NEIKER

MEMBER OF
BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

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[ENGLISH]

Annual Report 2025

NEIKER.EUS

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Introduction

[1]

Amaia Barredo

BASQUE GOVERNMENT MINISTER FOR FOOD, RURAL DEVELOPMENT, AGRICULTURE AND FISHERIES, AND PRESIDENT OF NEIKER

In 2025, NEIKER continues to consolidate its role as a key player supporting the Basque agricultural, livestock and forestry sector during a period of profound transformation. The challenges linked to climate change, generational renewal and the need to ensure food security require a primary sector that is increasingly sustainable, competitive and prepared to face the future.

In this context, knowledge transfer takes on strategic importance. Ensuring that innovation effectively reaches farmers, livestock breeders and foresters is essential to improve the profitability of their operations and strengthen the resilience of the agrifood system as a whole. NEIKER plays an essential role as a bridge between research and its practical application, helping to ensure that knowledge has a genuine impact across the region.

Generational renewal is another of the major challenges we face. Ensuring that new generations join the sector requires making it more attractive, supporting it with technological tools and offering innovation and real opportunities for professional development in rural areas.

All of this highlights the need to strengthen a primary sector that is not only an economic driving force but also a safeguard of environmental sustainability and territorial balance in the Basque Country. NEIKER's work is fundamental to making progress towards this objective, developing solutions that meet the sector's current and future needs.

I would like to express my sincere thanks to the NEIKER team for their commitment and dedication, as well as to all the organisations and stakeholders who collaborate to ensure that knowledge and innovation remain drivers of progress for our rural areas.

Olatz Unamunzaga

MANAGING DIRECTOR OF NEIKER

In 2025, at NEIKER we remain determined to fulfil our commitment to generating practical knowledge and sharing it with the agricultural, livestock and forestry sectors, contributing to their sustainability and competitiveness through applied R&D&I.

One of the most significant milestones has been the launch of the Berritzen Plan to bring innovation even more closely into line with the sector's real needs. It includes experimental demonstration plots, the transfer of results and an open channel for gathering ideas from the sector itself.

This year, we have also made a significant effort to strengthen our scientific infrastructure to position ourselves at the forefront of research. Notable developments include the refurbishment of our NCB3 high-containment laboratory in Derio, key to our work on the One Health approach and in animal health research, and the launch in Arkaute of Spain's largest experimental agrovoltaic unit for arable crops, to study the compatibility between agricultural production and renewable energy generation.

At the same time, we continue to promote agritech solutions for more efficient and sustainable agriculture, and to participate in R&D&I projects with national and international partners that reinforce our role as a driver of innovation.

We also support sectors such as the wine and potato sectors in their search for solutions to improve their resilience.

None of this would be possible without the commitment of our team and the trust of institutions, companies and sector stakeholders, to whom I would like to express my sincere thanks.

[1.3] NEIKER'S BOARD OF DIRECTORS

CHAIR

Amaia Barredo Martin
BASQUE GOVERNMENT MINISTER FOR FOOD, RURAL DEVELOPMENT, AGRICULTURE AND FISHERIES

NON-DIRECTOR SECRETARY

Sonia Masip Moriarty
LEGAL TECHNICIAN AT NEIKER

MEMBER

Jon Karlos Aguirre Huerga
DIRECTOR OF SERVICES AT THE BASQUE GOVERNMENT'S DEPARTMENT OF FOOD, RURAL DEVELOPMENT AND FISHERIES

MEMBER

Raúl Pérez Iratxeta
BASQUE GOVERNMENT'S DEPUTY MINISTER FOR AGRICULTURE, FISHERIES AND FOOD POLICY

MEMBER

Oneka Zaballa González
DIRECTOR OF AGRICULTURE AND LIVESTOCK

MEMBER

Iker Iglesias Eguia
BASQUE GOVERNMENT'S DIRECTOR OF QUALITY AND FOOD INDUSTRIES

MEMBER

Iñigo Robredo Guinea
DIRECTOR OF DIGITAL STRATEGY, BASQUE GOVERNMENT'S DEPARTMENT OF GOVERNANCE, DIGITAL ADMINISTRATION AND SELF-GOVERNMENT

MEMBER

Federico Saiz Alonso
PRESIDENT OF BASKEGUR

MEMBER

Karmele Pikabea Echave
DIRECTOR OF EUSKABER

MEMBER

Alaitz Ortuondo Pérez
ABEREKIN, S.A.

MEMBER

Nerea Múgica Herrán
TECHNICAL DIRECTOR OF GARLAN COOPERATIVE

MEMBER

Arrate Lacalle Gutiérrez
NEIKER WORKERS' REPRESENTATIVE

About NEIKER

[2]

[2.1]

WHO WE ARE…

We are a technology centre that specialises in creating innovative solutions for the agricultural, livestock and forestry sectors.

As an entity dependent on the Basque Government's Ministry of Food, Rural Development, Agriculture and Fisheries, we work to contribute knowledge and value to these sectors.

We form part of the Basque Research and Technology Alliance (BRTA), a Basque Government consortium that brings together various technology stakeholders in the Basque Country to address the industrial challenges facing our community.

We are also part of the Basque Science, Technologyand Innovation Network, which unites organisations and institutions from the fields of science and technology.

…AND WHAT WE DO

Through applied research, we generate scientific knowledge and develop innovative, transferable technologies and solutions that address challenges such as the sustainability and competitiveness of farming operations.

Our main areas of work are research related to animals, covering both livestock and wildlife, crops, forests and natural resources.

All of this while integrating the One Health approach, which addresses the interrelationship between the health of animals, the environment and people in a cross-cutting manner.

[2.2] EXPERTISE

PLANT SCIENCE

Production systems and good agricultural practices.

Genetic improvement in plants and disease resistance indicators.

Alternative crops and biomolecules relevant to agriculture and livestock.

Diagnosis, epidemiology and control of pests and diseases.

Precision agriculture.

ANIMAL SCIENCE

Genetic improvement and reproduction.

Feed and nutrition.

Production systems.

Applied ethology and animal welfare.

Diagnosis, control and epidemiological surveillance of animal diseases.

Zoonoses and food safety.

Environmental biosecurity, wildlife and vectors as a source of infection for farm animals and people.

ENVIRONMENTAL SCIENCE

Conservation and sustainable use of agricultural and natural resources.

Recovery of degraded soils.

Environmental monitoring.

Impact, mitigation and adaptation to climate change.

Circular bioeconomy.

FORESTRY SCIENCE

Plant physiology and tissue culture.

Genomics.

Forest pathology.

Sustainability and ecosystem services.

Improvement of biodiversity.

[2.3] HELPING THE AGRICULTURAL SECTOR

We contribute to the competitiveness and sustainability of the agricultural, livestock, and forestry sectors through research and applied science.

ONE HEALTH

We study the relationship between animal, human and environmental health. We work on wildlife surveillance and the prevention of zoonotic diseases, and seek alternatives to optimise the application of plant protection products in agriculture and reduce the use of antibiotics in livestock farming.

SOILS

We investigate the health and quality of agricultural and forest soils to improve their productivity, sustainability and capacity to adapt to climate change. We develop management tools and practices that promote the conservation of organic matter, soil biodiversity and the efficient use of resources.

GENETIC IMPROVEMENT

We strive to develop new plant varieties and animal selection to meet the demands of industry and consumers, producing more productive animals and plants that are resistant to high-impact diseases and better adapted to climate change, always with the lowest possible impact on the environment.

ADVANCED TECHNOLOGY SERVING THE SECTOR

We incorporate high-tech solutions into the agricultural, livestock and forestry sectors to drive their transformation towards more productive, sustainable and climate-resilient systems, while also contributing to generational renewal.

SUSTAINABILITY AND COMPETITIVENESS

We promote more sustainable, innovative and environmentally friendly production processes and systems. We champion agricultural activity and its importance for the production of high-quality food, alongside its contribution to biodiversity conservation, climate change mitigation and landscape maintenance, without neglecting the profitability and competitiveness of mixed farming holdings.

CLIMATE CHANGE

We predict the most likely future scenarios and study mitigation and adaptation strategies, proposing alternatives to current production systems. Furthermore, we compile greenhouse gas emission inventories for the agricultural and livestock sector and develop monitoring programmes for disease vectors favoured by global change, given their role in disease transmission.

