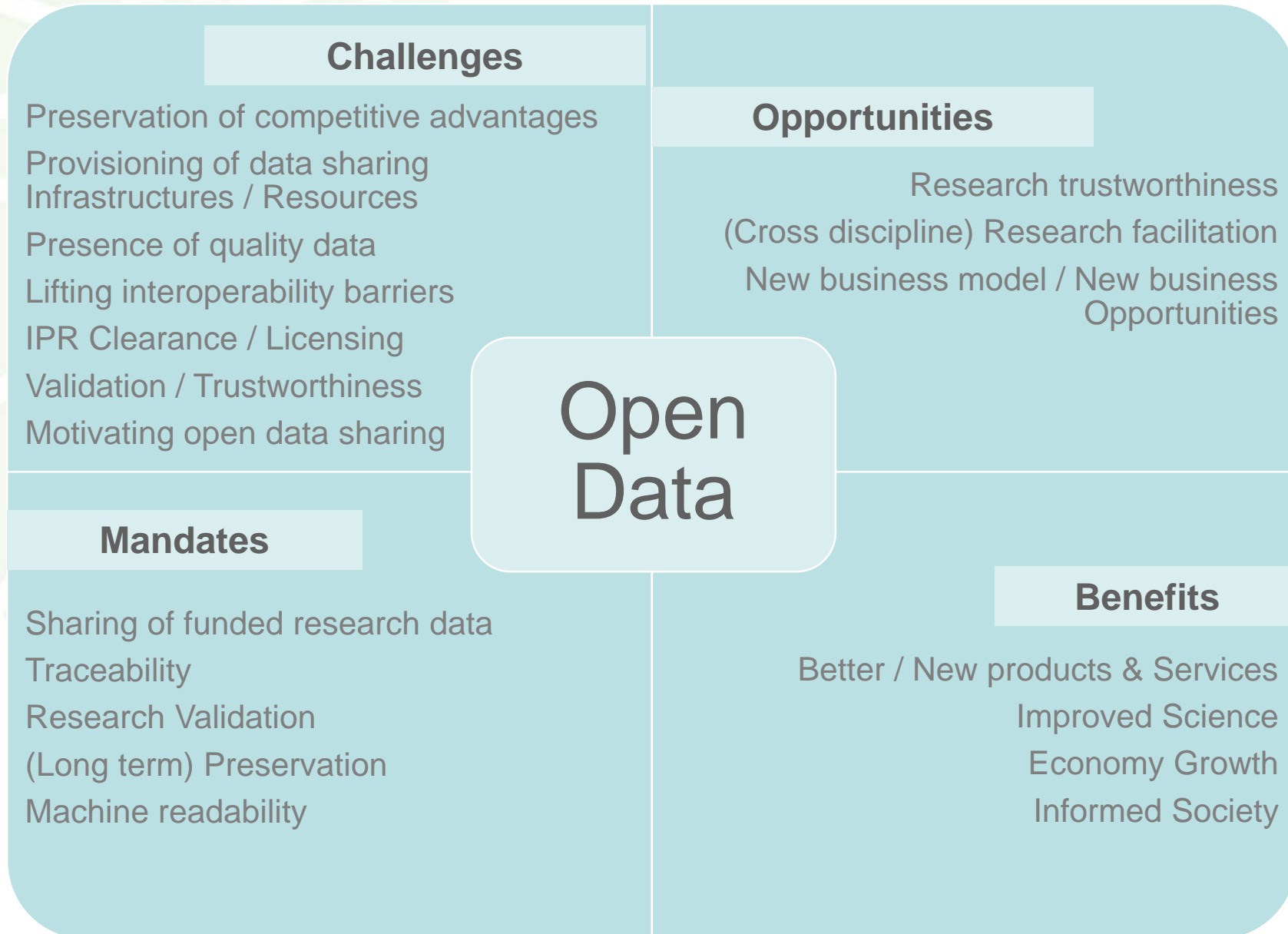


Collective **A**wareness **P**latform**S** for **E**nvironmentally-sound **L**and management based on data techno**L**ogies and **A**grobiodiversity

Innovation experiences – Insight in the CAPSELLA initiative, main outcomes and results

Prof. Yannis Ioannidis, ATHENA RC

Open Data features and benefits



Biodiversity, Agriculture, Food & Data

“Since the 1900s, some **75 per cent of crop diversity has been lost** from farmers’ fields. Better use of **agricultural biodiversity** can contribute to more **nutritious diets, enhanced livelihoods** for farming communities and more **resilient and sustainable farming systems.**”

UN Sustainable Development Goal #2

The rise of the Open Science movement:

Increased understanding and acceptance of value of data sharing through Open Access, Open Data, Linked Open Data



Encourage cooperation to address and solve societal problems



Allow access to more and more accurate information to take informed decisions (farmers, consumers, public authorities, businesses)

