



ISA

**RESEARCH
AT ISA**
WE MAKE
A DIFFERENCE

2021/2022

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ISA







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**RESEARCH
AT ISA:
WE MAKE
A DIFFERENCE!**

ISA

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SUPERIOR DE
AGRONOMIA



António Guerreiro de Brito

President of ISA

"And you better
start swimmin'
Or you'll sink
like a stone

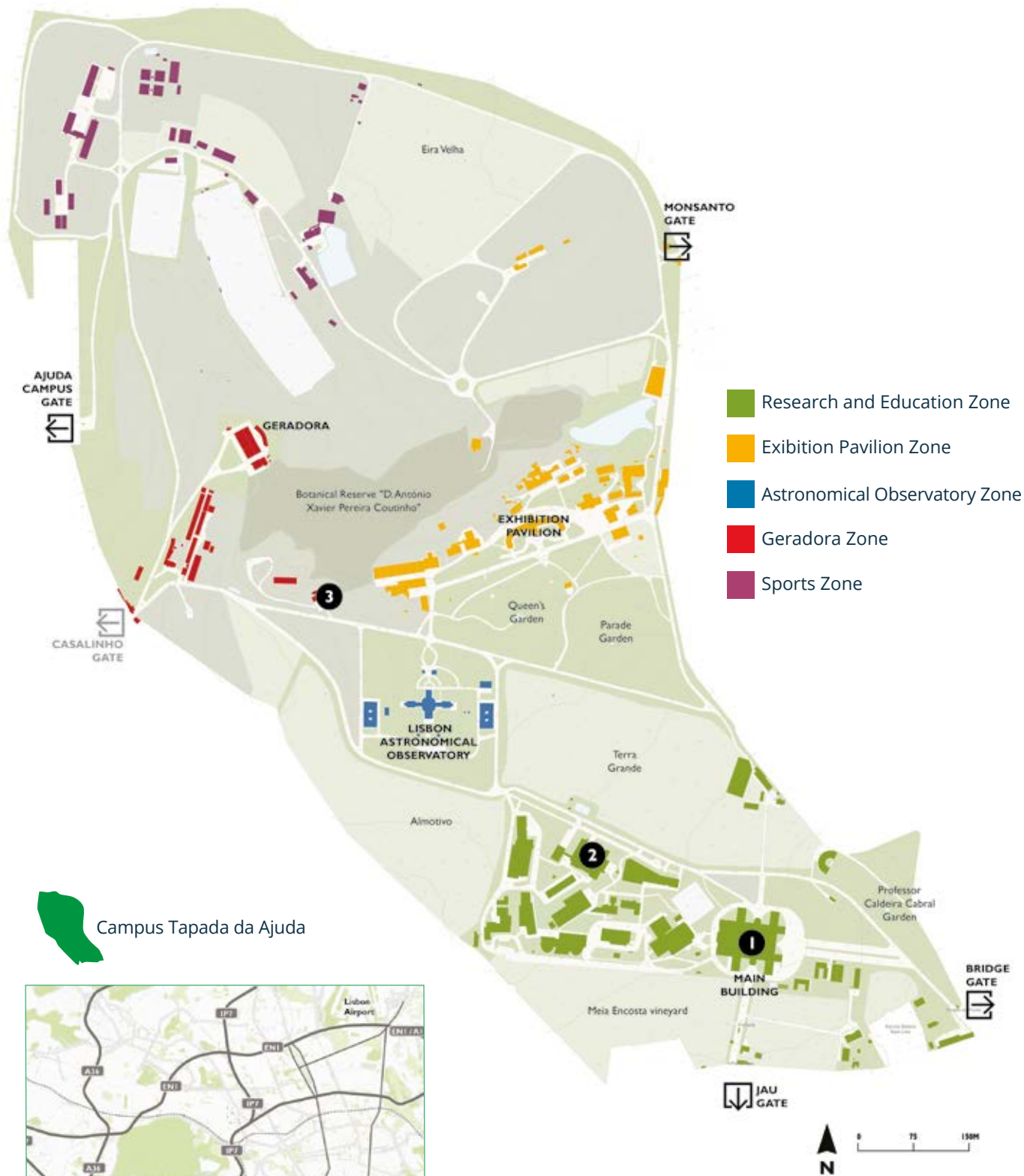
Bob Dylan,
in *For the times they are a-changin`*

Message from the President

For the times they are a-changin`, a well-known song more than 60 years old from a Nobel prize winner, may be the definition for this decade. From local to global, climate resilient, increasingly digital, the embarrassing truth is that many human problems remain to be solved in the core of food-water-energy-nature nexus. Thus, highly dynamic science based and supported by increasing social concerns, research and technological activities are goal-oriented to sustainable futures, even when aiming at fixing past errors. Besides, internal and external collaborative networks are more synergistic than ever to gain critical mass and to foster innovative outcomes. This is the general mindset that guides our school, **the Instituto Superior de Agronomia (ISA)**.

We aim at delivering positive societal impact with a focus on agriculture, food, environment, forest, animal production, biology and landscape architecture. This is not new for us. Our school is committed to make a difference since 1910, when Diploma do Governo 61 published on December 16, established **ISA** and conceded Tapada da Ajuda, an infrastructure for "learning by doing" located in the heart of Lisbon. Innovation is continuously delivered from the scientific advances we pursue. In addition, technology transfer involving public and private companies is powered by knowledge and is one of our main motivations.

This document shows relevant scientific highlights from all research groups based at **ISA**. It is a snapshot of our compromise to knowledge and innovation. Our performance is a consequence of a joint commitment of teachers, researchers and technical and administrative staff. Only a restless and ambitious institution, capable of renewing itself and embracing new challenges can create noteworthy knowledge to build a better world. Let's continue to make the difference!



Campus Tapada da Ajuda



RESEARCH CENTERS

- 1 Linking Landscape, Environment, Agriculture and Food Research Center - **LEAF**
Research Center in Biodiversity and Genetic Resources - **CIBIO-INBIO, (ISA-POLE)**
- 2 Forest Research Center - **CEF**
- 3 Center for Applied Ecology "Professor Baeta Neves" - **CEABN**



WELCOME TO ISA

Founded in 1910, the **Instituto Superior de Agronomia (ISA)** is a school of the University of Lisbon, nationally and internationally recognized for the higher quality of **education and research** in the areas of Agricultural Engineering, Animal Science, Forestry, Food and Environment, Landscape Architecture and Biology.

