European Commission

Analytical Brief N° 1

AREAS WITH NATURAL CONSTRAINTS

Overview and socio-economic and environmental features of farming in ANC areas based on FADN data

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Agriculture and Rural Development

CONTENTS

Introduction

This document analyses key socio-economic and environmental features of farms in Areas with Natural Constraints (ANC) compared to farms outside them. The analysis is mainly based on farm-level data from the EU Farm Accountancy Data Network (FADN) and includes information on farm economic size, workforce, labour input, management intensity and land uses. This brief aims at characterising farming in ANC based on factual data.

HIGHLIGHTS

Designated ANC areas cover 59% of the EU Utilised Agricultural Area (UAA), with a majority of 33% for areas other than mountains, 17% for mountain areas and 8% for areas with specific constraints.

Payments for ANC are an income support to compensate farmers for disadvantages due to natural or other specific constraints. Member States may design and include payments for these areas. This support enhances the average annual payment per hectare for farmers in such areas. The EU legislation does not set specific environmental commitments for this type of support, however this can contribute to maintain more extensive farming and contrast land abandonment.

FADN data show that farms in ANC are in average less intensive than farms outside ANC, with lower workforce intensity (less workers per farm), they use less inputs (notably mineral fertilisers and pesticides), have a lower stocking density, and include more environmentally beneficial land uses than farms outside ANC. These general trends are consistent across different farm types. Farms in mountain areas are the least intensive.

In economic terms, ANC farms have a lower economic size and income, lower intermediate consumption and receive more subsidies per hectare compared to non-ANC farms.

In the period 2023-2027, ANC support is provided for by 23 CAP Strategic Plans with a planned public expenditure of 18.7 billion EUR, covering 47 million ha. This amount represents 17% of the total public funding for rural development and 6% of the CAP total public funding. Hungary and Latvia did not activate the intervention compared to the previous programming period.

For the programming period 2014-2022, the Rural development measure 13 supported ANC payments in 25 Member States for a total amount of 36.6 billion EUR of public expenditures. They covered 57 million ha. In both periods, not all designated areas receive support via ANC payments in addition to direct payments.

In Europe, many valuable protected habitats depend on or can profit from agricultural activities and would be threatened by land abandonment. Most of such habitats are found in so-called High Nature Value (HNV) Farmland. An ad-hoc performed spatial analysis reveals that around 80% of HNV farmland is located within ANC. ANC payments therefore contribute to supporting agriculture in HNV.

Overall, ANC payments help maintaining extensive and low-input farming systems which, though less performing in economic term, produce food and feed in more marginal areas. Without CAP payments, large shares of these areas would be at risk of abandonment.

1. ANC categories and designation

Areas facing natural or other specific constraints (hereinafter Areas with Natural Constraints, ANC) are those where farming is more difficult due to unfavourable conditions such as altitude, slope, dryness, low temperature, unfavourable texture and stoniness, or that are impacted by other factors that put them at risk of land abandonment.

Three categories of ANC were established by Article 32 of Regulation (EU) 1305/2013 and remain those taken into consideration in the current CAP regulation:

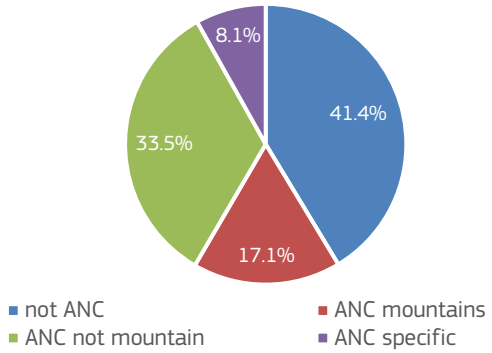
- Mountain areas.
- Areas, other than mountain areas, facing natural constraints. During the programming period 2014-2020, this category has been re-designated according to objective biophysical criteria and to fine-tuning. Fine-tuning takes place to exclude areas, selected through biophysical criteria[1], where natural constraints have been offset by human intervention and/or technical progress.
- Other areas affected by specific constraints: 10% of Member States territory may be designated under this category in order to preserve the environment, landscapes, coastal areas or the tourism potential.

The current and former CAP provide for payments that may be granted to farmers in areas with natural constraints[2]. They are aimed at compensating farmers in full or partially for disadvantages to the agricultural production in these areas.

The rationale for such compensation is to ensure a fair income and allow farmers to continue agricultural activity and prevent land abandonment. ANC support is paid annually per hectare of utilised agricultural area (UAA) and is based on the calculation of differences in income and costs between constrained and non-constrained areas.

As indicated in Graph 1.1, in 2021[3] ANC areas covered 58.6% of the EU UAA, with a majority of 33.4% for areas other than mountains, 17.0% for mountain areas and 8.1% for areas with specific constraints.

Graph 1.1 - Percentage of designated ANC areas divided by category at EU level (on UAA) in 2021



Source: Agri food data portal – context indicators dashboards.