CAPSELLA



Raises awareness



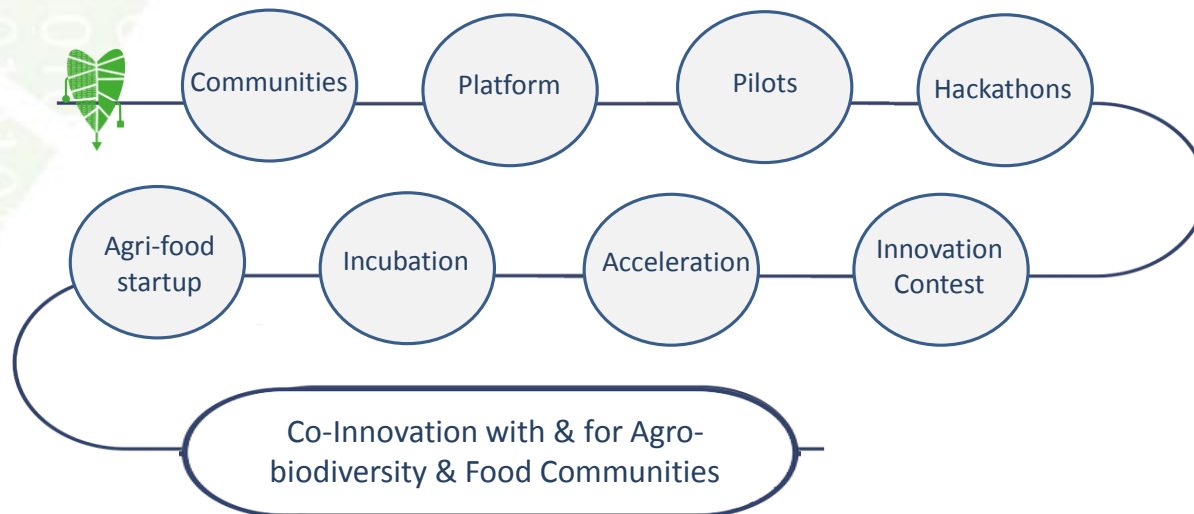
Leverages collective knowledge



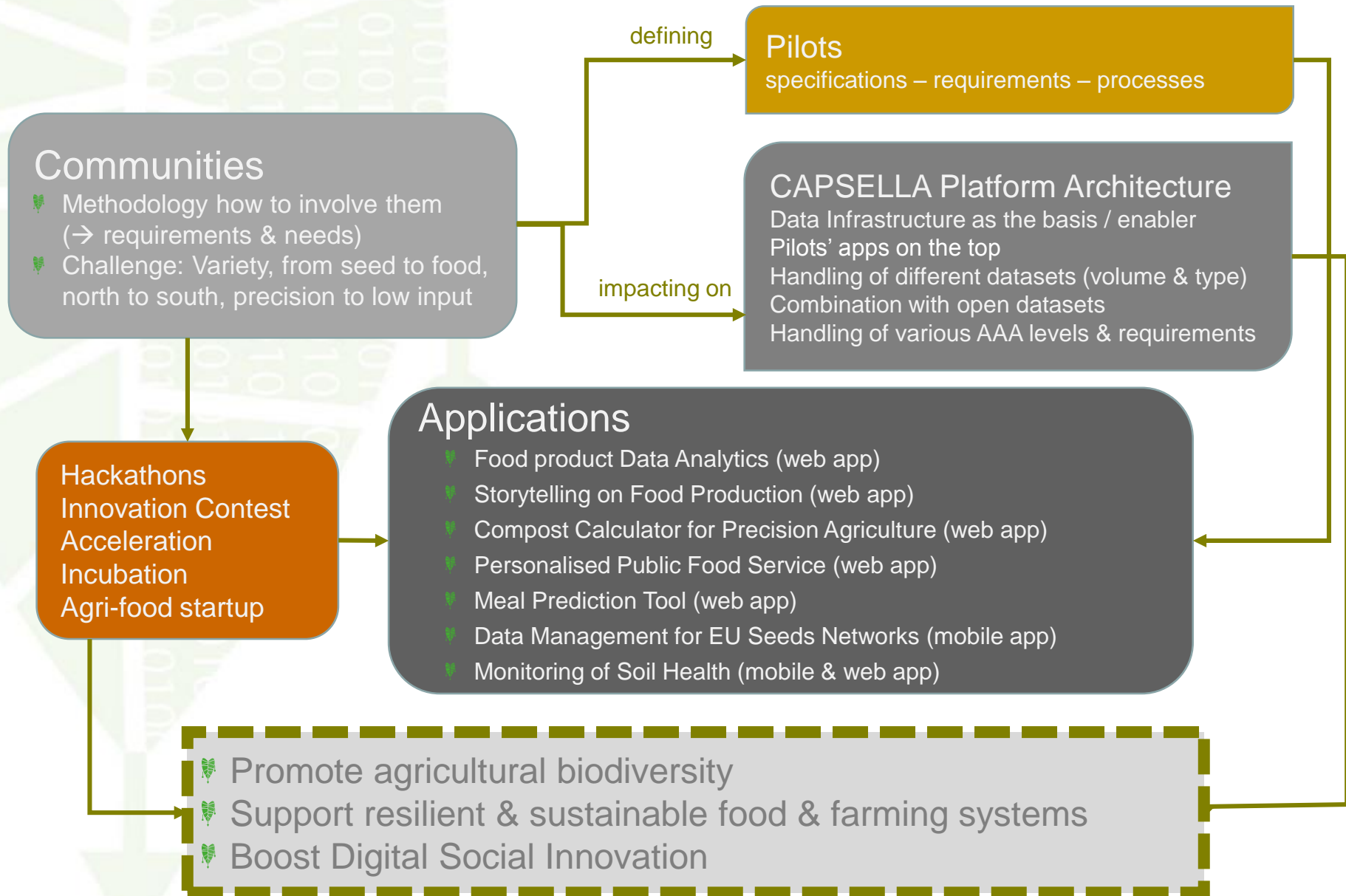
Collects community requirements in a bottom-up & participatory way