ISA has been developing its education and research missions based in five institutional values: **Knowledge, Innovation, Cooperation, Quality and Ethics and Good Practice.**

ISA hosts four Research and Development Units (R&D) that ensure the development and implementation **of ISA's Strategic Research and Innovation Agendas** such as Sustainable Agricultural, Food Safety, Circular Economy, Forests and Biodiversity, Climate Change Adaptation and New Urban Landscapes.

Supported by more than 230 highly qualified researchers, excellent research facilities, high-tech equipment, and experimental field sites, **knowledge transfer and research application are key** priorities for ISA.

ISA ambition is to contribute to rural and environmental National and European policies and create economic and social value.

ISA IN NUMBERS

STAFF

reported to 2020



329

Teaching and research - PhD holders

156

PhD students

414

Master students

FUNDING



4.2M€

3 Research Units, funding FCT, I.P., 2020-2023

6.7M€

National projects, 2018-06/2021

9.8M€

International projects, 2018-06/2021

PUBLICATIONS*

reported to 2015-2020



57.9%

of all publications with
International Collaboration

1.52

of Field-Weighted Citation Impact
(52% above world average)

62.4%

of all publications in top 25% journal percentiles
(SNIP -Source-Normalized Impact per Paper)

* Scopus SciVal database, all indexed
publications; consulted on April 2021



RESEARCH AT ISA

ISA produced more than 4000 indexed publications over the last two decades. Although Agricultural and Biological Sciences represent more than 65% of ISA's research, Environmental Science, Biochemistry, Genetics and Molecular Biology, Social Sciences and Earth and Planetary Sciences increasingly emerged as new research areas (Source: Scopus -SciVal March 2021).

To strengthen research and development partnerships with other scientific and non-academic entities and with the business community, **ISA** currently participates in three **Collaborative Laboratories** (Colab4Food, Colab VINES&WINES and ForestWISE) and two **Associate Laboratories** (TERRA and InBIO), all funded by the Portuguese Foundation for Science and Technology (FCT, I.P).

The increased capacity to attract research funding was translated into 16.5 million Euros obtained in the last three years in competitive national and international projects. A strong inter-institutional component and large engagement with the public administration and the business sector has enabled the establishment of several protocols for scientific and technical collaborations.





RESEARCH UNIT

FOREST RESEARCH CENTRE

ACRONYM / CEF

COORDINATOR / Prof. José Miguel Pereira

CONTACTS AND LOCATION /

Edifício Prof. Azevedo Gomes, Instituto
Superior de Agronomia, Tapada da Ajuda,
1349-017 Lisboa
+351 21 365 3130;
cef@isa.ulisboa.pt

WEBSITE/MEDIA /

www.isa.ulisboa.pt/cef

-  www.facebook.com/centrodeestudosflorestais
-  www.instagram.com/cef.centro.estudos.florestais/
-  https://twitter.com/cef_research
-  www.linkedin.com/company/centrodeestudosflorestais/

RESEARCH AREAS /

- > FOREST ECOLOGY
- > SUSTAINABLE ECOSYSTEM MANAGEMENT
- > ECOSYSTEM QUALITY AND SERVICES
- > FIRE ECOLOGY AND MANAGEMENT
- > FORESTRY AND AGROFORESTRY
- > FOREST PRODUCTS AND BIOREFINERIES
- > BIOECONOMY

FACTS AND FIGURES

RESEARCH STAFF

reported to 2020 FCT team



84

Teaching and research –PhD holders

FUNDING

FCT funding R&D Unit (2020-2023)



1.6M€

RESEARCH PROJECTS

2018 – 06/2021



6.5M€

International projects

2.8M€

National projects

PUBLICATIONS

reported to 2015-2020



60.9%

of all publications with International Collaboration

27.8%

of all publications in top 10% journal percentiles (SNIP -Source-Normalized Impact per Paper)

2.8%

of Academic-Corporate Collaboration in 2020 (World average 2.7%)

FCT CLASSIFICATION

reported to 2019



EXCELLENT



Prof. José Miguel Pereira

CEF is a prestigious research unit dedicated to **Forest Sciences and Natural Resources**. As one of the oldest university-based research centres in Portugal, **CEF** has a long tradition in **interdisciplinary** research structured by a strong international network and an **inter-institutional** cooperation and interaction with stakeholders.

CEF shares the **EU Forest2020** vision of forests and semi-natural areas as vital, productive and multifunctional ecosystems, contributing to sustainable development and human well-being, in a healthy environment. By adopting a problem-solving approach, **CEF** develops innovative research on issues dealing with forests, agro-forestry systems semi-natural areas, and forest-based industrial chains.

CEF is organized into four Research Groups:

ForEco: FOREST ECOLOGY

Analysis of ecosystem structure, function and biodiversity responses to drought, fire, and land use dynamics. Monitoring and modelling of energy, carbon and water exchanges between ecosystems and the atmosphere. Forest genetics and tree improvement. Fire ecology and modelling of fire-environment-human relations.

ForProtect: PROTECTION, RESTORATION AND SERVICES IN FORESTS AND AGROECOSYSTEMS

Sustainable management of biotic resources, ecosystem quality and services, protection, vulnerability assessment, and recovery of natural and semi-natural ecosystems and watersheds, as well as valuation of environmental services.

ForChange: FOREST ECOSYSTEM MANAGEMENT UNDER GLOBAL CHANGE

Sustainable forest and agro-forest ecosystems management for a diversified range of objectives, from conservation and restoration to optimization of non-wood and wood products and/or other ecosystem services, with a strong emphasis on the involvement of stakeholders and in a participatory analysis of trade-offs.

ForTec: FOREST PRODUCTS AND BIOREFINERIES

Study of wood, cork and non-wood forest biomass and their transformation into useful bio-products, including process innovation in green chemistry and biorefineries toward a more sustainable use of natural resources. All activities follow the circular bioeconomy philosophy.

