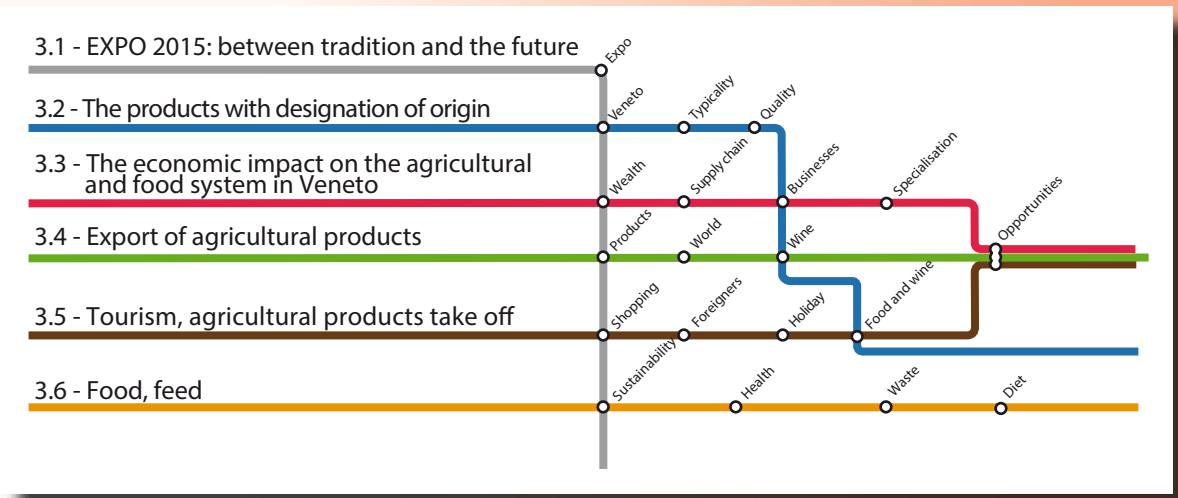
the topic: energy

Taking advantage of the occasion of the 34th world exposition, which for the second time in history took place in Milan, focusing on "Feeding the Planet, Energy for Life", in this chapter we will look at Energies, which Veneto enters into the field to meet the needs linked to nutrition.
In fact, our region produces food, through an articulated agricultural food chain from the field to the table, which produces richness, employs people and resources, generates real and true areas of food specialisation and creates food of the highest quality, certified by the system of European designation.
Our region also exports the food which we produce around the world, with a growth which does not know how to stop over the last ten years, with a level of appreciation which makes the Veneto region a leader for numerous products, first of which is wine. The food produced is also an irresistible form of attraction for the millions of tourists who visit each year and who, beyond an appreciation for the historical, geographical and cultural wonders of our land, also know to enjoy the delicious food products.
Our region, lastly, consumes food, in our own style, which in a world ever more inclined to globalisation, suffers from the same problems of all western countries: from food waste to the repercussions on the health of the population, above all due to a rising risk of being overweight and obesity



Energy for life

3

3. Energy for life

EXPO Milan 2015 is the Universal Exposition Italy hosted from 1 May to 31 October 2015 and is recognised as the largest event ever organised on food and nutrition. "Feeding the Planet, Energy for Life" is its central theme, and the one chosen for the Statistical Report of this year is a natural decision: Energies. Understood as both the forces which must be employed to jump-start the country after a long seven-year period of crisis, and those generated by inventiveness, entrepreneurship, innovation and extensive research in all areas of humanity.
The Milan EXPO is being presented as the place where all countries of the world will meet to compare ideas about the objectives of development and the increasing presence of human beings on the planet, in an attempt to give a concrete response to a vital need: the ability to guarantee healthy, safe and sufficient food for all people, respecting the Planet and its equilibrium. It is an opportunity to reflect on the history of mankind and on food production from all points of view; from the preservation and promotion of dietary traditions and history to the search for new technologies.
The food on exhibition at EXPO 2015 is valued at 34.7 billion Euros for Italy. In particular, there are 52 main countries from which we import 83% of foods we purchase from abroad. As for our exports, the result is similar: participating countries are the destination of approximately 80% of our agri-food business abroad (half of which, however, is in the hands of only five countries: Germany, France, the United States, the United Kingdom and Switzerland).
In this chapter, we will analyse the main issues involved in the theme of EXPO, with reference to our region: from the thematic events which will take place over the six-month exposition, to the high quality foods produced here, and from the agri-food sector to gastronomic tourism and to the diets which are the most popular.