[2.4] NEIKER'S TEAM

219 PROFESSIONALS

56% WOMEN

44% MEN

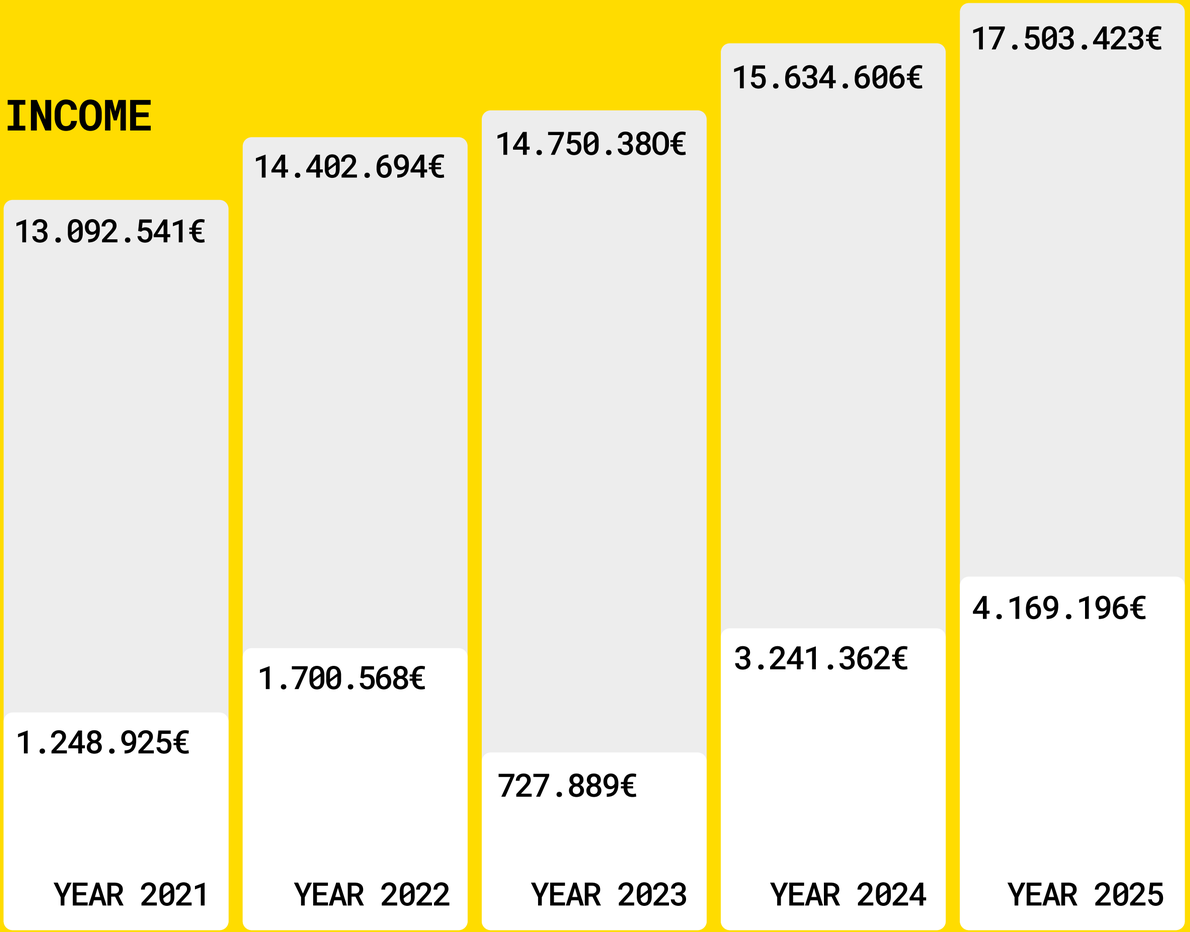
35% PHD HOLDERS

33% HOLDERS OF HIGHER EDUCATION DEGREES

52% PHD HOLDERS OUT OF ALL WHO HOLD HIGHER EDUCATION DEGREES

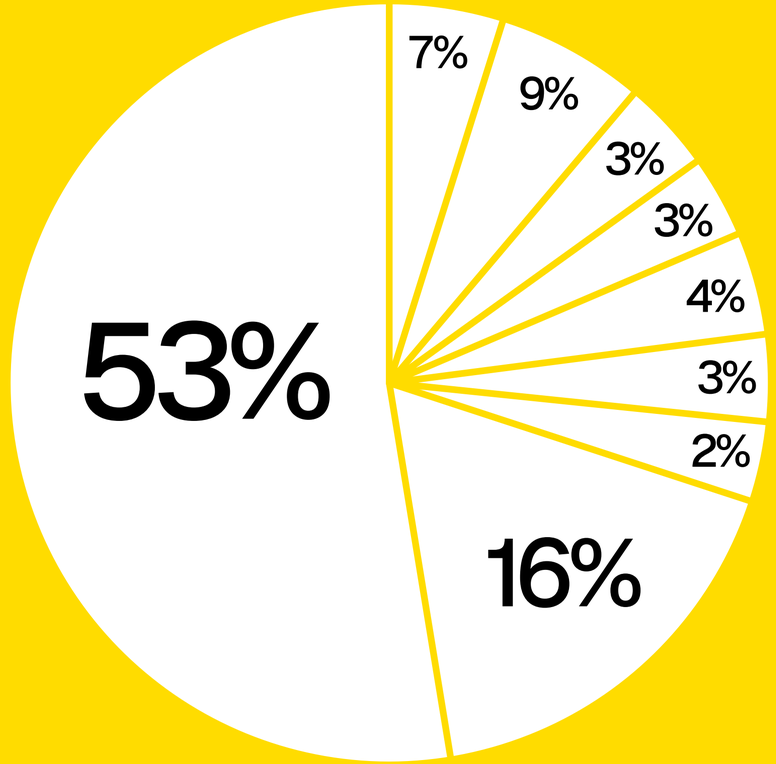
[2.5] FINANCIAL INFORMATION

INCOME



INVESTMENTS

[2.6] SOURCE OF OUR FUNDING



53% BASQUE GOVERNMENT DEPARTMENT OF FOOD,RURAL DEVELOPMENT, AGRICULTURE AND FISHERIES

16% BASQUE GOVERNMENT COMMISSIONS

7% NATIONAL CALLS FOR PROPOSALS

9% EUROPEAN CALLS FOR PROPOSALS

3% BASQUE GOVERNMENT CALLS FOR PROPOSALS

3% LABORATORY SERVICES

4% CONTRACT-BASED PROJECTS

3% TECHNICAL SERVICES

2% INDUSTRIAL PROPERTY

Research activity

[3]

We generate and transfer fundamental and practical knowledge to increase the competitiveness, sustainability and recognition of the Basque agricultural sector.

We conduct research to provide valuable solutions to the problems facing the Basque agricultural sector, as well as to generate growth opportunities.

[3.1] MILESTONES OF 2025

> Following extensive refurbishment, in 2025 **we inaugurated our biosafety level 3 (NCB3) facilities in Derio (Bizkaia)**, which enable the study of pathogens posing a high risk to animal and plant health and, in some cases, also to public health.

This is a key infrastructure for advancing vaccine development, new diagnostic techniques and studies on the pathogenesis of animal diseases, and it cements NEIKER and the Basque Country's reputation as a leading authority in animal health, both nationally and across Europe.

This refurbishment also allows us to open new lines of work, both independently and in collaboration with other organisations, preparing us for future threats.

Although we have had NCB3 facilities since 2002, which were originally built to address the diagnosis of mad cow disease (bovine spongiform encephalopathy), it was necessary to upgrade them to improve biosafety standards and thus continue working on research lines such as animal tuberculosis, avian influenza, Q fever or Xylella fastidiosa with the highest guarantees.

With an investment of five million euros funded by the Basque Government's Department of Food, Rural Development, Agriculture and Fisheries and, to a lesser extent, by the State Research Agency, we work with a One Health approach at our NCB3 facilities.

NEW BIOSAFETY LEVEL 3 (NCB3) FACILITIES

For working more safely and efficiently in the study of high-risk pathogens.

FIVE LABORATORIES

ANIMAL FACILITY WITH FOUR ROOMS FOR SMALL ANIMALS

FOUR BOXES FOR LARGE ANIMALS

NECROPSY ROOM

COMMON AREAS

> **We have partnered with Ihobe to promote climate action** through a collaboration agreement to move forward with the integration of environmental criteria into strategic sectors such as agriculture and livestock, generating innovative solutions and practical tools for a more sustainable and resilient Basque Country.

> **We are consolidating and expanding our Baltsan long-term trial network** to generate knowledge that we share with the agricultural sector for more sustainable food production. Baltsan includes more than 40,000 square metres with regenerative rotational livestock farming, crop rotation and organic fertilisation in cereals, an agrivoltaic unit, selection of nut tree varieties, more pathogen-resistant vine varieties and a forest monitoring site.

> In 2025, we continued **wildlife health surveillance** in the Basque Country using early detection protocols for relevant pathogens, such as **highly pathogenic avian influenza (H5N1) in wild birds**, to provide key data to health authorities and enable faster response and action in the event of detected outbreaks. Avian influenza no longer follows a seasonal pattern, meaning that constant vigilance and coordination between government bodies, livestock farmers and technical staff remain essential to limit its impact.

