

CAP funds help expand agroecology gains for Flemish farmers

Contributing to climate-resilient agriculture by applying new integrated water management measures.

EAFRD-funded projects

Location: Herentals, Kasterlee, Lille and Vorselaar, Belgium

Programming period: 2014-2020

Priority: P6 - Social inclusion and local development

Focus Area: Local development

Measures: M16 - Cooperation

Funding:	Total budget	165 767 (EUR)
	EAFRD	53 874 (EUR)
	National/Regional	53 874 (EUR)
	Private	24 865 (EUR)
	Other	33 154 (EUR)

(Province of Antwerp, municipalities Herentals, Lille, Kasterlee and Vorselaar)

Other	350 000 (EUR)
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(Land development project Water-Land-Scape as operational budget during 2020-2024)

Timeframe: 01/01/2019 - 30/06/2021

Project promoter: Boerenatuur Vlaanderen vzw

Email: Boerenatuur Vlaanderen vzw

Summary

The agroecology project 'River, Farmer, Soil' related to the catchment area of the river Aa in Belgium. It promoted the implementation of new water management measures to help reduce the risk of flooding, improve water quality and increase the climate resilience of agricultural businesses in the area. The project was implemented by a collaborative team of organisations to address the problem in an integrated manner, thereby linking up with other existing initiatives and co-funding regimes. The project aimed to inspire, raise awareness and guide 23 farmers to voluntarily apply agroecology measures in water management. This included the installation of weirs in ditches, the integration of draught-resistant crops in the rotation and the application of wood chips to increase the organic carbon content of the soil. In addition, training and educational demonstrations fostered the wider take-up of these measures to restore and improve the balance between agriculture, soil and water.



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Project results

- 24.25 hectares (ha) of land were planted with drought-resistant crops to improve the soil structure.
- The application of wood chips in the soil increased the organic carbon content of 30.07 ha of land.
- The project converted 3.2 ha of land to water level-controlled drainage achieving a gain of 20-35 mm of crop evaporation per growing season.
- Thirteen weirs in ditches were built resulting in an improved water buffer capacity.
- 3.05 ha buffer of mixed grass strips were created, improving water quality.
- The broad communication activities ensured that the project measures were widely adopted.
- A cooperation was created regarding hedgerow management and the use of wood chips as an organic material supply for improving the water retention of soil.





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Key lessons and recommendations

- When seeking the commitment of farmers to voluntarily apply new agroecological techniques, it is crucial that the new measures are compatible with the business management/strategy of each farm. They also need to demonstrate that they are effective and cost-efficient.
- It is advantageous to create a diverse partnership by involving as many relevant stakeholders as possible. This will contribute to building support for any area-based goals. The diversity of partners can be challenging for the actual implementation of the project in the short term but is advantageous in the long term.

Context

The agroecology project 'River, Farmer, Soil' focuses on the catchment area of the river Aa in the province of Antwerp in Belgium. The area, which is home to approximately 600 farmers, has experienced a combination of prolonged periods of drought, heavy rainfall and flooding in recent years. The lowlands of the valley are characterised by fertile, flood-prone peatlands while in the upland area, the soils are sandy with a tendency to dry out quickly. Water management has become a significant challenge. Both, water quality and quantity, as well as soil quality in the valley of the Aa needed to be addressed to re-instate a better balance between agriculture, water and soil.

In 2019, several organisations started to collaborate with each other to find new, sustainable water management solutions. Among others, the collaboration included two farmer associations, an agricultural research institute, a nature conservation association, the province of Antwerp, four municipalities and a regional landscape organisation.

Although the watercourses of the Aa have a relatively good quality compared to the rest of Flanders, they do not meet the national quality targets mainly due to diffuse pollution from the agricultural sector. The objective to increase the water quality is particularly relevant in the project area because there are two groundwater extraction points for drinking water.

The collaborative partners were keen to implement an integrated solution to water management, whereby the new EAFRD project inter-related closely with several existing initiatives and drew co-funding from the Flemish 'Water-Land-Scape programme'.

Objectives

The project had the following key objectives:

- Develop a set of concrete, easy-to-deploy, small-scale agricultural measures for sustainable water management.
- Support farmers and land managers in the project area in implementing measures that contribute to reducing the risk of flooding and making agriculture more climate resilient.
- Improve water quality by adapting agricultural practices.
- Maintain economically viable agriculture while improving landscape quality.