RELEVANT MEMBERSHIPS

NATIONAL

- > Centro de Inovação e Competências da Floresta (SerQ)
- > Instituto de investigação da Floresta e do Papel (RAIZ)
- > Centros de Competências: do Pinheiro Bravo (CCPB), do Pinheiro Manso e Pinhão (CCPMP), do Sobreiro e da Cortiça (CCSC), dos Frutos Secos (CNCFS), da Apicultura e da Biodiversidade
- > Autoridade Nacional de Emergência e Proteção Civil (ANEPC)
- > Painel Científico de apoio à Estratégia Nacional de Adaptação às Alterações Climáticas (ENAAAC 2020)

INTERNATIONAL

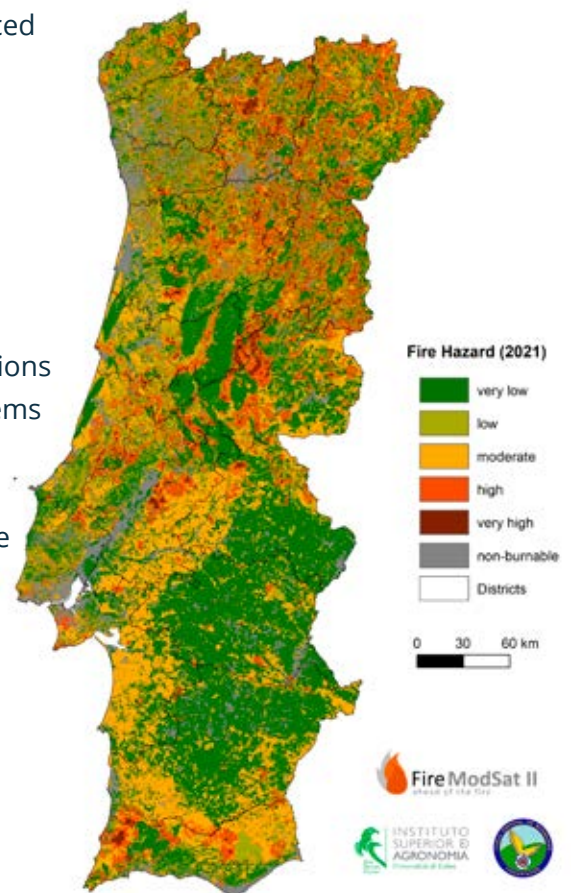
- > European Forest Institute (EFI)
- > European Agroforestry Federation (EURAF)
- > EVOLution of TREEs as drivers of terrestrial biodiversity (Evoltree)
- > Institut Européen de la Forêt Cultivée (IEFC)
- > International Union of Forest Research Organizations (IUFRO)
- > International Union for the Conservation of Nature (IUCN)
- > Sociedade Ibero-Americana para o Desenvolvimento das Biorrefinarias (SIADEB)
- > Integrated Carbon Observation System (ICOS)
- > Miombo network





RESEARCH APPLICATIONS

- > Tree improvement of Chestnut (*Castanea sativa*) for enhanced resistance to blight
- > Development of a global burned area mapping algorithm for the European Space Agency
- > Design of the National Primary Fuelbreak Network for the Portuguese Forest Service (ICNF)
- > Applied landscape management to reduce fire vulnerability (e.g. Alvares, Góis).
- > Monitoring abiotic stresses, and management recommendations to improve resilience in Mediterranean and Tropical Ecosystems
- > Resilience and sustainability of coffee to abiotic constraints under climate change
- > Development of a tool for assessing the quality of Portuguese rivers (F-IBIP)
- > Ecological assessment and restoration recommendations for riparian and wetland systems
- > Development of a free software to perform summarizations along river networks (RIVTOOL)
- > Development of new biological control tactics for exotic invasive insects
- > Development of a large scale forest simulator: StandsSIM



- > User oriented forest models: SUBER, GLOBULUS, PINEA, GYMMA, Pinaster, Castanea
- > Spatial and participatory multi-criteria decision support tools with application to forest management planning
- > Method for cork quality field assessment
- > Models for the prediction of cork oak site index and cork caliber percentiles, used as the basis for the 'Cartografia de Aptidão para o Sobreiro' APP
- > Evaluation of pulping aptitude from different biomasses (e.g. cardoon and acacia)
- > Anatomical studies for the identification and dating of ancient wooded pieces for museums and legal advice in courts
- > Production of renewable green fuels (e.g. pellets) from lignocellulosic materials
- > Valorization of barks as a source of natural biosorbents and bioactive compounds





RESEARCH UNIT

LINKING LANDSCAPE, ENVIRONMENT, AGRICULTURE AND FOOD

ACRONYM / LEAF

COORDINATOR / Prof. Isabel de Sousa

CONTACTS AND LOCATION /

Instituto Superior de Agronomia,
Tapada Da Ajuda, 1349-017 Lisboa
+351 21 365 3246; Leaf@isa.ulisboa.pt

WEBSITE/MEDIA /

www.isa.ulisboa.pt/leaf

 www.facebook.com/LEAF.ISA.UL

 <https://twitter.com/LEAF22312605>

FACTS AND FIGURES

RESEARCH STAFF

reported to 2020 FCT team



125

Teaching and research - PhD holders

FUNDING

FCT funding R&D Unit (2020-2023)



2.1M€

RESEARCH PROJECTS

2018 - 06/2021



3.1M€

International projects

3.3M€

National projects

PUBLICATIONS

reported to 2015-2020



47.8%

of all publications with
International Collaboration

20.9%

of all publications in top 10% journal percentiles
(SNIP -Source-Normalized Impact per Paper)

