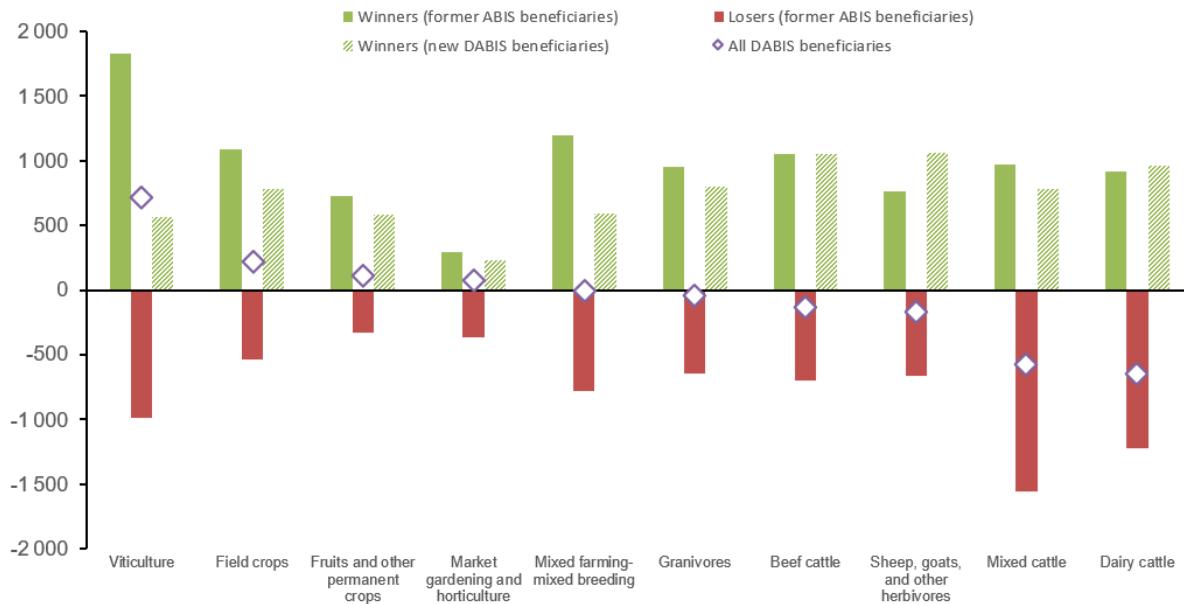
Note: Bars are ordered by category from the highest to lowest variation.

At a more aggregated level, viticulture is clearly the largest budget winner, with a total increase of +105% (also the largest absolute gain), moving it from the eighth to the sixth largest budget among the ten production types (Figure 9 and Appendix B). The second-largest budget gain is in fruit and other permanent crops (+10%), although this sector remains the second smallest in terms of total agricultural budget, both before and after the reform.

The smallest budget is in market gardening and horticulture, which — paradoxically — experiences the largest budget loss (-9%), despite Figure 7 showing it as the second sector with the highest share of winners. Appendix B reveals that, in this sector, losers lose more on average than winners gain. This can be explained by an unequal distribution of farm size (median 3 ha, mean 13 ha), implying that new beneficiaries gain very little per hectare, while existing beneficiaries lose more on their relatively large areas. Nevertheless, although this sector experiences the largest relative loss, the absolute loss is the smallest.

These gains in the viticulture and fruit sectors (around €130 billion) are financed by relatively modest reductions (between -2% and -7%) in most livestock breeding sectors. However, because these sectors have much larger initial budgets, even small percentage cuts generate savings substantial enough to offset the increases observed in the smaller crop sectors.

Figure 9: Median Variation in (D)ABIS (in €), by Production Type



Source: ESEA 2023; CAP data 2023, extractions from October 2025.

Scope: Metropolitan France

Note: Bars are ordered by category, from highest to lowest median variation among all DABIS beneficiaries.

Finally, Figure 9 presents median gains and losses by sector (the mean being too sensitive to extreme values)¹⁵. The largest median gains are observed in the viticulture sector and primarily among farms that were already beneficiaries before the reform. This likely reflects the historical distribution of DPUs (now DPBs): sectors that traditionally received little support—such as viticulture and other permanent crops—were allocated far fewer payment entitlements because hectare-based subsidies mirrored past support levels. As a result, existing viticultural beneficiaries probably held relatively few DPBs compared to their total eligible area. With the DABIS simulation and the extension of support to all hectares, their payment levels increase sharply. In contrast, new beneficiaries are mostly small farms, which explains why their median gains remain more modest.

