



CAPSELLA

Bringing biodiversity to value, from Functional Agricultural Biodiversity (FAB) to data platforms (CAPSELLA) (NL)

- ZLTO is partner in Capsella

Wico Dieleman, farmers organisation (ZLTO), Netherlands

Senior Projectmanager

- **Nature conservation / biodiversity**

- Arable en meadow birds (Farmbirds)
- Integrated Pest Management (IPM) / FAB
- Soil quality (cover crop)
- Community of farmers of nature conservation



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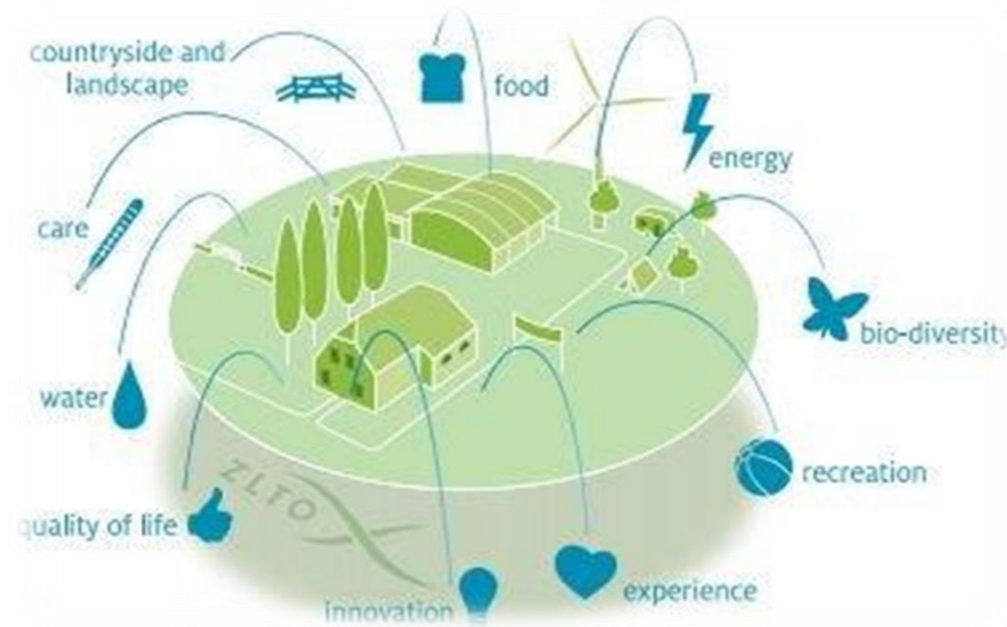
ZLTO Southern Agriculture and Horticulture Organisation

Organisation (farmers Union)

- South of the Netherlands
- 15.000 members, with 7.500 business owners
- Managed by agricultural entrepreneurs
- Meeting the consumer's wishes = market-oriented business approach
- Mission: ZLTO supports its members in their efforts to obtain a solid position in the market



and in society





CAPSELLA

CAPSELLA is your Innovation lab for agrobiodiversity



Collective **A**wareness **P**latform**S** for **E**nvironmentally-sound and Management on data technologies and **A**grobiodiversity

- Capsella develops innovative ICT solutions tailored to the needs of all **food, field** and **seed** related actors engaging in agrobiodiversity. Above all, we harness the power of open data to help communities innovate.
- Capsella has a bottom-up, participatory approach, to ensure ICT responds to your needs. Through user conversations, workshops, hackathons, an online platform for collaboration and sharing open data, we are a platform for your innovation.

Capsella: Biodiversity, Farmers, ICT, Open Data

How to streamline this in a project: searching process:

- look at what we (still) have!
 - **FAB**
 - **Sustainable soil management**
- A pilot is an initial small-scale implementation run to test and experience the viability of the project idea.