The CAPSELLA objectives and flow

- └ Develop a technical platform to support community based initiatives
- └ Produce new datasets concerning regional agrobiodiversity
- └ Build upon and enhance existing data sets on the agro-biodiversity and food domains
- └ Develop a number of community-driven data powered ICT solutions
- └ Run pilots with communities
- └ Run incubation and acceleration activities

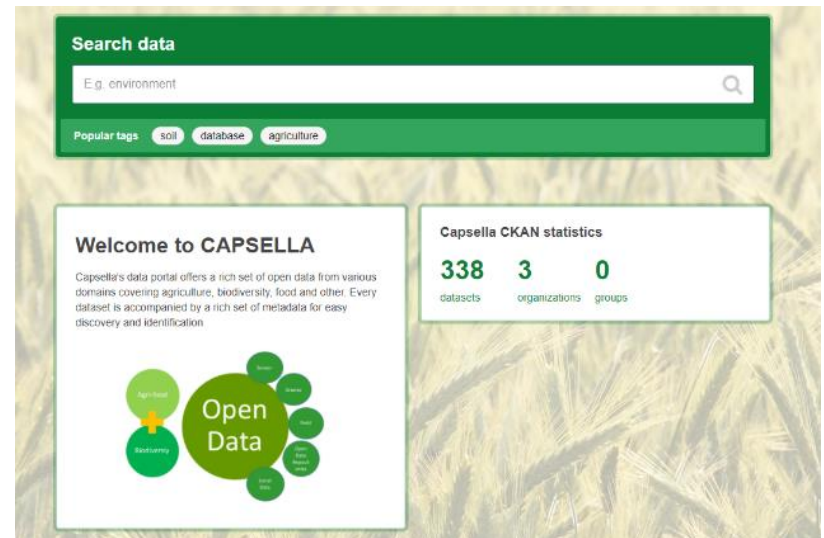


Multilayered approach



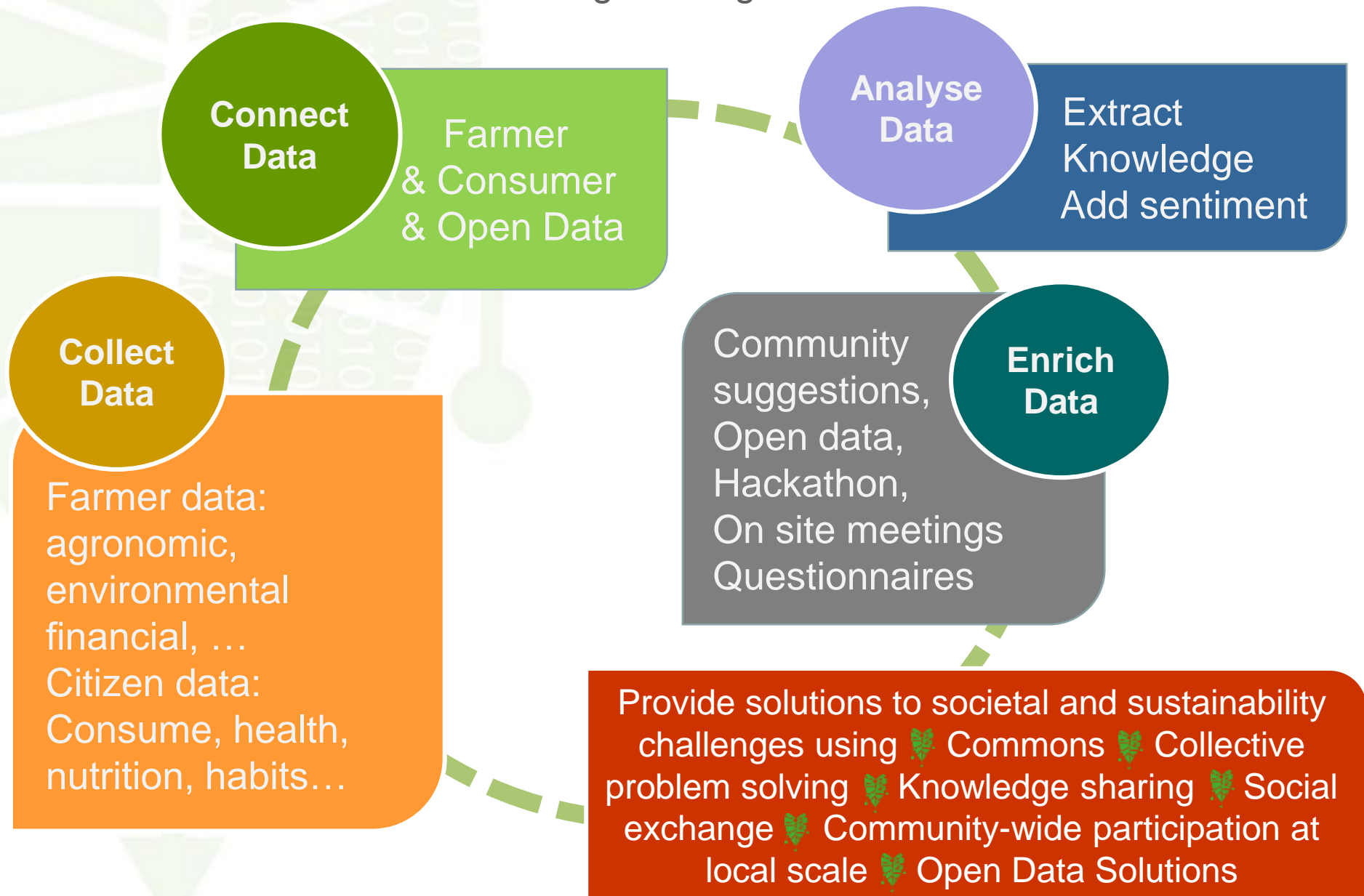
CAPSELLA Data Infrastructure