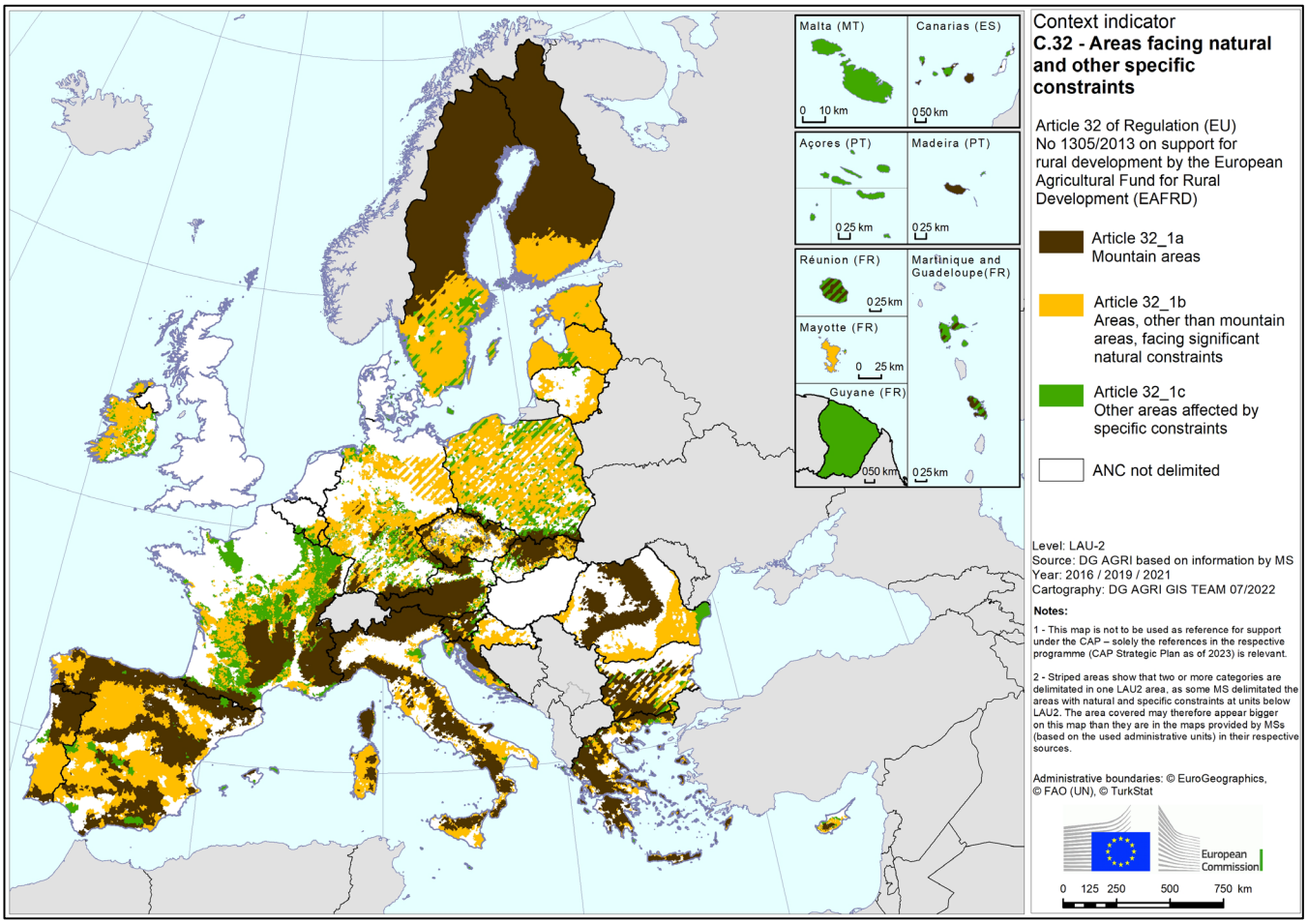
[1] Annex III of Reg. (EU) 1305/2013 specifies eight biophysical criteria: 1) Low Temperature; 2) Dryness; 3) Excess Soil Moisture 4) Limited Soil Drainage; 5) Unfavourable Texture and Stoniness; 6) Shallow Rooting Depth 7) Poor Chemical Properties; 8) Steep Slope.

[2] Art. 71 of regulation (EU) 2021/2115.

[3] Data are reported by Member States during the programming period 2014-2020, extended to years 2021 and 2022.

The spatial designation of ANC areas as of 2021 is shown in MAP 1 below. This delimitation is maintained under the current CAP.

MAP 1 – Spatial designation of Areas facing natural and other specific constraints. Source: Agri food data portal – context indicators dashboards.

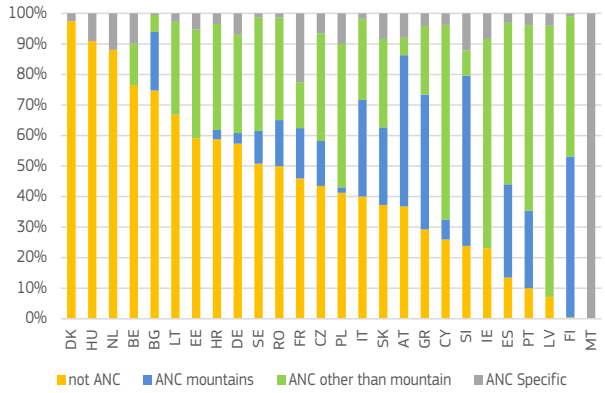


Due to different and specific physical constraints, especially for areas other than mountains, the ANC designated areas and categories across Europe are very diverse. This is shown by Graph 1.2, which details the percentage of UAA by ANC category[4].

Agricultural mountain areas[5] are prevalent (more than 30% of total UAA) in Greece, Spain, Italy, Austria, Slovenia and Finland. Areas other than mountain are prevalent (> 50% of UAA) in Ireland, Spain, Portugal, Latvia, Cyprus and Luxembourg. Areas with specific constraints cover the whole territory of Malta and are significant as well in France, Slovenia, Luxemburg.

The share of UAA in non-ANC areas is highest (> 70%) in Denmark, Hungary, the Netherlands, Belgium and Bulgaria, while is lowest (<15%) in Spain, Latvia, Luxembourg, Malta, Portugal and Finland.

Graph 1.2 - Percentage of designated ANC areas divided by category at Member State level (% of total UAA) in 2021



Source: Agri food data portal – context indicators dashboards.

