

# Implementation and development of „regenerative“ practices in European soy production

# Regenerative Agriculture

Royal Agricultural Society of England defines principles of

## **Regenerative Agriculture:**

1. **Minimise soil disturbance**
2. Keep the soil covered
3. Maintain living roots in the soil
4. Maximise plant diversity
5. Reintroduce livestock

# Share of conservation tillage on arable area EU27

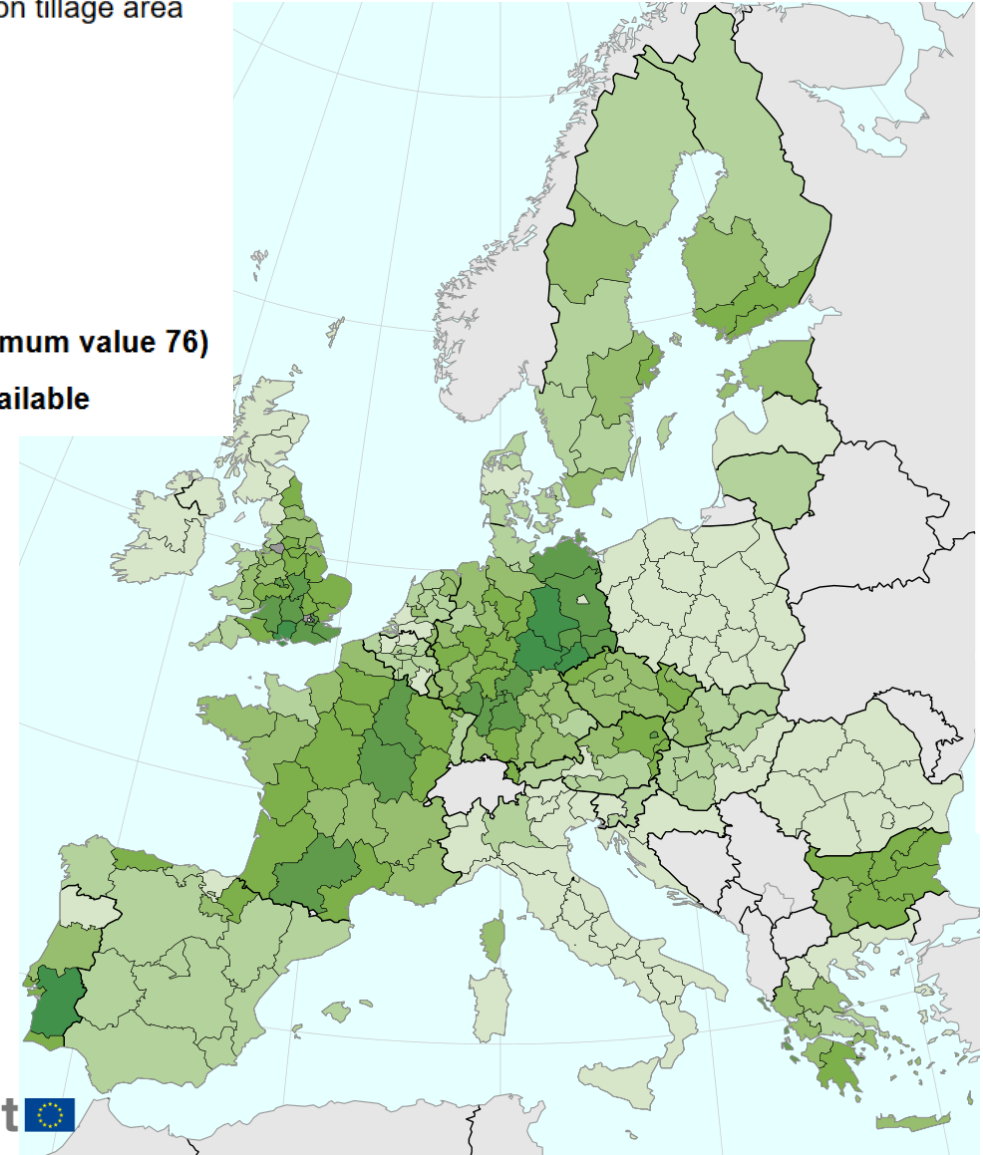
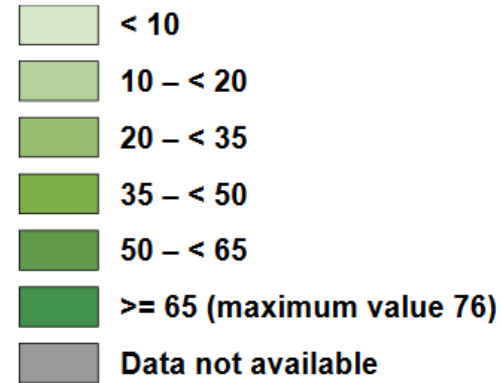


