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# Agri-food Resilience

## How to implement risk management solutions across the supply chain

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The **Agri-Food Resilience** event, organised by dss+ on **3 March 2026** at the Hotel I Portici in **Bologna**, brought together the key players in the Italian agri-food sector to discuss how to implement concrete solutions for risk management along the supply chain.

The discussion was guided by the three key words **Protect** - identifying and quantifying risks; **Transform** - putting concrete actions in place to reduce them; **Sustain** - sustaining change over time through cultural transformation.

The analysis confirmed that food production is currently under pressure on two fronts: the growing challenges posed by processing methods and the difficulties in sourcing raw materials, which are increasingly affected by climate change and geopolitical instability.

# The context: a sector under pressure

The discussion during the event highlighted a clear picture. **Climate change** is now perceived as the most significant risk to the sector. Increasingly severe and unpredictable events, altered seasonal cycles and frequent water crises are putting agricultural and livestock systems at risk, with **negative effects** on **production efficiency** and the **quality of output.**

Added to this is the **volatility of raw materials**, fuelled by both **geopolitical conflicts** and **tensions over natural resources.** Global commodity markets introduce financial dynamics that can be influenced as much by price volatility as by the interconnections between sectors - such as energy and food.

Finally, **demographics. Demographic change** poses a risk on the consumer side (where preferences can shift suddenly and sometimes emotionally) on the production side. A survey conducted by dss+ on a sample of around 1,500 farmers revealed that approximately 55% had not identified a business succession plan, despite the average age of the owners being over 50.'

These pressures are no longer theoretical. They are increasingly shaping real-world investment decisions. A clear sign of how **risk** has entered **financial assessments:** an Arab sovereign wealth fund recently abandoned the acquisition of a Spanish agri-food company due to uncertainty over access to water over the next thirty years.

> Often, the speed at which risks arise exceeds the speed of corporate responsiveness and strategy: it is essential to focus on what can be controlled.

**Stanislao Fabbrino, Deco Industrie, Fruttagel**

### Climate change

Extreme weather events, droughts and water crises are hitting Italian production hard: in 2023, agricultural value added fell by -2.5%, with wine down -17% and fruit at -11% (Tagliacarne Institute). The EEA estimates a 9% loss in the value of agricultural land for every degree of temperature rise in the Mediterranean region.

### Commodity volatility

In 2024, cocoa and coffee prices rose by +48% and +83%; butter exceeded €8/kg, an alltime record (Areté/Unione Italiana Food). According to Nomisma, the volatility of agricultural prices has now tripled compared to the 1990s.

### Demographic change

The average age of Italian farmers is 63, and only 7.5% of farms are run by people under 35, compared with a European average of 18% (ISMEA, 2024). Twenty-eight per cent of workers in the primary sector are aged between 55 and 64: generational renewal is one of the most pressing structural challenges.

**Agri-food systems** are characterised by **specific features** that must be understood in order to define strategies for improvement.

**A fragmented organisation**. Upstream of food producers lies an extremely complex supply chain often fragmented across numerous small producers and local cooperatives, which makes production difficult to relocate. Very often, businesses are family-run: this is a distinctive feature of the sector, but at the same time limits average profitability and investment capacity.

**Local markets vs. global commodities.** In contrast to extremely local production, there are typically global markets for raw materials.

The **Italian agri-food system** exports excellence (pasta, cheese, cured meats) but **relies on imports for the raw materials needed to produce it**. The self-sufficiency rate for maize and soya - basic ingredients in animal feed - has fallen to 46% and 32% respectively, with supplies concentrated in countries such as Brazil and Ukraine. A single geopolitical or climatic event in these areas can ripple through the entire supply chain, with consequences that local producers can neither anticipate nor control

## Italian agriculture: remains family-run

93,5%

**of Italian farms are individually or family-run**

Source: ISTAT, 7th Agricultural Census 2020

-50%

**of small family farms over a 15-year period, whilst large farms have doubled: the sector is becoming more concentrated, but family-run structures still dominate.**