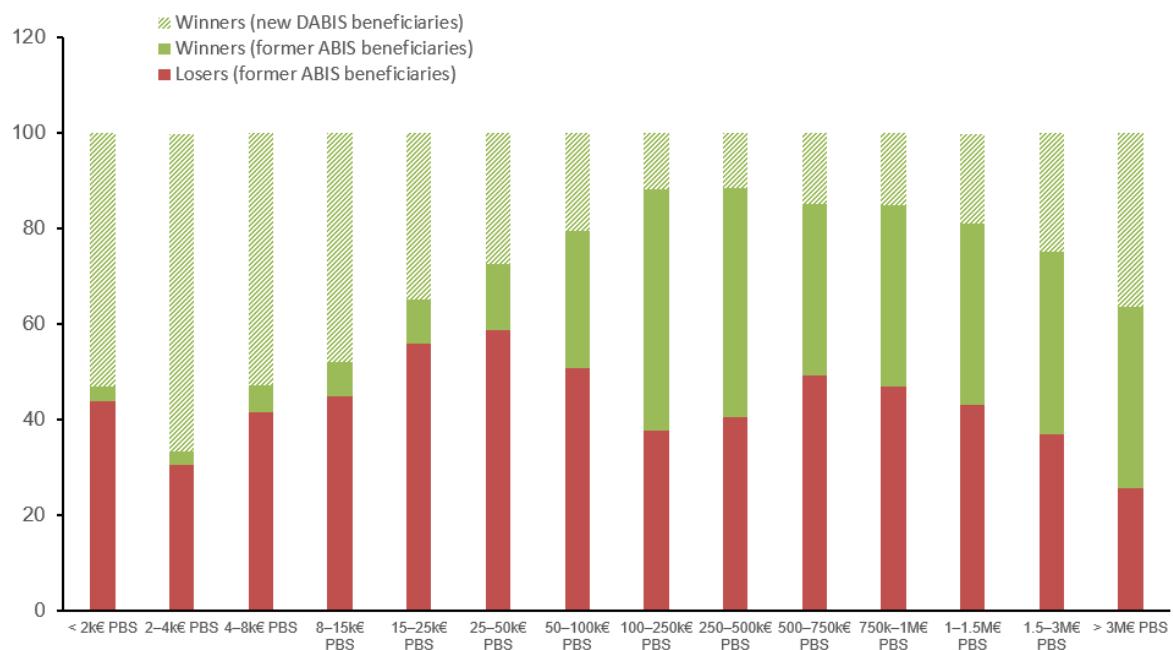
The sectors with the largest median losses are indeed those with the highest average and median eligible areas, such as mixed cattle and dairy cattle. Conversely, permanent crops and market gardening — characterised by the smallest eligible areas — show relatively modest median gains and losses, typically around €500.

¹⁵This indicator also has limits, as it only provides a partial view of the underlying distribution of gains and losses within each sector.

3.2.2 Analysis by Farm Economic Size

Figure 10 shows the proportion of winners and losers by economic class (CDEX). As expected, the share of new beneficiaries is highest among farms with low PBS (see figure note for definition). This is consistent with the fact that the physical and economic size of farms are generally correlated — except in certain high-yield sectors such as market gardening, microgreens, and organic poultry (ModelesdeBusinessPlan, 2025).

Figure 10: Share of Winners/Losers under the DABIS Scheme, by Economic Size



Source: ESEA 2023; CAP data 2023, extractions from October 2025.

