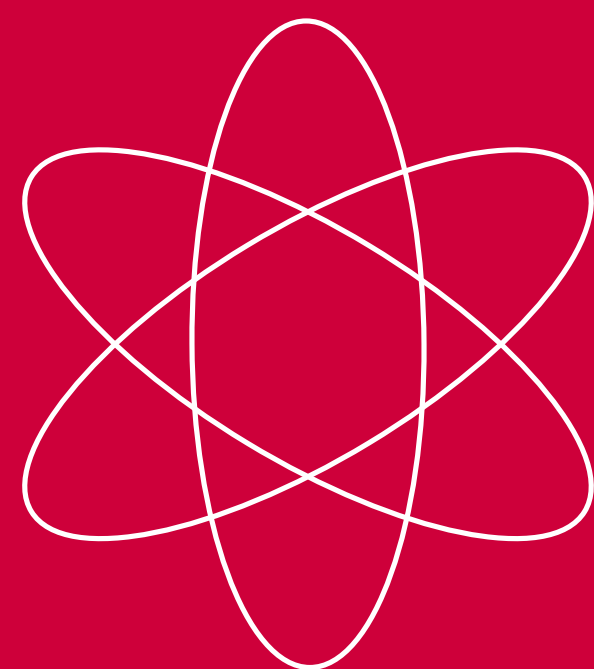


STRATEGIC PLAN

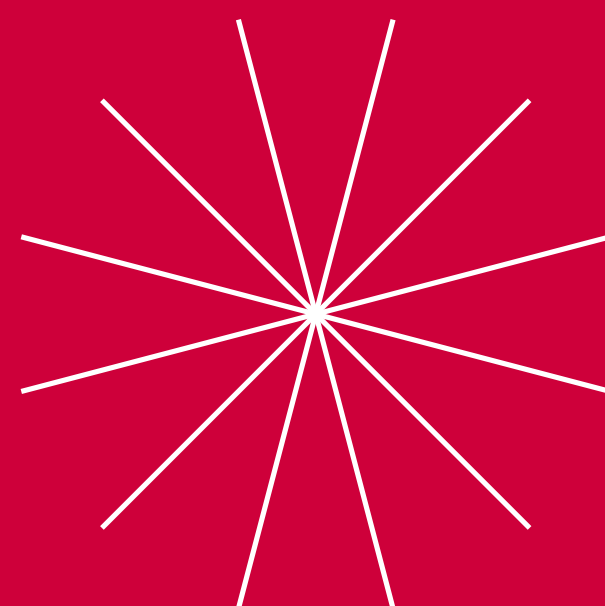
Science to feed the future



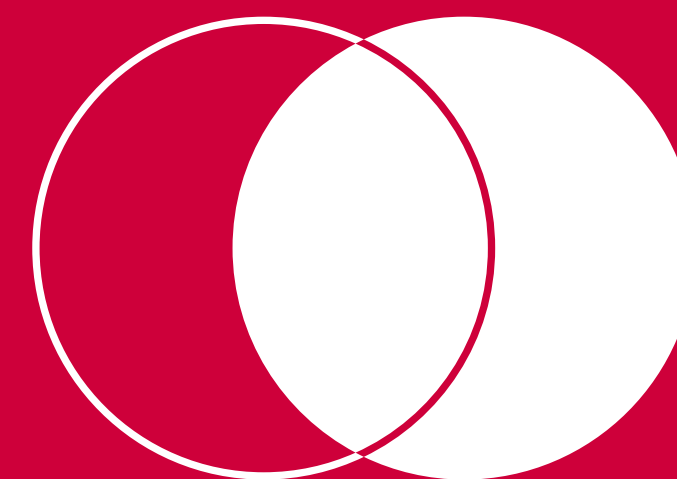
SCIENCE



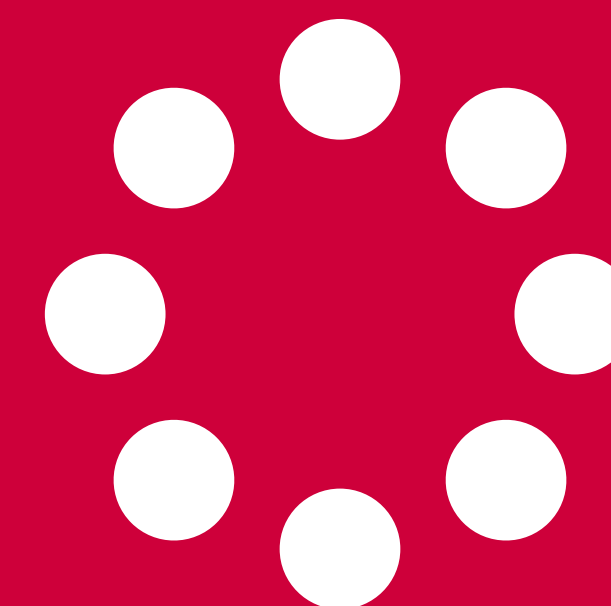
PEOPLE



INNOVATION

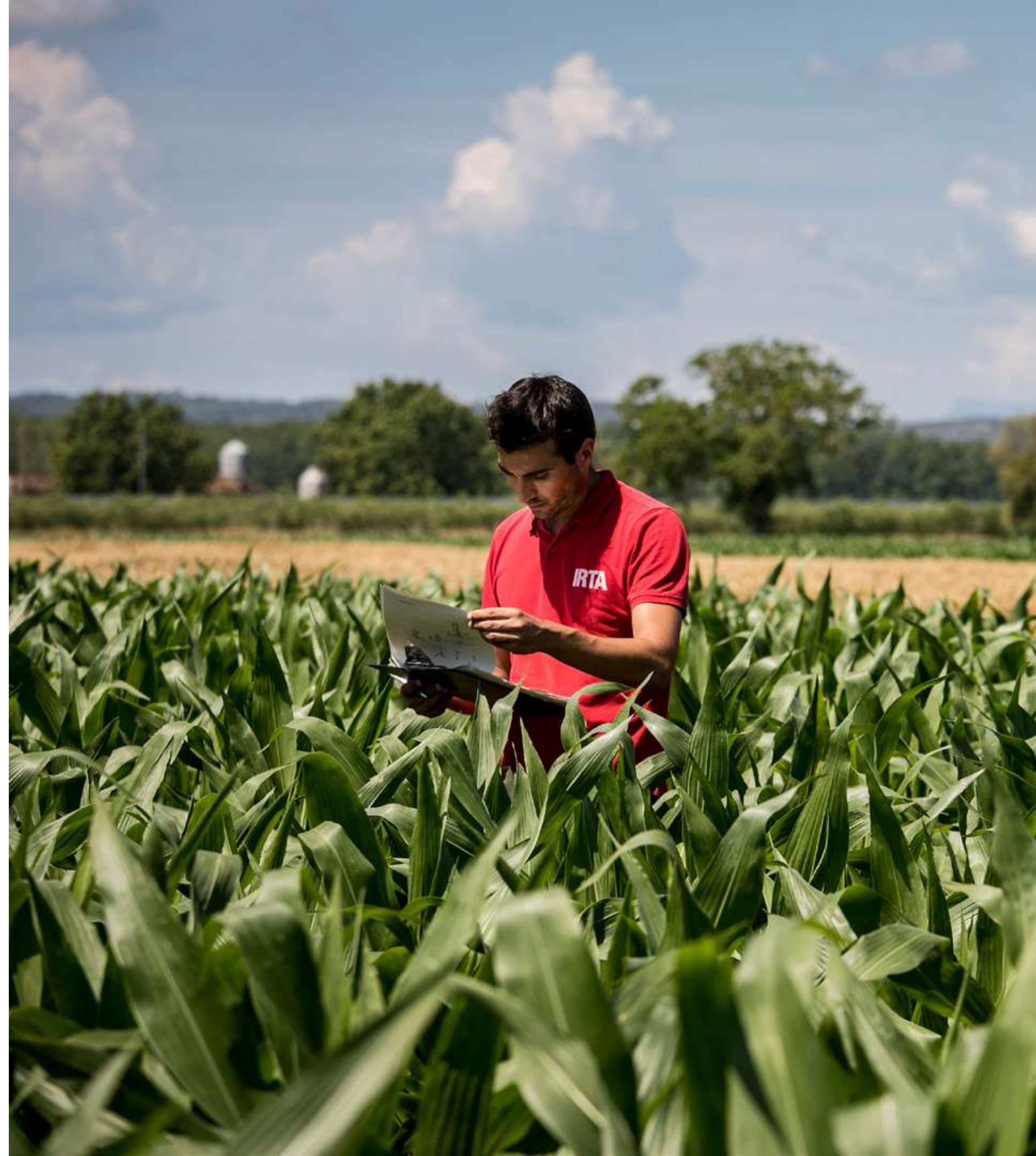


ALLIANCES

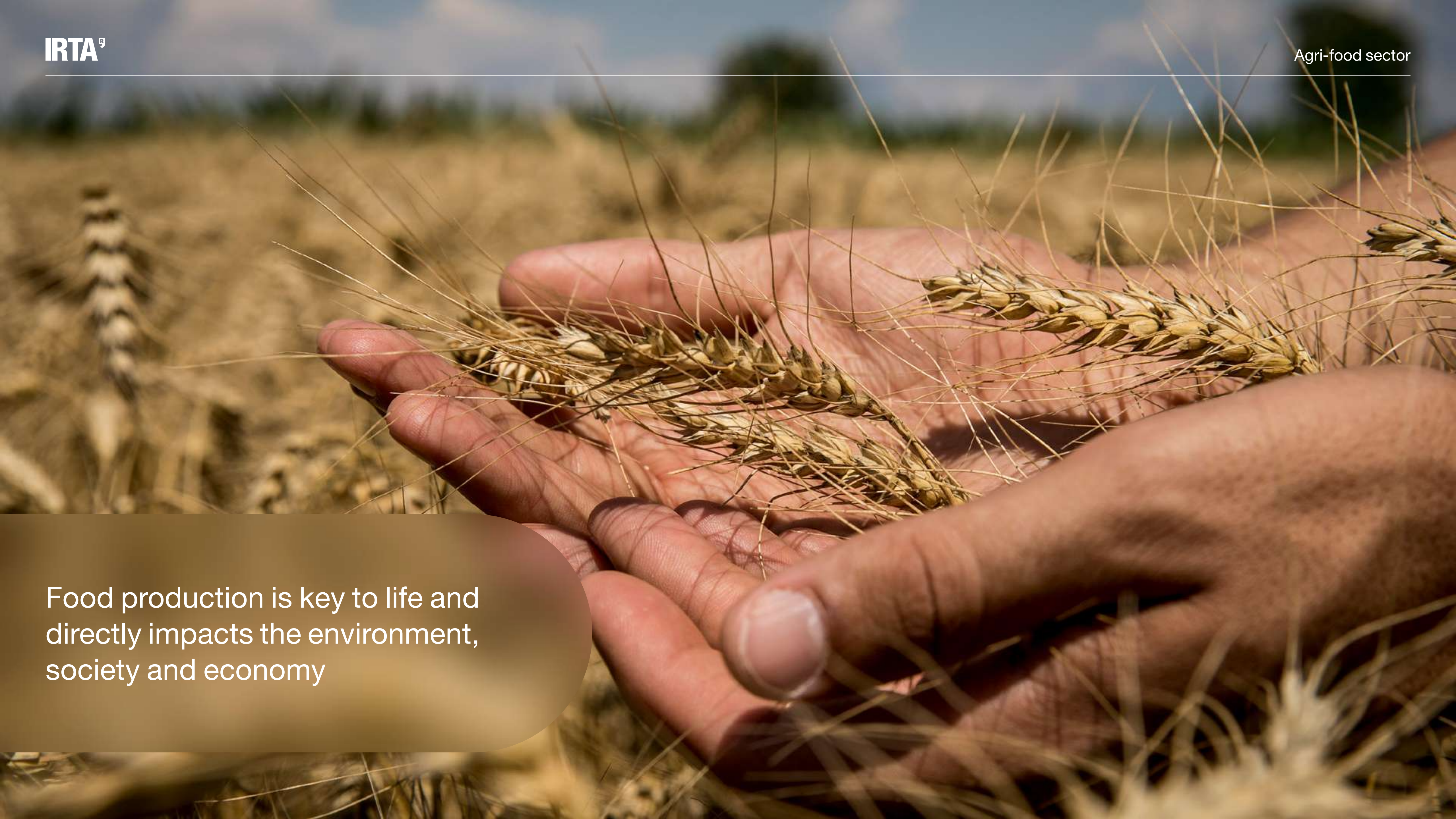


SOCIETY

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1. Agri-food sector: a key sector for the future of the country



Food production is key to life and directly impacts the environment, society and economy

The need to transform the existing food systems is increasingly evident and widely acknowledged, so that they can provide sufficient healthy food for the population, adapt to climate change and the energy crisis, and to make them sustainable, safe, fair, resilient and compatible with the prosperity and well-being of future generations.

Globally, the food and agri-food industry is one of the sectors that has the greatest impact on guaranteeing the sustainability of the planet and the health and well-being of the population. It is also one of the most heavily affected from the perspective of resource scarcity and competition for raw materials, land, water and energy.

