



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA  
DIPARTIMENTO DI  
SCIENZE E TECNOLOGIE AGRO-ALIMENTARI

# DEPARTMENT OF AGRICULTURAL AND FOOD SCIENCES

**Prof. Rosalba Lanciotti**

Department of Agricultural and Food Sciences

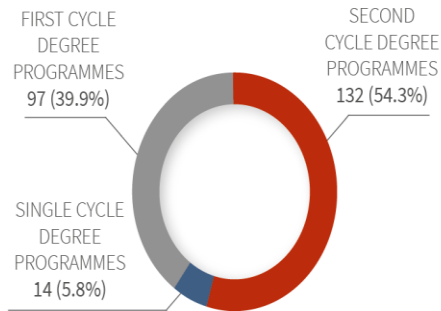
# Educational Programs

DEGREE PROGRAMMES (A.Y. 2021/2022)

**243**

OF WHICH 96 INTERNATIONAL:

- 56 TAUGHT IN ENGLISH
- 23 TAUGHT IN ENGLISH DOUBLE/MULTIPLE DEGREES
- 17 DOUBLE/MULTIPLE DEGREES NOT TAUGHT IN ENGLISH



POSTGRADUATE TRAINING (A.Y. 2020/2021)

**48** PhD programme degree

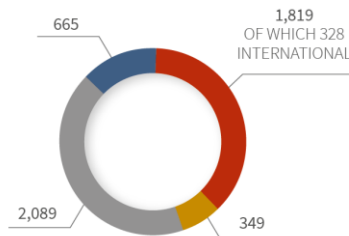
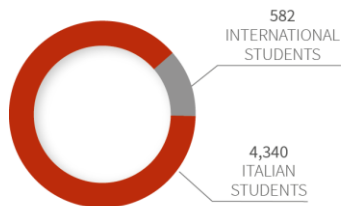
**55** Specialization schools

**95** Master's Degree Programmes of which 19 international

• **1,819** PHD STUDENTS of whom 328 are not Italian from the following geographical regions

Europe	124
Asia	128
Africa	27
North America	9
Central and South America	39
Oceania	1

TOTAL ENROLMENTS ON POSTGRADUATE PROGRAMMES: **4,922**



- PHD STUDENTS
- STUDENTS ENROLLED ON FIRST AND SECOND LEVEL MASTER'S PROGRAMMES
- STUDENTS ENROLLED ON POSTGRADUATE OR LIFELONG LEARNING PROGRAMMES
- STUDENTS ENROLLED IN SPECIALIZATION SCHOOLS (NOT MEDICINE)

# ALMA MATER STUDIORUM BOLOGNA UNIVERSITY

## from 1088 to the future

## A MULTICAMPUS STRUCTURE:

### 5 SCHOOLS

(Economics and Management, Engineering, ARTS Humanities and Cultural Heritage; Medicine and Science)

### 31 DEPARTMENTS

(covering all the research and educational programs on Medicine, Sciences, Social Studies, Technology (**DISTAL**) and Humanities)

### Students:

✓ 85,368 enrolled on degree programs (6,480 international ones)