Scope: Metropolitan France

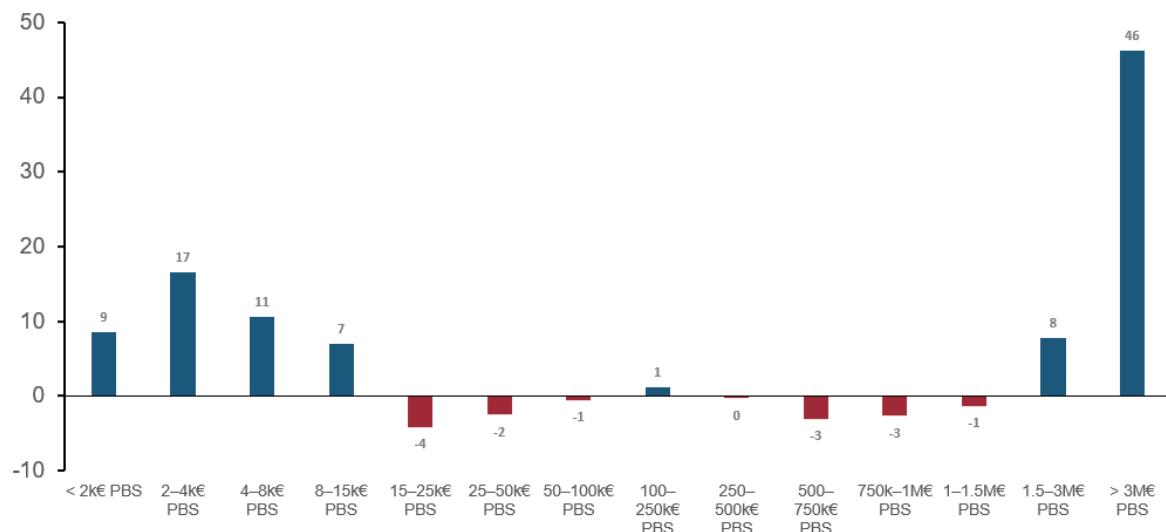
Note: “Production brute standard” (PBS) means the standard gross output, i.e. the theoretical value of an agricultural holding’s production based on average yields and prices, used to compare the economic size of farms.

We also observe that among those less productive farms with the most new beneficiaries, almost all former beneficiaries are losers. To explain this, let us consider the four potential effects of the reform outlined at the beginning of this section: (i) degressivity and capping, (ii) extension to all eligible hectares, (iii) redistribution of savings, and (iv) sharing with new beneficiaries. Small farms are likely exempt from the first two negative effects (which target larger farms), while the third effect is positive for all. Therefore, we conclude that extending support to new beneficiaries has lowered the average payment

per hectare, which explains why almost all small farms are now losers¹⁶.

Conversely, for wealthier farms, we observe a higher proportion of winners among former beneficiaries (and less new ones), likely due to the positive effect of extending support to all eligible hectares: these farms probably had fewer DPB than eligible hectares. Overall, the total share of losers (both former and new beneficiaries) remains almost stable across economic classes and even decreases slightly among the wealthiest farms. This is surprising and could suggest that the effects of degressivity and capping are too weak and not sufficiently redistributive.

Figure 11: % Change in (D)ABIS Total Payments, by Economic Size



Source: ESEA 2023; CAP data 2023, extractions from October 2025.

Scope: Metropolitan France

Note: Bars are ordered by category from the highest to lowest variation.

Finally, Figure 11 shows the total budget variation by farm economic size. Among the 14 economic classes, the four smallest and the two largest classes experience the highest relative gains. However, in absolute terms, the 100–200k PBS class gains the most (+€16 million, a modest 1%), as it represents the largest economic class and had the highest initial budget. The six other winning classes, despite their higher relative gains, each receive a modest absolute increase of €1–3 million and remain among the classes with the lowest total budgets, both before and after the reform.

Nonetheless, the substantial gains observed for the (few) wealthiest farms suggest a

¹⁶In addition to the fact that the redistributive payment of the ABIS is diluted under the DABIS in this simple scenario without targeting, which previously benefited smaller farms.

potential inconsistency with the degressivity schedule, which may be offset by the extension of support to all eligible hectares, replacing the previous DPB system that limited payments on large areas.

3.3 Conclusion

The DABIS reform substantially increases coverage, raising the share of farms receiving payments from 75% under the ABIS to 98%, by including all farms with eligible hectares. New beneficiaries are predominantly small farms, while medium and large farms experience mixed effects depending on their prior DPB allocation and eligible area. Sectoral impacts are uneven: viticulture and permanent crops (fruits) gain the most, whereas large livestock and arable farms face relative losses. Geographical disparities reflect regional specialisation and farm size distribution.