> We **monitor arthropod vectors** that transmit pathogens affecting animal health and public health in the Basque Country in the context of global change. Monitoring focuses particularly on invasive species such as the tiger mosquito (Aedes albopictus) and Asian bush mosquito (Aedes japonicus), as well as on the surveillance of ticks, to improve knowledge of their distribution, spread and epidemiological role. We carry out this work in collaboration with the Department of Health, various city councils and cross-border surveillance and research networks, as well as with public participation through citizen science applications.

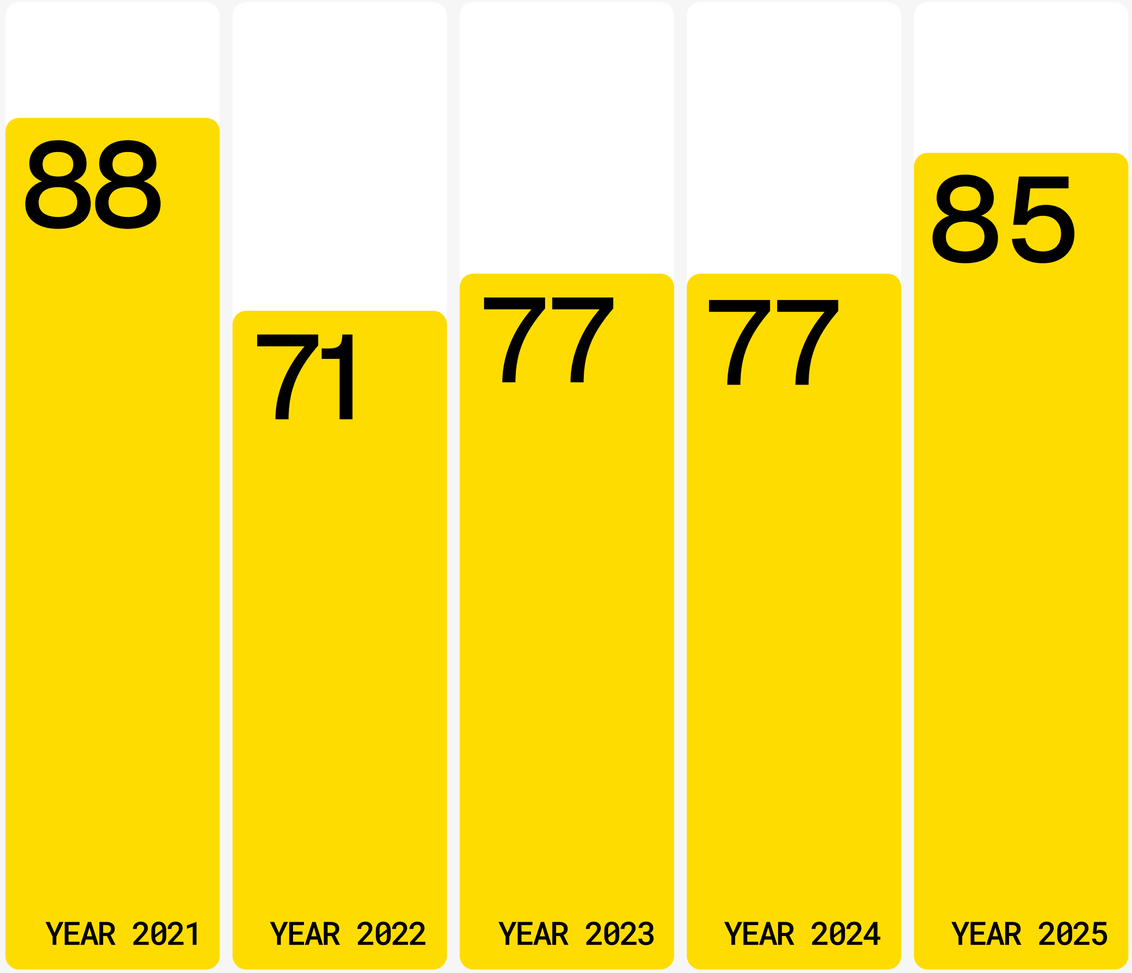
[3.2] AWARDS

We once again have three researchers in the Stanford “World's Top 2% Scientists" ranking, reflecting our strong and ongoing commitment to scientific excellence.

They are **Carlos Garbisu**, a specialist in environmental microbiology and scientific director of NEIKER, **Inma Estévez**, a recognised scientist in applied ethology and animal welfare, and **Ramón Juste**, an expert in animal health.

[3.3] PUBLICATIONS

NUMBER OF INDEXED SCIENTIFIC PUBLICATIONS



[3.4] MAIN PUBLICATIONS

Urrutia-Angulo, L., Lavín, J. L., Oporto, B., Aduriz, G., Hurtado, A., & Ocejo, M.
(4 October 2025). Resistome and microbiome profiling of bovine milk following antimicrobial dry cow therapy: Insights from short- and long-read metagenomic sequencing. Frontiers in Microbiomes, 1672438.
[link]

Badia-Bringué, G., & Alonso-Hearn, M
(10 October 2025). Integrating transcriptomic and genomic studies for the identification of expression quantitative trait loci associated with bovine paratuberculosis. Frontiers in Veterinary Science, 12, 1632212.
[link]

Benhissi, H., Medjadbi, M., Charef, S. E., Atxaerandio, R., Ruiz, R., Mandaluniz, N., Goiri, I., & García-Rodríguez, A.
(2025, marzo). Probiotic-inoculated biochar as a feed additive for dairy sheep: Effect on apparent digestibility, microbial protein supply, methane emissions and productive performance. Animal Feed Science and Technology, 321, 116257.
[link]

Medjadbi, M., Goiri, I., Atxaerandio, R., Ruiz, R., Charef, S. E., Benhissi, H., Ibarruri, J., Iñarra, B., Gutiérrez, M., San Martin, D., & García-Rodríguez, A.
(4 January 2025). Effect of feeding increasing levels of spent coffee grounds on milk yield and composition, methane emissions, milk fatty acid profile and curd sensory characteristics in Latxa dairy sheep. Journal of Animal Science, 103, skaf325.
[link]

García-García, D., Mesanza, N., Raposo, R., Pascual, M. T., Barrena, I., Urkola, A., Berano, N., & Iturritxa, E.
(2025). Risk prediction of Lecanosticta acicola spore abundance in Atlantic climate regions. Agricultural and Forest Meteorology, 362, 110360.
[link]

Augusto, L., Borelle, R., Boča, A., Bon, L., Orazio, C., Arias-González, A., Bakker, M. R., Gartzia-Bengoetxea, N., Auge, H., Bernier, F., Cantero, A., Cavender-Bares, J., Correia, A. H., De Schrijver, A., Diez-Casero, J. J., Eisenhauer, N., Fotelli, M. N., Gâteblé, G., Godbold, D. L., Gomes-Caetano-Ferreira, M., … Charru, M.
(2025). Widespread slow growth of acquisitive tree species. Nature, 640(8058), 395–401
[link]

Garbisu, C., Unamunzaga, O., & Alkorta, I.
(2025). Generating regenerative agriculture. Frontiers in Sustainable Food Systems, 9.
[link]

Rosa, E., Azevedo, R., & Merino, P.
(2025). Performance of a real time and wireless electrochemical gas sensor for monitoring ammonia concentration in a naturally ventilated dairy barn. Computers and Electronics in Agriculture, 236.
[link]

van Loon, M. P., Alimagham, S., Abuley, I. K., Boogaard, H., Boguszewska Mańkowska, D., Ruiz de Galarreta, J. I., Geling, E. H., Kryvobok, O., Kryvoshein, O., Landeras, G., Okuda, N., Parisi, B., & Trawczyński, C.
(2025). Insights into the potential of potato production across Europe. Crop and Environment, 4(2), 97–106.
[link]

Sánchez Fernández, L., Alonso, E., Ortiz Barredo, A., Planas de Martí, S., Jones, L. A., & Pérez Ruiz, M.
(2025). First UASS drift curves for agroforestry scenarios in Spain. Crop Protection, 191.
[link]