169

Patent citations since 2000

FCT CLASSIFICATION

reported to 2019



VERY GOOD

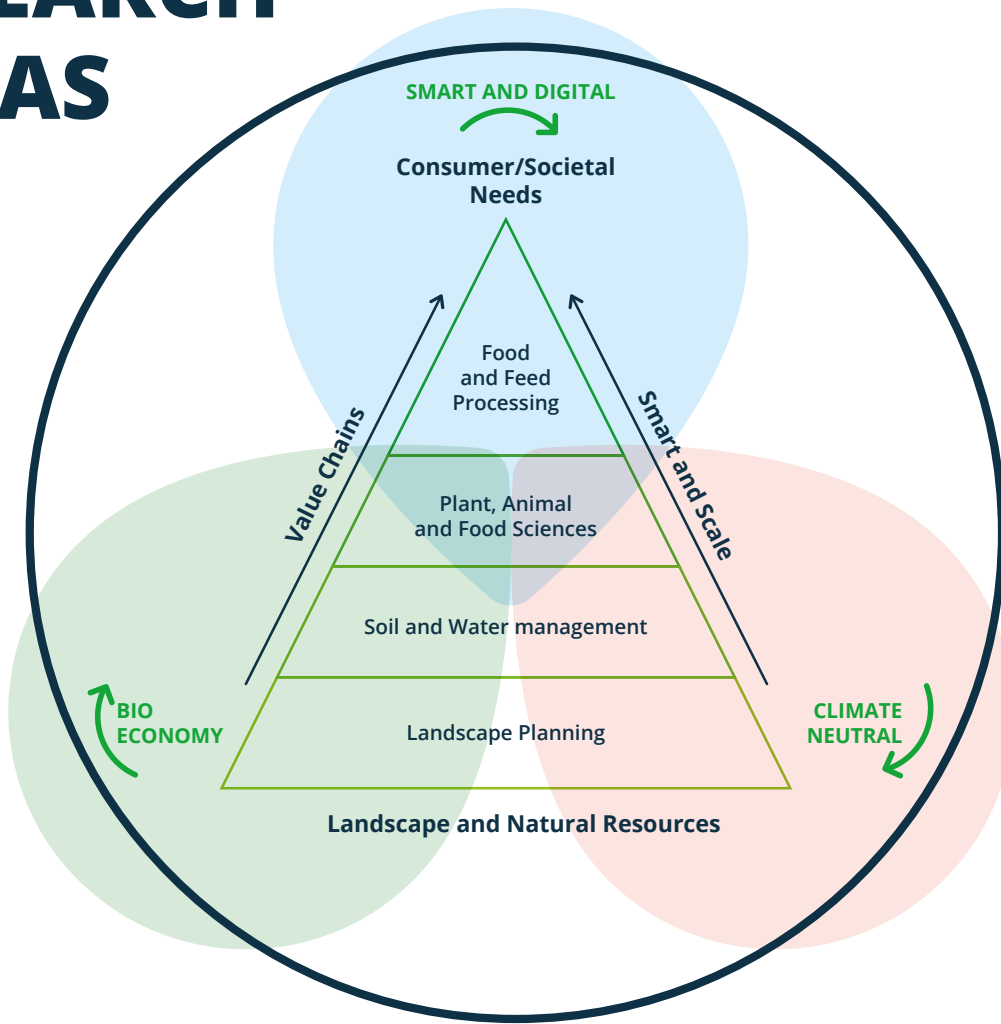


Prof. Isabel de Sousa

LEAF is a leading research unit devoted to **Landscape, Environment Agriculture and Food**. As a result from the integration of four investigation centres, **LEAF** conducts research in topics covering the whole agricultural-food value chain at different scales, from cells and microorganisms to food systems and landscapes. **LEAF's** strategic objectives are completely aligned with the 17 SDG and the farm to fork strategy of the European Green Deal and aims to extend these to other continents, namely through the Portuguese speaking countries.

LEAF is committed to perform **applied research** by design and implement effective solutions and products, to increase **food production and quality**, while being attentive to conservation and **efficient use of natural resources**. With a strong analytical infrastructure and an extensive national and international network of partners, **LEAF** ensures knowledge transfer through education, training and science dissemination in direct collaboration with private and public companies.

RESEARCH AREAS



LEAF is structured in three complementary Research Groups:

G1 - RESOURCES MANAGEMENT & LANDSCAPE ARCHITECTURE

G2 - PLANT SCIENCE & CROP PRODUCTION

G3 - FOOD & FEED

LEAF adopts a collaborative research approach among groups to address four thematic lines:

1 GRAPEVINE AND WINE PRODUCTION, including grapevine diversity, grape production, wine quality and environmental sustainability.

2 OLIVE AND OLIVE OIL CHAIN, namely olive orchard management, olive oil quality, added-value products from olive oil, environmental impacts.

3 TROPICAL AGRICULTURE AND AGRI-FOOD VALUE CHAINS, specifically tropical agro-food systems, climate change adaptation, plant biodiversity and conservation, knowledge transfer and capacitation.

4 GREEN AND BLUE INFRASTRUCTURES, including planning at all scales of landscape, design, management, urban and peri-urban agriculture.

A new thematic line is emerging on the **production and use of algae and microalgae** (including as food and feed).

RELEVANT MEMBERSHIPS

NATIONAL

- > Associação Portuguesa para a Diversidade da Videira (PORVID)
- > Centro de Competências para o Tomate Indústria (CCTI)
- > Centro Operativo e de Tecnologia de Regadio (COTR)
- > Centro Operativo e Tecnológico Hortofrutícola Nacional (COTHN)
- > Direção Geral de Agricultura e Desenvolvimento Rural (DGADR)
- > Fundação Eugénio de Almeida
- > Instituto Nacional de Investigação Agrária e Veterinária, I.P. (INIAV)
- > PortugalFoods
- > Vinhos do Alentejo: Comissão Vitivinícola Regional Alentejana (CVRA)
- > Comissão Nacional do OIV (CNOIV)
- > Associação dos Laboratórios de Enologia (ALABE)

INTERNATIONAL

- > Association for Science and Information on Coffee (ASIC)
- > Biorefine Cluster Europe
- > European Algae Biomass Association (EABA)
- > European Biogas Association (EBA)
- > European Infrastructure for Plant Phenotyping (EMPHASIS)
- > Food and Agriculture Organization of the United Nations (FAO)
- > GreenTech Innovators, AS
- > Innovation for Agriculture (IFA)
- > International Organisation for Biological Control (IOBC)
- > Research Network on Recycling of Agricultural and Industrial Residues in Agriculture (RAMIRAN)
- > International Viticulture and Enology Society (IVES)
- > Rede OENOVITI

RESEARCH APPLICATIONS

- > A polymer for protein removal from wines
- > An adaptogen for the control or prevention of a plant disease or infestation
- > Biodegradable and active packaging for food products
- > Method for detecting of early-stage fungal and virus infection and non-conventional control strategies
- > Mycorrhiza native communities in Portuguese vineyards
- > Natural and friendly fungicide, non-toxic for humans, animals and environment
- > New polypeptide to prevent/treat inflammation or cancer or to use as nutraceutical
- > Virgin olive oil, co-processed flavoured oils, enriched oils with bioactive compounds and structured lipids



- > Algae and microalgae as a source for food and feed
- > Coffee cultivars with durable resistance to quarantine main diseases
- > Egg quality between production systems and between hybrid and native chicken breeds
- > Grapevine varieties for yield and quality via polyclonal and clonal selection
- > Halophytes for marginal land and technosoils
- > New bio-based fertilisers and bioenergy sources
- > Sustainable Foods with impact on health: Fortified gluten-free cereal foods, high protein beverages from local pulses as substitute of milk, nutritious fermented foods from cereals and pulses



- > A quick tool for real-time assessment of the nutritional status of apple orchards
- > Assessment and mitigation of greenhouse gases and ammonia emissions and groundwater pollution
- > Green roofs for Mediterranean conditions
- > Innovation hub for irrigation systems
- > Natural and semi-natural habitats assessment and land use planning and design e.g. EPICWebGIS tool
- > Productive process and products for increasing efficiency of the resources in agriculture
- > Remote and non-destructive water stress monitoring based on thermal data and water use efficiency
- > Risk assessment and remediation prospects for abandoned (peri)urban soils and areas affected by mining exploration