While degressivity and capping aim to make payments more equitable, the extension of support to all hectares can partially offset these redistributive objectives for smaller farms. This first simulation does not include targeted measures for specific groups, which could further enhance support for small-scale holdings. Future adjustments — such as redistributive top-ups for small farms or capping of eligible hectares if DPBs are removed — could improve equity outcomes.

Beyond economic logic, political realities shape the implementation of agricultural reforms. Large unions and sectoral interests influence outcomes, and perceived losses often outweigh equivalent gains, highlighting the importance of analysing winners and losers. The simulation tool developed provides the flexibility to test alternative configurations and inform future policy design, helping to achieve the most satisfactory balance between coverage, equity, and political feasibility.

References

- Council of the European Union. *Timeline – History of the Common Agricultural Policy*. <https://www.consilium.europa.eu/en/policies/the-common-agricultural-policy-explained/timeline-history-of-cap/>.
- Mahe, L.P. & Guyomard, H. (1992). *The CAP and the GATT negotiation: between political economy and mercantilism?*. 28th Seminar: EC agricultural policy by the end of the century, Lisbon, Portugal, September 1992. 37 p. HAL-01594130.
- Gaillard, M. (2022). Réformes de la politique agricole commune (PAC) depuis 1992 . In : *L'Union européenne*. La Documentation française. <https://www.vie-publique.fr/catalogue/23844-lunion-europeenne>.
- Le Monde. Jean Glavany (1999, 24 février). Reforming the CAP, for Europe . Dir. de publication: Colombani, J.-M. ; Réd. Chef: Plenel, E. In: CVCE — Historical Archive of the European Integration. https://www.cvce.eu/obj/reforming_the_cap_for_europe_from_le_monde_24_february_1999-en-0504959f-bfcf-49d3-8433-efafb1c3aae7.html
- Boinon, J.-P., Kroll, J.-C., Lepicier, D., Leseigneur, A. & Viallon, J.-B. (2006). La mise en œuvre des DPU (droit à paiement unique) et de l'article 69 dans les États membres de l'Union européenne . CAP-eye — Repères PAC histoire, n°2003-2. https://capeye.d-marheine.com/wp-content/uploads/reperes_pac/histoire/2003-2.pdf
- Alavoine Mornas, F., & Giraud, G. (2008). Réforme de la politique agricole commune de 2003 : premiers effets sur les exploitations agricoles de grandes cultures en région Provence-Alpes-Côte d'Azur . *Ingénieries eau-agriculture-territoires*, 53, 69–82. HAL-00602642.
- Rossi, R. (2025). “Financing of the CAP: facts and figures”. In: European Parliament — EU Fact Sheets. <https://www.europarl.europa.eu/factsheets/en/sheet/106/financing-of-the-cap-facts-and-figures>
- DRAAF Nouvelle-Aquitaine. (2023). *Architecture du PSN et grands équilibres budgétaires*. PDF. https://draaf.nouvelle-aquitaine.agriculture.gouv.fr/IMG/pdf/02_2302_architecture-psn_fch_4-1.pdf
- Sotte, F. (2007). La nature économique du Droit à paiement unique . *Économie rurale*, 300 (juil.-août 2007). Mis en ligne le 12 novembre 2009. Consulté le 28 novembre 2025. <http://journals.openedition.org/economierurale/2207> doi:10.4000/economierurale.2207
- DGPE/SDPAC. (2025, 16 juillet). *Instruction technique DGPE/SDPAC/2025-455 — Règles d'activation des droits à paiement de base (DPB), aide redistributive et transferts de DPB à compter de la campagne 2024*. Ministère de l'Agriculture, de la Souveraineté alimentaire et de la Forêt. Consulté le 30 novembre 2025. <https://info.agriculture.gouv.fr/boagri/instruction-2025-455>

Ministère de l'Agriculture, de l'Agroalimentaire et de la Souveraineté alimentaire. (2022, 25 février). *La PAC 2015-2022 en un coup d'œil*. Consulté le 30 novembre 2025. <https://agriculture.gouv.fr/la-pac-2015-2022-en-un-coup-doeil>

Ministère de l'Agriculture, de l'Agroalimentaire et de la Forêt. (2015). *Dossier PAC – Campagne 2015 : Notice générale*. TelePAC. https://www3.telepac.agriculture.gouv.fr/telepac/pdf/tas/2015/Dossier-PAC-2015_notice_generalites.pdf