[4] For HU delimitation, refer to map 2 of the context indicator dashboard; data on EE are currently being updated.

[5] Article 32(b) of Regulation (EU) No 1305/2013 establishes the characteristics of mountain areas and states that areas north of the 62nd parallel (located in Finland and Sweden) and certain adjacent areas shall be considered mountain areas.

2. Socio-economic and environmental features of farming in ANC areas

The figures presented in this section are elaborated using data from the EU Farm Accountancy Data Network (FADN)[6]. Farms in ANC other than mountain and farms in ANC affected by specific constraints were merged into a single *non-mountain ANC* class to have a sample size large enough for statistical analyses. Figures provided in the following tables and graphs are calculated using the last three available accounting years (2018-2020).

First, general figures on a set of key indicators of farms' economic and physical characteristics of farms in ANC and outside ANC are presented, followed by a more detailed comparison of farm management intensity and other agro-environmental features.

2.1 A comparison of key structural indicators

Table 2.1 shows general results by grouping all FADN farm types by their location within or outside ANC areas. Only FADN farms are part of the sample taken into account.

The following indicators are considered: farm economic size, farm physical size (total Utilised Agricultural Area – UAA), workforce (measured in Annual Working Unit, AWU). Two additional indicators can be used as general descriptors of farm management intensity, namely Stocking density, i.e. total ruminant livestock units per ha of forage area, and cost per ha of total intermediate consumption as a proxy of overall management intensity[7].

[6] FADN (europa.eu)

[7] This includes crop-specific inputs (seeds and seedlings, fertilizers, crop protection products, other specific crop costs), livestock-specific inputs (feed veterinary expenses, other specific livestock costs and specific costs for other gainful activities, plus farm overheads. A caveat in interpreting this indicator is that it does not account for differences in price levels (purchasing power parity) across Member States.

Those indicators show that farms in ANC are in average less intensive than farms outside of ANC, with lower workforce intensity (less workers per farm), less total intermediate consumption, and lower stocking density. This holds true across all farm types. Farms in mountain areas are the least intensive.

Table 2.1 – Basic characteristics of farms by type of ANC - average values per farm over the period 2018-2020

Location	Economic size (in 1000 EUR of SO)	UAA (ha)	Work-force (AWU/ farm)	Stocking density* (LU/ha)	**Inter-mediate con-sumption (EUR/ha)**
not ANC	96.40	38.7	1.70	1.69	1,771
ANC not mountain	67.18	46.8	1.50	1.02	1,014
ANC mountain	55.61	31.1	1.43	0.92	1,098

**stocking density of ruminant grazing livestock by forage area*
Source: DG AGRI based on FADN data

The average economic size of farms located in ANC, both mountain and non-mountain ones, is smaller than those outside it. However, when physical size is considered, in terms of UAA, farms with natural constraints other than mountain had the largest average UAA (46.8 ha).

As for **workforce intensity**, holdings in mountain and non-mountain ANC use on average 15.9% and 11.8% AWU less, respectively, than farms outside ANC.

In terms of **total intermediate consumption**, the difference between farms inside and outside ANC is even more significant. The figure per ha is 42.7% and 38.0% lower, respectively, in non-mountain ANC and mountain ANC farms compared to farms outside ANC.

Total **stocking density** is also significantly lower in both types of ANC compared to not ANC areas, the relative difference being -45.8% in mountain ANC and -39.3% in non-mountain ANC.

The difference in economic size is maintained when the analysis is detailed by farm types[8], with the exception of mixed farms and farms specialised in other grazing livestock, where the differences between holdings located outside ANC and in non-mountain ANC is not significant (Table 2.2).

Table 2.2 – Farm economic size per location in ANC and per farm type

Farm Type (TF8)	Economic size (Standard output - 1000 €)		
	(1) not ANC	(2) ANC not mountains	(3) ANC mountains
(1) Field crops	74.2	42.8	38.9
(2) Horticulture	221.4	107.1	99.5
(3) Wine	109.1	68.6	52.8
(4) Other permanent crops	41.0	26.8	28.1
(5) Milk	140.8	123.7	86.4
(6) Other grazing livestock	50.7	59.0	52.5
(7) Granivores	578.7	398.3	522.1
(8) Mixed	53.9	55.1	39.3

Source: DG AGRI based on FADN data (average 2018-2020).

Similarly, total intermediate consumption per ha is systematically lower in ANC areas across all farm types and ANC types, though with some differences in magnitude, as shown in Table 2.3: values are lowest for non-mountains ANC for all farm types except mixed ones: in non-mountain ANC the difference is particularly significant for farms specialised in horticulture, wine, other permanent crops and other grazing livestock.

Table 2.3 – Total intermediate consumption (€/ha) per main farm type and ANC class with % changes compared to farms outside ANC

Farm Type (TF8)	(1) not ANC	(2) ANC not mountains	(3) ANC mountains
(1) Field crops	901	616 (-31.6%)	642 (-28.8%)
(2) Horticulture	20174	6478 (-67.9%)	15390 (-23.7%)
(3) Wine	3158	1335 (-57.7%)	2536 (-19.7%)
(4) Other permanent crops	1814	848 (-53.2%)	1099 (-39.4%)
(5) Milk	2730	1792 (-34.4%)	1960 (-28.2%)
(6) Other grazing livestock	1313	650 (-50.5%)	654 (-50.2%)

Source: DG AGRI based on FADN data.

When interpreting these results, it shall be pointed out that the FADN sample is limited to commercial farms, i.e. market-oriented farms with a standard output greater than a pre-defined economic threshold. While these represent over 90% of total agricultural output, many small farms are excluded from the analysis.