„Grubber“ (cultivator), source: Lemken



Ploughing, source: Pixabay

Share of conservation tillage area





Soybean field on a slope  
after a heavy rainfall event  
(Austria):

resulting in damage to  
infrastructure facilities  
© BWSB/Wallner






















# Soil disturbance x pesticides



## Good pre-conditions for soy in Europe

1. Soybean pests and diseases are very rarely an issue.
2. Hardly any insecticide or fungicide applied
3. Sufficient control by crop rotation and tillage (mostly)

## Soybean pests in the USA

 Bean Leaf Beetle <a href="#">View Pest</a>	 Conservation of Natural Enemies of Insect Pests <a href="#">View Pest</a>
 Cutworms <a href="#">View Pest</a>	 Grasshoppers <a href="#">View Pest</a>
 Green Cloverworm <a href="#">View Pest</a>	 Imported Longhorned Weevil <a href="#">View Pest</a>
 Integrated Pest Management (IPM) <a href="#">View Pest</a>	 Japanese Beetle <a href="#">View Pest</a>
 Natural Enemies of Insect Pests <a href="#">View Pest</a>	 Seedcorn Maggot <a href="#">View Pest</a>
 Slugs <a href="#">View Pest</a>	 Soybean Aphid <a href="#">View Pest</a>
 Soybean Gall Midge <a href="#">View Pest</a>	 Soybean Looper <a href="#">View Pest</a>
 Soybean Stem Borer <a href="#">View Pest</a>	 Stink Bugs <a href="#">View Pest</a>
 Thistle Caterpillar <a href="#">View Pest</a>	 Two-spotted Spider Mite <a href="#">View Pest</a>
 White Grubs <a href="#">View Pest</a>	 Whitefly <a href="#">View Pest</a>
 Wireworms <a href="#">View Pest</a>	