- Black-box design: domain, scheme and data agnostic infrastructure
- Ability to incorporate different data types and sources
- On-demand data processing and analytics services integrating social media data and open datasets with user generated datasets
- Built-in interoperability features: Data management supporting various formats
- Metadata Publishing
- Extensible and pluggable to seamlessly allow the integration of new services and data types
- Source code under EUPL



CAPSELLA Data flow

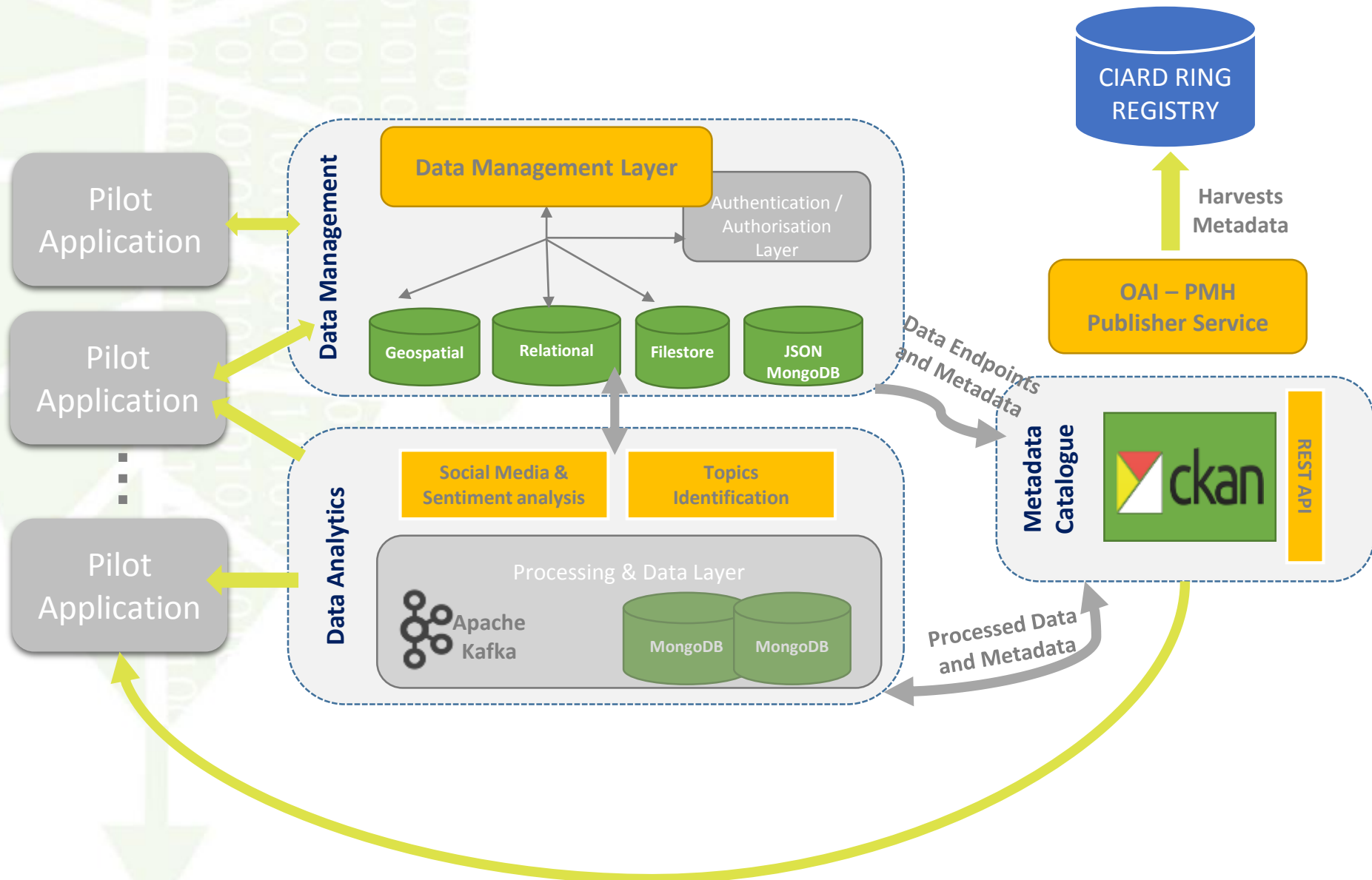
Rural-urban linkage through data driven services



