

KNOWLEDGE PLATFORMS  
AND RESEARCH LABS

# RESEARCH REPORT 2023





# THE FUTURE MUST ALWAYS BE IMAGINED AND SOUGHT



The research activity and its continuous dissemination are the destiny and duty of a School of Management. It may seem like a strong statement but this phrase expresses in the most appropriate way the sense of the challenges and times we are experiencing and that allows us to guide to the future with the strength and passion that distinguishes SDA Bocconi.

Higher-education, applied research and the growth of people are closely linked and forward-looking. There is no growth in people's lives if the gaze is not turned to the future and when the gaze is no longer able to grasp the future, growth stops, it no longer affects and it no longer has an impact on the surrounding society. Growth is not a solitary act but a path, which becomes more exciting if done with good travel companions. In this sense, growth, training, applied research, relationships and sharing are closely linked. We must therefore have the desire and ambition to talk about the future every day. This is the ambition of every School of Management, this is definitely the hallmark of our School of Management, SDA Bocconi School of Management.

To understand what it means to speak and plan the future every day, we need to reflect on the two simple words - so simple to seem obvious - that are found immediately after SDA Bocconi, that is "School" and "Management".

The concept of "School" is a concept of community and continuous construction. In a world where research, knowledge and education are seen as an act of consumption, which materializes - and is likely to run out - in the very short moment of a download, the concept of "School" is exactly the opposite in that it is not confused with the learning tool - physical or digital, synchronous or asynchronous - but is clearly above the available tools and offers a meditated synthesis, at the service of the community, and built with the support of diverse interlocutors who interact with each other, from faculty, staff, students, alumni, companies and institutions that meet every day on our campus. The quality and intensity of relations become the quality of the School and the energy to continue on its way.

The concept of "Management" is at its root a concept of responsibility. Management means guiding men and women, resources and organizations. It's an act of responsibility by definition. It is devoid of sectorial affiliation, as it crosses institutions and organizations with profoundly different characteristics: from listed companies to private ones, from small to large, from public to non-profit sector. If responsibility is the deepest nature of management, its attitude today must be that of transversality. Knowledge and therefore management can no longer be placed in predefined areas, in vertical silos that define their own rules and aspire to perfection, which becomes self-referentiality and closure. The marketing silos, the finance silos, the technology silos and so on. Vertical perfection becomes complacency and then only leads to dryness and inability to think about the future every day.

The task of a School of Management is to ensure the highest level of vertical understanding, knowing well that "teaching" or "doing" management actually means destroying vertical silos with the force of creativity, with the courage to always get out of your comfort zone, with the will to always advance those vertical knowledge that are then questioned. But it also means identifying and welcoming new vertical silos, new disciplinary areas that were not even imaginable: from artificial intelligence, to cybersecurity, to the space economy and to what is to come, that today we cannot imagine but that we are certain that it will come. SDA Bocconi in management has always seen the transversality that passes from companies, to public administrations and financial intermediaries. This transversality today is leading the SDA to have a broader spectrum ranging from geopolitics themes to data sciences and AI, because businesses, institutions and financial intermediaries demand this to understand the world and face their challenges.

The knowledge platforms that the School has created go exactly in this direction and are the inexhaustible force that continuously links the drive for innovation, the drive for vertical understanding within the disciplinary field, the push to transversality that is the necessary condition in order to understand the complexity of the scenarios that every business decision-maker must observe. But above all, without research the ability to affect with the activity of higher-education dries up and becomes a ritual. The nature of being a School is to continually strengthen the bridge between the needs of companies and institutions and the ability to always look to the future.

The challenges of the School become the collective challenges, the knowledge that is produced through research is a collective and community act, which then brings initiative, enthusiasm and benefit to individuals but remains a strongly collective act. This is why our School has the task of helping individuals and organizations to think about the future every day. Not to deny the present but to live it more intensely and with greater responsibility. This is the responsibility of the manager and is the hallmark of the leaders, who are formed in our classrooms. It is the perfect link between the School and its community, between the programs that we develop every day with passion and the participants, between the content of our training and the task of the manager. This is why the School does not offer a solution but builds the possible solutions through the extraordinary experience of many colleagues who direct our programs and live every day with those who have or have the ambition to have the responsibility of guiding men and women, resources and organizations.

The space to build the future is vast, and the School is always there whenever there is courage and a desire to design innovative solutions. That's where we have to start if we want to give answers to the people and organizations that choose the SDA. History therefore continues and always evolves, with determination and impact.

