Diversity and Participatory research For Organic Agriculture

Véronique Chable

7 February 2019 – Agrocampus Ouest

INRA SCIENCE & IMPACT

Following developments after Isabelle Goldringer presentation "PPB as a strategy for agroecology transition"

- The key role of crop biodiversity for agroecology transition
- « Alternative » participatory and collaborative plant breeding approaches?
- Her 12 years experience of a PPB project on bread wheat in France

Today,

- About diversity of agroecological approaches > organic agriculture
- Research paradigm and plant breeding
- The revival of peasant seed > community seed banks

Agroecology/organic agriculture

A first look at DIVERSITY of concepts!

From where agroecology and organic agriculture knowledge come from?

- **Agroecology**

1928 – Bensin, 'Agroecological characteristics description and classification of the local corn varieties Chorotypes'
1930 – Friederichs, ' Die Grundfragen und Gesetzmäßigkeiten der land- und forstwirtschaftlichen Zoologie'
1938 – Papadakis, 'Compendium on crop ecology'
1942 – Klages, 'Ecological crop geography'
1956 – Azzi, 'Agricultural ecology'
1965 – Tischler, 'Agrarökologie'
1979 - Cox and Atkins, 'Agricultural ecology: an analysis of world food production systems'
1983 – Altieri, 'Agroecology'
1984 – Douglass (ed.), 'Agricultural sustainability in a changing world order'
1987 – Arrignon, 'Agro-écologie des zones arides et sub-humides'
1990 – Gliessman, (ed.) 'Agroecology: researching the ecological basis for sustainable agriculture'
1991 – Caporali, 'Ecologia per l'agricoltura'
1995 – Altieri, 'Agroecology: the science of sustainable agriculture (3rd edition)'
1997 - Gliessman 'Agroecology: ecological processes in sustainable agriculture'
2007 – Gliessman, 'Agroecology: the ecology of sustainable food systems'
2007 – Warner, 'Agroecology in action: extending alternative agriculture through social networks'

- **Organic agriculture**

1924 – Rudolf Steiner's Agriculture Courses based on Anthroposophy approach

1928 : creation of Demeter

1938 – Ehrenfried Pfeiffer, 'Bio-Dynamic Farming and Gardening' and association

1940 –Sir Abert Howard, 'An agricultural testament'.

1946 : Creation of the Soil association

1930 - Organic-biological agriculture Hans Mueller and Hans Peter Rusch then, influence on Bioland creation.

1960 – « Agriculture biologique » by AFAB (French Association Française of Organic agriculture)

1964 : creation of Nature&Progrès in France

1975 – Masanobu Fukuoka, 'The One-Straw Revolution' and 'The Natural Way of Farming'

1978 – Bill Mollison and David Holmgren, 'Permaculture'

2006 - Ernst Götsch, Syntropic agriculture https://lifeinsyntropy.org/en/

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Re-thinking agriculture on the basis of ecological knowledge and re-questioning the food systems organisation

2007 – Warner, 'Agroecology in action: extending alternative agriculture through social networks'

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Re-thinking agriculture which renews the vision of the life

Agroecology / organic agriculture Let's Miguel Altieri explain …

- "**Those who adhere to organic agriculture have the highest degree of consciousness consistency of their thinking**.
- Their approach to the problems distinguishes them from industrial agriculture, not by the refusal of "progress", but by the rejection of a project and a particular **vision of life**, and the management designed and developed in the Western part of the World.

[12] Altieri, M.A.- Agroecology: The Science of Sustainable Agriculture, Westview Press (1995)

« Organic pionners »: life at the central place

Howard 1940

Instead of breaking up the subject into fragments and studying agriculture in piecemeal fashion by the analytical methods of science, appropriate only to the discovery of new facts, we must adopt a synthetic approach and look at the wheel of life as one great subject and not as if it were a patchwork of unrelated things. All **the phases of the life cycle are closely connected**; all are integral to Nature's activity; all are equally important; none can be omitted.

Sir Albert Howard (1940) An Agricultural Testament, Oxford University Press, New York and London

Biodynamics is thus **not just a holistic agricultural system but also a potent movement for new thinking and practices in all aspects of life** connected to food and agriculture.

https://www.biodynamics.com/what-is-biodynamics

Fukuoka called his agricultural philosophy shizen nōhō (自然農法?), most commonly translated into English as "natural farming". It is also referred to as "the Fukuoka Method", "the natural way of farming" or "Do-Nothing Farming". The system is based on **the recognition of the complexity of living organisms** that shape an ecosystem and deliberately exploiting it. Fukuoka saw farming not just as a means of producing food but **as an aesthetic and spiritual approach to life**, the ultimate goal of which was "the cultivation and perfection of human beings".

https://en.wikipedia.org/wiki/Masanobu_Fukuoka

The world of agricultural research has established the break with nature.

The 40th anniversary of the Plant Breeding division at INRA: part of the introductory speech of a former director

- *Ce processus d'amélioration des plantes a instauré et diffusé dans le corps social* ***une culture scientifique marquée par une sorte de distanciation, d'éloignement et même de rupture vis-à-vis de la nature*** *; ceci afin de la connaître, la transformer et l'utiliser. Il s'agit là d'un processus banal, inhérent à toute démarche scientifique. La particularité de l'amélioration des plantes est que ce phénomène s'est heurté à une vision de la nature héritée des sociétés paysannes*. (Hervieu B, 2004)

This process of plant breeding has introduced and disseminated in the social body a scientific culture marked by a kind of distancing**, separation and even break vis-à-vis nature**, in order to understand it, to transform and to exploit it. This is a trivial process, inherent in any scientific approach. The specificity of plant breeding is its incompatibility with the common vision of nature inherited **from peasant societies**.

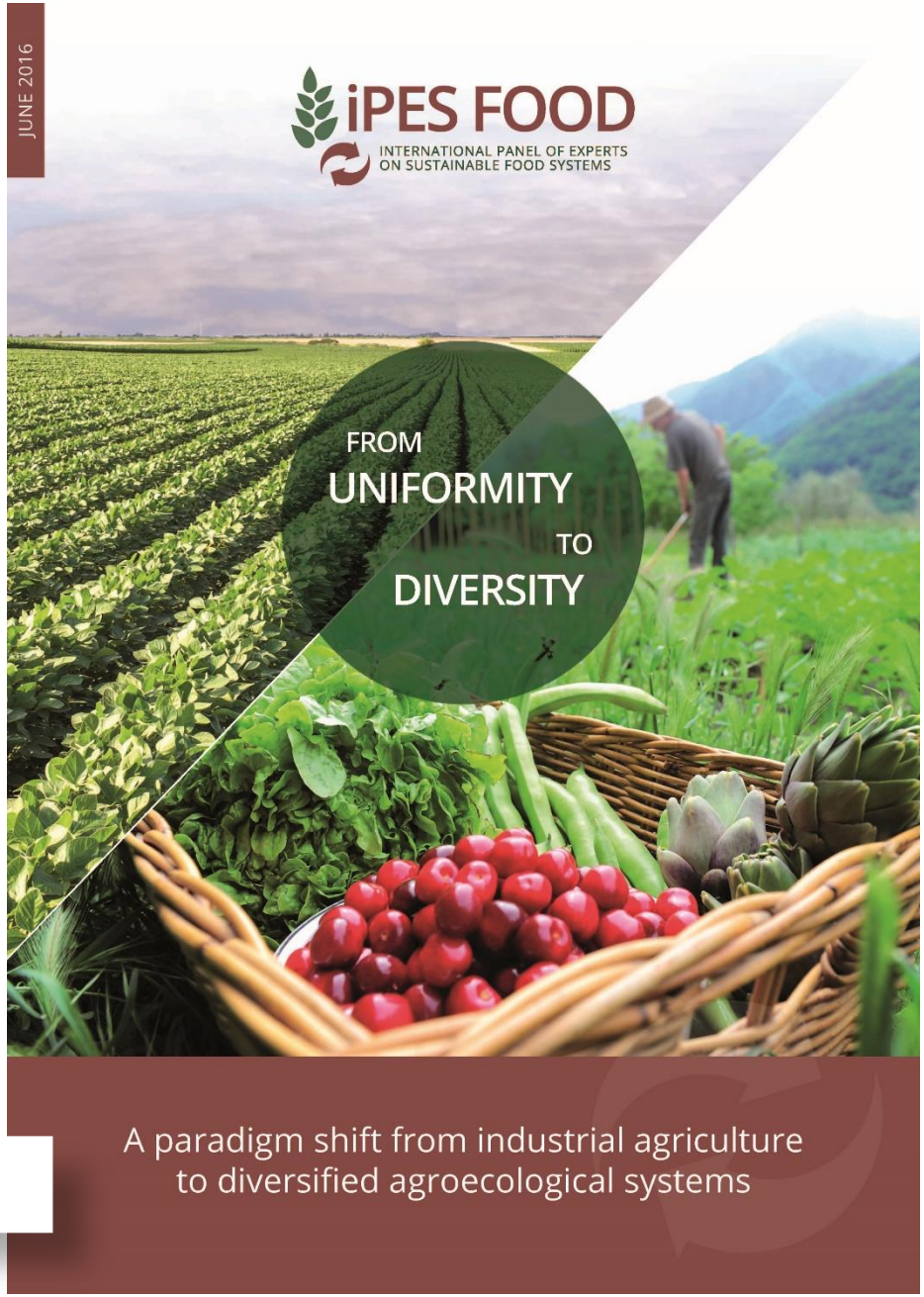
Hervieu B (2004) L'amélioration des plantes, un domaine emblématique pour l'INRA : histoire, identité, horizons. Actes du colloque « L'Amélioration des Plantes, continuités et ruptures ». Pierre Boistard, Claire Sabbagh et Isabelle Savini, éditeurs. Montpellier 17-18 Octobre 2002

Cultivated varieties?

Two paradigms coexist

Their foundation and history …

From uniformity to diversity



2016

DIVERSIFOOD INNOVATION FACTSHEET #16, *November 2018*

This project has received funding from the European Union's H2020 Programme under grant agreement no 633571

DIVERSIFOOD

www.diversifood.eu

A PARADIGM SHIFT

AT FIRST GLANCE

A paradigm shift refers to a radical change in beliefs or theory. DIVERSIFOOD has established diversity as the foundation of resilient food systems working with the hypothesis "the whole is greater than the sum of the parts".

Embedding crop diversity and networking for local high quality food systems

A new paradigm is called for after one century of standardisation in the agro-food system

"From uniformity to diversity: a paradigm shift from industrial agriculture to diversified agroecological systems" is the title of the report of the International Panel of Experts on Sustainable Food systems (IPS-Food 2016). DIVERSIFOOD witnesses experiences from the ground to design more precisely this paradigm shift and to provide elements to involve a large community - from research to market – in redefining food chain organisations based on a holistic knowledge of living processes involved in resilience.

Diversity and living processes

Uniformity invading all levels of modern societies has covered the overall food production and has broken the intrinsic link of agriculture with the living systems. At the other end of the food chain, most of consumers have no more idea of the farming realities, of the needs of their own body and of the quality of their food.

DIVERSIFOOD is deeply influenced by the messages of pioneers of organic agriculture as Howard (An agricultural testament, 1943) who pointed out the close connexions between health of soil, plants, animals and humans, meaning all living beings are interdependent. According to this vision, alternative food systems should be conceived through the holistic approach. Indeed, the new paradigm addresses all the practices from farming to food processing, distribution and consumption.

DIVERSIFOOD promotes organic farming and agroecological farming systems based on diversity and respect of biological processes and societal needs (or, in other words, based on living systems). To do that, DIVERSIFOOD engages in recovering and enriching crop diversity by reintroducing underutilised and forgotten species, adopts multi-actor and participatory plant breeding methods to increase diversity and the capacity to manage it, promotes community agrobiodiversity management to empower local farming systems and collective approaches, and explores the conditions to create sustainable local markets able to appreciate diverse products.

