Innovation on Organic Seed & Plant Breeding

biofach sPECIAL Forum Biofach, Stream 5 Friday 19th 2021 14:00 – 14:45

- **Strategies of Horizon2020 projects LIVESEED, ECOBREED, BRESOV**

  By Monika Messmer (FiBL Switzerland), Vladimir Meglic (Agric. Inst. of Slovenia KIS), and Ferdinando Branca (Univ of Catania)

- **Showcase the new EU-wide router database on organic seed**

  By Xenia Gatzert (FiBL Germany)

Please ask questions in the slido chat on the left side of the streaming window on talque or use on your computer or mobile www.slido.com Code for the session is #U829

LIVESEED

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BRESOV

Horizon2020: LIVESEED, ECOBREED & BRESOV

- **LIVESEED** - Boosting organic seed and plant breeding (2017-2021)
- **ECOBREED** - Increasing the competitiveness of the organic breeding and farming sectors (2018-2023)
- **BRESOV** - Breeding for Resilient, Efficient and Sustainable Organic Vegetable production (2018-2023)

Objectives:

- Improve availability of organic seed of cultivars suited for organic production
- Develop improved methods and strategies for organic plant breeding and seed health
- Develop new cultivars with high resilience, product quality, and local adaptation
- Design on farm organic cultivar testing networks and initiate participatory breeding
- Identify legal and socio-economic framework enforcing organic seed and plant breeding

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Improve integrity and competitiveness of organic sector by reaching 100% organic seed of cultivars suited for Organic Agriculture

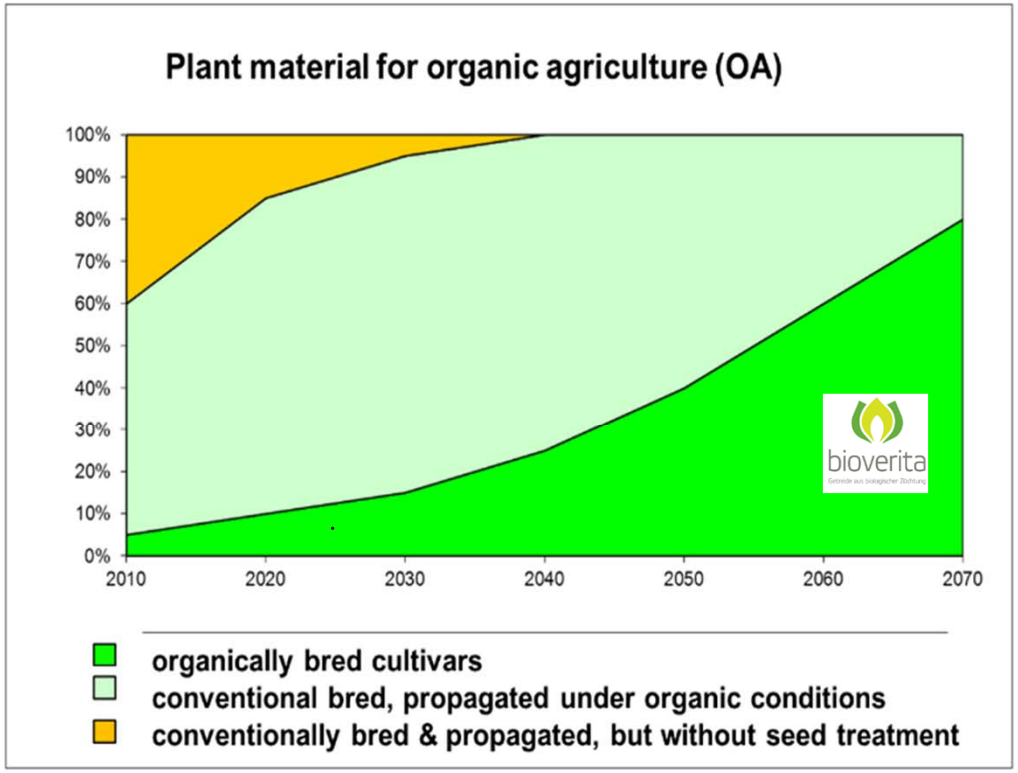

Figure 1 : Schematic time line to reach the goal of 100% organically propagated seed of suitable cultivars (light green) in short term and to foster cultivars specifically bred for organic farming systems (bright green) in the long term

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Boosting Organic Seed and Plant Breeding across Europe (2017-2021)

Bram Moeskops & Ágnes Bruszik IFOAM Organics Europe, Project Coordinators
Monika Messmer, FiBL-CH, Scientific Coordinator

Biofach 2021

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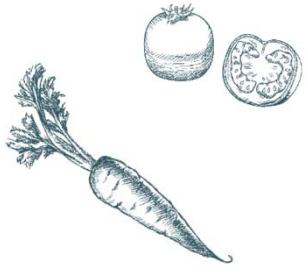
www.liveseed.eu

8.9 Mio €
52 months
50 partner and linked parties
18 European countries
125 stakeholders

Inter- and transdisciplinary approach of co-development of innovations



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727230 and by the Swiss State Secretariat for Education, Research and Innovation (SERI) under contract number 17.00090. The information contained in this communication only reflects the author's view. Neither the Research Executive Agency nor SERI is responsible for any use that may be made of the information provided.

Scope of activities
to reach 100% organic seed of cultivars suited for Organic Farming by 2036

cereals
maize
legumes
vegetables
forage
fruits

Policy & regulation
Harmonized Implementation of Organic Regulation with respect to seed

Cultivar testing & seed multiplication & seed health
Increase accessability of organic healthy seed, adoption of new cultivars

Research & development in organic plant breeding Innovative concepts, strategies and approaches for more resilient cultivars and holistic strategies to widen choice of organic cultivars

Socioeconomic Issues
Improve the competitiveness of the organic seed supply chains
from breeding to the consumer incl survey on new breeding technologies

Knowledge exchange & network
Capacity building, exchange of knowledge, collaboration & awareness raising on the benefits of organic plant breeding and organic seed

LIVESEED

For main results see www.liveseed.eu

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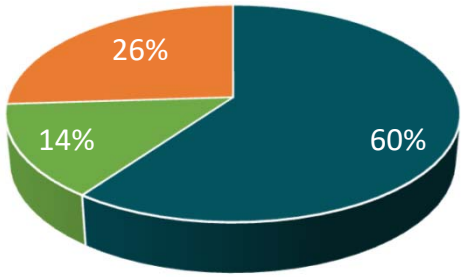
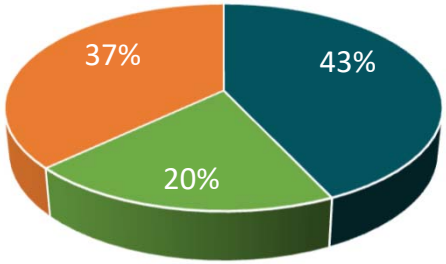
Status quo analysis on organic seed in EU and Switzerland in 2016

Northern Europe (23’887 t)

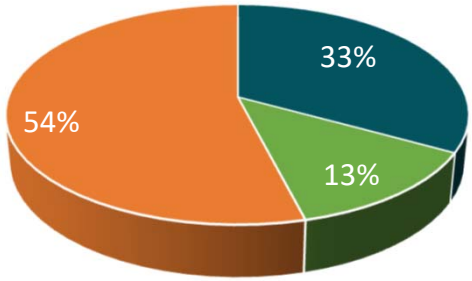


Central Europe (40’622 t)

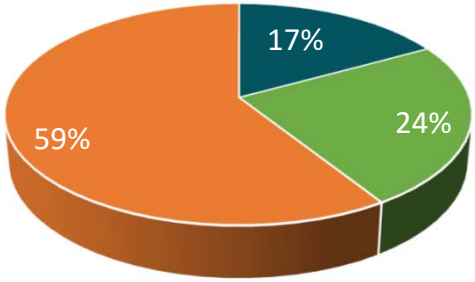


New organic regulation 2018/848 will phase out derogation for non-organic seed latest by 2036

Southern Europe (55’363 t)



Eastern Europe (24’692 t)



ORGANIC SEED SUPPLY
NON-ORGANIC SEED SUPPLY *
Total Seed supply for OF

ORGANIC FARM SAVED SEED

https://orgprints.org/38616/

This project received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 727230.

