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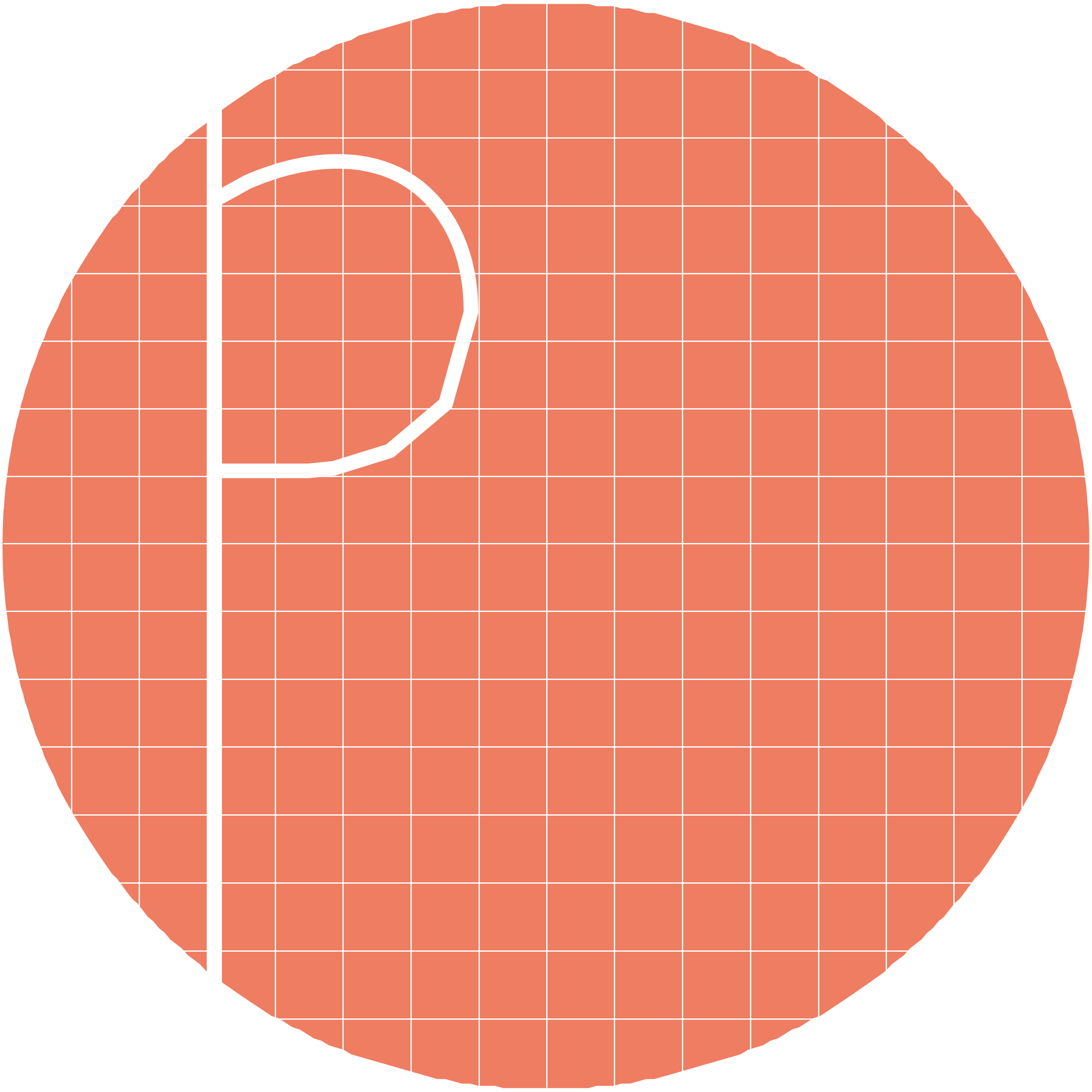
# Paper: Out of the pandemic and into the war

The state of health of “Made in Italy” agri-food.