From a market-oriented approach to a life-oriented approach

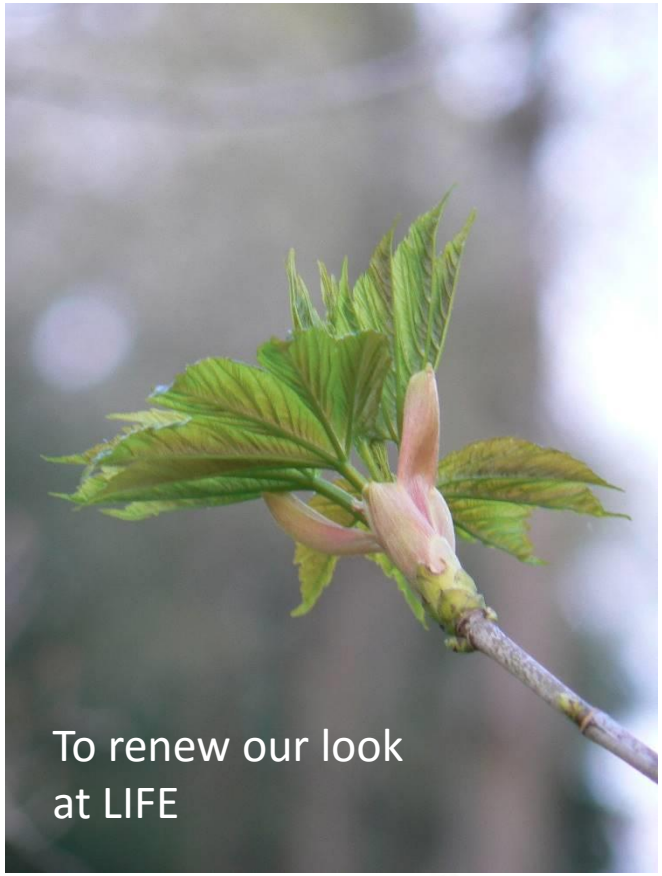
http://www.diversifood.eu/wp-content/uploads/2018/05/Diversifood_IF16_Paradigm_shift-1.pdf

Paradigm shift for multi-actor and transdisciplinary research

Take Home Message

From ***external to intrinsic values;*** this means different relationships in the life-oriented paradigm:

- between plants, and with their socio-biological environment
- between humans, and with their socio-biological environment



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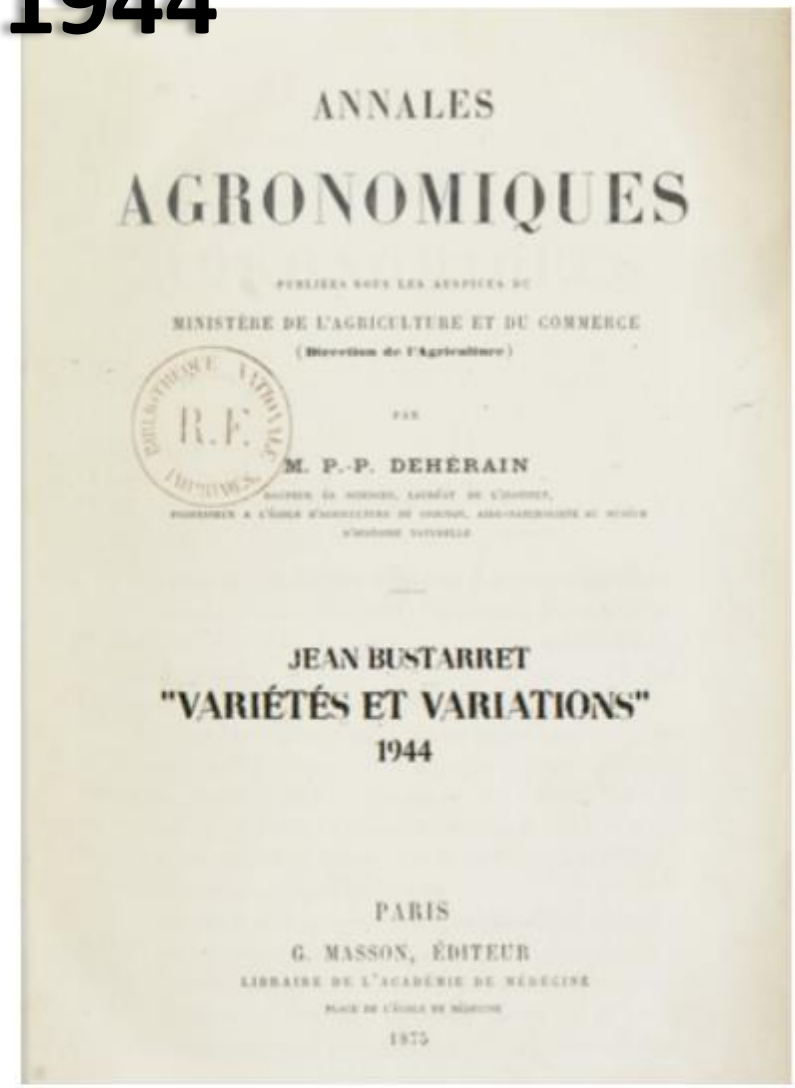
1908: F1 hybrids appeared in agriculture … The foundation of market-oriented paradigm

- "When hybrid maize was invented and presented to US farmers in the first decades of the twentieth century, it was based on two new operations, one biological and the other socio-economic.
- First, **strange manipulations** (forced inbreeding and controlled hybridization) produced biological products that had never before existed in nature.
- Second, **farmers gave up their time-honoured practice** of saving their own varieties of seed in favour of annual purchases of hybrid maize seed.

Duvick D.N. **(2001) Biotechnology in the 1930s: the development of hybrid maize**. Nature Reviews (2):69:74

MOTS-CLÉS : AMELIORATION DES PLANTES - LIGNEE - VARIETE - 70 ANS - BUSTARRET

1944


ANNALES

AGRONOMIQUES

PUBLIÉES SOUS LES AUSPICES DU

MINISTÈRE DE L'AGRICULTURE ET DU COMMERCE

(Direction de l'Agriculture)

PAR

M. P.-P. DEHÉRAIN

JEAN BUSTARRET

"VARIÉTÉS ET VARIATIONS"

1944

PARIS

G. MASSON, ÉDITEUR

LIBRAIRE DE L'ACADÉMIE DE MÉDECINE

1875

© Inra, Montage de Guillaume Bourrioux

Une variété doit être stable et homogène pour être évaluée

Dans sa publication déterminante de 1944 (1), Jean Bustarret distingue trois types de variétés : « la variété-lignée pure (2), la variété clone (3) et la variété population (4) ». Dans les deux premiers types de variétés, tous les individus sont génétiquement identiques et homozygotes pour tous leurs caractères, alors que les variétés populations, dites aussi « de pays » sont des mélanges d'individus, susceptibles d'évoluer dans l'espace et le temps. Jean Bustarret voit en la variété-lignée pure « la forme la plus « parfaite » de la variété, car elle est prévisible et possède des caractères stables qui permettent d'établir sa valeur agronomique. Il introduit les notions d'« homogénéité », de « stabilité » et de « caractères distinctifs ». Ces normes, dites DHS – distinction, homogénéité, stabilité – seront exigées par le CTPS pour l'inscription de toute nouvelle variété sur le Catalogue officiel et pour sa mise sur le marché (5), excluant alors les variétés de pays.

Cette vision de la variété devient très vite la vitrine de l'école de sélection française. Sous l'action des experts français, elle s'étend à l'Europe et sous-tend le catalogue communautaire des espèces et variétés de plantes cultivées.

Une vision de la variété insérée dans le modèle de développement des trente glorieuses

Cette vision de la variété correspond au modèle de développement de l'après-guerre, basé sur la productivité et l'efficacité,

http://www.inra.fr/Chercheurs-etudiants/Systemes-agricoles/Toutes-les-actualites/70-ans-La-notion-de-variete-en-1944

A variety must be stable and homogeneous to be evaluated

In his landmark publication of 1944, Jean Bustarret distinguishes three types of varieties: "the pure variety-line, the clone variety and the population variety (4)". In the first two types of varieties, all individuals are genetically identical and homozygous for all their characters, whereas the so-called "country" varieties are mixtures of individuals that can evolve in space and time. time. Jean Bustarret has seen in the pure variety-line "the most perfect form" of the variety, because it is predictable and possesses stable characters which make it possible to establish its agronomic value. It introduces the notions of "homogeneity", "stability" and "distinctive characters". These standards, known as DUS - distinction, uniformity, stability - will be required by the CTPS for the registration of any new variety on the Official Catalog and for its placing on the market, excluding then the varieties of countries.

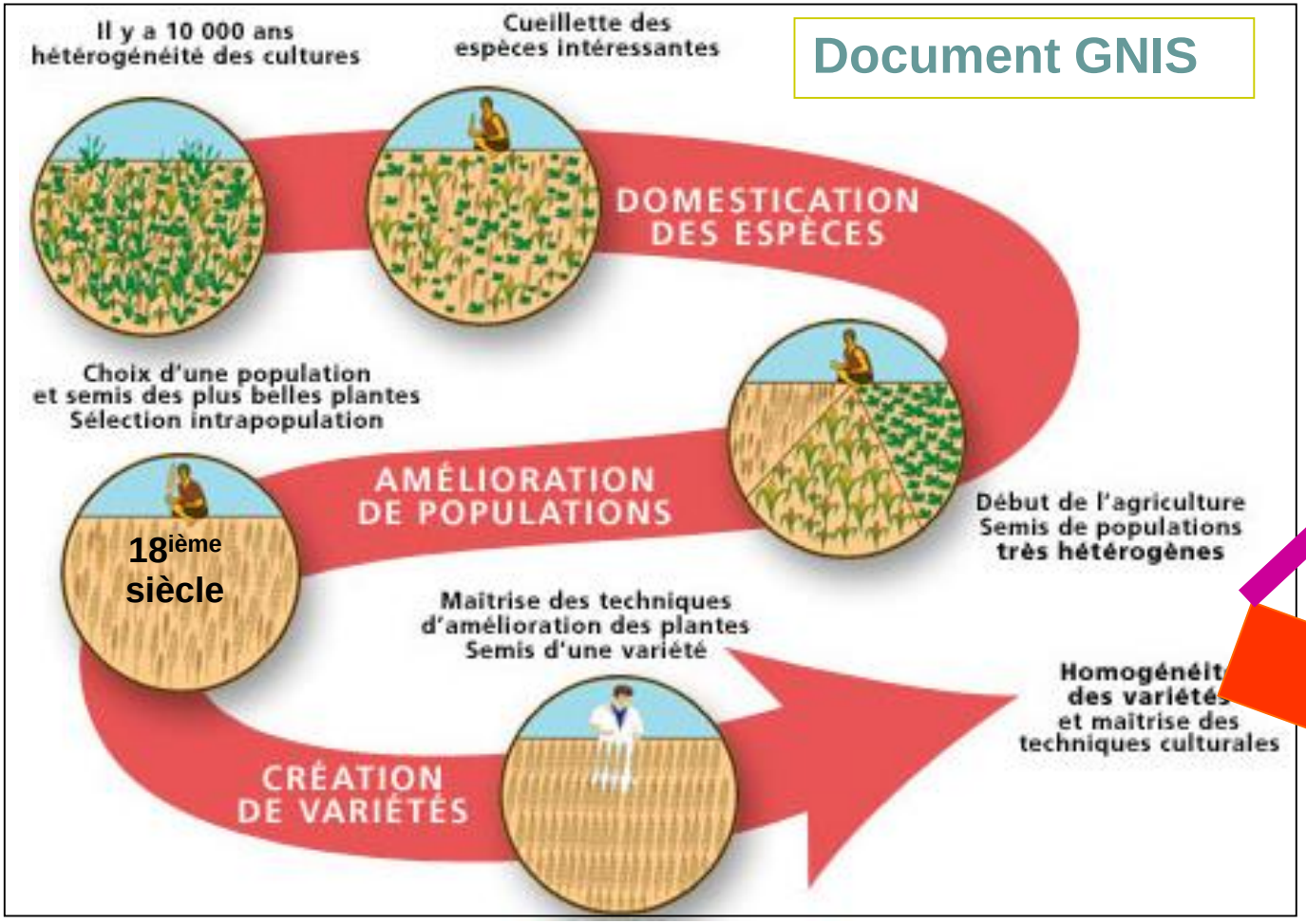
This vision of the variety quickly becomes the showcase of the French school of selection. Under the action of the French experts, it extends to Europe and underpins the Community catalogue of species and varieties of cultivated plants.

