



# INRAE

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**Introducing  
the French National Research Institute  
for Agriculture, Food and Environment**

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2021

Science for people,  
life & earth

AE



INRAE



The French National  
Research Institute for  
Agriculture, Food and  
Environment (INRAE)

# Our mission

came into being in  
January 2020, through the  
successful merger of the  
French National Institute for  
Agricultural Research (INRA)  
and the French National  
Research Institute of Science  
and Technology for the  
Environment and Agriculture  
(Irstea)



We operate under the joint authority of the French Ministry for Higher Education, Research and Innovation and the French Ministry for Agriculture and Food

**Our mission is twofold**

- to produce and share scientific knowledge contributing to solve major challenges in Europe and in the world concerning agriculture, food and the environment
- to build on our research in order to foster innovation, provide expertise, and lend support to public policy makers at international, European and national level

INRAE – a world leader in agriculture, food and the environment



Humanity and the Earth are facing global challenges that call for new research objectives. As a public research institute, serving the common good, INRAE is fully committed to carry out science dedicated to life, humans, and the Earth that uncovers solutions to our most pressing concerns.







1/2 de Ré Cat I  
TOMATE de Pleine Terre  
2.95  
5.00 / 2kg



Looking to 2030, we have defined our scientific priorities and objectives for the next decade.

# Our roadmap: INRAE 2030

They arose from a collaborative, participative process that took place both internally and outside of our institution, welcoming contributions by international experts.





scientific priorities  
(SPs)



policy priorities  
(PPs)

**SP 1** Responding to environmental challenges and their associated risks

**SP 2** Accelerating agroecological and food transitions while answering socioeconomic challenges

**SP 3** Building a bioeconomy based on the efficient circular use of resources

**SP 4** Promoting a holistic approach to health

**SP 5** Facilitating transitions by mobilizing data sciences and digital technologies

**PP 1** Placing science, innovation, and expertise at the centre of society-policy dialogue

**PP 2** Reinforcing our engagement with academic, European, and international partners

**PP 3** Establishing social and environmental responsibility as a common objective

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**INRAE 2030**  
**Building a sustainable future through  
shared science and innovation**

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18 research centres with  
strong regional ties

# Our organisation



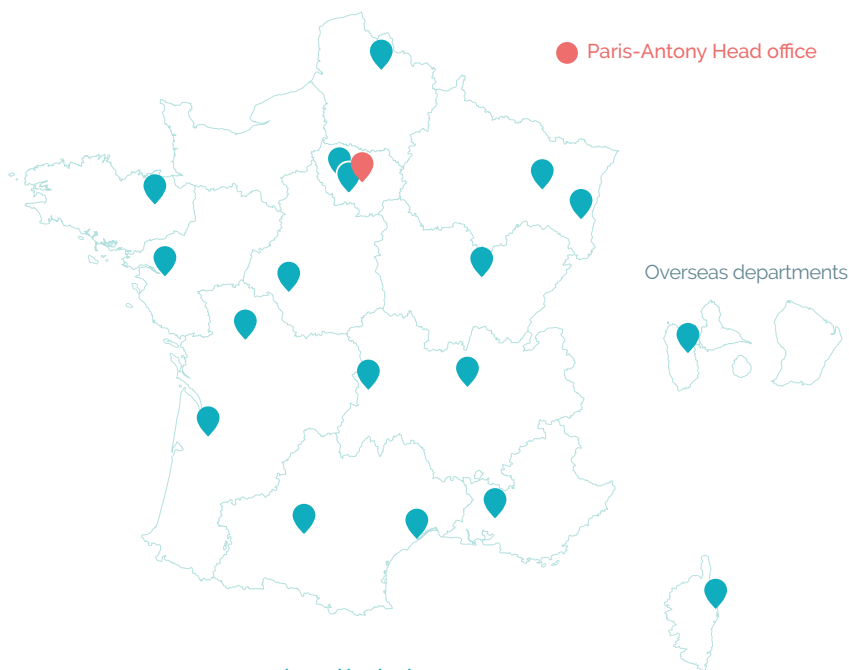
202 Research units



43 Experimental units



22 Service units



## 14 research divisions



Action & Transitions  
Christophe Soulard



Agroecosystems  
Philippe Hinsinger



Animal Genetics  
Edwige Quillet



Animal Health  
Muriel Vayssier-Taussat



Animal Physiology  
& Farming  
Françoise Medale



Aquatic Ecosystems  
& Water Resources  
Mohamed Naaim



Ecology & Biodiversity  
Catherine Bastien



Economics  
& Social Sciences  
Pierre Dupraz



Food, Bioproducts  
& Waste  
Michael O'Donohue



Human Nutrition  
& Food Safety  
Lionel Bretilon



Mathematics  
& Digital Technologies  
Hervé Monod



Microbiology  
& the Food Chain  
Sylvie Dequin



Plant Biology  
& Breeding  
Isabelle Litrico-Chiarelli



Plant Health  
Marie-Hélène Ogliastro











# Our key figures

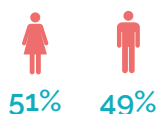


2020

## Our people

- 1,997 researchers
- 3,188 engineers
- 3,096 technicians
- 1,850 PhD candidates
- 2,029 interns