**STEFANO CASELLI**

*Dean SDA Bocconi School of Management*

Milan, 30 October 2023





# eSG - EXCELLENCE IN SUSTAINABILITY & GOVERNANCE

The excellence in Sustainability and Governance - eSG Knowledge Platform and the Labs that are part of it focus on global challenges related to environmental, social, and governance issues that lead businesses, international organizations, public institutions, and governments to rethink their future.

The Labs of the eSG Platform propose innovative and pragmatic solutions through research activities, analysis of current and emerging trends, and by fostering the creation and dissemination of knowledge and skills in sustainability and governance, thanks also to the monitors on specific themes or sectors.

Thanks to the study of integrated and cross-cutting sustainability within businesses, the Labs that make up the eSG platform aim to provide evidence and insights to businesses facing the challenges of sustainable transformation and its impact on ecosystems, as well as governance, strategies, products, processes, and business decisions. Topics such as corporate governance, sustainability of SMEs, developments in sectors such as food, fashion, furniture, finance, automotive, etc., are just a few of the subjects analyzed by this platform, its Labs, and its Monitors.

The platform produces scientific knowledge through quantitative and qualitative research methodologies, with the aim of supporting organizations in maintaining and renewing their market positioning by integrating social, environmental, energy, and governance challenges into their strategies and practices. Additionally, the platform contributes to the creation of organizational capacities and leadership with the goal of promoting organizational change and technological innovation required by the United Nations' Agenda 2030 and the European Green New Deal. Last but not least, the platform, through its Labs and Monitors, participates in academic debates through publications, articles, reports, and peer-reviewed books.



**Francesco Perrini**

*Scientific Director of the eSG - Excellence in Sustainability & Governance Knowledge Platform*

*Associate Dean for Sustainability, responsible for Diversity, Equity and Inclusion (DEI) and Innovation and Corporate Entrepreneurship (ICE). Full Professor of Management at the "Management & Technology" Department at Bocconi University.*



# AGRI Lab

Romeo ed Enrica Invernizzi  
Agribusiness Research Initiative

Our mission is to overcome the challenges of the agribusiness sector, strengthening its knowledge and skills in the areas of business management, innovation and sustainability through research, education and dissemination. Our approach is based on 3 actions:

1. Research on the industry's critical issues
2. Adapt business management practices
3. Overcome future challenges

\*\* Themes of this Lab are across Technology, Innovation & Transition and eSG - Excellence in Sustainability & Governance Knowledge Platform

## 1. Research, Adapt, Overcome

A more complex than ever business landscape makes the extensive and diverse value chain of agribusiness a critical industry. Challenges ahead will bring new risks and business opportunities. While European policies are pushing towards a sustainable transition in the primary sector and global phenomena affect the industry with unprecedented impacts, there is a strong need for innovative and future-proof management solutions. Invernizzi AGRI Lab is carrying out scientific research to understand the complexity of current changes in the industry, designing adaptation strategies, and helping the entire supply chain in overcoming the challenges ahead.

Companies, entrepreneurs, managers in the primary sector and all sectors connected to it, from farms to input suppliers, from institutional investors to processing companies will find in the Invernizzi AGRI Lab a resource for understanding the dynamics, the strategic lines of development, and best practices that will lead the industry through the challenges of 2050.

### 1.1

#### Holistic Approach

Invernizzi AGRI Lab is a multidisciplinary environment in which the skills and experiences of over 20 SDA Bocconi professors and researchers merge to create scientific and applied research projects on the most relevant issues of agribusiness. Research Activities focus on the collection and analysis of qualitative and quantitative data relating to the management of companies in the agribusiness supply chains. From economic and financial performance, to marketing, to the efficient management of production and, again, to the topic of innovation in products, processes and services.