The modern variety is a stantardizable product

- Distinct
- Uniform
- Stable

http://www.gnis-pedagogie.org

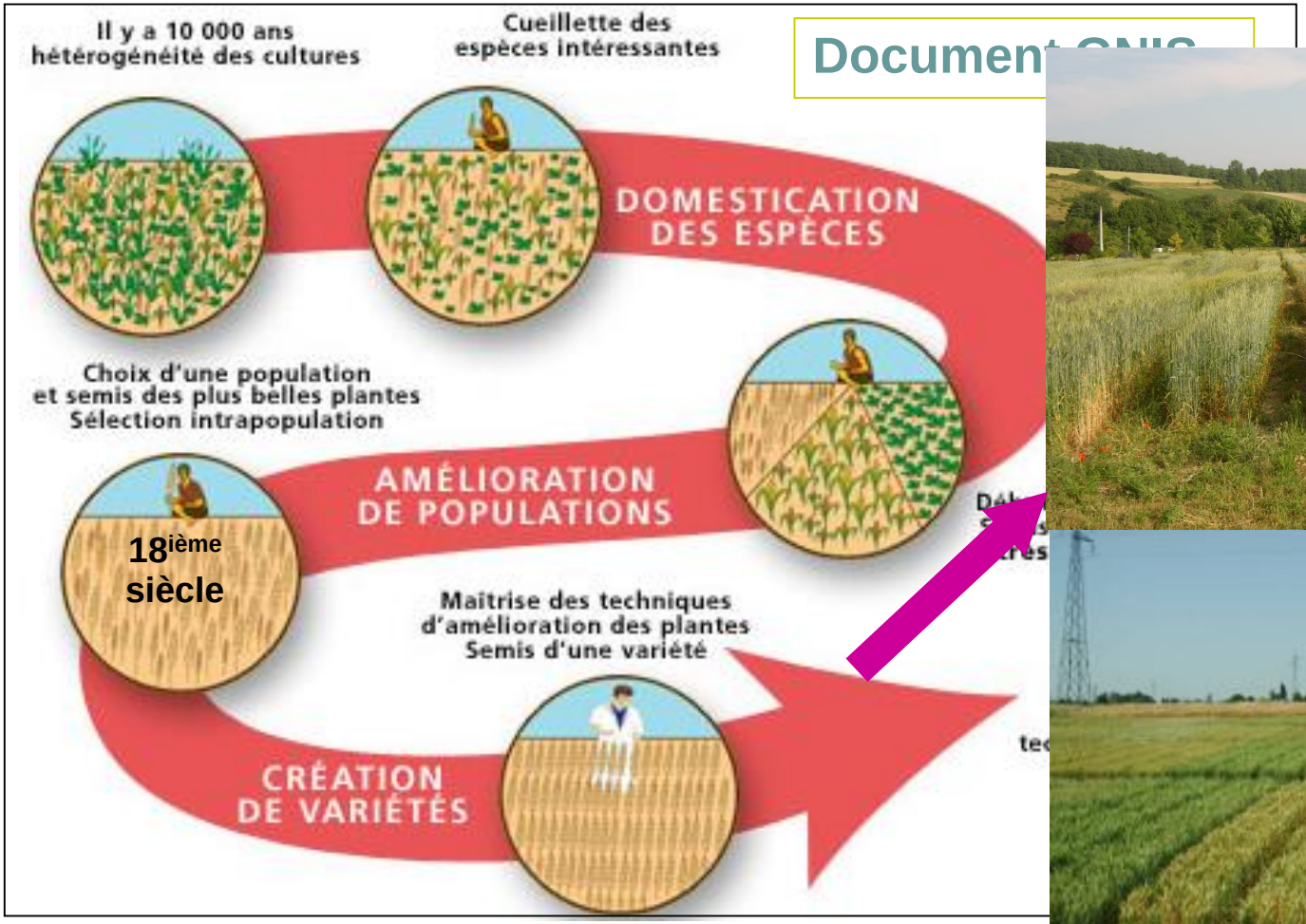
History of plant breeding according to GNIS
(Groupement National Interprofessionnel des Semences)



The variety finds again its place, in a mode of agricultural development respecting the man and his environment

Variety remains a technological product, designed by seed professionals, for industrial and artificial agriculture

History of plant breeding according to GNIS



Document GNIS

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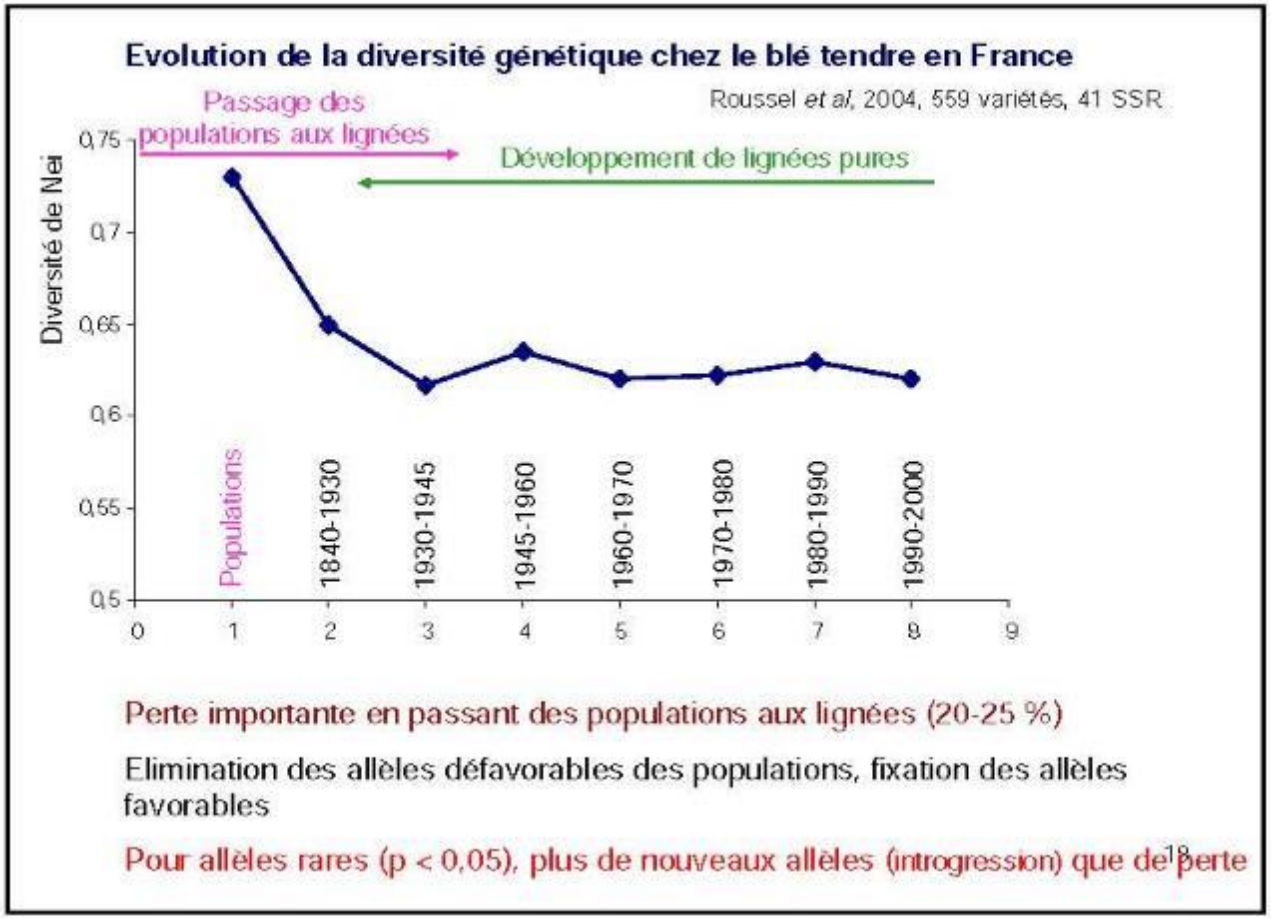
Genetic uniformisation of agricultural landscapes

- ‘Modern’ breeding (20-21th c.) led to a drastic decrease in the cultivated crop diversity => standardization among species, and within and among varieties

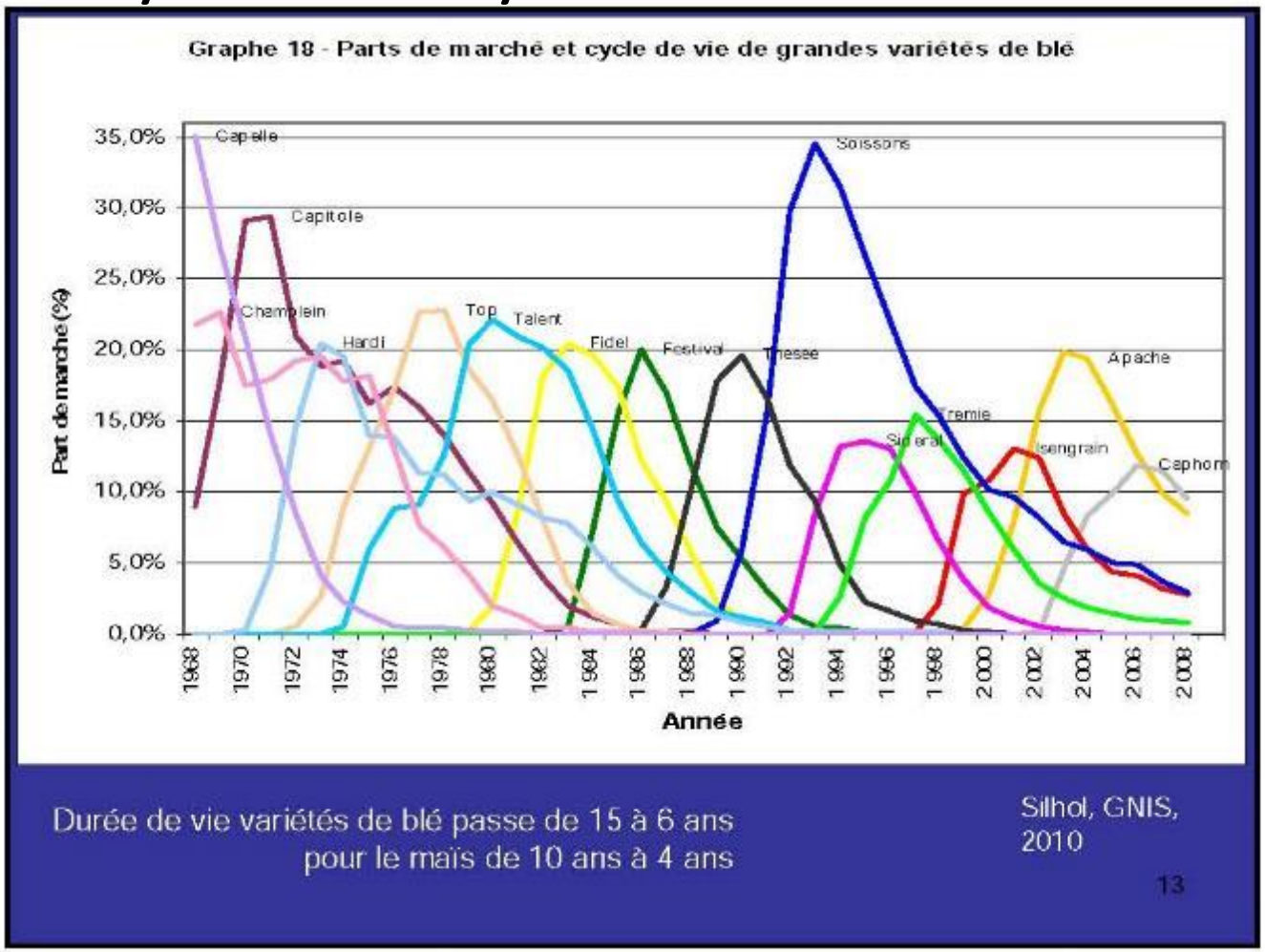
Isabelle’s slide

Modern plant breeding and loss of diversity: ancient varieties are more diverse



Académie d'Agriculture de France – 2013. Séance du 23 janvier 2013.
André Gallais : **ÉVOLUTION DE LA DIVERSITÉ GÉNÉTIQUE DES VARIÉTÉS DE PLANTES CULTIVÉES**

