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Öko-Institut e.V.
Institut für angewandte Ökologie
Institute for Applied Ecology

FiBL

Bioland

Blueprint for agriculture

The EEG approach to promoting biodiversity measures

Starting point

Over the last few decades, there has been a sharp decline in biodiversity in agricultural landscapes, despite extensive support programmes for agri-environmental measures (see BMUV 2021, p. 60). For example, farmland bird species in Europe declined by 57% between 1980 and 2018 (PECBMS 2020). Particularly the current scope of measures is insufficient to halt the decline. A better coordination of measures at the landscape level and more areas for more biodiversity are important building blocks for halting and, at best, reversing the loss of habitats and species (see Metzner n.d.). To ensure that farms actually implement the necessary measures, the current subsidies must at least cover the costs incurred. This is often not the case, especially for high-yielding sites.

Research approach

The aim of our project is to develop a support instrument which can be used to substantially increase biodiversity-promoting measures in agriculture. To this end, the extent to which the German Renewable Energy Sources Act (EEG) can be extended to agriculture is analysed. With a view to the specifics of nature conservation, a landscape-based approach, as established in the Netherlands, was chosen for the expenditure side. For the income side, a funding model was developed, which has the aim of introducing a surcharge for the agricultural and food sector: the Ecosystem Services Act (ÖLG).

To determine the income needed, the need for measures was determined in two project areas as examples and compared with the measures currently implemented. The necessary compensation for measures encompasses the regionalised costs for the implementation of measures and the loss of income. In this way, the financing needs for the necessary scope of measures can be determined.

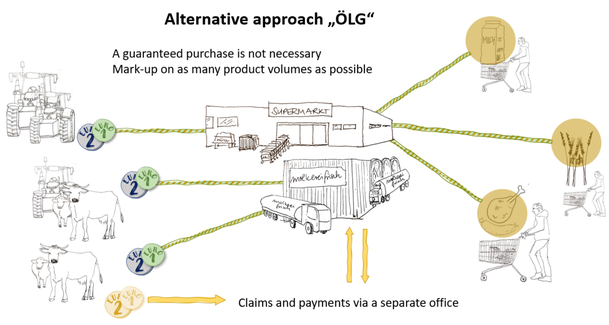
Results and need for further research

Example: change in income when planting perennial flower strips under EAFRD (2014-2020) support conditions in three German federal states

EAFRD subsidy (2014-2020 for a perennial flower strip [€/(ha*year)]	Change in income flower strips instead of 5-year crop rotation with 2 saleable root crops
Lower Saxony: 875 €/(ha*a)	- 627 €/(ha*a)
Hesse: 600 €/(ha*a)	- 902 €/(ha*a)
Baden-Württemberg: 710 €/(ha*a)	- 792 €/(ha*a)

SOURCE: NATIONAL FRAMEWORK 2014-2020, AUTHORS' OWN CALCULATIONS

Basic idea of paying a fixed 'feed-in-tariff' in agriculture; Ecosystem Services Act (ÖLG)



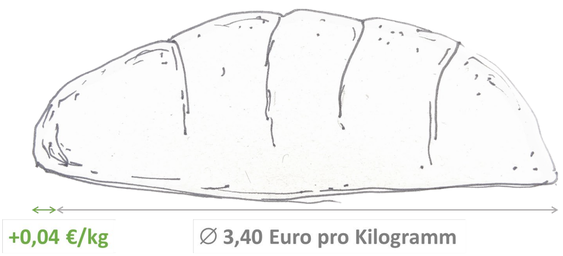
SOURCE: AUTHORS' OWN

Area and funding requirements for biodiversity measures in the two study areas and their extrapolation to all of Germany

Region	Area requirement [ha]	Funding requirement incl. GAP for AUKM [€]	Funding requirement surcharge [€]
AO Lower Saxony	22.797	€ 24.391 million	€ 23.418 million
AO Bavaria	37.050	€ 20.662 million	€ 18.706 million
Germany	**3.8 million ha**	**€ 3.395 billion**	**€ 3.213 billion**
Administrative expenses			€ 700.000

SOURCE: AUTHORS' OWN CALCULATIONS, NOTE, AO = AREA OF ORIGIN

Example: ÖLG mark-up for one kilogram of mixed bread (non-proportional illustration)



* 1 grain unit (=100 kg barley) = statistical unit for adding individual agricultural products together to make a total

SOURCE: AUTHORS' OWN ILLUSTRATION.

Subsidies often do not cover costs

The example of a perennial flowering strip on a high-yielding site shows the differences in income compared to previous harvesting over a period of 5 years: the costs of implementing the measure plus the resulting loss of income from the 5-year crop rotation leads to significant losses. The remuneration of the measure is not economically attractive.

Solution idea: model of the ÖLG

On the level of the recipients, a mark-up is to be charged on raw materials in the form of a surcharge paid to a payment office (income side). The income is used to support the planning of measures and their communication and implementation on the farms (expenditure side), organised via nature organisations whose members are the farmers (see also below right).