60+

Farmers have enrolled in Invernizzi AGRI Lab's executive education program

14.000

Young students have enrolled in Invernizzi AGRI Lab's MOOC on Coursera

10+

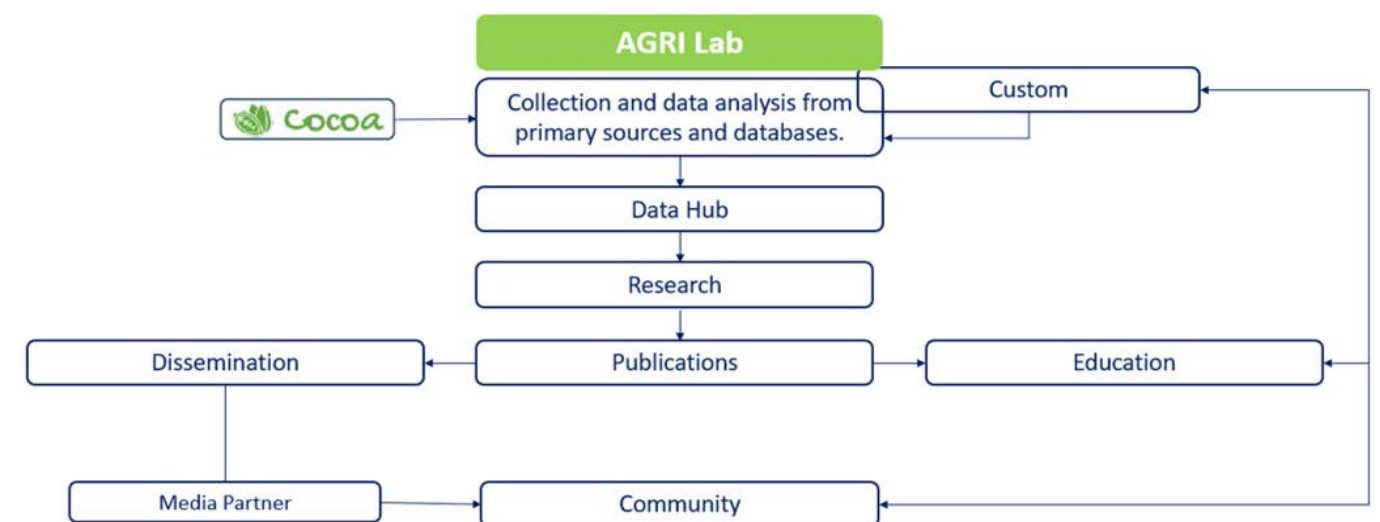
Dissemination Events

3

Independent Long-Term Research Projects launched every year

20+

Faculty Members collaborate with Invernizzi AGRI Lab in Research and Education Activities





## 2. Membership model



### 2.1 The Founding Institution

The Romeo and Enrica Invernizzi Foundation was founded in the early nineties by the will of the Cavaliere del Lavoro Romeo Invernizzi, one of the most brilliant and innovative entrepreneurs in the Italian food industry, and of his wife Enrica Pessina, a constant presence in Milanese social life, to give a point of reference in Lombard scientific research and to promote progress and well-being of society through knowledge.

- By statute, the Foundation has always supported initiatives in the study of Economics, Food Sciences and Medicine and Surgery.
- In 2004, shortly before their death, the Founders decided to donate their entire assets to the Foundation that bears their name, further strengthening its means and capabilities. Today the Foundation continues its mission led by an independent and apolitical Council, made up of personalities from the world of culture, professions, entrepreneurship and the Italian scientific community. The collaboration with three

Invernizzi AGRI Lab has been founded with contribution of the Romeo and Enrica Invernizzi Foundation in 2019. Along with the Foundation, Credit Agricole Italia is now a permanent donor of the Lab. Both, Invernizzi Foundation and Credit Agricole Italia support wide scope, long-term, independent research activities. The Lab is open to more supporters in the form of Donors to the Bocconi University.

Companies and Public Institution also address Invernizzi AGRI Lab for custom research, education and dissemination activities aimed at specific objectives. Custom research activities span from base research to action research projects aimed at helping companies and institution in achieving specific business objectives.

important Milanese universities (State University of Milan, Catholic University of the Sacred Heart and Luigi Bocconi Commercial University) has led in recent years to finance numerous research projects and to favor the activity of researchers of international importance.

- With Invernizzi AGRI Lab, the Foundation aims at fostering the development of the Agribusiness industry helping the new entrepreneurial generation in the transition towards a sustainable future.



**Francesco Billari (Rector of Bocconi University) speaks at the Invernizzi AGRI Lab Event**

### 2.2 Supporting Partner

- Crédit Agricole is an international banking group built around the customer. With its solidity, the group operates in all market segments and is among the leading banking operators in Europe. Trust, social responsibility, innovation, internationality and quality are the values that inspire the identity of the Group, which stands as a proximity bank with a rich commercial offer. The bank was founded in France as a

Financial Institution for farmers and the agricultural sector is still a key industry for the Group.

- With Invernizzi AGRI Lab, Crédit Agricole Italia has signed an innovative three-year agreement through which the Banking Group will provide the Lab with advanced analytical tools, data sets and deep-rooted specialist skills in agri-agro, in order to support research in the agricultural sector and agri-food.