CAPSELLA Infrastructure: privacy & security

- Various openness and accessibility levels of the data, for satisfying the requirements of each pilot and its respective communities
 - Public: the dataset is accessible by anyone
 - Protected: the dataset is available to the users of the specific group
 - Private: the dataset is accessible only by the owner
- Increased security provisions
 - Hosted at the University of Athens infrastructure
 - All web services secured with Spring security
 - OAuth 2.0 standard protocol for authorization
 - Two levels of authentication/security
 - 1st level: 3 social login providers (Facebook, Google, LinkedIn)
 - 2nd level: JSON Web Tokens for the communication between the web application and the web server

CAPSELLA Platform & Pilot Applications



CAPSELLA Pilots

Small (or larger!!) scale experimental trials with real users that represent the targeted communities

Italy:
Personalised
Public Food
Systems

Netherlands:
Storytelling on
Food production

Netherlands:
Compost in
Precision
Farming

Italy, Greece:
Soil health pilot

Czech Republic:
Personalised Food
System: Meal
Prediction tool

Italy:
Data Management
for EU Seeds
Networks

Greece:
Food Product Data
Analytics



Seed

Field

Food

#1 Food Product Data Analytics

DASHBOARD

TWEETS



1592 opinions were detected in a total of 9553 tweets:
● Positive
● Negative
● Neutral

[View more](#)

RESOURCES

Browse worldwide bibliography with 233 resources regarding **astevia**.

[Browse all](#)

COMPETITORS

Check your competitors' latest activity on Twitter.

[View Tweets](#)

