



MUSE



MONTPELLIER UNIVERSITY OF EXCELLENCE

**CAAS-MUSE partnership and
the support of Agropolis
International**



**CAAS Workshop on
"International Mega
Programme-Lessons to Learn"
Beijing, 25-28th June 2018**

Summary

1. MUSE an institution associating research & education institutions in Montpellier
2. MUSE's launching of top international partnerships
3. Cirad and IRD, members of MUSE and involved in international partnerships
4. Agropolis International's support to MUSE and its members

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Context

A national effort for boosting innovation in both private & public sectors, including Higher Education & Research

Various “Tools” for Higher Education & Research :

Excellence Labs - Scientific Equipments - Universities of Excellence

Key point: to build “new” universities integrating all the “actors”

→ Initiatives of excellence (IDEX)

→ Initiatives – Science – Innovation – Territories - Economy (I-SITE)

University of Montpellier

SupAgro – EMA –
ENSCM

Ensam – CEA – CNRS –
Inra

IRD – Cirad – Ifremer –
Inserm Inria – BRGM –
IAMM – Irstea Montpellier
U. Hosp. – Nîmes U.

19 establishments
6,000 scientists
50,000 students



MUSE



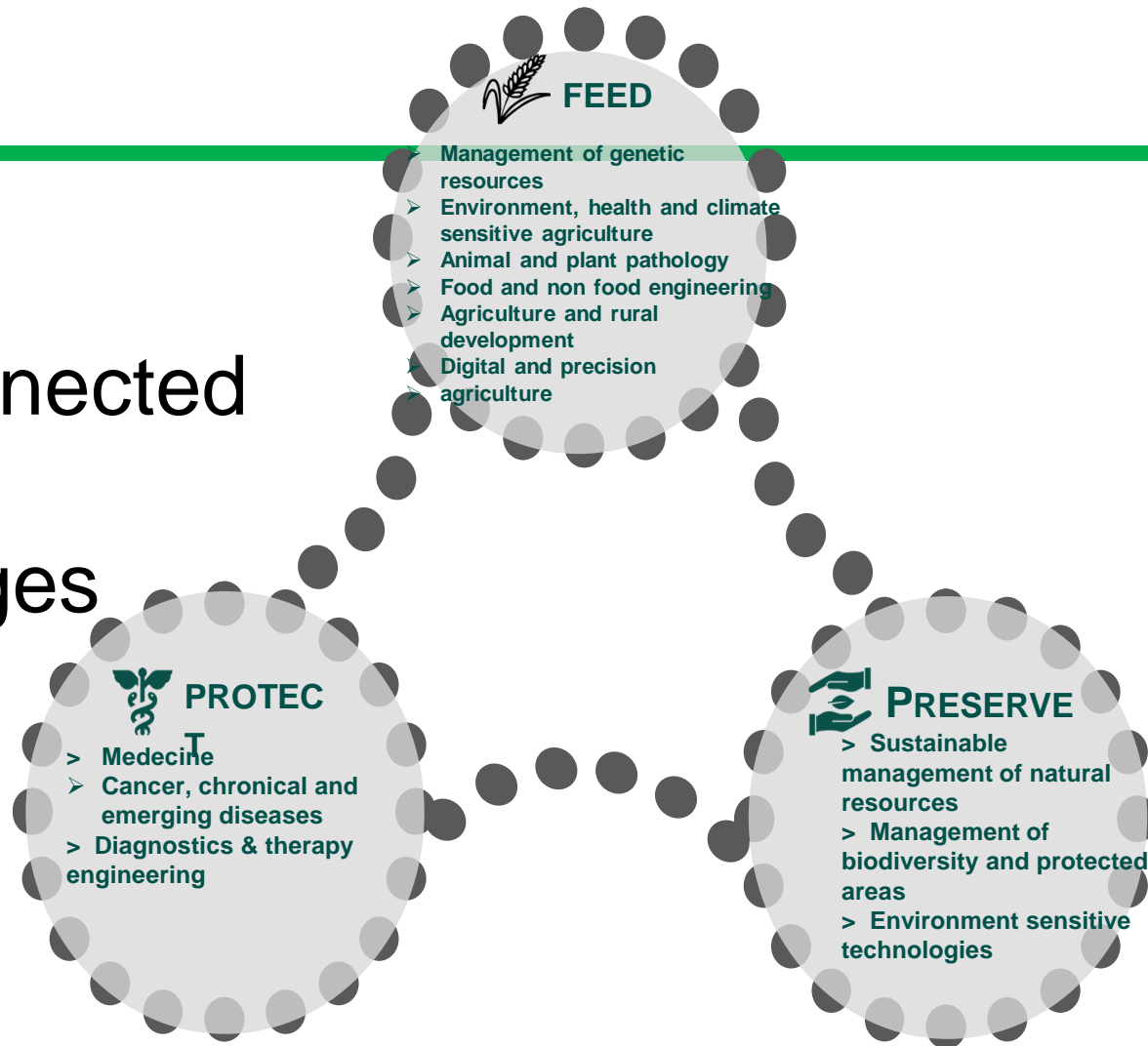
MONTPELLIER UNIVERSITY of EXCELLENCE

Endowment
550 M€ (670
M\$)



UNIVERSITÉ DE MONTPELLIER

3 interconnected societal challenges



Core disciplines to address 3 interconnected societal challenges



- > LAW SCIENCES
- > MANAGEMENT SCIENCES
- > HEALTH AND ENVIRONMENT ECONOMY
AND POLITICAL SCIENCES



FEED

- > Integrative Biology
- > Agronomy & agroecology
- > Food sciences

- > BIO-CHEMISTRY
- > ROBOTICS
- > DATA SCIENCES



PROTECT

- > Biology & Medecine
- > Epidemiology
- > Engineering



PRESERVE

- > Ecology
- > Ecotoxiology
- > Engineering



- > BIO CHEMISTRY
- > CIRCULAR ECOLOGY
- > PROCESSING



Some data of excellence about the **University of Montpellier** from the “Shanghai Ranking (2017)”