The identified differences would likely be even more marked if small farms were considered, as these indicators are positively correlated with farm economic size and the share of small farms is higher in ANC areas. This might not be the case, however, for the average size measured through total UAA.

2.2 Environmental pressure of farm management in ANC vs non-ANC farms

The environmental pressure exerted by agricultural activity within and outside ANC areas is examined here first by looking at differences in land uses in ANC vs non-ANC holdings, and then using additional specific proxies of management intensity, assuming that higher intensity is associated to higher environmental pressure, namely:

- Cost and physical quantities of mineral fertilisers per ha of productive UAA
- Cost of plant protection products per ha of productive UAA, as a proxy of total actual use of such products on the field

LAND USES

Farms located in both types of ANC have larger shares of protein crops[9], grassland[10] and low productive land[11] than farms located outside ANC (Graph 2.1).

From an environmental and climate perspective, these are considered beneficial agricultural land uses. Protein crops improve soil fertility and reduce need for synthetic fertilisers use through fixation of atmospheric Nitrogen. Low production areas and grasslands lower the

[8] The grouping used here is based on the FADN Farm Type classification "TF8", which distinguishes the following 8 main types of farming, based on their production specialisation measured through gross standard output: 1) fieldcrops; 2) horticulture; 3) wine; 4)other permanent crops; 5) milk; 6) other grazing livestock; 7) granivores; 8) mixed farms.

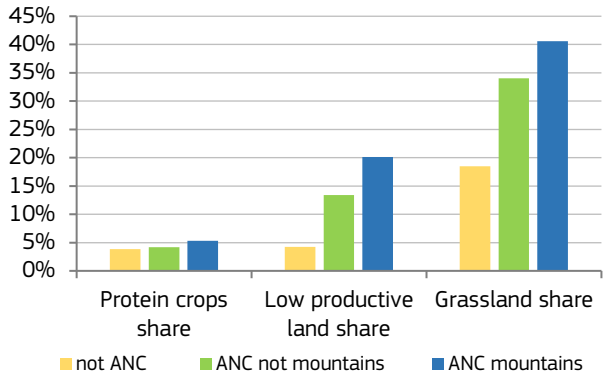
[9] Calculated as the share of protein crops (beans, combination of lentils, lupines, vetches, alfalfa, other leguminous crops) on total arable land.

[10] Calculated as the share of temporary and permanent grassland on total UAA.

[11] Calculated as the share of fallow land, set asides, rough grazing on total UAA.

risk for soil erosion, support biodiversity, improve soil biophysical properties, and contribute to the maintenance of landscapes.

Graph 2.1 – Share of protein crops, grasslands and low productive land by type of ANC, 2018-2020



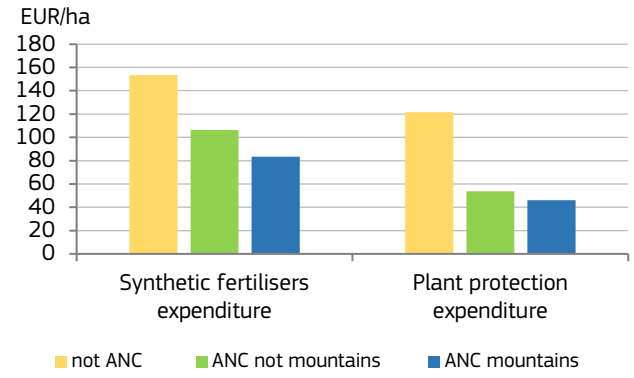
Source: DG AGRI based on FADN data.

INPUT INTENSITY

The intensity of input of mineral fertilisers and plant protection products[12] are commonly considered as a proxy of environmental pressure. They represent an important economic cost for farmers as well, especially in a period of increasing input prices.

The intensity of use of mineral fertilisers and crop protection products is considerably lower in ANC areas: Graph 2.2 shows the average expenditure per ha at farm level, aggregating all farm types per ANC class. It shall be noted that values are calculated per ha of *productive UAA*, thus excluding land laying fallow, set aside and grassland out of production, the share of which is higher in ANC areas. Therefore, the difference between non-ANC areas and ANC areas is even larger when results are calculated per ha of total UAA.

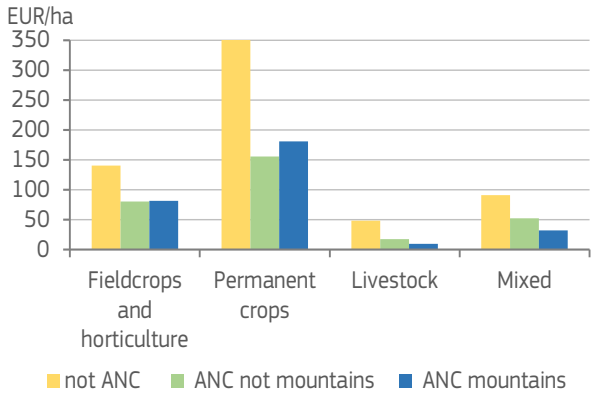
Graph 2.2 – Average farm expenditure of fertilisers and plant protection products per ha of productive UAA across ANC types, 2018-2020



Source: DG AGRI based on FADN data.

As the mix of farm types is different across ANC areas, it is relevant to examine whether these patterns are consistent across different farm types. Graph 2.3 shows the cost of plant protection products in EUR/ha per ANC class in four main groups of farm types[13]: 1) Specialist fieldcrops and horticulture; 2) specialist permanent crops; 3) Specialist Livestock; 4) Mixed farms. In all cases the per hectare expenditure in non-ANC areas is significantly higher.