3.1 EXPO 2015: between tradition and the future

Reflecting the urban layout of Roman cities, the exhibition site of EXPO 2015 is laid out on an orthogonal grid, whose two main axes are constituted by the "cardo" and by the "decumanus", which crossing the entire site in an east-west direction, had a width of 35 m and a developed length of approximately 1.5 km. Every 20 metres, the pavilions of the participating countries rise up on either side. Conversely, the "cardo" is orientated along the north-south axis with a length of about 350 metres. Along its length are the spaces dedicated to Italy and the EU. At the point of intersection between the two lines lies Piazza Italy, the symbolic place where our country and the world come to meet. The exhibition area extends for 1.1 million square metres, occupied by 143 countries, various international organisations and companies. Over 20 million visitors are expected over the six months of the EXPO. Along the cardo, the Italy Pavilion will display the excellence of our country: the culture and national traditions linked to food and nutrition, characterised by the high quality of the raw materials and final products. The inspirational concept conveys Italy as the Nursery of New Energies, birthplace of the future, rich in history, though not the sombre museum of its own grandeur. The Italian Identity exhibition is the cornerstone of the Pavilion and is dedicated entirely to the territories participating in its cultural and artistic project.
The four "Italian Powers" told with the aid of the 21 Regions and autonomous Provinces are:

- The power of Expertise: 21 people speak about the professional qualities of Italians, in terms of their artistic and manual skills, and how they found success by thinking in business terms;
- the Power of Beauty: there are 21 landscapes and 21 architectural masterpieces which express the beauty of Italy;
- the Power of Challenge: here there are 21 stories of farming, agri-food and craftsmanship business, which tell, in detail, the splendour of Italy, the ability to show our best in the most challenging of circumstances, to cultivate vineyards of excellence on arid hilltops which cannot be worked by machine; the power closest to the virtue of challenge;

- the Power of the Future is told through a Nursery of 21 plants, each representing one of the Regions and which recalls the Piazza del Campidoglio in Rome, where Michelangelo created the mosaic of Renaissance harmony. Rising from the mosaic is a large Tree, the Tree of Life, a steel and wood structure, 37 metres high, with a 25 metre wide opening, located at the centre of the Lake Arena.

Along the north-west cardo are the exhibits of the Italian Regions, each there for a minimum of two weeks and a maximum of six weeks, their interpretation of the four powers: the their agricultural, touristic and eno-gastronomic excellence, and most of all their thoughts and their strategies on the Theme of EXPO Milan 2015. Each had two large spaces, one used as a library, the other as a public meeting space, where they were able to showcase their knowledge and expertise. On the south-west cardo, the concept of the short food supply chain and, as a consequence, that of sustainable development. Here, the largest Italian and European agricultural organization displayed the excellence of the product supply chain of the Mediterranean diet, Italy's true gift to the world. On the north-east cardo, space was given to the excellence of the wine. Curated by Vinitaly, the ground floor of the Wine Pavilion offered a sensory experience of the product, calling upon all the five senses and providing the visitor with a full immersion experience, while the upper level displayed the system of Italian wines. Inside the Italy Pavilion, on the north-west cardo, there was the exhibit of the European Union, which wanted to be guests of Italy, centred around the theme "Growing Europe's Future Together for a Better World". Environmental sustainability, health, growth, employment, research and innovation are the major themes of the events held in the pavilion: particular attention was given to the results of innovative research projects in the agri-food sector, with the objective of giving the visitor a greater awareness of the achievements of the EU over the last fifty years and of the main challenges to be faced in the next 10 years which are related to the themes of EXPO Milan 2015. The pavilion offers the opportunity to view and sample the food common to all European citizens, bread.

The Veneto at EXPO...