FEED

#41

Agriculture

#76-100

Water



CURE

#101-150

Biology

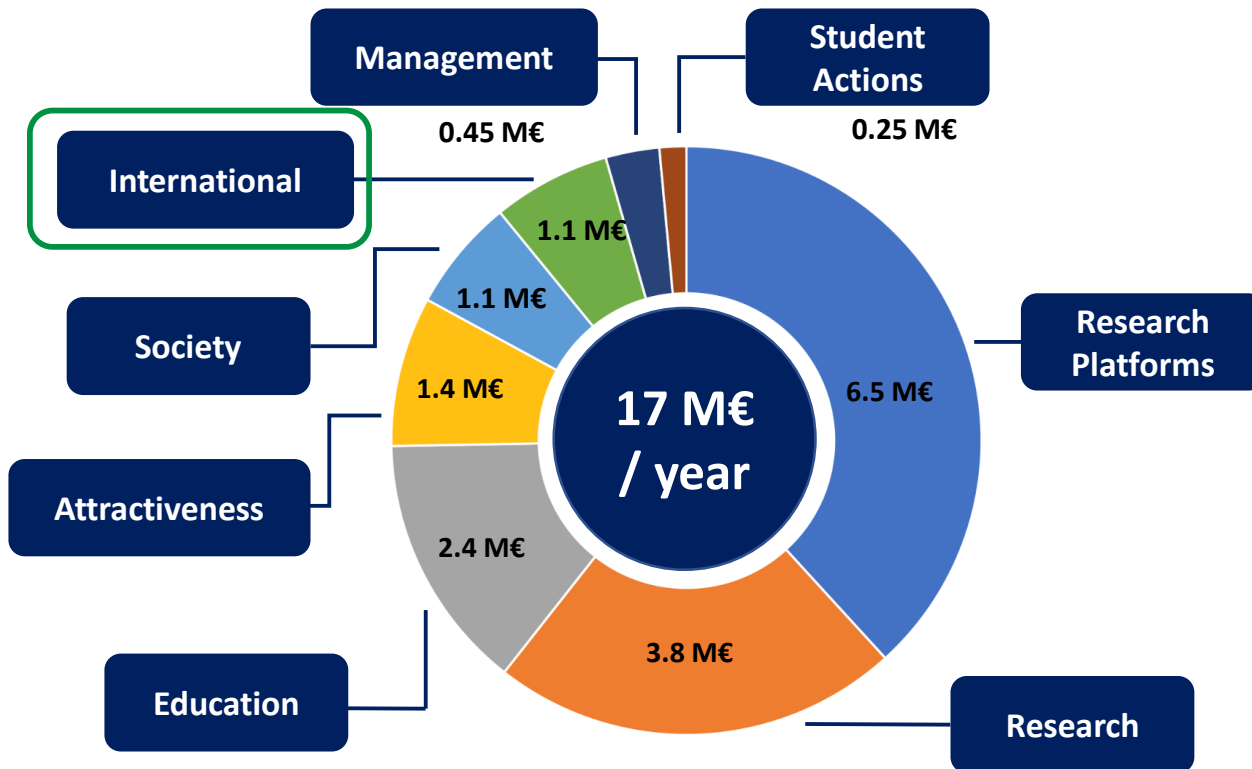


PROTECT

#2

Ecology

“MUSE” Budget breakdown



Research Projects: A few examples linked to the agricultural context



Lucie SIRIEX
Moisa
InVivo Co.

**Impact of vegan-diet on
nutrition and social life**

Boris SZUREK
IPME
Cornell
INERA (Burkina)

**Fighting Rice Bacterial
Leaf Streak in Africa**



Claire MOUQUET
Nutripass
U. Abomey Calavi (Benin)

**Niébé-based diet in urban
environment in Benin**

Research Projects: A few examples linked to the agricultural context



Serge CHIRON
HSM // G-EAU // LBE
U. Barcelona

Reducing pharmaceutical
residues in wastewaters

Rachel CERDAN
DIMNP // CBS // LBE
Pasteur Inst.
AGV Co.

New therapies against
Malaria



Research Projects: A few examples linked to the agricultural context



Patrice BUCHE

IATE

UC Davis (Matthew Lange)

**From Advanced Text
Extraction to Selection of
Fresh Food Packaging**



Gilles MASSARDIER

ART-Dev // Cepel // G-Eau

UC Davis (Mark Lubell)

Suez Co.

**Study of public policies
regarding climat change**

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International dimension of MUSE

**Launch of flagship international
Mega programs through partnership**

Moving beyond outdated developed - developing divide (2030 Agenda for Sustainable Development)

Taking advantage of the

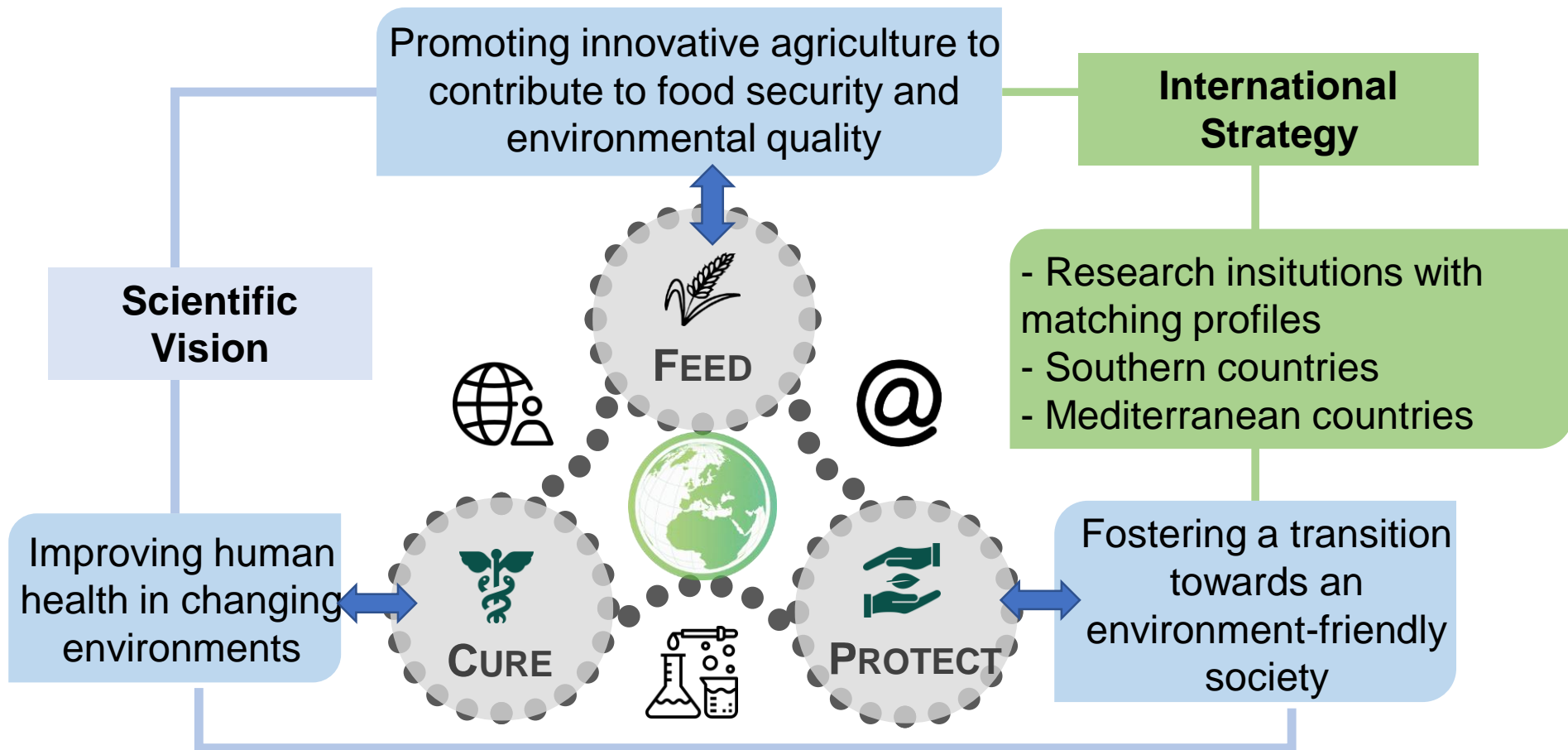
- **The important « scientific density » in Montpellier in these areas**
- **The presence of numerous international partners in Montpellier (CGIAR, EMBRAPA, INTA, CSIRO, PUTRA MALAYSIA, ...)**
- **The partnering heritage with some dedicated institutions: IRD, Cirad, CIHEAMM (Framework agreements and presence of Montpellier research groups in more than 100 countries)**