Modern plant breeding and loss of diversity: variety « life » is reducing



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The revival of peasant seed

A multi-actor and trandisciplinariry research to sustain the development of cultivated diversity for the organic and peasant agricultures

http://www.inra.fr/Chercheurs-etudiants/Systemes-agricoles/Toutes-les-actualites/70-ans-La-notion-de-variete-en-1944

Une vision de la variété insérée dans le modèle de développement des trente glorieuses

- Cette vision de la variété correspond au modèle de développement de l'après-guerre, basé sur la productivité et l'efficacité, dans l'objectif de couvrir les besoins alimentaires de la France. Les facteurs de production doivent être standardisés pour se prêter à la mécanisation comme à la transformation industrielle.
- **La variété fixée (lignée pure, clone ou hybride F1) devient elle-même un facteur de production isolable et standardisé, un « input » dans une agriculture pensée comme un système industriel de production** (6).

Evolutions, sinon révolutions…

- Les normes DHS, complétée par la norme de de « Valeur agronomique et technologique » (norme VAT) et par un dispositif d'évaluation expérimentale des variétés (Geves) constituent l'instrument national de pilotage du « progrès génétique », axé pendant longtemps sur le rendement.
- Néanmoins, **le contexte a depuis considérablement évolué, avec un progressif retour vers la diversité.** L'Inra participe à cette évolution. L'Institut a œuvré en particulier pour l'adoption par le CTPS d'une procédure originale d'évaluation adaptée à l'agriculture biologique et a inscrit en 2011 les deux premières variétés de blé spécifiquement sélectionnées pour l'agriculture biologique. Lire l'article.
- D'autre part, d'autres modèles d'innovation variétale ont émergé dans les années 80 : **sélection participative par des réseaux de paysans,** retour des variétés populations dans les négociations réglementaires (lire l'article) ou, à une autre extrémité du spectre, « modèle d'innovation intégré » des firmes internationales, avec le développement des biotechnologies.

http://www.inra.fr/Chercheurs-etudiants/Systemes-agricoles/Toutes-les-actualites/70-ans-La-notion-de-variete-en-1944

A vision of the variety embedded within the model of development of the “trente glorieuses”

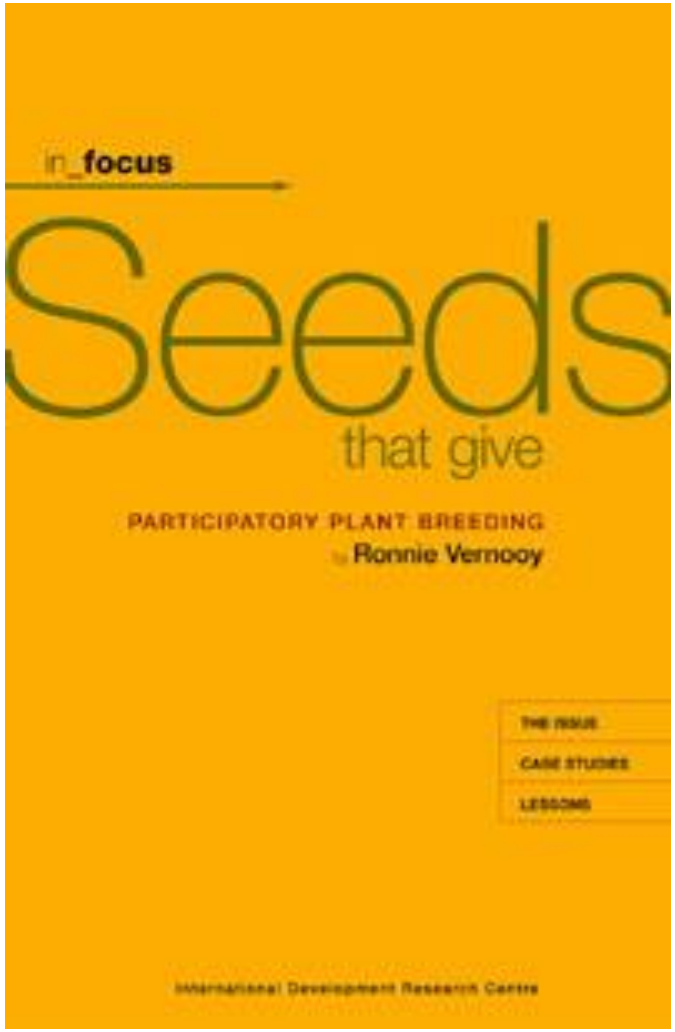
This vision of variety corresponds to the post-war development model, based on productivity and efficiency, with the aim of covering France's food needs. The factors of production must be standardized to lend themselves to mechanization as to industrial transformation.

- **The fixed variety (pure line, clone or hybrid F1) itself becomes a factor of production isolable and standardized, an "input" in an agriculture thought as an industrial system of production**(6).

Evolutions, if not revolutions…

- The DHS standards, supplemented by the standard of " Value for Cultivation, Use and Sustainability (VCUS) " and by an experimental variety evaluation system (GEVES), constitute the national instrument for steering "genetic progress", which has for a long time focused on the yield.
- Nevertheless, the context has since changed considerably, with a gradual return to diversity. INRA participates in this evolution. In particular, the Institute worked on the adoption by the CTPS of an original evaluation procedure adapted to organic farming and in 2011 included the first two wheat varieties specifically selected for organic farming.
- On the other hand, other models of varietal innovation emerged in the 1980s: **participatory selection by farmers' networks,** the return of population varieties in regulatory negotiations or, at another end of the spectrum , "Integrated innovation model" of international firms, with the development of biotechnologies.

Peasant seed changes values …



http://www.idrc.ca/openebooks/014-4/

https://philhoward.net/2018/12/31/global-seed-industry-changes-since-2013/

Seed Industry Structure
1996 - 2013

Monsanto

Buyer

Limagrain
-Winsrin

KWS

Land
O'Lakes

ASI

Syngenta

DuPont

Dow

Seed Companies
Chemical Companies
Other Companies
Full Ownership
Partial Ownership

Size proportional to global seed market share

Phil Howard, Associate Professor, Michigan State University
http://www.msu.edu/~howardp

Phil Howard conclusion of our workshop in Decembre 2018

Design a system to be as effective as possible.

- In terms of finding alternatives, we have to look at the systems we have and try to find spaces outside of it,
- A lot of farmers recognize the value of research but they may have other needs.

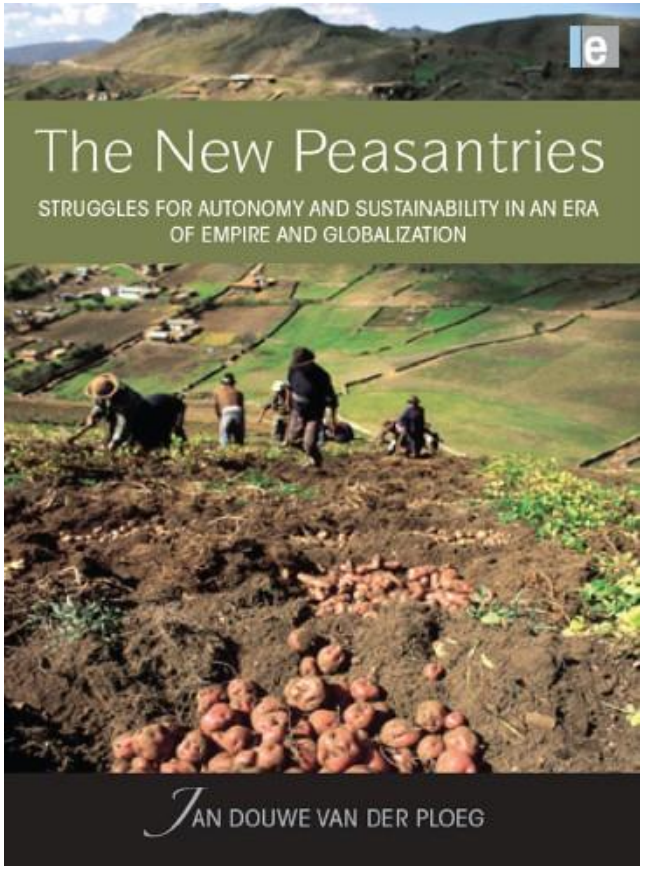
How to find out our food systems?

- Because the current system wastes time and energy, we could use crowd founding, telling stories so that the value connect to the real world,…
- Alternative currencies when they are available can be used.
- Also cooperatives banks could be useful

The story of a reconnexion of men and nature

- A new organisation for science
- A new economy to be invented

Peasant communities supports a renewal of agricultural practices

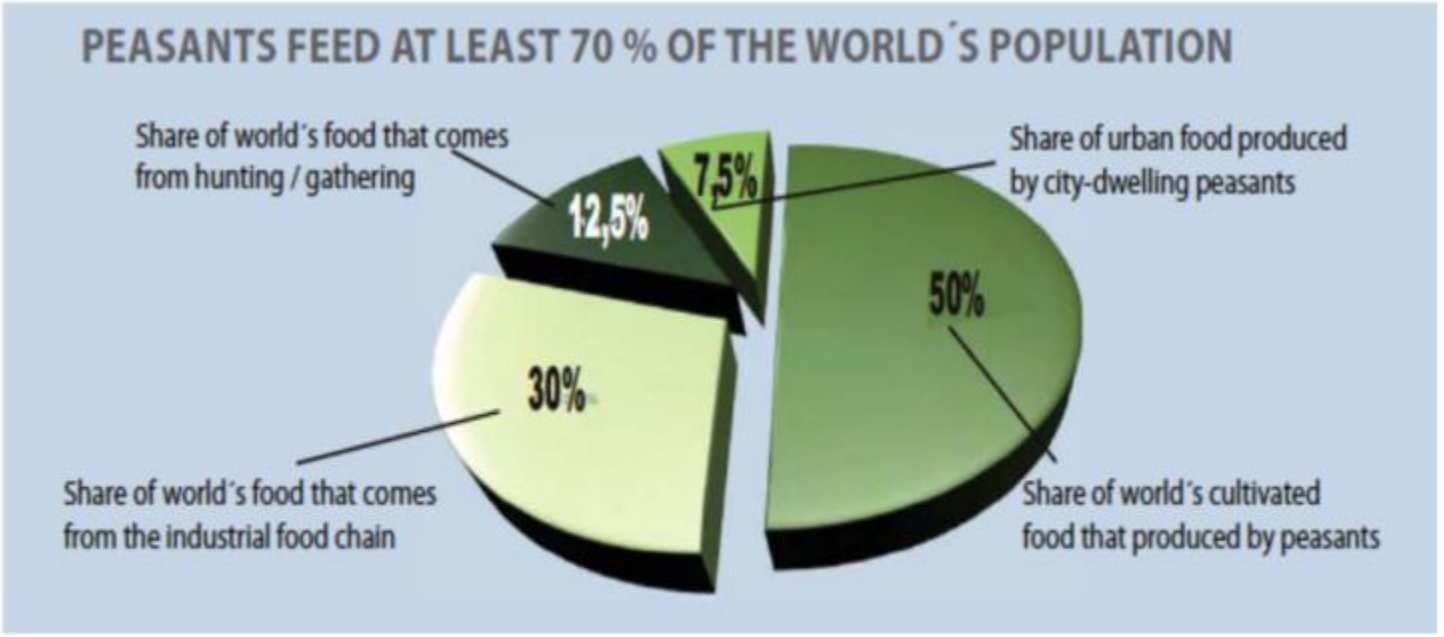


Empowerment of peasants' networks or organisations

Small Scale Farmers Produce 70% of the Worlds Food

The only practical way to feed the world is to grow the food locally where it is needed by small holder farmers