# Conflicting goals? Soil disturbance or herbicides?



Photo: Wolfgang Kastenhüber

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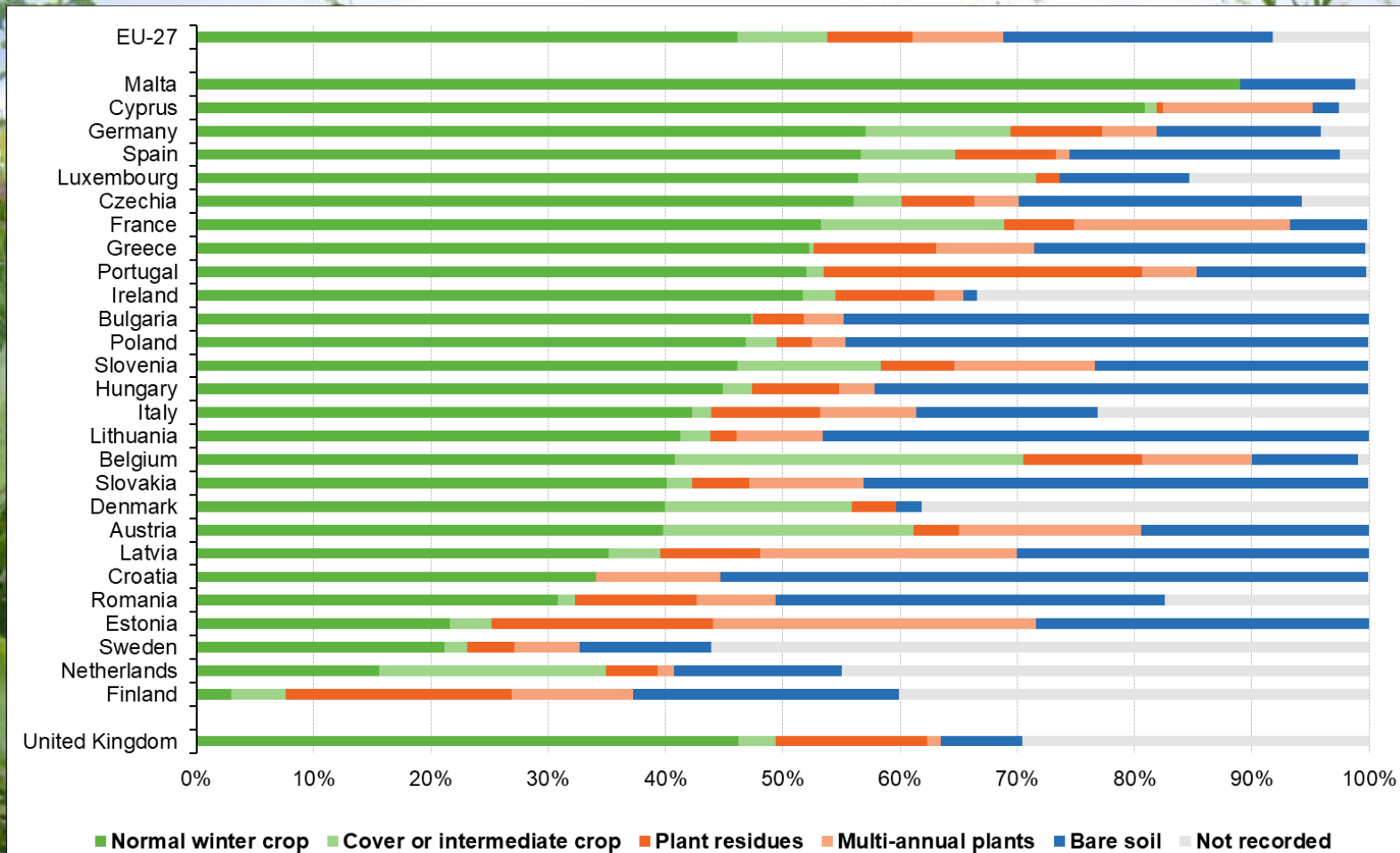
Trial in Austria: Soybean sowing in no-till system,  
© BWSB/Wallner



**Keep the soil covered**



# Share of soil cover in arable land during winter - EU27 (data: 2016)



Source: Eurostat (online data code: ef\_mp\_soil for soil cover types and ef\_lus\_main for arable land)

eurostat

Austrian Development Agency



## Cover crops in Austria (2023)

~30-35% of farms use cover crops or all-year green cover.

Source: Ministry of Agriculture

Source: EU Farm Structure Survey. Note: Agricultural practices are not frequently surveyed on an EU-level.