With the know how and support from Agropolis International

An international ambition

- **Design and implement world wide research and teaching infrastructures to « co-produce » knowledge, data and skills required to address the challenges FEED – PROTECT - PRESERVE**
- **Collaborate with the best world level institutions while involving low income countries institutions : « No research community left behind »**

A project with 3 challenges that encompass all disciplines



Partnership required to :

- Stimulate exchanges and collaboration
- Mobilize complementary resources and skills
- Address local-global interactions
- Cover the global dimension, in particular through data analysis
- Support scientific communities of low income countries
- Contribute to scientific diplomacy



An international strategy to address 3 interconnected societal challenges

MUSE Int'l Focus Key Partners: Current Objectives



General Framework of international Agreement (e.g. Wageningen U.R.)

- **Purpose**

- To define the general framework for cooperation between MUSE and selected key partners
- Complement each MUSE member's individual personal agreement
e.g. Agreements of INRA & Cirad with CAAS

- **Possible areas of collaboration (e.g.: agreement with Wageningen U.R.)**

- education and research missions
- joint scheduling and implementation of joint research and education projects
- exchange and hosting of scientific and technical staff
- training for academic and technical staff
- scientific, technical and educational information exchange
- joint organization of seminars, symposiums and conferences
- publication and implementation of research results
- joint responses to national, regional and international calls for tender
- transfer and exchange of scientific resources and equipment/facilities for research, education and information purposes

Possible forms of cooperation

1. **Mobility and secondment of scientific and support staff and students**
2. **Support to the joint design and implementation of scientific and training projects (each of them with Specific Agreement); 4 different levels of integration**
 - Exchange of information
 - Inclusion of partnership as a desired criteria or eligibility condition in own tools and/or calls
 - Matching incentive tools and mechanisms to implement dedicated and specific mechanisms
 - Support to joint sourcing of resources
3. **Particular attention to specific activities**
 - Development of joint education programs
 - Joint organization of events
 - Joint initiatives, such as the development of key initiatives, the implementation of an Institute for Advanced Knowledge, common arrangements with third parties/countries
 - Cross-participation in respective governance and functioning bodies
 - Concerted participation and action in international arena

EXPLORE

Call for international
mobilities
2018

OBJECTIVE: SUPPORT INTERNATIONAL COLLABORATION, INCREASE ATTRACTIVENESS AND VISIBILITY AND CONTRIBUTE TO THE DESIGN OF NEW INTERNATIONAL INITIATIVES

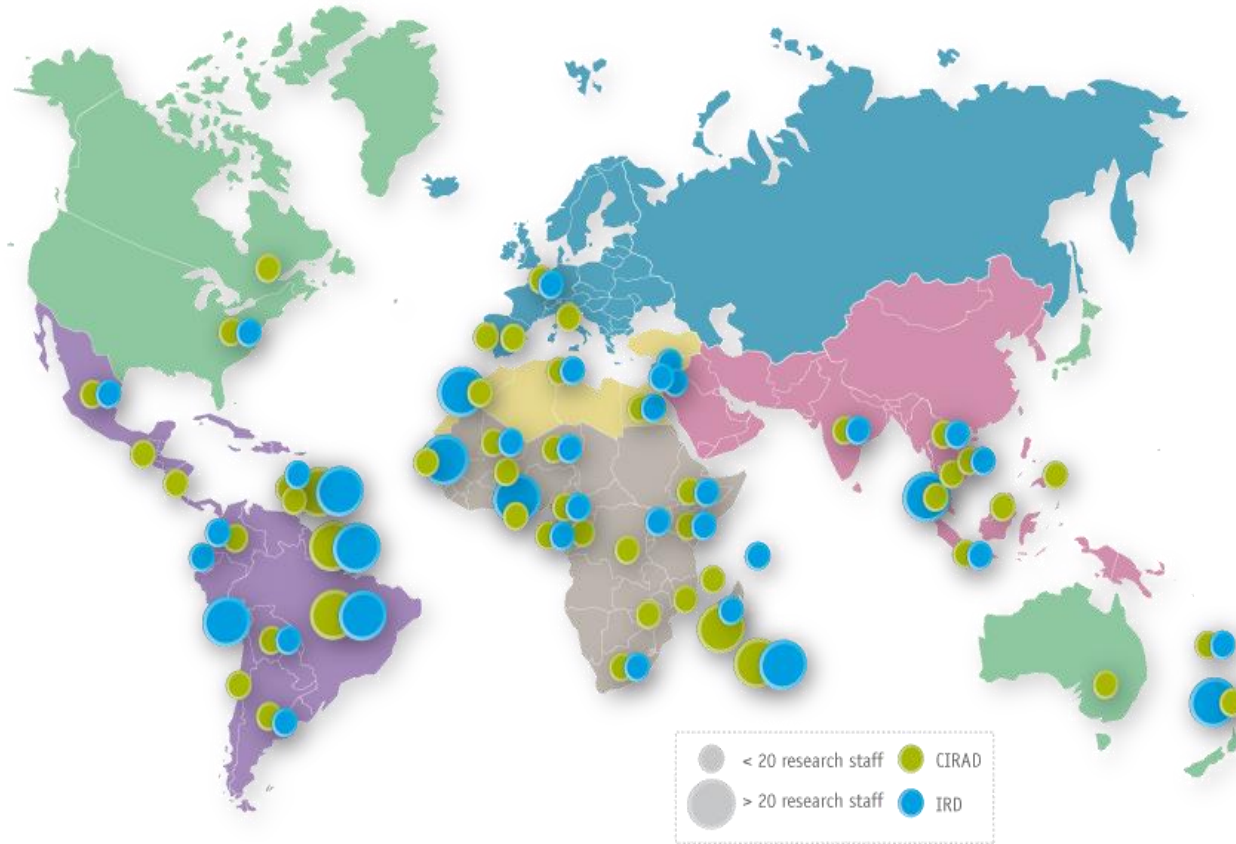
2 PATTERNS FOR THE FIRST CALL IN APRIL 2018)

- Staff from and to MUSE international strategic partners
 - « Binômes » : one scientist from Cirad or IRD (international dedicated French research institutions) together with a scientist from another institution to explore new partnership
- ➔ 79 proposals selected in June 2018