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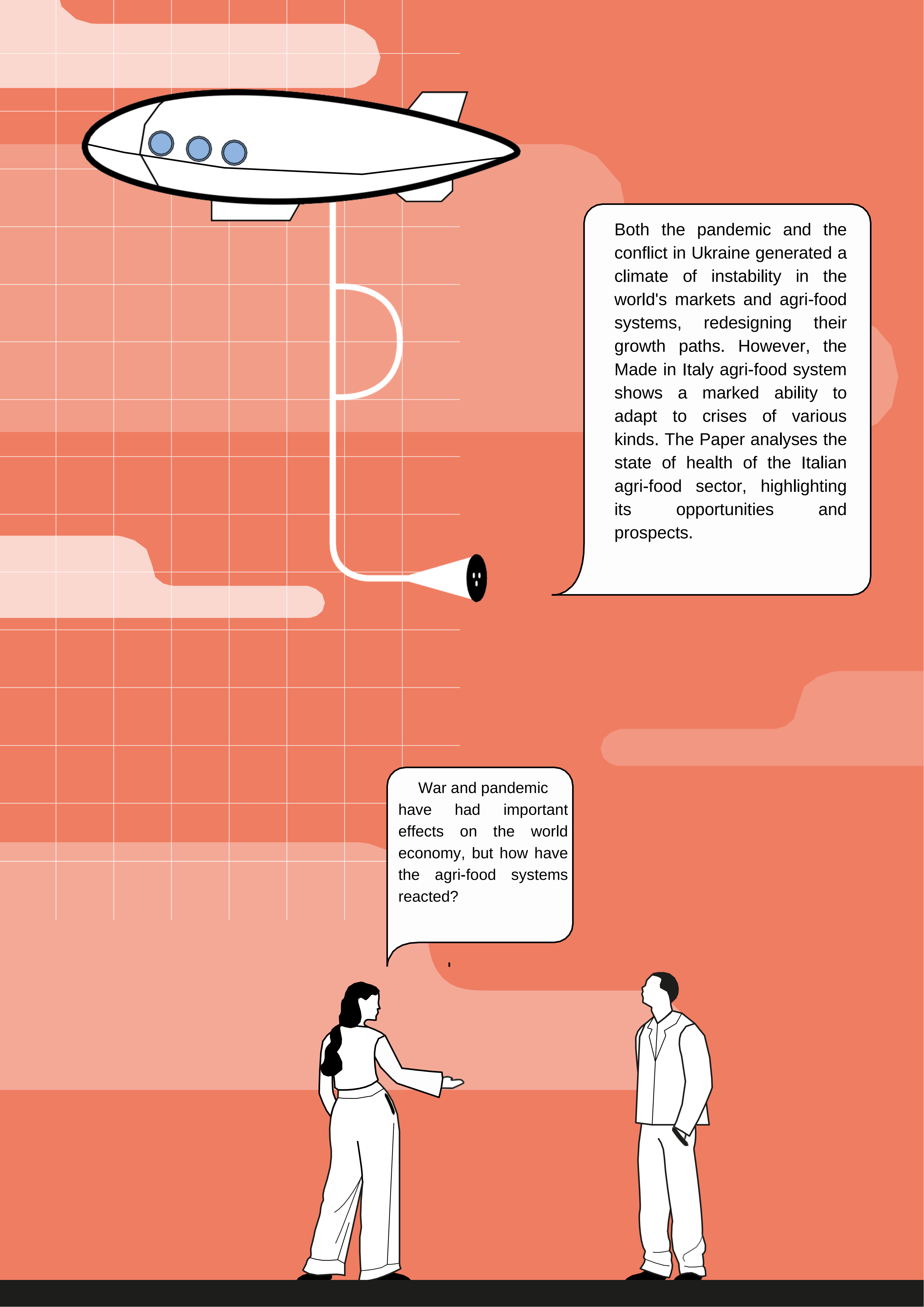
Both the pandemic and the conflict in Ukraine generated a climate of instability in the world's markets and agri-food systems, redesigning their growth paths. However, the Made in Italy agri-food system shows a marked ability to adapt to crises of various kinds. The Paper analyses the state of health of the Italian agri-food sector, highlighting its opportunities and prospects.
War and pandemic have had important effects on the world economy, but how have the agri-food systems reacted?

## Abstract

- First the pandemic and then the war inevitably contributed to redesigning the growth paths of agri-food systems. The Paper focuses in particular on the Italian model and its ability to adapt to crises of various kinds.

- The ups and downs in the prices of production factors in recent months have raised many concerns for agricultural producers, as have the drought events of the last year. But the sector has shown unprecedented resilience. Italian agriculture is more alive than ever and the immense heritage of values it expresses continues to fuel the race of Made in Italy to conquer the markets, with a record 60 billion Euro of exports in 2022.

- In the last three years, electronic commerce in Italy has recorded a growth close to 50% and many of the agro-food companies have undertaken this path. In 2022, 48.2% of the population made online purchases for an estimated value of nearly 45 billion Euro. Food is confirmed as one of the most dynamic sectors with a 17% growth compared to 2021, but still remains far from the most important sectors. In fact, only 6.1% of online buyers used the platforms to purchase agri-food products, far from the percentages of those who buy clothing online (19.4%), household items (10.3%) and technology (7.7%). However, the food delivery theme seems to have passed the threshold of necessity and even that of temporary fashion, with 5 million downloads in 2022 for the 3 main reference platforms.