Food

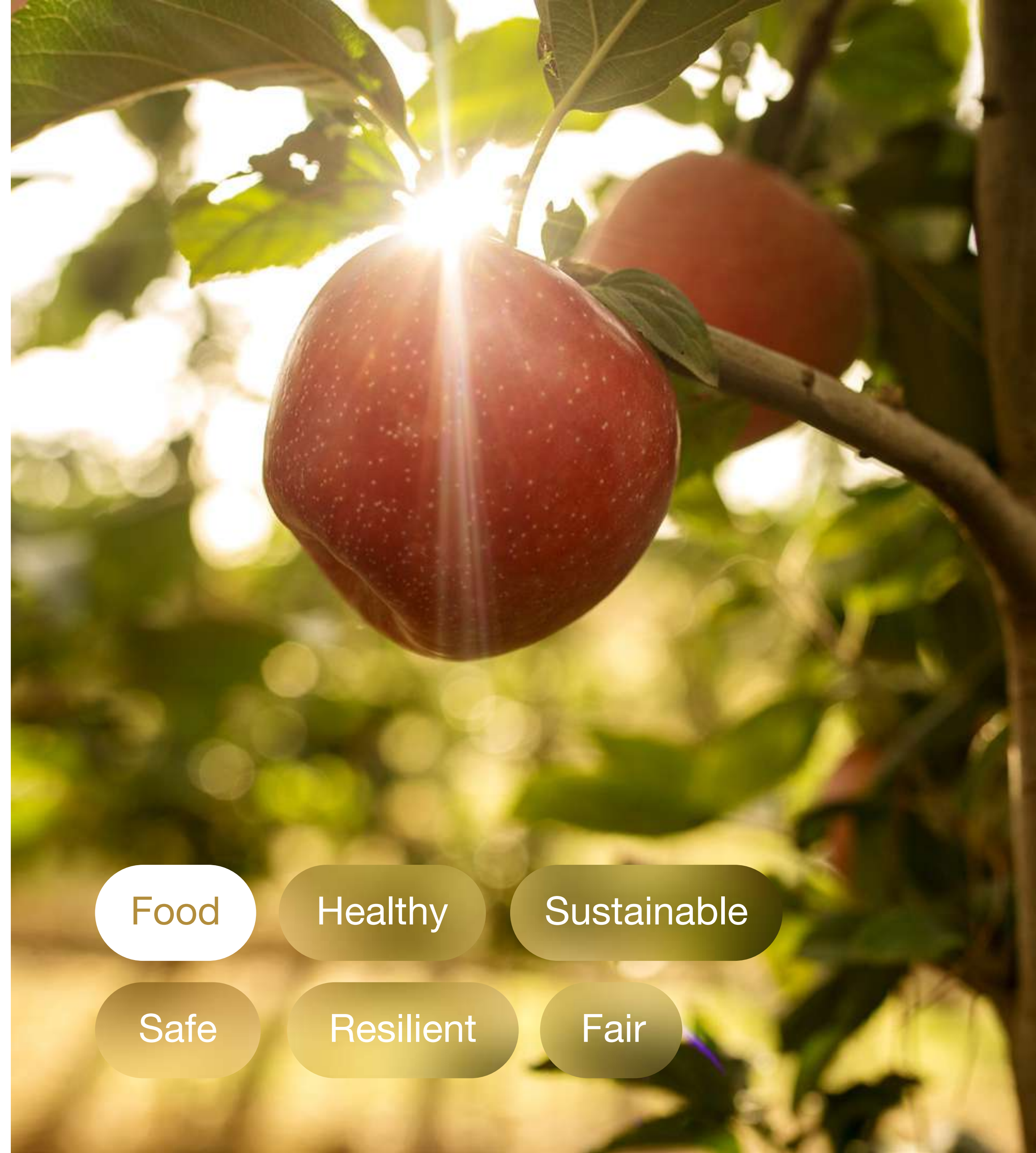
Healthy

Sustainable

Safe

Resilient

Fair



The agri-food sector is a cornerstone of the Catalan economy, led by the meat industries and supported by a solid business ecosystem that covers the entire value chain. It is the leading industry in terms of turnover and employment in Catalonia.

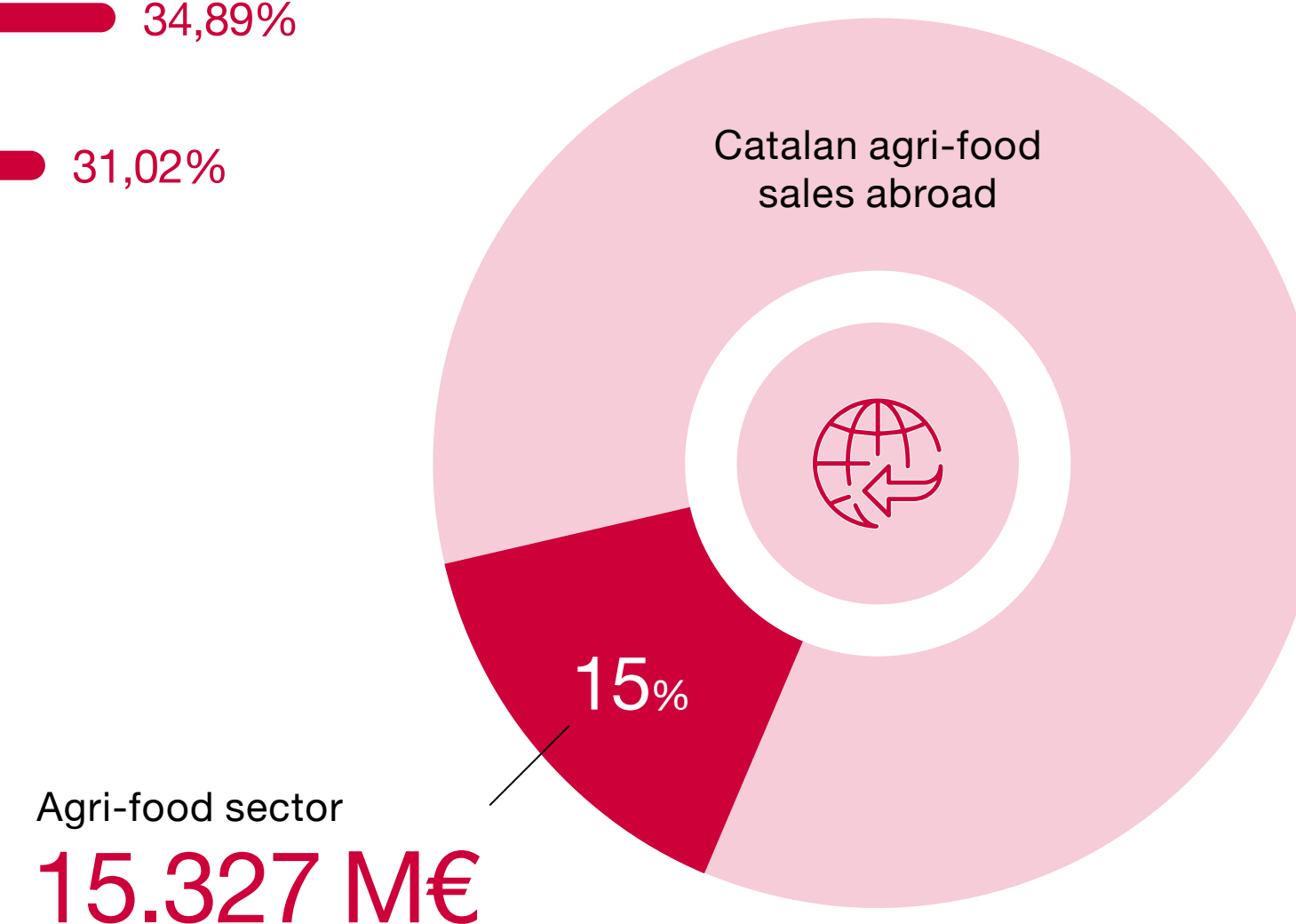
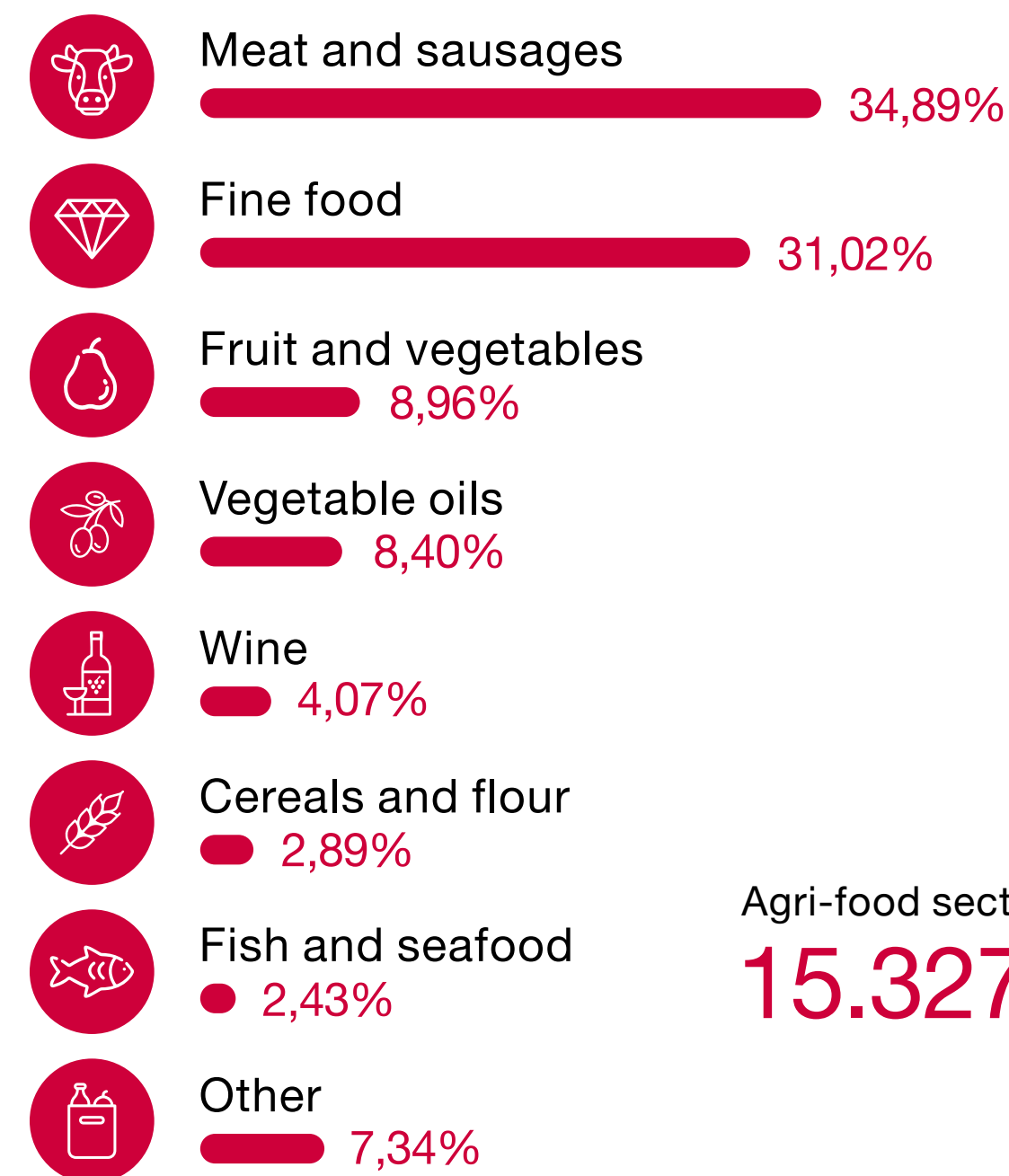
Innovation is key and the sector follows three major trends:

- Sustainably produced food
- Healthy eating
- 4.0 technologies in the catering industry

Agri-food sector in Catalonia



Catalonia, Spain's leading exporting region



Source: ACCIÓ (figures from 2023)

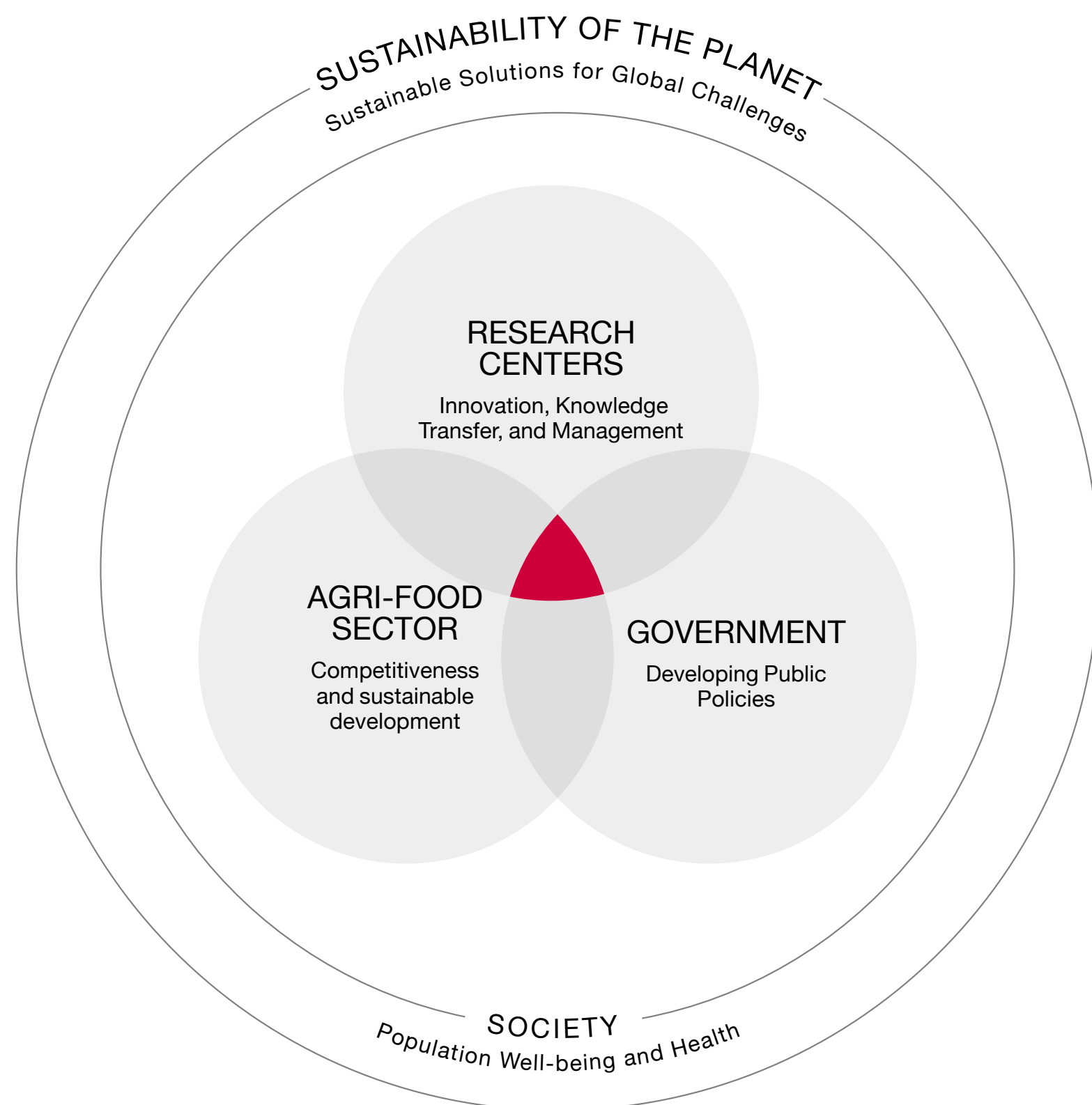
2. Our organisation

We are a research centre attached to the Government of Catalonia's Department of Agriculture, Livestock, Fisheries and Food, and we are part of the CERCA system, a group of research centres of excellence in Catalonia.