Policy recommendations

New organic regulation 2018/848

- Phasing out of derogations to the use of non-organic plant reproductive material latest by 2036
- Regular update of national organic seed database
- In 2026 report on the availability of organic seed and reasons of a possible limited access of organic operators

→ LIVESEED assessed present derogation reports, national organic seed database, and estimated use of **organic seed across Europe** and collected **best practice for policy implementation** from different countries www.liveseed.eu > tools > booklets

→ **Recommendations to improve implementation of organic seed use** www.liveseed.eu > Results > WP1 > **D1.9 report on political obstacles**

→Developmet of a **EU wide router-database** with interface to national databases

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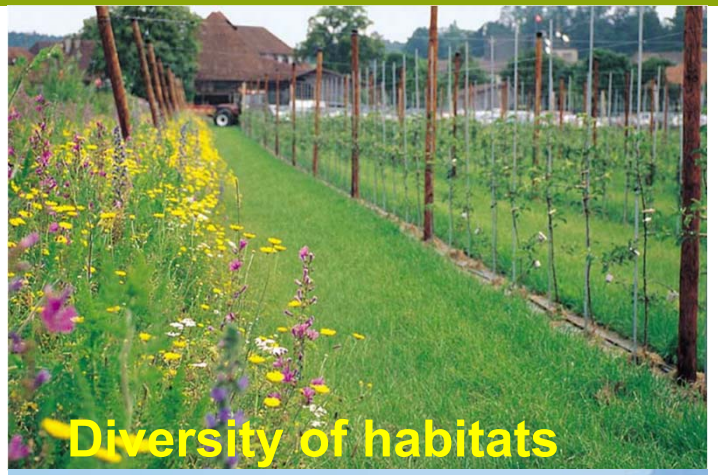
Breeding for functional biodiversity



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Breeding for functional biodiversity

Develop concepts, strategies, and tools for the development of cultivars with improved resilience:

- Genetic diversity within cultivars e.g. composite cross populations and dynamic populations that can adjust to multiple stresses (cereals, legumes)
- Develop concepts for optimized cultivar mixtures (cereals)
- Breeding cultivars suited for species mixtures (legume – cereal mixtures, Lucerne – grass species, agroforestry)

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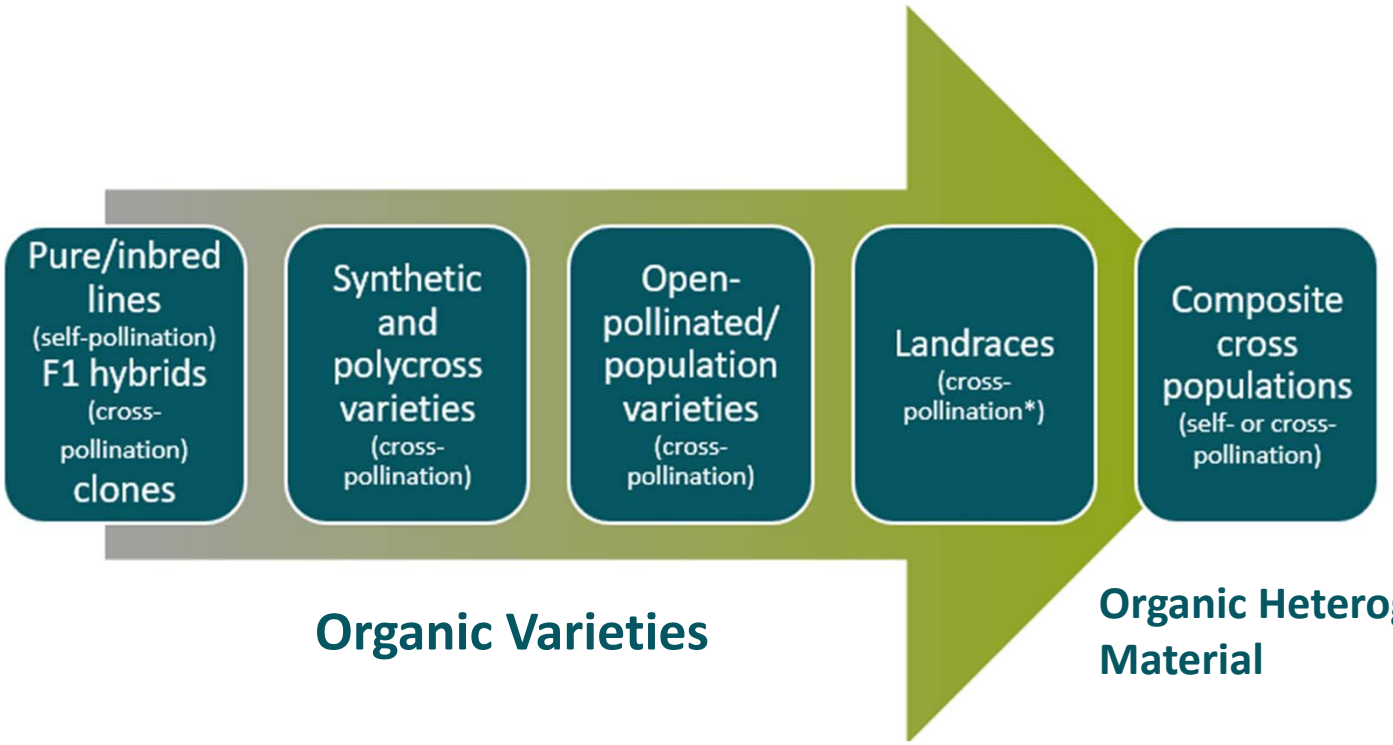
Novel cultivar types and levels of genetic diversity



New EU organic regulation 2018/848 coming into force January 2022

- Definition of **organic varieties** derived from organic plant breeding
- Definition of **organic heterogeneous material** which can be commercialized from 2022 onwards

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Organic Heterogeneous Material

Tools vary for different types of OHM

- **FARMER SELECTIONS:** selection by a farmer from a population or landrace. They have a lot of genetic and phenotypic diversity so do not comply with DUS.

Open list of elements to consider in order to describe 'farmers selection':
- Origin
- Region of development
- Phenotypic traits
- Traceability
- Breeding conditions and location

- **DYNAMIC POPULATIONS:** developed from a mixture of large numbers of breeding lines and cultivars (understood in a broader sense than officially released varieties, landraces, less homogeneous populations, niche varieties...) cultivated together and seed saved. After a few generations, the mixtures outcross and adapt to local conditions. The process is important for the definition.

