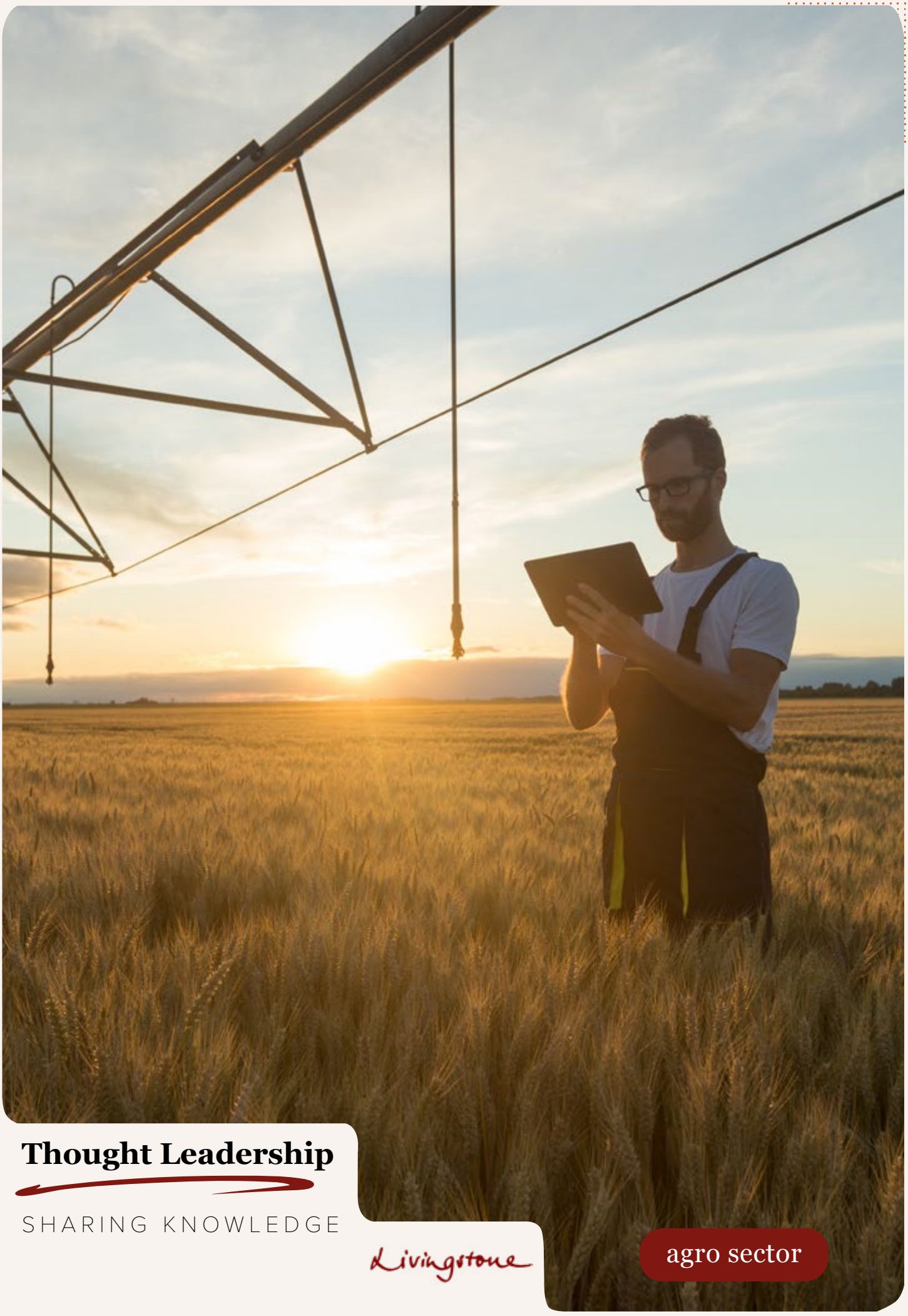

Thought Leadership

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agro sector

The Future of Agriculture in Southern Europe: Challenges and Investment Opportunities Amid Climate Change

A New Agricultural Landscape

Southern Europe's agricultural industry is at a turning point. With climate change reshaping the landscape, traditional farming methods are becoming increasingly unsustainable. Rising temperatures, erratic rainfall, escalating frequency of extreme weather events and degraded soils are disrupting yields and putting pressure on food production. Spain is on the frontline of these challenges, but this adversity also presents a wave of innovation and investment opportunities.

Water scarcity is perhaps the most critical and continuous threat for the sector.

