Field margins in Heilbronn, Germany

Year of issue

2025

Summary

Since 1992, the city of Heilbronn (Germany) has implemented a field margin programme to reduce erosion, improve water infiltration, and promote biodiversity in the agricultural landscape. Farmers receive compensation for yield losses and maintenance work. The programme includes various strip types, such as grasslands, hedgerows, and orchard rows, planned according to local soil and biodiversity maps. Recent efforts highlight synergies with education (school orchards), pollinator protection, and landscape aesthetics. The initiative is embedded in the city's ecological corridor strategy and contributes to soil, water, and habitat conservation.

So far, it has been found that the field margins have a significant positive impact on soil erosion and species composition. The partridge protection strips in particular have had a positive effect on the partridge population.

The project has grown over the last 30 years in terms of area and number of contractual partners. Although some contractual partners withdrew a few years ago, the area has not changed significantly. New applications for new areas are still recieved.

Photo Gallery



Location

49.14, 9.21

Project

NWRM

National ID

Germany_01

Sector

Agriculture

Installation Date

1992

Implementation status

Ongoing

Contact

Guillaume Michel, ACTeon

Overview

Location of the project

Over the territory of the Heilbronn municipality.

Country

Germany

NUTS2 Code

Stuttgart

Sponge measures implemented in the case study

Buffer strips and hedges

Objectives

The original objectives were to promote segetal flora and fauna and to reduce erosion through improved soil retention.

Involved partners

Authority type	Authority name	Authority role	Comments

Other	Heilbronn Municipality	Initiation of the measure	The Heilbronn Municipality initiated the programme. It is involved in all other phases of the programme (through its administration for Green Areas) design, implementation, financing, monitoring... The Municipality establishes directives which define the rules of the Field Margins Programmes
Farmers	Farmers	Implementation	94 farmers and land owners. Interested farmers are involved in the design of field margins with representatives of the municipality
Private property owners	Landowners	Implementation	94 farmers and land owners.
Other	Administration for Green areas of the Heilbronn Municipality	—	This administration of the municipality is in charge of all green areas of Heilbronn (parks, children playgrounds, cemetery, etc.), as well as the field margins programme. It is responsible for the coordination of the program
Farmers	Kreisbauernverband Heilbronn e.V.	—	Farmers association around Heilbronn. It has been involved in the project. It is a farmer lobbying wanting more subsidies for field margins.
Other	Ludwigsburg and Bietigheim-Bissingen	—	Two neighbouring municipalities. For the notification to the European Commision, a common request (containing programs of the three cities) was sent.
Farmers	Ortsverein Landwirtschaft	—	Local associations of farmers
Other	Department for nature protection of Heilbronn	—	Involved in the definition of rules for implementing and managing field margins ("Pflegekonzept")
Other	Administration for agriculture in Heilbronn	—	Involved in the definition of rules for implementing and managing field margins ("Pflegekonzept")
Other	Minister for rural areal of Baden-Wí¼rttemberg	—	Provides support to the municipality for the notification of the program to the European Commission

Site Information

Climate Zone

Cool temperate moist

Precipitation

758.00 mm

Temperature (°C)

9.90 °C

Elevation range

159 m

Vegetation class

Grassland (Heilbronn meadow seeds for fertile soils)

WFD Ecological status

Poor

WFD Chemical status

Failing to achieve good

Design and Implementation

Project scale

Meso

Project scale specifications

The project is limited to the municipality of Heilbronn's territory.

Project area

72,87 ha, 1.906 field margins, 80 contractual partners

Basis of design

Field margins (size, localization...) have been designed taking into account the ways of water runoff, soils types, slopes, etc.

Principles

The project was launched as part of the cooperation and in the interests of sustainability (soil protection, species protection).

Factor constraints

The greatest restrictions and, at the same time, the most favorable conditions all depend on cooperation with local farmers. Overall, the majority of the community has supported this project, and it is progressing steadily. The biggest difficulties so far have been that individual citizens have complained about the extensive mowing (“untidy condition”) or that individual contractors had special financial requests and have withdrawn from the project as a result. Furthermore, it is not easy to attract new contractors to this project.