Centro
Ecologia
Aplicada
"Prof. Baeta Neves"

RESEARCH UNIT

CENTRE FOR APPLIED ECOLOGY "PROFESSOR BAETA NEVES"

ACRONYM / CEABN

COORDINATOR / Prof. Miguel Nuno Bugalho

CONTACTS AND LOCATION /

Ed. Professor Baeta Neves,
Instituto Superior de Agronomia,
Tapada da Ajuda, 1349-017 Lisboa, +351
213653333; ceabn@isa.ulisboa.pt

WEBSITE/MEDIA /

www.isa.ulisboa.pt/ceabn

RESEARCH AREAS /

- > BIODIVERSITY
- > ECOLOGICAL DESIGN
- > FIRE ECOLOGY
- > WILDLIFE

FACTS AND FIGURES

RESEARCH STAFF

reported to 2020 FCT team



21

Teaching and research - PhD holders

FUNDING

FCT funding R&D Unit (2020-2023)



0.5M€

RESEARCH PROJECTS

2018 - 06/2021



0.6M€

International projects

0.6M€

National projects

PUBLICATIONS

reported to 2015-2020



80%

of all publications with
International Collaboration

22.4%

of all publications in top 10% journal percentiles
(SNIP -Source-Normalized Impact per Paper)

2.5%

of highly collaborative work in the top
1% citation percentiles

FCT CLASSIFICATION

reported to 2019



EXCELLENT



Prof. Miguel Nuno Bugalho

CEABN is a prominent research unit devoted to the **Sustainable Use and Conservation of Forest and Agriculture Ecosystems**.

CEABN has a strong commitment on **Agro-environmental Education** for distinct target-societal groups, with a special emphasis on schoolchildren.

CEABN embraces a research-oriented strategy by developing studies for specific private and public entities needs, allowing **CEABN** training activities to be directed towards detected gaps.

CEABN has a partnership with the Biodiversity and Genetics Research Centre (CIBIO) from the University of Porto.

CEABN is the representative of the University of Lisbon on that partnership, the InBIO Associated Laboratory.

CEABN develops research in four areas:

BIODIVERSITY IN AGRICULTURAL AND FOREST ECOSYSTEMS

Analysis of the impacts of management actions on the biodiversity of agricultural, agro-silvo-pastoral and forestry systems, studies at the national and European levels, scientific-based support for the national and EU agricultural and forest policies.

ECOLOGICAL DESIGN AND LANDSCAPE ARCHITECTURE

Application of the ecological knowledge for the development of green structures within cities (urban forestry), integration of historical, cultural and ecological perspectives in landscape studies.

FIRE ECOLOGY AND MANAGEMENT

Development of added value information to different end users on various aspects of fire, specifically: effects on wildlife and landscape, fire as a management tool, wildfire prevention and vigilance, post-fire ecology and management and restoration of burned areas.

WILDLIFE MANAGEMENT

Investigation of wildlife-habitat inter-relationships, particularly on the effects of wildlife on ecosystems (e.g. the impact of wild herbivores on vegetation dynamics), on the ecology and management of game species and on the impacts of agricultural changes on species with unfavourable conservation status.

RELEVANT MEMBERSHIPS

NATIONAL

- > Instituto da Conservação da Natureza e das Florestas (ICNF)
- > Instituto Nacional de Investigação Agrária e Veterinária (INIAV)
- > Agência Portuguesa do Ambiente (APA)
- > Agência de Gestão Integrada de Fogos rurais (AGIF)
- > Instituto de Investigação da Floresta e Papel (RAÍZ)
- > Observatório do Sobreiro e da Cortiça (CMC-OSC)

INTERNATIONAL

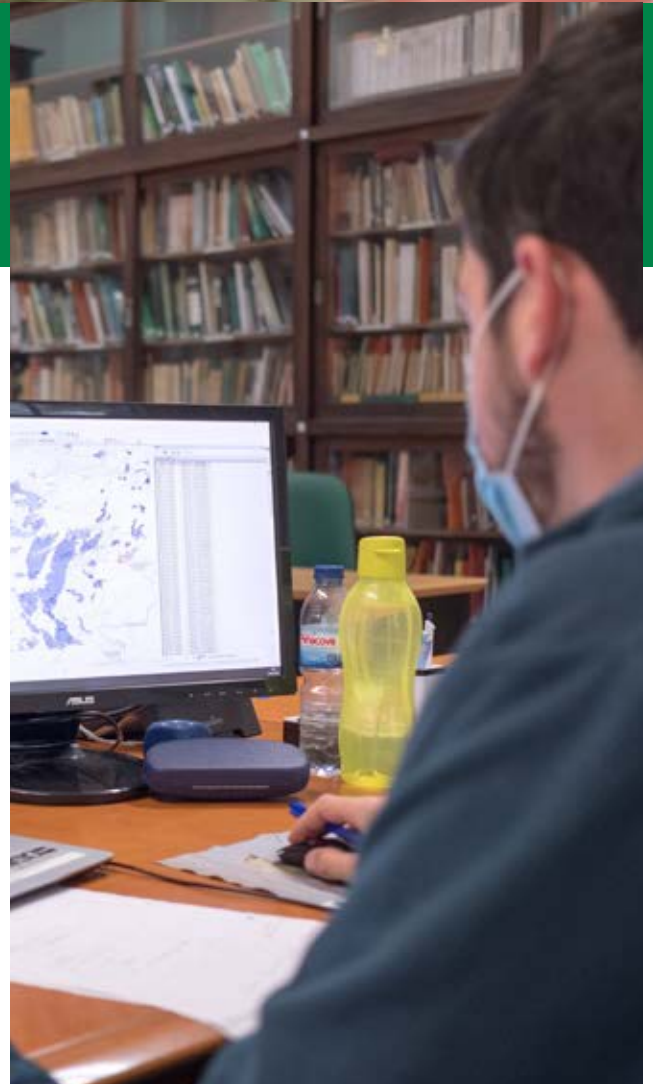
- > United Nations Organisation for Food and Agriculture, (FAO)
- > EC, Directorate-General for Environment
- > European Forest Institute (EFI)
- > Joint Research Centre (JRC)
- > European Forest Data Centre (EFDAC)
- > International Union for the Conservation of Nature (IUCN)
- > World Wide Fund For Nature (WWF)