Source: Eurostat, 2007–2022

**Family farms average around**

8-10 ha,

**compared to**

40-50 ha

**for corporate farms – making them roughly five times smaller. Evidence shows that only larger farms consistently achieve positive returns on labour and invested capital.**

Source: FAO, World Development (Lowder et al., 2021)

# The pace of change

Whilst innovation in the industrial sector is often faster, in the agri-food sector it is essential to respect **nature's timescales.** These range from cycles of just a few weeks in lettuce cultivation to the 24 months required to let alone the time to grow a hazelnut tree and harvest. These cycles influence both innovation and the focus of **finance**, which, in its role of supporting growth, imposes investment payback periods often limited to five years, placing **new pressures on value creation.**

"We need to find a new way of collaborating within the agri-food supply chain to reduce speculation and build relationships based on competence, trust and an understanding of complexity.

Claudio Mazzini - Coop Italia

"The paradigm is changing: the market no longer looks solely at product quality, but at the quality of the process that generates it.

Paolo Bulgarelli - Lactalis Italia

The issues are sufficiently clear, and a thorough understanding of the production system allows us to identify any complexities. When it comes to solutions, two fundamental aspects emerge: on the one hand, **technology**; on the other, **people**.

### Technology and data

The need for data, accurate forecasts and systems to use resources efficiently is now being met by the technology available. **Artificial intelligence** systems, **drones for** crop **monitoring**, specialised fertilisers and seeds, and **advanced weather forecasting** tools: the tools are there. The **challenge** is to make them accessible and ensure they are adopted throughout the supply chain.

### People and organisation

The interconnectedness of production systems and the significant demand for labour make the role of **people** fundamental. Bringing innovation to the fields requires adequate **economic incentives, effective communication and individuals** capable of bridging the gap between the agricultural and industrial sectors. **Collaboration along the** value **chain** is essential for building **stable and sustainable relationships.**

“

We must not forget to factor in consumer engagement. We have plenty of data and KPIs, but the real challenge is understanding what to communicate clearly and transparently.

**Leonardo Mirone - Barilla**

## The technology is there - the challenge is to adopt it

**€2.5bn**

**€2.5bn the value of the Italian market of precision agriculture in 2023, with annual growth of +19%**

Source: ICSC Observatory 2024

**72%**

**of Italian farms already use at least one digital technology; more than half use more than one**

Source: ICSC Observatory 2024

**-15%**

**reduction in fertiliser use with AI-based variable-rate application systems: savings of up to €10,000 per year per farm**

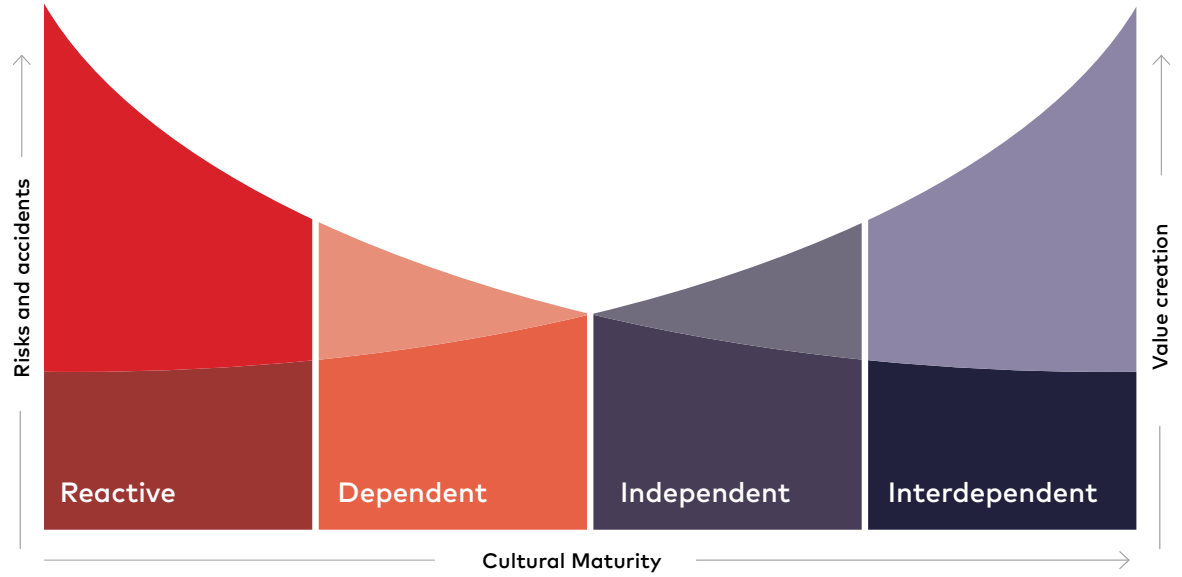
Source: Balafoutis et al. / European Review of Agricultural Economicsof Agricultural Economics