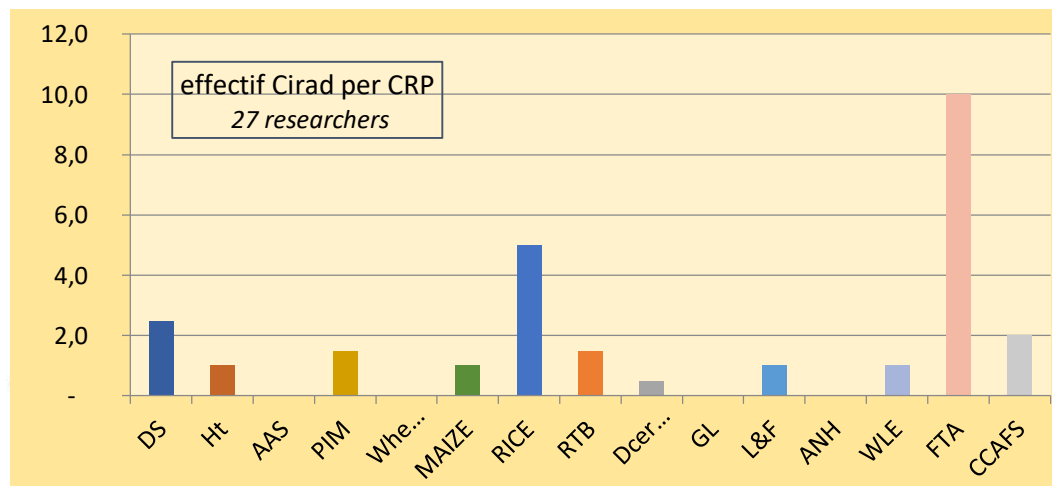
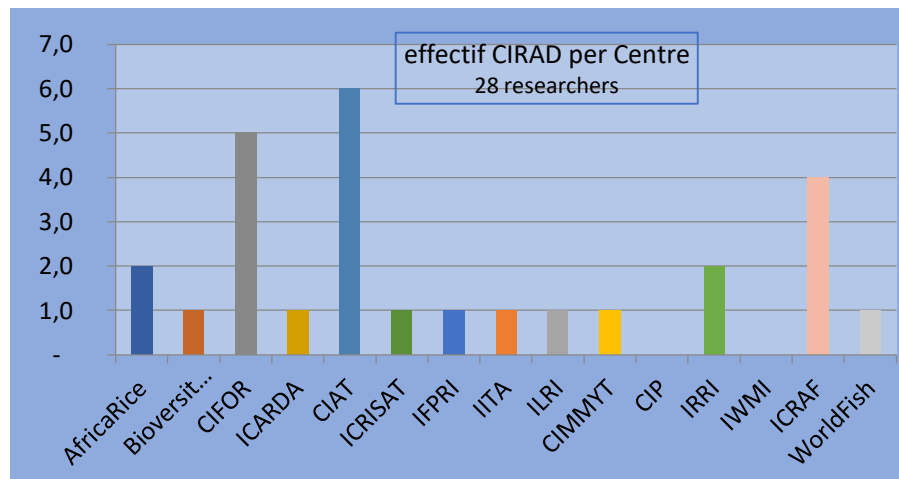
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Cirad & IRD Researchers posted abroad