[3.5] ARTICLES AND THESES

85 ARTICLES

MORE THAN 85 ARTICLES IN INDEXED JOURNALS

87%

87% OF ARTICLES IN THE FIRST QUARTILE

60%

60% IN THE FIRST DECILE

1.562 ARTÍCULOS

A TOTAL OF 1,562 ARTICLES INDEXED IN SCOPUS

95→99

WE INCREASED OUR H-INDEX FROM 95 TO 99

TWO RESEARCHERS WITH AN H-INDEX ABOVE 52

>52

FROM 85 TO MORE THAN 98 ARTICLES WITH OVER 100 CITATIONS

100 CITATIONS

FROM 265 TO MORE THAN 292 ARTICLES WITH OVER 50 CITATIONS

50 CITATIONS

6

THESES DEFENDED IN 2025

3/6

INTERNATIONAL THESES

4/6

CO-SUPERVISED WITH OTHER RVCTI CENTRES

4

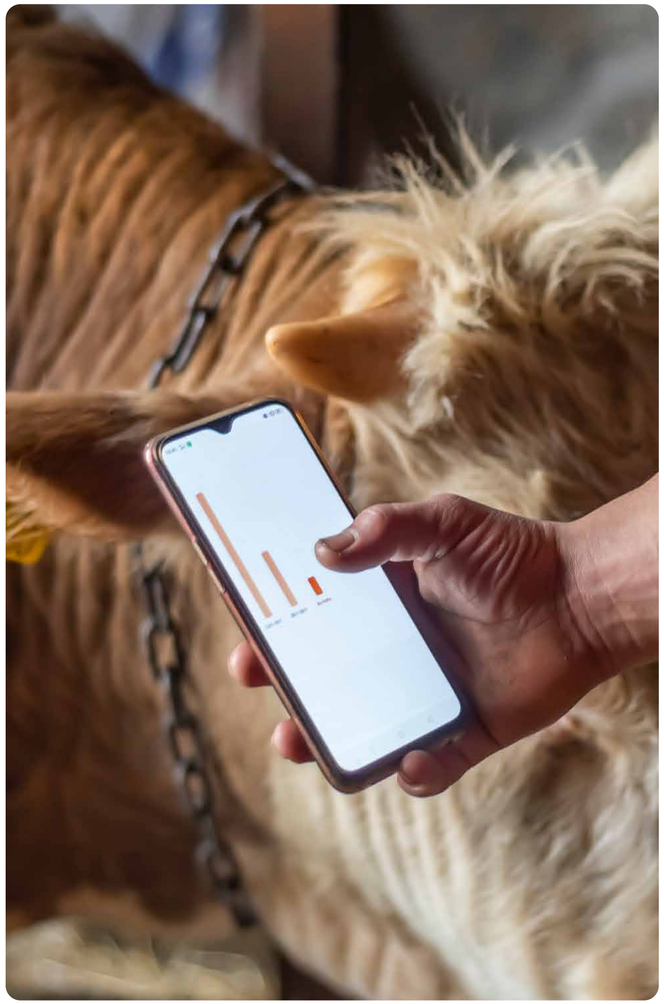
PREDOCTORAL RESEARCHERS FROM OUR INSTITUTION AND 2 FROM OTHER CENTRES

18

THESES IN PROGRESS

99

THESES SUPERVISED SINCE 2002



[3.6] OUR DOCTORAL THESES

Urkijo Letona, A.
(n.d.). Agroekosistemen ekarpena biodibertsitateari eta ekosistemen zerbitzuei Euskal Herriko nekazal paisaian. Universidad del País Vasco / UPV-EHU. Directora: Ibone Ametzaga Arregi (UPV/EHU); Co-directora: Isabel Albizu Beitia (NEIKER).
[link]

Badia Bringué, G.
(n.d.). Early diagnosis, genomic resistance to bovine paratuberculosis, and regulation of the host response against this infection. Universidad del País Vasco / UPV-EHU. Directora: Marta Alonso Fernández-Pacheco (NEIKER); Co-directora: Begoña Marina Jugo Orrantia (UPV/EHU).
[link]

Oyanguren Arizaga, M.
(n.d.). Immunostimulation strategies against bacterial diseases that affect dairy cattle. Universidad del País Vasco / UPV-EHU. Directora: Natalia Elguezabal Vega (NEIKER); Co-director: Juan Anguita Castillo (CICbioGUNE).
[link]

Hidalgo Castañeda, J
(n.d.). Nature-based solutions for the remediation of contaminated soils. Universidad del País Vasco / UPV-EHU . Director: Carlos Garbisu Crespo (NEIKER); Co-director: José María Becerril Soto (UPV/EHU).
[link]

Pena, N.
(n.d.). Campilobacteriosis genital bovina en España: epidemiología, diagnóstico y caracterización genómica de Campylobacter fetus subsp. Venerealis. Universidad Complutense de Madrid. Directora: Esther Collantes (SERIDA); Co-director: Gorka Aduriz Rekalde (NEIKER).

Yao, J.
(n.d.). Root growth in mechanically heterogeneous substrates. Universidad del País Vasco / UPV-EHU. Director: Lionel Xavier Dupuy (NEIKER); Co-directora: Evelyne Kolb.
[link]

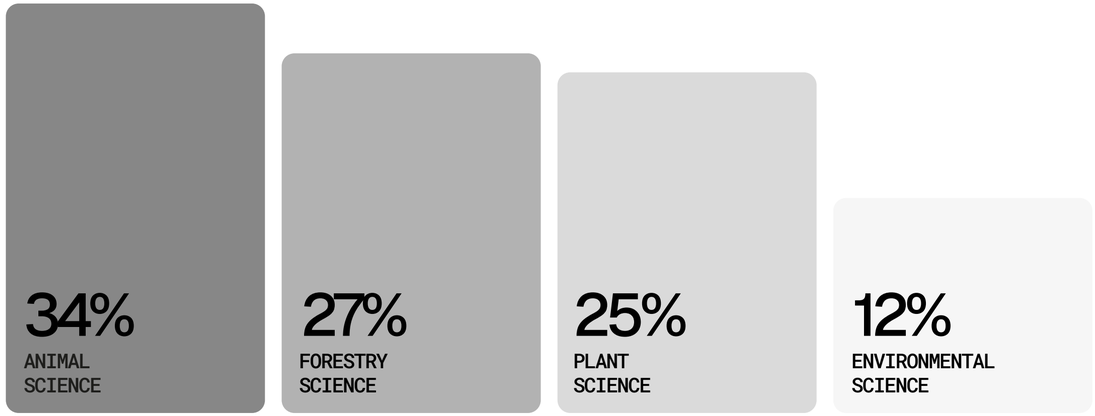
[3.7] PATENTS

We published a patent for a “Paper-based microfluidic device for the analysis of root exudates” (WO2025061811) jointly with UPV/EHU.

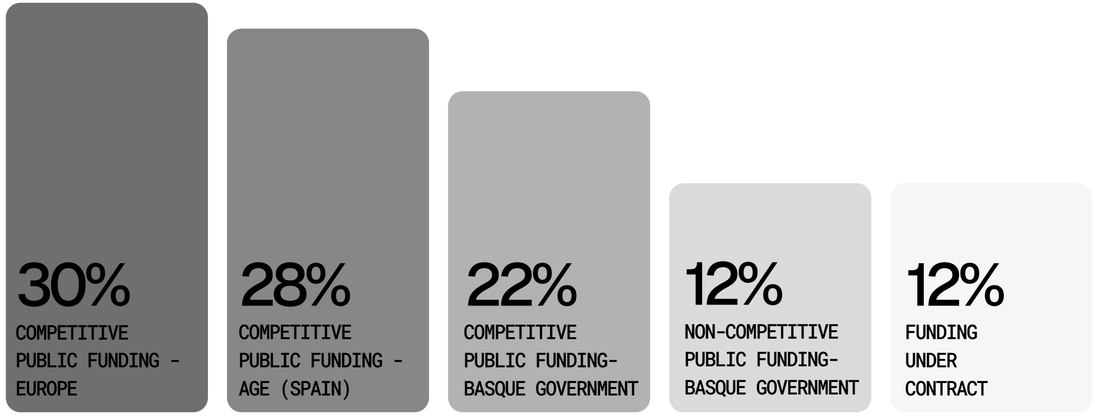
Registration of new varieties: we applied for a patent for a new potato variety, ATSEGINE, with a high concentration of bioactive compounds and antioxidants. Highly suitable for producing coloured crisps.

