

New openings at Eu level on seed marketing

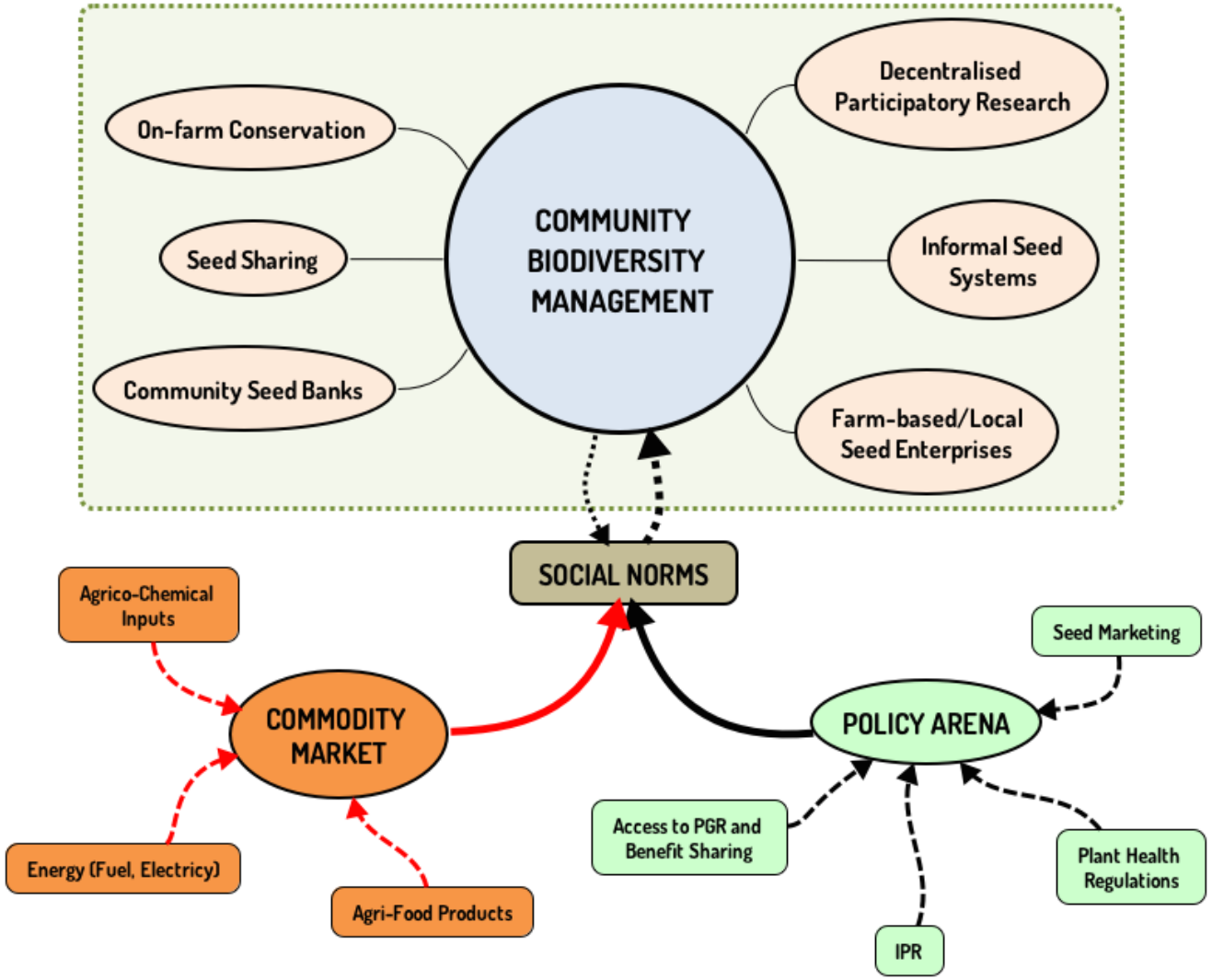
Riccardo Bocci – Rete Semi Rurali – r.bocci@semirurali.net
www.rsr.bio

My presentation

1. The situation now;
2. The on-going reform;
3. Diversified seed systems;
4. One experience: the rice OHM by RSR.



RSR's Mission



DIVERSITAS

RSR'S DIGITAL ECOSYSTEM



ACTIONresearch



COMMUNITY SEED BANKS



COMMUNITY



PARADIGM CHANGE

RSR-DB

diversitas.rsr.bio/?_ga=2.125270410.1872185354.1668624694-508534450.1618411335&_gl=1*1jqmudp*_ga...

Rete Semi Rurali

Accedi all'area personale

banca dati RSR

Banca dati ReteSemiRurali

Benvenute e Benvenuti nella pagina della banca dati di Reti Semi Rurali



Frumento

Varietà e Popolazioni: **389**
Numero di Accessioni: **1479**
Peso stimato: **874.2kg**

i



Orzo

Varietà e Popolazioni: **19**
Numero di Accessioni: **85**
Peso stimato: **218.0kg**

i



Segale

Varietà e Popolazioni: **34**
Numero di Accessioni: **74**
Peso stimato: **17.0kg**

i



Avena

Varietà e Popolazio
Numero di Accessi
Peso stimato: **34.**



Agronomy for Sustainable Development (2022) 42: 8
https://doi.org/10.1007/s13593-021-00742-8

REVIEW ARTICLE

Pesticide-free agriculture as a new paradigm for research

Florence Jacquet[1] · Marie-Hélène Jeuffroy[2] · Julia Jouan[1] · Edith Le Cadre[3] · Isabelle Litrico[4] · Thibaut Malausa[5] · Xavier Reboud[6] · Christian Huyghe[7]