Among the regions exhibiting in Milan, Veneto appeared, of course, with its beauty, its products, its excellence. "Veneto Mondo Novo, the age-old taste for innovation" is the declaration of the Veneto programme for EXPO 2015, a Veneto already imagined by Giandomenico Tiepolo in his painting "Mondo Novo", a Veneto which today is ever more dynamic in the evolution of the primary sector, able to enhance the biodiversity and niche products in the agri-food field. EXPO 2015 represents both a challenge and a wonderful opportunity for local businesses and the region, as a whole: the possibility to host millions of visitors from around the world, an occasion to meet the International Delegations from the countries of greatest interest and to present their qualities of excellence and richness, know-how and innovation, together with the great historic tradition of our region. Numerous events are planned for EXPO, not only in the exhibition pavilions in Milan, in which our region was hosted, but most of all in Veneto. Four main strands have been identified to group together the rich programme of initiatives: Green Nature is the ideal container for the initiatives linked to ecology and environmental sustainability; Blue Flag reunites the large gatherings with the International Delegations and the research and internationalisation B2Bs; the Yellow Line is the thematic strand for projects related to food education and waste prevention products, aimed, above all, for the younger generation; the Red Carpet is the calendar of the exhibitions and cultural proposals of our region. Inside the Italy Pavilion, the Veneto Region will be present from 2-8 October, in an exhibition space divided into two distinct areas: on one side, the area of "expertise", developed conceptually along horizontal surfaces, with tables for social interaction and tasks for workshops, meetings and presentations; on the other side, is the area of knowledge, developed on vertical surfaces, which transmit the emotional message of the Veneto slogan for EXPO, "Mondo Novo", represented by Veneto villas, crops and eno-gastronomic excellence produced in the region.

The same four Italian Powers are also represented for Veneto, in Milan, through testimonials on "know-how", documentaries on the "beauty" of the natural, artistic and architectural heritage, the scientific research aimed at overcoming current "challenges" and the Garden of Biodiversity which told of the agricultural biodiversity and its evolution towards the "future". The project for the creation of the Garden of Biodiversity also counted on the technical and scientific support of the Orto Botanico of Padua, the oldest botanic

garden in the world. In the Garden, each Italian region was represented by a plant, commonly found in their territory. Italy, with its 380 varieties, is the keeper of the greatest number of vines in the world and Veneto holds a prominent position thanks to its own 25 typical varieties. Wine is one of the typical products which best distinguish Veneto, reflecting its nuances, virtues, flavours and colours; cultivation of the vine, with its ancient roots. The participation of Veneto at EXPO 2015 was realised through the work of tens of supplier and exhibition companies, planners and designers, institutional partners and sponsors from our region. With regard to Veneto businesses which contributed to the realisation of the exhibition site in Milan, it must be remembered that they played a leading role. Alongside the largest vendors, there were also numerous small to medium sized suppliers. In the area of the planning and design, as well, Veneto made an important contribution. Stop and consider for a moment, just a few examples: the suspended membrane roof structure of the decumanus, the coordination of civil engineering works, the design of the window panelling and green space, and planning for earth moving and roads. With regard to partners and sponsors, the Veneto Region had a space in the Italy Pavilion, while the University of Padua provided technical and scientific support to the area dedicated to biodiversity. Important Veneto brands were named as official sponsors of the event.

…and EXPO in Veneto

Veneto has an ancient tradition of openness in its relationships abroad, thanks to which it has been able to develop an evolved culture and a strong economic system. EXPO 2015, therefore, presented an important opportunity for the promotion of meetings between the institutional, economic and cultural representatives of Veneto and their counterparts in other countries who participated in the big event. Previously existing relationships were reinforced and new connections were made possible, as well. A rich programme of initiatives and events was organised to give concrete meaning to participation in EXPO and to attract delegations and representatives from the many foreign companies interested in forming relationships with Veneto. A 2015, full of visiting delegations from around the world awaits us, in Veneto, with the purpose of transforming meetings into opportunities to develop and consolidate mutual understanding in ways which, even beyond EXPO, can give rise to new important relationships for the many different realities of our territory. Communication is based on the brand "Veneto Mondo Novo", in which the Veneto villa, an artistic heritage without equal and agronomic laboratory of the intelligence found there, is at the centre of communication in the region. The culture of the villas, which developed around them between the 6th and 7th centuries, is in fact a shining example of how innovation, in each age, represents the road to be followed. A spectacular and modern Veneto, dynamic in the evolution of its primary sector, able to develop biodiversity and niche market products, from scientific research to the cultivated field. It begins, therefore, from the Veneto villa, on the one hand, representing undoubted architectural value and the harmony of the classic forms and its original purpose as a productive farm, on the other hand. The two most important exhibition spaces in Veneto: Villa Contarini in Piazzola sul Brenta and the AQUAE2015 Pavilion in Marghera.

The first is Villa Contarini in Piazzola sul Brenta, owned by the region, a charming point of entry for both cultural tours as well as meetings with International Delegations who are visiting our region: the wonderful building is the cultural reference point identified by the Region for EXPO. The Villa, on this occasion, represents the image of a fascinating economic and architectural model, still relevant and one of a kind. The objective is also that of contributing to the growth of cultural tourism linked to the cities of art in Veneto, and to promote the magnificent heritage of the over 4,000 villas spread across our territory. Art, food and spectacle are the three ingredients in the rich calendar of programmed events, together with B2B, high-level networking and business workshops with foreign Delegations.