**Example:** in Italy, the Olivair project has reduced olive harvesting costs on sloping land thanks to the use of specialised drones. The real challenge is not the availability of the tools, but their accessibility and widespread adoption throughout the supply chain - especially in small-scale operations.

# dss+ / Bradley Curve

> Transformation begins first and foremost with a cultural shift: when people's awareness changes, so do consumption patterns and, consequently, business models.

**Sergio Castellano, Chef Express**




### Responsive

People do not take responsibility. They believe that safety is a matter of luck or 'management'. Accidents 'just happen'. Over time, accident rates remain high.

### Employee

Safety is seen as compliance with rules and management decisions. Accidents decrease because safety is "controlled". It is those in authority who ensure safety.

### Independent

People take individual responsibility. They believe that their own actions make a difference. Accidents are reduced further.

### Interdependent

Teams share responsibility and a sense of ownership over safety. We look out for one another. The goal becomes zero accidents. Safety is a shared cultural value.

## Cultural change as a strategic lever

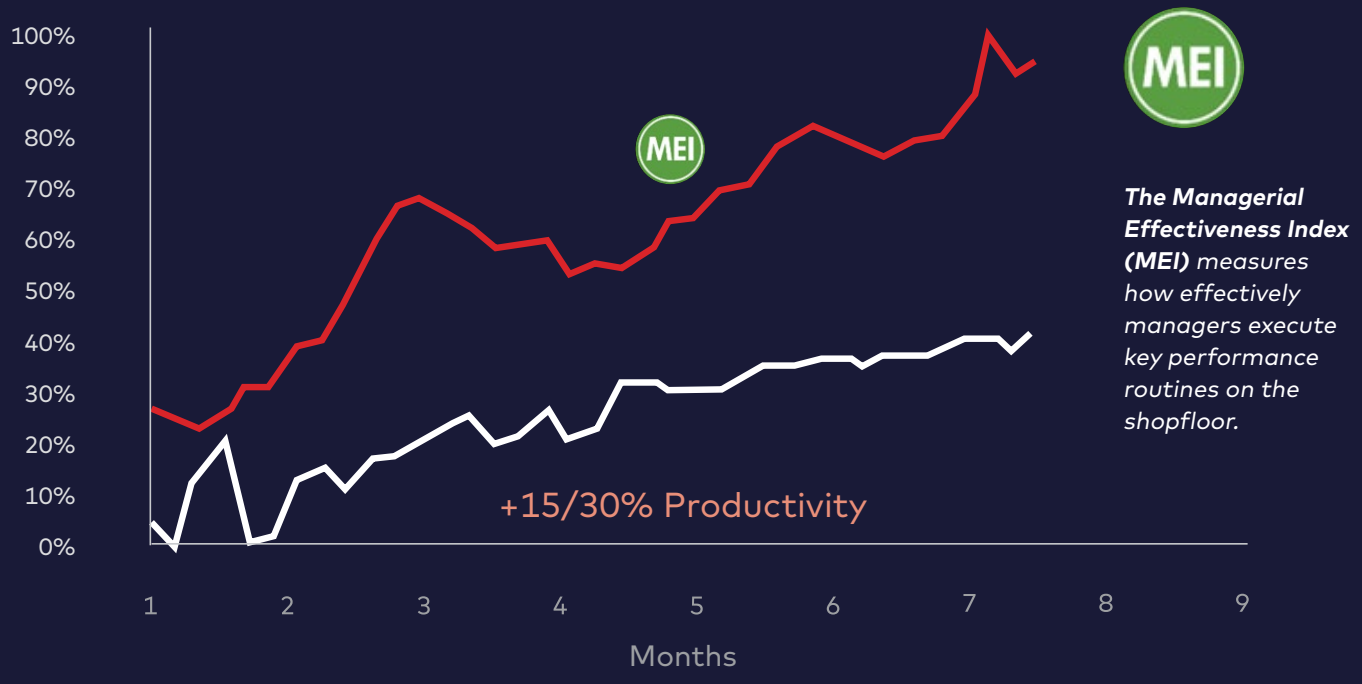
No transformation can succeed without the **involvement of people**. Working on cultural improvement is the defining feature of the dss+ value proposition. Using the **dss+ Bradley Curve** model as a reference-which describes the transition from a reactive or dependent approach-based on mere compliance with rules - to one that is initially independent and gradually becomes increasingly interdependent, in which **people** become **active agents of change**, it becomes clear that in agri-food supply chains a purely top-down approach is doomed to fail.