- Thanks to Credit Agricole's support, the Lab has published the book "Agricoltura tra sostenibilità e innovazione: 1° rapporto di analisi economico-finanziari delle aziende agricole italiane". The study provides an updated and detailed report on the economic and financial performance of the primary sector, filling a gap historically determined by the scarcity of information and extensive samples on Italian agricultural companies.



**Left to right: Emanuele Fontana (Head of Agribusiness Marketing, Crédit Agricole Italia), Luca Ghezzi (Professor, Bocconi University), Serena Morricone (Professor, SDA Bocconi), Francesco Billari (Rector, Bocconi University), Vittorio Ratto (Vice-Director General, Crédit Agricole Italia), Gianantonio Bissaro (Managing Director, Fondazione Romeo and Enrica Invernizzi), Vitaliano Fiorillo (Director, Invernizzi AGRI Lab).**





### 3. Independent Long Term Research Activities

Thanks to the Founding and Supporting Partners, Invernizzi AGRI Lab conducts independent, long term research activities aimed at deepening the knowledge on agribusiness and introducing innovative management practices and tools. Agribusiness is at the core of 13 of the 17 Sustainable Development Goals as set by the United Nations and Invernizzi AGRI Lab is working every day to evaluate risks of the changing global landscape and harness business opportunities arising from a new sustainable approach in producing, processing, distributing and consuming food, feed, fibre.

Long term researches at Invernizzi AGRI Lab focus on Sustainability of the Agrifood System; Innovation, Agritech and Disruptive Technologies; Markets and Commodities Trading; New Managerial approaches and innovative management tools.

#### 3.1 Understanding the Industry

The fundamental economic dimensions of the agribusiness industry in Italy and Europe are monitored by an increasing number of public and private research institutions collecting data at any level of the value chain. While data about the upstream and downstream parts of the value chain are extensive and

reliable, the agricultural sector is a collection of estimates, plain averages, and even conjectures. Given the widespread unstructured management of farms, data collection in agriculture is a very difficult task. Invernizzi AGRI Lab has conducted a thorough analysis of available datasets on the industry, revealing a

dramatic variance of data and coarse sampling and analysis methodologies. This issue has so far driven most of the activities regarding the agricultural sector, aimed at creating a deeper understanding of the industry based on reliable data collection and analysis.



#### 3.2 Future Farm Management

Farms play a crucial role in the agribusiness industry sustainable transformation. We believe that by increasing and strengthening managerial skills in farms, the industry will harness the inherent potential in solving a large part of sustainability challenges affecting our society and economic system. Technology will play an important role in this transition, but managerial tools and approaches will be the key to the future.



**Co.Co.A. Business Simulation**  
CO.CO.A Business Simulation is a self-teaching tool for farms performance measurement. By following the teaching videos and tutorials the farmer can understand performance control and generate an income statement reclassified by business lines. Thanks to online training and the ability to simulate the progress of their business, farmers can measure the profitability of their business. For the first time, performance indicators are applied to farms providing a clear snapshot

of profitability, productivity and debt ratios. The software by collecting information from multiple farms provides a large database on farm profitability, useful for future research.

#### 3.3 The impact of Megatrends and Innovation in the Industry

The mega-trends are "processes that form slowly and affect us for a long time, between seven or ten years, or even more". These include forces of social, economic, political, technological and environmental change that reshape our world and that distinguish themselves from other phenomena based on three fundamental features: length, impact depth and impact extent.

**Big Data, Precision Farming and Disruptive Technologies**  
In a highly competitive context, exposed to the pressures of growing demand and facing political and climatic instability, a technological revolution is currently underway in the agribusiness sector. This revolution promises to transform the way we produce and consume food, feed, fibre, and biomass sustainably while delivering substantial returns to companies and consumers throughout the value chain. The book titled 'Agriculture as an Alternative Investment: The Status Quo and Future Perspectives,' developed in collaboration with Antin IP Professorship in Infrastructure Finance, provides an overview of the major innovations and megatrends in the agribusiness industry.

**Regenerative Agriculture and Carbon Farming**  
In the strategy towards climate neutrality of the European Union, agriculture is one of the key sectors for removing CO2 from the atmosphere. The European Commission is working to promote the spread of carbon farming on a large scale, but the difficulties in creating a virtuous system could compromise the achievement of the set objective. Invernizzi AGRI Lab is studying the potential economic impact of carbon farming on the agribusiness value chain and the benefit that companies could derive from adopting sustainable agricultural practices.