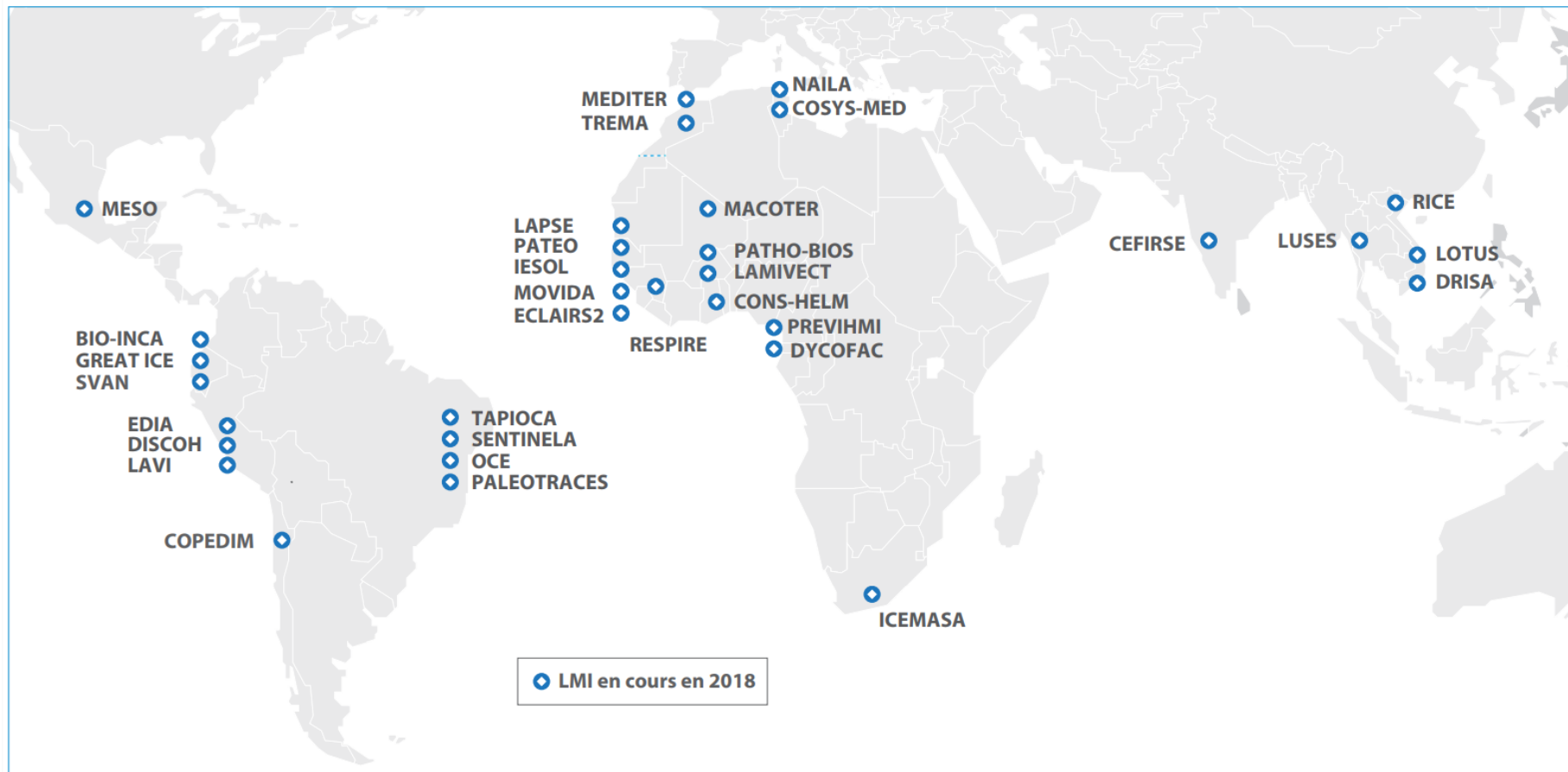


Cirad's strong international partnership with CGIAR

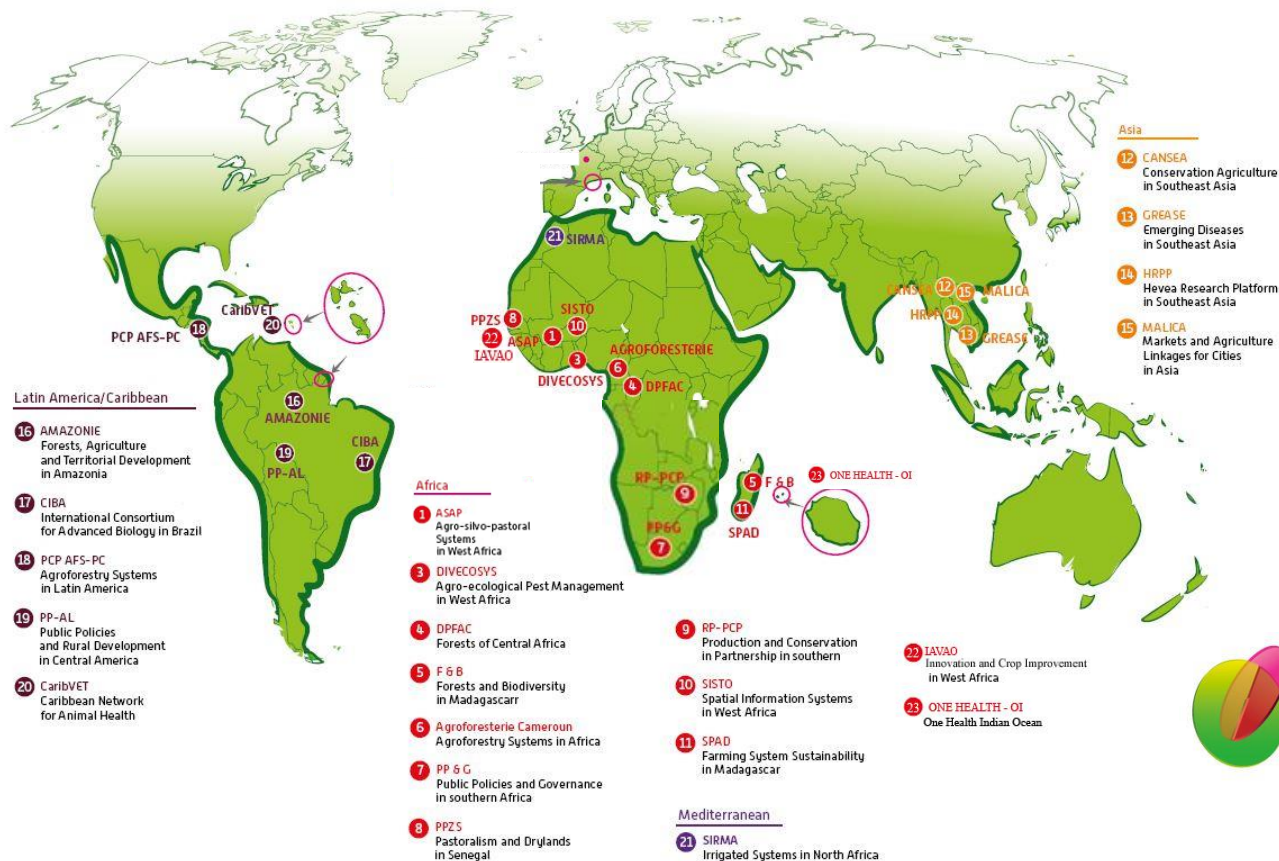




IRD : 34 International Mixed Laboratories – "LMIs"

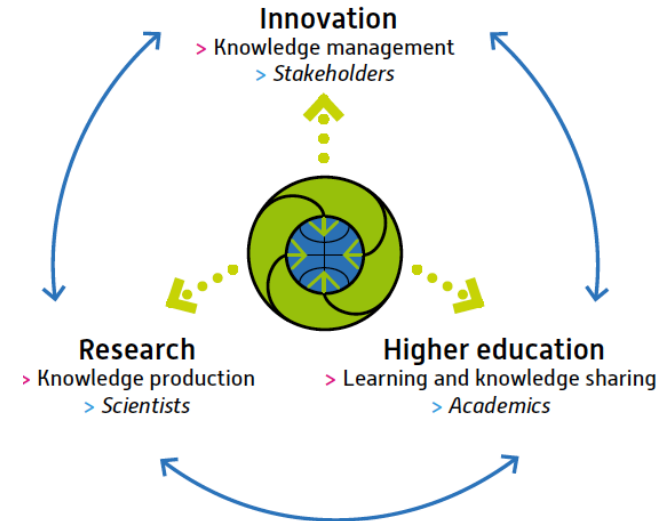


Cirad : 22 Platforms in Partnerships Worldwide for Research & Education – "dPs"



Concept of the "dPs"

- a community of partners eager to work **together, ...**
- with **shared** objectives and perspectives
- on a long-term basis, mobilizing human resources, means and fundings **on a par-basis**
- on focused topics of **common interests**
- in **a given geographic** area
- composing a critical mass of scientists, competencies and activities.



dPs are dealing with a number of strategic scientific objectives

- **Ecologically intensive agriculture**

Invent an agriculture able to valorize agroecosystems in a sustainable way.

- **Biomass valorization**

Innovate for sustainable valorization of non-food biomass.

- **Sustainable food**

Enhance food security for southern societies.

- **Plants and animal health**

Understand, anticipate and manage hazards and risks related to plants and animal bioaggressors.

- **Public policy for development**

Strengthen public action to reduce inequalities and poverty.