- Although access to innovations is growing at a rapid pace in the sector, with digitised agricultural enterprises having quadrupled in the last decade, the diffusion of innovation still suffers from territorial and company size differences. It is a question of networks, of connections, but also of the evolution of services that need to be promoted in order not to leave anyone behind. If encouraged, digital innovations and e-commerce could in fact help the growth of Italian agriculture and Made in Italy products.

- Furthermore, Italy is experiencing a significant infrastructural delay with 77 billion Euro of lost exports. The peaks of Made in Italy excellence, such as the agri-food sector, among the hardest hit, with 8 billion Euro of lost exports, are penalised in particular. All of this recalls the need for investment and upgrading of Italy's material infrastructures, without forgetting the significant issue of the country's water shortage.

- The Paper explores the fundamental role that Italian agriculture already plays in the ecological transition and in the defence of the environment and the territory, but also underlines the need for greater investments to make the European and Italian agri-food chains even more sustainable and competitive. Last but not least, it highlights the importance of integration with tourist routes capable of conveying art, culture and food: an essential route to strengthen the link between tourism and agri-food and to make it a "unique heritage".

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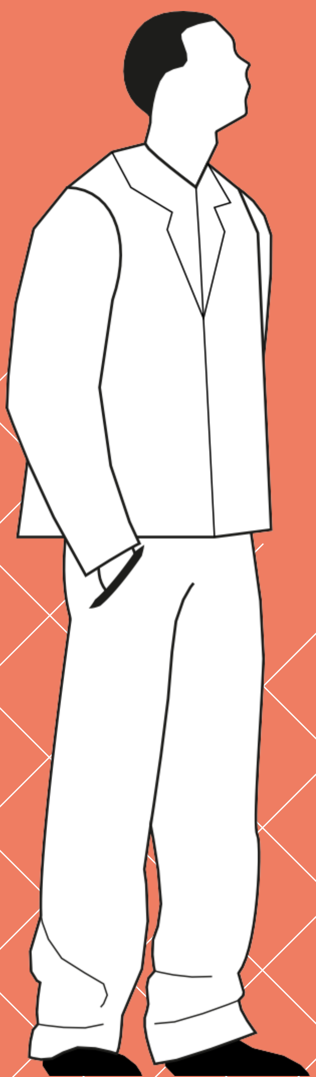


# Index

1. The growth paths of agri-food systems - p. 9
2. Intangible networks and e-commerce - p. 13
3. Material infrastructures - p. 17
4. De-carbonisation of the agri-food supply chains - p. 21
5. Integration with the tourist and cultural offer system - p. 29