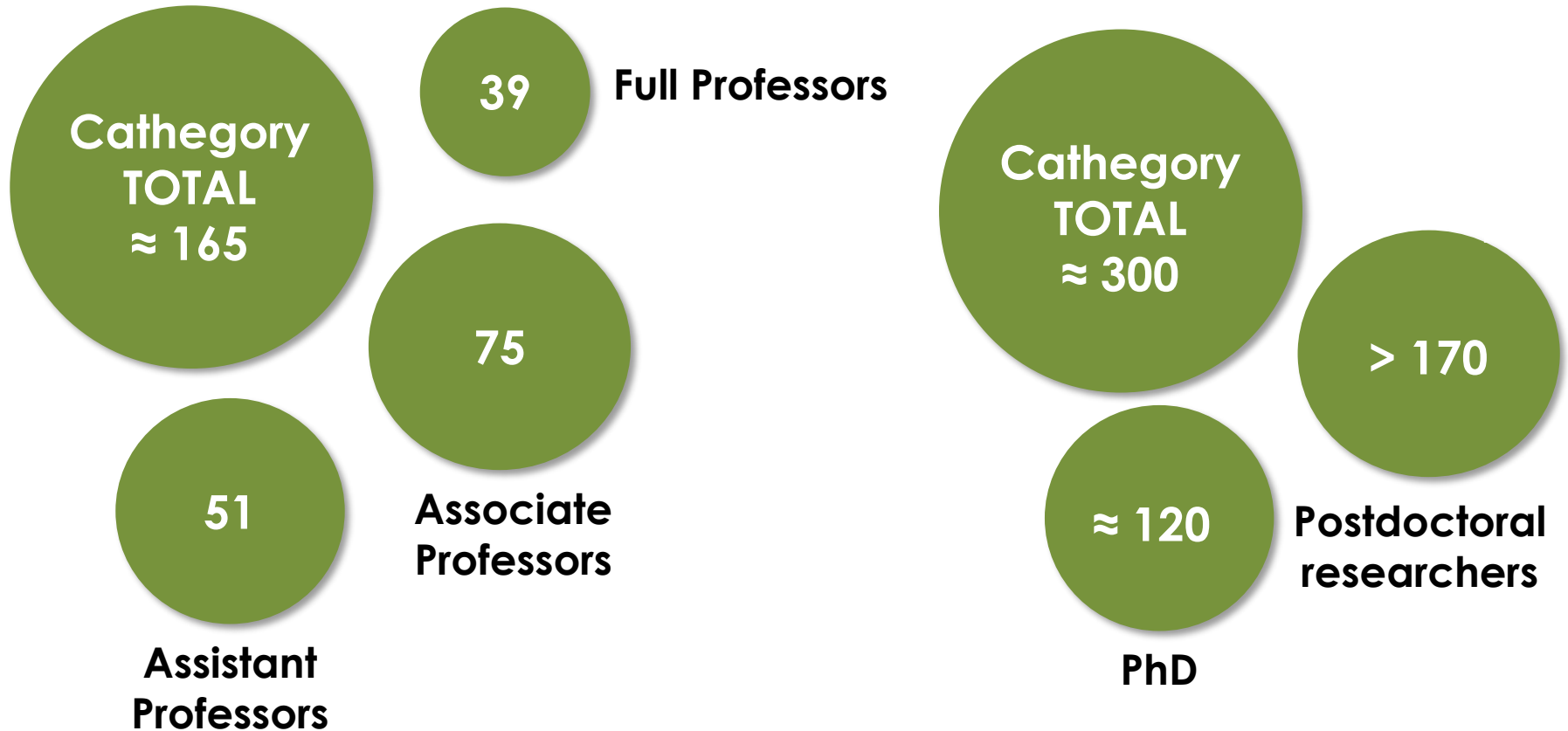
✓ 90,291 enrolled in undergraduate and post graduate programs (7,062 international ones)