It is important to increase the resilience of small holders at local level to ensure adequate food security for the world



UNITING THE ORGANIC WORLD

Beginning of 2000's : organic seed were missing

The creation of
Réseau Semences Paysannes
in France

Peasant seeds

Definitions established by Réseau Semences Paysannes

- selected and reproduced by farmers on farms and gardens in conditions of organic farming or biodynamic farming
- Diversified and evolutionary populations, resulting from natural methods of selection and conservation, without biotechnologies
- reproducible and not appropriated by intellectual property right,
- adaptable, exchangeable between farmers and gardeners in respect of the rights of use defined by the collectives that have selected and conserved them

Peasant seed

- sélectionnées et reproduites par les paysans dans les fermes et les jardins menées en agriculture paysanne biolog
- populations diversifiées et évolutives, issues de méthodes naturelles de sélection et de renou e des paysans
- reproductibles et non appropriables par un droit de propr it de
- adaptables, échangeables entre paysans et jardiniers dans l s collectifs qui les ont sélectionnées et conservées

Bred where the plant will produce

Diverse, evolutive, natural

Free, no property right

Can be exchanged within communities

La force des plantes en culture grâce à la diversité

news and views

Crop strength through diversity

Martin S. Wolfe

In conventional farming, single varieties of crop plants are grown alone. But mixing varieties may be a better option: several rice strains, planted together on a large scale, are more resistant to a major fungal disease.

Nature, 2000

1943 Sir Albert Howard and Eve Balfour

The connexion which exists between a fertile soil and healthy crops, healthy animals and, last but not least,
healthy human beings
must be made known far and wide.

Albert Howard (1943) An Agricultural Testament. Oxford University Press, New York and London

Evelyn Barbara Balfour (1943) The living soil: Evidence of the Importance to Human Health of Soil Vitality, with Special Reference to Post-War Planning, London, Faber and Faber

Diverse, evolutive, natural

Seed from genetic resources centres

Seeds of gardeners

Forgotten varieties come back to field and creation of new one

Seed from peasants

Peasant seed enriched by meetings

MAISONS DES SEMENCES PAYSANNES - RENCONTRES INTERNATIONALES 2012

Le journal des rencontres

Prix libre
(Coût de fabrication 3 €)

ÉDITO

Les semences en *commun*

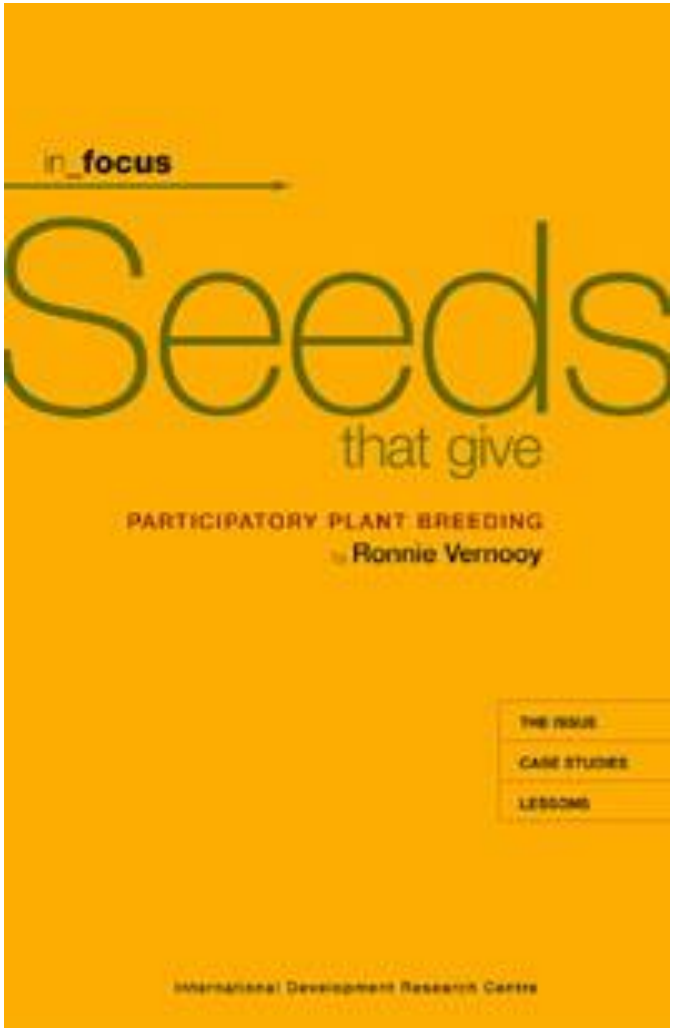
Les semences paysannes aiment les rencontres. Elles sont bien trop précieuses pour être réduites à de vulgaires objets industriels, brevetés et à usage unique. C'est la diversité des *communautés* humaines et la richesse des échanges qui a permis de créer cette infinie diversité végétale nourricière. Mais nul doute aussi que la diversité végétale a influé sur la diversité des êtres humains et de leurs cultures. Toute la plante est dans la semence : la mémoire du passé, des gènes apparus il y a des millions d'années qui, grâce aux rencontres dans les champs et aux échanges dans les fermes, se sont rassemblés dans la graine pour s'adapter aux conditions de demain.

It is the diversity of human communities and the richness of exchanges that has made it possible to create this infinite plant diversity. But there is no doubt that plant diversity has influenced the diversity of human beings and their cultures.

All the memory of the plant is in the seed ... to adapt to the conditions of tomorrow

Patrick de Kochko – Réseau Semences Paysannes

Free of right



Peasant seeds now bring together peasants from all continents

Reporterre
le quotidien de l'écologie

« Les semences sont le socle de la lutte pour la souveraineté alimentaire »

8 octobre 2015 / Lorène Lavocat (Reporterre)

Au village Emmaüs Lescar-Pau, dans les Pyrénées-Atlantiques, des cultivateurs du monde entier se sont retrouvés fin septembre avec une idée en tête : « Semer la résistance ».

In the village Emmaüs Lescar-Pau, in Pyrénées-Atlantiques, farmers from all the world met in September 2015

Next meeting in France in November 2019

Collective organisations at several levels

The issue of
Seed and organic agriculture

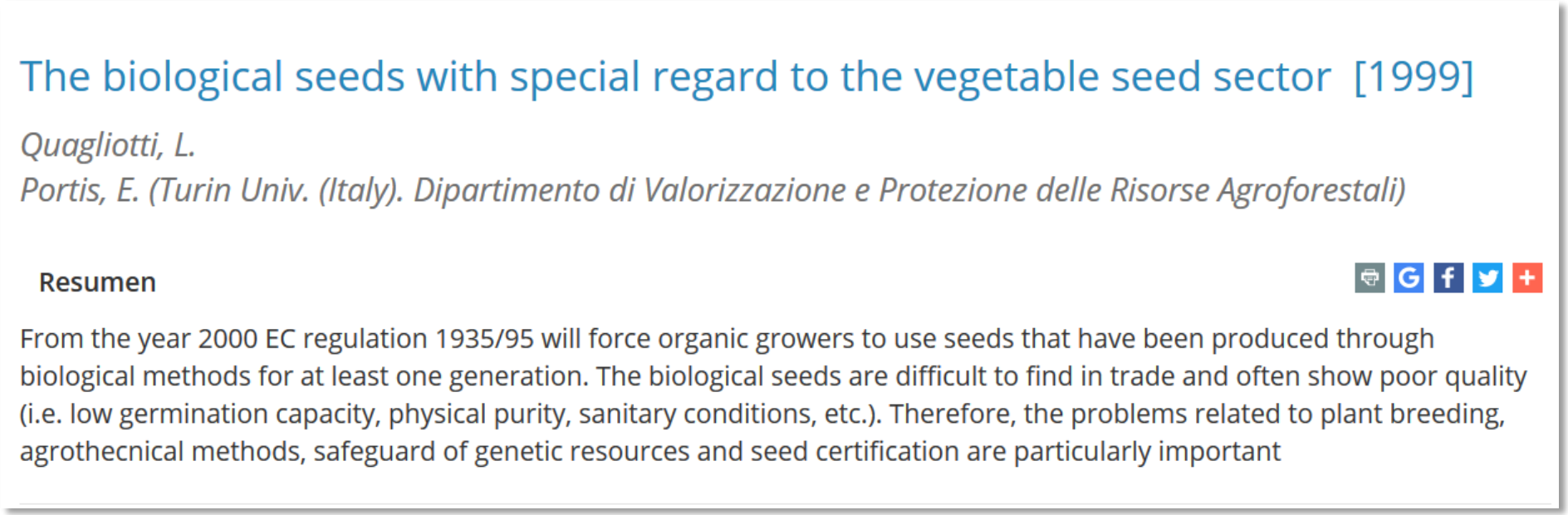
and the connexion with peasant seeds

The origin of the question
15 years ago

- European regulation
- Evolution of breeding methods, more and more incompatible with organic principles
- Empowerment of farmers and collective organisation

Regulation for Organic Agriculture: CE/1935/95

Organic production with organic seeds



The biological seeds with special regard to the vegetable seed sector [1999]

Quagliotti, L.

Portis, E. (Turin Univ. (Italy). Dipartimento di Valorizzazione e Protezione delle Risorse Agroforestali)

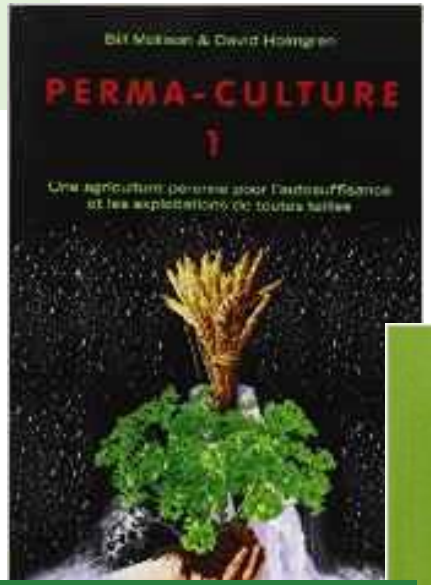
Resumen

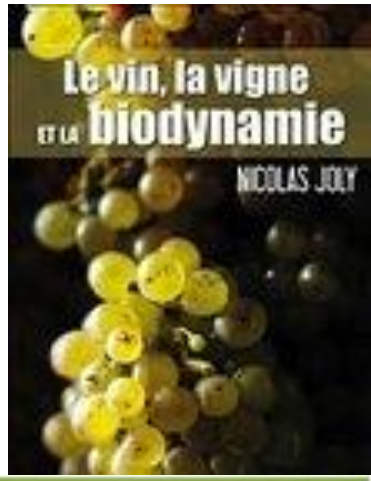
From the year 2000 EC regulation 1935/95 will force organic growers to use seeds that have been produced through biological methods for at least one generation. The biological seeds are difficult to find in trade and often show poor quality (i.e. low germination capacity, physical purity, sanitary conditions, etc.). Therefore, the problems related to plant breeding, agrothecnical methods, safeguard of genetic resources and seed certification are particularly important

http://agris.fao.org/agris-search/search.do;jsessionid=0844075C835B9A1E52C74DFE832D80EB?request_locale=es&recordID=IT2001060274&sourceQuery=&query=&sortField=&sortOrder=&agrovocString=&advQuery=&centerString=&enableField=

Organic agriculture is diversified

Various forms of agriculture based on natural processes have emerged for a century





An International federation

120 countries – 800 movements

IFOAM ORGANICS INTERNATIONAL | CULTIVATING CHANGE.