WATER IS THE MOST LIMITED RESOURCE FOR AGRICULTURE AND ITS SCARCITY DEFINES THE FUTURE OF THE SECTOR IN SPAIN

Prolonged droughts threaten a wide range of crops that are critical for Spanish food production. The recurrent regional political battles over access to irrigation are headline news every year and reflect the critical nature of water supply. Of course, there is no easy answer. Climate change cannot be switched off. Optimistic estimates place temperature increases at 1.5%, current estimates talk about 2%, and the pessimistic ones point to temperatures above 3.5%. These numbers can appear small but the consequences from these increases are enormous. At a global level, agriculture accounts for the use of 70% of fresh water each year. However, only 50% is replenished: There is a deficit. A major one.

Another consequence of global warming is the increasing incidence of extreme

weather events. Wildfires, flooding and heatwaves are damaging crops and reducing harvest predictability. Extreme heat also leads to lost working hours and as harvesting periods are reducing, yields again suffer. Storms ruin crops and lead to soil nutrient losses.

One further impact from the increasingly warm weather is the greater outbreaks of disease and the growing number of pests attacking crops. As the weather warms sub-tropical pests that would not survive in Spain are now much more prevalent. The increase in the use of pesticides and fertilizer to combat pests and degraded soils in turn create additional problems for the aquifers that supply many of Spain's fields.

Some of the Solutions

These massive challenges are being addressed through innovation. The lack of water has led to Spain being one of the most advanced countries in the world in modern irrigation techniques. Drip feed systems are prevalent in much of Spanish agriculture, minimizing water usage but also allowing the farmers to be precise in the administration of fertilizers and pesticides, reducing costs and reducing contaminating run offs. Additionally, there has been substantial progress in the implementation of hydroponic cultivation techniques which reduce both water and fertilizer consumption, delivering quality products whilst helping to minimize land degradation.

SPAIN LEADS INNOVATION IN IRRIGATION TECHNIQUES, HYDROPONIC CULTIVATION AND ARTIFICIAL INTELLIGENCE APPLIED TO AGRICULTURE

Newer innovations will also be key. The use of satellite imagery, and the data that has been collected since the nineteen seventies, in combination with Artificial Intelligence, can allow predictive analysis of weather trends, anticipating weather conditions. The use of sensors in the fields, and even drones can increase the richness of data and allow the implementation of digital irrigation.

Precision agriculture applying these IoT technologies is the future of successful agriculture.

The use of Ai goes further than monitoring water resources and optimizing water and chemical usage. It also accelerates the development of climate resistant crops, significantly reducing research costs and timelines. The same is true for innovative

fertilizers and pesticides. Climate resistant seeds will be a critical mitigation strategy as the climate worsens.

The reduced use of fertilizers and pesticides, and the implementation of renewable energy will also be vital as end users insist upon supply chain traceability and guarantees, as will signs that other more climate friendly agricultural practices such as regenerative farming, are being adopted.

Consequences

These wide-ranging innovations will be critical to safeguard Spanish agriculture, but they can be capital intensive. Larger players will find these costs easier to assume, whilst also building a bigger geographical platform of farms that can offset the risks of local extreme weather.

They can also offer their customers guarantees of the quality of their products, and boost marketing initiatives

INVESTMENT IN AGRICULTURAL TECHNOLOGY IS KEY TO ENSURING THE SUSTAINABILITY OF THE SECTOR AND ATTRACTING CAPITAL TO A CHANGING MARKET

about the use of renewable energy, and regenerative farming practices and the minimization of chemicals.

The good news is that there are many investors keen to invest and indeed that have invested in the space. Spain is a world leader in agriculture and is the key producer of agricultural products for Europe. This expertise in a resilient industry with reliable revenue streams is highly attractive to investors. The very deep knowledge of the industry also means that there are a multitude of Spanish start-ups addressing many of the growing problems the sector faces. The recent announcement of Impact Bridge launching a focussed agro-alimentary fund is the latest example of the interest in the space. Other funds, such as MCH, Miura and Atitlan, recognising the need for sector concentration have been active for several years. In fact, the Atgro Fund, managed by Santander and Grupo Atitlán, has raised €300 million to invest in this sector, with the forecast to reach €500 m in the third quarter of 2025.

An additional attraction for these investors is the EU's grants policies associated with innovation and the development of solutions that help the agri-food industry to continue to operate in a scenario of major climate change. The "PERTE Agrario", within the European initiative of the Next-Generation funds, is one of the largest in terms of budgetary allocation in Spain, and undoubtedly one of those that has distributed the most money among players who are betting on investing in the search for solutions that provide mitigation and adaption to the problems.

But even with grants and incentives, these adjustments to production technology require strong balance sheets. By building bigger agricultural groups, capital will be available for the absolutely necessary and critical investment in innovations, ensuring the future of one of Spain's most important industries.

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