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# Faculty

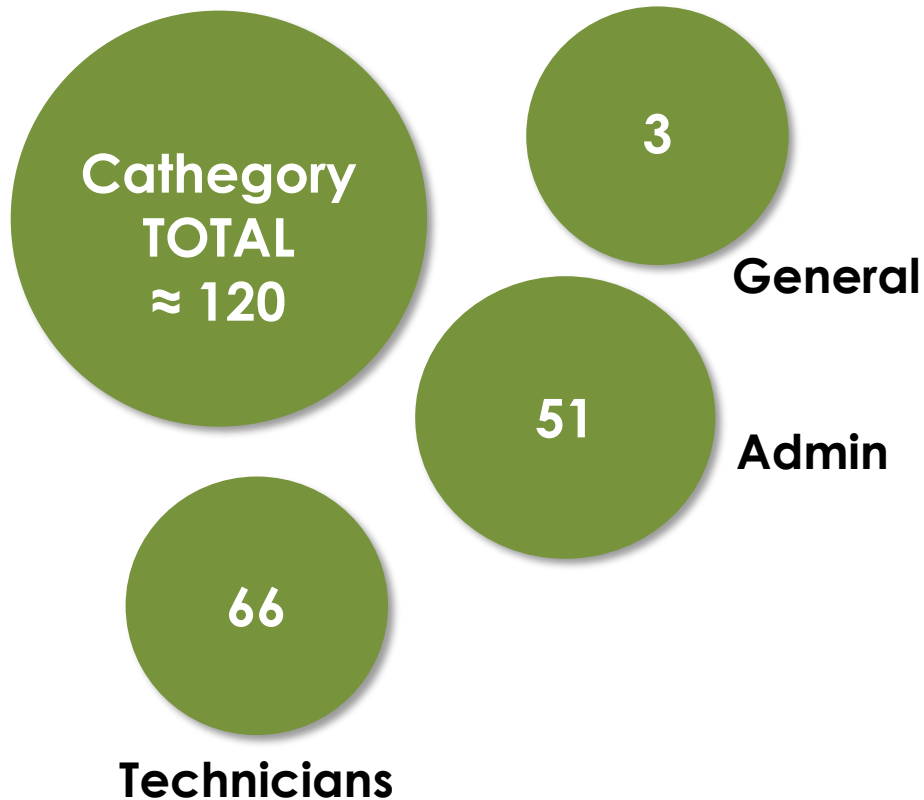
## DISTAL TEACHING and RESEARCH STAFF (PERMANENT)



## DISTAL TEACHING and RESEARCH STAFF (TEMPORARY)



# DISTAL Technical and Admin Staff



**Students enrolled in DISTAL courses**



# DISTAL – PhD Programmes

**A.Y. 2022/23**  
(PhD Total n. = 141)

The DISTAL offers the distinctive three-year PhD programme of **Agricultural, Environmental and Food Science and Technology** (coordinator: **Massimiliano Petracci**)

DISTAL members are also involved in Inter-Departmental Ph.D. Programmes:

- **Health, Safety and Green Systems**  
(coordinator: *Patrizia Tassinari*)
- **Future Earth, Climate Change and Societal Challenge**
- **Innovative Technologies and Sustainable Use of Mediterranean Sea Fishery and Biological Resources (FishMed-PhD)**



## RESEARCH Scientific divisions (10) and sectors (25) OF THE DEPARTMENT

<u>Divisions</u>	<b>SSD</b>
<b>Agronomy and field, vegetables, ornamental crops</b>	AGR/02, AGR/04
<b>Fruit tree and woody plant sciences</b>	AGR/03, AGR/05
<b>Agricultural chemistry, pedology and agricultural genetics</b>	AGR/07, AGR/13, AGR/14
<b>Chemistry, biochemistry and botanical sciences</b>	CHIM/03, CHIM/06, BIO/01, BIO/10
<b>Agricultural and food economics</b>	AGR/01, IUS/03
<b>Agricultural engineering</b>	AGR/08, AGR/09, AGR/10
<b>Agri-environmental and food microbiology</b>	AGR/16
<b>Plant pathology and entomology</b>	AGR/11, AGR/12
<b>Food science and technology</b>	AGR/15
<b>Animal sciences</b>	AGR/17, AGR/18, AGR/19, AGR/20, VET/04