# Keep the soil covered



## Key topics

- Choice of species and mixtures
- Sowing time of cover crops and days until end of vegetation season
- Pollinating vs non-pollinating
- Diseases
- Economic questions
- Soil management and soil functions

# Maintain living roots in the soil

## Under-sowing in soy



Photo: [www.humusbewegung.at](http://www.humusbewegung.at)

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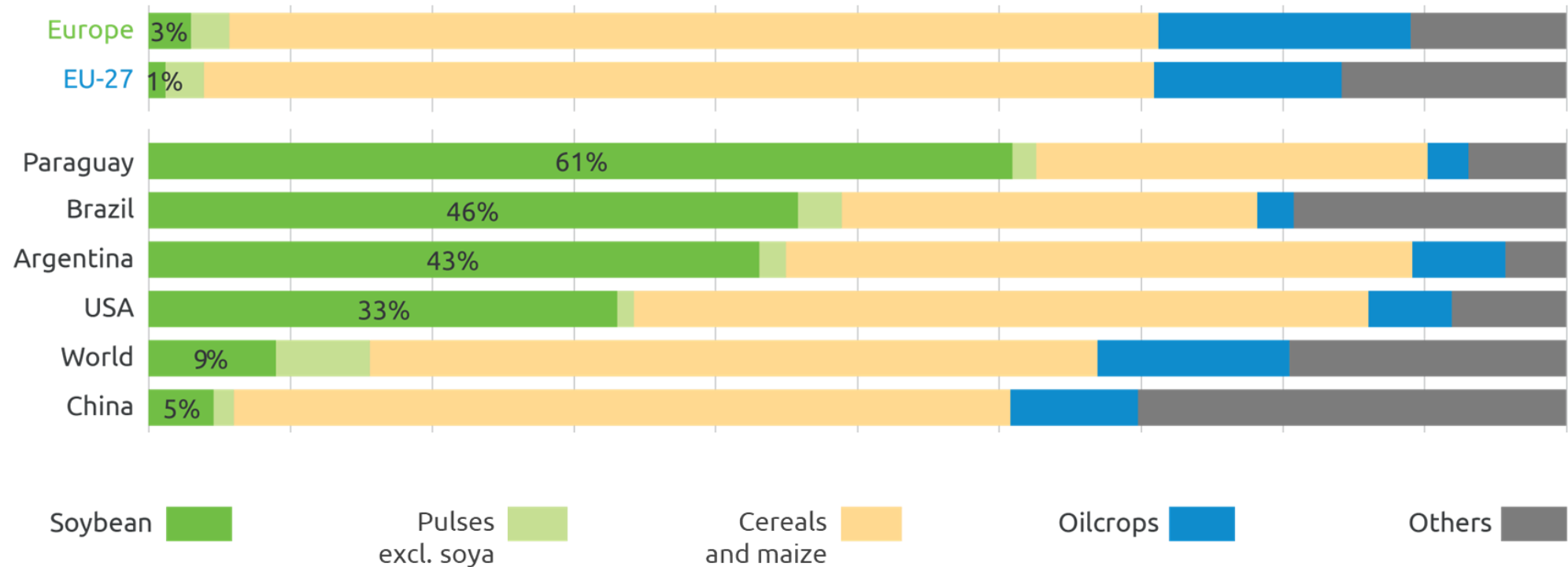
## **Regenerative Agriculture:**