Graph 2.3 – Average cost of plant protection products per ha per aggregated farm types and ANC class, 2018-2020



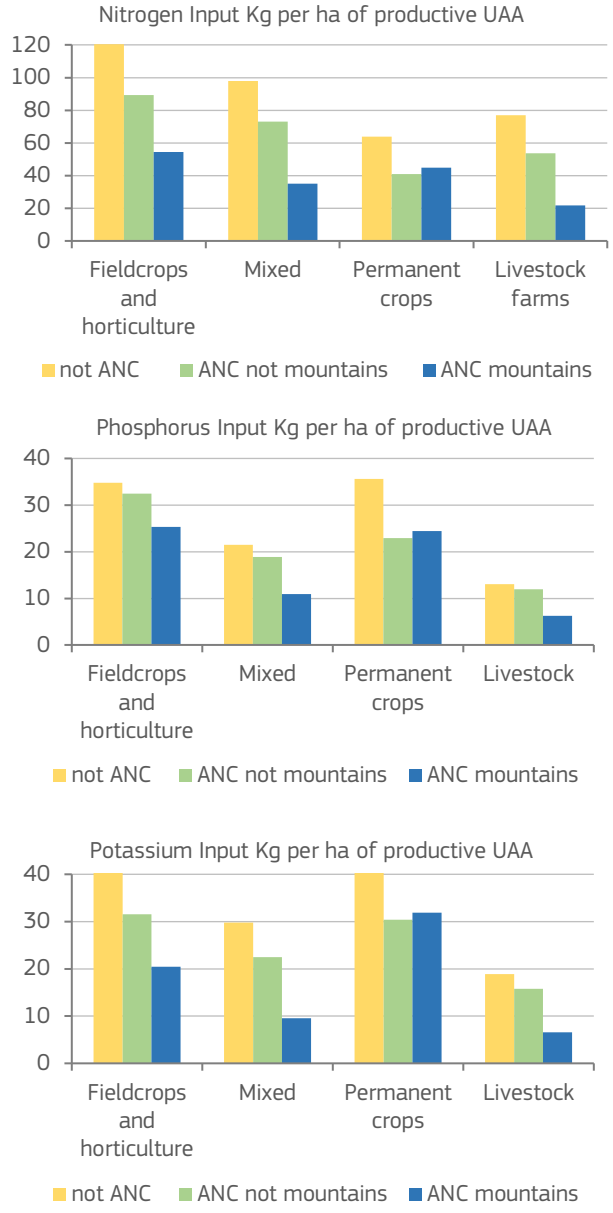
Source: DG AGRI based on FADN data.

[12] In FADN, crop protection products include plant protection products (pesticides), traps and baits, bird scarers, anti-hail shells, frost protection, etc. However, the largest part of such expenditure is attributable to pesticides.

[13] Starting from the TF8 classification (see footnote 14), here, farm types 1 and 2 are grouped under "Fieldcrops and horticulture"; farm types 3 and 4 are grouped under "Permanent crops"; types 5, 6 and 7 are grouped under "Livestock farms" and group 8 remains unchanged ("Mixed farms").

The physical quantity of Nitrogen (N), Phosphorous (in the form of P_2O_5) and Potassium (K) in mineral fertilisers is collected in FADN since 2015. Graph 2.4 shows the average input (kg/ha of productive UAA) over the period 2018-2020 in the four farm types groups per ANC class.

Graph 2.4 – Average Input of nitrogen, phosphorus and potassium in mineral fertiliser in different farm types, per ANC class.



Source: DG AGRI based on FADN data (all EU except Romania)

Differences in mineral fertilisers use are significant across ANC class, especially for Nitrogen, and consistent across farm types aggregates. Again, here the metric is Kg per ha of productive UAA, so differences are even more marked if total UAA is considered, given the higher share of non-productive UAA in ANC areas.

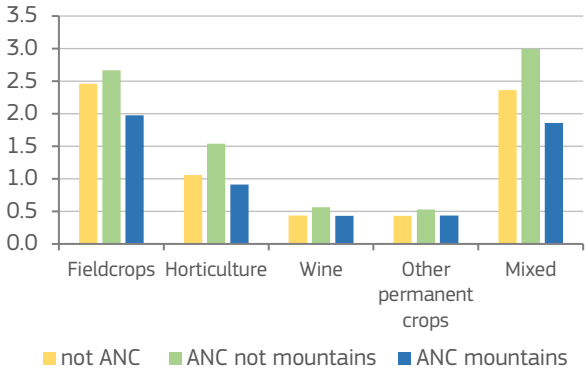
CROP DIVERSIFICATION

Crop diversification is an important agro-ecological practice with positive effects on several environmental aspects including biodiversity, pollination, pest control, nutrient cycling, soil fertility, and water regulation[14]. Especially in arable farms, crop diversification can contribute to limiting the use of fertilisers and pesticides, saving indirect energy consumption, optimise the efficiency of nitrogen input and improve soil structure.

To measure the degree of diversification, the Simpson's reciprocal index has been used. This index considers the number of crops and their area: the greater value of the index, the more diverse the crop mix is, with a minimum value of 1 in case of monoculture.

As shown in Graph 2.5, crop diversification is highest in ANC not mountains across all farm types. On the other hand, mountain ANC have in general the lowest farmland diversification, due to the large share of grasslands in these areas.

Graph 2.5 – Simpson's reciprocal index by type of ANC and by selected farm types



Source: DG AGRI based on FADN data.

Overall, results based on FADN data indicate that the environmental pressure from agricultural activity is significantly lower in farms located in ANC areas compared to farms outside ANC areas. Such results are valid across different farm types and different ANC classes.

[14] Se e.g. Tamburini G et al. (2020) Agricultural diversification promotes multiple ecosystem services without compromising yield. Science advances 6.45 (2020): eaba1715. https://www.science.org/doi/full/10.1126/sciadv.aba1715.