## DISTAL – BOLOGNA -AGRITECH FACILITIES



Main Building



The Greenhouses



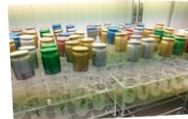
Vertical farming



SEM and TEM Microscopy LAB



LABs of seed and  
germplasm analyses  
and researches



## DISTAL –CADRIANO- AGRITECH FACILITIES



Machinery and Engineering labs



Sustainable orchards, open fields Labs and green houses



# Department of Agricultural and Food Sciences (DISTAL) strengths

- ✓ Extremely high “Biodiversity” in terms of scientific sectors belonging to different research areas allowing a farm to fork multidisciplinary approach in educational programmes and research activities
- ✓ Multi-campus (Bologna and Cesena) and multi-site (Ozzano, Cadriano, Imola and Tebano) structures
- ✓ The presence in areas highly suited for agriculture and food productions
- ✓ The strong relationship with the main agri-food production players and stakeholders
- ✓ High efficacy in the Knowledge transfer to society and agri-food production sectors
- ✓ High publication rate
- ✓ High Competitiveness in project success rate



# Cadriano: Research and Educational Center

Lot 1 – Cadriano Experimental Learning Center

Via Gandolfi 19 (Lot 1 starting January 2033- ending at the beginning of 2024)



Redevelopment of CRIOF building, canteen services, offices and laboratories

- **Final design** approved by agencies
- **Executive design completed**
- **Participation in Call MIUR II**, co-financing of the work at 60% for structural and technological modernization of University Institutions
- **Publication of the call for tenders** for the contracting of the works



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Bologna- Focused on AGRITECH



Cesena- Campus of Food Sciences

DISTAL –CESENA- FOOD SCIENCES AND TECNOLOGIES



Cesena Main building



Cesena Labs



Cesena facilities



CESENA-“Inter-Department Centre of Food Industrial Research (CIRI-Agroalimentare), specifically devoted to the technology transfer to food industry, and particularly to SMEs



## DISTAL – Ozzano Research Centre on Animal Species



Main Building - Offices and Labs



Experimental Facilities for Poultry Species

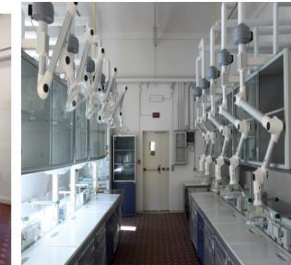


**New Master Degree:  
Vegetable and  
Agricultural  
Biotechnology**

## DISTAL – Imola Green houses and Labs



Facilities functional the research and educational activities on green and landscape sciences and technologies



### BACHELOR DEGREES (8)

- Marketing and economics of the agri-industrial system
- Animal production
- Land and agri-forestry technologies
- Agricultural technology
- Food technology
- Sciences and Technologies for green and landscape
- Sciences and Culture of Gastronomy
- Viticulture and Oenology

### MASTER DEGREES (6)

- **International Horticultural Science (in English)**
- **Food safety and food risk management (in English - regional)**
- **Precise and sustainable agriculture (in English)**
- Planning and management of agri-territorial, forest and landscape
- Agricultural science and technology
- Food Science and Technology



**DISTAL main research and educational program driver: contributing to sustainability and resilience building on the Nexus between Water, Food, Energy and Agriculture to favor the achievement of the main goals of UNESCO's 2030 agenda according to:**



- National Research Strategy on Agriculture, Food, Environment and Energy
- National Plans for Recovery and Resilience
- Emilia Romagna Region Strategy and funding programs
- European Research programs: CBE, Horizon-Europe, PRIMA Mediterranean program.
- Consultancy and industrial research



## **DISTAL main research topics**

- reduction of pollution
- zero waste
- reduction starvation and undernutrition
- increase global food quality, quantity, safety and shelf-life
- increase the sustainability of agri-food productions
- set up bio-technological and production processes able to save energy, water, land valorisation of waste and by products
- identification of new protein sources
- prevent climatic changes
- **Identify new packaging materials and preservation strategies**