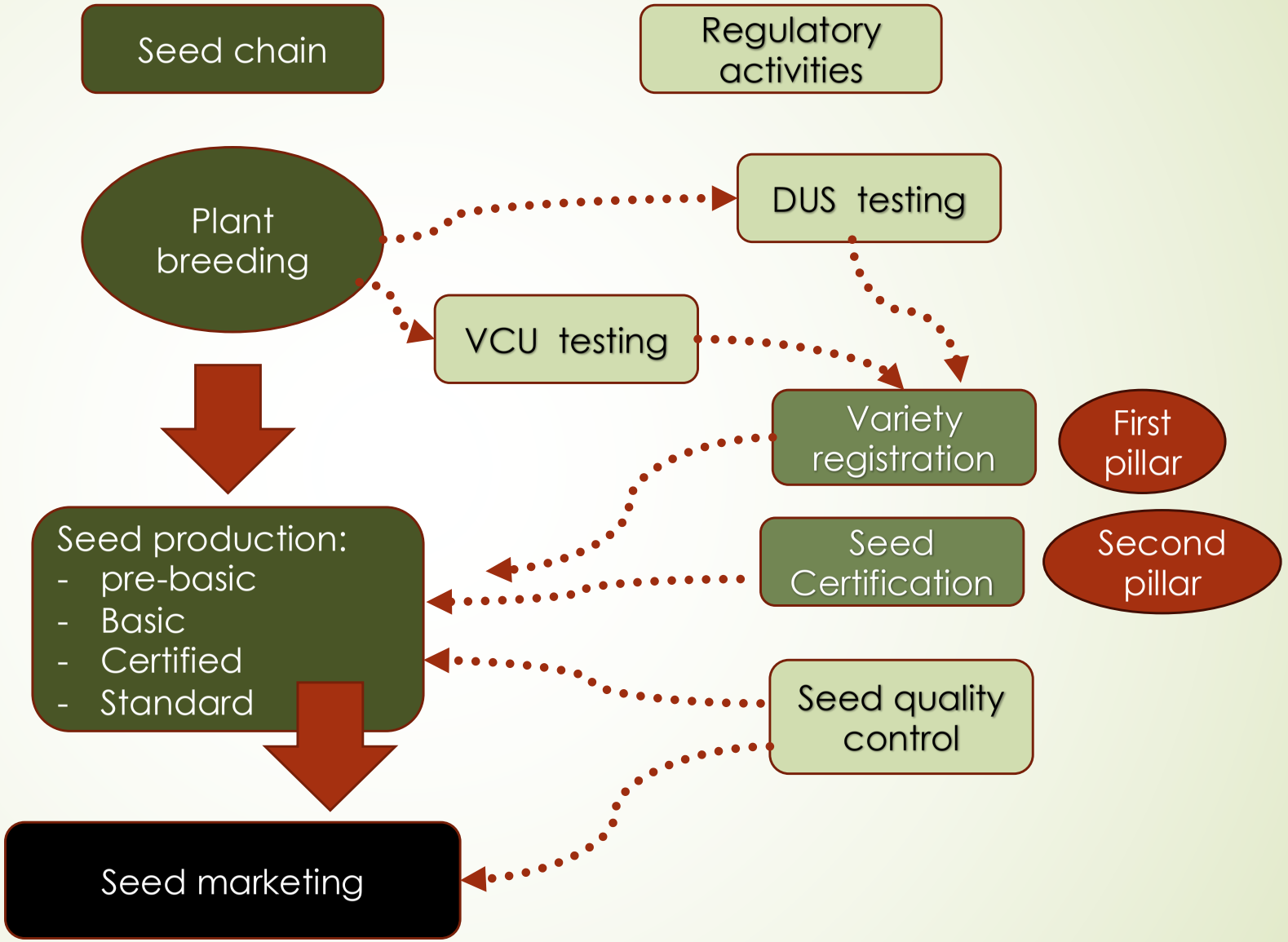
genetic uniformity promotes strong and directional selection pressure on pathogens

The genetic basis of "**ability to co-exist**" traits for all major crops requires renewing methods and criteria in selection programs

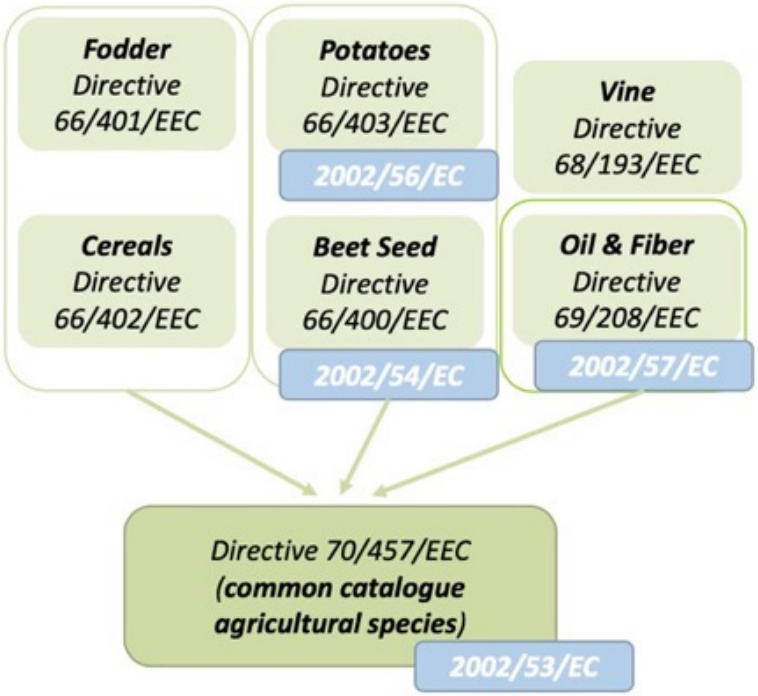
Indeed, the **genotype × environment × management** ($G \times E \times M$) equation of the breeder's objective is to derive value from genetic resources in the face of environmental heterogeneity

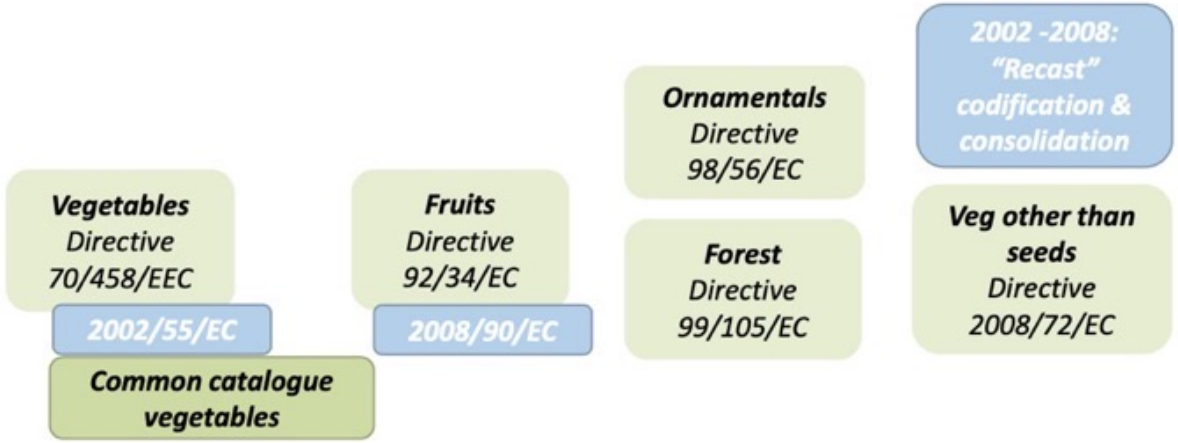
Extending **plant-trait approaches to soil biota** and including them in breeding programs is a promising research front, especially since agricultural systems make it possible to choose crop species and varieties

The EU model


Seed chain
Regulatory activities
Plant breeding
DUS testing
VCU testing
Variety registration
First pillar
Seed production:
- pre-basic
- Basic
- Certified
- Standard
Seed Certification
Second pillar
Seed quality control
Seed marketing