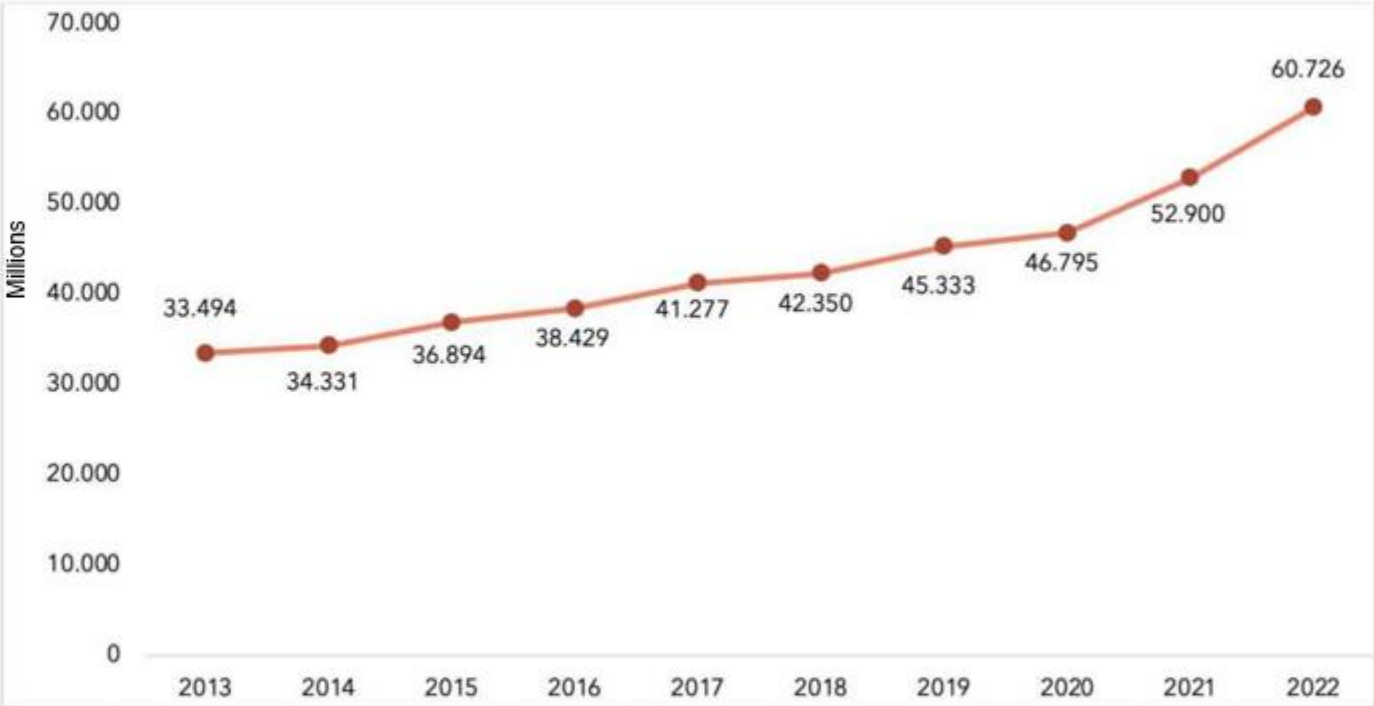
Bibliography - p. 33

# 1.

# 1. The growth paths of agri-food systems

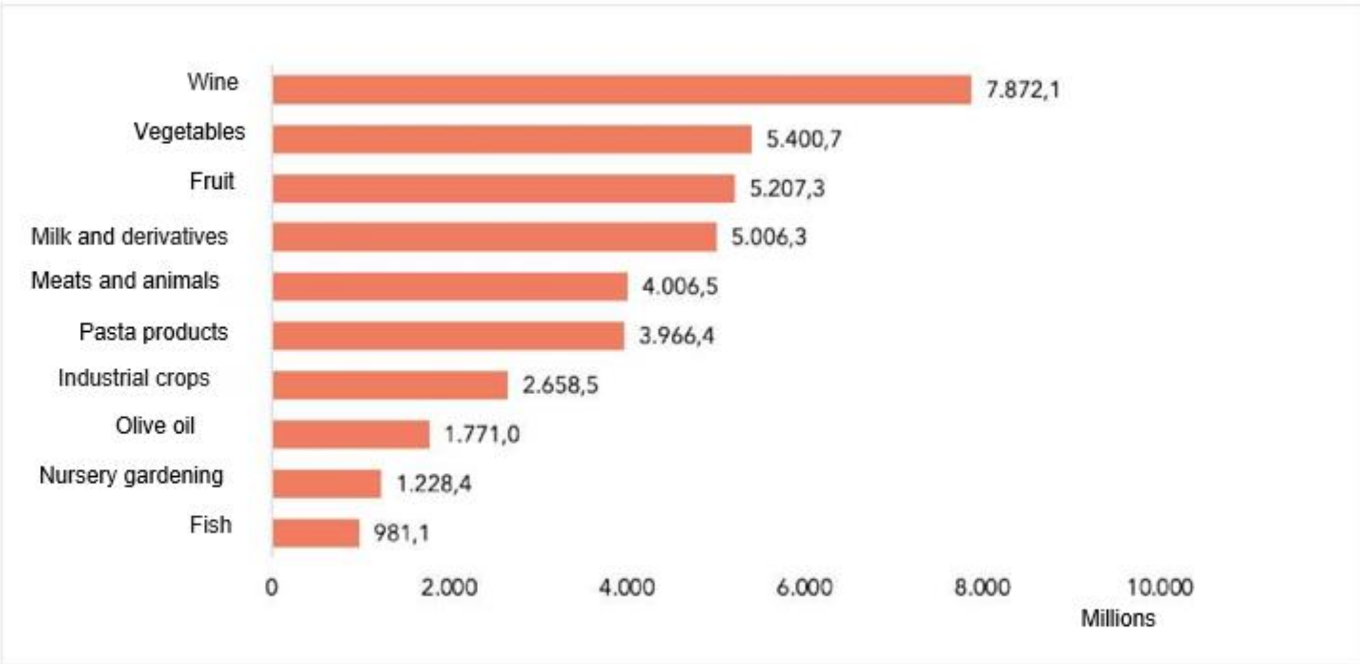
First the pandemic and now the conflict in Ukraine are rewriting the growth paths of agri-food systems, within an institutional framework that progressively enriches the set of prescriptions functional to the creation of more sustainable agri-food systems. How is the “Made in Italy” agri-food system moving in this scenario and what are the crucial aspects to be explored to ensure that social responsibility and economic sustainability can grow together? The starting point are the numbers of the sector which, perhaps in Italy as in no other part of the developed world, has shown an important capacity to adapt, both to historical circumstances and to the increasingly evident impacts of climate change. Over the past decade, the national food system has seen the value of exports almost double, rising from 33.5 billion Euro in 2013 to 60.7 billion in 2022. In 2019, before the pandemic, we had reached 45 billion, with growth in the last 3 years of over a third (+15 billion) (1). Leading Italian agri-food exports are the peaks of Made in Italy excellence, such as wine with just under 8 billion Euro, vegetables with 5.4 billion, fruit with 5.2 billion, cheeses with 4.4 billion, meat and pasta with 4 billion each. These numbers tell us about a system capable of penetrating markets and reorganising itself, perhaps also by virtue of an agility that derives from an almost naturally "district" dimension of the Italian food supply chains, which sees the medium and small businesses excel both on the agricultural front and on industrial transformation.