Open list of elements to consider in order to describe 'dynamic population':
- Parents
- Breeding process
- Phenotypic traits when possible
- Traceability
- Breeding conditions and location
- Breeding objective

- **Composite Cross Populations (CCPs):** the result of targeted crosses that are then left to evolve together under natural conditions. This category is different from synthetic varieties/populations which are reconstructed to be stable.

Open list of elements to consider in order to describe 'CCPs':
- Parents
- Breeding process/methods, selection methods
- Traceability
- Cultivation Environment
- Breeding conditions and location
- Breeding objective

www.liveseed.eu > Results > WP2 > D2.8 'Proposal for a toolbox for identification and description of organic heterogeneous material'

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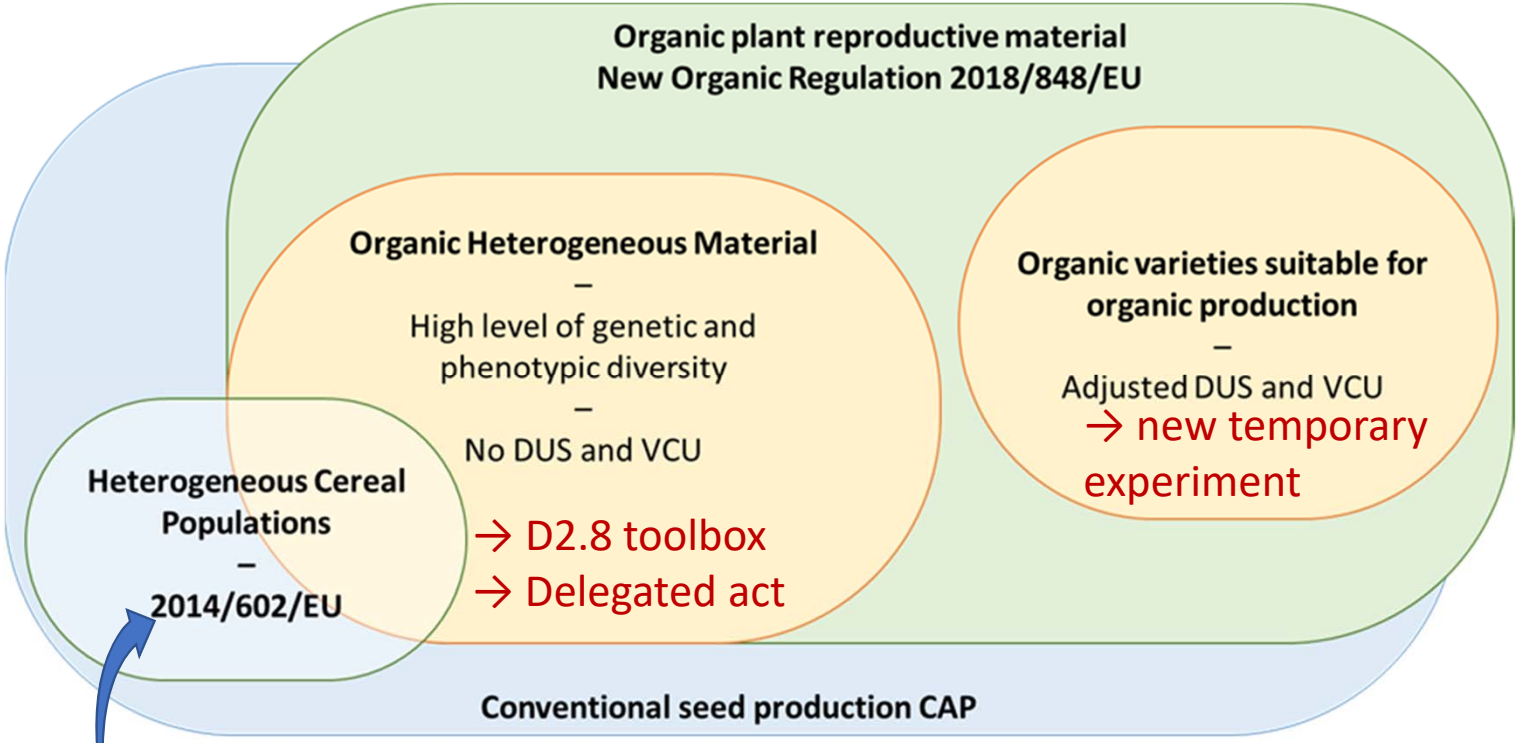
Novel Cultivar Types



- Definition of organic plant breeding
- Definition of organic heterogeneous material for all crops
- See **Liveseed Milestone Report M2.8** 'Main outcomes and SWOT of experiences from marketing populations under the **Temporary Experiment into the commercialisation of heterogeneous populations in the European Union**' for an **update on 2014/150/EU**

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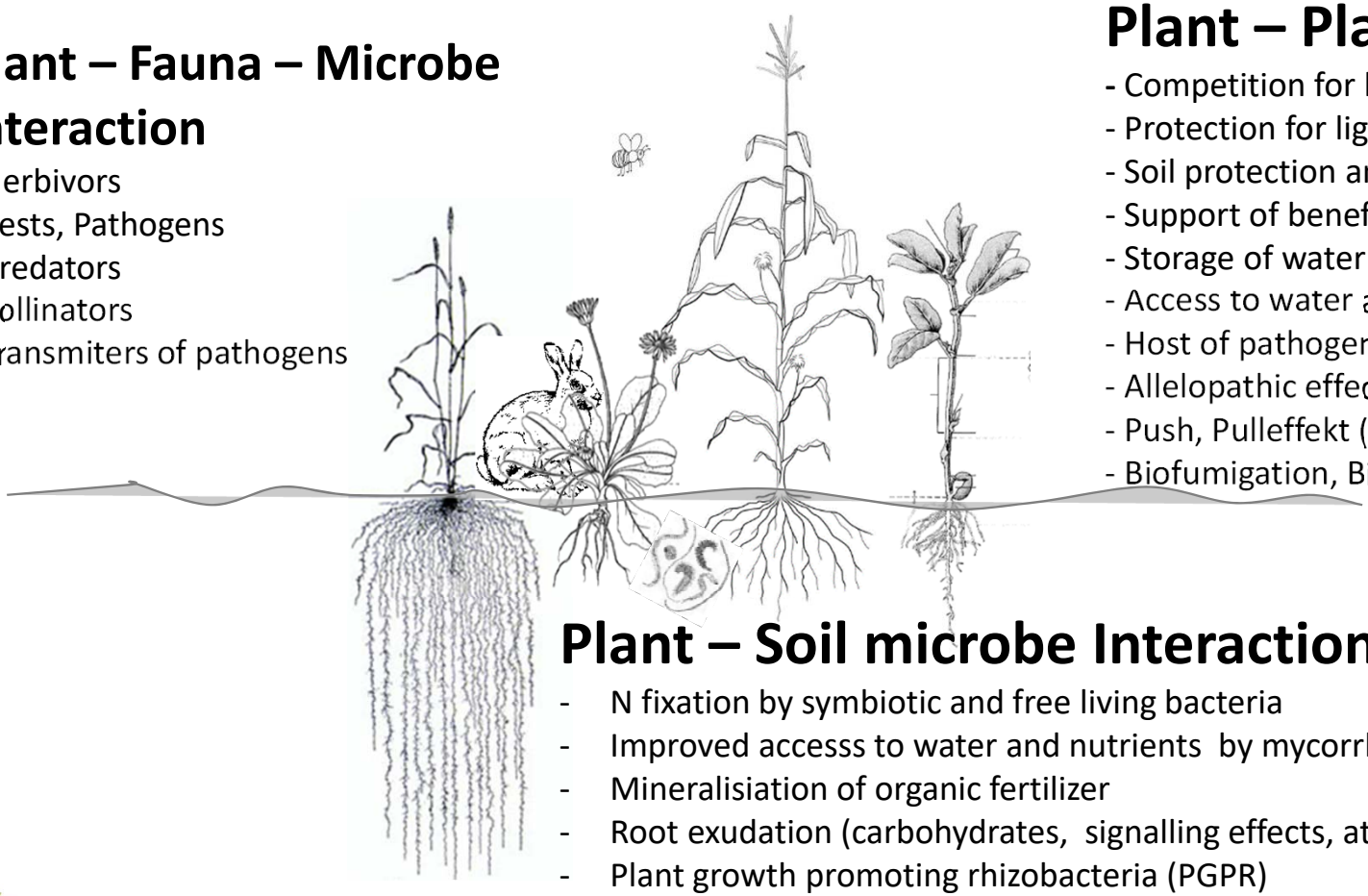
Breeding for improved symbiosis