STEVIA ASPECTS



General



Nutrition



Health



Taste

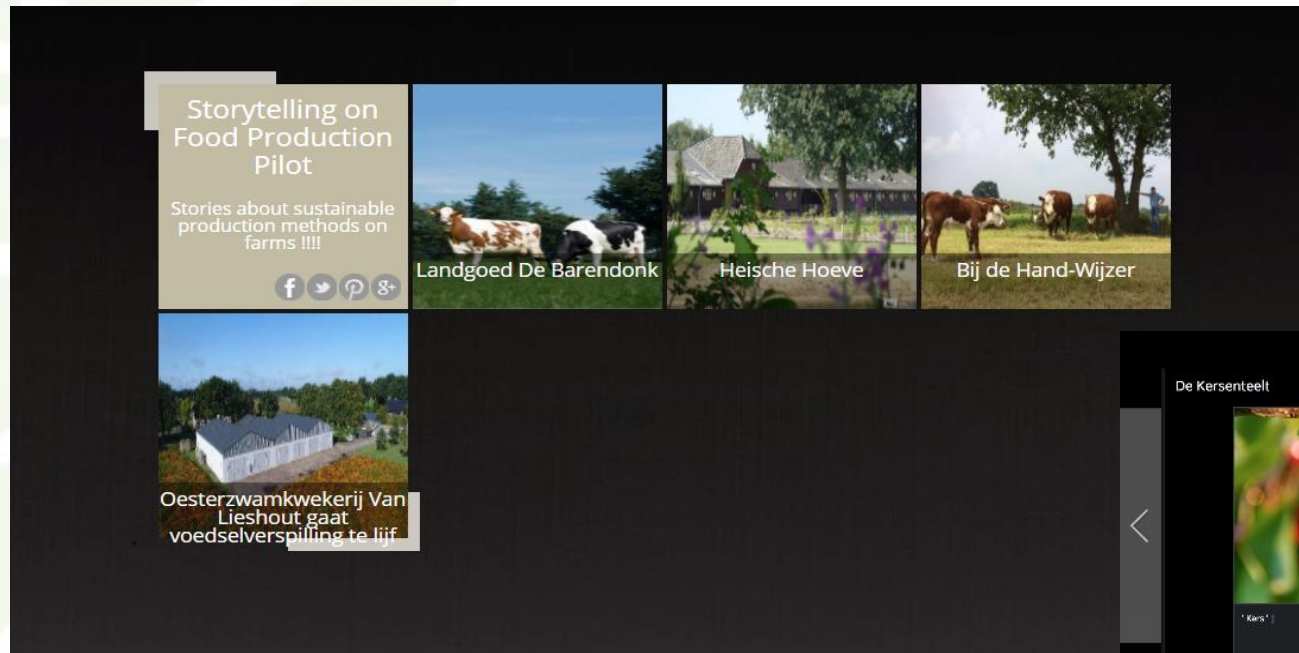
PRODUCT ASPECTS



La Mia Stevia

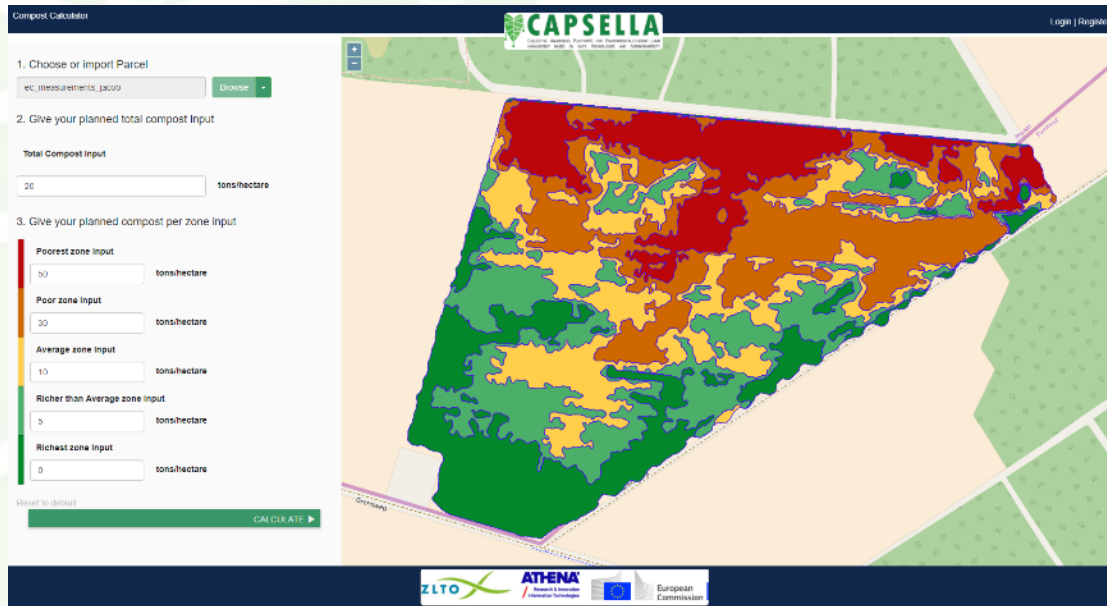
- The Stevia Hellas Cooperative can access open scientific, market and social data (i.e. twitter data) to monitor, improve and better position their product in the Greek Market
- Help cooperatives' managers to better market, promote and design their product
- <http://www.stevianet.gr/dashboard>

#2 Storytelling on Food Production



- Farmers can compose and edit stories related to their farm and products, and present multi-storylines, on multi platforms
- Increasing consumers' awareness for a healthier and more localised way of producing food
- <http://capsella-pilots.madgik.di.uoa.gr/storytelling-pilot/>