**The True Cost of Farmland**  
Farmland belongs to the broader category of investments in Natural Capital, aimed at enhancing the conservation of natural areas and essential ecosystem services, which have an estimated total value of \$ 140 trillion. While institutional investors are increasingly looking at farmland as an asset class and arable land is increasingly scarce, Invernizzi AGRI Lab is investigating alternative pricing models based on ecosystem services, environmental and social risks and future productive potential in terms of agricultural produce.





Resilience in Agribusiness

The theme of resilience has become more relevant than ever in the wake of the recent crises that have impacted the business community. The agri-food supply chains are now seeking to develop strategies to withstand unexpected disruptions. In light of the importance of food security and the resilience of agri-food supply chains, the Invernizzi AGRI Lab is studying the impacts of the recent crises caused by COVID and the war in Ukraine, as well as investigating actions and strategies to withstand and adapt to events like those recently experienced.

3.4 Independent Main Publications



Book – Agricoltura tra sostenibilità e Innovazione: 1° rapporto di analisi economico-finanziaria delle aziende agricole italiane

Through the collaboration between Crédit Agricole Italia and Invernizzi AGRI Lab, the volume provides an overview of Italian agricultural companies by analyzing production factors and their interaction with asset and financial data. The book presents the research results, which involved more than 2,000 observations of Italian farms, and

attempts to provide an original perspective on the primary sector. It aims to be an information source based on reliable budget analysis methodology that can not only detect anomalies but also explain why they occur. The results seem to challenge widely held beliefs that have marked the industry for decades and could lead to the definition of a different managerial strategy for large farms.

Book – Agricoltura tra sostenibilità e Innovazione: 1° rapporto di analisi economico-finanziaria delle aziende agricole italiane



The book, co-authored by Antin IP Professorship in Infrastructure Finance, addresses the pressing challenges facing agriculture due to climate change and social shifts, highlighting the need for increased productivity and resource efficiency. It emphasizes the growing interest of investors and asset managers in agriculture as a long-term strategic investment, driven by technological innovations and environmental concerns. The book explores disruptive technologies that can improve agricultural processes, reduce food loss and waste, and enhance sustainability. It also assesses the current state of agriculture investing, outlines the unique characteristics of the agriculture asset class, and

identifies innovative technological advancements for long-term sustainable returns.

E&M Article – Le montagne russe del vertical farming: dall’hype ai disinvestimenti

Vertical farming, due to its ability to conserve land and water, reduce pesticide and herbicide use, protect crops from extreme weather events, is a strategic sector for addressing agribusiness challenges. However, between late 2022 and early 2023, investments in this sector decreased, leading to a wave of disinvestments, job cuts, and restructuring. This decline can be attributed to a phase of "disillusionment," where the hype gives way to a more critical evaluation of what truly works, typical in VC investments in emerging technologies. After this phase of disillusionment, the sector may still experience a new wave of investments due to the increasing interest in climate tech. This could lead to innovations in business models and a revival of investments in vertical farming, although a greater focus on sustainability and profitability is required, both of which could potentially be ensured through technological advancements.

E&M Article – Resilienza nell’agribusiness: l’altra faccia della medaglia della globalizzazione

This article discusses the concept of resilience, particularly in the context of supply chains in agribusiness. Resilience, which gained prominence due to events like the COVID-19 pandemic and geopolitical conflicts, is vital for ensuring the continuous production and distribution of essential food and goods. The Invernizzi AGRI Lab at SDA Bocconi’s research highlights the growing scientific interest in

studying the resilience of agrifood supply chains. Collaboration, redundancy, robustness, flexibility, visibility, digitization, adaptability, efficiency and agility emerge as key attributes for achieving resilience. It also emphasizes how these enabling attributes depend primarily on managerial decisions at the strategic and tactical levels. Finally, the study highlights the relationship between resilience and sustainability, showing that the transition to more sustainable agribusiness systems strengthens the resilience of supply chains.

E&M Article – “Tutto è guidato dai prezzi, ma a quale costo?” Le sfide delle collaborazioni nelle filiere del settore agroalimentare

Supply-chain collaborations are key strategic levers to compete on the global market. In the agri-food industry, however, they are still hindered by obstacles at corporate and individual level that are traceable back to the industry overall structure, to the balance of power among its actors and to its products’ features. Resistors include the lack of trust between partners, difficulty ties in managing the industry complexity, the poor collaboration culture, the low integration of processes and IT systems between companies, the limited propensity to share information, and leadership deficits. Overcoming the global environmental and social challenges will require firms to address these challenges and to extend collaborations to non-commercial actors, as regulators and civil society.