Fig. 1.1: Made in Italy agro-food export (2013-2022)




**Source:** Centro Studi Divulga elaboration based on Istat data

Fig. 1.2: Top 10 product exports 2022 (Values, million Euro)



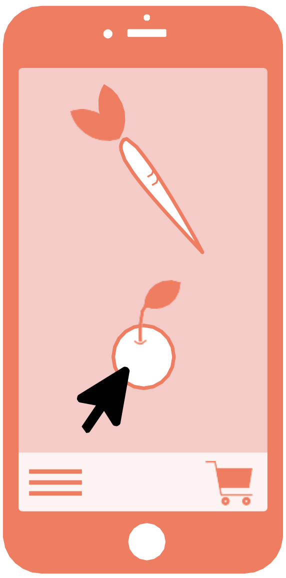

**Source:** Centro Studi Divulga elaborations on Ismea data

There was certainly no shortage of fibrillation and moments of great difficulty, both during the "lockdown" season and in the first months of the war. The ups and downs in the prices of production factors have at times appeared capable of bringing agricultural producers to their knees, as have the drought events of the last year, but this has not been the case. Italian agriculture is more alive than ever and the immense heritage of values it expresses continues to fuel the Made in Italy race to conquer the markets.

Some issues must, however, precisely in the light of this capacity for resilience, be addressed, to help our agri-food systems and to unleash all their extraordinary potential.

In this work we have grouped them into four policy areas: intangible infrastructures, in particular electronic commerce; material infrastructures at the service of production and the environment; decarbonisation; integration with the tourist and cultural offer system.

# 2.

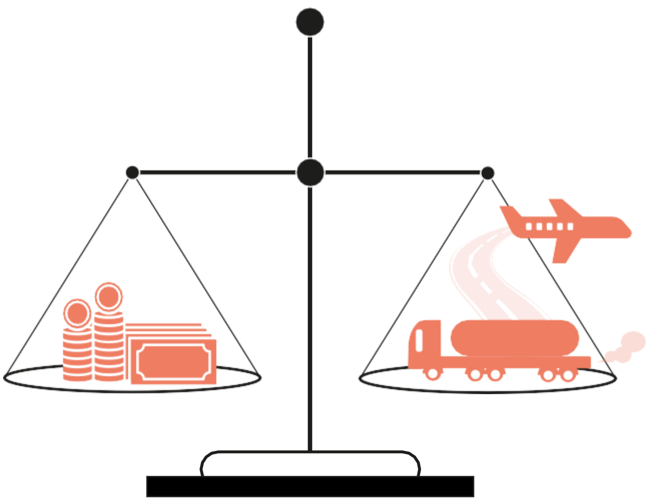


# 2. Intangible networks and e-commerce

While access to innovations is growing at a rapid pace in the sector - with the number of digitised agricultural enterprises quadrupling in the last
10 years (2) - Italian agriculture is still marked by a digital gap that divides some areas of the country from others. It is a question of networks, of connections, but also of the evolution of services that need to be promoted so that they leave no-one behind. In the new digital solutions are the answers to be more sustainable and to communicate the entire baggage of environmental and social reputation enjoyed by Italian agriculture. We must make this a marker of the supply chains and to do this we need investments in digital, territorial and corporate infrastructures. In this context, the great opportunity that can arise for the agri-food sector and for the simultaneous valorisation of products must be considered Made in Italy from the diffusion of e-commerce. In the last three years, in fact, electronic commerce in Italy has recorded a growth close to 50% and many agro-food companies have undertaken this path (3). In 2022, 48.2% of the population made purchases online, a decrease of 2.1% compared to 2021, also due to the end of the restrictions resulting from the pandemic. This is an estimated value of nearly 45 billion Euro in 2022. Food is confirmed as one of the most dynamic sectors with a growth of 17% compared to the previous year, but still remains far from the most important sectors. In fact, only 6.1% of online buyers turned to the platforms to purchase agri-food products, far from the percentages of those who buy clothing online (19.4%), household items (10.3%), technology (7.7%). The