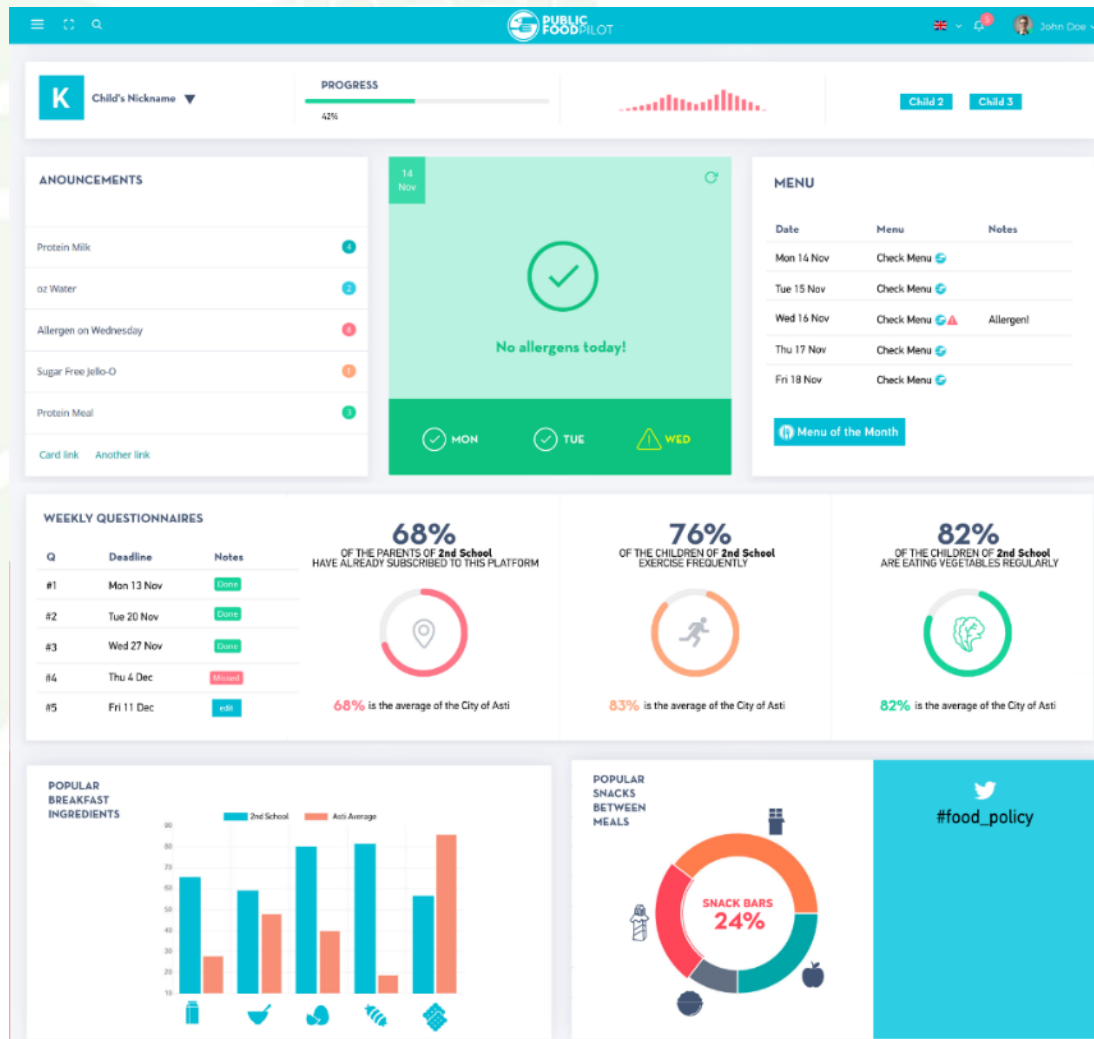
#3 Compost in Precision Agriculture



• <https://goo.gl/o111HC>

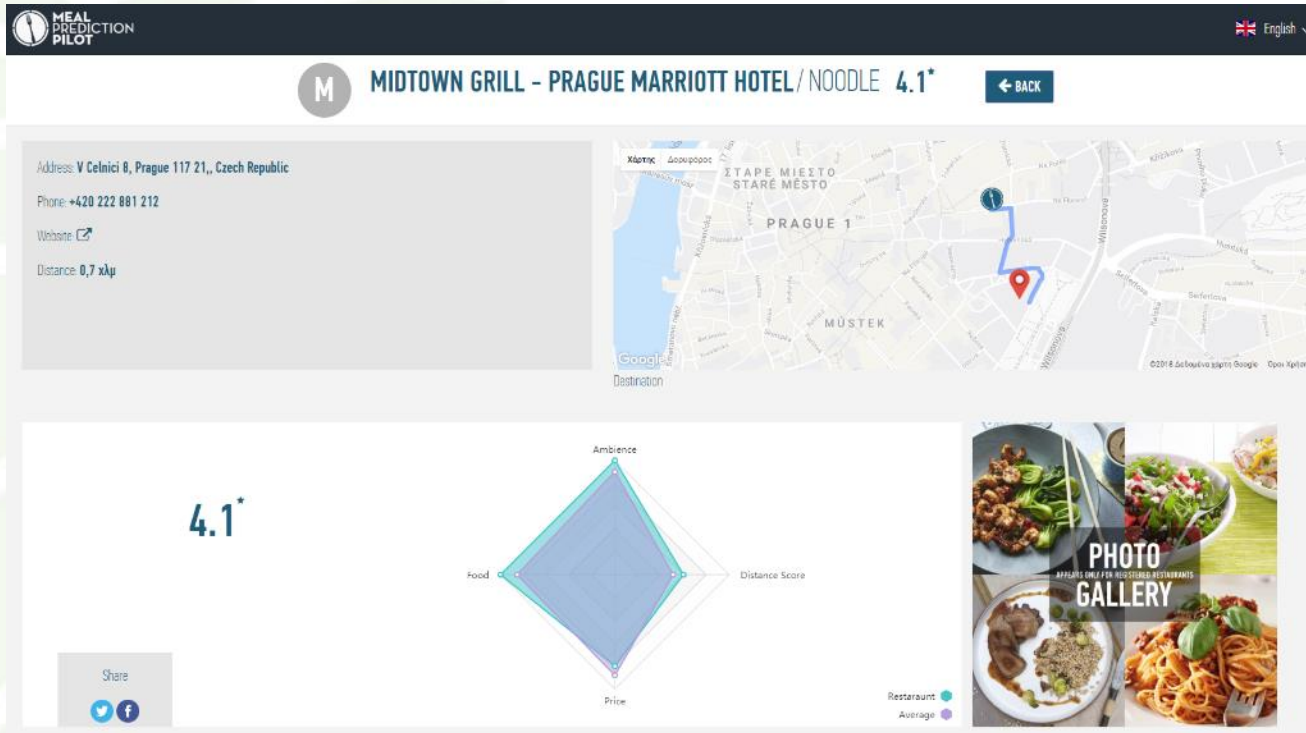
- Combination of existing open datasets (satellite images, soil features, soil structure & weather conditions) electromagnetic conductivity data, and proprietary datasets with field registrations
- Maximize farming efficiency & improve the sector's accountability to market and society
- Improve soil quality and contribute to the reduction of CO2 emissions

#4 Personalised Public Food Service



- Open data, nutritional, health and social data
- Impact on food habits in major EU cities through open data
- Enhance transparency and inform decision making in food supply chain management, public procurement and consumption of meals served at public schools
- <http://publicfood.eu>

#5 Meal Prediction Tool



- Geolocation, user preferences, menus & restaurant ratings
- The tool informs consumers about restaurants serving menus that match to their individual preferences and suggests places
- Criteria: location, price, online ratings & sentiment analysis of customer experiences in each restaurant

#6 Data Management for EU Seeds Networks



Rete Semi Rurali

SEEDS

This App will help you to collect data from field experiments for wheat, barley or maize during the growing season. It will ask you, depending on the phenological phase, to observe plots and register information starting from the sowing to the harvesting. For any support you may need, please write to info@semirurali.net.