E&M Article – Suolo, efficienza e finanziamenti: storia di un’agricoltura sostenibile

This article highlights that 60% of European agricultural soils are in a state of degradation due to urbanization, erosion, pollution,

and intensive farming. The European Union is addressing this challenge through Conservative Agriculture, an approach that promotes sustainable practices to make soils more efficient and restore ecosystem services. This not only helps meet European regulations but also directly impacts the financial sustainability of agricultural businesses. Soil is the primary productive asset of agricultural businesses and serves as the primary collateral for loans and financing provided to agricultural enterprises. For this reason, the role of financial institutions and investors embracing ESG principles emerges as a powerful driver for the widespread adoption of these groundbreaking practices in the agricultural sector. Soil, the most valuable asset of agricultural enterprises, is at the heart of this transformation toward a more sustainable agricultural future.

Scientific Paper – Evaluating Value-Driven Agricultural Soil Performance: Using Conservation Agriculture to support Ecosystem Services (forthcoming)

This article introduces a novel model for assessing soil utilization, efficiency, and quality in agroecosystems while considering ecosystem services. It adapts a conventional industrial metric, the Overall Equipment Effectiveness, to the agribusiness sector, serving as a valuable tool for farmers, practitioners, and managers seeking alignment with the UN SDGs and the EU’s Farm to Fork strategy. An analysis of crop data spanning from 2011 to 2022 reveals that this pioneering approach provides a far more comprehensive evaluation of conservation agriculture compared to traditional methods. Conservation agriculture emerges as a powerful method

for enhancing overall soil efficiency, with the potential to yield effectiveness improvements of up to 80%. These findings underscore the importance of an interdisciplinary approach that balances short-term gains and long-term sustainability in agriculture operations and supply chains.



Scientific Paper – The Effectiveness of Economic and Financial Interventions in Promoting Milk Quality on Dairy Farms: A Systematic Review (forthcoming)

The dairy industry provides a variety of dairy products to millions of people worldwide and generates employment for agriculture and related industries. However, many dairy farmers, particularly small-scale ones, face vulnerability in the competitive dairy market. To address the growing challenges and competition in the industry, it’s essential for farms to conduct comprehensive economic sustainability assessments that go beyond yield monitoring. This study, based on a SLR, identifies commonly used economic and managerial performance indicators in dairy farms in advanced economies. The study reveals that while current indicators are relevant, they do not fully capture the complex interplay of variables and the nature of economic sustainability. Therefore, there is a need to introduce additional indicators focusing on operational efficiency, effectiveness, strategic investments, and financial strength.





## 4. Custom Research

Invernizzi AGRI Lab conducts tailored research to meet the specific needs of companies, organizations, and public institutions within the agribusiness sector. Through custom research, Invernizzi AGRI Lab helps its partners identify opportunities, make informed decisions, and implement effective strategies to advance their goals and competitiveness.

Through this research, Invernizzi AGRI Lab assists clients in uncovering opportunities and insights specific to their sector, market, or challenges. The collaborative nature of custom research allows us to address their questions and concerns, guiding them toward well-informed decision-making processes and the implementation of effective strategies. This tailored approach to research forms a critical bridge between knowledge and practical action, helping partners not only stay competitive but also drive progress and innovation in their respective domains.

### 4.1 Main Custom Research Activities

#### Leone Alato SpA - Enhancing Complex Beer and Wine Supply Chains Contracts

This custom research explores Italy's wine and beer sectors as vital components of the country's cultural heritage and economic landscape. It delves into supply chain contracts within these sectors, discussing their concept, objectives, and the benefits they offer to various stakeholders. The report emphasizes the cultural significance and economic impact of viticulture and brewing in Italy. It also provides strategies for efficient and sustainable supply chain management and underscores the role of research and innovation. The research underscores the importance of supply chain contracts for enhancing cultural heritage, economic growth, and sustainability in the Italian wine and beer industries.



#### Generali Act4Green: Engagement on sustainability practices

Generali Country Italia has launched the Generali Act4Green project to raise its employees' engagement with the objective to reduce the company's carbon emissions from commuting, in line with its commitment to climate neutrality. The Invernizzi AGRI Lab is supporting Generali Country Italia in this initiative by carrying out a survey on its employees' travel habits, to identify the most effective engagement levers, calculate the firm's emissions baseline and establish emissions reduction targets.