RESEARCH APPLICATIONS

- > Development and implementation of Payment for Ecosystem Services
 - project Green Heart of Cork - in collaboration with the World Wide Fund for Nature (WWF)
- > WebGIS tool HABEaS for assessing priority areas for biodiversity and ecosystem services in collaboration with the World Wide Fund for Nature (WWF)
- > Paradigm shift on the use of fire as a tool for a better integrated fire management
- > Assessment of post-fire dynamics made in different landscape contexts supports forestry decisions at local and regional scale
- > Unveil ambrosia beetle ecology in cork oak and pine stands to improve forest pest control





- > UAV wildfire rekindle detection prototype using artificial intelligence techniques
- > Industry valorization of marginal forest products (invaders/ aromatics shrubs), to help landowners in fuel management actions
- > Quantify GHG and VOC emission risk fosters the inclusion of these indicators in silviculture Decision Support Systems
- > Development of an innovative mix of testing and implementation methods, and market and investment/financing tools for bridging the gap between innovations in disaster resilience (climate adaptation) and end users
- > Assessment of ecosystem services provided by urban trees to assist municipal policies on green infrastructure (Lisboa, Cascais, Almada)
- > Development of animal ecology and bioeconomy models in order to reverse declining trends of threatened species (Iberian lynx and European turtle dove)
- > Forest and agriculture Environmental Education Programmes for a wide range publics (Private and Public)





RESEARCH UNIT

RESEARCH CENTER IN BIODIVERSITY AND GENETIC RESOURCES - ISA POLE

ACRONYM / CIBIO-InBio

COORDINATOR /

Prof. Nuno Ferrand de Almeida

COORDINATOR AT ISA /

Prof. Pedro Beja

CONTACTS AND LOCATION /

Instituto Superior de Agronomia, Tapada da Ajuda, 1349-017 Lisboa;
cibio@cibio.up.pt

WEBSITE/MEDIA /

www.cibio.up.pt

 www.facebook.com/cibio.inbio;

 www.instagram.com/cibio_inbio/

 www.linkedin.com/company/cibio/

RESEARCH AREAS /

- > EVOLUTION
- > GENETICS
- > GENOMICS
- > BIODIVERSITY
- > ECOLOGY
- > CONSERVATION
- > SUSTAINABILITY
- > ECOSYSTEMS
- > ENVIRONMENT

FACTS AND FIGURES

RESEARCH STAFF

reported to 2020 FCT team



16

Teaching and research - PhD holders

PUBLICATIONS

reported to 2015-2020



74%

of all publications with
International Collaboration

38.7%

of all publications in top 10% journal percentiles
(SNIP -Source-Normalized Impact per Paper)

2.5%

of publications in top 1% journal percentiles,
including Nature and Science periodicals

FCT CLASSIFICATION

reported to 2019



EXCELLENT



Prof. Pedro Beja

CIBIO-InBio is a high-status research unit dedicated to develop world-class research in the area of **Biodiversity and Evolutionary Biology**. **CIBIO-InBio's** mission is to produce advanced scientific knowledge to set and suggests appropriate conservation priorities and managements tools.

In addition to its headquarters at the University of Porto, CIBIO-InBio has more two poles, one located in ISA. CIBIO-InBio at ISA develops research mostly in:

Biodiversity in Agricultural and Forest Ecosystems

Analysis of the impacts of management and policies (the Common Agricultural Policy in particular) on biodiversity and ecosystem services of agricultural and forest systems; Impacts of global change on farmland biodiversity.

Applied Ecology

Conservation biology; impact assessment and mitigation; sustainable use of biological resources; developing cost-effective tools for monitoring biodiversity.

Theoretical Ecology and Biodiversity Modelling

Dynamics of biodiversity change and its consequences for ecosystem services using a combination of theoretical and empirical approaches; Environmental assessments of the condition of biodiversity and ecosystem services from the local to the global scale.

RELEVANT MEMBERSHIPS

NATIONAL

- > Instituto da Conservação da Natureza e das Florestas (ICNF)
- > EDP, Energias de Portugal
- > Redes Energéticas Nacionais (REN)
- > IP, Infraestruturas de Portugal
- > BCSD – Act4Nature Portugal

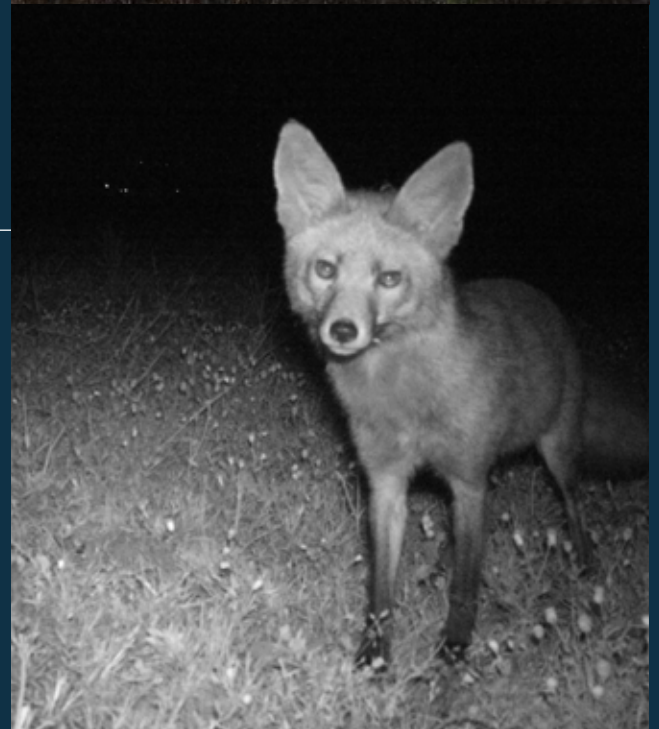
INTERNATIONAL

- > University of Montpellier
- > Twinlabs - Angola, Mozambique, Cape Verde, Namibia, Zimbabwe and South Africa
- > LifeWatch ERIC, the e-Science European Infrastructure for Biodiversity & Ecosystem Research
- > eLTER, Long-Term Ecosystem Research in Europe



RESEARCH APPLICATIONS

- > Restoration of ecosystems
- > Cost-effective biodiversity monitoring
- > Conceptual framework to solve practical problems in ecosystem management, conservation biology, impact assessment and mitigation, and the sustainable use of biological resources
- > Impacts of powerlines and roads on biodiversity
- > Development of spatially-explicit models for population viability analysis in fragmented landscapes
- > Development of global and regional monitoring schemes to improve our understanding of biodiversity and ecosystem services change
- > Environmental assessments of the condition of biodiversity and ecosystem services from the local to the global scale
- > Ecology of bats and their response to environmental change, management of the interaction between bat populations and human activities and evaluation and promotion of bat ecosystem services
- > Knowledge improvement on the ecology of managed agricultural and forest ecosystems: farming systems and policy impacts, global change and farmland biodiversity, forest ecology and management impacts