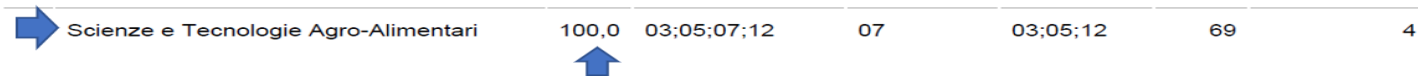


## Main outcomes related to national and international research positioning

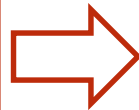


- According to QS World University Rankings in the subject Agriculture & Forestry, UNIBO is the first University in Italy
- In Agriculture & Forestry subject, DISTAL is the main contributor of UNIBO (accounting for over than 85%)

Italian Evaluation System of Research Quality (VQR) confirmed the excellence of the DISTAL research assigning a score of 100 out of 100 available.



DISTAL as an integrated research and educational platform including a huge number of advanced expertise, infrastructures, facilities, biotechnologies and tools



Its widespread territorial diffusion strengthens the interactions among scientific sectors, between research activities and educational programs as well as DISTAL and stakeholders

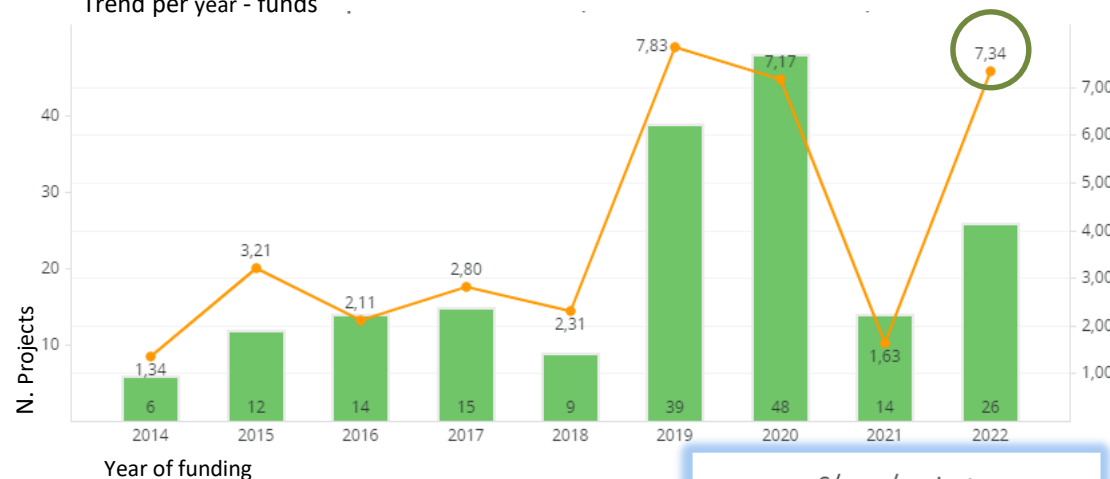


This advanced, integrated and widespread structure and the ability to interact in a synergic way with stakeholders, academic partners (including the other Universities of ER) and other relevant key actors allow us to be the first Department of Alma Mater Studiorum –University of Bologna in terms of funded competitive national and international projects as well as to play a pivotal role in public engagement and committed research.