forced domiciliation, to which we were globally obliged, has given a powerful boost to purchases through electronic *device* and many agri-food companies have embarked on the path of online commerce. It was certainly not an easy path: organisational and administrative transformations, tax precautions, virtual product showcase techniques, payment techniques, warehouse and logistics problems. It was a powerful challenge that the sector substantially addressed well and which allowed the country to better bear that period of forced closure. Now, having passed the red alert for Covid, we are witnessing the liberating return of the consumer to the market stalls, or to the shop. Something, however, of that difficult period has remained, indeed, to tell the truth, at least two things. The first can be identified in the continuation of the *food delivery* activity. The main platforms that manage it seem to have crossed the threshold of necessity and also that of temporary fashion , with 5 million downloads for the three main reference platforms. In 2022, in fact, Glovo exceeded two million downloads, Deliveroo is just over one and a half million and Just Eat has approximately one million three hundred thousand (4). The other is connected to the possibility, tested during the pandemic period, for producers to acquire advantages from making the company's products known well outside the limits of their own store and in many cases to acquire new customer bases even a long way from the national borders. Small agri-food companies are also moving in this direction and are increasingly embracing new and more advanced marketing techniques. These are also radical innovations for many of our small and medium-sized companies that require systematic interventions in the field of training, the dissemination of knowledge and support for the required technical and organisational investments.

# 3.

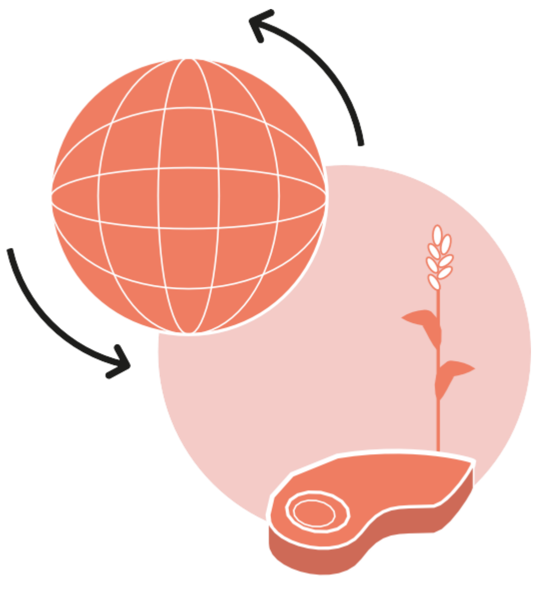


# 3. Material infrastructures

The infrastructural development of a country clearly represents a crucial driver for economic growth, for the competitiveness of the productive fabric and for the well-being of citizens. Italy boasts a high propensity for international trade, the result of a good consideration of Made in Italy products on global markets. Despite this, the analysis of the country's global competitiveness index shows a tangible delay with Italy which ranks 30th in the global ranking (5), at a significant distance from Singapore, the USA, Hong Kong and the Netherlands which respectively cover from the first to the fourth position. A delay that is crystallised in the 77 billion Euro of "lost exports" a year, equal to 15% of national exports (6). The peaks of Made in Italy excellence in particular are penalised, such as the agri-food sector, among the hardest hit with 8 billion Euro of losses (10% of the total for the country and 15% of the entire export of the sector). The situation is worse only for the metals and manufactured goods (9.3 billion), chemical products (13 billion) and mechanical (20 billion) sectors. This logistical gap in the country unavoidably calls for a 'synergistic' development of the various alternatives with a view to 'intermodality'. A model capable of easing the still too high pressure on road transport, which moves 88% of goods with a value far higher than the EU average of 77%.

Alongside this, other alarm bells cannot be underestimated which for some time have been signaling the need for important infrastructural interventions also in terms of irrigation resources. The increasingly frequent and prolonged periods of drought that see our country as protagonist solicit immediate and concrete responses. One of them is the Invasi project, with the construction of rainwater storage basins that definitively allow the overcoming of a paradoxical condition in which only 11% of rainfall is collected. It is a crucial investment capable of combining benefits deriving from energy, agricultural and human consumption uses. The strategy of developing and strengthening Italy's material infrastructures was created from here, for a competitive impetus for the 'entire' country.