TERRA

Laboratory for sustainable
land use and ecosystem services

ASSOCIATE LABORATORY

ASSOCIATE LABORATORY FOR SUSTAINABILITY OF LAND USE AND ECOSYSTEM SERVICES

ACRONYM / TERRA

COORDINATOR /

Prof. Maria Teresa Ferreira

COORDINATOR AT ISA /

Prof. Maria Teresa Ferreira

CONTACTS AND LOCATION /

Instituto Superior de Agronomia,
Tapada da Ajuda, 1349-017 Lisboa

FACTS AND FIGURES

APPROVAL DATE



FEBRUARY 2021

FUNDING AWARDED

For 5 years



1.1M€

TEAM/CONSORTIUM



RESEARCH CENTRES

Forest Research Centre (CEF)

Centre for Functional Ecology - Science
for People & the Planet (CFE)

Centre for Geographical Studies (CEG)

Institute of Environmental Health (ISAMB)

Centre for Research in Agronomy, Food,
Environment and Landscape (LEAF)

FINANCIAL INSTITUTIONS

University of Lisbon (Ulisboa)

University of Coimbra (UC)

Foundation for Science and Technology (FCT)



Prof. Maria Teresa Ferreira

OBJECTIVES

The Associate Laboratory **TERRA** intends to deliver innovative socio-ecological scientific evidence in support of best management practices and policy decision making towards sustainable land use and biocircularity of product chains, while tending the human societies they support.

STRUCTURE & MISSION

TERRA is shaped by 2 universities, 3 institutes and 5 research centres having **Instituto Superior de Agronomia** as proponent institution. **TERRA** institutional associates have

uniqueness and complementary research and innovation skills in forest, riverine, agricultural and urban ecosystems. With a team of more than 400 highly qualified researchers, **TERRA** has a background and expertise covering the all gradient of land use systems, from **natural areas to urban ecosystems**.

TERRA mission is to link **Health Landscapes** with **Human Well-being**, by bring together rural with urban spaces. By adopting a problem-solving and a cooperative approach, **TERRA** intends to deliver tailored responses to policies and societal needs.

STRATEGIC ACTIVITIES

TO ACHIEVE ITS MAIN GOAL, TERRA WILL TARGET STRATEGIC OBJECTIVES, CORRESPONDING TO FIVE THEMATIC LINES (TL):

TL1 -Natural capital and sustainable ecosystem services:

to explore inter-links between biodiversity, ecological resilience and nature's contributions to people well-being.

TL2- Sustainable agriculture forestry and fisheries:

harvesting food, wood, fibre and wildlife materials from land, soil and water while safeguarding the integrity of natural biological resources.

TL3 -Products processing and circular economy:

sustainable processing to reduce the environmental impact of land use and generate eco-friendly products.

TL4 -Society and environmental health:

interactions between the physical and social environments and development of preventive and sustainable approaches.

TL5 Socioecological systems, planning and policy:

addresses climate change impact on society, adaptation to/and disaster risk management.



COLAB**COLLABORATIVE
LABORATORY FOR
INNOVATION IN THE
AGRIFOOD INDUSTRY**

ACRONYM / Colab4Food**COORDINATOR /**

Dr. Miguel Teixeira

COORDINATOR AT ISA /

Prof. Anabela Raymundo

CONTACTS AND LOCATION /

INIAV – Polo de Vairão, Rua dos Lagidos,
4485-655, Vairão, Vila do Conde, Portugal
+351 936 268 137;
geral@colab4food.com

WEBSITE/MEDIA /<https://colab4food.com>

FACTS AND FIGURES

STARTING DATE



MARCH 2020

FUNDING AWARDED

For 3 years



1.5M€

TEAM/CONSORTIUM



INDUSTRY

Grupo Primor, S.A.

PortugalFoods

Sumol+Compal Marcas, S.A.

Super Bock Group

Mendes Gonçalves, S.A.

SenseTest, Lda, Frulact - Indústria

Agroalimentar, S.A.

Cerealis

Vieira de Castro

ENTITIES FROM NATIONAL SCIENTIFIC SYSTEM

Instituto Superior de Agronomia
da Universidade de Lisboa,

Universidade de Aveiro,

Universidade do Minho,

Instituto Politécnico de Viana do Castelo -
CISAS, INIAV, I.P.,

Universidade de Trás-os-Montes e Alto Douro,

Universidade de Coimbra,

Universidade do Porto,

Universidade Católica Portuguesa - CBFQ,
Requimte - Rede de Química e de Tecnologia

Faculdade de Medicina Veterinária
da Universidade Lusófona (ESCN)

Instituto Ibérico Internacional
de Nanotecnologia (INL)



Eng. Bruno Henriques and Dra. Patrícia Fradinho

OBJECTIVES

Colab4Food is a new Research & Innovation (R&I) entity in the agrifood sector with the clear purpose to redefine the way we innovate, modernize and improve the sector in a collaborative way. Colab4Food combines expertise and creativity to develop more sustainable food processes, innovative nutritive foods and tailored taste solutions.



STRUCTURE & MISSION

Our Vision

Colab4Food's vision 2025 is supported on 5 strategic pillars:

- > Driving sustainable innovation through R&D projects,
- > Unlocking growth opportunities in competitive funding calls and networking activities,
- > Acceleration value-2-market with differentiated services,
- > Customer and consumer focus for efficient knowledge transfer,
- > High performance talent to convert critical mass into technological solutions.

Ultimately, we aim to become the key-platform for collaborative innovation & knowledge transfer in the national agrifood sector representing Portugal in the innovation ecosystem.

Our Mission

Our mission is to act as a strategic entity to bridge academia and industry together, thus

being a driving force in innovation for the food industry needs and consumer demands through knowledge and partnership-based research.

We will actively contribute to promoting the internationalization of the Portuguese food companies by identifying research funding opportunities and empowering the food business with the latest technology tools and processes.



STRATEGIC ACTIVITIES

COLAB4FOOD' IS SUPPORTED ON 5 STRATEGIC PILLARS FULLY ALIGNED WITH OUR R&I AGENDA TO SUPPORT OUR STRATEGIC ACTIVITIES:

Driving sustainable innovation through R&D projects with partners in the fields of:

- > Food Raw Materials
- > Food Formulation, processing and delivery technologies
- > End Products (incl. clean label, packaging and nutrition)
- > Circular economy.