Préfecture d'Indre-et-Loire. (2023, 03 avril). Les paiements de base, redistributif et JA – PAC 2023-2027 : éligibilité des aides . Consulté le 30 novembre 2025. <https://www.indre-et-loire.gouv.fr/Actions-de-l-Etat/Agriculture-foret-et-developpement-rural/Agriculture/PAC/PAC-2023-2027-eligibilite-des-aides/Les-paiements-de-base-redistributif-et-JA>

Préfecture du Cher. (2024, 16 mai). Qu'est-ce que l'écorégime? , PAC 2023-2027 – Écorégime. Consulté le 30 novembre 2025. <https://www.cher.gouv.fr/Actions-de-l-Etat/Agriculture-et-developpement-rural/PAC-2023-20272/Ecoregime/Qu-est-ce-que-l-ecoregime>

European Commission. (2025, novembre). *A fairer and better targeted income support for farmers – The CAP 2028-2034 proposal explained*. Factsheet. CIRCABC. <https://webgate.ec.europa.eu/circabc-ewpp/d/d/workspace/SpacesStore/73984111-ebb3-4e37-83b3-d4ffd170e6c1/download>

European Commission. *Régime POSEI : soutien aux régions ultrapériphériques confrontées à l'éloignement, l'insularité ou des conditions climatiques difficiles*. Consulté le 1 décembre 2025. https://agriculture.ec.europa.eu/common-agricultural-policy/market-measures/outermost-regions-and-small-aegean-islands/posei_fr

Ministère de l'Agriculture, de l'Agroalimentaire et de la Souveraineté alimentaire. (2023). *Dossier PAC 2023 – Guide d'admissibilité des surfaces agricoles*. TelePAC. https://www.isis1.telepac.agriculture.gouv.fr/telepac/pdf/tas/2023/Dossier-PAC-2023_guide-admissibilite.pdf

European Commission. (2024). *Summary report on the implementation of direct payments (except greening) in claim year 2022*. Directorate-General for Agriculture and Rural Development. https://agriculture.ec.europa.eu/document/download/8707d160-1fed-45b1-aba8-bc9a6eca9846_en?filename=summary-report-implementation-direct-payments-claim-2022_en.pdf

Agreste. "Production brute standard (PBS)". Sources, Définitions, Méthodes. Consulté le 1 décembre 2025. <https://agreste.agriculture.gouv.fr/agreste-web/methodon/N!/searchurl/listeTypeMethodon/>

ModelesdeBusinessPlan. (2025). *Comment créer une petite exploitation agricole rentable?* ModelesdeBusinessPlan.com. <https://modelesdebusinessplan.com/blogs/infos/petite-exploitation-agricole-rentable>

Appendix A: Computation the ABIS Counterfactuals

This Appendix details the full procedure used to (i) compute the 2025 convergence of DPB values, (ii) calibrate the convergence parameter ensuring budget neutrality, and (iii) construct the uniform-value counterfactual. All steps correspond exactly to the R code used in the analysis.

(i) Convergence of DPB Values to 2025 Rules

The starting point is the portfolio of DPBs held by each farm in 2023. For each DPB, the 2025 value is obtained by applying the national convergence scheme defined in the PSN. The function `calc_conv25()` implements the following rules:

- **Plafonnement.** The initial value is first capped at a maximum of €1,000/ha.
- **Convergence in reduction (DPB above the target).** For DPBs with initial value $v_{2023} \geq v^*$, where $v^* = 129.59$ €/ha is the national target, the 2025 value is:

$$v^{\text{conv}} = \max\{(1 - 0.30)v_{2023}, v_{2023} - 0.50(v_{2023} - v^*)\}.$$

- **Convergence in increase (DPB below the target).** For DPBs with $v_{2023} < v^*$, a minimum floor is applied:

$$v_{\text{plancher}} = \max\{0.85 v^*, v_{2023}\},$$

and the 2025 value is:

$$v^{\text{conv}} = v_{\text{plancher}} + X (v^* - v_{\text{plancher}}),$$

where X is the national acceleration factor calibrated below.