# Research

Trend per year - funds

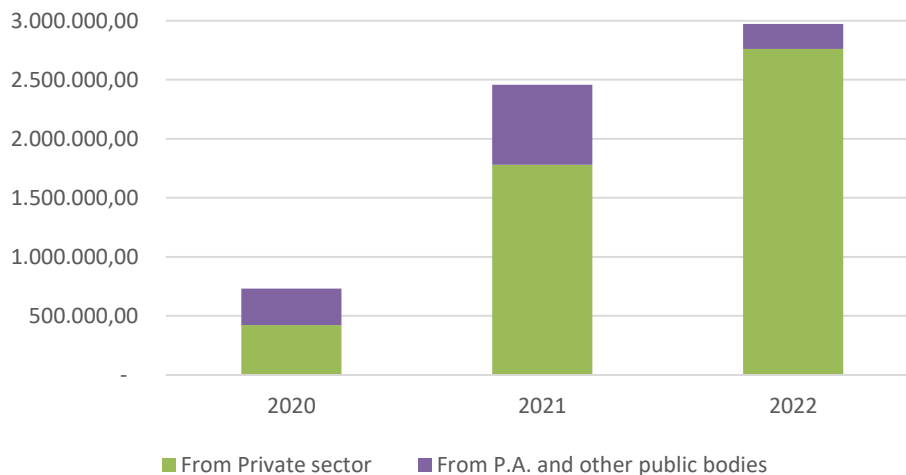


Department budget (mln)

Year of funding



THIRD MISSION (€)



■ From Private sector ■ From P.A. and other public bodies

- Revenue growth from competitive projects
- Funds per department member above University average, but below area maximum
- Increase in citations per department member in the three-year period (especially new hires)
- Growth in turnover from commissioned research
- Turnover per department member about 2.5 times UNIBO average

- VRA single index and publications for VQR purposes in Area average
- Open access publications above Area average
- Products with international co-authors and interdisciplinary publications above Area average
- QS ranking SC AGRICULTURE AND FORESTRY: UNIBO 40th position worldwide, 15th in EU and first in Italy
- VQR: score 100; allowed to submit project Excellent Departments



## DISTAL wins:

- **79 EU-funded project** (H2020,HEU,KIC, PRIMA Sec. 1, etc.), 18 coordinated projects
- **22 International projects** with EU and international dimension (JPI, PRIMA Sec. 2, EJP, etc.), 6 coordinated projects
- **53 nationally funded projects**, 12 coordinated projects
- **85 minor projects** from **Regional** and **local funding** agencies (public and private)
- In the framework of **PNRR**, the Department participates in the categories Biodiversity, Agritech, and Partenariato Esteso, and to a project on Ecosystems for innovation



# AZIENDA AGRICOLA A.U.B.

## The Farmhouse



- **A.U.B.** – Technological platform
- Living Lab of UNIBO
- 500 hectares of land (including 220 organic ones)
- 10 business units located in Reggio Emilia and Bologna
- 200 heads of dairy cattle
- an artificial insemination center (equines)
- an autonomous equipment park
- 55 agricultural workers
- 20 units of technical staff

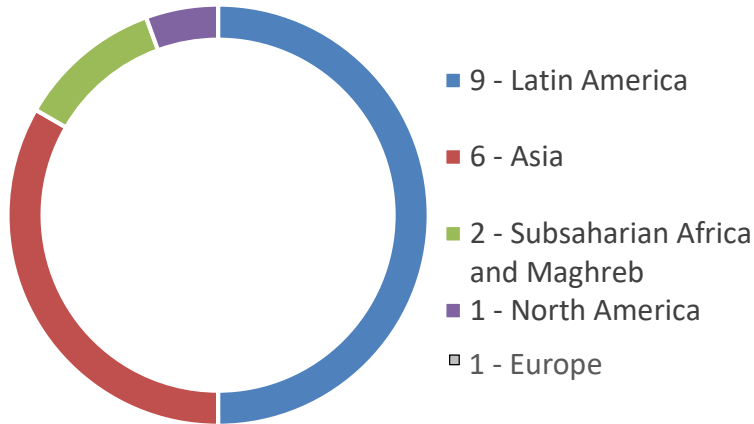


# Internazionalization



Baku – April 2023

## 23 Active agreements of sector



University framework agreement with Ada University (Azerbaijani) for 5-years duration

- Activation of 5 PhD executive positions in the next 5 cycles (38°- 42°) in order to train future teachers on Agro-Food topics activated at Ada University
- Support in the creation of educational structures and the definition of educational plans for 1° and 2° level degrees on Agro-Food topics
- New destination for student mobility in the framework of call Erasmus+ KA171 International Credit Mobility (ICM - a.y. 2024-2025)