The second exhibition space is the AQUAE2015 Pavilion, prepared by EXPO Venice s.p.a., an exhibition area of 14,000 square metres and 35,000 square metres of green space. The new and imposing pavilion near Vega2 in Marghera, built as a true and proper satellite pavilion of EXPO Milan, is the showcase and laboratory for scientific research and innovation, the exclusive avant garde centre for cultural events, exhibitions and tastings, multi-disciplinary conferences, evening shows, workshops and "water"-themed conventions. Located in the pavilion, AQUAE Venice 2015 is the only official co-exhibition to the Great Exhibi-

tion in Milan. It tells, in an experiential and interactive way, the role of "blue gold" in life, industry and nutrition, and the fundamental interrelation between water, human and the Earth for the future, and allows a voyage into the wonders of the abysses and the discovery of the flavours of the sea. The exhibition also promotes itself as a fascinating journey through culinary flavours and cultures from around the world, with a different ethnic atmosphere for each month of EXPO. The "Water Food World" section has a cookery show, cookery courses, restaurants and tasting stations where the star food is, obviously, fish; alongside the activities aimed at the general public are scientific insights promoted by partners. After the six months of EXPO, the pavilion will become the hub of the new Exhibition and Trade Fair Centre of Venice, thanks to the partnership with the VEGA of Venice, thanks to the partnership with the VEGA Venice Gateway for Science and Technology, and the Ca' Foscari University. Beyond the two exhibition sites, Veneto will experience an EXPO spread out across its territory, also thanks to the travelling roadshow, Mondo Novo, a fascinating showcase for typical local products, an exhibition space which will bring the best traditional Veneto products to cities across the region, and the screening of 10 video shorts telling the history and the quality offerings of our agri-food sectors. The international spirit of the Wine in Villa festival wants to raise awareness of the territorial origin of two of the best known and most envied products in the world, Prosecco Superiore DOCG and Valpolicella, and together make available the entire productive zone, its system of harvesting and the eno-gastronomic and cultural offering of the region, thanks to events and happenings over the six months of EXPO. As proof of the undertaking by the Region for sustainable tourism, the strategic project "Green Tour, Verde in Movimento" is meant to represent a winning example of "slow" tourism, which is aware of the environmental surroundings, as well as experience the hospitality linked to the history and traditions of our lands; the Botanical Garden of Padua and the Parks will be involved in initiatives and events, to witness the extraordinary floral beauty and richness of our land. There are three nutritional education projects which involve the schools, to raise awareness and inform the young about responsible consumption, the reduction in waste and the correct diet: Smartfood, Controconsumo and the Festival delle Scuole di Ristorazione, which this year is planning a special edition in Milan. The culture goes in the spotlight at the Arena and the Biennale, at the Fenice and the Teatro Stabile del Veneto.
The traditional "Festival delle Ville Venete" has, this year, scheduled events for the entire duration of EXPO, with the Villa Contarini, site of two other exhibitions as its starting point. Workshops, B2B and events with the International Delegations are, instead, an opportunity networking opportunity for our companies and businesses, thanks to the strategic partnership with the China Corporate United Pavilion and the Destination Veneto projects, EXPO is now and Exponiamo il Veneto (Let's Expo the Veneto).

The "Milan Charter"

Food is "a fundamental right": this is the basic claim of the Milan Charter, the ambitious manifesto of EXPO 2015. The Charter was the result of a path developed by "Idee di EXPO" and 41 working groups focused on the fight against waste and investment in research. The top experts from the world of academics and representatives of national and international institutions met to debate its fundaments and contents: this will represent the first great cultural heritage of EXPO. More than a conclusive declaration, the Charter is meant to represent a series of undertakings and on 16 October will be sent to the Secretary-General of the United Nations, Ban Ki-moon, for the update to the Millennium Development Goals of the UN. It is the first time that in the long history of the Universal Exhibition, a charter of global responsibility, which applies to all, will be proposed. As a tool for informed participation, the first great challenge it proposes is, in fact, that of representing a universal undertaking, applicable and tangible for every citizen, empowering each person on the fundamental questions of the right to food and sustainability. Not only governments, associations and institutions, but all visitors will also be invited to sign it as recognition of their personal commitment and become true "food ambassadors". The fundamental issues discussed are food waste, the practices for reducing inequality, product safety and security and agricultural sustainability, with the aim of overcoming the five challenges of our millennium: malnutrition, undernourishment, the management of natural resources, food waste and the issue of water. What are the economic and production models able to guarantee sustainable development? What are the best practices and technologies capable of reducing

the imbalance? How do we achieve to consider food not only as a source of nutrition but also as a symbol of cultural identity?
The Milan Charter, like a place to come together and work, invites movement towards the great objectives of the new Millennium, which are particularly significant for our country: the history which characterises our agriculture and diet can, in fact, be seen as protagonists in this new challenge, as well.