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# Maximise plant diversity

Harvested areas of annual crops, 2021

Only 3% legumes in EU



Source: FAO and other national statistics

# Soy production in Europe

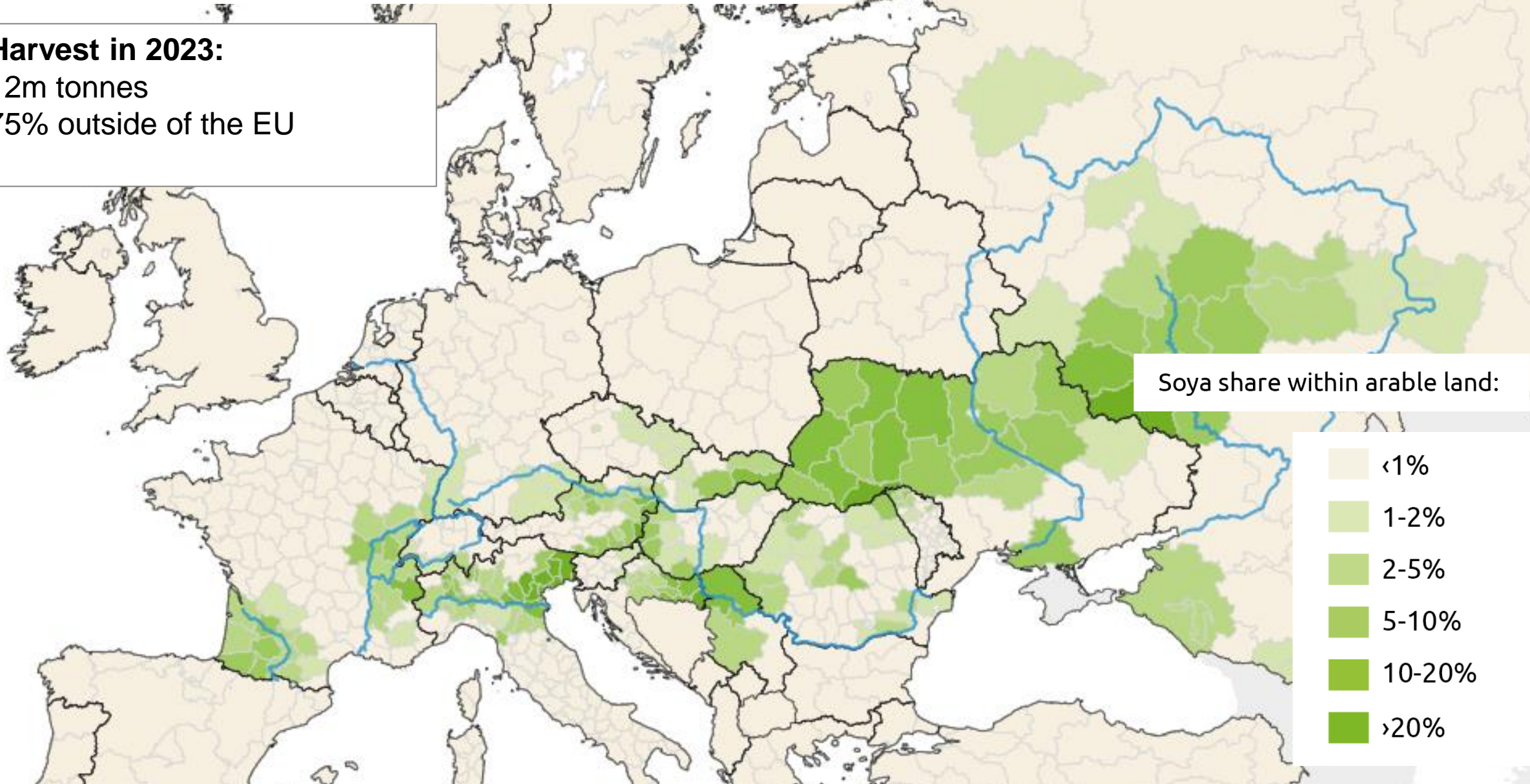
 Austrian Development Agency



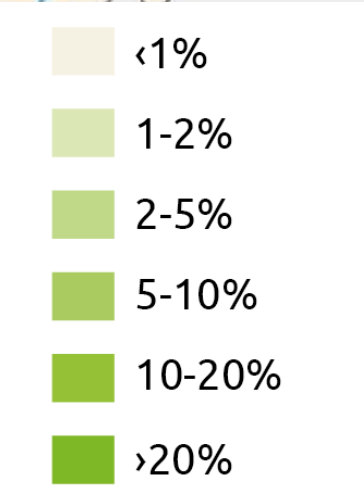
## Harvest in 2023:

12m tonnes

75% outside of the EU



Soya share within arable land:



# Contributions by Donau Soja to promote sustainable farming practices





# Donau Soja Academy



In **5 major soy producing countries** in Eastern Europe

**Trainings, trials, webinars** on sustainable soy cultivation: cultivar choice, seed treatment, IPM, conservative tillage,...