Plant – Fauna – Microbe Interaction

- Herbivors
- Pests, Pathogens
- Predators
- Pollinators
- Transmiters of pathogens



Plant – Plant Interaction

- Competition for light, water, nutrients
- Protection for light, wind, transpiration
- Soil protection and erostion prevention
- Support of beneficial insects
- Storage of water and nutrients
- Access to water and nutrients in deeper horizons
- Host of pathogens
- Allelopathic effects
- Push, Pulleffekt (Desmodia, Napiergras)
- Biofumigation, Biosanitation

Plant – Soil microbe Interaction

- N fixation by symbiotic and free living bacteria
- Improved accesss to water and nutrients by mycorrhiza
- Mineralisiation of organic fertilizer
- Root exudation (carbohydrates, signalling effects, attraction, repellents)
- Plant growth promoting rhizobacteria (PGPR)
- Pathogenes & counterparts

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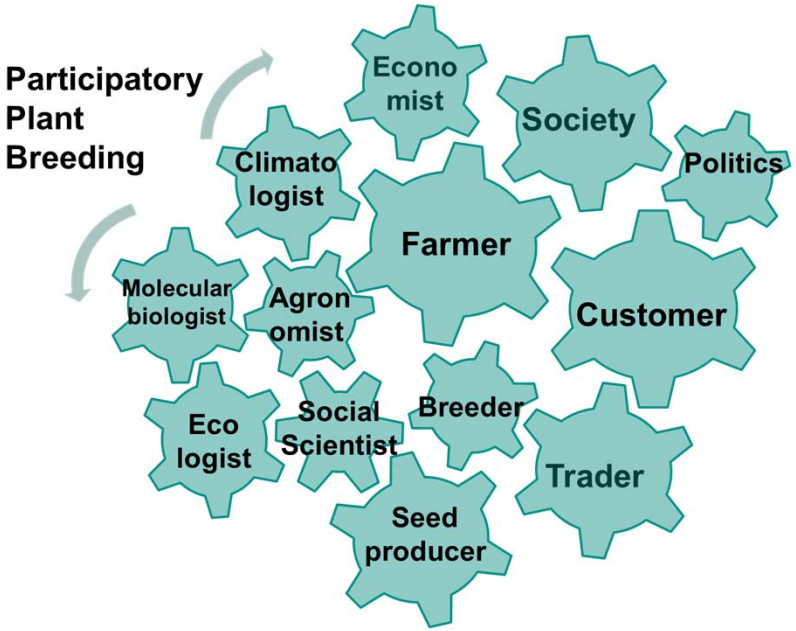
Decentralized Participatory Plant Breeding in tomato, maize and cereals



- Embedding Cultivated Diversity in Society for Agro-Ecological Transition, *Chable, V.; Nuijten, E.; Costanzo, A.; Goldringer, I.; Bocci, R.; Oehen, B.; Rey, F.; Fasoula, D.; Feher, J.; Keskitalo, M.; Koller, B.; Omirou, M.; Mendes-Moreira, P.; van Frank, G.; Naino Jika, A.K.; Thomas, M.; Rossi, A.. Sustainability 2020, 12, 784. https://doi.org/10.3390/su12030784*

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Strategies for Organic Plant Breeding

- Systems-based breeding
- Increase efficiency and diversity of breeding by networking and decentralized participatory breeding programs for local conditions
- Improving impact of breeding by involving all stakeholders in the breeding process (farmer, value chain and community driven breeding)
- Developing new concepts for the ownership of cultivars and their financing
- Participating in political discussions on regulatory framework to foster greater agrobiodiversity (official variety testing, seed regulation)
- Valorization of organic plant breeding along the value chain

www.bioverita.org, www.engagement.biobreeding.org

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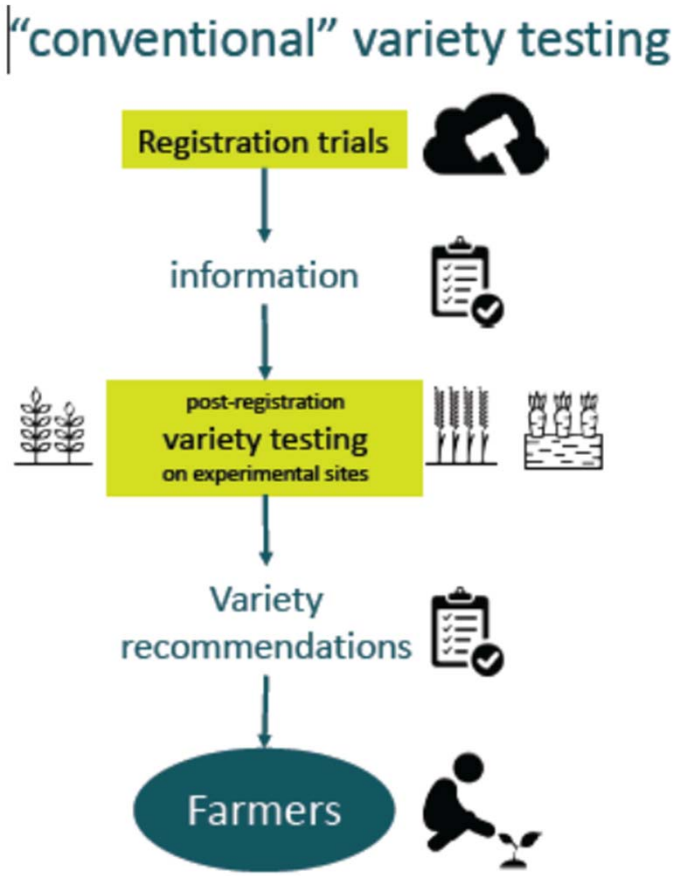
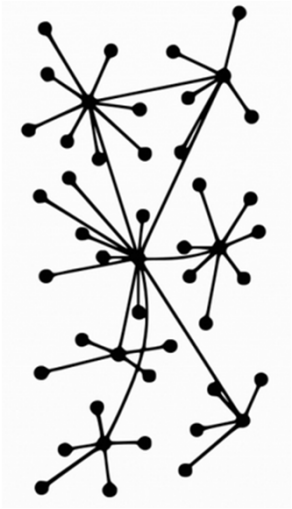
New models for post-registration on-farm cultivar testing networks to speed up adoption of new cultivars