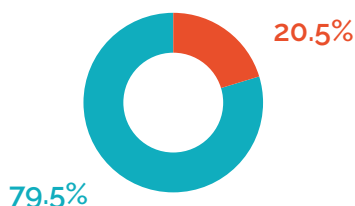
Our staff in 2020:  
11,000+ people



- 75% tenured staff
- 25% contractual staff

## Budget in 2020

€ 999,1 million



public service subsidy  
own resources

•  
€7 million in revenue from  
patents and licences

€24 million in revenue from  
research contracts with  
socioeconomic partners

HR Excellence label of the  
European Commission



Equality and Diversity  
at Work certification



## More on partnerships and innovation in 2020

- 15 innovation fields
- 450+ partners
- 380 new research contracts  
with socioeconomic partners
- 116 new disclosed inventions  
and value-added results
- 45 patent applications
- 69 new licenced patents,  
know-how, software & plant variety rights
- 212 start-ups created since 1999









# Our contribution to global challenges



an integrated  
approach



INRAE is a leading research institution worldwide, ranking as the 4<sup>th</sup> organisation with the highest number of publications by quotation in agricultural sciences, the 4<sup>th</sup> in plant and animal sciences, the 10<sup>th</sup> in ecology and environment (Clarivate Analytics, 2009-2019 period).



The 2030 Agenda of the United Nations describes the global challenges we are facing with the 17 Sustainable Development Goals (SDGs).

### INRAE is tackling 8 of them through its scientific contributions

(Number of INRAE publications by SDG, using Elsevier 2019 mapping in SciVal, WoS 2013-2018 data)



4,541  
publications



2,440  
publications



2,386  
publications



1,932  
publications



1,857  
publications



1,284  
publications



1,148  
publications



974  
publications

“

*"INRAE has a responsibility to tackle this century's global challenges. With its integrated approach to agriculture, food and the environment, INRAE will be able to identify and develop solutions with multiple applications, which can, for example, facilitate the agroecological transition and the transition to healthier and more sustainable dietary regimes, while combatting climate change, land degradation, water scarcity and food insecurity."*

— Jean-François Soussana —  
INRAE's Vice-President of International Policy,  
member of the Intergovernmental Panel on  
Climate Change (IPCC)

”



# International scientific cooperation

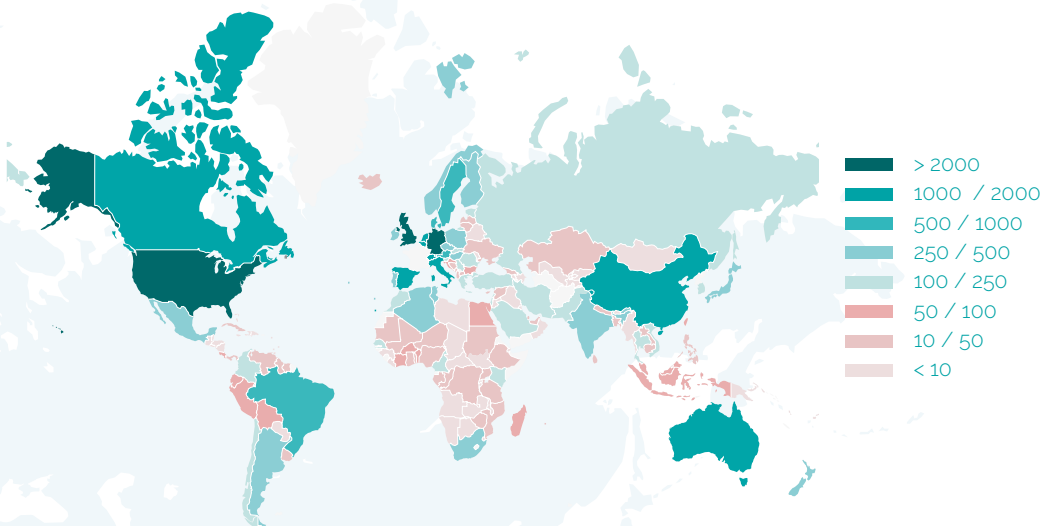


working together with  
international students  
and scientists to respond  
to global challenges

Our scientists are co-publishing  
with others in 110 countries  
around the world

**Map of INRAE co-publications**

*(Web of Science Data, DipSo processing - DRI July 2021)*



We are developing a set of instruments  
to structure international scientific  
cooperation, with more than 20 projects

➤ **LIA** - International associated laboratories where scientists from INRAE and its international counterparts work together to build long-term shared projects of excellence

➤ **2RI** - International research networks focused on specific themes

➤ **JLC** - Joint linkage calls funded to foster new professional relationships and the creation of collaborations, with a specific focus on young scientists

➤ **IRIs** - International Research Initiatives



# International Research Initiatives (IRIs)



Bringing together  
the international  
scientific community  
on key issues and contributing  
to science-policy dialogue

## We have the ambition to drive research initiatives

bringing together national, European and international partners on priority themes contributing to the 2030 Agenda: the International Research Initiatives (IRIs). An IRI is a shared vision, a roadmap, a strategic research agenda shared by an international community of researchers and the facilitation of this community.

