THÜNEN

Project brief

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Evaluation of the Common Agricultural Policy from an environmental perspective: Greening had little effect

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- **The 2013 reform of the Common Agricultural Policy (CAP) had a positive but only minor environmental impact due to Greening**
- **The proportion of fallow land increased as a result of the ecological focus area regulation, but remained well below the levels seen at the turn of the millennium**
- **The requirements for crop diversification were relatively low: 81% of arable land would have already met the requirements before they were introduced**
- **After Greening: The implementation of the original conditionality for set-aside (GAEC 8) could have almost doubled the proportion of arable land under fallow**

Background and objectives

Agriculture is partly responsible for excessive inputs of nutrients and plant protection products (PPPs) into soils and water bodies. The largely intensive use of agricultural land makes it difficult for many animal and plant species to find suitable habitats. Numerous previous reform efforts in subsidy and regulatory law have only insufficiently reduced these pressures. Therefore, as part of the CAP reform in 2013, parts of direct payments were linked to Greening measures. These included requirements for ecological focus areas (EFAs), crop diversification, and grassland conservation, and were in force from 2015 to 2022.

Building on two previous projects, the research project "Evaluation of the Common Agricultural Policy from an Environmental Perspective" (GAPEval III) aimed to analyze the environmental impacts of the 2013 CAP reform for Germany, with a particular focus on Greening measures.

Approach

The detailed analysis of land use and changes was based on data from the Integrated Administration and Control System (IACS) from five federal states (Brandenburg [BB], Hesse [HE], Lower Saxony [NI], North Rhine-Westphalia [NW], Rhineland-Palatinate [RP]) for the years 2013 to 2021 and the Germany-wide agricultural structure survey. This data was used to analyze trends in land use that are particularly relevant to Greening. The development of organic farming and changes in animal husbandry were also considered. In order to assess the environmental impacts of changes in land use, the water erosion potential, the humus balances of arable farming, and nitrogen surpluses were examined. The environmental risk of PPPs for specific soil-climate areas was analyzed using risk indicators. Statistical methods were used to derive the influence of policy measures on land use changes and associated environmental impacts.

The data was also used to estimate the effects of the weakened requirements for the designation of non-productive areas (GAEC 8) in the funding period from 2023 onwards, if they had already been in force from 2015 to 2021.

Results

Since the turn of the millennium, the proportion of fallow land in arable farming has undergone significant changes, which can be attributed to EU policy decisions. Although the proportion in Germany rose from 1.6% in 2014 to 2.6% in 2015 with the introduction of Greening, it was still well below the proportion of around 7% at the beginning of the 2000s, when there was still a quasi-mandatory set-aside scheme.

The increase in fallow land and fallow strips from 2015 onwards is mainly due to EFA fallow land and EFA strips promoted through Greening, which accounted for 68.1% of all fallow land and fallow strips in 2015 (see Fig. 1 ; BB: not taken into account, as no corresponding agri-environment-climate measures (AECM) were offered). After 2018, the area of ÖVF fallow land and ÖVF strips declined both relatively and absolutely. Nevertheless, it was shown that farms provided more fallow land and fallow strips as a result of Greening, and thus Greening had a (albeit small) positive environmental impact.

Despite the increase in area, fallow land as ecologically valuable EFA did not reach the intensive regions of arable farming and livestock farming, as a regionally differentiated analysis shows. There, intercropping increased, which was already frequently integrated into the cultivation program before the introduction of Greening and thus accounted for a high proportion of arable land.

Farms committed to crop diversification cultivated around 92% of arable land (2015–2021, federal states BB, HE, NI, RP). Even before the introduction of crop diversification, the requirements would have been met on 81% of total arable land, which shows the low level of requirements. After the implementation of Greening, this share increased to 90%.

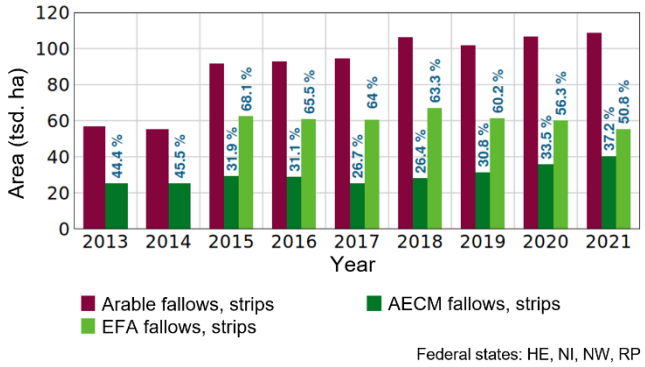

Figure 1: Development of arable fallow land and fallow strips in four federal states. Percentages: share of all arable fallow land and strips. The sum of ecological focus areas and AUKM may exceed 100% of all fallow land, as in NI, NW, and RP, fallow land could be subsidized as both ecological focus areas and AUKM (source: Baum et al. (2025), p. 127).

The modeled water erosion potential increased over time. A significant proportion of this increase can be attributed to the increased erosivity of precipitation, which is linked to climate change-induced warming of the atmosphere. In addition, changes in crop distribution – especially in municipalities with areas particularly susceptible to erosion – contributed to the increase. In these regions, the proportion of summer crops increased significantly. Even though the modeling does not take into account the effect of catch crops due to a lack of data, the reduced soil cover in spring results in an increased risk of erosion.

In regions where the proportion of land treated with PPPs was higher, the frequency of treatment, the intensity of treatment, and the amount of PPPs used were also consistently higher. This illustrates that even small changes in land use, such as CAP measures to promote fallow land, can lead to a noticeable reduction in PPP use and the resulting environmental risk. For the funding period from 2023 onwards, the GAEC 8 regulation was adopted, according to which all farms with at least 10 ha of arable land that applied for direct payments would have to declare 4% of their arable land as non-productive areas (fallow land, landscape features). If this regulation had been in force in 2021, only 25.0% of these farms would have met this requirement (federal states BB, HE, NI, NW, RP).

Assuming that they maintained this and other farms subject to the requirement reported exactly 4%, the proportion of fallow land could have been increased from 3.3% (2021) of total arable land to 5.7%, and intensive regions would also have been reached. The regulation never came into force in this form. In 2023, cereals, sunflowers, and legumes were also allowed to be counted as non-productive areas, and in 2024, legumes and catch crops (both without PPPs). Since the median catch crop share of farms subject to GAEC 8 was 15.4% (2021) of their arable land, additional designation of fallow land would not have been necessary in most cases. The limited progress made by Greening in expanding fallow land can thus be maintained at best, but no additional positive environmental impact will be achieved.

Conclusions

The 2013 CAP reform had only a minor impact on land use. Fallow land increased slightly and the decline in permanent grassland was halted – the latter partly due to stricter regulatory requirements. Overall, the environmental impact of the 2014–2022 funding period remained low.

The CAP funding period from 2023 onwards introduced stricter environmental requirements, including the obligation to have 4% of land set aside (GAEC 8). This measure would also have affected intensively farmed regions. Due to the suspension and repeal of the standard, there has been no significant improvement in the environmental impact of the CAP.

If reducing the negative environmental impact of agriculture is an important objective of the CAP, payments under the CAP should be more closely linked to environmental performance.

Further information

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Publications

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