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Activities

The following activities were implemented:

- Mapping of needs and solutions (January-June 2019). This activity organised workshops with interested farmers and other experts to identify and map their needs and opportunities and to collectively determine which measures could provide a solution. This resulted in the development of a menu of agroecology measures regarding sustainable water, landscape, soil and crop management.
- Selection of measures per farm (March 2019-June 2021). For each participating farm the most appropriate measures were chosen from the 'menu' considering the type of farm and management, as well as any societal and agricultural impacts the measures were expected to create.
- Implementation and demonstration (July 2019-June 2021) of the selected measures. Each participating farmer was provided with necessary information about the operation and implementation of the selected measure(s) (including administrative aspects of necessary permits for weirs in ditches). Guidance was delivered through site visits, both individually and in groups, including demonstration sessions.
- Knowledge dissemination through demonstrations, workshops and technical fact sheets (sorghum, water level-controlled drainage and dams) highlighting the possibilities and benefits of the various measures.

- Follow-up (July 2019-June 2021) through a local farm management group. The collaborative group consisted of farmers who started implementing the water management measures on their land. Its role was to provide ongoing feedback. The group met annually to exchange experiences and to receive information about the (improved) management of measures and/or new measures. The implementation and success of the project measures were also monitored through yield measurements, soil analysis, data loggers, etc.

Main results

- 24.25 ha of land were planted with drought-resistant crops (sorghum, herbal leys, maize-bean, alfalfa and mustard) to improve the soil structure and reduce the demand for water due to their deeper roots.
- The application of local wood chips in the soil increased the organic carbon content of 30.07 ha of land over the medium-term contributing to a net carbon storage of 1.4 tonnes per ha (based on applying an initial dose of 10 tonnes per ha).
- The project converted 3.2 ha of land to water level-controlled drainage achieving a gain of 20 to 35 mm of crop evaporation per growing season.
- Thirteen weirs in ditches were built resulting in an improved water buffer capacity allowing rainwater to infiltrate and replenish the groundwater after heavy rainfall.
- 3.05 ha buffer mixed grass strips were created contributing to improving the water quality.
- The project involved 23 farmers.
- The broad communication and promotional activities, including annual info markets showcasing good practice examples, ensured that the project measures for improved soil and water management were widely adopted.
- Rural stakeholders gained skills in sustainable farming practices, land management and soil conservation fostering the application of more environmentally friendly and efficient agricultural techniques.



- > A local network of farmers was established to facilitate the exchange of experiences.
- > A cooperation between the municipality of Kasterlee and local farmers was created on hedgerow management and the use of wood chips as an organic material supply for improving the water retention of soil.
- > A more resilient agricultural system can contribute more effectively to sustainable food production.

Key lessons and recommendations

- > When seeking the commitment of farmers to voluntarily apply new agroecological techniques, it is crucial that the new measures are compatible with the business management/strategy of each farm. They also need to demonstrate that they are effective and cost-efficient. Since business strategies vary significantly, the implementation of measures requires flexibility and customisation.
- > It is advantageous to create a diverse partnership by involving as many relevant stakeholders as possible. This will contribute to building support for any area-based goals. The diversity of partners can be challenging for the actual implementation of the project in the short term but is advantageous in the long term regarding sustainability.
- > During the COVID-19 period, the project team organised outdoor network events in small groups whilst maintaining distance between each other.

"I appreciate that this project offers the opportunity to create a mixed buffer strip in an accessible way. It allows me to have straight field edges along the Aa, a meandering river, and at the same time contribute to improved water quality and increased biodiversity."

Farmer Paul Van de Water

"When fieldwork is due and a wet soil is not desired, the control pipe of the water control-levelled drainage can be temporarily detached. This way, the field only drains during the desired periods, and we are better prepared for long drought periods."

Farmer Tom Bastiaens

"I am in favour of systematically incorporating wood chips into the soil, as it increases the organic matter content in the soil, and the maize performed better during a long drought period."

Farmer Gert Willems

Additional information:

www.boerenatuur.be/beek-boer-bodem/

www.provincieantwerpen.be/aanbod/drem/dienst-gebiedsgericht-beleid/kleine-netel/-beek-boer-bodem-.html



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