Supported by Protein Partnership Programme and the Austrian Development Agency



# Protein Partnerships in a nutshell

1.



## Knowledge transfer & farmer trainings

Donau Soja conducts trainings for agricultural producers and farmers on sustainable agricultural production approaches and techniques.

2.



## Certification of farmers or cooperatives and agricultural collectors

Donau Soja supports quality management and standard implementation: covering Donau Soja / Europe Soya certification, GM and pesticides analysis costs.

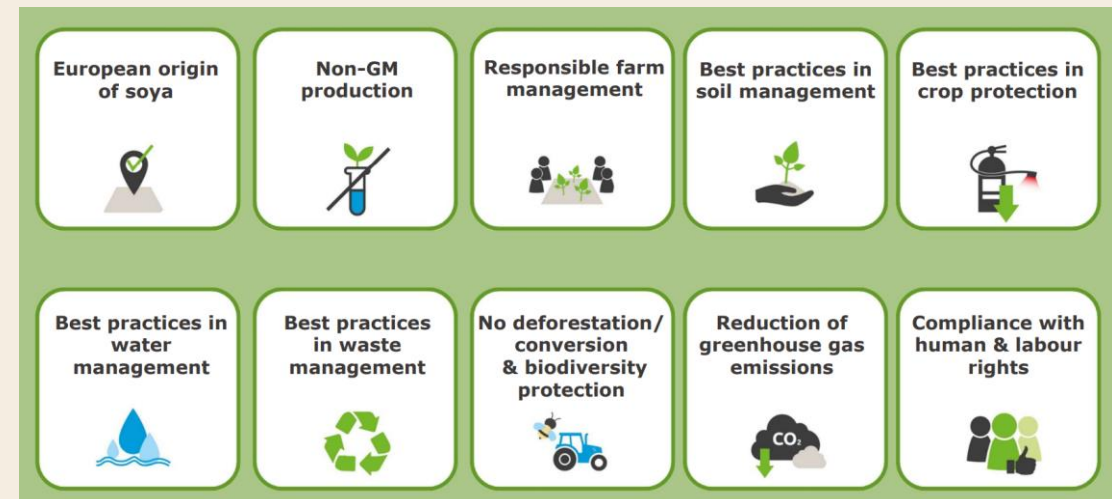
3.



## Activities for value chain building & market uptake

Donau Soja organises platforms and match making activities to improve market access for farmers and cooperatives; as producers of «climate friendly soya» in Europe.

The Protein Partnership Programme funds and organises hands-on trainings for farmers, and participation in field trials in partner countries.



# Practice example: DS certified farm in Ukraine

## Continental Farmer Group

mini-till, use of organic fertilizers, green manure, precision agriculture, traceability and accountability

Corn, Wheat, Rapeseed, Soya, Barley, Sugar Beet in the crop rotation

- 195k ha cultivated area
- 45k – under soya
- 3,0 – 3,5 t/ha - average soya yields 2020-2023
- 153K ha with regenerative practices