A Website of IFOAM - Organics International & Its Action Group

WHAT WE DO GET INVOLVED OUR LIBRARY

Welcome » IFOAM » What We Do » Organic Landmarks » Principles of Organic

PRINCIPLES OF ORGANIC AGRICULTURE

Principle of Health

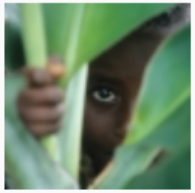
Healthy soil, plants, animals, humans = a healthy planet.

Principle of Ecology

Emulating and sustaining natural systems.

Principle of Fairness

Equity, respect and justice for all living things.



Principle of Care

For the generations to come.

Organic agriculture/peasant seeds

- **Principle of Health**

Organic Agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible.

Peasant seed enhance local adaptation and health

- **Principle of Ecology**

Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.

On farm plant breeding favours natural processes

- **Principle of fairness**

Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

On farm breeding stimulates collective organizations of seeds exchanges without intellectual property

- **Principle of care**

Organic Agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment

On farm plant breeding avoids all forms of biotechnologies

Our first experience

On cauliflowers in Brittany

Since 2001

A favourable context ...

- Cabbage and cauliflowers: urgent need of organic varieties
- Professionals were organised
- Genetic resources were available
- A scientific project INRA-CIAB

Today, the message: vegetable without any biotechnology (CMS)

http://kaolkozh5.blogspot.com/

Kaol Kozh gère depuis 2017 l'attribution de la mention "Légume issu de Semence Paysanne". Il s'agit d'une démarche pour identifier les légumes issus de semences paysannes auprès du consommateur, aussi bien sur les marchés, dans les magasins bios et les grandes surfaces. Les maraîchers candidats doivent suivre un cahier des charges technique qui définit les règles à respecter pour prétendre à la mention. Il faut notamment pratiquer la sélection et la multiplication de semences sur sa ferme et ne pas utiliser de biotechnologies comme les CMS.
Le contrôle s'effectue sur le principe d'un SPG (Système Participatif de Garantie) inspiré de ce qui se fait chez Nature et Progrès. Un groupe de producteurs se déplace chez le candidat et effectue le contrôle.

Et aujourd'hui, la valorisation…

Le brocoli « violet du Cap », est ce que l'on peut appeler une variété originale. Il fait partie de ces légumes oubliés, qui aujourd'hui, grâce au travail des paysans, se retrouve sur les étals. On parle ici de sélection participative, une collaboration étroite entre paysans et chercheurs qui mettent à profit leurs compétences afin d'étudier et de développer des variétés de légumes répondant aux critères et surtout à l'éthique de l'AB. Le brocoli « violet du Cap » est ainsi issu de semences fermières, c'est à dire des variétés sélectionnées et multipliées dans les fermes ; le producteur reproduit lui-même ses semences d'une année sur l'autre, elle est dite « variété de population » contrairement aux hybrides F1 qu'il faut racheter tous les ans.

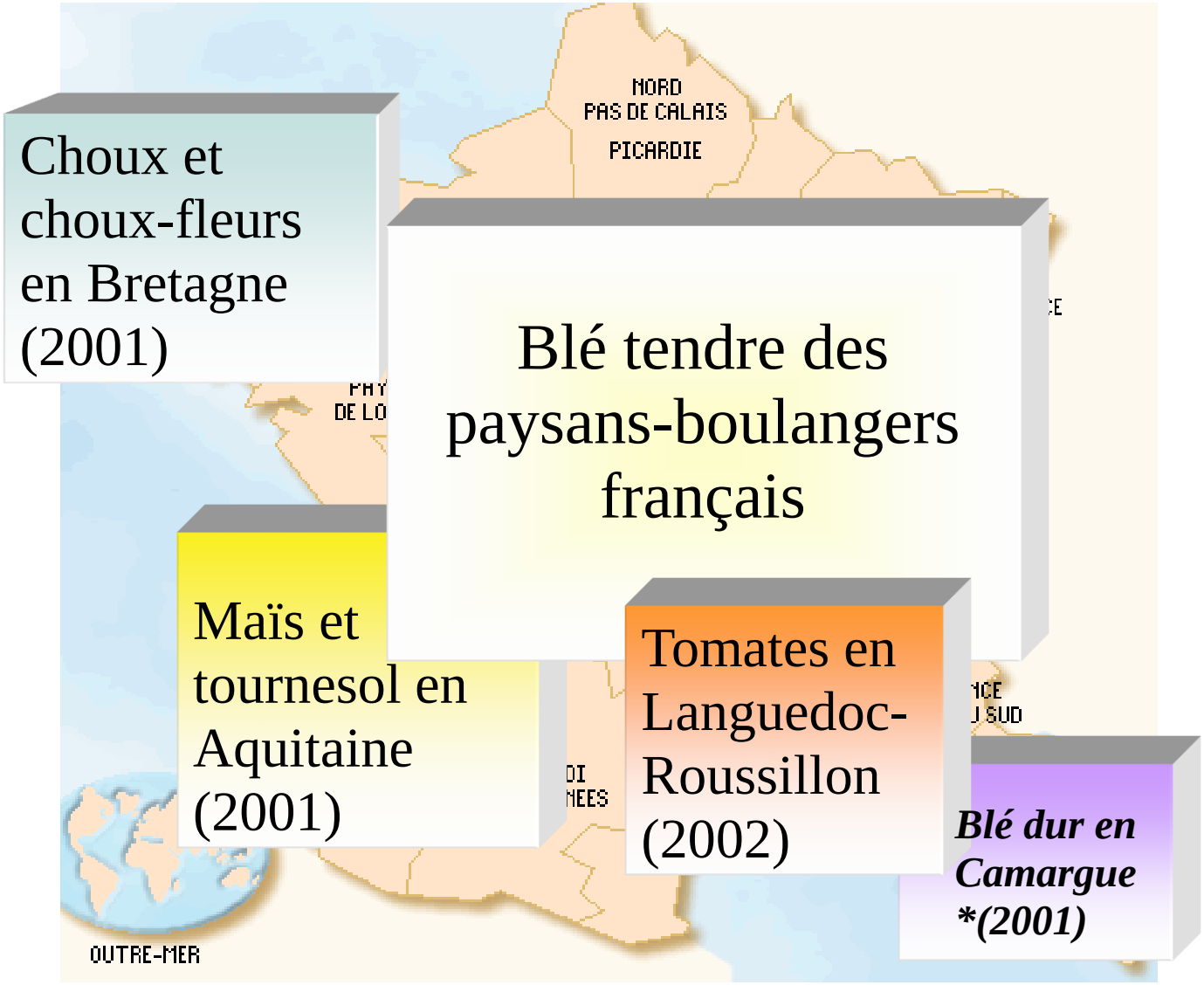
http://www.biobreizh.org/

Origin of seed is mentionned on labels

Participatory reseach

The beginnings

2001-2002



The breton seed associations

Triptolème

Réunir les acteurs d'une Agri-Culture riche de sens participante à la santé de la terre et des hommes pour :
partager co-naissance et patrimoine
s'accompagner dans la mise en œuvre de nos expérimentations et recherches en matière de biodiversité, d'agronomie, de transmission.
Créée en 2006

Kaol Kozh

Pour le développement de la Biodiversité en Bretagne

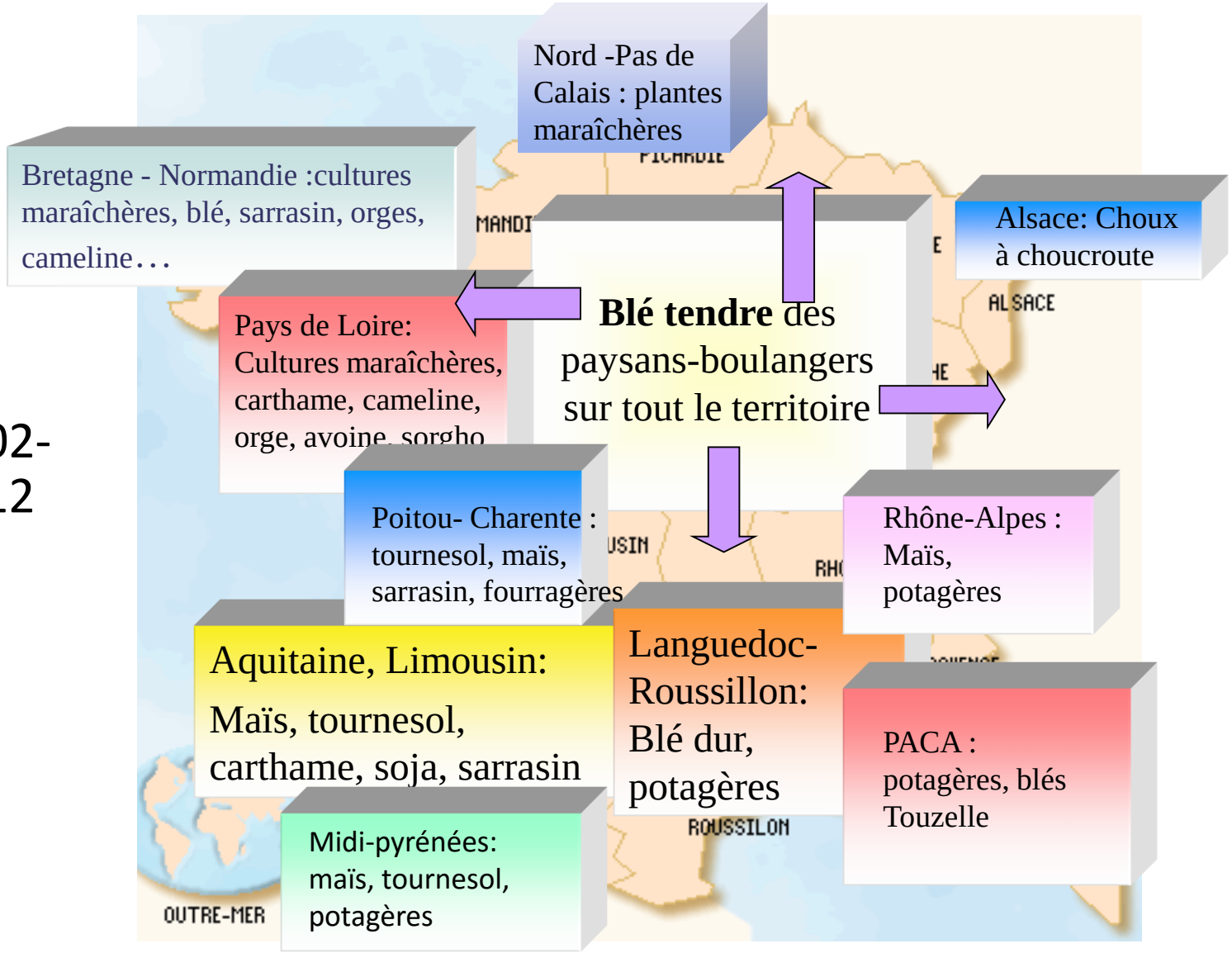
Sélection participative, Multiplication, et Mise en commun des semences bio