Decentralized on-farm cultivar testing networks: multiactor – simple - cost efficient - interactive – shared data



www.liveseed.eu → **Results Report → WP2 → D2.3**

Booklet on main results of LIVESEED Nov 2020

https://wiki.js.diglife.coop/decentralization

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Policy recommendations for organic seed use

→ Harmonized and **stricter implementation of derogation rules** for non-organic seed (national annex 1, expert groups, roadmap)

→ Improved **interactive national databases** of available organic seed as basis for unbureaucratic derogations and monitoring

→ **Eu-wide router database** linked to national databases of available organic seed promoted and financially supported by EU authorities

→ **Improved data collection and monitoring** on production and use of organic seed → more transparency for seed produers

→ **Wider choice of cultivars** adapted to organic production (Breeding and cultivar testing)

→ Availability for **novel types of cultivars** like organic heterogeneous materials, organic bred varieties and populations, farmers' selections

→Improve **quality and health of seed** at similar price → seed health strategies, trainings, support in local infrastructure

www.LIVESEED.EU > Results > WP1 > D1.9 Report on Political Obstacles and Bottlenecks on the Implementation of the Rules for Organic Seed in the Organic Regulation

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ECOBREED

Increasing the efficiency and competitiveness of organic crop breeding

Vladimir Meglič
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Project duration: **5** years (till May 2023)
25 partners from **15** countries: AT, CN, CZ, DE, ES, GR, HU, IT, PL, RO, RS, SI, SK, USA, UK
14 universities & institutes, **10** private companies, **1** association

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Agricultural Institute of Slovenia

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Funded by European Union
Horizon 2020
Grant agreement No 771367

The **main focus** of **ECOBREED** is to **improve the availability of varieties** and **seed suitable for organic** and **low-input production**. Activities will focus on **four** crop species i.e.

- **wheat** (both common wheat *Triticum aestivum* L. and durum *Triticum aestivum* L., T. *durum* L.),
- **potato** (*Solanum tuberosum* L.),
- **soybean** (*Glycine max* (L). Merr),
- **common buckwheat** (*Fagopyrum esculentum* Moench.).

The project will develop (a) **methods, strategies and infrastructures for organic breeding**, (b) **varieties with improved stress resistance**, **resource use efficiency and quality** and (c) **improved methods for the production of high quality organic seed.**

ECOBREED will use an **integrated** and **multi-disciplinary approach** to **increase the competitiveness of the organic** and low-input breeding and farming sectors.

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Horizon 2020
Grant agreement No 771367

The specific objectives to be addressed in ECOBREED are:

- Identify genetic and phenotypic variation in morphological, abiotic/biotic tolerance/resistance and nutritional quality traits that can be used in organic breeding.
- Evaluate the potential for genetic variation in enhanced nutrient acquisition of the plant.
- Optimisation of seed production/multiplication via improved agronomic and seed treatment protocols.
- Providing farmers the opportunity to choose and develop varieties in their own environment that best suit their needs and conditions. by establishment of: on-farm variety evaluation trials and exploitation of Participatory Plant Breeding (PPB) to enhance the on-farm availability of genetic resources, develop new conservation varieties and new populations (composite cross populations).
- Production of elite varieties for improved agronomic performance, biotic/abiotic stress resistance/tolerance and nutritional quality.
- Development of training programmes (improved genotyping and phenotyping) to facilitate rapid technology transfer from the project into commercial practice.
- Ensuring optimum and rapid utilisation and exploitation of project deliverables and innovations by relevant industry and other user/stakeholder groups via extensive farm based demonstration (phenotyping, breeding and PPB) and dissemination activities.

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Horizon 2020
Grant agreement No 771367

Work completed

Identification, selection, evaluation, and multiplication of genetic resources and cultivars for further studies within the project together with initial breeding activities.

To identify **potential genetic diversity for each of the species suited to organic production systems** from different environments across Europe and other countries

A total of **839 accessions** were identified and the prelimary collections created including

- 200 samples of wheat
- 197 potatoes
- 242 soybeans
- 200 of buckwheat

The most appropriate materials that have been/will be used for **phenotypic characterization across contrasting environments under organic farming**.

The inventory of all crops are available for general public in the document "**Inventory of genetic resources for each target species**".

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Horizon 2020
Grant agreement No 771367

Work completed

Wheat

- resistance sources against common bunt reidentified and used in crosses with elite wheat cultivars
- test mycorrhiza compatibility and allelopathic effects
- Development of a new genetic diversity via a multi-parent advanced generation intercross (MAGIC) scheme including eight parents per population.

Potato

- Late blight resistance, carotinoids, Colorado beetle

Soybean

- N-fixing capacity screening, experiment using different inocula and a trial using different cover crop

Buckwheat

- Phosphorus mineralization trials
- in vitro test for allelopathic impact on selected monocot and dicot weed species
- first crosses made towards production of new varieties.

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Work completed

During the first stage, the project was mainly focused on the identification, selection, evaluation, and multiplication of genotypes and other materials for the needs of further studies within the project together with initial breeding activities.
To identify potential genetic diversity for each of the species suited to organic production systems we have identified biological materials from different environments across Europe and other countries with a higher potential in organic farming. A total of **839 accessions** were identified and the prelimary collections created including **200** samples of **wheat**, **197 potatoes**, **242 soybeans** and **200 of buckwheat** with a subsequent multiplication of selected materials. The working collections have been created including the most appropriate materials that have been/will be used for phenotypic characterization across contrasting environments.
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Wheat

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BRESOV

BREEDING FOR RESILIENT, EFFICIENT AND SUSTAINABLE ORGANIC VEGETABLE PRODUCTION: THE H2020 BRESOV PROJECT

www.bresov.eu

Coordinator: Ferdinando Branca

UNIVERSITÀ degli STUDI di CATANIA

The BRESOV project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 774244.