3. Rural development and CAP Strategic Plans implementation

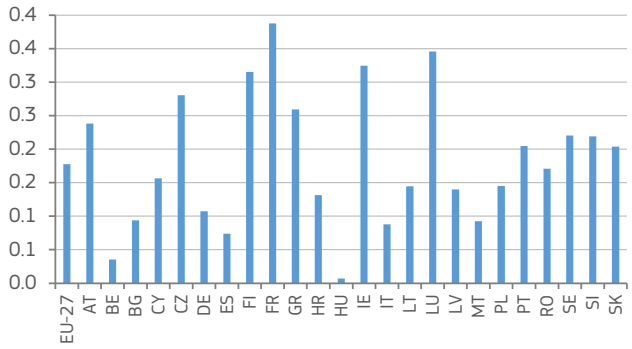
3.1 Rural development implementation in the period 2014-2022

Rural development measure M13[15] supported ANC payments for the programming period 2014-2022[16]. In total, 25 Member States activated the measure under Rural Development (all except Estonia and Netherlands) for an overall amount of 36.6 billion EUR of public expenditures, of which 22.7 billion EUR from the European Agricultural Fund for Rural Development (EAFRD), i.e., 18% of total EAFRD expenditures at EU level.

Graph 3.1 shows the support granted in Measure 13 as a share of the total EAFRD expenditures by Member States. The highest shares are in France (39%), Luxembourg (35%), Finland and Ireland (32%).

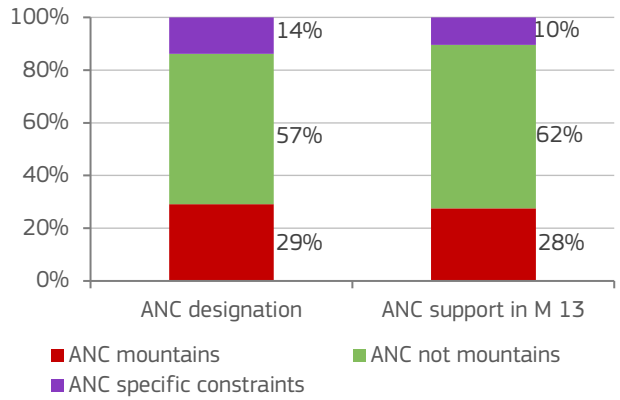
In physical terms, the support covers around 57 million ha[17], 28% of which is allocated to mountain areas (16 million ha), 62% to areas other than mountains (35 million ha) and 10% to specific support (6 million ha). Shares between the three types of ANC are substantially the same in designated areas as shown in Graph 3.2.

Graph 3.1 – Percentage of EAFRD expenditures for measure 13 on total expenditures by MS[18]



Source: RDIS. Date of extraction of the data: 03/12/2021.

Graph 3.2 – Comparison between ANC categories shares in designated and Measure 13 supported areas



Source: Agri food data portal - context indicators dashboards and RDIS (date of extraction of the data: 03/12/2021).

[15] Articles 31 and 32 of Regulation No 1305/2013.

[16] In the period 2014-2022, Member States could also grant payments for ANC under pillar 1 (EAGF) according to Article 48 of Regulation No 1307/2013. Two MS made use of this possibility (DK and SI).

[17] This is less than the designated ANC area due to certain eligibility conditions or regions not activating the payments (e.g. DE).

[18] Estonia and the Netherlands not included as the measure 13 is not activated. Denmark is not shown as the EAFRD allocation for measure 13 is less than 1%.

3.2 CAP strategic plans implementation in period 2023-2027

Payments for natural or other area-specific constraints[19] are programmed in 23 CSPs: IE, IT, HR, EL, CY, PT, AT, ES, MT, SI, PL, SE, DK, FR, FI, LT, LU, CZ, DE, SK, BG, RO, BE (Wallonia). No ANC support is planned in EE, HU, NL, LV and BE (Flanders).

The total planned public expenditure under CSPs at EU level for ANC during 2023-2027 is 18,7 billion EUR[20] aiming to support an estimated 47 million ha[21] of the agricultural area annually. In financial terms, the support for ANC represents around 17% of the total public funding for rural development and 6% of the CAP total public funding (Table 3.1).

Table 3.1 – ANC indicative financial allocations and planned output indicator by Member State

Member State	Total indicative financial allocation (Total public expenditure in €) (2023-2027)	Indicator 0.12 (ha)[22] (FY2027)
AT	990,000,000	1,440,000
BE - Wallonia	44,300,000	233,158
BG	272,422,899	590,000
CY	26,500,000	106,709
CZ	874,376,582	2,003,514
DE	976,846,481	4,228,631
DK	13,085,000	38,993
EL	1,275,384,615	2,418,397
ES	654,132,106	4,798,422
FI	896,340,732	2,218,600
FR	5,500,000,000	6,499,848
HR	213,685,156	612,256
IE	1,250,000,000	2,229,219
IT	1,460,151,554	2,476,059
LT	130,720,000	701,500
LU	87,024,000	118,400
MT	14,026,450	8,856
PL	1,480,000,000	7,079,748
PT	477,053,699	1,634,086
RO	663,985,705	5,138,928
SE	806,451,615	1,075,000
SI	240,000,000	340,000
SK	369,717,895	1,127,775
TOTAL	18,716,204,491	47,118,099

Source: DG AGRI (based on the financial tables with outputs planned in the CSPs adopted in 2022).

[19] Article 71 of Regulation No 2021/2115.