Area and funding requirements

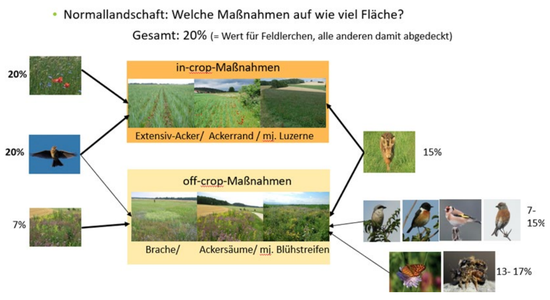
The area and funding requirement for the biodiversity measures needed in agricultural landscapes are determined for two districts in an arable and a grassland region in Bavaria and Lower Saxony. These are then scaled to Germany as a whole. This simple method results in an area requirement totalling approx. 3.8 million hectares and a budget for measures that amounts to approx. 4 billion Euro.

Burden on consumers

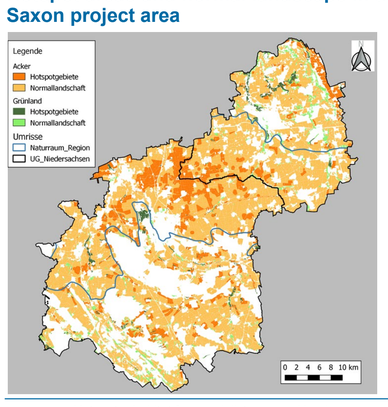
This amount is allocated to the most common crops and the respective products: cereals, potatoes, oil fruits, sugar, meat, milk, eggs. With funding costs of around 4 billion Euro and around 900 million grain units (GU) of raw materials produced per year, the mark-up amounts to around 4.4 cents/GU. If the mark-up is passed on unchanged, the additional costs for 1 kg of mixed bread (= 0.0095 GU) would be 0.042 Euro.

Summary and recommendations

Schematic illustration of deriving the measures required for arable land (target/actual analysis for Lower Saxony)



Hotspot areas and normal landscape in the Lower Saxon project area



Hotspot = habitat for specialists, normal landscape = mainly habitat for generalists

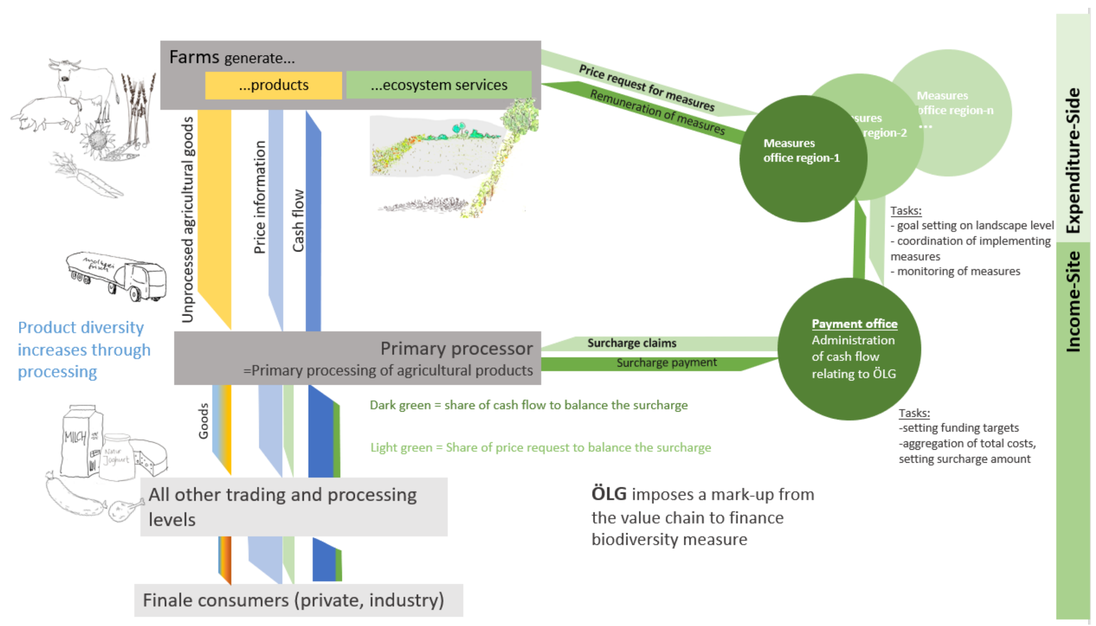
SOURCE: INSTITUTE OF AGROECOLOGY AND BIODIVERSITY

ÖLG offers a potential solution

A rough extrapolation based on the ÖLG for all of Germany results in a funding requirement of around 4 billion Euro. In relation to the sales prices for food to customers, the "biodiversity surcharge" is expected to result in only a small increase in prices. At the same time, experience gathered with co-operative nature conservation in the Netherlands indicates that the measures are more effective. A more regionalised coordination of measures by corresponding agencies (see above) also offers starting points for more regionalised subsidies.

The implementation of the subsidy model involves various legal challenges. For example, it is important to include imported products without jeopardising the free movement of goods and competition. Furthermore, the co-existence of the ÖLG with existing subsidy programmes is a challenge.

Schematic structure of the funding model in the ÖLG



SOURCE: AUTHORS' OWN ILLUSTRATION

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Sources

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