|| mobile app

NEXT

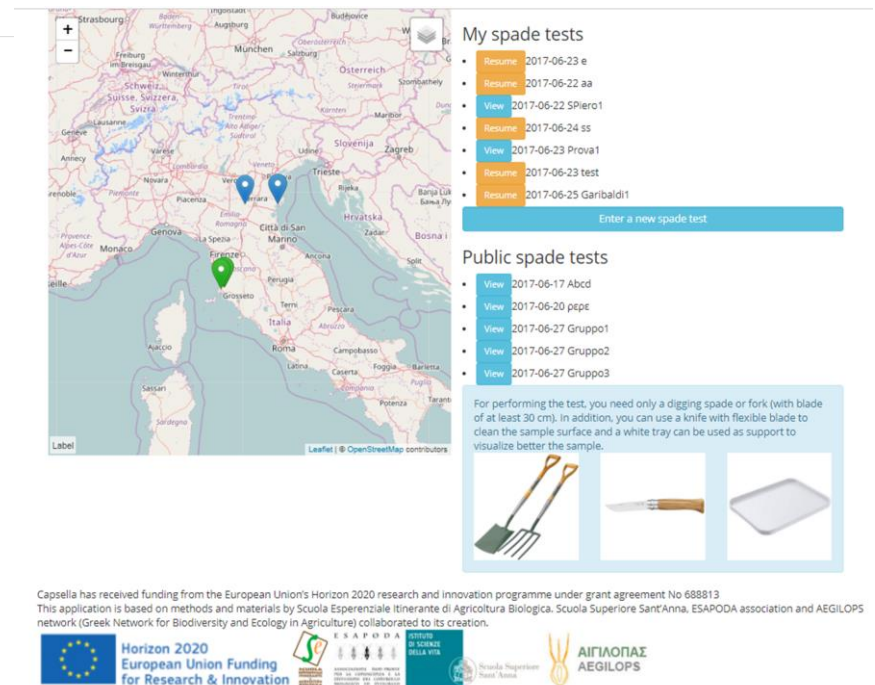
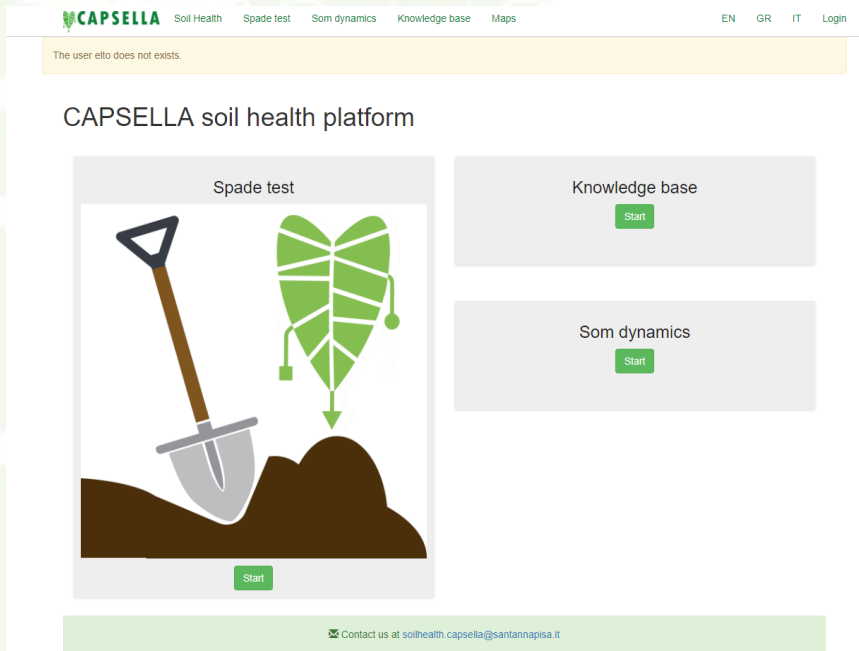
Disclaimer: The Seeds mobile app have been supported by funding from the European Union's Horizon 2020 Framework Programme under grant agreement No. 688813 (CAPSELLA), and have been developed in the frame of the related pilot, powered by Rete Semi Rurali and Agroknow

CAPSELLA

Agroknow

- Data from decentralised on-farm experimental fields, weather & soil data for each experimental location, variety data
- Connection to a statistical analysis platform for data elaboration and delivery in graphical form
- Monitor seed varieties across Europe

#7 Soil Health App



- The pilot includes three services: soil organic matter dynamics; spade test; knowledge base
- Support farmers in monitoring soil conditions
- <https://soilhealth.capsella.eu/>
- https://play.google.com/store/apps/details?id=eu.capsella.soilhealth.spade_test

CAPSELLA Acceleration Programme

- Facilitates the co-creation of disruptive solutions, business ideas and opportunities
- Supports innovative, diversity-based, quality and health-centred food systems in Europe,
- Contributes to a greener and more fair future with efficiency and transparency in the ecological, biodiversity based, organic agriculture sector



3 months of training

15 modules

65 applicants

11 teams

3 winners



CAPSELLA innovation in figures

1 platform

334 datasets on the CAPSELLA data repository

3 scenarios

7 pilots → **7** apps

1 online map

1 incubation process, **65** participants

5 beneficiary teams receiving mentoring

1 nomination for the European Digital Skills Award

<http://www.capsella.eu/>

[@Capsella12](#)



<http://www.facebook.com/capsellaproject/>

<http://www.linkedin.com/groups/8524214>

<https://github.com/CAPSELLA>