#### Generali Act4Green: Carbon Offsetting Forestation Project

Generali Country Italia has decided to accelerate the transition to climate neutrality by increasing direct CO2 sequestration. The company intends to achieve this result by exploiting currently underutilized land owned by Genagricola 1851 (the group's agricultural company). The Invernizzi AGRI Lab supports the design of forestation projects, conducts preliminary feasibility assessments, sizes of forestation interventions, analyzes the project's economic sustainability and evaluates the assets and finances. Furthermore, the Lab measures the incremental value of these natural assets using the Natural Capital evaluation method, highlighting the project's significance for both the environment and the economy.



## 5. Initiatives

Invernizzi AGRI Lab dissemination and education Initiatives are aimed at spreading refreshed managerial culture in the industry. Executive education initiatives are primarily designed for farmers and technicians of the industry to foster the introduction of management knowledge and practices alongside technical and agronomic knowledge. Dissemination initiatives engage the business community and relevant stakeholders over frontier and critical topics, providing the Invernizzi AGRI Lab with continuous guidance on future impactful research activities. Every year, Invernizzi AGRI Lab design and delivers several executive and custom education initiatives as well as seminars, conferences, webinars and focus groups on specific topics of general interest.

### 5.1 Education

#### MOOC: Challenges of Agribusiness Management

In 2020, Invernizzi AGRI Lab launched the Challenges of Agribusiness Management MOOC on Coursera. The goal of this course is to make available the understanding of the challenges and opportunities of agribusiness to the largest possible audience. From farms to retailers, from input providers to traders, all the diverse players of this value chain interact in a complex business environment in which nature, policy, technology and management strategies have to be considered to overcome future challenges and seize upcoming opportunities. Every year Invernizzi AGRI Lab we update the course with up to date data, new releases and features. So far, 10.000 students from around the world have enrolled in the course.

### 5.2 Dissemination

#### Agriculture between sustainability and innovation - Milan 18/05/2023

Since more than 90% of companies are exempt from accounting record-keeping requirements, the Italian agricultural sector has received little attention from researchers studying financial and economic performance. Estimates

and predictions regarding profitability were used in place of a statistically significant sample for data collection and analysis, which could have resulted in policy errors and decreased private capital investment. Researchers from the Invernizzi AGRI Lab examined information from more than 2000 companies, which was made possible by an anonymous database provided by Crédit Agricole Italia. Important players in the agriculture industry have contributed and presented findings at the event.

#### Presentation of the Commodities Monitor - Milan, 24/10/2023

Geopolitical tensions and climate change are rendering the commodities market more volatile and straining both domestic and international supply networks. The process that agriculture has evolved in response to the energy crisis is also beneficial for the emergence of new markets and the rise in exchange complexity. The Associazione Granaria Milano and the Invernizzi AGRI Lab have presented the research project dedicated to the analysis of commodity markets. The "Commodities Monitor" is an ambitious initiative created to provide research and analysis to assist all industry stakeholders in better understanding the continuous changes in the market and supporting them in overcoming its challenges.

#### Agriculture as the Engine of Change and Progress - Milan, 14/11/2023

The structure of the food system, shaped by globalization, faces growing pressures for change. Key challenges include increasing agricultural productivity, reducing food waste, efficient use of natural resources, extending safe food and water access globally, and optimizing value distribution along the supply chain. While agribusiness is pivotal for achieving the UN's Sustainable Development Goals, it's seldom seen as a driving force for change. The event organized by Invernizzi AGRI Lab aims to explore the inherent potential of the agricultural sector as a catalyst for change. Through the experiences of experts and organizations that have turned food system challenges into opportunities, it seeks to inspire a renewed perspective on agriculture, fostering cultural change among stakeholders and the general public.

#### Sustainability: the new path for the development of agriculture - Milan, 21/11/2023

Climate change, natural resource management, crop sustainability, and land use are some of the important issues affecting the agricultural industry nowadays. In this context, the innovative technologies used in the most modern machinery are a key enabler for adapting and evolving





agricultural production in the face of an ever-growing world population. During the event, organized by the Bocconi Alumni of Topic Sustainability in collaboration with Topic Digital&Innovation, we have a discussion on the role of technologies in agribusiness with CNH Industrial, the world's second largest manufacturer of agricultural machinery, a leader in automation and precision technologies and a pioneer in the development of alternative powertrains.