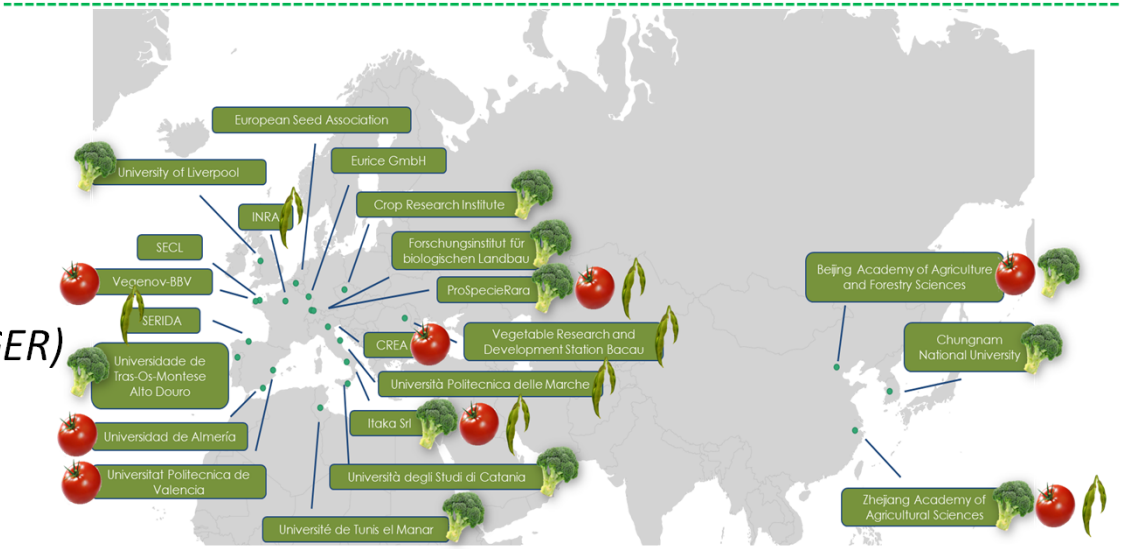
BREEDING FOR RESILIENT, EFFICIENT AND SUSTAINABLE ORGANIC VEGETABLE PRODUCTION:
THE H2020 BRESOV PROJECT

BRESOV

Exploitation of **genetic resources**, in terms of formulating **climate-resilient** cultivars addressed to **vegetable organic production** systems under current and future scenarios of climate change

Three crops: brassicas, beans and tomatoes

- **4** years
- **22** partners
- **9** EU28 countries *(IT, BE, ES, PT, CZ, FR, UK, RO, GER)*
- **2** Associated countries *(Switzerland, Tunisia)*
- **2** Third countries *(China, South Korea)*



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Objectives

The **overall aim** of BRESOV is to improve the **competitiveness** of the three crops (brassica, bean, tomato) when grown in an **organic production system**:

a) Establishing **core collections**

b) Exploring the **genetic basis of main traits for organic cultivation** and **develop molecular markers** for assisted breeding of new cultivars (OP cultivars, inbred lines and hybrids) adapted to organic farming agro-systems for **biotic and abiotic stresses** on several organic vegetable farming systems

c) Increasing quality and quantity of **organic vegetable seed availability** for the growers of **different European geographic/climatic conditions**

d) Improving the **adaptability** of the target crops in organic vegetable farming systems and the **interaction between the new cultivars and the soil microbiome**.

e) Demonstration/testing/training activities to **disseminate the outcomes of the project** in view to innovate vegetable organic farming to the BRESOV stakeholders

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Achievements

- **Establish core collections for each Species**

  The sets of materials have been designed to maximise the genetic and phenotypic diversity to exploit genetic diversity not included in elite germplasm and to identify sources of useful traits and map traits of interest for organic farming agriculture

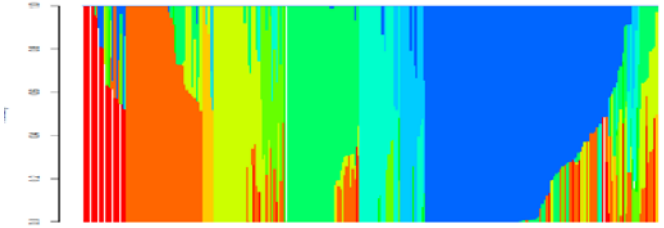
✓ **For Brassica vegetables (*B. oleracea)* 837 accessions**

✓ **For Tomato (*S. lycopersicum)* 496 accessions n**

✓ **For Bean (*P. vulgaris)* 675 accessions**

- **develop molecular markers for assisted breeding of new cultivars adapted to organic farming agro-systems**

GBS genotyping activities for detecting the diversity of the BRESOV core collection (CC) and of the Breeding Set (BS) have been performed and will allow the acquisition of genotyping data of interest, which combined with different levels of phenotyping data, will allow detecting QTLs, major genes, and associated markers



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Achievements

- **Explore the genetic basis of main traits for organic**

TOMATO

Solanum lycopersicum

- ✓ plant bio-morphology and agronomic
- ✓ carotenoids
- ✓ Fruit firmness
- ✓ nitrogen use efficiency
- ✓ high temperature and water stress
- ✓ Resistant traits against pathogens

BEAN

Phaseolus vulgaris

- ✓ plant bio-morphology and agronomic
- ✓ Resistance traits against pathogens
- ✓ protein content, antioxidant activity
- ✓ analysis of sugars and myo-inositol

BROCCOLI

Brassica oleracea

- ✓ plant bio-morphology and agronomic
- ✓ Resistance traits against pathogens
- ✓ water stress, waterlogging and dark induced senescence
- ✓ glucosinolates content and profile
- ✓ polyphenols and antioxidant capacity
- ✓ Size, shape and colour of inflorescence
- ✓ broccoli hollow stem

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Achievements

- **Explore the genetic basis of main traits for organic**

Solanum lycopersicum

- ✓ plant bio-morphology and agronomic (P10-UPV, P12-CREA)
- ✓ carotenoids (P12CREA)
- ✓ nitrogen use efficiency (P10-UPV)
- ✓ high temperature and water stress (P3-UAL)
- ✓ *Phytophtora infestans* (P8-VEG)
- ✓ fruit firmness and *Fusarium oxysporum* f. sp. *radicis lycopersici*

Phaseolus vulgaris

- ✓ plant bio-morphology and agronomic (P16-SERIDA, P7-UNIVPM, P11-VRDS)
- ✓ *Sclerotinia sclerotiorum*-white mold
- ✓ *Pythium* and *Erisyphe polygoni*-powdery mildew (P16-SERIDA)
- ✓ anthracnose (P19-INRA)
- ✓ protein content, antioxidant activity and

sugar content (P12-CREA)

- ✓ *Uromyces appendiculatus* – bean rust (P14-ZAAS)
- ✓ analysis of sugars (sucrose, glucose and fructose)

and the polyalcohol myo-inositol (P16-SERIDA)

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Achievements

- **Explore the genetic basis of main traits for organic**

Brassica oleracea

- ✓ water stress (P1-UNICT),
- ✓ plant bio-morphology (P1-UNICT, P15-UTM),
- ✓ waterlogging and dark induced senescence (P9-UNILIV),
- ✓ *Xanthomonas campestris* pv. *campestris* (Xcc1, Xcc4) (P1-UNICT and P20-UNICHU),
- ✓ *Hyaloperonospora parasitiva* - downy mildew (P5-VURV),
- ✓ broccoli hollow stem (P14-ZAAS, P1-UNICT)
- ✓ bud purple (P14-ZAAS, P1-UNICT)
- ✓ *Alternaria brassicicola* (P14-ZAAS, P1-UNICT)
- ✓ glucosinolates (GLS) amounts and profiles (P4-UTAD, P1-UNICT and P15UTM))
- ✓ GLSs products of degradation, polyphenols and antioxidant capacity (P12-CREA),
- ✓ size and shape of inflorescence (P1-UNICT and P15-UTM)

The BRESOV project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 774244.