12 Directives (Council/Parliament)





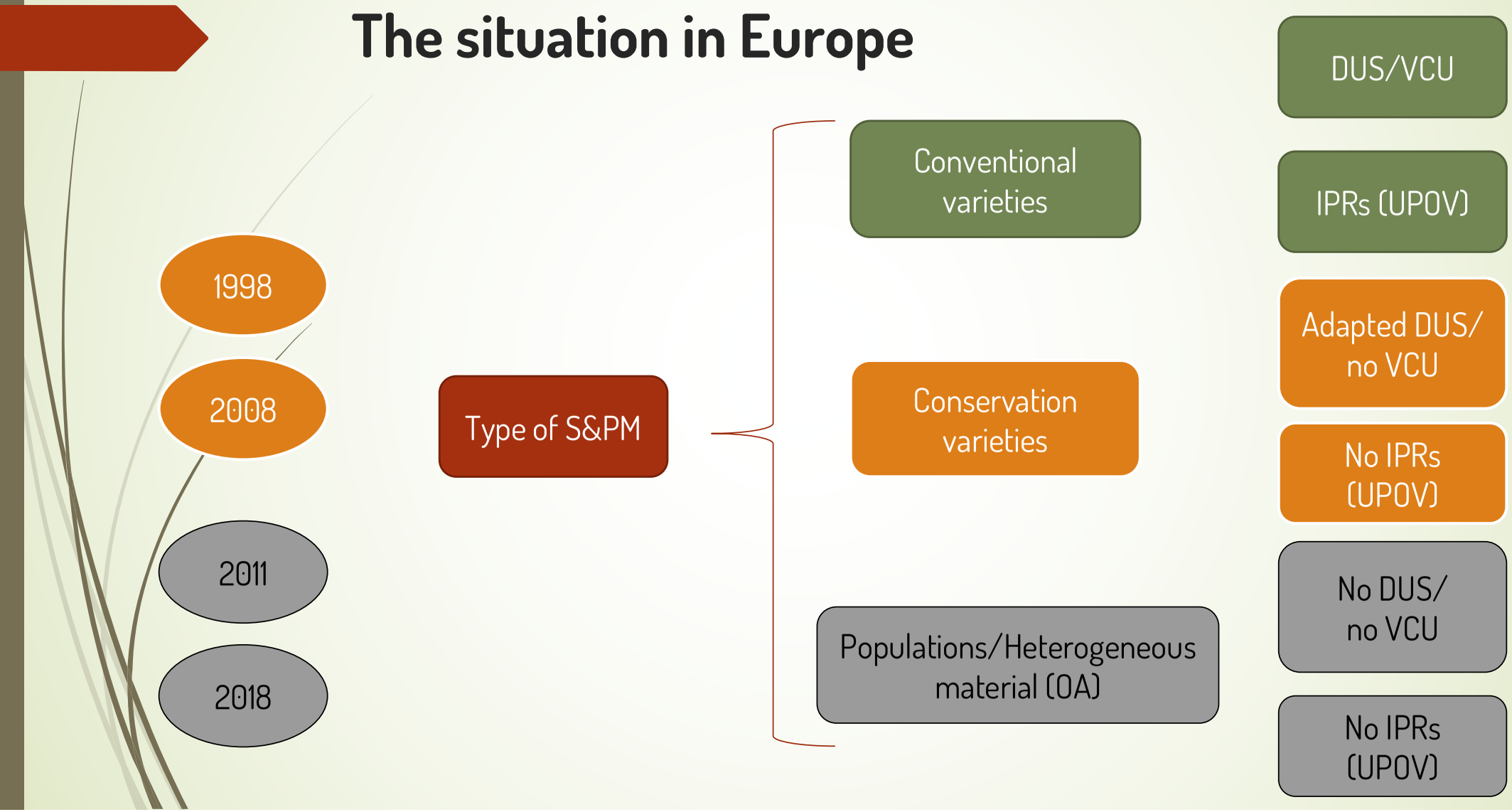
3 Commission Directives (derogatory regimes)

Cereal conservation varieties Directive 2008/62	**Veg conservation/ amateur varieties** Directive 2009/145	**Fodder mixtures** Directive 2010/60

1 New Regulation (Council/Parliament) from 01.01.2022

Organic Production Reg. 2018/0848	**COM Regulation (2021/1189 Delegated Act)** Organic Heterogeneous material

The situation in Europe



Conservation varieties

derogation

Not official DUS testing

90% of true to type according to the official description

Description by the maintainer

No VCU testing

For free in Italy

Variety maintainer

Phytosanitary rules

Seed certification for agricultural species

You pay certification each year

The seller must be registered as professional operators

ORGANIC HETEROGENEOUS MATERIAL



A new marketing regime for diversified seed populations

Heterogeneous materials: how to breed



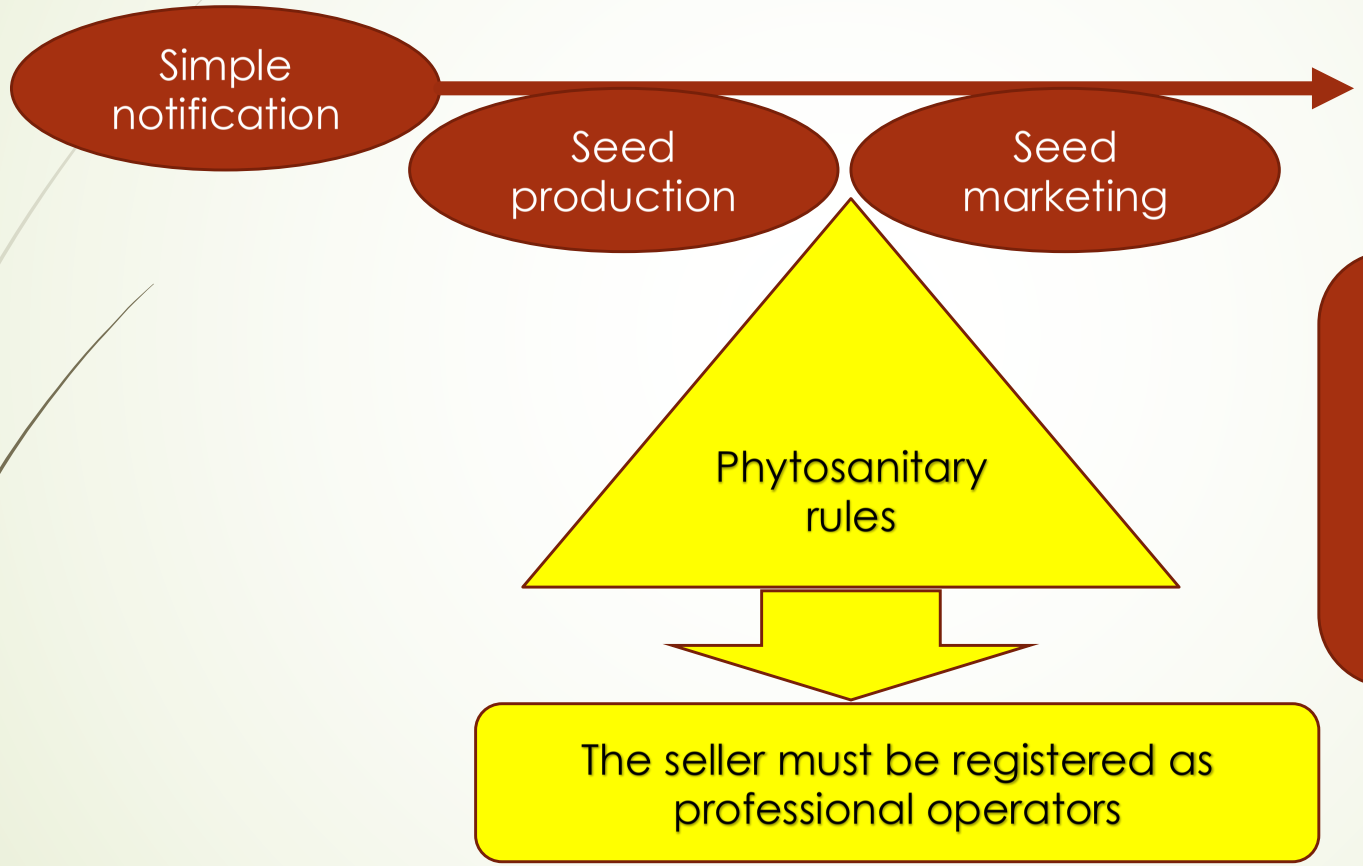
The material referred to in paragraph 1(b) may be generated by one of the following techniques:

(a) **crossing of several different types of parental material**,;

(b) **on-farm-management practices, including selection, establishing or maintaining material, which is characterized by a high level of genetic**;

(c) **any other technique used for breeding or production of organic heterogeneous material, taking into account particular features of propagation.**

Heterogeneous materials: how to register, market and control



Organic heterogeneous material is intended to adapt to various biotic and abiotic stresses due to repeated natural and human selection and **therefore is expected to change over time.**

Labelling

INFORMATION TO BE SET OUT ON THE LABEL OF THE PACKAGES AS PROVIDED FOR IN ARTICLE 7(2)(b)

A. The label shall include the following information:

1. the denomination of the heterogeneous material, together with the phrase ‘Organic heterogeneous material’;
2. ’Union rules and standards’;
3. the name and address of the professional operator responsible for affixing the label, or its registration code;
4. country of production;
5. reference number given by the professional operator responsible for affixing the labels;
6. month and year of closing, following the term: ‘closed’;
7. species, indicated at least under its botanical name, which may be given in abridged form and without the authors names, in roman characters;
8. declared net or gross weight, or declared number in case of seeds, except for small packages;
9. where weight is indicated and pelleting substances, or other solid additives are used, the nature of the additive and also the approximate ratio between the weight of pure seeds and the total weight;
10. information on the plant protection products applied to the plant reproductive material as required under Article 49(4) of Regulation (EC) No 1107/2009[1];
11. the germination rate where, pursuant to Article 6(13) of this Regulation, organic heterogeneous material does not satisfy the conditions with respect to germination.

Labelling

B. The denomination referred to in point A.1. shall not cause its users difficulties as regards recognition or reproduction and shall not:

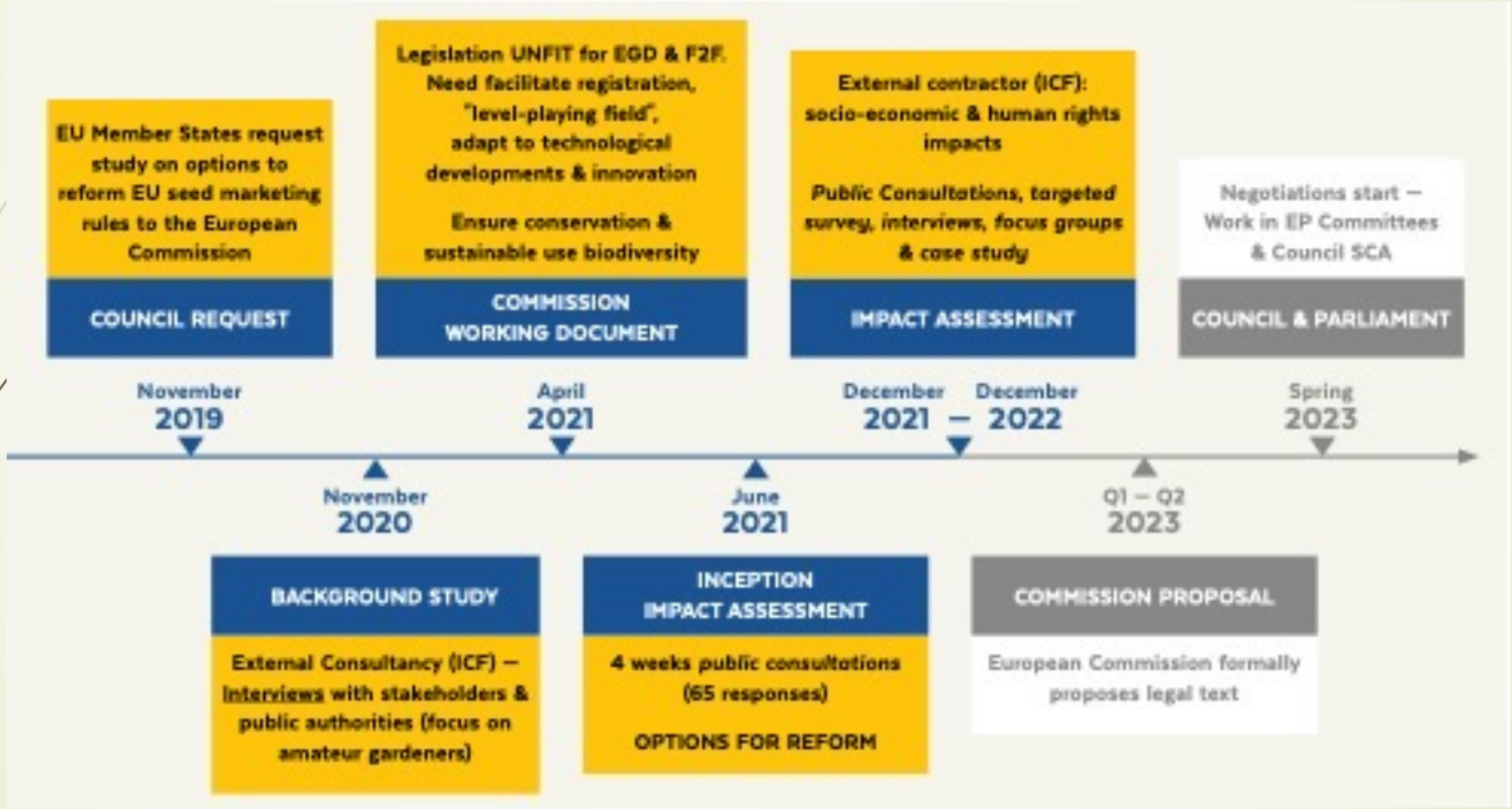
(a) be identical or likely to be confused with a denomination under which another variety or organic heterogeneous material of the same or of a closely related species is entered in an official register of plant varieties or a list of organic heterogeneous material;

(b) be identical or likely to be confused with other designations which are commonly used for the marketing of goods or which have to be kept free under other legislation;

(c) mislead or cause confusion concerning the characteristics, the value or the identity of the organic heterogeneous material, or the identity of the breeder.