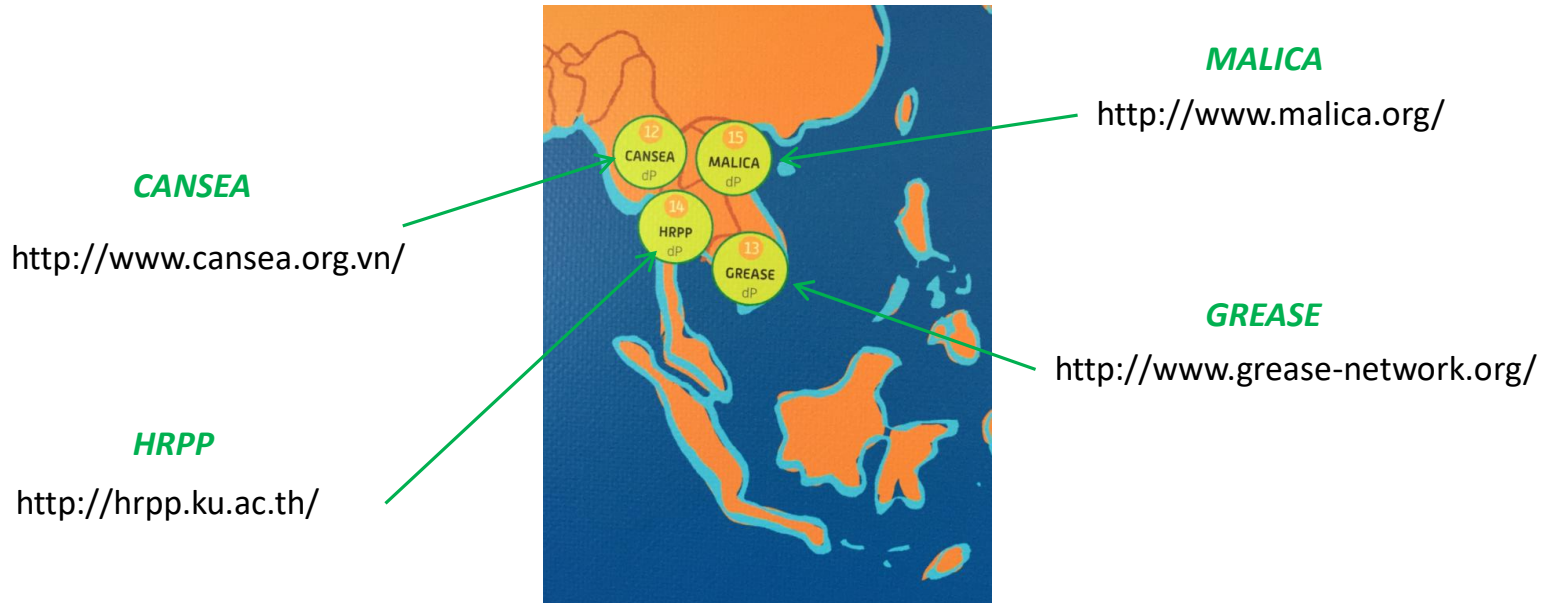
- **Societies, nature and territories**

Contribute to societies action for a sustainable management of their territories.

4 "dPs" in In Asia



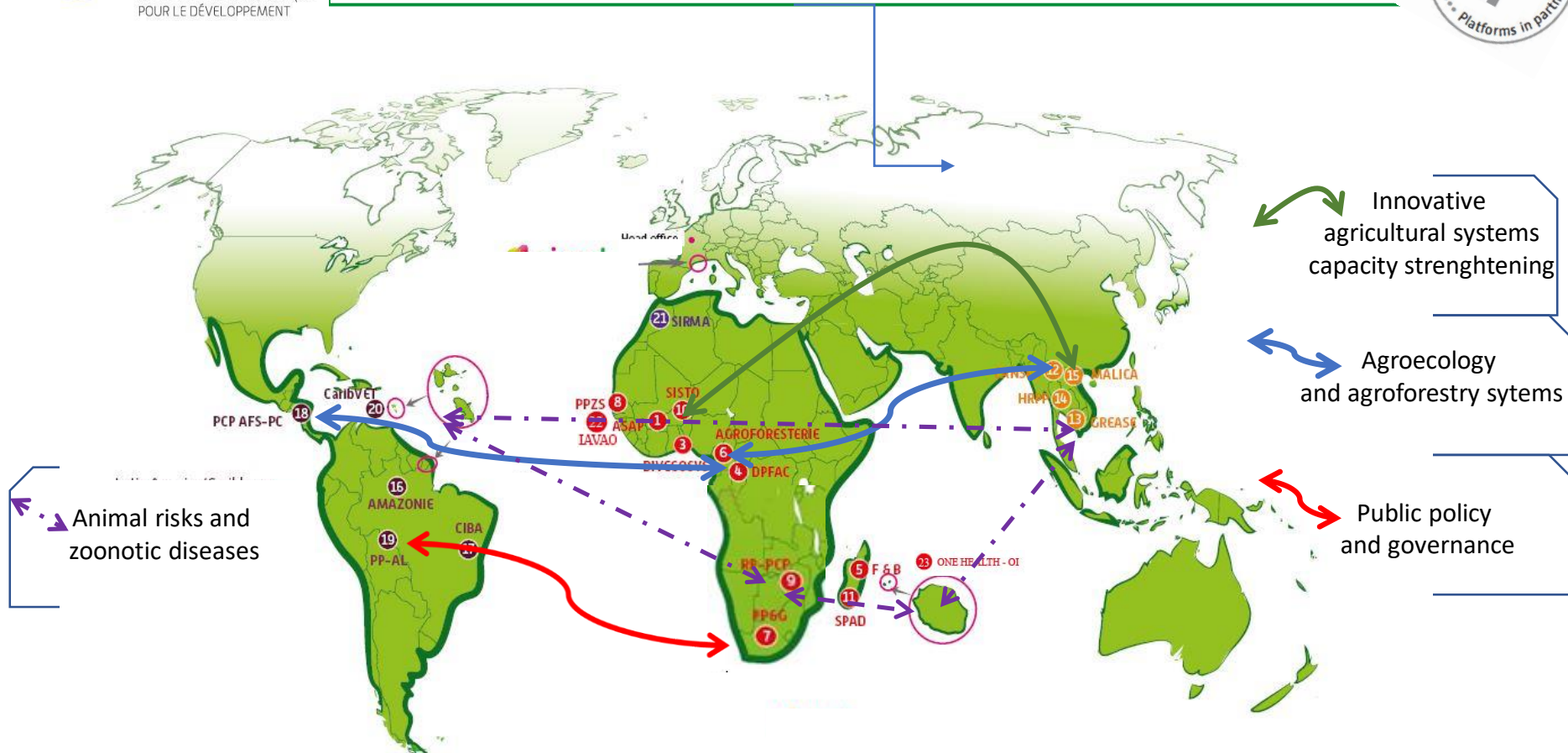
Four **platforms in Partnership** are operating on different topics such as *Agriculture and Market interactions*, *Emerging Diseases*, *Conservative Agriculture*, *Rubber Production*; they gather a collectif of about 100 scientists, praticionners, trainers,... representing more than 25 different bodies.



Conservation Agriculture in South East Asia

CANSEA is a **platform** in **Partnership** devoted to producing knowledge related to conservation agriculture, agroecology practices, soil fertility restoration and preservation