Créée en 2007

La sélection participative et/ou paysanne

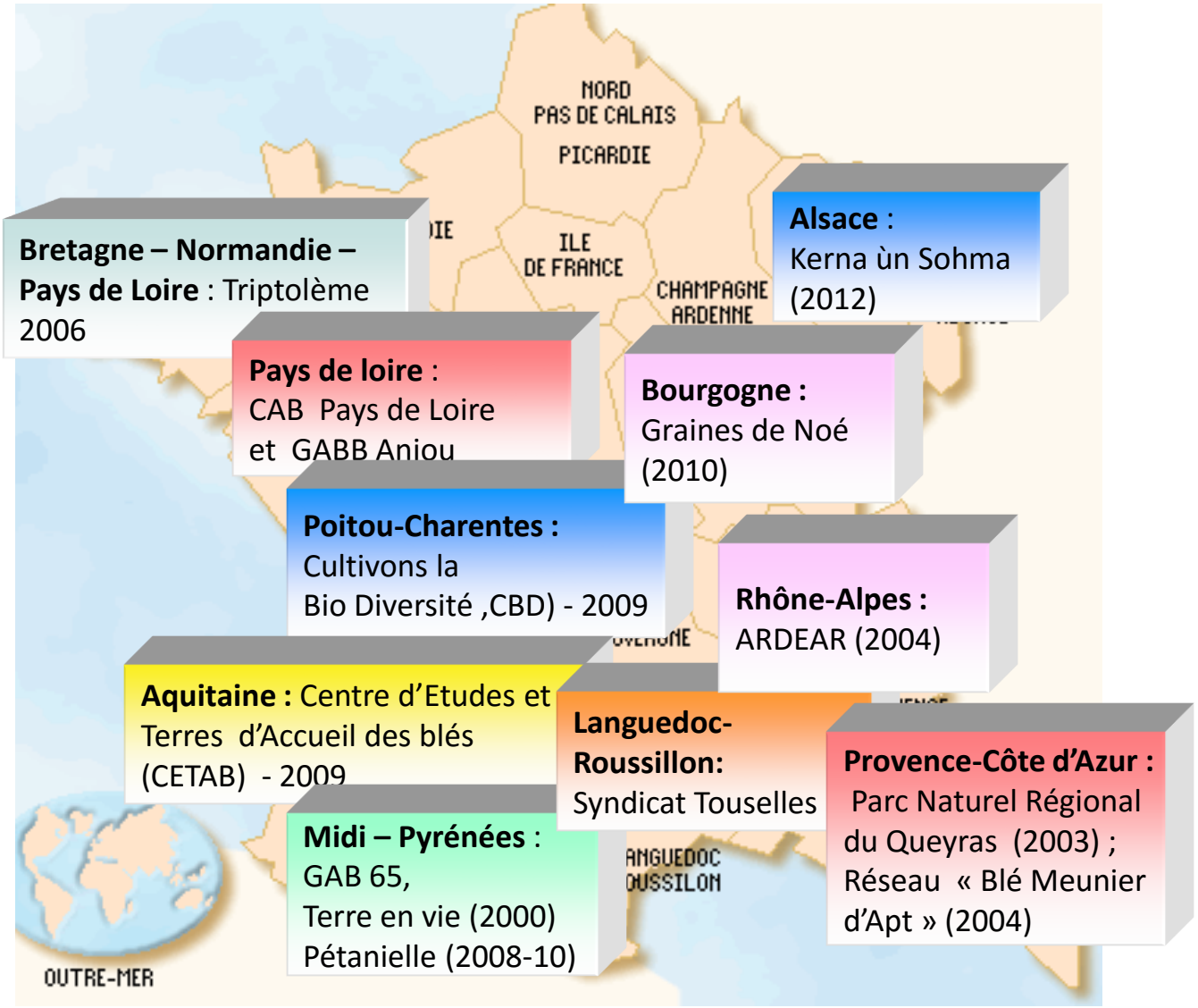
Participatory Plant Breeding/ on farm breeding

2002-2012



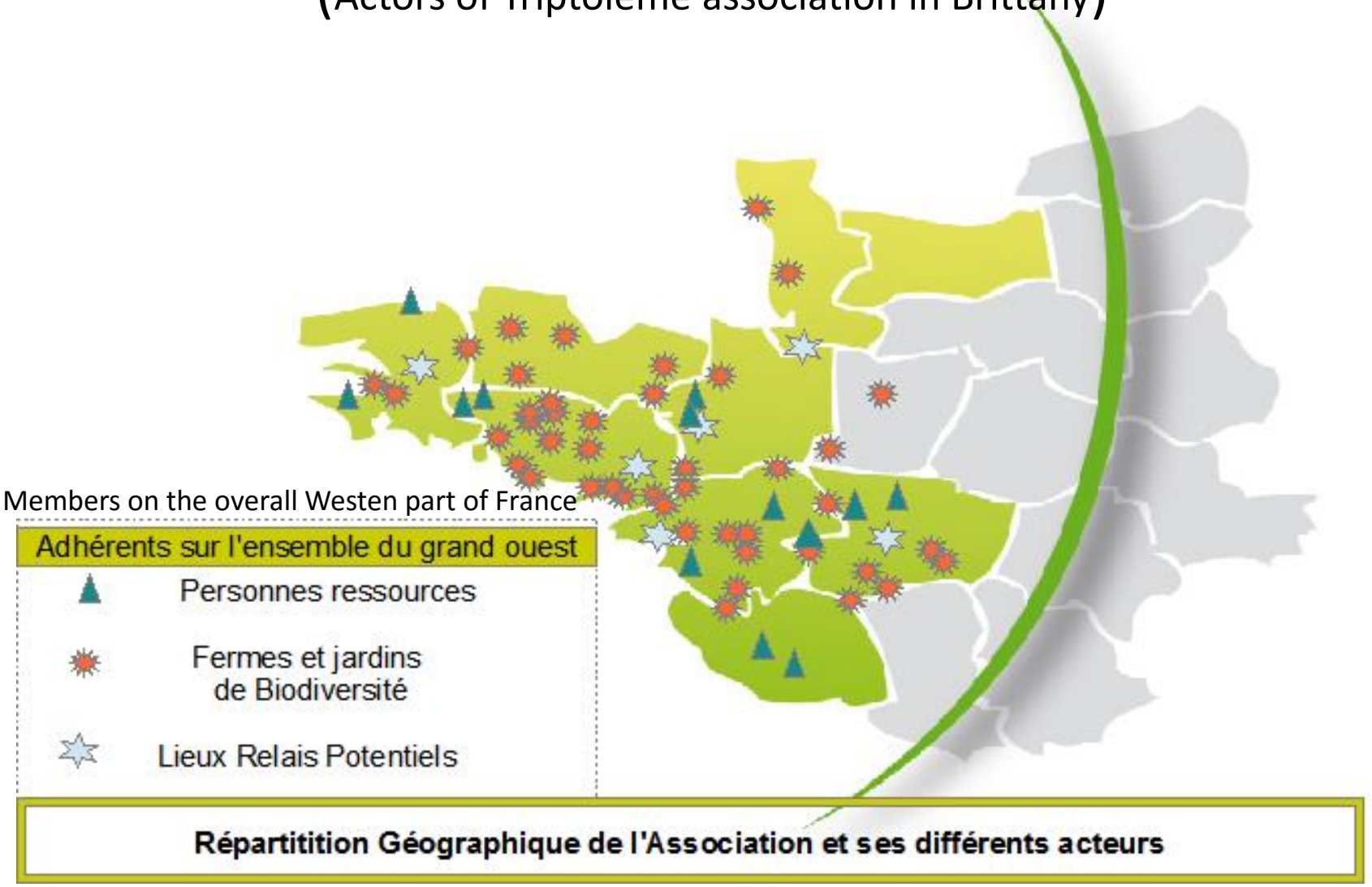
Les associations pour la sélection paysanne des blés

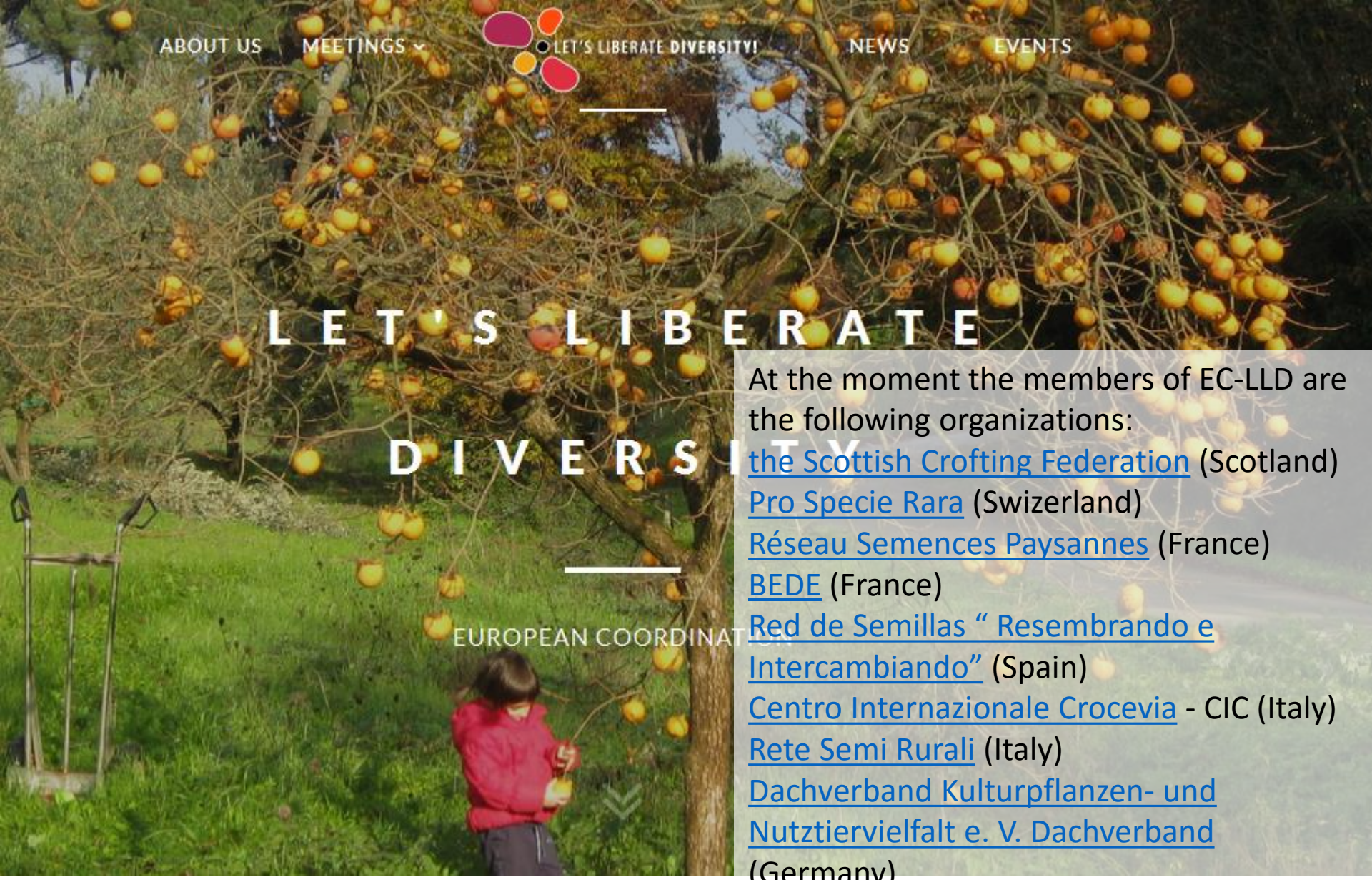
Associations involved in on-farm breeding of soft wheat



Les Acteurs de l'association Triptolème en Bretagne

(Actors of Triptolème association in Brittany)





At the moment the members of EC-LLD are the following organizations:

the Scottish Crofting Federation (Scotland)
Pro Specie Rara (Swizerland)
Réseau Semences Paysannes (France)
BEDE (France)
Red de Semillas " Resembrando e Intercambiando" (Spain)
Centro Internazionale Crocevia - CIC (Italy)
Rete Semi Rurali (Italy)
Dachverband Kulturpflanzen- und Nutztiervielfalt e. V. Dachverband (Germany)
Ecoruralis (Roumanie)
Seeds (Luxembourg)

http://liberatediversity.org/index.php

DIVERSIFOOD

Community Seed Banks

ABOUT THE CSB MAP MATERIAL EVENTS CONTACT

Map of Community Seed Banks in Europe. If you want to be shown on this map with your initiative, please contact us here.