[3.8] PROJECTS

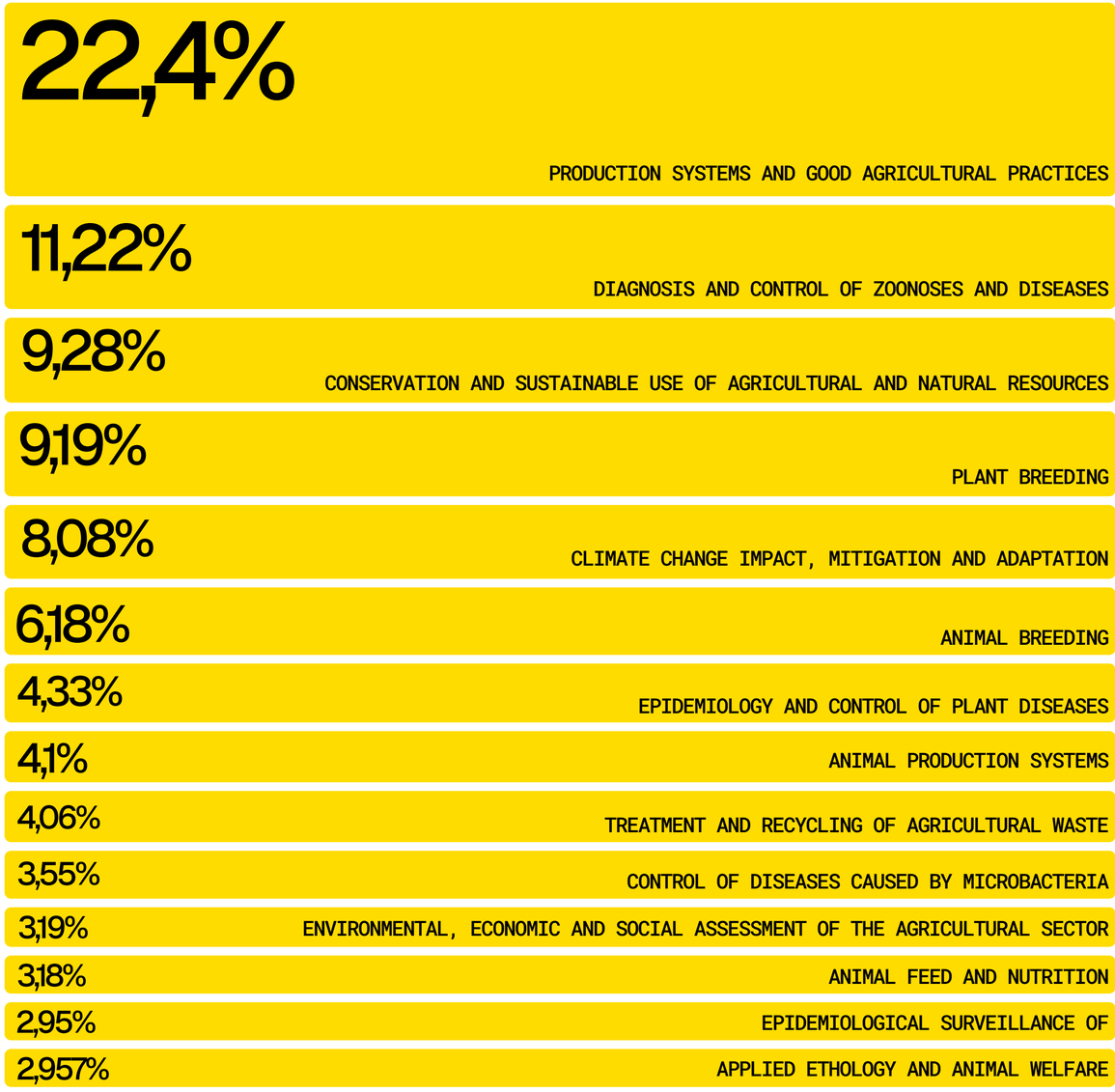
PROJECTS BY RESEARCH AREA



PROJECTS BY MAIN FUNDING BODY



IMPLEMENTATION BY AREAS OF RESEARCH



[3.9]

VISITS AND PARTICIPATION IN FORUMS

28	INTERNATIONAL CONFERENCES
4	INTERNATIONAL VISITS
48	NATIONAL CONFERENCES
20	NATIONAL WORKSHOPS
32	NUMBER OF PARTICIPANTS IN INTERNATIONAL VISITS AND FORUMS

[3.10]

COLLABORATIONS IN 2025

With **IHOBE** to establish lines of work for mitigating and adapting the agricultural sector to climate change, and for soil conservation.

With **AZTI**, to incorporate the evaluation of sustainability in the primary sector into its ENVIRODIGITAL tool so that the system determines the impact of the entire value chain.

With **SEIPASA**, **ECONATUR**, **BASF** and **SYNGENTA** to create and design new, more efficient and sustainable pest and disease control programmes.

[3.11] MEMBERS OF...

Aclima

Fundación Vasca para la Seguridad Alimentaria

Agencia Vasca de Innovación

Asebio

Basque Research & Technology Alliance

Lekunberriko Instituto Laktologikoa

European Forest Institute

Innovative Community of EIT

Elhuyar

Basque Food Cluster

Bio-based Industries Consortium

PARTNERSHIPS

AZTI

Bask Egur

BCC Basque Culinary Center

BC3 Basque Centre for Climate Change

BCAM Basque Center for Applied Mathematics

CICbioGune

CICbiomaGune

Cidetec

CIEFAP Centro de Investigación y Extensión Forestal Andino Patagónico (Argentina)

CTF Science for Forest Management, Biodiversity & Bioeconomy

Gaiker

HAZI

IRTA Instituto de investigación de la Generalitat de Cataluña

Tecnalia

Tekniker

Euskal Herriko Unibertsitatea

USSE

VICOMTECH

Transfer and impact

[4]

In our commitment to the Basque agricultural and livestock sector, we work closely with professionals and organisations to offer solutions based on science and research.

Our proximity allows us to understand their challenges and concerns, promoting the transfer of knowledge and technology to strengthen their competitiveness and sustainability.

[4.1] MILESTONES OF 2025

We have launched the **BERRITZEN Plan**, designed to further strengthen the link between innovation and local needs and maximise the impact on the region. It includes demonstration plots, living labs, calls to gather innovative ideas and other practices to ensure that our work incorporates the sector's perspective.

We inaugurated in Arkaute Spain's largest experimental agrovoltaic unit for arable crops (8,000 m²), which will allow us to study under real conditions the compatibility between agricultural production and renewable energy generation, addressing the challenges of the energy transition, adaptation to climate change and economic sustainability. In total, we have installed 212 photovoltaic modules, which are estimated to generate 163,914 kWh annually, equivalent to the average electricity consumption of approximately 50 homes. We will use all the energy generated for self-consumption at the Arkaute campus, which will enable us to significantly reduce electricity demand from the grid.

We are incorporating our expertise in sustainability assessment of the agricultural and livestock sectors into the **ENVIRODIGITAL** tool, designed by AZTI, to reduce the environmental impact of the food industry.

We have been selected for TechBridge, the EIT Food programme to accelerate the commercialisation of research-driven innovations. We will work on the **transfer plan for patents on genetic markers for paratuberculosis.**

In 2025, we continued to drive **innovation and sustainability in the wine sector**, providing solutions that enable winegrowers to tackle an increasingly complex and demanding situation. We have therefore used precision viticulture to optimise vineyard management, promoted the recovery and conservation of plant material from minority grape varieties as a strategy against climate change and are promoting management practices that improve crop resilience under extreme climatic conditions.

[4.2] KEY COLLABORATIONS IN 2025

With **PEPSICO**, to evaluate potato varieties on our farms.

With **RENOLIT**, to test films that can accelerate the growth of microalgae.

With the **BARRENETXE** and **GARAIA** cooperatives, to improve efficiency and productivity in greenhouse horticulture.

With **INNOGANDO, BEHIALDE** and **DO IDIAZABAL**, to drive the digitalisation of the livestock sector, improve herd management and strengthen the traceability of grazing-based products.

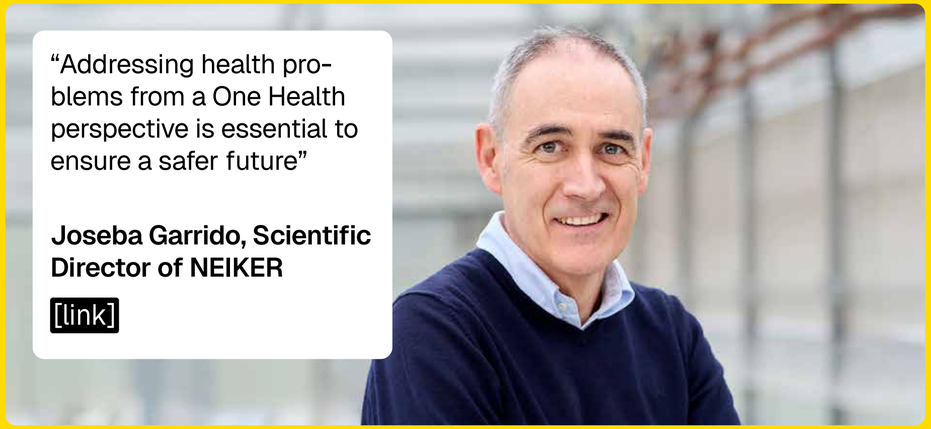
With **PAPPSTOR**, to boost precision livestock farming in meat production (equine and cattle).

With **CONFELAC** (dairy sheep), **KAIKU** and **CONAFE** (dairy cattle), **ASOPROVAC** and **PROVACUNO** (beef cattle), to improve livestock sustainability.

With **IRTA Viticultura**, to advance sustainable viticulture systems, sharing and combining the results of both research centres.

With **GARLAN** and **UDAPA**, to accelerate the implementation of modernisation and digitalisation in the agricultural sector and precision agriculture.