## An IRI aims to

**Rally the international scientific** community around major challenges and align research efforts on key issues;

**Favor comparative approaches** to achieve better complementarity and consistency;

**Scale up scientific cooperation and production** on key issues;

**Build up funding opportunities** at national, European and international levels.

## Current IRIs

- Soils and Climate Change
- Intestinal Microbiota and Health
- PREZODE (Preventing Zoonotic Disease Emergence)
- Agroecological crop protection
- Forest and agroforest adaptation to climate change
- Agroecological transitions for food systems facing water scarcity and climate change









# Advancing European research





**Our scientific strategy is aligned with European priorities** (Green deal, Horizon Europe). We have developed a leadership in European networks through Joint Programmes Initiatives and public-private partnerships at European level such as the Animal Task Force.

➤ **The 1st beneficiary of** Horizon 2020 Societal Challenge 2 "Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research and the Bioeconomy" in 2019

➤ **A driving force** for a European roadmap on pesticide-free agriculture, behind the initiative «Towards Chemical Pesticide-free Agriculture» - **34** European research institutes from **20** countries



**Our institute is very active in a range of European projects**, as a coordinator and a partner, and contributes to leading European research infrastructures.

**We are involved in**

➤ **More than 300 European projects** (H2020), coordinating 94

➤ **6 European infrastructures** (ESFRI), coordinating 1 – IBISBA.EU

➤ **6 European infrastructure projects coordinated by INRAE** - EPPN2020, AquaExcel 2020, VetBioNet, SmartCow, PigWeb, IBISBA 1.0.











INRAE's research  
infrastructures (RIs) supply  
scientific communities  
with data production and  
processing services,

# Research infrastructures open to researchers from abroad



along with support for  
training, innovation and the  
development of technology.  
The RI's are also linked,  
internally and externally, to  
form a support framework  
at national and European  
levels.



**Research infrastructures cover major thematic areas of our institute:** Environment, Forest & land use, Agriculture, Human nutrition & health, Bioeconomy

## Environment

### ➤ ICOS

Integrated Carbon Observation System

### ➤ LIFE RI

Living In Freshwaters and Estuaries

### ➤ AnaEE

Analysis and Experimentation on Ecosystems

### ➤ IN-SYLVA-France

Adaptive Forest Management

### ➤ OZCAR and RZA

Observation of Critical Zones and Drainage basins

### ➤ Theia, PNDB, Dinamis

National data infrastructure for Earth system science

## Resources, agronomy, phenotyping

### ➤ RARe (European)

Agricultural and Environmental Biological Resources Centers

### ➤ EMERG'IN

Emerging Infectious Animal and Zoonotic diseases

### ➤ LiPh4SAS

Livestock Phenotyping for Sustainable AgroecoSystems

## Nutrition, bioeconomy

### ➤ PROBE

Platform for Profiling Properties of Food and Biobased Products

### ➤ CALIS

Consumers/Food/Health

### ➤ IBISBA (European,

coordinated by INRAE)

Industrial Biotechnology Innovation and Synthetic Biology Acceleration

## OMICS

### ➤ IR Génomique

Genomics

### ➤ BioinfOmics

Bioinformatics for Omics

### ➤ MetaboHUB

metabolomics & fluxomics

At INRAE we place great emphasis on giving society the scientific and technical knowledge,

# Providing expertise and policy support



tools and methods needed to clarify, design, implement and evaluate public policies. Our expertise contributes to the development and implementation of international agreements, as well as to European Directives, national and local policies.

At international, European and national level, **we provide support and expertise throughout the entire public policy lifecycle.**

➤ **INRAE provides scientific expertise and support to multilateral institutions** (FAO, World Bank, CGIAR, UNEP)



Our international experts tell us more

➤ **We are involved in a number of international initiatives**, emanating from our contributions to major international events (UN Climate Change Conferences, UN Biodiversity Conferences, World Water Forums)



Jean-François Soussana about working for the Intergovernmental Panel on Climate Change (IPCC)

➤ **18 framework agreements signed with public non-academic partners**

➤ **21 collective scientific assessments, foresight studies, and advanced studies** over the last 5 years



Roles, impacts and services provided by European livestock production



Agrimonde-Terra: to explore what the future holds for food security and land use



Storing 4 per 1000 carbon in soils: the potential in France

➤ **10 sustainable operational activities** to support public policies



Epidemiological surveillance platform







We are committed to science accessible to all, focused on **quality, transparency** and the **replicability of results**

# Open science



**Innovative peer review processes** from methodology to the findings of our research

**Digital infrastructures** to manage and disseminate data and knowledge, in keeping with national and European policies

**Building long-term relationships** with non-profit organisations based on trust

**Strong support** given to participatory research.





## Introducing the French National Research Institute for Agriculture, Food and Environment

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Join us:



[inrae.fr/en](https://inrae.fr/en)



**RÉPUBLIQUE  
FRANÇAISE**

*Liberté  
Égalité  
Fraternité*

**INRAE**