FIELD

- **Compost in Precision Agriculture**
- **Soil Health Pilot**
- Storytelling on (Food) Production

SEED

- Data Management for EU Seeds Networks

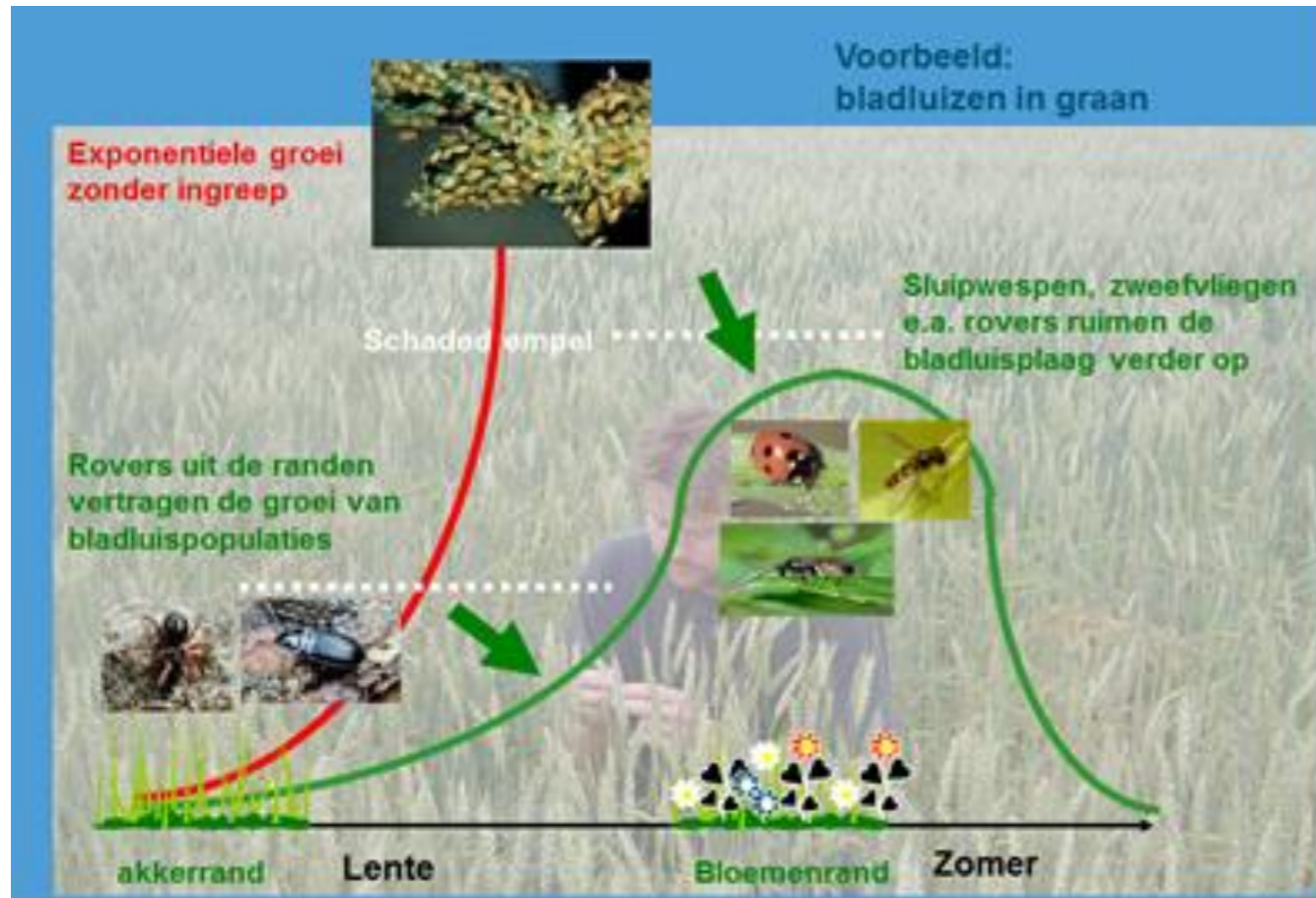
FOOD

- Food Product Data Analytics
- Personalised Public Food Service
- Personalized Food Systems: The "Meal Prediction Tool"

Functional Agricultural Biodiversity (FAB) (1) (Integrated Pest Management – IPM)

'those elements of biodiversity on the scale of agricultural fields or landscapes, which provide ecosystem services that support sustainable agricultural production and can also deliver benefits to the regional and global environment and the public at large.