The result of this step is a converged value v^{conv} for each DPB. For each farm, DPBs are then activated in descending order of value using the admissible area constraint, following the official payment logic. This is implemented through the function `compute_paiement_base()`.

(ii) Calibration of the Convergence Parameter X

The convergence parameter X is not set ex ante. It must be calibrated so that the total amount of basic payment under the 2025 converged DPBs exactly matches the total paid

using the 2023 DPB values (scenario 0). The calibration proceeds as follows:

1. Compute the reference total:

$$T^{\text{ref}} = \sum_{\text{farms}} \text{compute_paiement_base}(\text{DPB}_{2023}).$$

2. For any trial value X , compute

$$T(X) = \sum_{\text{farms}} \text{compute_paiement_base}(\text{DPB}_{\text{conv25}}(X)).$$

3. Find the root of the equation

$$T(X) - T^{\text{ref}} = 0.$$

This is solved numerically using an algorithm (`uniroot`), which delivers:

$$X_{\text{final}} \approx 0.2540.$$

This value is then used to compute the final 2025 DPB values in scenario 1.

(iii) Calibration of the Uniform-Value Counterfactual

The second counterfactual (scenario 2) replaces all activated DPBs with a single uniform value, u , applied identically to all DPBs. The value u is chosen so that the resulting total basic payment again matches T^{ref} .

Let:

$$T_{\text{uni}}(u) = \sum_{\text{farms}} \text{compute_paiement_base}(\text{DPB valued at } u).$$

We solve:

$$T_{\text{uni}}(u) - T^{\text{ref}} = 0.$$

A numerical search (`uniroot`) over $u \in [100, 150]$ gives:

$$u_{\text{final}} \approx 128.02 \text{ €/ha.}$$

This value is then assigned to all activated DPBs to compute the uniform-value basic payment for scenario 2.

Appendix B: Comparison Counterfactual vs. Scenario DABIS

Dimension	Category	Number of farms	Number of farms with ABIS (counterfactual)	Number of farms with DABIS (scenario)	Share of losers former ABIS benef.	Share of winners former ABIS benef.	Share of winners new DABIS benef	Budget mass ABIS counterfactual	Budget mass DABIS scenario	Budget variation (%)	Average variation (Losers, former ABIS benef.)	Average variation (Winners, former ABIS benef.)	Average variation (Winners, new DABIS benef.)	Mean eligible area (ha)	Median eligible area (ha)
Total	Total	349623	263305	342016	45	32	23	3961594585	3961594585	0	-1821	1349	1683	75	48
Otex	Field crops	98851	87294	98798	46	43	12	1476746352	1486687728	1	-1436	1092	2472	101	77
Otex	Granivores	16495	11886	13188	65	26	10	151510845	144467208	-5	-1684	1068	2807	57	38
Otex	Beef cattle	41859	37577	41637	54	36	10	584497087	575145061	-2	-1651	1201	2425	91	71
Otex	Fruits and other permanent crops	13492	8291	13473	43	18	39	48188085	52959858	10	-990	1353	1395	25	12
Otex	Sheep, goats, and other herbivores	33517	28054	33193	59	19	22	285700976	289926202	-6	-1969	1247	2094	53	29
Otex	Mixed farming-mixed breeding	39423	33172	38241	52	39	9	608748554	588629547	-3	-2344	1293	1984	101	77
Otex	Dairy cattle	31819	31433	31687	69	30	1	584026025	545739986	-7	-2249	1025	4384	111	99
Otex	Viticulture	53480	16523	53428	8	25	69	81423538	168998068	105	-2018	2805	1481	20	8
Otex	Mixed cattle	4956	4691	4889	62	34	4	108860038	101914111	-6	-3197	1225	4327	140	122
Otex	Market gardening and horticulture	15294	6218	15139	33	8	59	33409713	30259066	-9	-1899	848	613	13	3
Otex	Unclassified farms	438	165	343	42	6	52	683370	887752	27	-314	137	1273	12	4
Cdex	< 2k€ PBS	13098	8058	12891	44	3	53	20391108	22140807	9	-645	384	789	11	6
Cdex	2-4k€ PBS	7519	2480	7432	31	3	67	8831272	10062018	17	-683	242	582	8	4
Cdex	4-8k€ PBS	13763	6389	13546	42	6	53	25247585	27925172	11	-646	837	794	13	6
Cdex	8-15k€ PBS	21189	10635	20398	45	7	48	41877288	44813592	7	-682	889	804	13	8
Cdex	15-25k€ PBS	20850	13011	20024	56	9	35	65361885	62837478	-4	-985	873	983	19	14
Cdex	25-50k€ PBS	38201	28798	38919	59	14	27	194436387	189828082	-2	-1053	1032	1255	31	26
Cdex	50-100k€ PBS	52573	41018	51583	51	29	21	431095468	428948137	-1	-1323	959	1724	51	48
Cdex	100-250k€ PBS	91939	80093	90764	38	51	12	1311614290	1327650021	1	-1928	1246	2338	93	89
Cdex	250-500k€ PBS	58523	50940	57537	41	48	12	1156138047	1152931165	0	-2599	1374	2978	134	120
Cdex	500-750k€ PBS	18762	15577	18292	49	36	15	424264445	411205766	-3	-4129	1953	4101	158	137
Cdex	750k-1M€ PBS	6799	5542	6525	47	38	15	149851196	145910891	-3	-5010	2617	4953	158	117
Cdex	1-1.5M€ PBS	4055	3088	3811	43	38	19	88443848	85271801	-1	-6745	3854	6394	158	107
Cdex	1.5-3M€ PBS	2092	1417	1885	37	38	25	30418719	42402696	8	-7920	4067	10838	155	100
Cdex	> 3M€ PBS	481	260	409	26	38	36	6823070	9977162	46	-8136	7287	19365	166	98