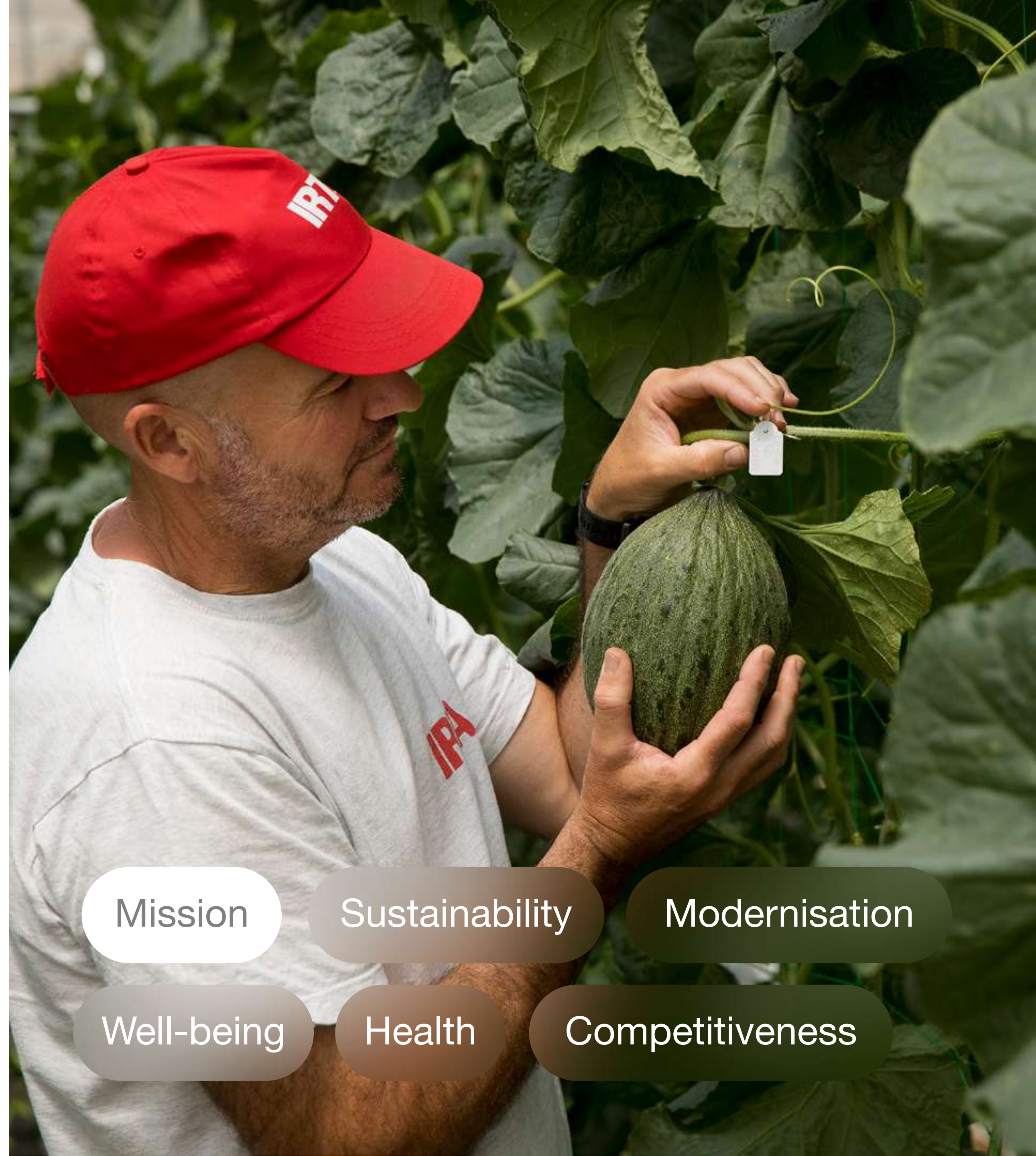
Through this network, we contribute to strengthening the international presence of Catalan research centres, fostering cooperation with the world's leading institutions, promoting the transfer of knowledge to the business sector and society, and reinforcing the commitment of the economic sector and the community to scientific research and development.



Our mission



▲ We contribute to the modernisation, competitiveness and sustainable development of the agricultural, food and aquaculture sectors, to supply healthy, quality food for consumers and, in general, to improve the well-being of the population.



Mission Sustainability Modernisation

Well-being Health Competitiveness

Our vision

To become a scientific benchmark, a driving force for innovation and technology transfer. We want to be the strategic ally of the agri-food sector.

Our values

- Integrity
- Commitment
- Respect for the environment
- Excellence



3. The IRTA of the next decade

At IRTA, we faced the challenge of rethinking the organisation, initiating a process of reflection that has allowed us to visualise where we are heading and which objectives we wish to pursue.

The drafting of the Strategic Plan 2024-2027 has involved a process of dialogue and active listening with some of our collaborators as well as national and international references, with the aim of ascertaining their opinion and vision on the future of the agri-food system and the role of research in this.

We have also benefited from the contribution of several people from IRTA with different professional backgrounds, recognising their experience and their decisive role as key players in the future of the institute.



Participation

Dialogue

Commitment

Future

4. Challenges of the Strategic Plan

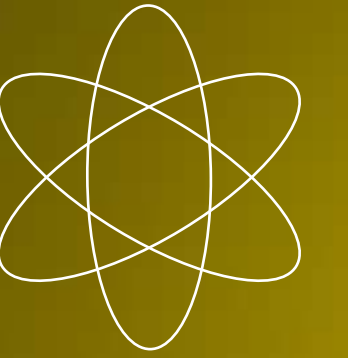
The strategic plan for the next decade addresses five challenges for the future, focusing particularly on scientific objectives to provide solutions to the challenges of the agri-food sector in the medium and long term.

In addition to the scientific challenges, we want to attract and retain the best professionals, boosting our recruitment of talent. We also want to reinforce the value of our research and establish alliances with key players in the sector, both nationally and internationally.

In this context, communication with society is essential in order to listen to peoples' concerns and put knowledge at their service.