Financing

Total cost

140000.00 €

Total cost information

In the budget of the Heilbronn Municipality, 140 000 €/year are dedicated to the Field Margins Programme.

Administrative annual cost information

One third of a full time worker at the administration for green areas.

Financing authorities

Authority name	Type of funding	Comments	Financing share
Heilbronn municipality	Local funds	The "Ackerrandstreifprogramm" (Programme for field margins) is a programme of subsidies for farmers concerned by a loss of their revenues due to the implementation of field margins. Subsidies are based on the amount of the variable cost margin. The amount of subsidies is defined in directives (from the municipality). 140 000 €/year from the municipality. The municipality is the only financer (no funds from the Land, the Federal state or the EU).	100 %

Compensations

Yes

Compensations basis information

601 €/ha + a variable part depending on type of field margin

Compensations number of beneficiaries

94.00

Compensations number of beneficiaries information

94 farmers or land owners are concerned by the programme

Compensations scheme information

One part of the payments aims at compensating the reduced gross margin (601 €/ha). The second part depends on the type of field margin. It is designed in order to cover costs linked to the care of field margins. From 2011 onwards, total costs are:
- Field margins: 1250 €/ha + seeds
- Field margins (fallow land): 1170 €/ha
- Field margin with a row of trees: 1740 €/ha + trees
- Field margins with an hedge: 2900 €/ha + plants

Policy and Governance

Policy description

Since the start of the field margins programme of the Heilbronn municipality in 1992, about 200 km of field margins have been managed. In this program, a large place is reserved for the involvement of farmers in all stages including the design phase. A compensation scheme targeting farmers and land owners has been designed by the municipality and its partners in accordance with the European legislation on agricultural subsidies.

Land ownership

Field margins are implemented on privately owned agricultural land.

Policy targets

Erosion Control

Runoff control

Oher Societal Benefits

Part of a wider plan

Yes

Wider plan

Wider plan type	Wider plan focus	Name	Comments

Local	Agriculture	Agro-environmental programme of Heilbronn	The Agro-environmental programme of Heilbronn has been approved by the European Commission in 2010 until 2013. For the next period 2014-2020, a new notification to the European Commission has been made under the same conditions than before. The EU has approved the program after prolonged procedures. However, the EU does not grant co-financing. The cities of Heilbronn, Ludwigsburg and Bietigheim-Bissingen finance their agri-environment schemes to 100%.

Public consultation

Yes

Consultation activities

Activity stage	Activity type	Comments
Design phase	Cooperation with farmers and land owners	Cooperation with farmers and land owners took place during the planning and design phase through meetings and field meetings as well as discussion with groups or individual farmers.
Implementation phase	Exhibition about the field margin programme	—
—	Numerous articles in the press, radio interviews...	—

Has contractual arrangements

Yes

Contractual arrangements

Arrangement type	Responsibility	Name	Role	Comments

Contractual agreement	Farmers must apply before planting (spring or autumn), with detailed maps and dimensions. Farmers must follow ecological mowing dates, avoid fertilisers/pesticides, and maintain the strips.	"Pflegeconzept"	Agreement between the municipality and the farmers about management rules of field margins.	Contracts last 5 years (exceptions possible for 1 year in transition phases). 9 different margin types (e.g., grass strips, hedgerows, orchard rows). Annual monitoring and documentation; non-compliance leads to funding cuts or repayment.
Institutional arrangement	—	Notification of the program at the European Commission	—	Subsidies to farmers have to bi notified to the European Commission

Impacts and Monitoring

Monitoring System

Monitoring requirements

No studies have been conducted on these areas to date.

Monitoring parameters

The areas are inspected on a random basis by the Parks Department.

Maintenance

Maintenance requirements

By farmers. Depends on the measure type, ranges from mulching or mowing twice a year, hedge maintenance, tree maintenance, cultivating, sowing and reseeding, to various combinations and special forms (e.g., partridge protection strips with fallow strips).

