



AgroBRC: Agricultural Resources for Research

(RARE : Ressources Agronomiques pour la Recherche)

BRC4Env: The Biological Resource Centre for the Environment

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What is AgroBRC?

- ❖ A meta-network, supported by AllEnvi
- ❖ Now registered on the RI roadmap of MENESR
- ❖ Grouping recognized BRC and biological collections of 3 main organisms (and associated partners)
- ❖ In a structured way, with standards of quality



MINISTÈRE
DE L'ÉDUCATION NATIONALE,
DE L'ENSEIGNEMENT SUPÉRIEUR
ET DE LA RECHERCHE



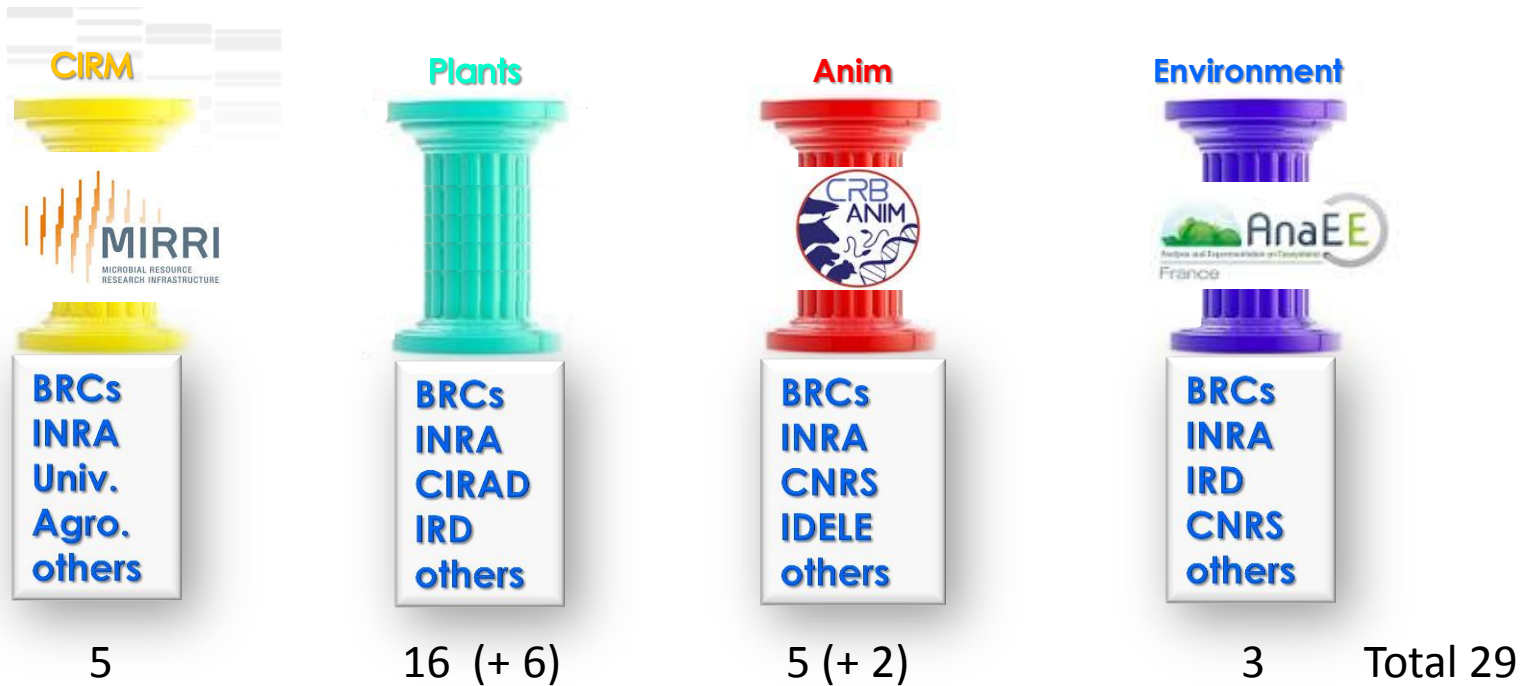
Why AgroBRC?

- ❖ **Grouping structures with a same job: resource collection, storage, characterization, dissemination**
 - for the scientific community
 - for private partners

- ❖ **With similar objectives with shared means**
 - increase the national and international exposure of BRCs
 - harmonize practices, generate synergy between BRCs (exchange of experience and tools...)
 - strengthen scientific and technical events
 - increase exploitation of results

- ❖ **By considering specificities**
 - conservation technology
 - partnership and sub-sectors
 - specific regulations, international context

The pillars of AgroBRC



- Bacteria, yeasts, fungi (pathogenic, food industry)
Consortia of micro-organisms (natural media, biotechnology)
- Crop plants and their wild relatives
- Domestic animals and wild relatives, honeybees
- Soil DNA, invertebrates, vertebrates
- Forests?

