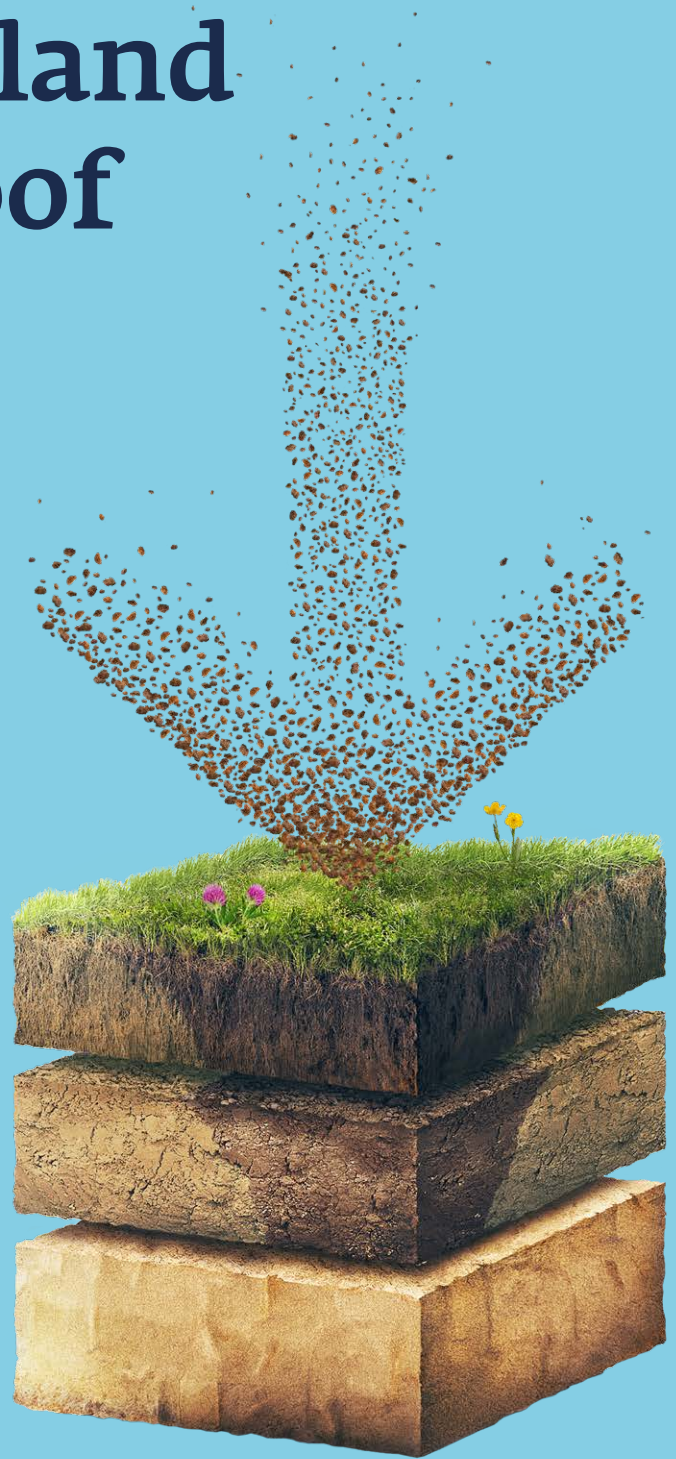


# Using clay to make sandy farmland climate proof



[LIFECO<sub>2</sub>SAND.EU](https://lifeco2sand.eu)

# LIFE CO<sub>2</sub>SAND

As a result of climate change we increasingly see longer periods of drought or, on the other hand, extreme rainfall. This has a great impact on farmers on sandy soils. Clay soil enhances the resilience of sandy soil, strengthening its capacity to handle extreme weather conditions. Clay can also increase the fertility of sandy soil. In the LIFE CO<sub>2</sub>SAND project, Rijkswaterstaat, (the Dutch Directorate-General for Public Works and Water Management) and the Province of Gelderland match the supply and demand of clay soil. We are applying the ‘clay-in-sand’ principle in 5 demo fields. Farmers, area managers and land designers are welcome to visit these ‘field labs’ and make use of this technique for their own soil.

## Clay for sandy soil: demand finds supply

There is a surplus of clay soil, which is not used at this time. In lowland areas, clay is extracted in nature restoration works and area development for road & house building. In the Netherlands, this clay surplus used to be handled as if it were waste. However, for farmers on drought-sensitive sandy soils it is valuable to improve their land. The clay particles enable the soil to retain more water, organic matter and minerals. More organic matter in the soil goes with a reduction of greenhouse gasses in the atmosphere. This helps to slow down climate change.

## Approach

- We assess the quality of a parcel. Together with the farmer we determine which clay is most suitable and how much clay we need to sustainably improve their soil.
- We help project planners find a valuable use for surplus clay. To this end, we promote the inclusion of sustainability calculations in tenders to valorise ecosystem services provided by clay-improved land.
- We work with 5 demo fields. Each demo field is different and each farmer works differently. This enables us to gain experience with different local circumstances, clay types and ways of applying the clay.
- On the demo fields we measure how much extra water the soil retains through the clay, and the change in soil fertility. We also measure differences in organic substance levels between the treated fields and untreated soil.
- We engage with policymakers and land developers responsible for clay releasing projects to promote the inclusion of clay delivery to farmers in planning studies and tendering procedures.
- We share knowledge with farmers, researchers and authorities by publications, demo days, congresses and calls.
- We develop education kits for business consultants and agricultural schools.



## **Sand belt**

The target area of LIFE CO<sub>2</sub>SAND is the European 'sand belt'. This belt is covered with sandy soils that are prone to droughts. The belt runs from Flanders in Belgium to Belarus and has intensive agricultural use.

## **Expected results**

- Water conservation of 10 mm per drought period.
- In the long term an extra capture of 1.9 tonnes of CO<sub>2</sub>-equivalents per hectare per year.
- Higher crop yield.
- Reduced leaching of fertilisers and minerals.
- Value-added reuse of released soil.

## **Ambition**

Our ambition is 700 hectares of climate-proof agricultural land by 2027. Farmers, land designers and area managers are encouraged to visit the 5 demo fields and use the technique for their own soil.

## **Demo days**

In the coming years, we organise a demo day 5 times a year to show the 'clay-in-sand' principle. We exchange knowledge and experiences on demo days. Together with the participants, we explore opportunities and challenges in order to further improve the technical aspects.



**“We now try to keep the soil fertile by applying organic manure or crop rotation. Especially the latter takes time. By adapting sandy farmland with clay, I expect to make faster strides. An important advantage is that by adding clay, the soil retains moisture better. Moisture is one of the most important elements in growth. It makes the plant more resilient. In this way, we hope to extend the growing period and increase yields.”**

Bert Slöetjes, owner of the demo field in Halle



## Contact

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 provincie  
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