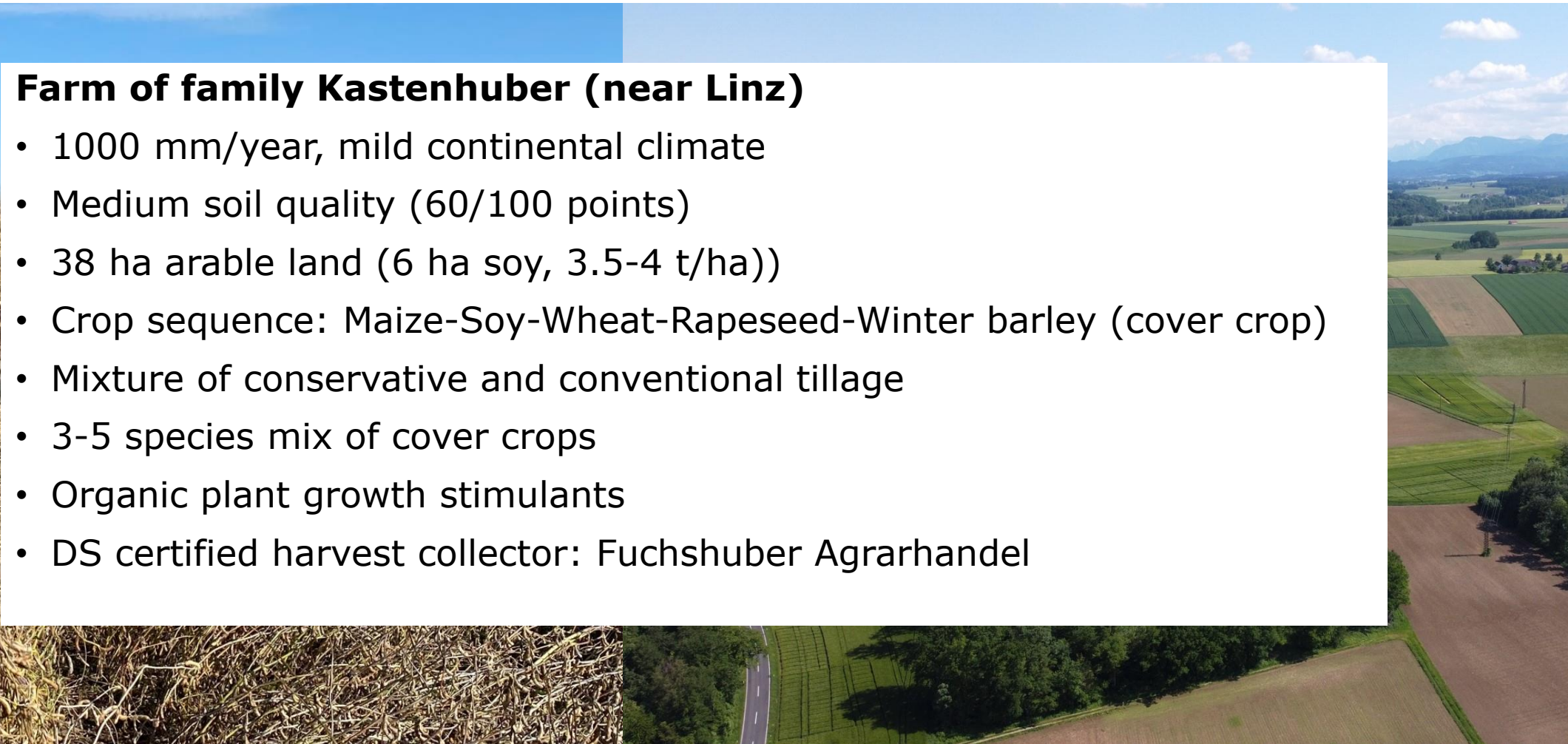
# Practice example: Donau Soja producer in Austria



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## Farm of family Kastenhuber (near Linz)

- 1000 mm/year, mild continental climate
- Medium soil quality (60/100 points)
- 38 ha arable land (6 ha soy, 3.5-4 t/ha))
- Crop sequence: Maize-Soy-Wheat-Rapeseed-Winter barley (cover crop)
- Mixture of conservative and conventional tillage
- 3-5 species mix of cover crops
- Organic plant growth stimulants
- DS certified harvest collector: Fuchshuber Agrarhandel



# Summary

- Sustainable farming practices (reg practices) are needed to address several challenges.
- “Regenerative practices” are in some European soybean regions already common but legumes (incl soy) are lacking in many places.
- DS promotes their implementation through market tools, educational activities and supporting knowledge generation.