[4.3] MAIN PROJECTS BY AREA



ONE HEALTH

We incorporate AI into early diagnostic processes to prevent the spread of diseases between animals and humans.
[link]

We investigate new transmission routes for avian influenza to strengthen prevention.
[link]

We study the environmental factors that influence the spread of mosquitoes and the diseases they transmit.
[link]

We are delving deeper into the study of trained immunity, seeking to enhance animals’ immune systems in order to prevent disease and thereby reduce the use of antibiotics.
[link]

SOILS

We launched a pioneering soil monitoring network that anticipates the future EU Soil Law.
[link]

We take part in the development of the Soil Health Data Cube, the AI revolution to understand and protect Europe’s soil.
[link]

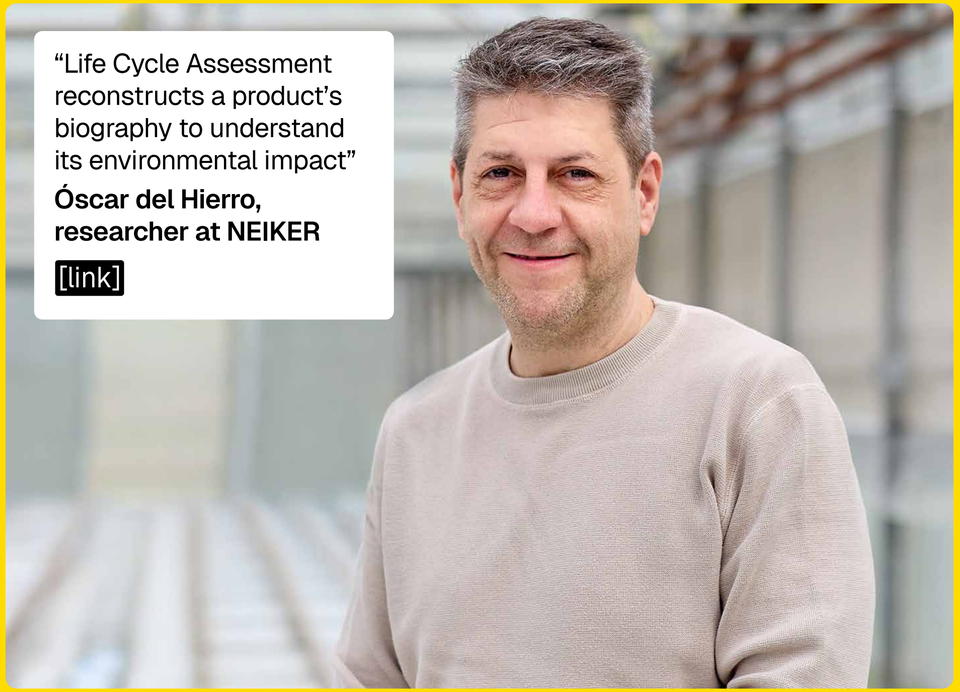
We host European monitoring specialists to halt soil degradation.
[link]

SUSTAINABILITY

We develop advanced metrics to optimise sustainability in the beef cattle sector.
[link]

We promote local production of quality fodder to strengthen livestock farming in the Basque Country.
[link]

We promote more sustainable sheep flocks through practices that improve productivity, care for the environment and can reduce the carbon footprint by up to 17%.
[link]



"Life Cycle Assessment reconstructs a product's biography to understand its environmental impact"
Óscar del Hierro, researcher at NEIKER
[link]

AGRITECH

We launched kABE, a digital platform to optimise livestock management in real time.
[link]

We promote the digitalisation of livestock farming through smart grazing based on virtual collars.
[link]

We implement virtual weather stations to optimise water use in agriculture and detect the risk of disease in field crops.
[link]

We use drones for safer and more sustainable agriculture.
[link]

FORESTRY

We obtain and propagate improved radiata pine seeds in the EUSKOBASOA 2050 Forestry Improvement R&D&I Plan.
[link]

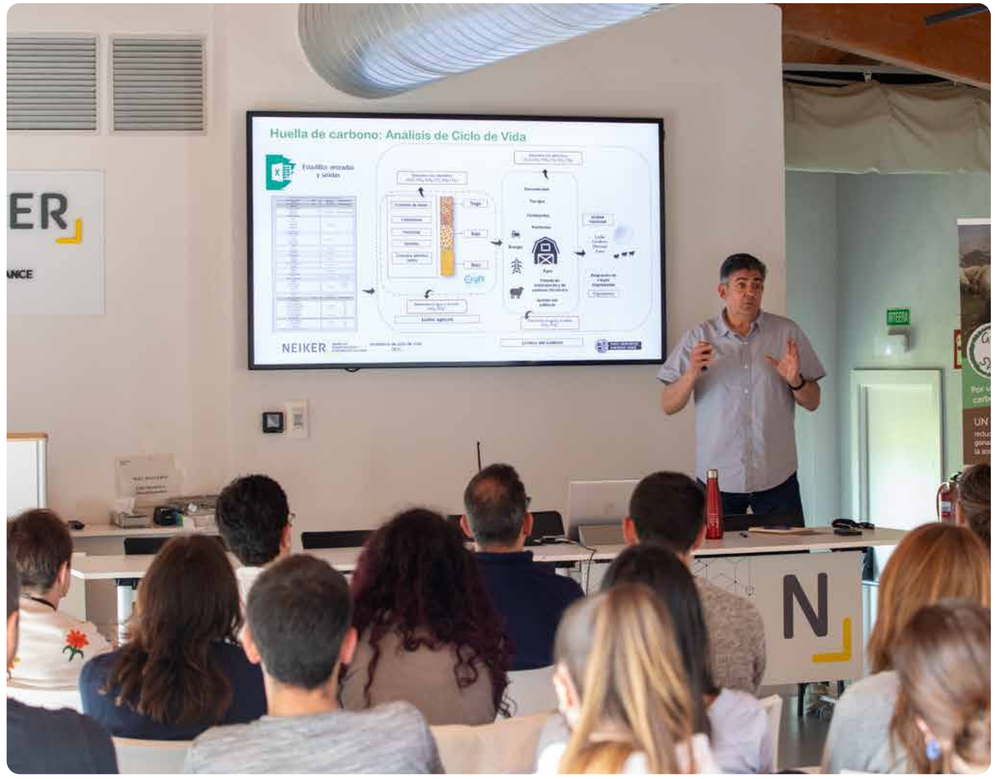
We launched a marteloscope, a classroom for simulating forest management strategies without altering the natural environment.
[link]

CLIMATE CHANGE

We integrate silvopastoralism into forests to reduce forest fire risk.
[link]

We study regenerative grazing to mitigate the effects of climate change and restore soil fertility.
[link]

[4.4] NEIKER KNOWLEDGE TRANSFER WORKSHOPS



- Sustainable sheep farms with low carbon emissions (webinar, 13/02/2025)
- Workshop on the digitalisation of dairy cattle farms (Derio, 06/03/2025)
- Annual Assembly of the European Institute of Planted Forests – IEFC (Donostia, 8-9/04/2025)
- Presentation of NEIKER's new agrivoltaic unit, with technical visit (Arkaute, 24/04/2025)
- Open day on how to reduce the carbon footprint of sheep flocks (Arkaute, 27/05/2025)
- Field day to learn about progress in the extensive cereal trial plots of the GENVCE network (Arkaute, 5/06/2025)
- FITORES Symposium, chemical control of diseases and development of resistance to plant protection products (Bilbao, 12/06/2025)
- 4th AKIS Forum for the Transfer of Knowledge (Arkaute, 13/06/2025)
- Field day at NEIKER's organic farming experimental farms (Arkaute and Escalmendi, 03/07/2025)
- European Soil Mission event on monitoring to halt soil degradation (Arkaute, 15-16-17/09/2025)
- Red PAC event on business models for high value-added products (Arkaute and Aramaio, 23-24/09/2025)
- European event on seed potatoes (Arkaute, 15-16-17/10/2025)
- National Congress of the Spanish Society of Sheep and Goat Farming (Bilbao, 1-3 /10/2025 SEOC)
- Field visit to NEIKER's experimental organic farming fields (Arkaute, 21/10/2026)
- 2nd Pyrenees Soil Forum, awareness-raising event (Arkaute and Aizkorri-Aratz Natural Park, 22-23/10-2025)
- Opening and visit to the new biosafety level 3 facilities (Derio, 05/11/2025)
- Smart grazing and livestock digitalisation (Arkaute, 15/12/2025)

[4.5] CLIENTS

Acor
Aimcra
Agromillora
Barrenetxe
BASF
BaskEgur
Biolan
Calidad Pascual
Fertinagro
Garlan
GARAIA
Innogando
IRTA
Kaiku Coop.
Pepsico
Saltoki
Syngenta
Syva
UAGA (Unión Agro ganadera de Álava)
Udapa

[4.6] WE ATTENDED LEADING EVENTS

- FruitAttraction2025 (Madrid), to showcase our progress in early detection, surveillance and solutions against potato plant diseases.
- Forest Innovation & Bioeconomy Conference (FIBC 2025, Vancouver), where we presented the Basque Country's forest bioeconomy strategy.
- Basque Circular Summit, organised by Ihobe, where we presented circular economy initiatives.
- DecarbonHub, organised by Aclima, to advance decarbonisation and sustainability in industrial and agrifood activity.
- Food4Future, the fifth edition of the leading food industry trade fair, where we presented our progress in indoor vertical farming and agrovoltaics.
- Expo Agritech 2025 (Málaga), with our proposals in biostimulants, agrovoltaics and irrigation innovation.