dss+'s extensive experience in cultural transformation has enabled it to develop an approach that begins **by listening directly to people**, which helps to identify the cultural barriers that need to be broken down. Alongside training, **on-the-job coaching** approaches have been developed to help people change their approach through **clear routines and specific objectives**. Transformation cannot be a one-off event: it must be **gradual, participatory and structural.**

# Behavior is the single most predictive factor you can measure when assessing performance

Based on over 20 years of experience in performance improvement, the **Humex approach** strengthens the impact of frontline leaders on operational quality, productivity, and safety. Through training and **coaching** on **shop floor management routines**, we develop capabilities that enable sustainable performance improvement.

## Food Sector




MEI

***The Managerial Effectiveness Index (MEI)*** *measures how effectively managers execute key performance routines on the shopfloor.*

dss+/Proaction

The graph shows a clear relationship between improvements in managerial behaviour (measured via the **MEI – Management Effectiveness Index**) and increased productivity over time.

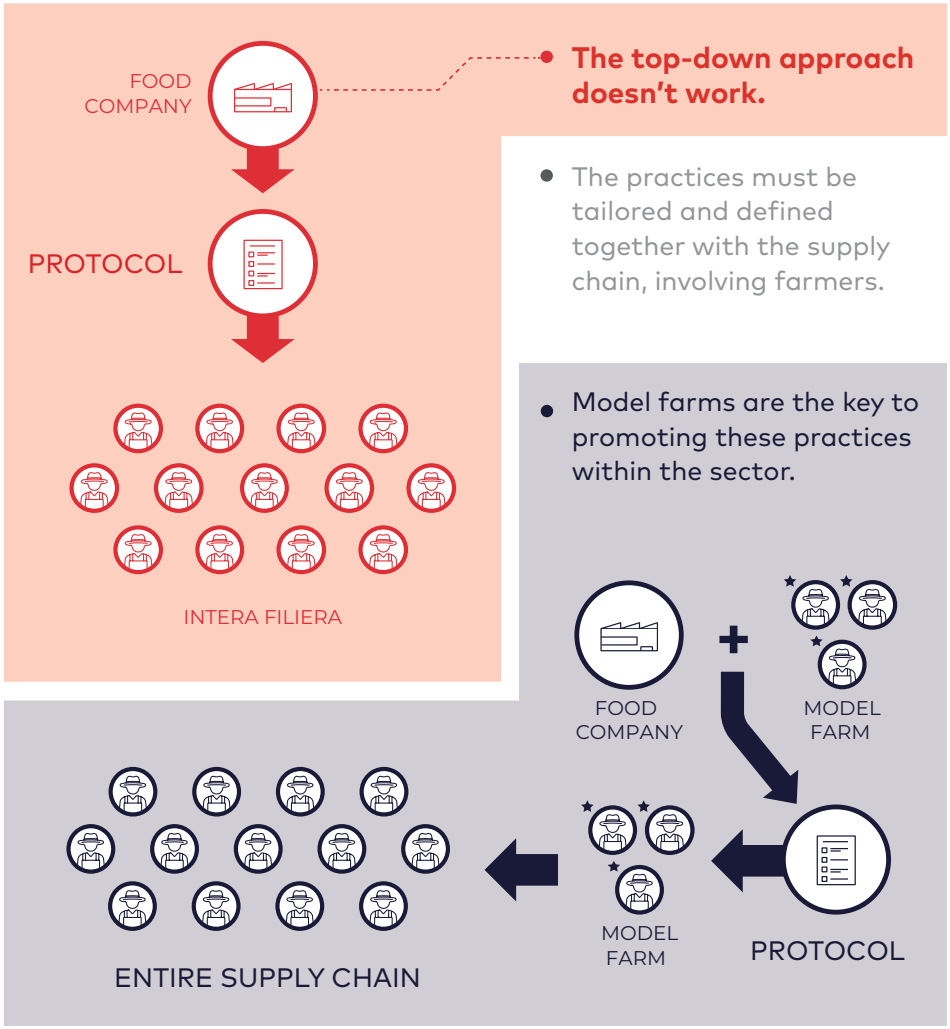
Over a period of around eight months, the MEI index rose steadily due to the increased implementation of operational management practices on the ground (e.g. daily operational meetings, handover briefings at shift changes and active supervision). At the same time, **productivity** also **increased by up to 15%,** highlighting how the strengthening of managerial routines has a **direct and positive impact** on operational performance.