Make use of the nature!



Spring

Field margin

Summer

- Aphids



- Natural predators

- Ladybug



- Hoverfly



- Gall midge



- Damage threshold

- Field margin / FAB-strip



Functional Agricultural Biodiversity (FAB) (2)

- **Monitoring !**

- look !



- **Knowledge !**

- actual (crop, insects, natural predators, etc.)

- **Trust !**

- Does it help (with less / no spraying)

- **15 years of good experiences !**



Hands-on information FAB



Compost calculator (1)

- Optimum use of compost
- Max improvement soil
- Accepted addition
 - Logistics and impaction
 - Minerals
 - Enterprise/ parcel: Legal max
 - Subparcel: soil life
- Need of simple decision support tool



Most compost where needed most (input)

- Basis: Soil Scan/ Field zones
- Upload to CAPSELLA cloud
- Proposed compost gift








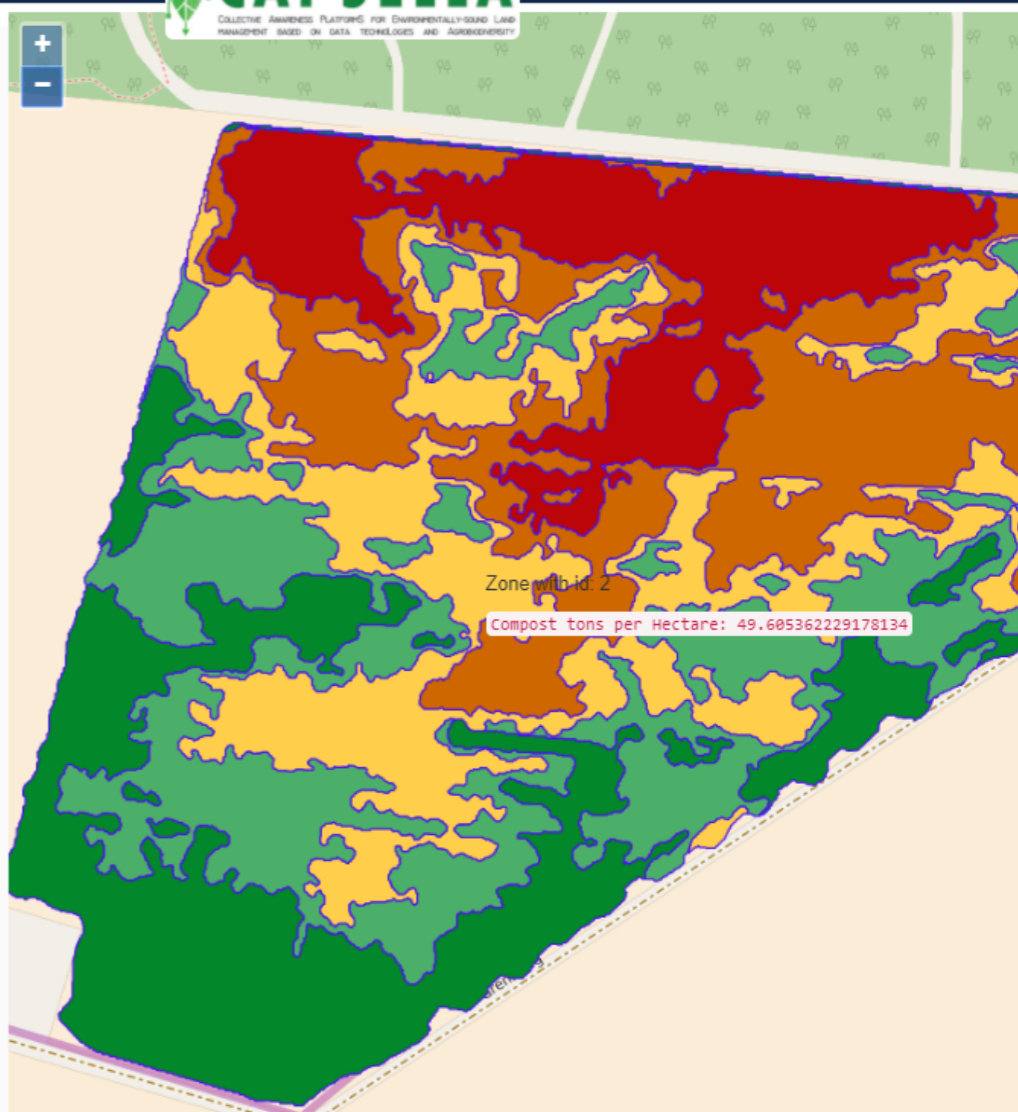
Compost Calculator

CAPSELLA
COLLECTIVE AWARENESS PLATFORM FOR ENVIRONMENTALLY-SOUND LAND MANAGEMENT BASED ON DATA TECHNOLOGIES AND JURISDICTIONS

Login | Register

1. Choose or import Parcel
2. Give your planned total compost input
 Total Compost Input
 tons/hectare
3. Give your planned compost per zone input

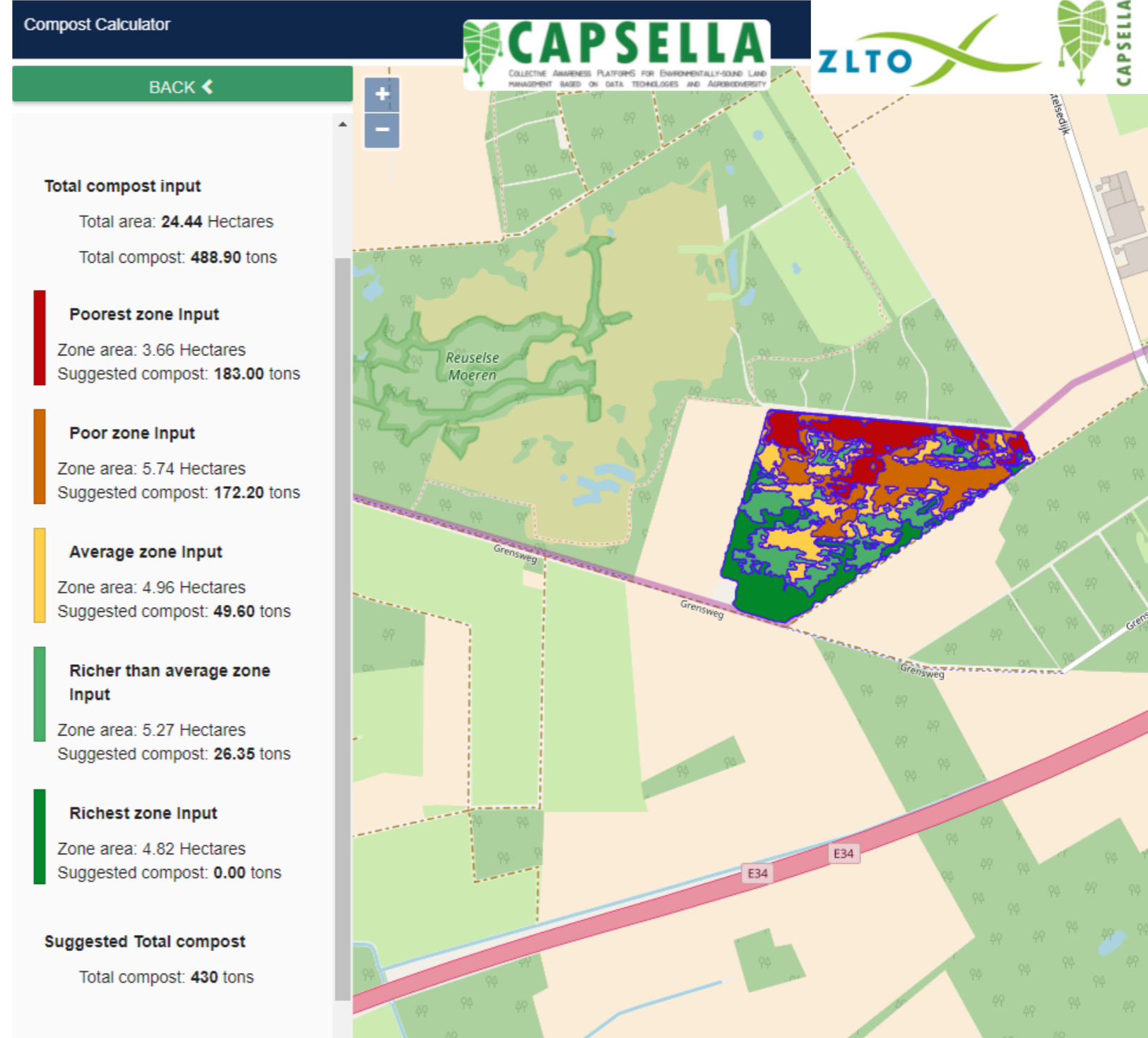
	Poorest zone Input	<input type="text" value="50"/>	tons/hectare
	Poor zone Input	<input type="text" value="30"/>	tons/hectare
	Average zone Input	<input type="text" value="10"/>	tons/hectare
	Richer than Average zone Input	<input type="text" value="5"/>	tons/hectare
	Richest zone Input	<input type="text" value="0"/>	tons/hectare