Achievements

- **Increase quality and quantity of organic vegetable seed available for the growers of different European geographic/climatic conditions**

✓ Review of the **knowledge related to the biocontrol agents (BCAs) and natural compounds (NCs) for controlling seedborne diseases** has been performed (D4.1)

✓ trialling plan **on going** is taking in consideration three key seed diseases for:

Broccoli *B. oleracea*	Xanthomonas campestris pv. campestris (Xcc), Alternaria spp., Phoma lingam (Leptosphaeria maculans)
Bean *P. vulgaris*	Colletotrichum lindemuthianum, Pseudomonas savastanoi pv. Phaseolicola, Fusarium solani f.sp phaseoli
Tomato *S. lycopersicum*	Clavibacter michiganensis subsp. michiganensis (Cmm), Pseudomonas syringae pv. tomato, Xanthomonas spp pathogenic to tomato, ToMV, Fusarium oxysporum f.sp. radicis lycopersici

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Progress towards Achieving Impact

- Activities are increasing knowledge on relevant genetic traits for organic crop production

Brassica oleracea

✓ water stress (P1-UNICT), plant bio-morphology (P1-UNICT, P15-UTM), waterlogging and dark induced senescence (P9-UNILIV), Xanthomonas campestris pv. campestris (Xcc1, Xcc4) (P1-UNICT and P20-UNICHU), Hyaloperonospora parasitiva - downy mildew (P5-VURV), broccoli hollow stem (P14-ZAAS, P1-UNICT), bud purple (P14-ZAAS, P1-UNICT) Alternaria brassicicola (P14-ZAAS, P1-UNICT), glucosinolates (GLS) amounts and profiles (P4-UTAD, P1-UNICT and P15UTM), GLSs products of degradation, polyphenols and antioxidant capacity (P12-CREA), size and shape of inflorescence (P1-UNICT and P15-UTM)

Solanum lycopersicum

✓ plant bio-morphology and agronomic (P10-UPV, P12-CREA), carotenoids (P12CREA), nitrogen use efficiency (P10-UPV), high temperature and water stress (P3-UAL), *Phytophtora infestans* (P8-VEG), fruit firmness and *Fusarium oxysporum* f. sp. *radicis lycopersici*

Phaseolus vulgaris

✓ plant bio-morphology and agronomic (P16-SERIDA, P7-UNIVPM, P11-VRDS), Sclerotinia sclerotiorum-white mold, Pythium and Erisyphe polygoni-powdery mildew (P16-SERIDA), anthracnose (P19-INRA), protein content, antioxidant activity and sugar content (P12-CREA), Uromyces appendiculatus – bean rust (P14-ZAAS), analysis of sugars (sucrose, glucose and fructose) and the polyalcohol myo-inositol (P16-SERIDA)

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Progress towards Achieving Impact

- 11 tomato, 9 broccoli and 35 bean varieties were scouted for traits interesting in organic farming such as:

Tomato	Bean	Broccoli
Selected in low-input conditions	Heirloom variety	Open pollinated
Tolerance to drought	Intense flavour	Branching
Tolerance to reduced nutrient supply	Robustness	Homogeneity
Resistance against pathogens	Ease/speed of harvest	Shape
Field resistance against Phytophthora infestans	Yield	Resistance to pathogens and pests

- All of tomato and broccoli and 10 of the bean varieties are grown and evaluated in France, Sicily or Switzerland
- A selection will be grown on-farm in multiple locations

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Future Steps in Implementation

- ✓ elite genotypes of great interest for organic vegetable farming systems will be regenerated for sharing with the WP4 and WP5 partners for comparing their adaptability in multi-climate conditions around EU and Extra-EU countries in their second year trials.
- ✓ specific experimental trials will test their interaction with the soil microbiome, their organoleptic and nutraceutical traits, and the seed quality and yield
- ✓ The GWAS ongoing activities will be integrated with the BRESOV phenotyping activities for their data association allowing the acquisition of genetic information relevant to the control and breeding of traits for organic crop production.

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Don’t miss our joint conference
from 8th till 10th March 2021

Questions about the three projects?

https://www.eucarpialiveseedconference2021.lv/

Registration till 28th February 2021

LIVESEED

This project received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 727230.

LIVESEED

BioFach 2021

Implementation of the Router Database

Xenia Gatzert, FiBL – WP1

19th February 2021

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727230. The information provided reflects the views of the authors. The Research Executive Agency is not responsible for any use that may be made of the information provided.

Aim in LIVESEED

- Raise awareness on importance of functioning and up-to-date organic seed databases in the EU

→ Because: Any variety which has **not been registered in the database shall be considered as unavailable**

- Support national authorities in improving system and information quality of their databases
- For international seed trader: access to national database can be difficult
- Reduce administrative burdens for seed supplier to list organic seed in national organic seed databases
  → Router Database will be launched in spring 2021

LIVESEED

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Current status of implementation

- All EU Member States (+CH) provide a “database” according to Art. 48 of EC 889/2008
- Implemented as: online database, Excel or PDF file
- Managed by: national authority or designated body
- Updating of data: database manager or seed supplier
- Frequency of updating: real-time, weekly, monthly to annually
- Data collection on granted/rejected derogations: automatically through online database or manually through authority

➢National databases will remain, Router Database will be additionally to the national databases

LIVESEED

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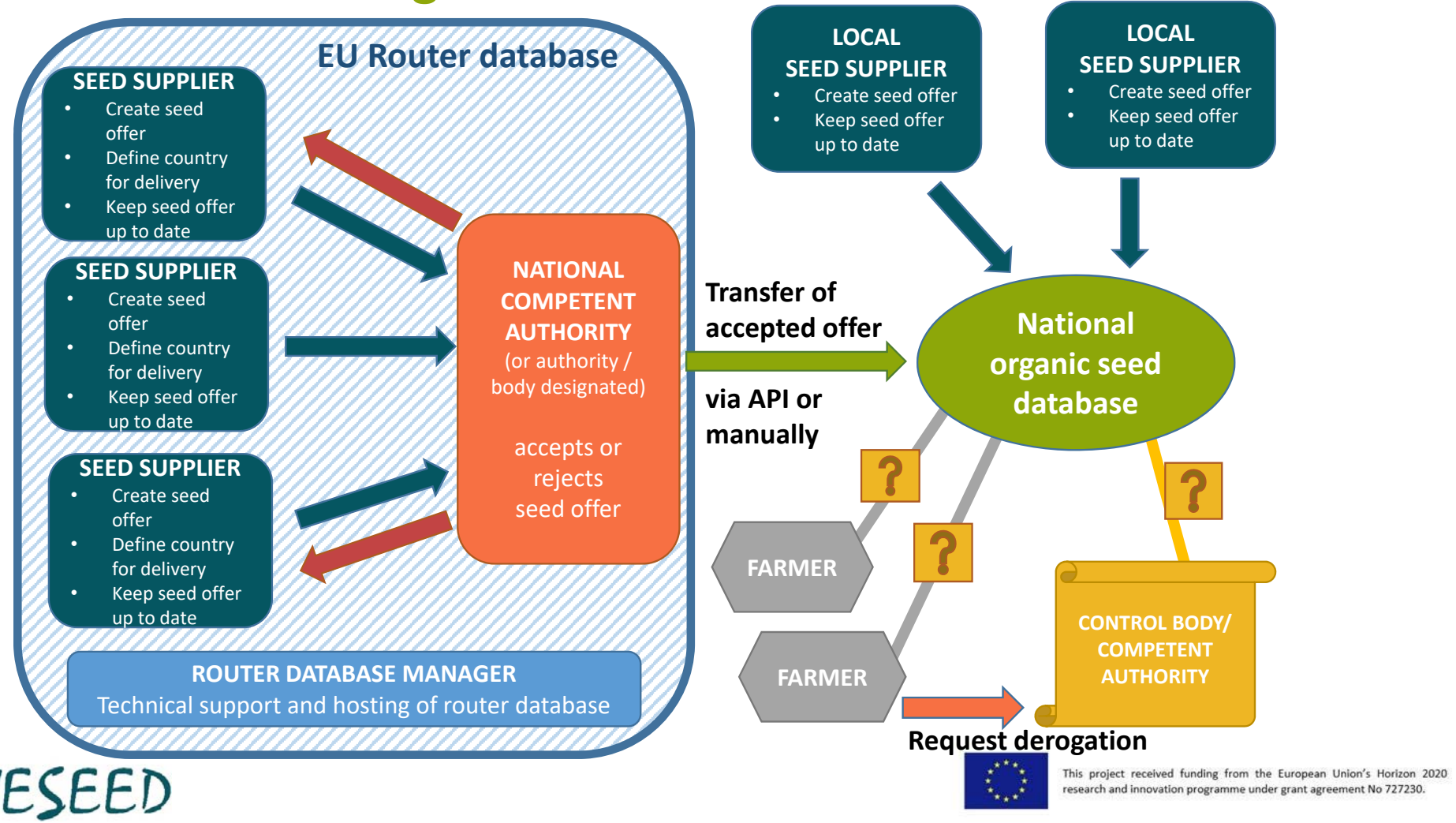
Aim of LIVESEED: Develop a EU-router database to link national organic seed databases