Dimension	Category	Number of farms	Number of farms with ABIS (counterfactual)	Number of farms with DABIS (scenario)	Share of losers former ABIS benef.	Share of winners former ABIS benef.	Share of winners new DABIS benef	Budget mass ABIS counterfactual	Budget mass DABIS scenario	Budget variation (%)	Average variation (Losers, former ABIS benef.)	Average variation (Winners, former ABIS benef.)	Average variation (Winners, new DABIS benef.)	Mean eligible area (ha)	Median eligible area (ha)
Region	11 ILE DE FRANCE	4108	3809	4019	30	60	10	79168244	81446626	3	-1729	1122	4008	136	126
Region	24 CENTRE VAL DE LOIRE	17972	15021	17588	34	51	15	323989748	328487271	1	-2359	1159	3176	125	119
Region	27 BOURGOGNE FRANCHE COMTE	21882	16602	21396	40	38	22	355843016	349129352	-2	-2909	1215	1891	110	88
Region	28 NORMANDIE	22441	17820	22053	46	35	19	289846989	290918847	0	-1651	1135	2188	85	70
Region	32 HAUTS DE FRANCE	21754	18806	21369	49	39	12	320823877	317730522	-1	-1630	1016	2197	97	77
Region	44 GRAND EST	38295	23035	37795	29	32	39	441359726	439170404	-1	-2399	1103	712	78	34
Region	52 PAYS DE LA LOIRE	24116	19793	23384	54	31	15	321000404	311912227	-3	-2081	1227	2244	85	67
Region	53 BRETAGNE	24484	20598	23167	64	25	11	284932225	252089949	-5	-1523	962	1717	65	58
Region	75 NOUVELLE AQUITAINE	56552	44506	55523	47	33	20	561899481	577823856	3	-1486	1723	2137	67	40
Region	76 OCCITANIE	55813	40627	54921	46	28	26	462072250	472916269	2	-1653	1745	1775	55	30
Region	84 AUVERGNE RHONE ALPES	43894	33589	43086	53	25	22	439782960	427648194	-3	-1653	1112	1438	64	42
Region	93 PROVENCE ALPES COTE D'AZUR	15713	7253	15173	25	23	52	79748601	88563286	11	-2869	2039	1609	39	11
Region	94 CORSE	2620	1985	2563	40	38	23	21117064	23777782	13	-1216	2448	2669	59	40
Eligible Area	< 10 ha	86591	19744	78984	21	4	75	37889833	48490610	28	-1244	319	512	3	3
Eligible Area	10 à < 20 ha	33634	23899	33634	54	17	29	68876955	78803991	14	-940	853	2246	14	14
Eligible Area	20 à < 30 ha	20974	17283	20974	64	18	18	75093293	83874100	11	-811	1297	3936	25	24
Eligible Area	30 à < 40 ha	20404	18459	20404	75	16	10	113448333	114480310	1	-975	1578	5583	35	35
Eligible Area	40 à < 50 ha	16804	15820	16804	82	12	6	127609959	121516672	-5	-1258	2087	7162	45	45
Eligible Area	50 à < 60 ha	16560	15875	16560	86	10	4	153328257	147199576	-4	-1114	2257	8803	55	55
Eligible Area	60 à < 70 ha	15234	14730	15234	80	17	3	160789651	159218485	-1	-914	1886	10430	65	65
Eligible Area	70 à < 80 ha	13237	12911	13237	60	37	3	159407405	160003371	0	-1056	1031	12162	75	75
Eligible Area	80 à < 90 ha	13181	12856	13181	17	80	3	176051561	180089554	2	-3037	629	13491	85	84
Eligible Area	90 à < 100 ha	11938	11525	11938	23	74	4	176414605	183154083	4	-3063	986	15526	95	95
Eligible Area	100 à < 110 ha	11342	11183	11342	28	71	1	186474928	191600558	3	-2689	1365	17057	105	104
Eligible Area	110 à < 120 ha	9714	9623	9714	30	70	1	173844249	179804284	3	-2277	1600	18606	115	114
Eligible Area	120 à < 130 ha	9218	9170	9218	27	72	1	177547192	184964087	4	-2315	1832	20199	125	125