NEIKER Analytical Services

[5]

IN 2025, MORE THAN 100,000 ANALYSES

+100k ANALYSES

MORE THAN 25 YEARS PROVIDING SPECIALISED ADVISORY SERVICES TO THE AGRICULTURAL, LIVESTOCK AND FORESTRY SECTORS

+25 YEARS

WE HAVE A TEAM OF MORE THAN 20 PROFESSIONALS

+20 PROFESSIONALS

[5.1] OUR ANALYTICAL LABORATORY SERVICES

> **Animal health:** reproductive and viral diseases of ruminants, emerging and re-emerging diseases, mycobacteriosis, microbiology of feed and its raw materials, detection of pathogens in milk, antibiotic resistance, etc.

> **Conservation of natural resources:** soil fertility and water properties, physico-chemical and biological soil parameters, advice on the transition to agroecology, advice on climate change mitigation, fertilisation recommendations, etc.

> **Plant health:** certification of seed and ware potatoes, purity and germination tests for botanical seed, detection of quarantine organisms and regulated non-quarantine pests (RNQPs), pest detection, varietal identification of plant species, issuance of phytosanitary passports for own propagation material, etc.

[5.2] 12 ACCREDITATIONS

We have 12 accredited techniques under reference number 615/LE1321 in the following areas:

> **Microbiology-immunology**
> **Molecular biology**
> **Biotechnology (plant health)**

+300 CLIENTES

MORE THAN 300 CLIENTS FROM EVERY STAGE OF THE VALUE CHAIN

RE-LAB

MEMBERS OF THE BIOLOGICAL ALERT LABORATORY NETWORK (RE-LAB)

[5.3] LABORATORY AND GREENHOUSE INFRASTRUCTURE

MICROBIOLOGY, IMMUNOLOGY AND MOLECULAR BIOLOGY LABORATORY

PATHOLOGICAL ANATOMY, CLINICAL BIOPATHOLOGY AND PARASITOLOGY LABORATORIES

LABORATORIES WITH A BIOSAFETY LEVEL OF 3 (NCB3)

ANIMAL EXPERIMENTATION FACILITIES WITH BIOSAFETY LEVELS OF 2 AND 3

SOIL SCIENCE AND PLANT MATERIAL LABORATORY

PLANT ANALYTICAL LABORATORY

BIOTECHNOLOGY LABORATORY

GREENHOUSE WITH A BIOSAFETY LEVEL OF 2 FOR TESTS WITH QUARANTINE PATHOGENS
GREENHOUSES FOR THE HYDROPONIC AND AEROPONIC CULTIVATION AND MANAGEMENT

OF VEGETABLES AND MICROALGAE

CHROMATOGRAPHY AREA

BIOTECHNOLOGY AREAS

ANALYTICAL CHEMISTRY AREA

Sustainability and state-of-the-art facilities

[6]

At NEIKER, we promote sustainability in our own operations, managing facilities and activities according to criteria of energy efficiency, waste reduction and responsible use of resources.

Our state-of-the-art facilities incorporate clean technologies and sustainable practices, serving as an example of best practice in environmental management.

We foster an internal culture that prioritises efficiency, care for the environment and minimising our impact.

In this way, we demonstrate that innovation and sustainability begin within our own organisation.

[6.1] PROGRESS IN SUSTAINABILITY

We have set the following objectives in **NEIKER's Energy Sustainability Plan:**

> Reduce our energy consumption by 35% by 2035.

> Ensure that 32% of our total consumption is sustainable by 2030.

To achieve this, we promote energy efficiency initiatives in our buildings and infrastructure:

> **Decarbonisation:** for the past ten years, our aim has been, where technically possible, to replace fossil fuels with renewable energy sources. In 2025, we invested 770,691 euros in a geothermal installation at our Derio centre, financed by NextGenerationEU funds amounting to 448,343.70 euros.

> **Sustainable mobility:** we promote it across our operations. In 2025, 20% of our fleet is ECO (hybrid/LPG) and 27% ZERO (100% electric).

> **Awareness-raising:** we promote training and awareness among NEIKER staff on routines and actions that impact sustainability.

[6.2] HOW ARE WE DOING?

> Between 2015 and 2025 → we reduced our energy consumption by **31%.**

In 2025 → **42.33%** of our total consumption came from renewable sources.

[6.3] WE HAVE STATE-OF-THE-ART FACILITIES

1.728 M² INSTALACIONES DE ALTA SEGURIDAD

883 M² LABORATORIO NCB-3

445 M² INVERNADEROS NCB-2 Y SL-3

3.305 M² LABORATORIOS

705 M² LABORATORIOS DE CONSERVACIÓN DE RECURSOS NATURALES

1.100 M² LABORATORIOS DE SANIDAD ANIMAL

1.500 M² LABORATORIOS DE SANIDAD VEGETAL

2.765 M² INSTALACIONES GANADERAS

100 HA FINCAS EXPERIMENTALES DE CULTIVOS HERBÁCEOS Y FRUTALES

1.810 M² OTRAS INSTALACIONES

900 M² ALMACENES, SALAS DE SELECCIÓN Y CARACTERIZACIÓN Y SERVICIOS

500 M² ALMACÉN AGRÍCOLA

340 M² TALLERES DE CAMPO

70 M² CÁMARAS FRIGORÍFICAS

Dissemination to society

[7]

[7.1] **DISSEMINATION OF SCIENCE**

[7.2] **SUPPORT FOR THE BASQUE LANGUAGE**

[7.3] **SOLIDARITY**

[7.1] DISSEMINATION OF SCIENCE

Ikastetxeak Belodromoan is an initiative of the Donostia International Physics Center and the Basque Film Archive, which, as part of the San Sebastian Film Festival, fosters a passion for science among schoolchildren aged six to 11. In 2025 our colleague Nahia Gartzia was invited to explain the importance of protecting forest biodiversity.

We are part of **STEAM Sare,** the network of educational centres and socioeconomic players that promote scientific and technological vocations. In 2025, we welcomed boys and girls to our facilities to explain how technology is revolutionising agriculture in the Basque Country.

We also promote science informally and in other settings, such as **Pint of Science.** In 2025, we were once again in Vitoria, explaining the potential of agrovoltaics, the combination of agriculture and energy generation, as well as the programme for the genetic improvement of sheep breeds in the Basque Country.

[7.2] SUPPORT FOR THE BASQUE LANGUAGE

We participated as judges in **Elhuyar Zientzia Azoka**, a fair for projects developed by young people that allows them to experience scientific research and development from the inside.