[20] Caveats: Different factors lead to a lower budget compared to 2014-2022. MS had the possibility to postpone the implementation of the ANC under the CSPs: ANC support can be paid under the RDP during the parallel implementation of the RDP and CAP SP. Moreover, HU and LV did not activate the intervention, while it was programmed in the previous period.

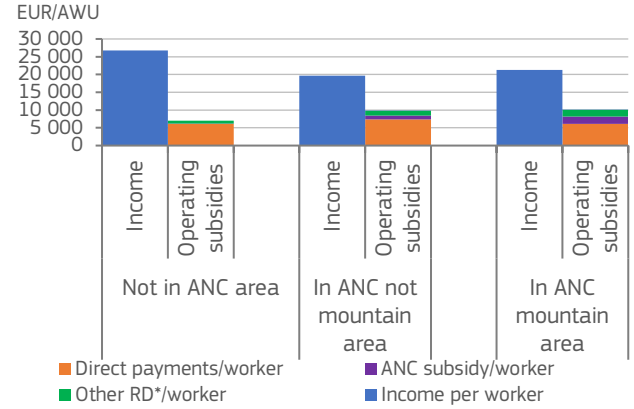
[21] Caveats: Several factors lead to a lower area compared to 2014-2022. HU (no new designation of ANC non-mountain) and LV did not activate the intervention, while it was programmed in the previous period. Furthermore, not all MS have completed their indicator sets in the CSPs yet. Finally, certain eligibility conditions further reduce the area supported.

[22] The data referring to the financial table with output for the 2027 financial year have been taken as an annual estimate for the reason that the implementation of the Rural Development Programmes continue to apply until 31 December 2025.

3.3 CAP Support in ANC and non-ANC farms

The CAP plays an important role in supporting farmer's incomes in ANC. Key figures per annual working unit (AWU) are provided in Graph 3.3. Specifically, in 2018-2020, CAP support accounted for 47.1% and 49.9% of the farm net value added value per AWU in mountains ANC and in non-mountain ANC respectively, whereas in non-ANC areas this share is 26.1%.

Graph 3.3 – Share of operating subsidies in Farm net value added by ANC class, 2018-2020



Source: DG AGRI based on FADN data.

Direct payments are the most important type of support granted in the three kinds of areas (87.3% of operating subsidies per AWU in non-ANC areas, 75.1% in non-mountains ANC; 60.5% in ANC mountains). ANC payments take a significant share of total CAP support (20.9% and 10.6% in mountains and non-mountains ANC respectively), but the importance of other rural development measures is significant as well: 18.6% and 14.3% in mountains and non-mountains ANC respectively.

The total operating subsidies per hectare of UAA are therefore the highest in mountain areas, whereas in ANC other than mountains and non-ANC they are at similar level. Nevertheless, despite considerable CAP support, the income gap between farms located in ANC and non-ANC remains large, amounting to 20.4% less in mountain areas and 26.5% less in ANC other than mountains.

Overall, the analysis shows that CAP payments play a major role in supporting the economic viability of ANC farms. Without such support, it can be expected that a significant share of farms in ANC areas would have to cease their activity.

4. The link between ANC, maintenance of agricultural activity and preservation of valuable habitats and species

Unlike agri-environmental measures and eco-schemes, the ANC support is by nature a form of income support, and not a compensation for the application of specific practices or environmental commitments. However, besides being overall less impacting on the environment, as shown in the previous sections, agriculture in ANC can to some extent have a positive environmental contribution insofar it supports extensive farming and prevent land abandonment.

Indeed, in the EU, several habitats of community interest included in Annex I of the Habitats Directive[23] are partially or fully dependent on the continuation of agricultural practices. In particular, a study found that 63 habitat types protected under the Habitats Directive depend on or can profit from agricultural activities and would be threatened by land abandonment[24], mainly grassland-based ones typically associated to mountain ANC.

Especially in the European context, where large areas of pristine ecosystems are lacking, current highly valuable landscapes and habitats are the result of a certain level of disturbance determined by extensive agricultural management. The ecological value of such habitats is even higher that what would result in absence of any agricultural activity. The cessation of agriculture in such cases would thus lead to a deterioration of their ecological status (examples are the traditional agroforestry systems of *dehesas* and *montados* in Spain and Portugal).

In particular, land abandonment trends have been severe in the Alpine region and in the Pyrenees, where the area of traditional permanent grasslands has shrunk, leading to the degradation of the highly valuable grassland/woodland mosaic due to shrubs encroachment. This not only negatively affected biotas and ecosystems but led to loss of valuable and recognised traditional landscapes as well as the systems of traditional tangible and intangible anthropic elements (traditional buildings, transhumance practices, typical alpine products such as certain types of cheese).

The concept of High Nature Value Farming (HNV) was elaborated in Europe in the 1990s precisely to characterize those farming systems that support a high diversity of habitats and species of conservation interest. It comprises mainly low-intensity livestock farming systems based on permanent and wooded pastures and hay meadows, and in some areas includes low-intensity crop systems, traditional orchards and olive groves.

Though HNV and ANC are different concepts, in practice HNV farming occurs most frequently in areas where natural constraints exist, and ANC payments are considered a form of supporting HNV.[25] This spatial correlation is shown in the following map (Map 2), where green areas represent HNV farmland within ANC and red areas are HNV farmland outside ANC areas (all types merged). Using the latest available HNV map[26] (as of 2012), it results that approximately **80% of HNV farmland in the EU is located within ANC areas**.