# Model Farm Approach

A supply chain approach to regenerative agriculture

The top-down approach does not work. Sustainable agricultural practices must be defined in collaboration with the supply chain, involving farmers from the outset. Model farms - selected pilot farms that test and validate changes - become the key to rolling out new practices across the entire supply chain in a credible and replicable manner.

The model is structured in three phases: (1) the food company and the model farm jointly define the protocol; (2) it is tested and refined in the field; (3) the protocol is scaled up to the entire supply chain with the support of the pilot farms acting as peer educators.




In a sector so closely linked to people and nature, cultural change is the only factor capable of enabling the transformations needed to reduce risks and build a sustainable future.

# Key takeaways: from known challenges to emerging priorities

1. The **availability of raw materials** is increasingly influenced by the effects of **climate change** and by increasingly volatile and **interconnected**.

2. **Demographic change** is putting the sector's production continuity at risk, as well as influencing consumer demand.

3. **Collaboration across the supply chain is essential** for reducing volatility and speculation, by building relationships based on **expertise** and **trust**.

4. Technologies to support forecasting and efficient production are already available: it is the **involvement of people** that is the key to promoting their widespread use in a collaborative manner, **avoiding top-down approaches**.

5. **Cultural improvement** is the **enabling factor** for reducing risks in the sector and building a more resilient agri-food supply chain.

# Event speakers

**Enrica Gentile**
Areté,

**Andrea Pietrobelli,**
Cereal Docks Group

**Paolo Bulgarelli**
Lactalis Italia

**Andrea Vitali**
OP Oasi

**Filippo Bertuzzi,**
Areté

**Sergio Castellano**
Chef Express

**Bianca Serito**
Lavazza

**Giovanni Causapruno**
xFarm

**Leonardo Mirone**
Barilla

**Claudio Mazzini**
Coop Italia

**Antonio Salvatore**
Op Oasi

**Consorzio Melinda**
Luca Lovatti

**Laura Pisani**
Bolton Food

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**Tommaso Bertolini**
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**More info about the event here:**

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**About dss+**

dss+ is the operational transformation partner for complex and high-hazard industries. Driven by our purpose, we help organisations achieve breakthroughs in safety, performance and sustainability that build business endurance and ensure long-term success.

We engage deeply within organisations to empower teams to shift mindsets, shape cultures, and establish the capabilities required at every level. We combine technical expertise and operational experience with a people-centred approach and data-driven insights. Additional information is available at **www.consultdss.com**.

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