Heterogeneous materials: how to assess identity

a. The parental material and the production scheme used in the crossing for creation of the organic heterogeneous material, as provided for in Article 4(2)(a) or, if applicable, in Article 4(2)(c), or the history of the material and the **on-farm management practices, including whether the selection has occurred naturally and/or through human intervention,** in the cases of Articles 4(2)(b) and 4(2)(c);
b. the country of breeding or production;
c. characterisation of the common key characters and of the phenotypic heterogeneity of the material.


EU Member States request study on options to reform EU seed marketing rules to the European Commission
COUNCIL REQUEST
November 2019
November 2020
BACKGROUND STUDY
External Consultancy (ICF) – Interviews with stakeholders & public authorities (focus on amateur gardeners)
Legislation UNFIT for EGD & F2F. Need facilitate registration, "level-playing field", adapt to technological developments & innovation
Ensure conservation & sustainable use biodiversity
COMMISSION WORKING DOCUMENT
April 2021
June 2021
INCEPTION IMPACT ASSESSMENT
4 weeks public consultations (65 responses)
OPTIONS FOR REFORM
External contractor (ICF): socio-economic & human rights impacts
Public Consultations, targeted survey, interviews, focus groups & case study
IMPACT ASSESSMENT
December 2021 – December 2022
Q1 – Q2 2023
COMMISSION PROPOSAL
European Commission formally proposes legal text
Negotiations start – Work in EP Committees & Council SCA
COUNCIL & PARLIAMENT
Spring 2023



News

- Mandatory VCU
- From VCU to Sustainable VCU
- More derogations:
  - Conservation varieties;
  - Heterogeneous materials;
  - Farmers' exchange;
  - Seed network
- Out of the scope exchange/market between private people

Farmers

Article 30

Seed exchanged in kind between farmers

1. By way of derogation from Articles 5 - 25, farmers may exchange seeds in kind, if such seeds fulfill all of the following conditions:

(1) are produced in the respective farmer's own premises;

(2) are derived from the respective farmer's own harvest;

(3) are not subject to a service contract conducted by the respective farmer with a professional operator performing seed production; and

(4) the seed is used for dynamic management of farmer's own seed for the purpose of contributing to agro-diversity.

Farmers

2. Such seeds shall fulfil all of the following requirements:

(a) not to belong to a to variety for which plant variety rights have been granted in accordance with Regulation (EU) 2100/94;

(b) to be limited to small quantities, defined by the competent authorities for specific species per year and per farmer, without using commercial intermediaries or public offer of marketing; and

(c) to be practically free from quality pests and any defects likely to impact their quality as seeds, and shall have satisfactory germination capacity.

3. Member States shall annually notify to the Commission and the other Member States the amounts per species defined in accordance with paragraph 2, point (b).

Conservation varieties

Article 26

PRM belonging to conservation varieties

1. By way of derogation from Article 20, PRM belonging to a conservation variety registered in a national variety register referred to in Article 44(1), point (b), may be produced and marketed in the Union as standard seed or material, if it complies with all the requirements concerning standard seed and material for the respective species, as referred to in Article 8.
2. PRM referred to in paragraph 1 shall be accompanied by an operator's label with the indication 'Conservation variety'.
3. A professional operator who uses this derogation shall annually notify to the competent authority this activity, with regard to the species and quantities concerned.

(29) 'conservation variety' means a variety that is:

(a) traditionally grown or locally newly bred under specific local conditions in the Union, and adapted to those conditions; and

(b) characterised by a high level of genetic and phenotypical diversity between individual reproductive units;

Heterogeneous materials

(27) ‘heterogeneous material’ means a plant grouping within a single botanical taxon of the lowest known rank which:

(a) presents common phenotypic characteristics;

(b) is characterised by a high level of genetic and phenotypic diversity between individual reproductive units, so that that plant grouping is represented by the material as a whole, and not by a small number of units;

(c) is not a variety; and

(d) is not a mixture of varieties;

Amateur varieties

Article 28

PRM marketed to final users

1. By way of derogation from Articles 5 - 12, 14, 15 and 20, PRM may be marketed to final users, if it complies with all of the following requirements:

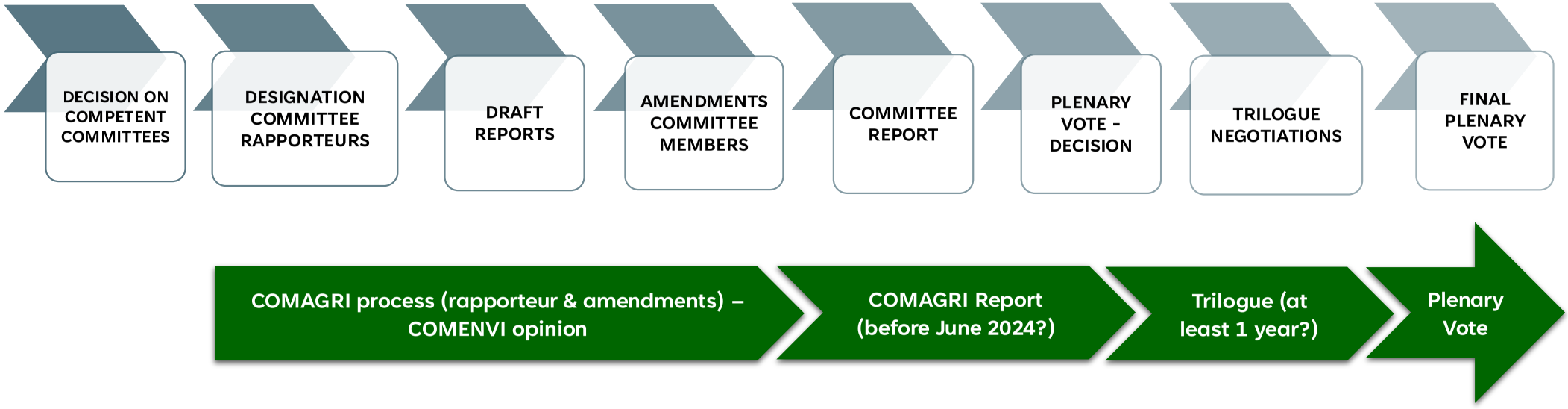
   (a) to bear an operator's label with the denomination of the PRM and the indication 'Plant reproductive material for final users – not officially certified' or, in the case of seeds, 'Seeds for final users – not officially certified';