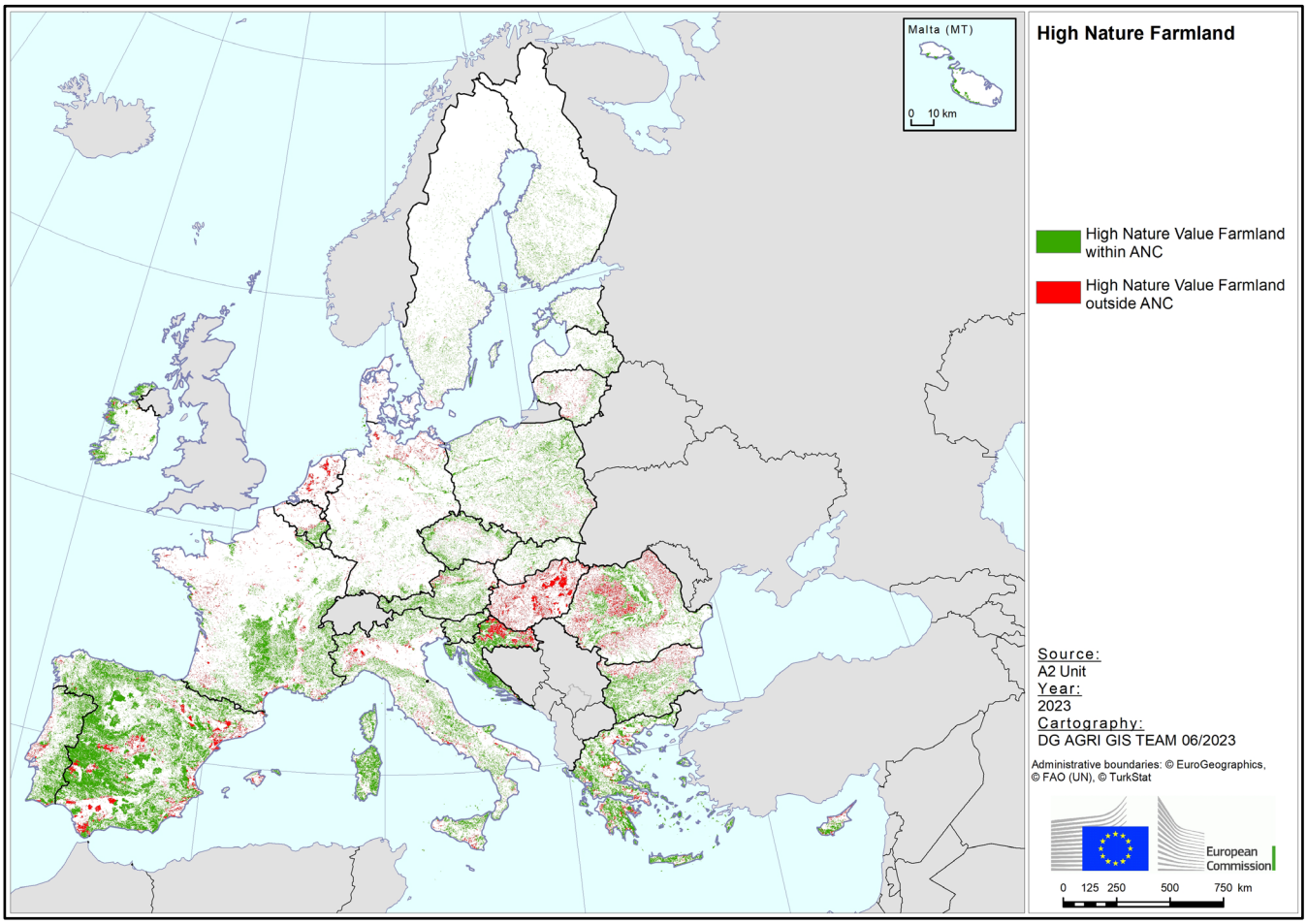
[23] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

[24] Halada, L., Evans, D., Romão, C. and Petersen, J.E., 2011. Which habitats of European importance depend on agricultural practices? Biodiversity and Conservation, 20, pp.2365-2378.

[25] Source: Gouriveau, F., et al. "What EU policy framework do we need to sustain High Nature Value (HNV) farming and biodiversity?" (2019). http://www.hnvlink.eu/download/D4.3.HNV-Link_Policy-Brief_v2019-3-25.pdf

[26] Source: European Environmental Agency

MAP 2 – High Nature Value Farmland within ANC (green areas) and outside ANC areas (in red)



5. Conclusions

Areas with natural constraints (ANC) represent almost 59% of the EU Utilised Agricultural Area (UAA) and the Common Agricultural Policy provides substantial support to allow continuation of farming in such areas.

The analysis presented here, based on FADN data, shows that farms in ANC areas are characterised by a less intensive management, measured through the use of production inputs and livestock density, compared to similar farms outside ANC. In particular, the per hectare quantity of mineral fertilisers and cost incurred for plant protection products are significantly lower in ANC farms.

Holdings in ANC also have, on average, larger shares of land uses that are beneficial for environment and biodiversity, such as grassland, protein crops, and fallow land.

Findings also show that ANC host the majority of High Nature Value (HNV) farmland, featuring valuable habitats and species protected by the Habitats Directive. These habitats depend on or can profit from continuation of extensive agricultural activities and would be threatened by land abandonment. ANC support could therefore contribute to maintain agriculture in those areas.

In economic terms, farms in ANC have on average a lower economic size, lower income per worker and receive more subsidies per hectare - both from ANC support and other area-based measures - compared to farms outside ANC.

These identified general findings are consistent across different farm types.

In conclusion, while the performance of farms in ANC measured with traditional economic metrics may be considered on average lower than non-ANC farms, the agricultural production from ANC farms is obtained with reduced input consumption and lower environmental pressure.

Furthermore, this output comes from more marginal land that, if not economically supported, would largely go out of production. This would likely entail an overall decrease of food production in the EU and a consequent intensification in already intensely managed farmland.

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