AgroBRC: current work

- ❖ **Build a Research Infrastructure**
- ❖ **Develop the Information System**
- ❖ **Define a Quality policy and certification (ISO 9001:2015 vs NF S96-900)**
- ❖ **Follow the activity of the ISO/TC 276/WG 2 Biobanks and bioresources workgroup**
- ❖ **Take into account the Nagoya protocol**

BRC4Env

The Biological Resource Centre for the Environment

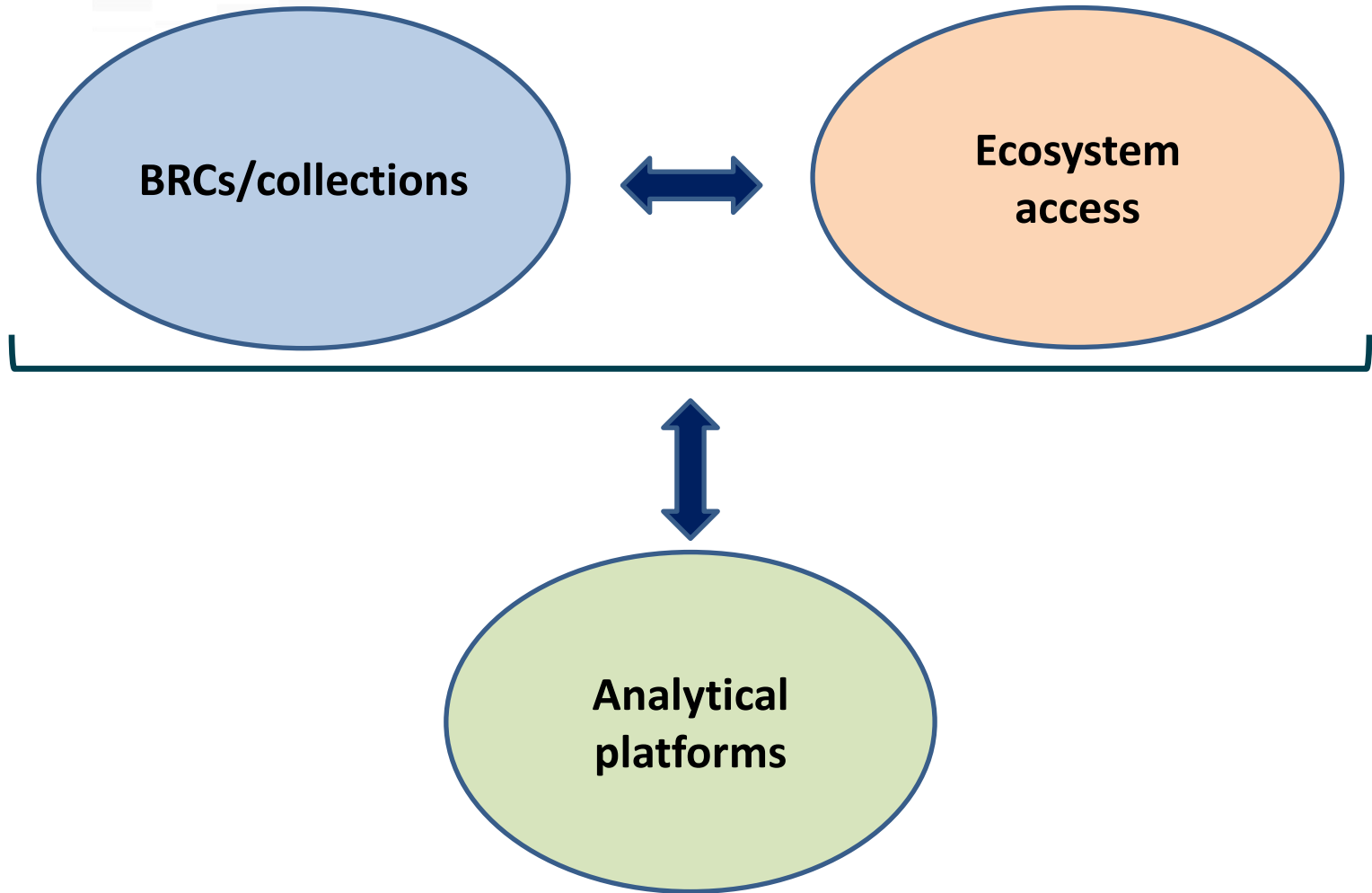
❖ Created in 2015

❖ Objectives

-To collect, store, characterize, disseminate samples from environmental matrices (soils, sediments, waters), genomic or genetic resources extracted from these matrices, micro-organisms, invertebrates, vertebrates, plants (or « constituents »), associated to these media.

-To organize and promote biobank development, as well as reference system for samples of environmental resources.