Unlocking growth opportunities in competitive funding calls and networking activities

- > Monitoring competitive funding calls and promoting ideas and solutions within consortia, submission of proposals and project management and dissemination within the food industry.

Acceleration value-2-market with differentiated services

- > Science & technology, Consultancy & services, troubleshooting and support at different levels for the food industry and scientific entities (in some cases).





COLAB

PORTUGUESE VINES AND WINES, COMPETITIVENESS AND SUSTAINABILITY

ACRONYM / Colab VINES & WINES

GERAL COORDINATOR /

ADVID - the Association for the Development of Viticulture in the Douro Region

COORDINATOR AT ISA /

Prof. Jorge Ricardo da Silva (Enology)
Prof. Carlos Lopes (Viticulture)

CONTACTS AND LOCATION /

ADVID - Associação para o Desenvolvimento da Viticultura Duriense Edifício Centro de Excelência da Vinha e do Vinho - Régia Douro Park
5000-033 Vila Real
Tlf. +351 259 308 207 / +351 913 887 475;
advid@advid.pt;
www.advid.pt

WEBSITE/MEDIA /

www.colabvinesandwines.pt

FACTS AND FIGURES

STARTING DATE



2019

FUNDING AWARDED

For 5 years



1.0M€

TEAM/CONSORTIUM



ADVID Wine Companies associated members and ADVID Academic and Research institutional associated members:

Instituto Superior de Agronomia (ISA) -
University of Lisbon

Faculty of Sciences - University of Porto
University of Trás-os-Montes
e Alto Douro (UTAD)

INIAV (Instituto Nacional de Investigação
Agrária e Veterinária, IP)

INESC TEC (Instituto de Engenharia
de Sistemas e Computadores,
Tecnologia e Ciência)

University of Minho

Portuguese Catholic University



OBJECTIVES

CoLAB VINES&WINES is an initiative led by ADVID – the Association for the Development of Viticulture in the Douro Region, which is the national Vine and Wine Cluster.

The main objectives are to: Increase the demand and sales value of Portuguese wines; assure that the system and associated territories producing and commercializing grapevine-based products is efficient, resilient and flexible.

STRUCTURE & MISSION

To generate and communicate knowledge and technology that enhances the expressed ambition of the sector to increase the export value. Supports the ambition expressed by the sector to increase the export value of Portuguese wines. Ensures that the Portuguese wine sector becomes more efficient, resilient and flexible in order to respond to climate, demographic and economic challenges.



STRATEGIC ACTIVITIES

THE STRATEGIC PLAN CHALLENGES ARE:

"Portuguese , of course!"

- > Competitiveness – Defining and delivering the Portuguese wine´s consumers that will want to buy.

"Tougher than ever!"

- > Sustainability – Designing and delivering a resilient Portuguese vine and wine sector.





COLAB

COLLABORATIVE LABORATORY FOR INTEGRATED FOREST AND FIRE MANAGEMENT

ACRONYM / ForestWISE

COORDINATOR /

Administration Board (Prof. José Manuel Mendonça, INESC TEC, President)

COORDINATOR AT ISA /

Prof. José Miguel Cardoso Pereira and Prof. Paula Soares (**rePLANT** project)

CONTACTS AND LOCATION /

Quinta de Prados, Campus da UTAD,
5001-801 Vila Real, Portugal
+351 259 350 489;
contact.fw@forestwise.pt

WEBSITE/MEDIA /

<https://www.forestwise.pt>

FACTS AND FIGURES

STARTING DATE



SEPTEMBER, 2018

TEAM/CONSORTIUM



BUSINESS ASSOCIATES

Altri Florestal
Amorim Florestal
EDP Distribuição
DS Smith Paper Viana
REN
Sonae Arauco
and The Navigator Company

MEMBERS OF THE ACADEMY

INESC TEC
Instituto Superior de Agronomia -
University of Lisbon
Universities of Aveiro, Coimbra, Évora,
and Trás-Os-Montes e Alto Douro

OTHER PUBLIC ENTITIES

AGIF (Agency for the Integrated Management
of Rural Fires) and INIAV (National Institute
for Agrarian and Veterinary Research)

STRUCTURE & MISSION

The CoLAB intends to combined efforts of universities, the public sector, the private sector and industry in a holistic and multidisciplinary approach to the issues of fire, the enhancement of the forest and the sustainable development of forest-based activities.

Ongoing projects includes **rePLANT**, co-financed by the Competitiveness and Internationalization Operational Program from Lisbon's Regional and Operational Program, by Portugal 2020 and the European Union through the European Regional Development Fund.

OBJECTIVES

ForestWISE is a private, non-profit association which aims to develop research, innovation and transfer of knowledge and technology with a view to increasing sustainable forest management in Portugal. **ForestWISE** aim to increase the competitiveness of the Portuguese forest sector and reducing the negative consequences of rural fires.





STRATEGIC ACTIVITIES

ForestWISE R&D&I agenda is organised on six research themes:

Forest and Fire management

- > Focus on the sustainable management of forested areas in the presence of wildfires at a landscape scale, including organization models and tools, new multi-functional forests, and ecosystem services

Risk management

- > Focus in risk handling through fuel management, community prevention, fire suppression system design and management, and ecosystem restoration, including forest health monitoring

Circular economy and value chains

- > Focuses on the mobilization and uses of biomass, secured wood supply, forest operations, emergency logistics, and the new challenges driven by the circular economy

Key enabling technologies

- > Focus in the use of remote data collection and other innovative applied to forest and wildfire management, in order to infuse science and technology at all system levels, through the development, implementation, and routinization of the use of decision support systems, from the operational to the strategic level

People, forests and fire

- > Focus on risk attitudes and risky behaviours, risk communication, and in the study of the socioecological systems in their specific context, including the value of forested areas to forestland owners

Policy and system design

- > Focus in the governance of natural resources and in policy assessment and (system) design

TITLE

RESEARCH AT ISA – 2021/2022

PROPERTY

Instituto Superior de Agronomia
Tapada da Ajuda, 1349-017 Lisboa, Portugal
Tel: +351 213653100
www.isa.ulisboa.pt

COORDINATION

Maria do Rosário Pereira Fernandes
Planning, Quality and Communication Office
mrfernandes@isa.ulisboa.pt

DESIGN

Oh MyDigital Lda
margarida.guerra@ohmydigital.pt

PHOTOGRAPHY

João Costa
Joao.costa@ohmydigital.pt

RESEARCH UNITS*

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SUPERIOR DE
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DE LISBOA