Socio-economic Impacts

Benefits and co-benefits

Strong links with public engagement projects (e.g. school orchard juice, biodiversity trail). Educational and demonstration functions included (KommBio.de)

Direct benefits

Long-term benefits through reduced soil degradation and better agricultural resilience.

Negative / Other impacts

The sudden withdrawal of some contractual partners in 2020 was unexpected, resulting in the loss of some field margins.

Biophysical impacts: Hydrology

Runoff reduction

20.00

Runoff reduction unit

% Percent

Information on peak flow reduction

Buffer strips help slow down surface water during heavy rainfall, mitigating flood peaks

Information on increased infiltration

Improved rainwater infiltration and groundwater recharge through deep-rooted grasses and worm activity.

Biophysical impacts: Biodiversity

Improved biodiversity

Yes

Information on improved biodiversity

Field margins are designed in order to promote biodiversity.
The density of earthworms in field margins has been improved (about twice more earthworms in field margins than in the neighbouring field).
Habitat for species like yellow wagtail (Schafstelze), grey partridge, bumblebees, butterflies.
Rich mix of native herbs, grasses, and fruit trees supports pollinators and bird species.
Linked with broader biotope network plans (Biotopverbundkonzept)

Lessons Learned

Key lessons

The Heilbronn municipality highly recommends implementing this easily achievable project on other agricultural land in other cities. It promotes biodiversity, soil quality, and relationships with farmers. Promoting biodiversity on farmland is highly recommended, as it is increasingly being lost globally due to modernization and land expansion.

Barriers

Barrier type	Barrier role	Comments
Attitude of relevant stakeholders	Main barrier	Willingness of many farmers to participate in the project
Legal obligations / restrictions	Main barrier	Administrative procedures are difficult to carry out for a municipality (for example the notification to the EU).
Limited staff and consultant knowledge	Secondary barrier	Due to staff shortages, it is not possible to monitor every single field closely (to determine whether mowing has been carried out too often or pesticides or fertilizers have been used illegally).

Drivers

Driver type	Driver role	Comments
Availability of subsidies	Secondary driver	According to the directive of the municipality concerning the Field Margins Programme : Funding will be provided as long as the municipal budget allows it.
Other	Secondary driver	The ease of implementation
—	—	The willingness of many farmers to participate in this project

Success factors

Success factor type	Success factor role	Comments
Communication activities	Main factor	Close relationship of trust between farmers and the municipality (particularly the administration for green areas which coordinates the program). This is helped by the areas on which the program is implemented (Heilbronn = a small territory, farmers in Heilbronn work only in Heilbronn, etc.).

Success factor type	Success factor role	Comments
Attitude of decision makers	Main factor	Elected representatives in Heilbronn agree on this program. There is therefore a very limited risk of no financing.
Attitude of the public	Main factor	Field margins helped decreasing conflicts between inhabitants and farmers. The public supports hence the program.
Attitude of relevant stakeholders	Main factor	Field margins helped decreasing conflicts between inhabitants and farmers. Farmers support therefore the program.
Financing possibilities	Main factor	Farmers are paid in order to compensate the decrease of crops.

Cost effectiveness

A precise cost-benefit analysis has not yet been carried out. However, it can be said that the benefits were very high and the associated costs and effort were comparatively low. This project is very effective in terms of erosion and biodiversity.

Transferability

This project can be easily implemented at any location with farmland.

Basin characteristics influence

This project has benefited above all from the surrounding fields and field margins, as some species of segetal flora typical of the location have been able to recover in many places.

Sources

Sources

Das Ackerrandstreifenprogramm

Das Ackerrandstreifenprogramm

AgrarumweltprogrammAktualisierte Richtlinie für das AckerrandstreifenprogrammStaatliche Beihilfe Nummer N539/2009, 2010-2013

Ackerrandstreifenprogramm – Bienenweide, AHA & Schulapfelsaftprojekt

Ackerrandstreifenprogramm der Stadt Heilbronn

Richtlinie für das Ackerrandstreifenprogramm 2021–2025

Ausstellungswände – Ackerrandstreifen: Positiv für Natur und Landwirtschaft