BRC4Env: experimental activities



BRC4Env: transverses activities

- ❖ **Harmonize reference documents and practices**
- ❖ **Define a policy for access to collections and data**
- ❖ **Support collections to become BRCs**
- ❖ **Set up a watch on scientific, technical and regulatory aspects**
- ❖ **Create links between collections**

BRC4Env: actual BRCs and collections

❖ Environmental matrices

- soil DNA: 2

❖ Microorganisms

- bacteria, mycorrhizal/pathogenic fungi, microalgae: 4

❖ Invertebrates

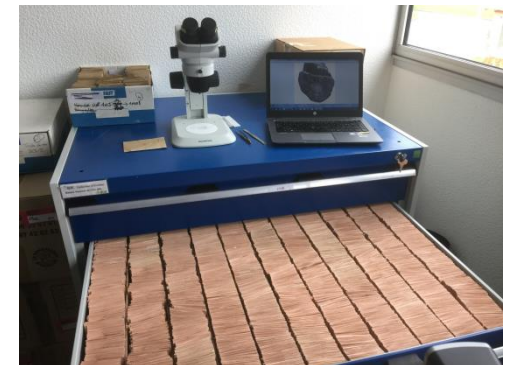
- insects: 2
- mites: 1
- nematoda: 4

❖ Vertebrates

- small mammals: 1
- fish scales: 1

❖ Plants

- seeds of adventive plants



BRC4Env: ecosystem access

AnaEE-France: Node 3: experimentation *in natura*

Long-term monitoring and experimentation on 26 sites providing a range of ecosystems from natural to strongly anthropised, temperate or tropical

Coordination : André Chanzy (INRA)

SOERE ACBB
(INRA)

SOERE PRO
(INRA, Veolia)

SOERE F-ORE-T
(CNRS, INRA,
CIRAD)

SOERE OLA
(INRA)

Nouragues
(Guyane)
(CNRS)

Site Alpin
(Lautaret)
(CNRS)

4 sites

3 sites

15 sites

1 site

2 sites

4 experimental
platforms



BRC4Env: tools

- Web portal (provisory): <https://www.brc4env.fr/>

The screenshot shows the homepage of the BRC4Env web portal. The browser address bar displays <https://www.brc4env.fr/>. The page features the INRA logo (SCIENCE & IMPACT) and a search bar. A navigation menu includes links for Home page, About, Services, Partners, References, Productions, and Identify yourself. The main content area is divided into sections: News (with a sub-section for Scientific meeting AgroBRC), Edito (with a sub-section for The Biological Resource Centre for the Environment), and Extras (with links for Jobs/Internships, Useful links, and Subscribe to News). The footer contains the copyright notice © INRA 2015, navigation links for News, Contact, and Legal notice, and the INRA website URL www.inra.fr.

- Mailing list: brc4env@listes.inra.fr, 35 subscribers
- Contact: christian.mougin@versailles.inra.fr

BRC4Env: collections of nematoda (1)

- ❖ **Plant-parasitic nematodes: CBGP (Montpellier) and ISA (Sophia)**
 - 14,000 slides, about 110 genera / 770 species, belonging to *Aphelenchida*, *Dorylaimida*, *Triplonchida* and *Tylenchida* orders, collected worldwide since 1935
 - Living collections of 150 populations belonging to several nematode genera of agronomic interest (root-knot nematodes, *Meloidogyne* spp., the pine wood nematode and associated species, *Bursaphelenchus* spp., and nematode vectors of plant viruses, *Xiphinema* spp.), collected worldwide



BRC4Env: collections of nematoda (2)

❖ Entomopathogenic nematodes: DGIMI (Montpellier)

Bacteria-nematode complexes for insect biocontrol and for discovering new bioactive molecules

280 strains of *Xenorhabdus* (26 species) and 200 strains of *Photorhabdus* (4 species) in glycerol, 100 souches of *Steinernema* (26 species) and 40 souches of *Heterorhabditis* (3 species) stored in Ringer's solution.



BRC4Env: collections of nematoda (3)

❖ Animal-parasitic nematoda: ISP (Tours)

Parasites of grazers (sheep, cattle...) : *Haemonchus contortus*, *Trichostrongylus retortiformis*...

Parasites of equine animals : *Parascaris* sp., *cyathostominae*...

Infective larva, males and female worms

6841 accessions available in liquid nitrogen



L3 *Haemonchus*

Caenorhabditis elegans

Inventory made by M. Carré-Pierrat

❖ 22 teams working on *Caenorhabditis elegans* in France



❖ Interested to be included to BRC4Env?

In conclusion: BRC4Env's action plan

- ❖ **Finalize the inventory of collections (and platforms), and arrange them within the pillars**
- ❖ **Develop the governing structures (committees...)**
- ❖ **Help for the development of Quality policy and labelling (ISO, NF, Ibisa, Nagoya...)**
- ❖ **Develop the Information System and web resources**
- ❖ **Obtain financial support for functioning**
- ❖ **Create links...**

Thanks for your attention!