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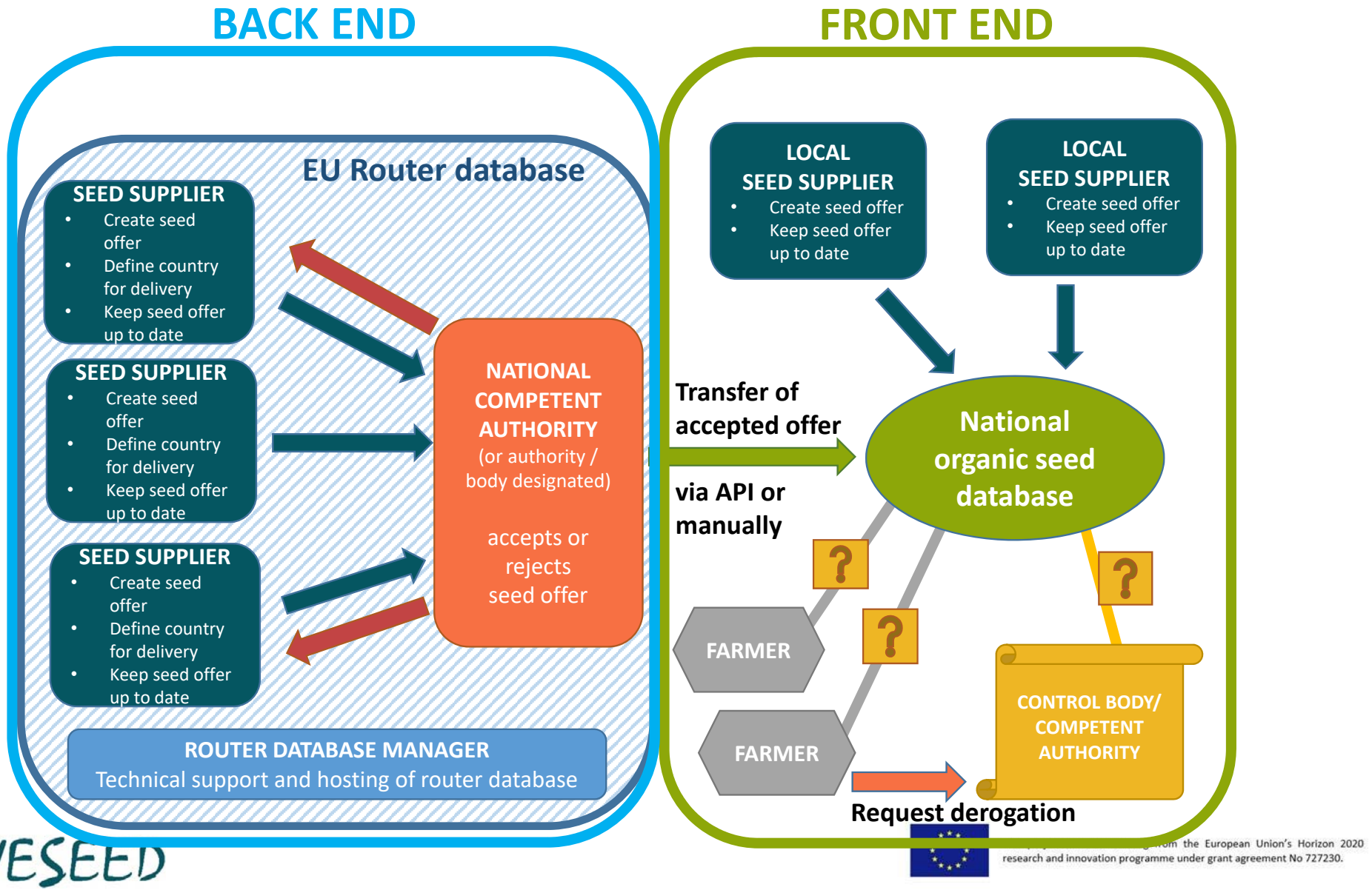

...from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727230.

Functions for seed supplier

- Register their company as seed supplier for organic seeds
- Choose in which countries they are able to deliver to
- Specify offers regarding crop, cultivar, delivery notes and optional the quantity
- Decide in which countries they want to offer different cultivars
- Manage the offers in each country individually
- View history of seed offers
- Communicate with national authorities through message system

LIVESEED

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Tasks for seed supplier

- Manage the offers and keep them up-to-date in all countries
- Be familiar with the special requirements for seed in the different countries
- Offer seed in countries only where known that the cultivars can be grown
- Communicate with national authorities whenever needed (f.e. questions to certain cultivars)
- Be available for requests and questions from farmers, control bodies etc. in the countries where seeds are offered

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Watch Tutorial for seed supplier

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Functions for national authorities

- See the list of seed offers that are available for their country
- See details regarding crop, cultivar, breeding method and information of seed supplier
- Decide to accept or reject the offer
- Download list of available offers for uploading it to national seed database / API
- Get in contact with supplier on their offer or with other national authorities via message system
- Manage/revise seed offers
- View history of offers in their country

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Tasks for national authorities

- Manage the offers in the Router Database
- Extract regularly reports with available cultivars and upload them to your national database (when no API is implemented)
- Give a clear reason when rejecting seed supplier or offers
- Be open for communication with seed supplier when they try to meet requirements / adapt their offers
- This tasks can be passed on to a database manager

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Functions for visitors

- View list of organic seed supplier in different member states; See name, contact data, location of office, website, offered crop
- See concept and background information of router database
- Get the link collection to national organic seed databases
- Download links to relevant documents (EC Regulations, reports, projects, …)
- View User-guides, FAQ, tutorials

LIVESEED

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Questions
on the Router database?

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Booklet on main results of LIVESEED Nov 2020

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