Result

- Compost advice
- Check on total application
- Task map for High Tech compost spreader

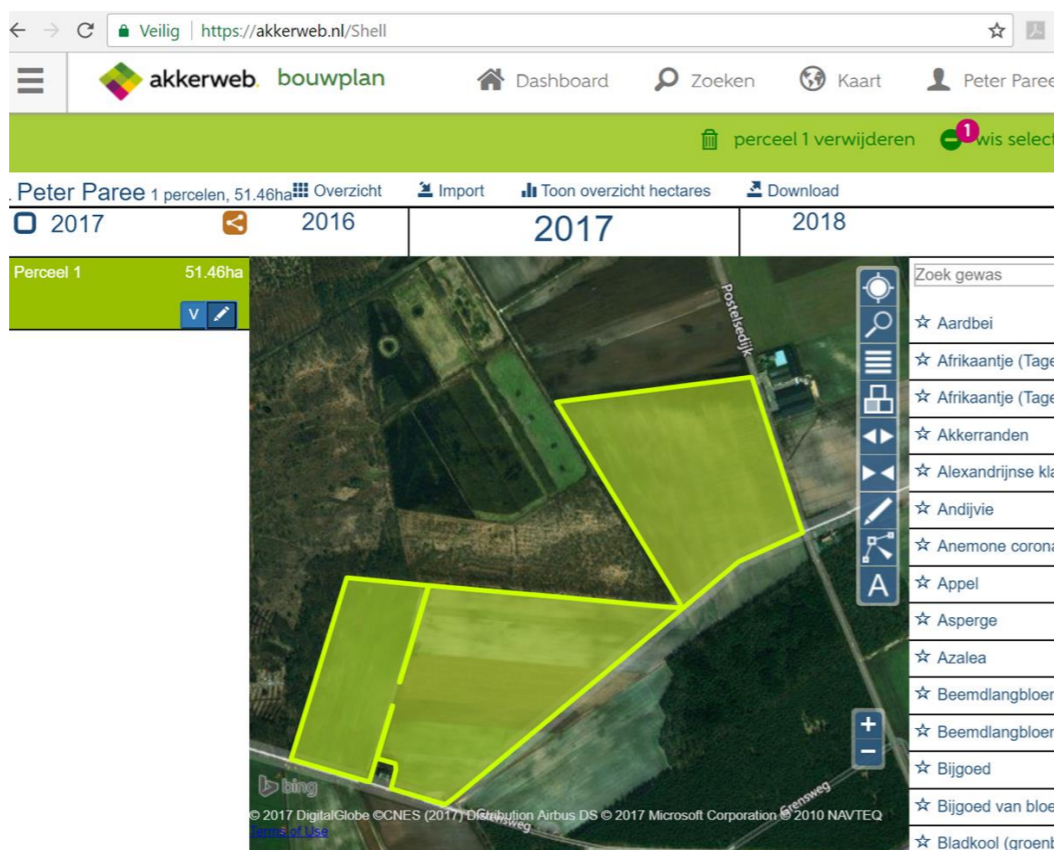
So most compost where needed most.