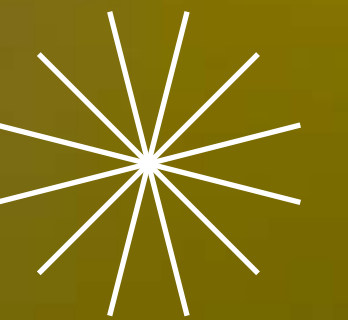
Science



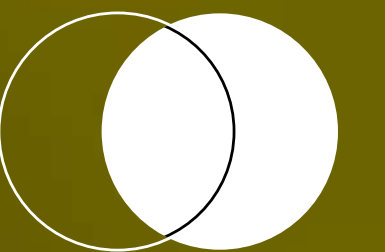
People



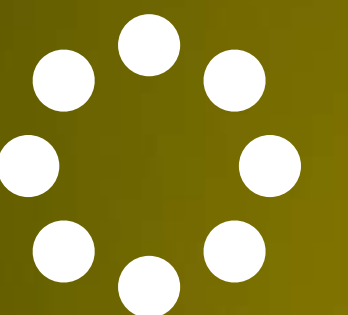
Innovation



Alliances



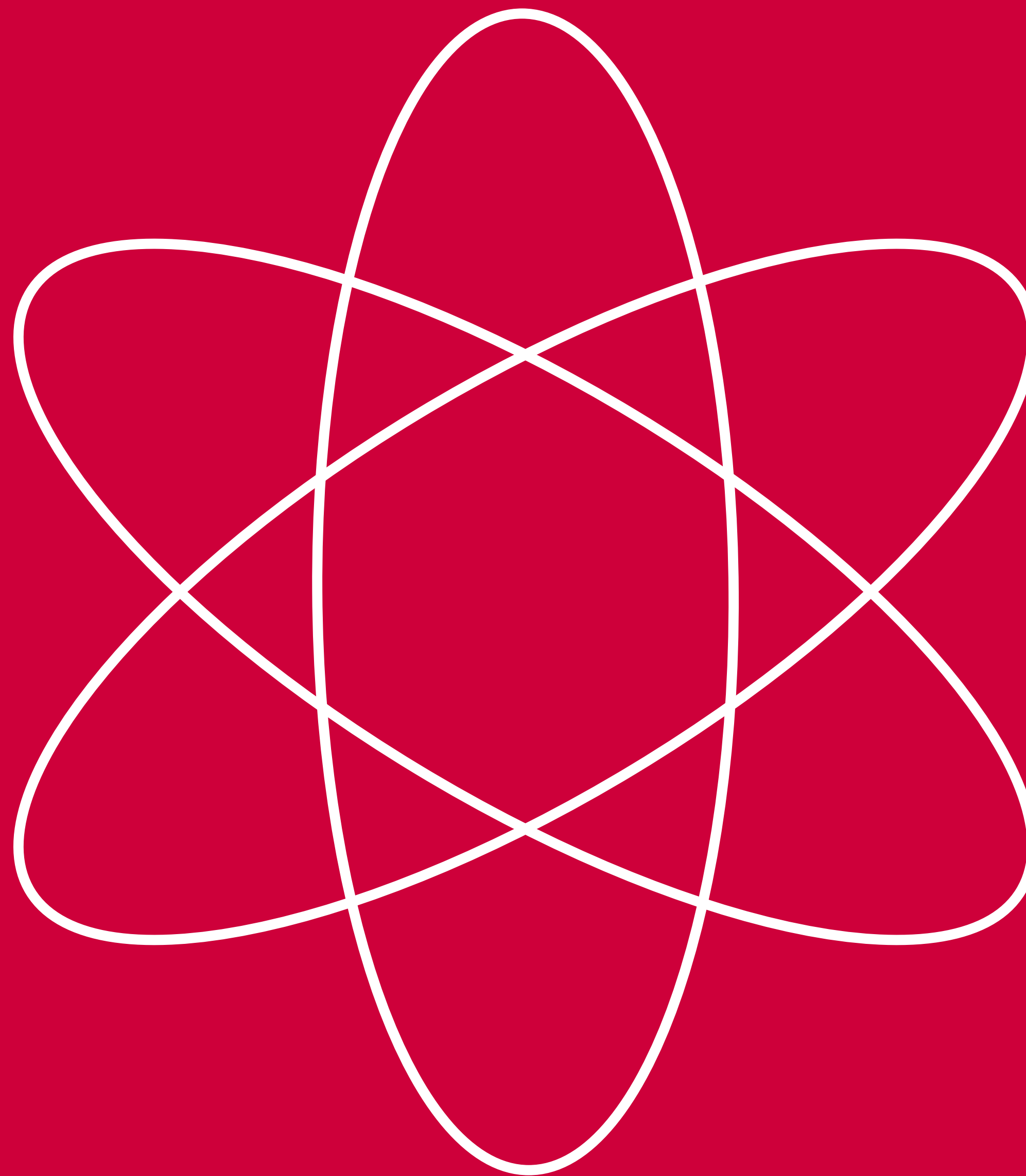
Society



Science

Objectives **8** | Key Actions **27**

We want IRTA to have the scientific orientation and the necessary means to provide solutions to the challenges facing the agri-food sector in the medium to long term.



Scientific research areas

In the new Strategic Plan 2024-2027, we want to focus our scientific activity principally on four areas of research that are in line with the UN Sustainable Development Goals.

-
- **Resilience to climate change**
Develop practices and solutions that enable agri-food systems to adapt to the impacts of climate change.

 - **Sustainable intensification of production**
Optimise food production by increasing yields without compromising natural resources.

 - **One Health**
Address human, animal and environmental health in an interconnected way to prevent risks and ensure food safety.

 - **Digitalisation and transformative technologies**
Apply cutting-edge digital technologies to improve efficiency and innovation in the agri-food sector.



WITHIN THIS FRAMEWORK, OUR EIGHT SCIENTIFIC OBJECTIVES ARE:

- 1 Boost the digital transformation of the agri-food sector.
- 2 Optimise water management for agricultural use.
- 3 Improve carbon sequestration and soil health.
- 4 Promote the bioeconomy by valorising organic waste and agri-food by-products.
- 5 Boost the alternative protein sector.
- 6 Guarantee animal health and welfare in the context of reduced antibiotic use.
- 7 Enhance resilience to emerging biological risks.
- 8 Boost research into viticulture in response to the new challenges facing the sector.

27 KEY ACTIONS



Objective **1** | Boost the digital transformation of the agri-food sector

We want to boost the transformation of the agri-food sector by adopting new disruptive digital technologies. These tools may be the key to solving the sector's current challenges, **improving the efficiency and sustainability of agricultural and livestock processes**. At IRTA, our team of researchers has sound knowledge of the available technologies and we want to position ourselves as a leading player in the digitalisation of the agri-food sector.

Key Actions

- Develop the network of digital AGROLABs, an infrastructure for research and validation of digital technologies.
- Develop Digital Twins for fruit trees, pig farms and food processing and preservation.
- Develop tools and platforms for precision agriculture, livestock and aquaculture in the fields of irrigation, animal feed, animal welfare and health, fertilisation and plant health.

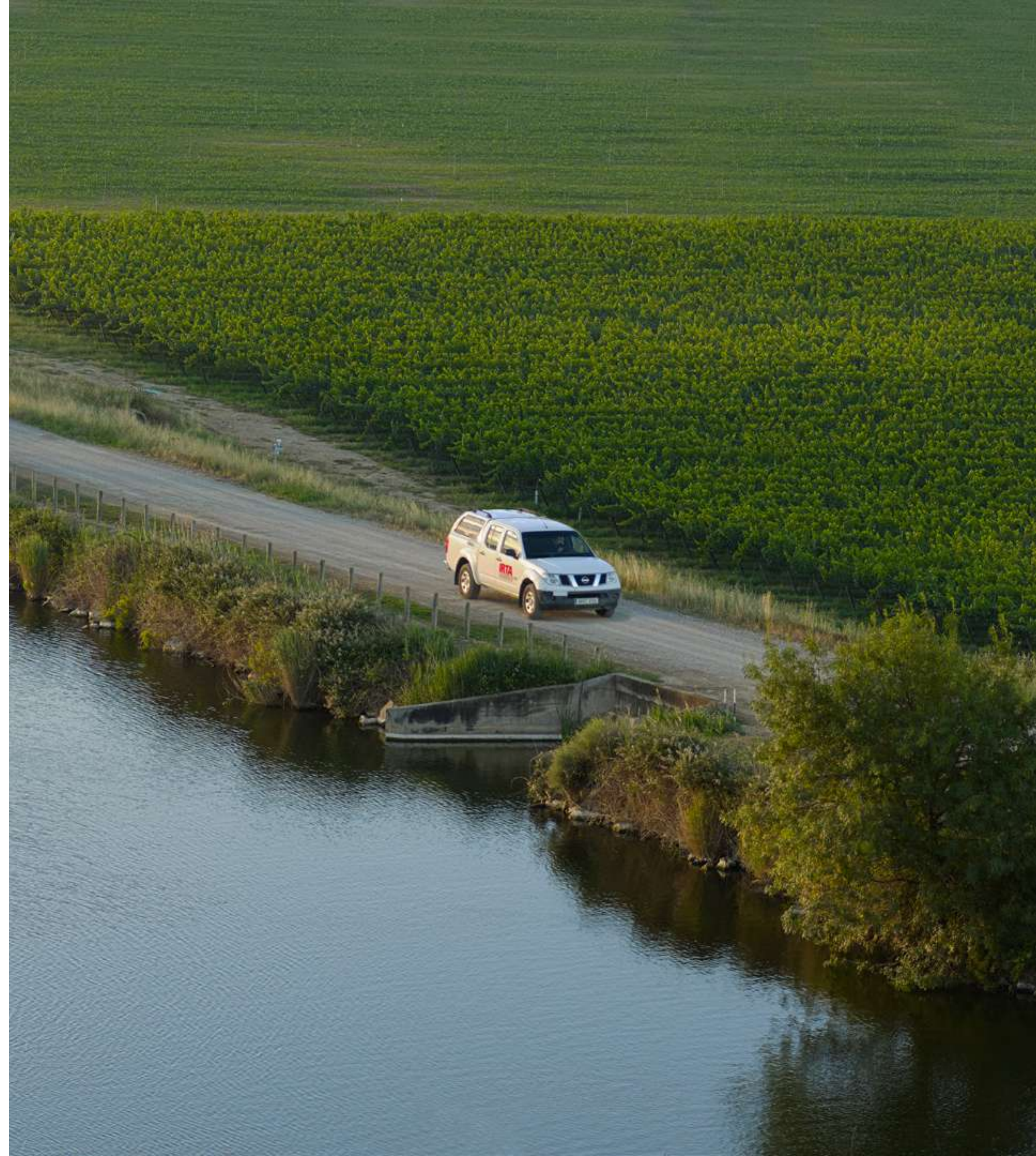


Objective **2** | Optimise water management for agricultural use

Our objective is to optimise agricultural water management, aware of its importance as a scarce resource. Over the last 30 years, **we have led several initiatives to improve water use efficiency** and we will continue to promote innovation that enables more sustainable management. We are committed to advising irrigation communities and developing platforms that facilitate water needs monitoring, with a view to **a more efficient and responsible future** in the agricultural sector.