King Saud University  
Riyadh 11-14 September 2022

Mission EMILIA-ROMAGNA'S FOOD ECOSYSTEM MEETS RIYADH  
11-14 September 2022

- Meetings with King Saud e Alfaisal Universities – Embassy - Organic Farmers - experimental palm grove (KSU)





# Internazionalization

Calls in support of internationalization initiatives of Departments



Dominican Republic – September 2022

## Call «Bando Strutture»

UNIBO funding for innovative initiatives of DISTAL within the framework of the agreements with extra-EU entities			
Call	Starting of activities	Title of the project	Extra-EU partners
2018	2019	PASS - Participatory Agroecology School System (Project coordinator: Prof. Adamo Domenico Rombolà)	USA - Chile - Brasil
2019	2020	SHARQ - Environment and Archaeology: Linking the Past and the Future for a Sustainable Development of the Samarkand Territory (Project coordinators: Prof. Diana Di Gioia and Prof. Moreno Toselli)	Uzbekistan
2021	2022	LatinLAB - Latin America Food Loss & Waste Prevention and Valorization Lab (Project coordinator: Prof. Andrea Segrè)	Dominican Republic - Costarica - Argentina
2022	2023	Sustainable green design and regeneration (Project coordinators: Prof. Tassinari, Prof. Torreggiani)	Malesia

"Unibo - Bando Strutture" financial contribution requested from 10.000 to 20.000 Euros (max 2 requests for Dept.)

## Call «Global South»

UNIBO funding for international projects of DISTAL in the context of development cooperation addressed to target country			
Call	Starting of activities	Title of the project	Extra-EU partners
2021	2022	SHEER - Soil Health Evaluation in Ecological Restoration (Project coordinator: Prof. Marcello Di Bonito)	Kenya

"Unibo - Global South" financial contribution requested from 20.000 to 45.000 Euros (max 1 request for Dept.)



# Third Mission

The Department develops:

- patents and plant rights
- service activities for the agri-food industry
- academic spin-offs

Laboratories and structures accredited at national and international level allow a constant alignment with the industrial world and financing through projects and activities on behalf of third parties:



- I.e. Fingerprinting Service: a molecular analysis service for the control of the "genetic correspondence" of plant material, for its discrimination and/or identification (fingerprinting). The laboratories are accredited by the Emilia-Romagna Region for DNA molecular analysis.



# Third Mission activities



## LaRAS - Seed Research and Analysis Laboratory

The laboratory is authorized to perform analysis for the application of seed regulations.

The Laras performs on request the following service activities for public bodies and private entities (seed companies, multiplier farmers, food industry, etc.):

- Official sampling service of seed lots, especially those intended for export
- Seed quality analysis services
- Physical analysis
- Physiological analysis
- Genetic analysis
- Technical consultancy service on specific issues related to seeds.



**ISTA ACCREDITED  
LABORATORY ITDL0100**

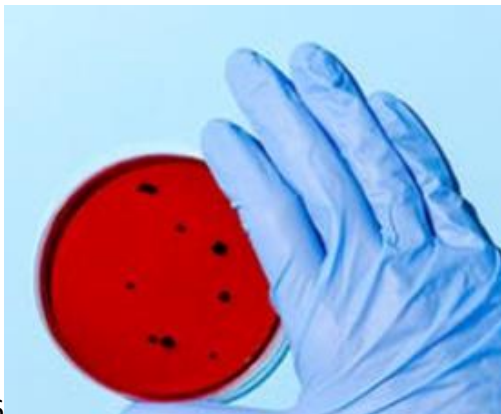


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# Third Mission activities

## CIRI - Interdepartmental Center for Industrial Research in Agri-food sector

- CIRI carries out and coordinates research and professional training activities, aimed at strengthening relations with industry and operating technology transfer to meet the needs of the production world.
- The CIRI Agro brings together more than 100 researchers, making use of advanced instrumental resources.
- The mission of the Center is to offer companies product and process solutions that ensure soundness and economic, environmental and social sustainability, developed according to an integrated approach and high levels of scientific and technological expertise.