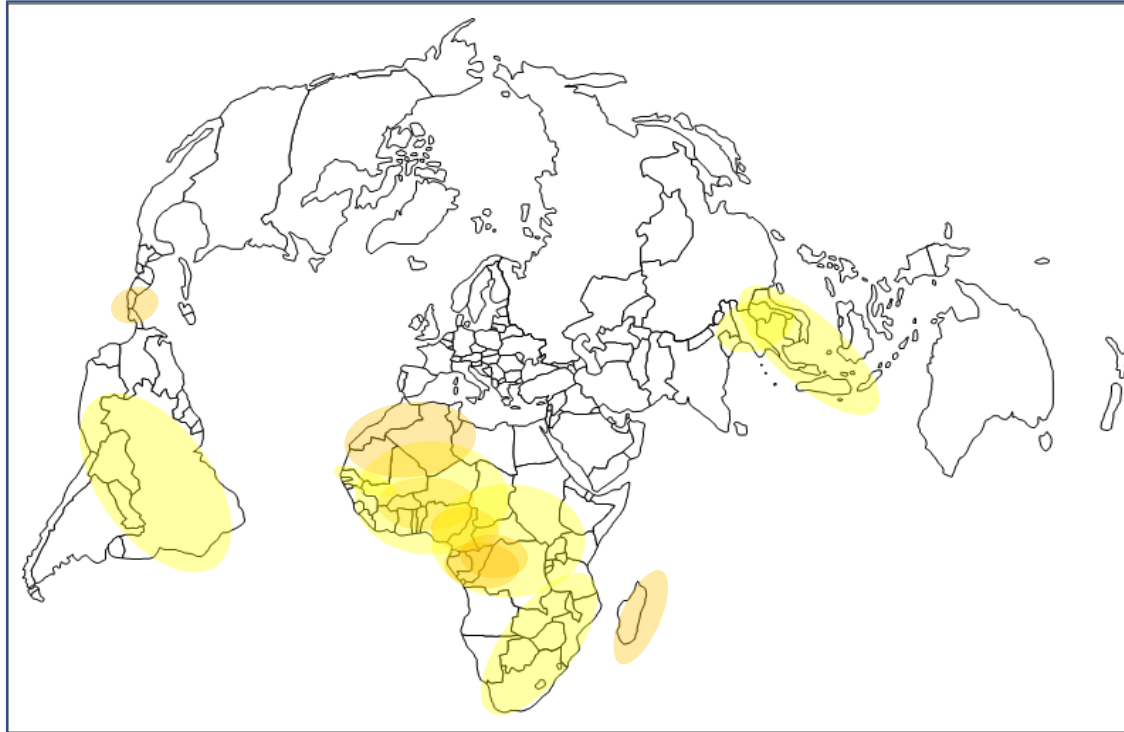


dPs: ex. Ecological intensification Network

To invent an ecological intensive and sustainable
agriculture, able to answer actuel and future
population need

14 dPs

ASAP
DIVECOSYS
FAC
CANSEA
RP-PCP
PPZS
HRPP
AFSPC
CIBA
SPAD
CRDPI
AFCameroon
SIRMA
IAVAO



13 Countries

Burkina Faso
Senegal,
Benin, Congo
Gabon, Mali,
Cameroon,
Zimbabwe,
Madagascar,
Indonesiae, Lao
Rep., Thailand
VietNam,
Brasil, Costa Rica,
Marocco, Algeria,
Tunisia

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27 higher education and research organisations
based in Montpellier and its region

4 universities

- University of Montpellier
- UPVM3
- Univ. Nîmes
- UPVD

13 research institutes

- **National:** INRA, CIRAD, IRD, BRGM, CEA, Irstea, CNRS, IFREMER, INSERM
- **International:** EMBRAPA, INTA, Bioversity International, CSIRO, USDA

10 education insitutions

- Montpellier SupAgro
- CIHEAM/IAM.M
- AgroParisTech
- ENSC.M
- EMA
- ESCAIA, ICRA, ISTOM, Sup de Co, CODIGE

A high scientific concentration in Europe

Focusing the fields of

Agriculture

Food

Biodiversity

Environment

2,700
researchers and
professors

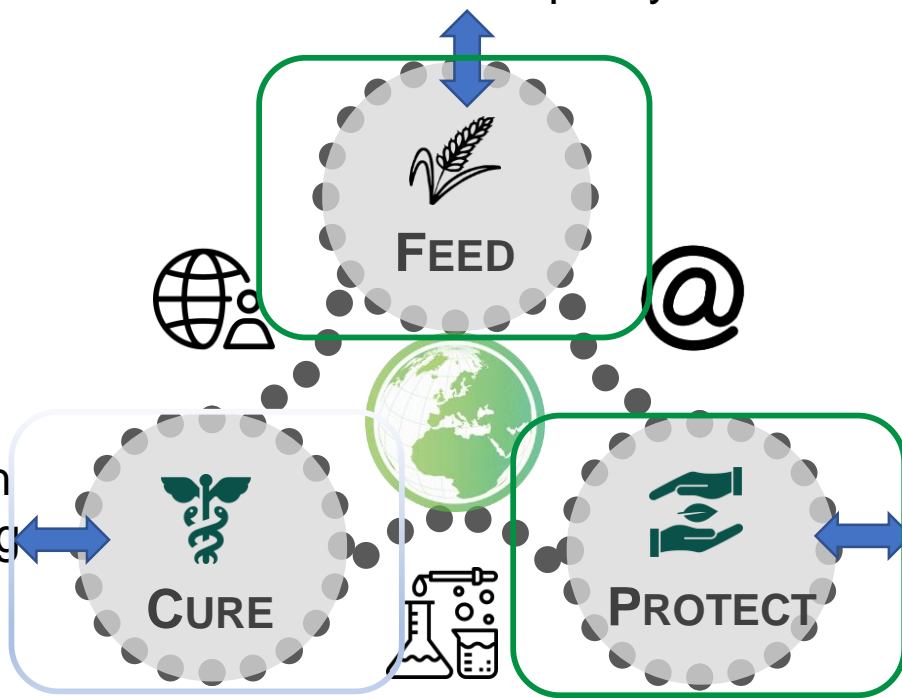
5,000
students

10,000
people
overall



In line with the MUSE domains

Promoting innovative agriculture to
contribute to food security and
environmental quality