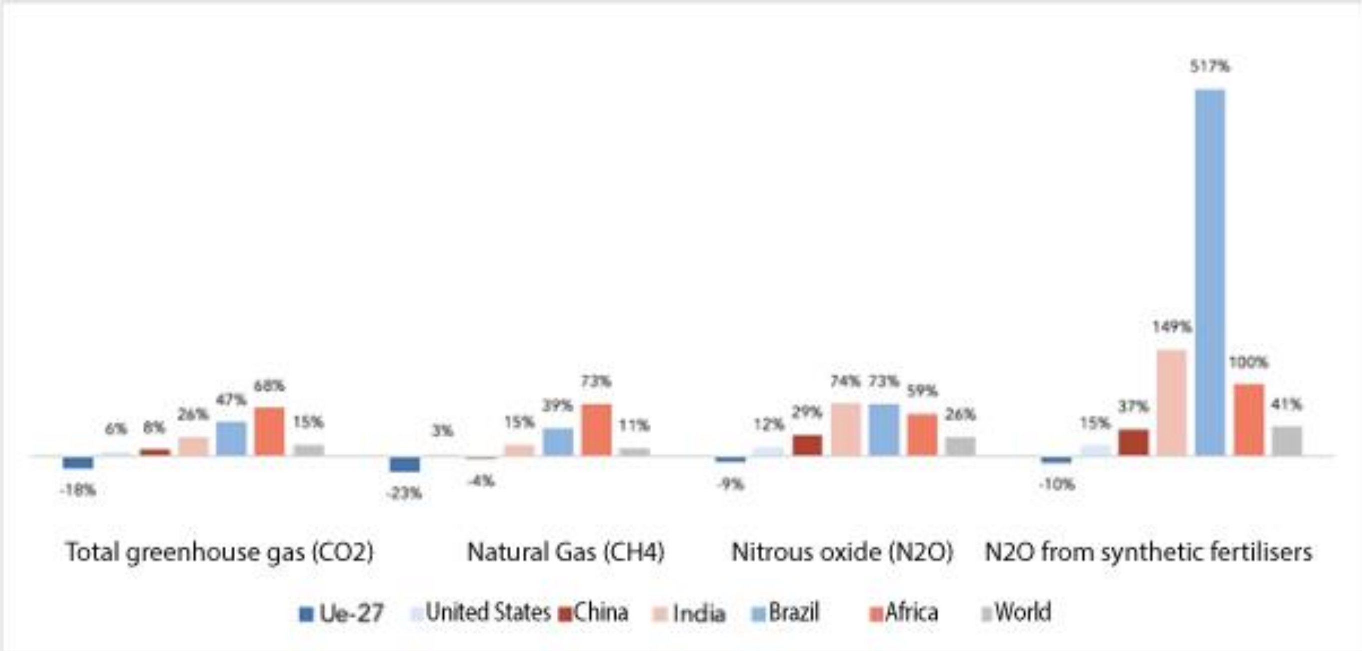
# 4.



# 4. De-carbonisation of agri-food supply chains

The most immediate and strong impacts of climate change are weighing on the agricultural sector. Recent years have seen the rapid increase in extreme climatic events (drought, heat stress, water bombs, floods, etc.), with risks impacting food security, food supply and food quality. With respect to some fronts, our agricultural productions have already been moving along the path of ecological transition for some time: the use of water resources has certainly improved in terms of efficiency, as has the use of pesticides, herbicides and fertilisers, accompanied by the growth of organic crops (the relative weight of which leads Italy to hold the world record for incidence, with approximately 18% of the surface areas). Last but not least, the practice of deforestation aimed at increasing grazing areas is irrelevant. Essentially, our agriculture is already playing a role in protecting the soil by maintaining and improving its ability to absorb carbon. In summary, it can be stated that a general activity is underway to defend the value of the territory and an orientation of crops towards food production processes that is consistent with the climate challenge we are experiencing. The data on the efforts that all of Europe is making in this direction are evident. Producing a ton of durum wheat or meat in Europe is far more sustainable than in the rest of the world and is increasingly so, as the data on the environmental performance of world agriculture over the last thirty years clearly indicate. While in all places of production the impact of the main sources of pollution in agriculture increases, in Europe it is decreasing and in some cases decisively. This is also the case for greenhouse gas emissions which in Europe see a decrease of almost 20% compared to even very marked increases in the other geo-political blocks considered (7).

Fig. 4.1: Change in total agricultural emissions and by source (2019/1990)




**Source:** Centro Studi Divulga elaborations on Ismea data

But even on this front, in addition to appreciating the ability of production systems to adapt to society's demands, we need to understand how to pave the way for a circular vision of agri-food systems. And there are many nodes to work on. For example, the theme of the diffusion of biorefineries and green chemistry. It is necessary to speed up the expansion of bioenergy, naturally avoiding incentive interventions of renewables which lead to reductions in the arable land. Biomass is an extremely versatile source of bioenergy and its uses are manifold: from the production of biofuels (substitutes for diesel, petrol or methane) to waste which becomes raw material for some intermediate chemical products. But the direct production of electricity or heat is also a topic. The other key destination is the production of biogas. Our country is well placed on this matter, given that it is the fourth largest producer in the world and the second in Europe, but in essence we are still talking about modest absolute volumes, being around 2.5 billion cubic metres. The production of biomethane is stronger, which has now reached 100 billion cubic meters (potentially, however, Italy already has plants with a five times higher capacity, denoting a strong development potential) (8). In the race to replace fossil fuels, the agricultural sector can therefore play an important role. At a technical level, bio-refineries are already adequately mature and the growth of "sustainable energy circularity" is solid. Especially if it will increasingly affect the livestock sector, considering that at the moment biogas is mainly produced from agricultural waste (65%) while the derivation from sewage is limited to 20%.