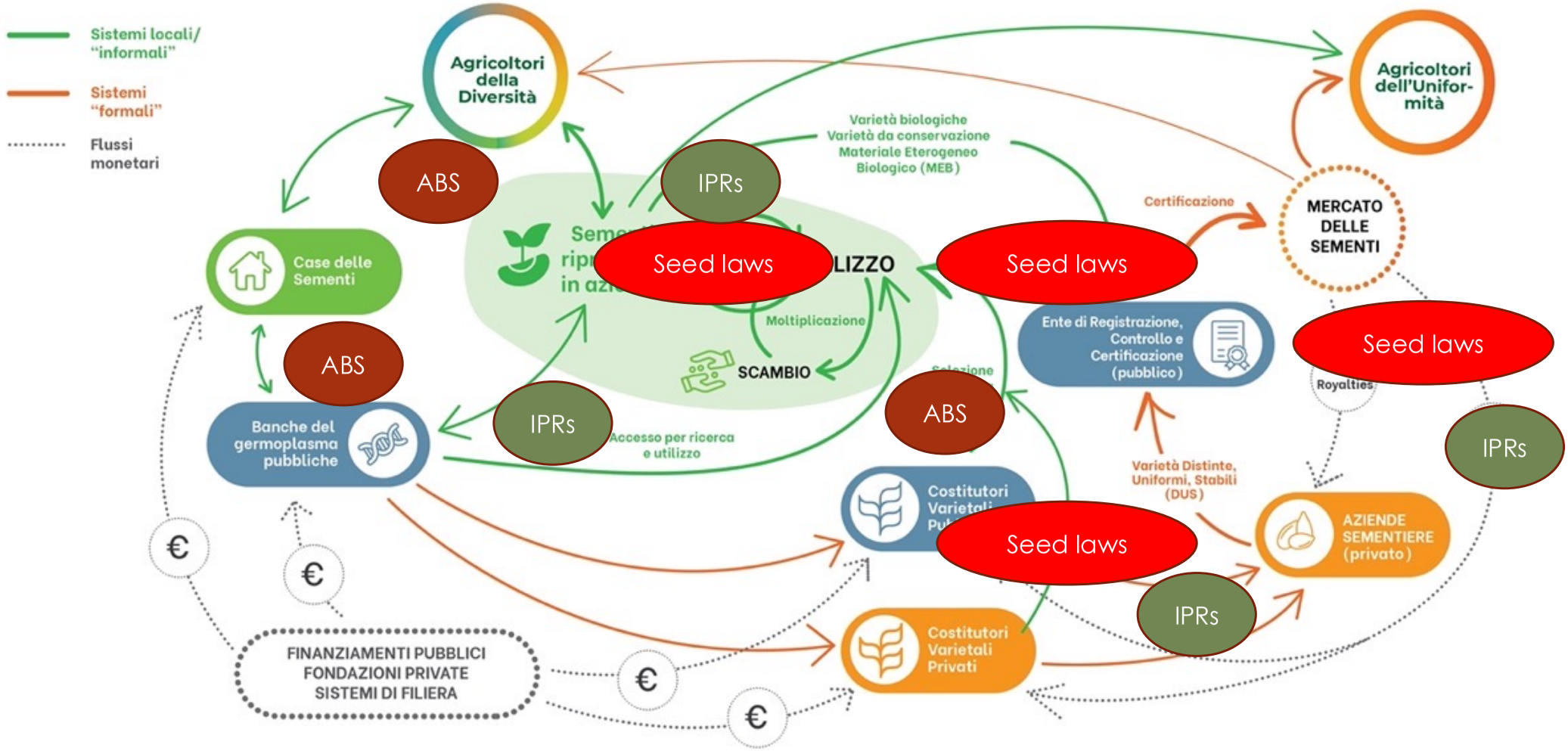
   (b) in case not belonging to a variety registered in a national variety register referred to in Article 44, to have a description made publicly available, on the basis of a private documentation, in a commercial catalogue kept by the professional operator. This private documentation shall be made available by the professional operator upon request to the competent authority;

   (c) to be practically free from quality pests and any defects likely to impair its quality as reproductive material, and shall have satisfactory vigour and dimensions in respect of its usefulness as PRM, and, in the case of seeds, shall have satisfactory germination capacity; and

Next steps

EUROPEAN PARLIAMENT




Sistemi locali/ "informali"
Sistemi "formali"
Flussi monetari
Agricoltori della Diversità
Agricoltori dell'Uniformità
ABS
IPRs
Seed laws
Varietà biologiche
Varietà da conservazione
Materiale Eterogeneo Biologico (MEB)
Certificazione
MERCATO DELLE SEMENTI
Case delle Sementi
Moltiplicazione
SCAMBIO
Ente di Registrazione, Controllo e Certificazione (pubblico)
Royalties
Banche del germoplasma pubbliche
Accesso per ricerca e utilizzo
Costitutori Varietali Pubblici
Varietà Distinte, Uniformi, Stabili (DUS)
AZIENDE SEMENTIERE (privato)
Costitutori Varietali Privati
€
FINANZIAMENTI PUBBLICI
FONDAZIONI PRIVATE
SISTEMI DI FILIERA

2019: field catalogue with 264 Italian rice accessions

Participatory selection with farmers and researchers

- **Combination of varieties with a high score according to grain type and ripening time**
- **Constitution of 3 mixtures: short, medium and long A grain type**

IRRI

The International Treaty
ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

https://youtu.be/3ujbylwjMv4?si=_Iu06tNqrZd_s8bM

2018

16 Italian rice accessions from national gene bank CREA and farmers' varieties as controls

Multiplication of accessions in two farms



Participatory evaluation

Processing and storing - RSR Community Seed Bank

2019

214 Italian rice accessions from international gene bank IRRI

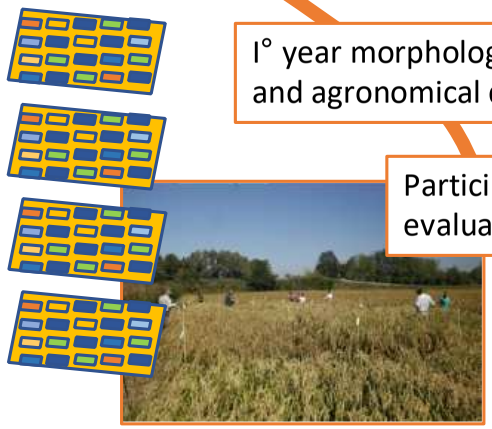
Multiplication of accessions on one farm