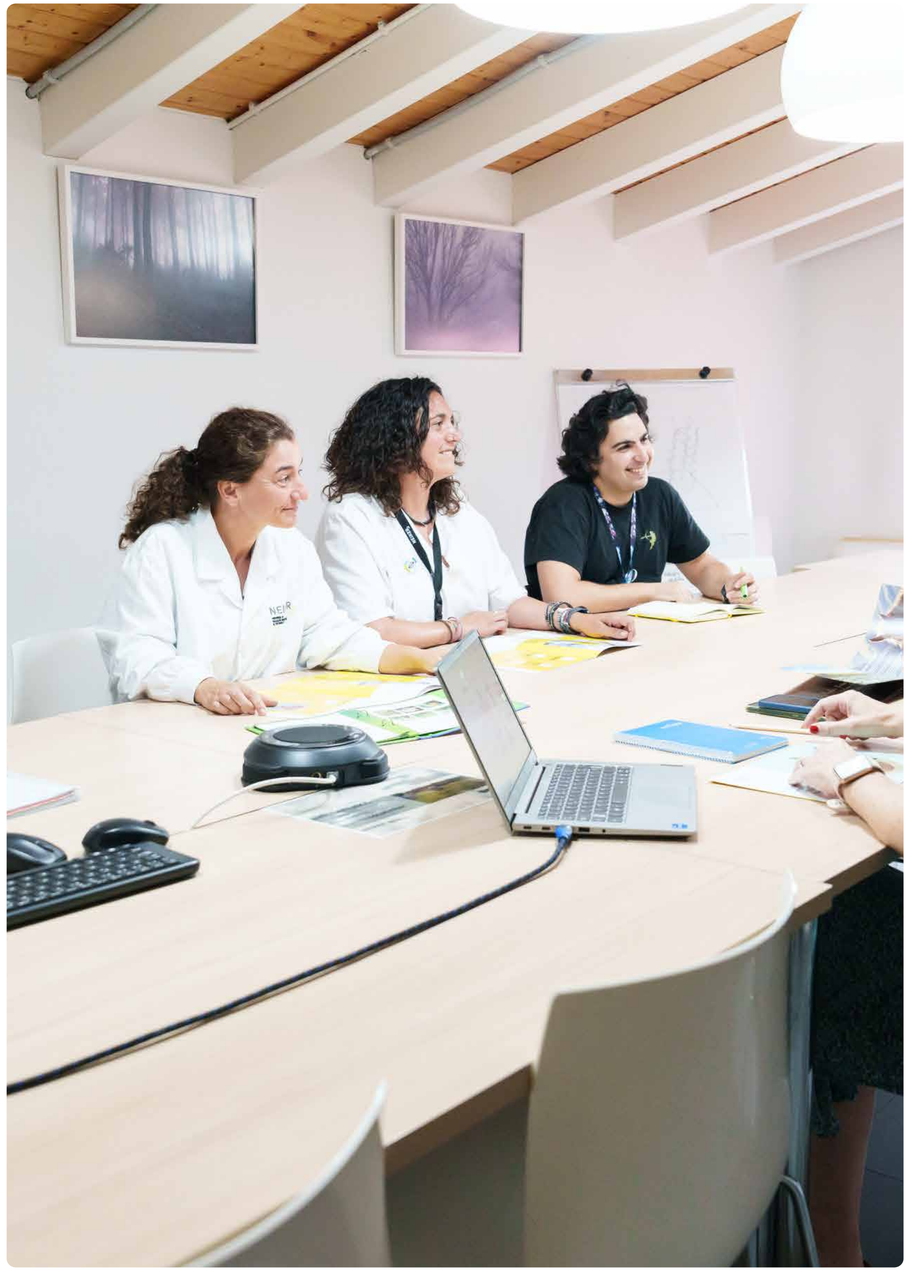
[7.3] SOLIDARITY

We have collaborated with **SALUGANDA Elkartea since 2011** to promote sustainable development in Uganda by providing schools with **sustainable infrastructure that supports their self-sufficiency.** In 2025, the project was expanded with more scholarships and sewing workshops, benefiting more than 4,300 girls and boys who cannot continue their studies for economic reasons.

Our activity generates surpluses which we have been donating to the **Araba Food Bank** since 2015. Last year, we delivered 33,000 kilograms of potatoes in collaboration with UDAPA, which bags the food to facilitate its storage and distribution.

A commited organization

[8]



[8.1] PROMOTING TALENT: TRAINING AND DEVELOPMENT IN 2025

146 TRAINING ACTIVITIES — 13% MORE THAN IN 2024

5.670 LEARNING HOURS — REINFORCING OUR CULTURE OF CONTINUOUS IMPROVEMENT

203 PEOPLE TRAINED — REACHING A LARGER PROPORTION OF OUR WORKFORCE

At NEIKER, training is a strategic investment that drives innovation and scientific excellence, while ensuring our team is prepared to lead the way in the agricultural, livestock and forestry sector.

During 2025, we consolidated a training model that is directly linked to our corporate challenges, training more people in a wider variety of ways, and contributing to the career development of our team, strengthening their growth and leadership capacity.

MILESTONES OF 2025

> **Digital transformation and people:** this year's growth has been underpinned mainly by areas such as digitalisation and the holistic development of our people, preparing NEIKER for the challenges posed by the future of technology.

> **Consolidation of the hybrid model:** webinars and online training are confirmed as the most efficient way to provide cross-cutting training, reconciling learning and research.

> **Strategic alignment:** a high degree of completion of planned actions, reflecting effectiveness in achieving the organisation's strategic objectives.

[8.2] BUILDING A TEAM

In spring we held an open day at our Arkaute centre, an event full of activities to bring together families, friends and people passionate about science and agrifood innovation and to explain our work to them first-hand.

[8.3] EQUALITY

In 2025, we continued working on NEIKER's Third Equality Plan, led by our Equality Negotiating Committee and with the participation of the entire team.

Highlights:

> **Conducting the Equality Satisfaction Survey**, to assess internal perceptions and identify areas for improvement.

> **Study on the pay gap at NEIKER**, showing a 4.8% gap in favour of women.

> **Presence of women in leadership positions**: 67% of the total.

> **Female speakers at our knowledge transfer events**: 50% of all participants. And, if we focus only on NEIKER speakers, 72% are women and 28% are men.

> **Attendance by the Negotiating Committee at the BAI SAREA event**, a network promoted by Emakunde-Basque Institute for Women and made up of Collaborating Entities for the Equality of Women and Men, and at **European Advanced Management Week**.

> **Ongoing support for notable commemorative dates:** International Day of Women and Girls in Science (11 February), International Women's Day (8 March), International Day of Rural Women (15 October) and International Day for the Elimination of Violence against Women (25 November).

> Update to NEIKER's **"Protocol for the prevention of and response to sexual harassment, sex-based harassment, harassment based on sexual orientation and harassment based on gender identity and expression"**, including this risk in the psychosocial risk assessment, to ensure an **environment free from violence against women.**

[8.4] QUALITY

External audits recognise the robustness of our **management system, which is goal-oriented and promotes continuous improvement.** We have:

> **Certification of the R&D&I Management System** in accordance with **ISO 56001:2024.**

> **Certification of the Quality Management System** in accordance with **ISO 9001:2015.**

> **Accreditation in accordance with ISO 17025:2017** by ENAC, with file number **615/LE 1321.**

We also participate in the Euskalit Evaluation Club, contributing to improving the competitiveness of Basque organisations.

[8.5] GOVERNANCE AND COMPLIANCE

In 2025, we held an **"Ethics Code Awareness Workshop"** for the whole team.

We joined the following Basque Government platforms:

> **Internal Information System** (BIS) in accordance with Law 2/2023

> **Specific anti-fraud system for "Next Generation" funds** (Recovery and Resilience Mechanism (RRM)) in accordance with Regulation (EU) 241/2021

We also reviewed the internal procedure "Staff, competencies, awareness and conflict of interest" to ensure proper handling of any potential conflicts of interest that may arise for both Board members and employees.

[8.6] HEALTH, SAFETY AND EMOTIONAL WELL-BEING

At NEIKER, we reaffirm our commitment to the safety, health and well-being of our team, making progress in implementing an Occupational Health and Safety (OH&S) Management System in accordance with ISO 45001:2018, aligned with our corporate values. This system guarantees safe, healthy working environments and promotes the well-being of all staff.

HIGHLIGHTS

> **Leadership and strong involvement of senior management, middle management and the Health and Safety Committees** in all processes related to OH&S, ensuring favourable results for our occupational health and safety indicators.

> Launch in 2025 of an **emotional well-being programme** that includes sessions with professionals and training courses, promoting the physical and emotional health of staff.

> **Integration of a gender perspective into our 2025 OH&S Policy**, consolidating NEIKER as a workplace with zero tolerance for gender-based violence and protecting employees from sexual harassment and harassment based on sex or sexual orientation, while promoting the inclusion of diversity throughout the workforce.

> **A positive trend in accident rates** during the period 2021-2025, reflecting our team's commitment to safety standards and the creation of an increasingly safe working environment.

INITIATIVES AND GOALS FOR THE FUTURE

> Continued **reinforcement of actions aimed at the psychosocial well-being** of our workforce, ensuring a healthy and balanced working environment.

> Review of the causes of accidents to identify opportunities for improvement and strengthen our preventive culture, with the aim of achieving **"Zero Accidents"**.

> Progress in **consolidating a culture of prevention**, promoting initiatives that ensure the safety, health and well-being of all NEIKER employees.

[8.7] COMMITMENT TO THE BASQUE LANGUAGE

We continue to make progress in the normalisation and promotion of the Basque language as the working language and language of communication both within and outside NEIKER. Throughout 2025, we have continued to implement the 2023–2027 Strategic Plan and carried out the Annual Management Plan, consolidating initiatives aimed at increasing the use of the Basque language in all areas of the organisation.

HIGHLIGHTS INCLUDE

> The completion of the follow-up **survey** for the **plan "The use of Basque at NEIKER"**, which enables us to assess the degree of progress and identify new areas for improvement.

> NEIKER's **strong involvement in the Euskaraldia initiative as an organisation**, with the launch of various activities (Mintzodromo, recreational activities and audiovisual materials), achieving a significant increase in internal participation.

> The strengthening of the **Basque-language Help Channel**, which has continued to provide support through short translations and linguistic reviews, with a notable increase in demand.

> The launch of the **"Science Communication in Basque"** group, aimed at promoting the use of Basque in scientific and technical communication.

> The **exchange of best practices** with other organisations within the framework of initiatives such as **AriGara** and **Euskalit's** best practice search engine, contributing to shared learning.

> Support for **International Basque Language Day** through the production and dissemination of a corporate video.

> **Promoting the use of technical Basque in seminars, conferences and specialist presentations**, thereby strengthening its presence in both internal and external scientific and technical contexts.

NEIKER MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

EUSKO JAURLARITZA
GOBIERNO VASCO

Annual Report 2025