**Seminars and Webinars**

Through periodic seminars and webinars, InvernizziAGRI Lab updates the business community on the advancement of research activities on specific topics. Researchers and guest speakers discuss the findings and the needs for further research to maximize the impact of the outcome on the industry. The topics covered so far are: private equity and venture capital investments in the agribusiness, heritage and luxury food products, land grabbing and traceability.

**5.3 Engagement**

**Milk the Future, MAN Italia - Cremona 14/09/2023**

The event, "Milk The Future," brings together professionals in the agriculture and dairy industry, including breeders, nutritionists, technicians, and veterinarians. It emphasizes the need to address present-day challenges while also looking towards the future, whether in the coming months

or years. As entrepreneurs, these professionals are encouraged to plan future agronomic and economic choices and anticipate changing consumer preferences. "Milk The Future" provides insights and reflections to enhance their entrepreneurial journey by offering a glimpse into the future of the dairy cow world, although not predicting it.

**Agri Data Green Summit, X-Farm Technologies, Milano - 29/09/2023**

This event, organized by tech company X-Farm Technologies, had the goal of accelerating the digital transition in the agri-food sector. Over 20 entities participated, including Barilla Group, Engie, Argo Tractors, Amazon Web Services (AWS), Invernizzi AGRI Lab. The summit addressed contemporary challenges like combating climate change by providing the agricultural sector with new risk management tools and promoting regenerative farming practices to increase carbon sequestration. To embrace this new agricultural model, besides adopting new technologies like Artificial Intelligence, there's a need for a fresh approach and collaboration among industry associations and stakeholders to promote new skills.

**International Symposium On GIAHS and Family Farming 2023 ,FAO FAO-Tokyo 27-29/11/2023**

The International Symposium in Tokyo will discuss various aspects of GIAHS (Globally Important Agricultural Heritage Systems). GIAHS, a FAO Initiative, represents dynamic systems where

human communities are closely linked with their environment, encompassing cultural, agricultural, and social dimensions. The Symposium will focus on key objectives: improving rural communities' economic well-being, promoting sustainable agriculture, conserving biodiversity, and enhancing overall life quality within GIAHS sites. Vitaliano Fiorillo, Director of Invernizzi AGRI Lab, will lecture on sustainable approaches to enhance farmland value and environmental conditions.

**POLICY MAKING- Generazione Cibo, Camera dei Deputati Roma, 26 /10 /2023**

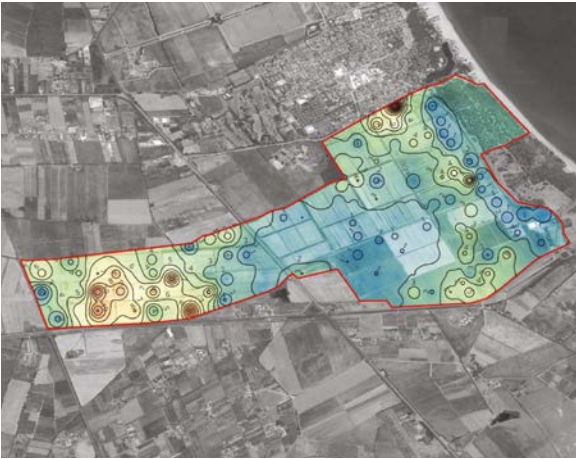
Agribusiness combats land degradation, safeguards biodiversity, and manages water resources, as well as facilitating CO2 sequestration from multiple sectors and reducing emissions in agriculture. To seize opportunities from agriculture, the "Generazione Cibo" initiative was presented at the Chamber of Deputies. The primary objective of this initiative is to establish a dynamic, multi-stakeholder platform dedicated to delving into the complexities of carbon farming. It aspires to underscore the fundamental role that the agribusiness sector can assume in the global fight against climate change. Vitaliano Fiorillo, director of the Invernizzi AGRI Lab and scientific member of the initiative, shared the extensive academic knowledge and expertise cultivated in the field of carbon farming. His speech aimed to bridge the gap between academia and institutions, forging a collaborative pathway towards a sustainable and resilient agricultural future.



**Vitaliano Fiorillo, Director of Invernizzi AGRI Lab - introduces the event organized with Crédit Agricole Italia**



**Invernizzi AGRI Lab meets with a group Agribusiness Management Development Program Alumni.**



**Preliminary cartography for Generali Act4Green Forestation Project**



**Generazione Cibo Press Conference**



**Marianna Lo Zoppo, Coordinator of Invernizzi AGRI Lab in Challenges of Agribusiness Management MOOC on Coursera**





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