Key Actions

- Strengthen scientific capabilities in irrigation agronomy.
- Promote research into the use of reclaimed water.
- Create a support and assistance network for water use in agriculture (RegAssist).



Objective **3** | Improve soil health and carbon sequestration

At IRTA we are working to improve soil health and promote carbon sequestration, recognising its fundamental role in environmental sustainability and the fight against climate change. This improvement benefits biodiversity and contributes to the resilience of agricultural ecosystems and the production of quality food. **We want to promote practices that encourage a more responsible use of resources and contribute to soil regeneration.**

Key Actions

- Study the mechanisms of carbon dynamics and the effect of regenerative agricultural practices on soil biodiversity and soil health.
- Develop a soil carbon certification programme.
- Develop a network of experimental plots for long-term carbon sequestration trials.



Objective **4** | Promote the bioeconomy by valorising organic waste and agri-food by-products

IRTA is committed to transforming these resources into sustainable solutions that not only reduce environmental impact, but also generate added value for the agri-food sector. Through innovation and the use of advanced technologies, we **contribute to a more circular and efficient system**, where waste becomes raw material for new products and services.

Key Actions

- Optimise the recovery of livestock waste through anaerobic digestion and composting.
- Boost circularity by valorising by-/co-products generated by agri-food industries, including the recovery of value-added compounds and bio-products (biorefinery).
- Increase knowledge of emerging technologies for biomass recovery.
- Build biogas plants to valorise organic waste and establish a collaborative network with leading industrial plants.



Objective **5** | Boost the alternative protein sector

We want to boost the alternative protein sector, aligning ourselves with the European Union's strategy for the protein transition, which seeks to **improve the sustainability of the food system and health**. With a legal framework established for insect, plant and microalgae proteins, together with interest from the Department of Agriculture, Livestock, Fisheries and Food in the development of these alternatives, we are determined to **foster protein ingredient innovation** and biorefinery processes, creating a more sustainable and competitive future.

Key Actions

- Create the Centre for Alternative Protein Innovation (CIPA).
- Boost alternative protein biomass production capacities based on microbial fermentation, algae and insects.
- Develop technologies and processes designed to obtain protein ingredients and apply these to foodstuffs for human and animal consumption.
- Improve plant production as a source of alternative protein.



Objective **6** | Guarantee animal health and welfare
in the context of reduced antibiotic use

Our aim is to ensure animal health and welfare in a context of reduced antibiotic use, following European policies that set clear targets for such a reduction. **We focus on animal welfare while looking for effective solutions** to current challenges.

Key Actions

- Study strategies to strengthen the immune system and improve animal welfare.
- Develop alternative molecules to current antibiotics.
- Develop on-farm diagnostic tools for a more rational use of antibiotics.



Objective **7** | Enhance the capacity to respond to emerging biological risks

We are working to tackle emerging biological risks through close collaboration with the Department of Agriculture, Livestock, Fisheries and Food. With sound expertise in animal health and food safety, **we are extending our actions to soil and plant health.**

Key Actions

- Develop epidemiological surveillance systems to predict the appearance of emerging pests and diseases.
- Develop methods for early detection and diagnosis of emerging pests and diseases.
- Develop prevention tools to address emerging pests and diseases.
- Set up a committee of experts to respond to the emergence of biological risks from a One Health perspective.
- Increase biosecurity infrastructures in animal health, plant health and food safety.



Objective **8** | Boost research into viticulture in response to the new challenges facing the sector

The wine sector is fundamental for Catalonia, but it is currently affected by a lack of specific research into viticulture and insufficient understanding of the effects of climate change. At IRTA we combine expertise in agronomy, pathology, water management and plant material, and we are committed to the i4Vi Alliance **to boost our research into viticulture.**

Key Actions

- Promote research into climate change adaptation and mitigation in viticulture.
- Create an Experimental Viticulture Farm.



People

Objectives **5** | Key Actions **11**

We want IRTA to be able to attract and retain the best team of professionals by offering a motivating work environment, oriented to growth and impact.



At IRTA we take care of our team and we are committed to their professional growth. We know that the employee experience is key **to attracting and retaining new talent**, which is why we strive to create a satisfactory and enriching work environment.

We are committed to continuous improvement, offering adapted training and generating professional development opportunities. We also value internal communication and effective, conscientious leadership **to ensure that our team is motivated and engaged**, thereby guaranteeing long-term talent retention.



5 OBJECTIVES

- 1 Optimise the employee experience.
- 2 Promote talent development.
- 3 Maximise talent attraction.
- 4 Promote effective internal communication.
- 5 Encourage leadership and ensure succession.

11 KEY ACTIONS



Innovation

Objectives **3** | Key Actions **7**

We want IRTA to have the capacity to bring competitive value to the agri-food sector by driving innovation.



We are a leading **institution in technology and innovation**, developing solutions to address the challenges of the agri-food sector. We transfer technology and knowledge to companies, supporting them in their development to enhance their competitiveness under sustainability criteria.

Innovation is a fundamental pillar for IRTA; we create new products and services through innovation projects, promoting open and collaborative innovation with various stakeholders. We explore and adapt new relational and exploitation models for research outcomes in collaboration with companies to meet their needs, allowing us to positively impact the sector.

Our expertise and knowledge enable us to provide training and consultancy, offering theoretical and practical courses to meet the growing demand for specialized training.



3 OBJECTIVES

- 1 Promote specialised training activities.
- 2 Increase innovative activity and sectoral impact.
- 3 Develop a software valorisation model.