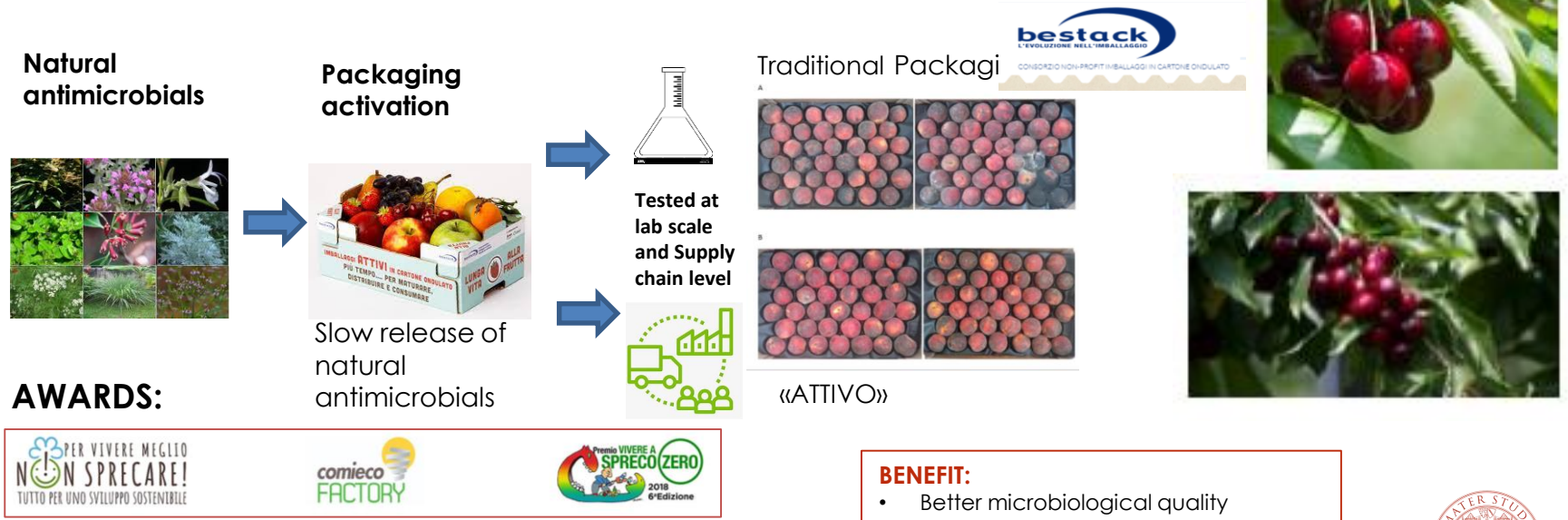
# Patents and Spin Off

- **5 spin-off** (Nextema, Aquaponic Design, Ergo Consulting, Last Minute Market, Griffa);
- **230 patents** including **26 for new fruit varieties (15 cherry trees; 2 apple trees, 4 di pear trees e 3 di kiwi trees).**

## Some best practices among Patents:

- 1) “Cherry Sweet”
- 2) “Cartone Attivo”

→ Both evaluated respectively as “Excellent” and “Excellent and Industrially Relevant” in VQR for Third Mission



## AWARDS:

1. First Prize - Business Category AWARD "DON'T WASTE", November 2019
2. First Prize - CALL FOR INVENTIONS COMIECO FACTORY, March 2019
3. First Prize – Business Category “LIVING AT ZERO WASTE“Last Minute Market, November 2018

- BENEFIT:**
- Better microbiological quality
  - Disinfection of the packaging surface
  - Compensation for possible cold chain interruptions
  - Significant reduction of food waste
  - Greater consumer satisfaction





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