Next development

Self defined sub parcels and OM-levels

- satellite/ history (high-tech)
- and/or spade test (manuel)



GRONDSOORT

Grondsoort: ■ Zware zavel ■ Lichte klei

Diagram 1 (Top): Ternary diagram with vertices 'klei' (top), 'zand' (bottom left), and 'silt' (bottom right). The diagram is divided into layers: 'zwarte klei' (top), 'lichte klei' (middle), 'zware zavel' (lower middle), 'lichte zavel' (bottom middle), and 'zand' (bottom left).

Diagram 2 (Bottom): Ternary diagram with vertices 'organische stof' (top left), 'zand' (bottom left), and 'klei' (bottom right). The diagram is divided into layers: 'veen' (top), 'organische stof meng op zand' (middle left), and '(zie boven)' (bottom).



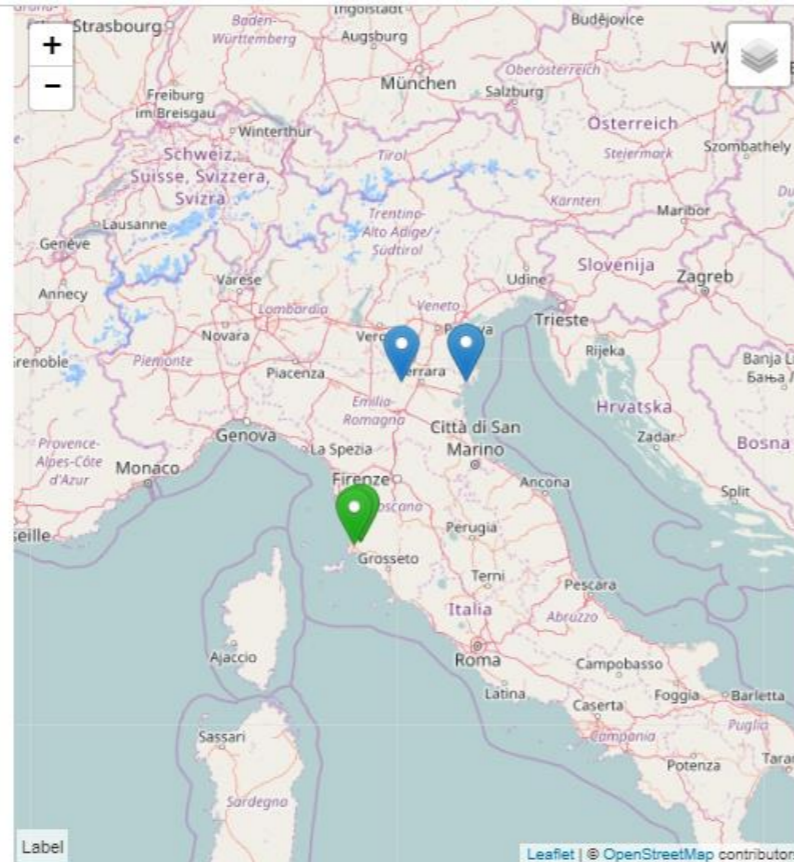
SPADE TEST

- Qualitative method
- Fast and free of charge
- No need of technical support
- Increases farmer awareness