Participatory evaluation

I° participatory field trial (RBD) 4 farms

I° year morphological and agronomical data



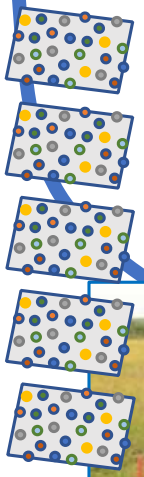
Participatory evaluation

Constitution of **three rice mixtures**: short grain, medium grain long grain type A – **5 farms**

Processing and storing - RSR Community Seed Bank

2020

II° participatory field trial **4 farms (RBD)**



II° year morphological and agronomical data



Participatory evaluation



Participatory evaluation of the mixtures – first year of multiplication and adaptation

Rete Semi Rurali

Fondazione CARIPLO

Entrata
Ranghino
Gritna
Alpe
Carmen
Russo
Lomellino
Titano
Rodeo
Italmochi
Topazio
Miara
Baldo
RN
Novara
Corbetta
Bertone
RM_Una Ga
C. Originario
RM_C. Orsin
Baldo_C.Orsi
Arborio
MIX_Una Ga

sustainability

MDPI

Article

Participatory Evaluation of Rice Varieties for Specific Adaptation to Organic Conditions in Italy

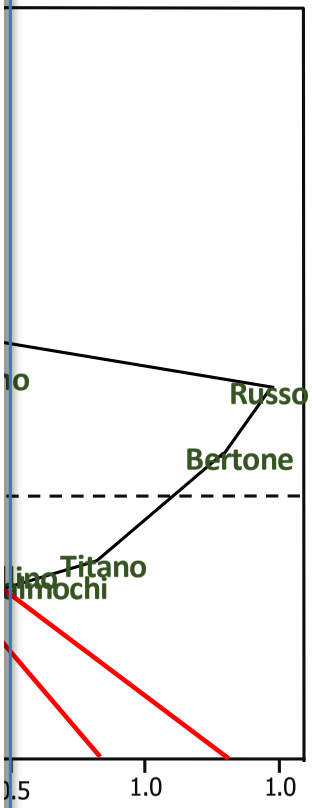
Giuseppe De Santis [1], Daniela Ponzini [1], Rachele Stentella [1], Tommaso Gaifami [1], Bettina Bussi [1], Rosalia Caimo-Duc [2], Ugo Stocchi [3], Marco Cuneo [4], Marco Paravicini [5], Riccardo Bocci [1], Matteo Petitti [1] and Salvatore Ceccarelli [6,*]

1 Rete Semi Rurali, Scandicci, 50018 Metropolitan, Italy
2 Azienda Terre di Lomellina, Candia di Lomellina, 27031 Pavia, Italy
3 Azienda Una Garlanda, Rovasenda, 13040 Vercelli, Italy
4 Cascina Gambarina, Abbiategrasso, 20081 Milano, Italy
5 Azienda Cascine Orsine, Bereguardo, 27021 Pavia, Italy
6 Independent Researcher, 63100 Ascoli Piceno, Italy
* Correspondence: ceccarelli.salvatore83@gmail.com

Abstract: Rice is the fourth most important crop in Italy with a growing area under organic management. We conducted a participatory evaluation of 21 rice cultivars (10 old, 10 modern and a mixture) in four organic/biodynamic farms, for two cropping seasons, to assess the extent of varieties × farms and varieties × years within farm interactions and farmers' preferences. There were significant differences between farms and varieties, as well as large interactions between varieties and farms, particularly in the case of plant height and reactions to *Fusarium fujikuroi* Nirenberg (bakanae) and *Magnaporthe oryzae* B Cooke (leaf and neck blast), but also for grain yield. There were also large interactions between varieties and years, which resulted in considerable differences in stability among varieties with one of the old, one modern and the mixture combining high grain yield and stability. Farmers, regardless of gender, were able to visually identify the highest yielding varieties in a consistent way across years, and although accustomed to seeing uniform varieties, they scored the mixture higher than the mean. The results are discussed in the context of a decentralized-participatory breeding program, to serve the target population of heterogenous environments represented by organic and biodynamic farms.

check for updates

Citation: De Santis, G.; Ponzini, D.; Stentella, R.; Gaifami, T.; Bussi, B.; Caimo-Duc, R.; Stocchi, U.; Cuneo, M.; Paravicini, M.; Bocci, R., et al. Participatory Evaluation of Rice Varieties for Specific Adaptation to Organic Conditions in Italy



Rete Semi Rurali

Thanks!







Manual #1

Community Seed Banks "Establishment, management and governance"