And also on the photovoltaic front, the REPowerEU Plan sets a growth of around 50 GW for our production capacity by 2030 (9) and a path that must lead us to 250 GW installed in 2050 (10). Along the way, the Pnrr has financed 1 GW of agri-voltaics and 0.5 GW of photovoltaics for the roofs of buildings operating in the agricultural, zootechnical and agro-industrial sectors (11).

A path that therefore exists and is well defined, but which nevertheless urgently needs to resolve a number of critical issues. The first mandatory one is to speed up and simplify the authorisations necessary for the construction and operation of the plants, possibly by linking the Public Administrations (obviously leaving each one with its own competences) in such a way that every agricultural entrepreneur deals with a single public interlocutor (a sort of administrative one-stop shop for the development of bioenergy and renewables). Furthermore, machines and plants for the accumulation of over-produced energies must be adequately financed in order to allow real increases in efficiency and energy autonomy on the micro-level of the company and then on the lesser level (territory). Finally, it is urgent to develop renewable and bioenergy markets that are independent from those of fossil sources in order to avoid erratic prices and possible financial speculation.

# 5.

# 5. Integration with the tourist and cultural offer system

In the first nine months of 2022, in our country there were 340 million tourist presences in accommodation facilities, of which approximately half (164 million) constituting foreigners, with an overall increase of 46% for arrivals and 40% for attendance compared to the previous year, albeit with a level still lower than the pre-pandemic level of 2019 (12).

The most popular destinations for foreigners have obviously been the cities of art: Rome, Venice, Florence and Milan. Beyond the possession of the largest artistic heritage in the world, with respect to which Italy enjoys an almost "natural" advantage, the improved cultural offer that the country has been offering in an attractive version over the last two decades should be noted.

The cultural tourism proposals, both material, through the faster programming of museum exhibition proposals, and immaterial, with high culture shows and performances (such as opera and dance) are bringing us back to levels closer to those of France and the United States. Attractive proposals based on the solid and ancient artistic heritage can lead our tourism sector to play a role of international leadership. Our food heritage, well rooted in the quality, variety and historic richness of Italian cuisine, currently runs in parallel, but in reality it is obviously already integrated into that tourist flow. It is unthinkable that a foreign tourist, between one artistic-cultural attraction and another, is able to walk through our streets and squares without falling into the temptation of Italian food. On the contrary, on closer inspection in the values of tourist services that are usually attributed to that sector in the national accounts, we could certainly separate out a quota that should be attributed to the food sector as if it were an export (even if it took place in the national territory it is aimed at a non-resident), obviously diverting it from domestic food consumption (those of residents). In the pre-Covid years, the estimate of the expenses incurred in Italy by international tourism was indicated between 25 and 30 billion Euro (13). Prudently assuming that at least 10% of said expenditure concerns food with national products, we can imagine agri-food exports 5% higher than the current level (overall equal to 60 billion Euro). The link between tourism and agri-food is therefore already strong, it is just a matter of becoming aware of it. Art, culture and food must more courageously propose shared itineraries. The industrial policy strategies of the two sectors should also be reconsidered from this point of view, channeling the set of global assets that already exist towards a single heritage that we already own.

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# Bibliography

(1) Centro Studi Divulga elaboration based on Istat data.

(2) Istat. 7th General Agricultural Census (2022).

(3) eCommerce b2c Observatory (2022).

(4) Statista. Main food delivery apps in Italy 2022, by downloads (2023).

(5) World Economic Forum. Global competitiveness index.

(6) Centro Studi Divulga. Paper 09: Logistics and competitiveness, Italy's logistic gap between war and pandemic (2022).

(7) Centro Studi Divulga elaboration based on Faostat data.

(8) Gme. Newsletter no. 155 (2022).

(9) Pniec. Integrated national plan for energy and climate (2019).

(10) Mase. Italian long-term strategy on the reduction of greenhouse gas emissions (2021).

(11) Pnrr. National recovery and resilience plan.

(12) Istat. Tourism: the strong recovery in the first nine months of 2022 does not recover the pre-Covid values (2022).

(13) Banca d'Italia. International Tourism Survey (2019).

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