For performing the test, you need only a digging spade or fork (with blade of at least 30 cm). In addition, you can use a knife with flexible blade to clean the sample surface and a white tray can be used as support to visualize better the sample.



Start in Italy, also starting in the Netherlands



My spade tests

- Resume 2017-06-23 e
- Resume 2017-06-22 aa
- View 2017-06-22 SPiero1
- Resume 2017-06-24 ss
- View 2017-06-23 Prova1
- Resume 2017-06-23 test
- Resume 2017-06-25 Garibaldi1

Enter a new spade test

Public spade tests

- View 2017-06-17 Abcd
- View 2017-06-20 pepe
- View 2017-06-27 Gruppo1
- View 2017-06-27 Gruppo2
- View 2017-06-27 Gruppo3

For performing the test, you need only a digging spade or fork (with blade of at least 30 cm). In addition, you can use a knife with flexible blade to clean the sample surface and a white tray can be used as support to visualize better the sample.



Capsella has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 688813. This application is based on methods and materials by Scuola Esperenziale Itinerante di Agricoltura Biologica, Scuola Superiore Sant'Anna, ESAPODA association and AEGILOPS network (Greek Network for Biodiversity and Ecology in Agriculture) collaborated to its creation.



What do you see on the soil surface?

You can choose one or more options clicking on the pictures. Skip the question clicking on next if no option applies



Superficial crust



Evidence of water logging



Evidence of erosion



Evidence of soil compaction



Growth of algae



Cracks

Back

Next

Looking at the soil color, do you see any of these signs?

Choose one option or click on Next if no option applies

Layer num. 1



Ocra-Rusty-Black-White spots



Grey-Green-Blue



Layers darker than others

Back

Next

Communities

- Compost producers:
 - now mass production;
 - expose innovativeness; link with innovative farmers group
- Contractors
 - Expose innovativeness; step forward
 - Use existing machinery
- Farmers
 - &organisation; cooperating on bigger themes like 'Local Carbon Credits'
- Advisors
 - Marginal role: **Keep It Stupid Simple - KISS**

- Capsella is a **biodiversity** project with **diverse groups**
 - Machine oriented and
 - Local Knowledge oriented farmers
 - Biodiversity as a common challenge. Tools still available:
 - FAB1, FAB2, with **farmers focused** material that is still actual: booklets
 - in ZLTO project line for 15 years (Wico is living example)
 - Experts in Capsella focused on **tooling, really serving farmers**
 - Minimal data input, maximum output
 - So: maximum use of existing, open data, clever applications behind
 - Good connection with real life world
 - So: integrate local knowledge with external information
 - In these aspects **no difference between these farmers groups** .
- Design principle 'Useful for Farmers' streamlines results**





SCUOLA
ESPERIENZIALE
ITINERANTE
DI
AGRICOLTURA
BIOLOGICA



ΑΙΓΙΛΟΠΑΣ

ΔΙΚΤΥΟ ΓΙΑ ΤΗΝ ΒΙΟΠΟΙΚΙΛΟΤΗΤΑ
ΚΑΙ ΤΗΝ ΟΙΚΟΛΟΓΙΑ ΣΤΗ ΓΕΩΡΓΙΑ

AEGILOPS

NETWORK FOR BIODIVERSITY AND
ECOLOGY IN AGRICULTURE

Communities come together based on practice facilitated by tools



Welkom to the Netherlands!