Dimension	Category	Number of farms	Number of farms with ABIS (counterfactual)	Number of farms with DABIS scenario	Share of losers former ABIS benef.	Share of winners former ABIS benef.	Share of winners new DABIS benef	Budget mass ABIS counterfactual	Budget mass DABIS scenario	Budget variation (%)	Average variation (Losers, former ABIS benef.)	Average variation (Winners, former ABIS benef.)	Average variation (Winners, new DABIS benef.)	Mean eligible area (ha)	Median eligible area (ha)
Eligible Area	130 à < 140 ha	8732	8658	8732	33	66	1	180929118	186314461	3	-2377	1866	21357	135	135
Eligible Area	140 à < 150 ha	6902	6849	6902	31	68	1	150879341	155528456	3	-2207	1711	22340	145	145
Eligible Area	150 à < 160 ha	6022	6002	6022	30	70	0	138973930	142049827	3	-2537	1926	23778	155	155
Eligible Area	160 à < 170 ha	5623	5468	5623	34	64	3	136357467	140054066	3	-3152	1619	24925	165	164
Eligible Area	170 à < 180 ha	5611	5552	5611	31	68	1	144074238	148776654	2	-2988	1681	26042	175	175
Eligible Area	180 à < 190 ha	4575	4544	4575	35	65	1	124683003	125307703	1	-2952	1505	27276	185	185
Eligible Area	190 à < 200 ha	4077	4063	4077	34	66	0	116493802	116615986	0	-2975	1438	28501	195	195
Eligible Area	200 à < 250 ha	13957	13887	13957	38	62	1	452449935	445448998	-2	-3827	1277	31454	222	221
Eligible Area	250 à < 300 ha	6946	6919	6946	37	62	0	289333442	283768438	-2	-4217	1001	37738	273	271
Eligible Area	300 à < 350 ha	3752	3729	3752	74	25	1	170773914	163230091	-4	-3574	1465	43370	323	322
Eligible Area	350 à < 400 ha	1789	1784	1789	97	3	0	93574670	85050025	-9	-5227	6976	48026	373	372
Eligible Area	400 à < 700 ha	2579	2547	2579	98	2	1	168903012	141482785	-16	-12093	12809	56236	482	457
Eligible Area	700 à < 1000 ha	176	175	176	99	1	1	18652088	11990890	-36	-38779	2794	66704	794	776
Eligible Area	≥ 1000 ha	51	49	51	94	2	4	8550607	4278523	-50	-93551	32565	100000	1358	1059

Source: ESEA 2023; CAP data 2023, extractions from October 2025.

Scope: Metropolitan France

Note: Some columns, and rows for the department category have been hidden. The most relevant are shown here but the full Excel file can be viewed on the GitHub project [here](#), in the folder "*sorties/Simulation 1/simulation_ctf_convtot.xlsx*".