Banques de semences communautaires "Création, gestion et

mation

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mplasm and

ntation de
des bénéfices



Languages: English, French, Spanish, Italian, Hungarian

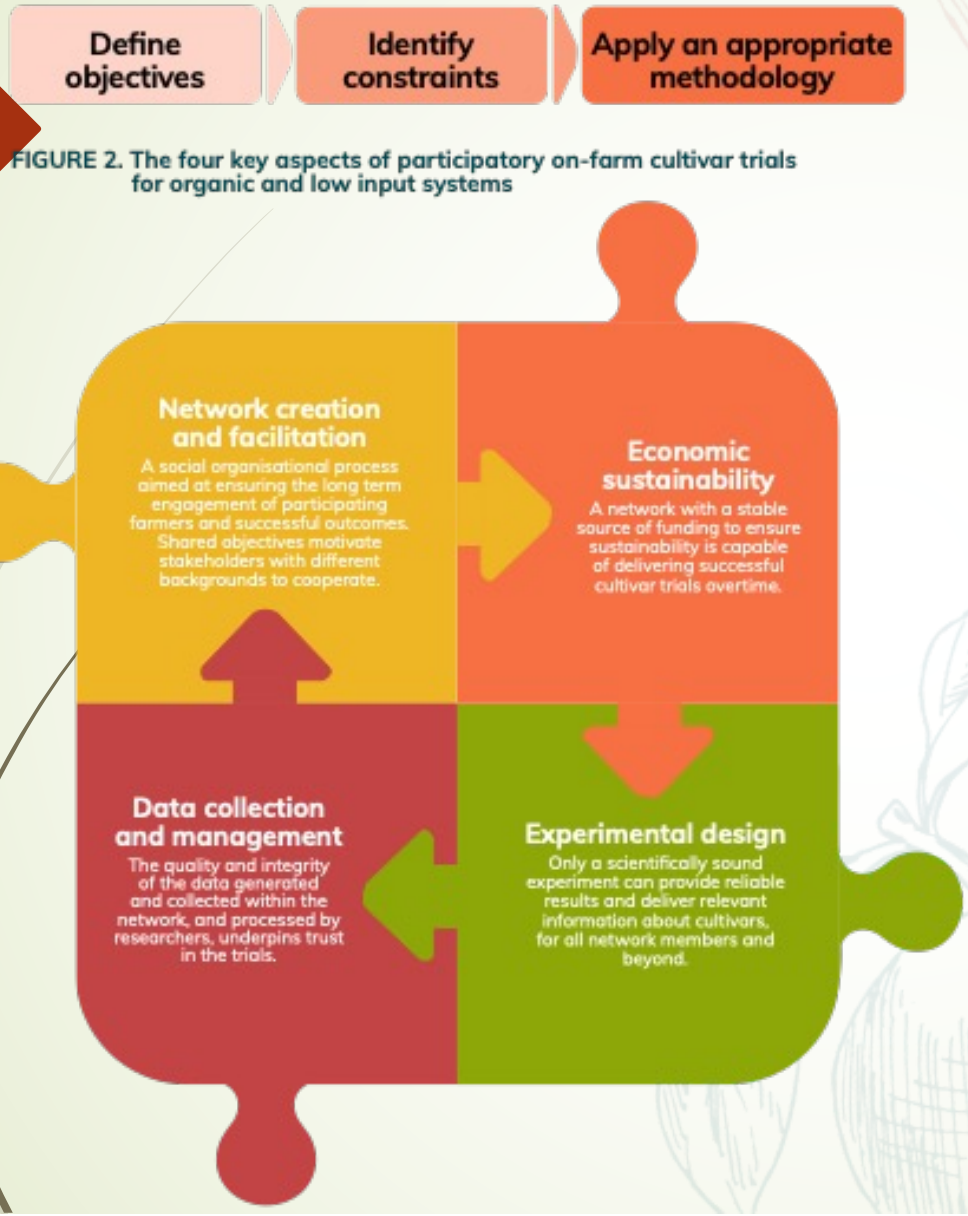


FIGURE 2. The four key aspects of participatory on-farm cultivar trials for organic and low input systems

Guidelines for organic on-farm cultivar trials

A practical guide for researchers and facilitators

LIVESEED

www.liveseed.eu

Success stories on organic seed production & breeding

Experiences from LIVESEED Cross Visits

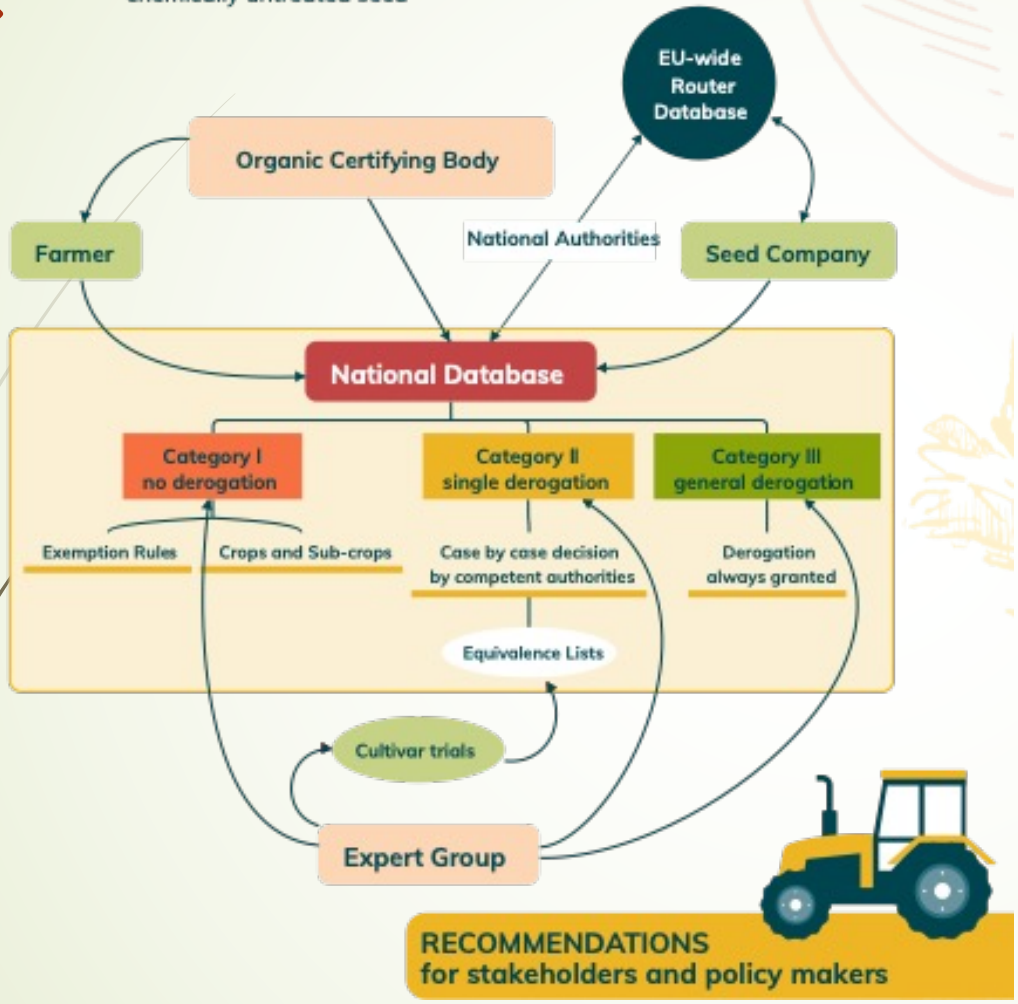
For technical resources and useful tools on organic seed production and plant breeding please visit the new "seed" section on **www.organic-farmknowledge.org**

Organic Farm Knowledge

LIVESEED

www.liveseed.eu

FIGURE 6. Model for the implementation of derogations for the use of non-organic, chemically untreated seed



Boosting organic seed and breeding across Europe: recommendations for stakeholders and policy makers

A roadmap towards achieving 100% organic seed from adapted cultivars in the organic sector

LIVESEED

www.liveseed.eu

Some further readings

- N. Louwaars, Seeds of confusion, PhD Dissertation, 2007.
- N. Louwaars, Plant breeding and diversity : A troubled relationship ?, Euphytica, 2018.
- N. Louwaars, W.S. de Boef, Integrated Seed Sector Development in Africa: A Conceptual Framework for Creating Coherence Between Practices, Programs, and Policies, Journal of Crop Improvement, 2012.
- C. Fowler, P. Mooney, Shattering: Food, Politics, and the Loss of Genetic Diversity, 1990
- C. Fowler, Unnatural Selection: Technology, Politics, and Plant Evolution, 1994
- https://osseeds.org – USA
- R. Andersen, Governing Agrobiodiversity, 2008.

Resources

- http://www.fao.org/plant-treaty/overview/en/
- https://enb.iisd.org/biodiv/itpgrfa/gb8/
- https://www.bioversityinternational.org/index.php?id=244&tx_news_pi1%5Bnews%5D=8690
- https://www.bioversityinternational.org/e-library/publications/detail/crop-genetic-resources-as-a-global-commons/
- https://www.bioversityinternational.org/e-library/publications/detail/plant-genetic-resources-and-food-security/