From a rough estimation, probably 130 initiatives, or more, have been established in Europe so far.

DIVERSIFOOD

This project has received funding from the European Union's H2020 Programme under grant agreement no 633571

ARCHE NOAH

COMPARING two models of CSB Initiatives in Europe

	The dual model: Seed savers organisations in Central & North. Europe	Farmers networks in Western and Southern Europe
Foundation	"old" organisations of seed – founded before the 1980th until 1995	Founded from 1995
Role models	US- and AU-Seedsavers´ associations	Initiatives in countries of the Global South?
Network vs. organisation	"Dual" structures: Members´ network AND organisational centralized structures . Often 1 to few organisations operating nationwide	"Network of organisations": Many initiatives and organisations organized in national networks
Activities	Organisations developed multiple, differentiated fields of activities – CSB being one of them, they are integrated and associated with the organisation.	Multiple activities in a shared responsibilities between member-organisations and roof-organisations
Members	large numbers of individual members. Members mainly from other professions, often active as private gardeners. Farmers are a small, important stakeholder group.	Generally smaller numbers of individual members –mainly farmers and gardeners.
Concept	"Conservation by use"	„Dynamic Management"

Une recherche multi-acteurs et transdisciplinaire pour soutenir le développement de la diversité cultivée pour les agricultures biologiques et paysannes

Thanks to

A continuation of successive projects for 10 years

Based on

Informal interactions for 15 years between farmers, millers, bakers, SME, facilitators, … researchers

With a common objective:
more resilient and environmental friendly agriculture and high quality food

- We have learnt together
- We have created a common culture based on evolutionary concepts

Progresses through EU 3 projects

Common hypothesis : DIVERSITY

(FP6 2007-2010)

(FP7 2010-2014)

(H2020 2015-2019)

Situation Europe of « non conventional varieties »

Observation and testing diversified crop populations

On farm research

Seed regulation recommendations

Strategies for performance and quality

Working on key-concepts

Participatory reseach

Policy recommendations on seed, research and food system

Broaderning crop diversity

Multi-actor and transdiscipliarity

Social organisation

Economic impact

Culture about food

4 species

7 species

15 species

The concept of **“multi-actor approach”,** a practical translation of the interactive innovation,

Concept introduced for the first time in the Horizon 2020 work programme 2014-2015

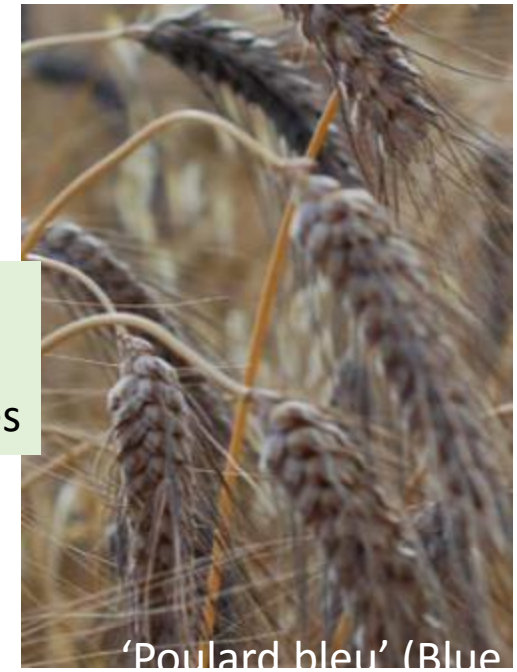
under the Societal challenge addressing agriculture and forestry

https://ec.europa.eu/eip/agriculture/sites/agri-eip/files/eip-agri_brochure_multi-actor_projects_2017_en_web.pdf

A complementary roles in order to be efficient all along the food chain

Example of Rivet wheat: to re-discover, to evaluate to breed new populations, to innovate for diversified end-use qualities

From genetic resources



'Poulard bleu' (Blue

To products

Bread and pasta with Poulard wheat from Triptolème association, a farmers-bakers' association in France

BEFORE the project

Farmers rediscover the species, initiated the actions several years ago, and first collection

Project Activities

Scientists enhanced the research of genetic resources

They experiment together on farm new forms of diversities conceived together

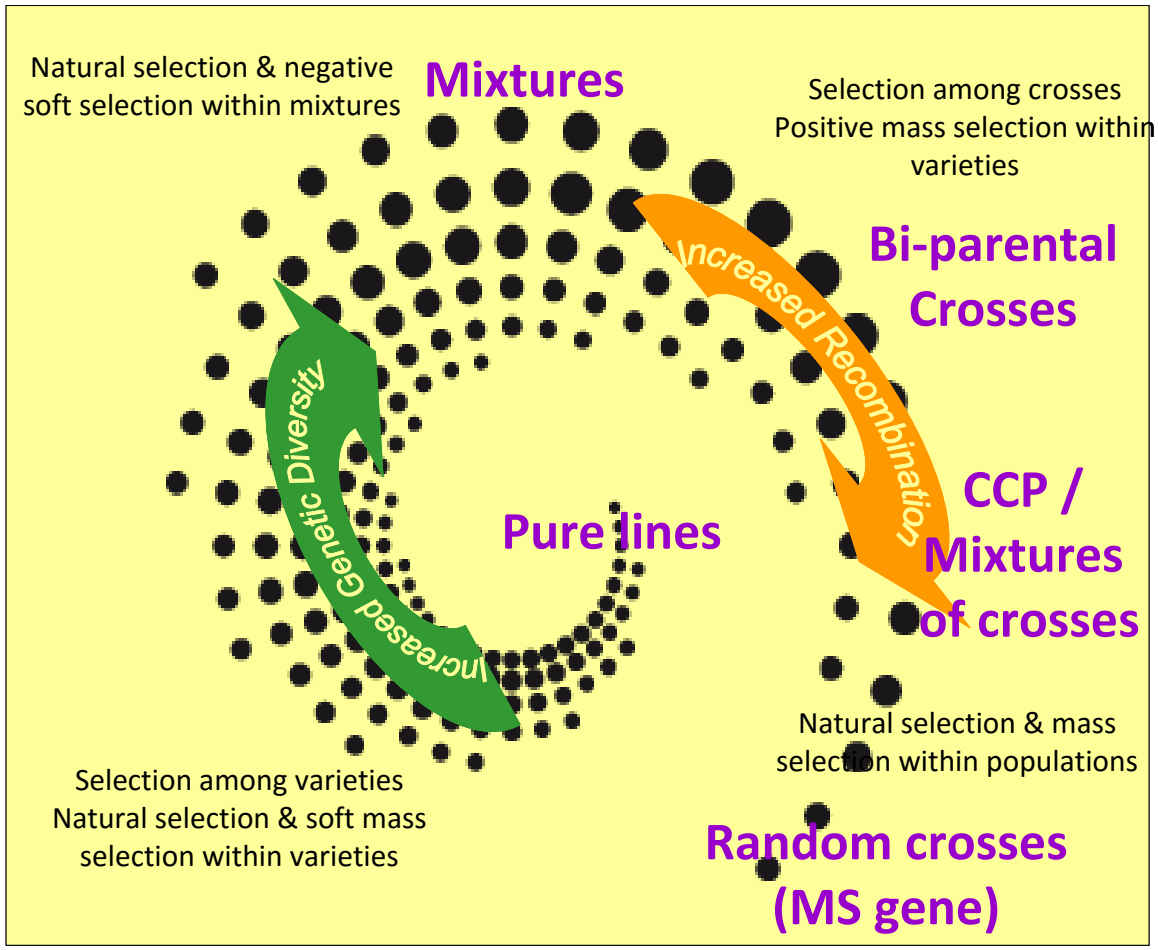
Scientists adapt experimental design and analysis to on farm conditions

They organise together groups for end-use evaluation

Farmers determined qualities and bottlenecks

Millers, bakers, artisans experiment new technics and recipes

Farmers and breeders grow / breed a range of populations / heterogeneous « varieties »



(E Serpolay)

=> a range of management approaches has been developed including those based on social organisation

Solibam

SOLIBAM strategies for farmers

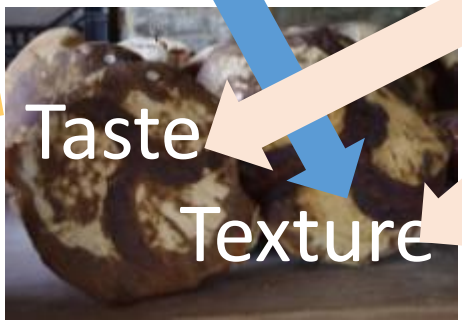
On farm strategies to manage quality of bread for farmer-baker

Variety

Practices

Environment

Miller – bakery



Emergence of common culture and research organisation

Similar organisations and questions for different species

generation of co-ownership of concepts

Collecting knowledge on seed conservation, collective organisation of on farm breeding, policy recommendations

cross-fertilisation of ideas between actors

Market organisations, cost studies, questions of labelling, policy recommendations

Analysis, synthesis and actions

Emergence of common culture and research organisation

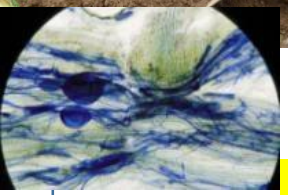
A new culture to enhance multi-actor concept

Common objective anchored in the food chain reality

(not a question of research)

farmers | millers | bakers | SME | Seed-savers | facilitators | citizens | researchers

Complementary know-how, methods and knowledge for integrated protocoles on the same grounds, within trials, experiments, survey …



Lead by the more relevant actors according to the needed competences

Global approach and research based on actions

Need time and space (one workpackage of the project) to share vocabulary, concepts, understanding of results, expression of new questions from first actions (iterative process)

Actors of maise groups

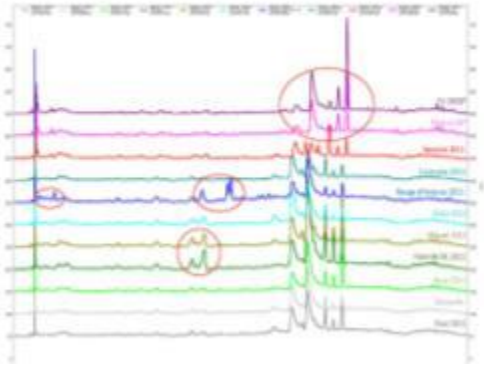
Bakers, caterers, chefs, peasants, researchers, consumers…

Quelles qualités ?

Transformation
- mouture
- préparation en cuisine

Organoleptique
- tests de dégustations avec des consommateurs

Nutritionnelle
- protéine
- antioxydants
- polyphénols...



Examples with 3 varieties

Agurtzan (French)

Sponcio (Italy)

Lavergne, peasant population

From USA

Seed to Kitchen Collaborative
Des semences à la cuisine


Merci de votre attention