



Agroforestry for Germany: adaptation and mitigation of climate change and environmental externalities

Policy co-design, the background

Germany's agriculture is facing multiple challenges simultaneously: the climate crisis, energy crisis, and biodiversity crisis, all while food security remains an important issue. Due to the urgency of these concerns, agriculture and land use in general need to address them at the same time. One land use system that has been shown to combine many of these goals is agroforestry. It can sequester carbon, improve soil health and water quality as well as increase biodiversity, while producing higher biomass outputs than tree- or agriculture-only systems. Despite these documented benefits, very little land in Germany is currently used for agroforestry systems.

Farmer perceptions

One of the reasons for limited adoption is farmer perceptions of these systems. German farmers mostly reject planting agroforestry, even if they were to become profitable through subsidies. Positive predictors for willingness to plant agroforestry systems were farmers with low quality soil, a high level of training, and if they had a generally positive attitude towards agricultural wood (Beer and Theuvsen 2020). Non-agroforestry farmers often perceive agroforestry to be less productive and profitable, even though many do recognise the positive environmental aspects of these systems. One major barrier is also seen in policy and legislation, which discourages the implementation of agroforestry (Tsonkova et al. 2018). While economic performance is not the only factor that influences adoption decision it seems to be an important element for many conventional farmers, especially as a first step to even consider these systems as a potential land use option.

Policy Option	Description
Baseline	No grants
CAP23	Direct payments (156 €/ha) + eco-scheme (60 €/ha wooded area)
Eco_double	Direct payments (156 €/ha) + eco-scheme*2 (120 €/ha wooded area)
Eco_tripple	Direct payments (156 €/ha) + eco-scheme*3 (180 €/ha wooded area)
AUKM1	Year 1-7: Direct payments (156 €/ha) + investment aid (1,546 €/ha wooded area) Year 8-24: Direct payments (156 €/ha) + eco-scheme*1.5 (60 €/ha wooded area)
AUKM2	Year 1-7: Direct payments (156 €/ha) + investment aid (1,546 €/ha wooded area) Year 8-14: Direct payments (156 €/ha) + investment aid (787 €/ha wooded area) Year 15-24: Direct payments (156 €/ha) + eco-scheme (60 €/ha wooded area)

Table 1: Policy Scenarios for Germany

Policy landscape

In recent years no policy support or legislative framework existed for agroforestry in Germany. With the upcoming programming period of the Common Agricultural Policy (CAP) however, this is going to change. Germany has included the maintenance of agroforestry systems as an eco-scheme with a payment of 60€/ha of wooded area (BMEL 2022). Wooded area here means the area where trees are planted. Additionally, Germany is planning to offer investment aid through the "Joint Task for the Improvement of Agricultural Structure and Coastal Protection (GAK)". Some Federal States in Germany (e.g. Brandenburg) have also announced that funding will become available for establishing agroforestry. How these funding options will be coordinated between the federal states and the federal government is not yet clear (Albrecht 2022). Germany is also implementing a legally binding definition for agroforestry (BMEL 2022).

Policy scenarios

The policy scenarios for Germany consist of different financial support schemes described in Table 1. The coming programming period for the European CAP starts in 2023 and Germany has incorporated agroforestry as an eco-scheme in its strategic plan. The programmed 60€ are paid per hectare of wooded area, i.e. the area where trees are planted on the agricultural plot. This area is declared by the farmer. Germany has not yet specified how the measurement of the wooded areas will be legislated. This wooded area, or area with trees, is then broken down into a share of the total agricultural plot e.g., if on a 20ha plot tree rows are planted that sum up to a total of 2ha, the share of wooded area on this plot would be 10% and a farmer would receive a total of 6€/ha on top of the direct payments. Direct payments are paid per hectare to each farmer independent of how the land is used. Since there has been critique that the eco-scheme payments for agroforestry are too low, two scenarios are included where the eco-scheme payments are doubled and tripled from their original value. The AUKM1 and AUKM2 scenarios are based on a proposal from the project SIGNAL, where for the first 7 years of establishment the farmer would receive 1,546 €/ha wooded area, and for the years 8 to 14 a total of 787 €/ha wooded area (Böhm et al. 2020). Whether this will be the investment aid available in the upcoming programming period is uncertain. It is used here to contrast the relatively low eco-scheme payments. All scenarios are forward looking assuming certain financial incentives. If time and resources allow for more scenarios to be run, other policies may be incorporated as well, e.g. reduced nitrogen fertilization or additional payments for carbon sequestration or other ecosystem services.

References

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