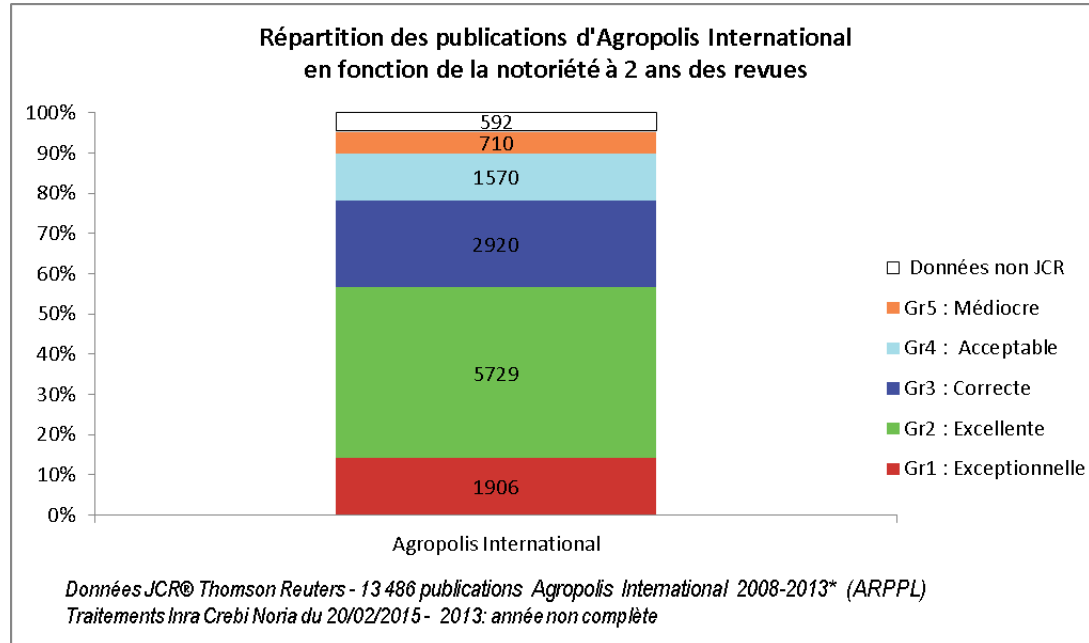


Improving human
health in changing
environments

Fostering a transition
towards an
environment-friendly
society

Indicators of Excellence - Impact factors of the publications' journals

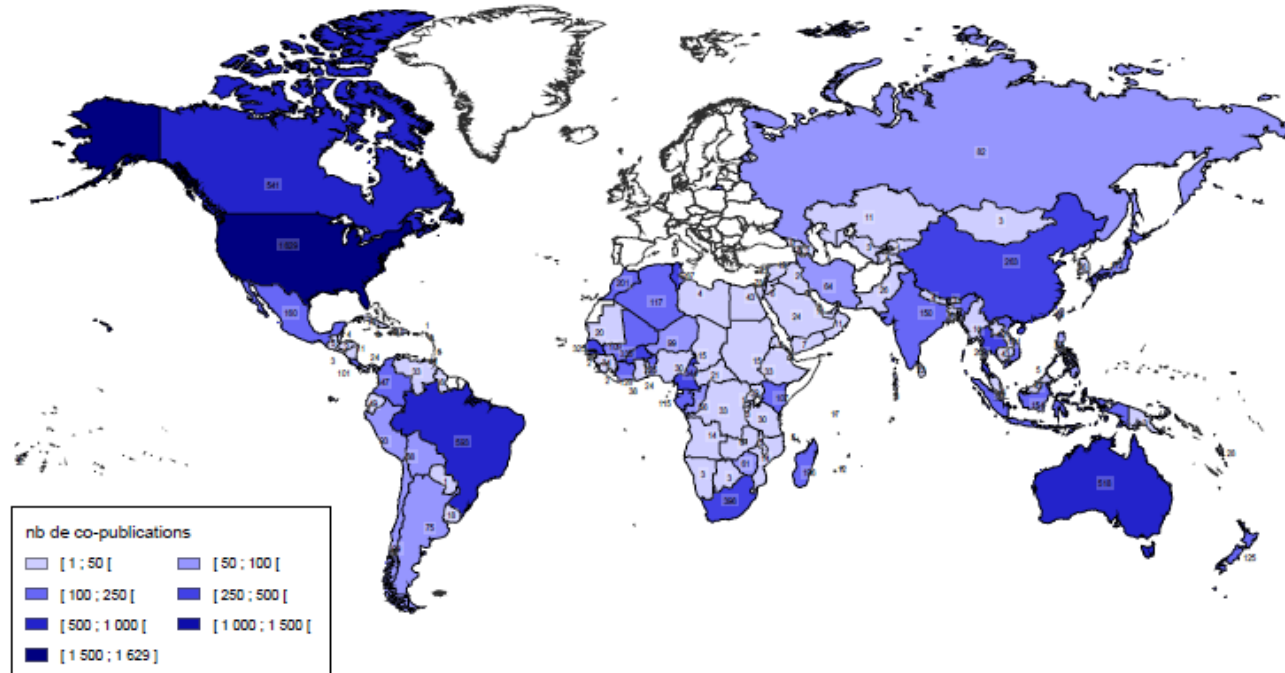
- 57% of the publications are exceptional or excellent
(1st quartile Impact Factor – Thomson Reuters)




Indicators of International partnership - Co-publication of articles

65% of the papers published are co-published with at least one foreign partner (30% in Europe)

compared to 50% from the French researchers and 30% in USA



Strong Agropolis international partnership network



Network of 400 scientists from Agropolis institutes based in 60 foreign countries

- mainly in tropical and Mediterranean regions

Many partnerships and agreements

- with foreign universities and institutions

1,000 foreign scientists

- hosted yearly in laboratories

20% foreign students

- hosted yearly in schools and universities

... and a strong link with the Agropolis Campus welcoming ...

International cooperation French institutions

- CIRAD, IRD, Montpellier SupAgro/Institut Régions Chaudes

International institutions

- CIHEAM-IAM.M, Bioversity International (CGIAR) , ICRA

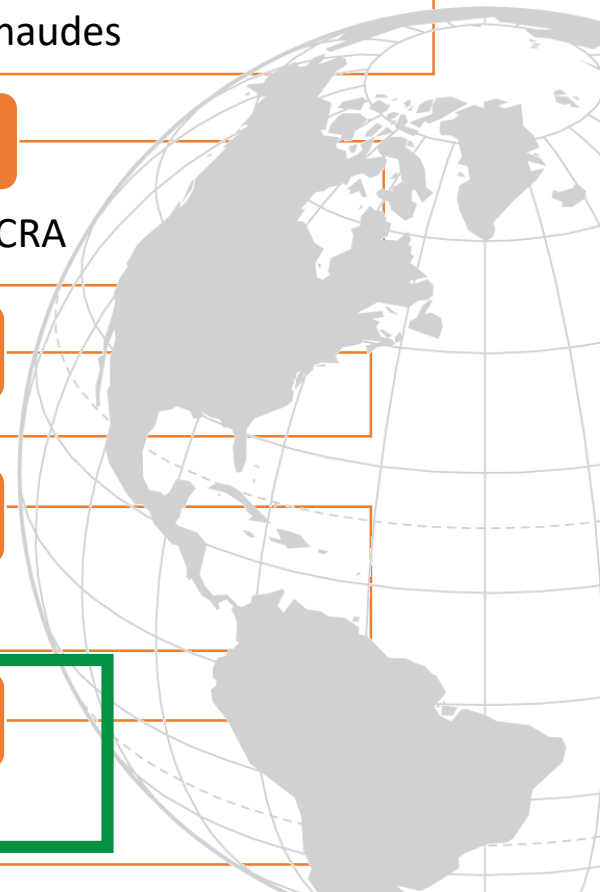
CGIAR System Management Office (SMO)

International Networks

- AgriNatura, IASP, ESA

Foreign national institutions

- Embrapa, INTA, Uni. Putra Malaysia



**Foreign External Laboratories of Institutions
with a European dimension welcomed at Agropolis
International in Montpellier**

❑ **EMBRAPA :**

- "Labex Europe Embrapa"
- Created in **2002**

❑ **INTA :**

- "Labintex INTA"
- Created in **2012**

❑ **Université Putra Malaysia (UPM):**

- "LabEx UPM"
- Created in **2015**

❑ **New foreign institutions**

- CORAF from West Africa
- University of Porto (Portugal)

▪

.....

Proposal for a development of the international partnership with CAAS

□ Agreement with MUSE :

- Mobility and secondment of scientific and support staff and students from CAAS and MUSE
- Support to the joint design and implementation of international scientific projects from CAAS and MUSE

□ Creation of a CAAS External Laboratory in Agropolis International :

- To support the partnership of CAAS with MUSE and their members
- To support the partnership of CAAS with other foreign institutions, in particular with the welcomed External Laboratories of INTA, Embrapa, UPM, ...
- To support the CAAS partnership from the Montpellier region to the European Union (European Commission & Research institutions ex. WUR)



MUSE



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Merci de votre attention !