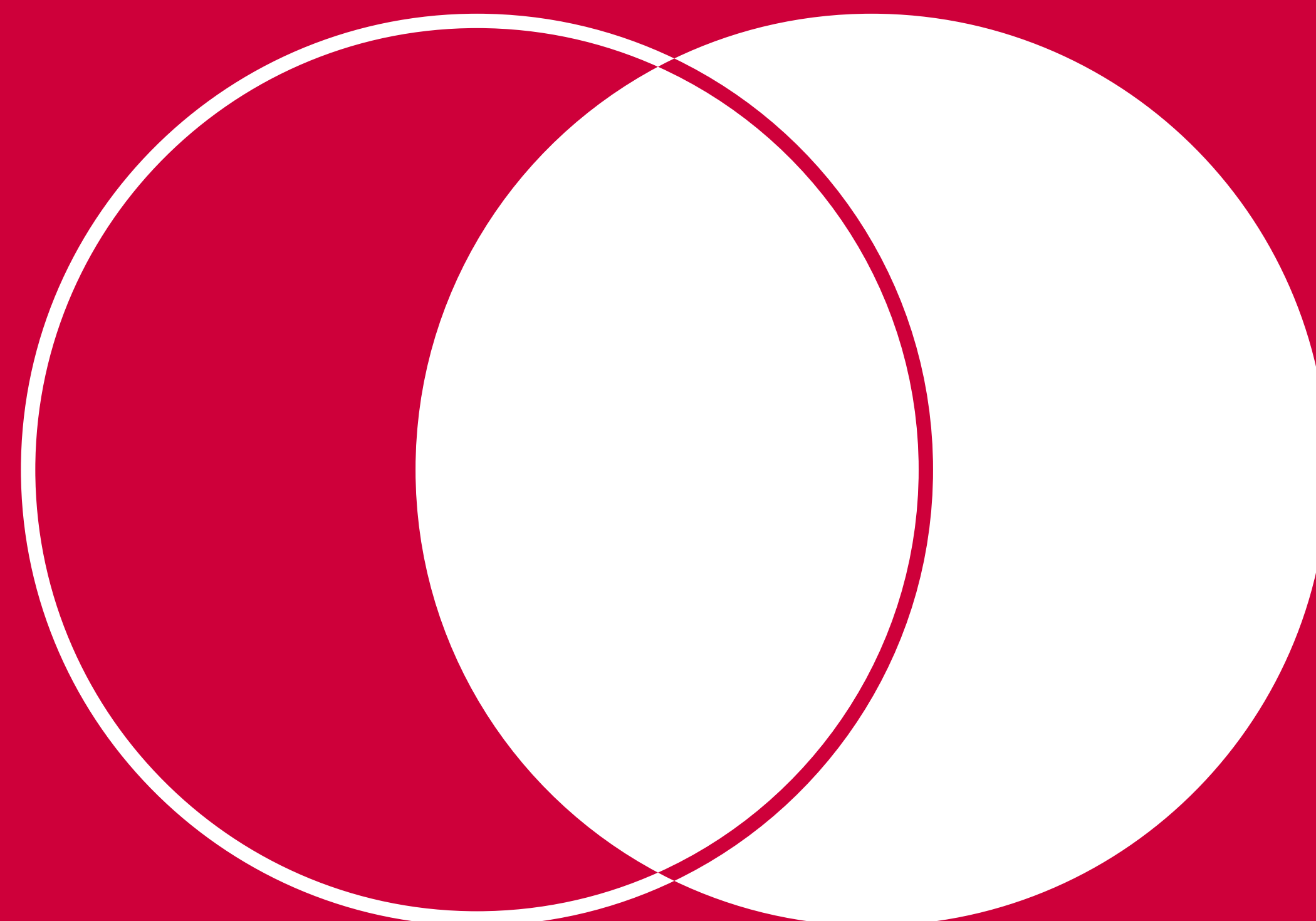
7 KEY ACTIONS



Alliances

Objectives **2** | Key Actions **5**

We want IRTA to be interconnected with the main agents in the world committed to promoting the agri-food sector.



Our capacity to interact with the scientific and business world and public authorities is fundamental for **forging strategic alliances.**

We are open to exploring new collaborations that allow us to grow and innovate and we want to become more outward looking to maximise opportunities in European calls and **strengthen our impact in the sector.**



2 OBJECTIVES

- 1 Manage and strategically plan alliances.
- 2 Promote a strategy of international alliances.

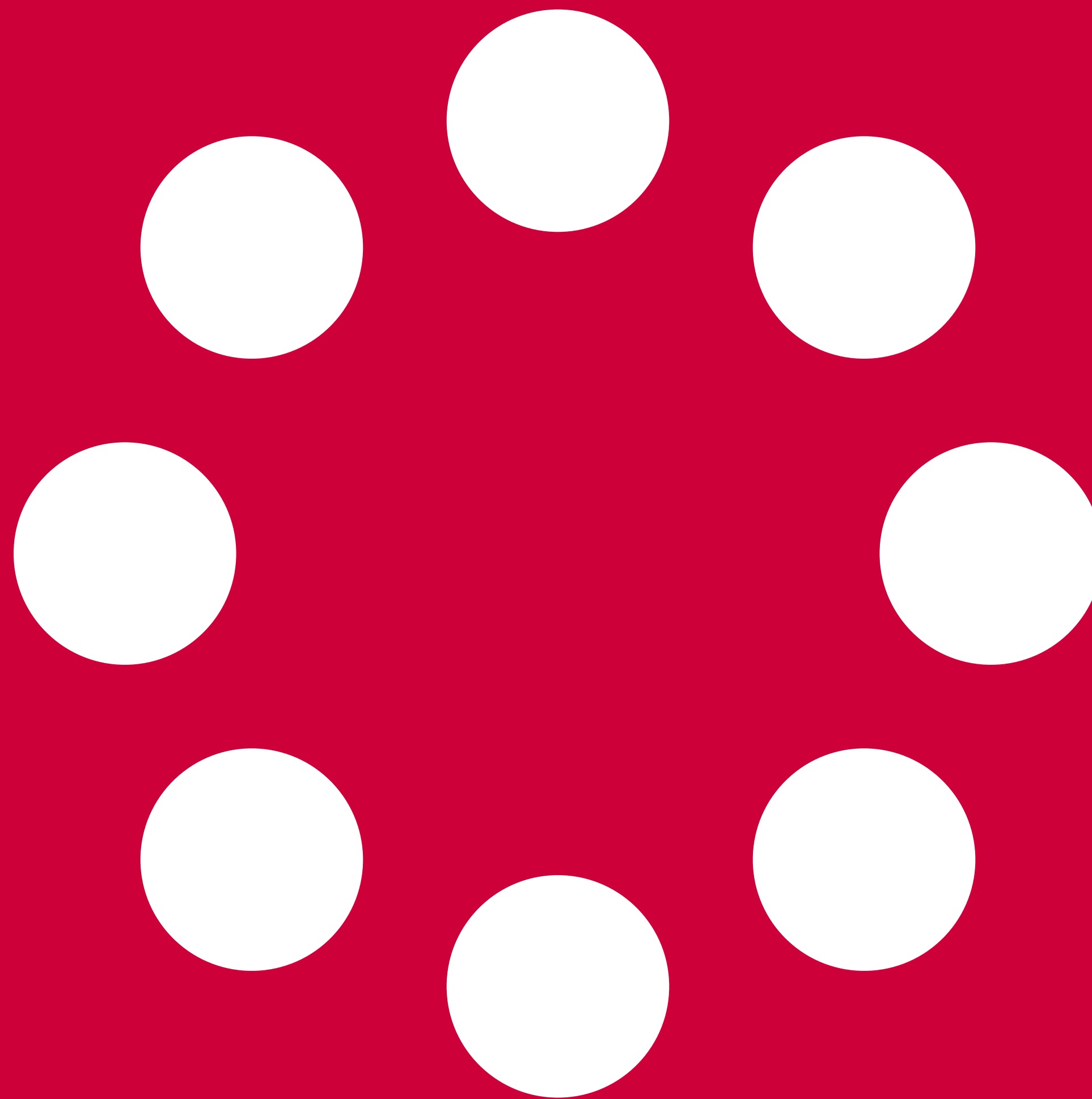
5 KEY ACTIONS



Society

Objectives **4** | Key Actions **5**

We want IRTA to be in constant communication with society, able to listen to its concerns about the agri-food sector and to provide answers.



At IRTA, we have the capacity **to generate high-impact content** in coordination with the Department of Agriculture, Livestock, Fisheries and Food, aimed at society and the agri-food sector. Examples of this include initiatives such as Research Night and The Day of Women and Girls in Science.

Additionally, there is a growing interest in food issues, where **our experts make us a scientific benchmark**. However, we aspire to deliver messages that not only transmit technical results, but also connect with the interests of society.



4 OBJECTIVES

- 1 Disseminate IRTA's knowledge to society.
- 2 Increase IRTA's presence on social media.
- 3 Optimise IRTA's capacity to become a reference point for opinion.
- 4 Develop the brand and the story to showcase IRTA.

5 KEY ACTIONS