3.2 The products with designation of origin[1]

Italy is proud of it centuries-long tradition of quality food and drinks, in part thanks to the favourable climate it enjoys, which in turn promotes an agriculture which is widely varied and of the highest quality. It is also partly due to the cleverness, imagination of the people and their love for the good life.
The proof can be seen from our appearance at the top of numerous European and global rankings: we are the world's number one producer of pasta, second in wine production behind France, and among the top European producers of numerous fruits and vegetables: in addition, many of our agri-food products are without rival on international markets (pasta, canned tomatoes, radicchio, vinegar, oil, wines), products for which our country ranks amongst the highest in shares on the global market, and the list could get longer.
As well, Italy is the top country in Europe by number of companies with organic farming certification, and second behind Spain in surface area dedicated to farming. We are also first for the surface areas dedicated to vegetables and organic sheep farming. Veneto is a major contributor to this success, as it is the number one Italian producer, in terms of quality and quantity, of numerous agri-food products, such as corn, soya, radicchio, and wine, as well as for poultry and rabbit farming. Similarly for exports, Veneto received the gold medal for the value of wine, fresh fish, horticulture and animal food products exported, in addition to placing in the top three for numerous other products. Veneto is, at the end, the top Italian region for companies certified for organic aquaculture.
Put together, all of this creates value added and profitability for farms struggling with an agricultural revolution which is reviewing the role, traditionally linked to the production of food goods. Intensive farming, which characterised the second half of the 20th century, had as its goal maximising production in response to the growing need for food, but it also contributed significantly to ecological and environmental degradation. These "collateral effects", due to the advanced farming in western countries, led to the crisis of the productivism model. From the 1980s onwards, the feeling grew for a need to shift attention and resources to more sustainable farming, which focused on quality and having respect for the natural ecosystem.
Today the global economy and the increasing integration of farming in the rural economy assign farms with multiple roles and functions. In addition to the primary purpose of food production, important tourist and social functions, land management, and brokering knowledge are also recognized. With the new millennium, it is therefore safe to assume that the primary sector is experiencing a new stage of evolution: the transition from industrial agriculture to a new role of agriculture services provider.
Diversification is the instrument which makes it possible to implement and put into operation the required multi-functionality in agriculture in response to new needs of society. Multi-functionality is able to connect agriculture with the new demands of the community by adding, alongside the production of food goods, a wide range of services and researching an effective compromise solution between objectives which are strictly productive, and those which are more social-environmental.
The cultivation of farm products which meet the needs of healthy, quality foods (organic farming and designation of origin products) was, therefore, developed. These were conveyed in a direct manner to satisfy the need for greater awareness about products, where they originate, and method of cultivation (short supply chain, direct sale). In addition, production also may be extended to non-food goods (electric energy, biogas, etc.) and non-agricultural services: from rural tourism and agritourism to educational and care farms.
It is no coincidence that more than one product in 5 with designation of origin is Italian and, again in 2014, our country had the highest number in the world with 269 products, 8 more than in 2013. Behind by a distance are France (219) e Spain (180).
Among these products, of which there are 161 PDO, 106 PGI and 2 TSG, the sector with the highest number is by far that of fruit, vegetables and cereals,

[1] Included are PDO (protected designation of origin), PGI (protected geographical indication and TSG (traditional specialty guaranteed).

Tab. 3.2.1 - Consumer sales (millions of Euros) on the national market, Production (t and 1,000 litres) and Exports (millions of Euros) of Italian PDO and PGI. Years 2012 and 2013

	Sales			Production			Exports		
	2012	2013	var. %	2012	2013	var. %	2012	2013	var. %
Cheese	4,966.9	4,782.9	-3.7	470,677	471,682	0.2	1,271.9	1,342.4	5.5
Meat products	3,257.9	3,187.1	-2.2	192,465	193,349	0.5	400.4	417.4	4.2
Fruits and cereals	664.7	556.7	-16.2	546,532	508,033	-7.0	167.5	194.1	15.9
Balsamic vinegar	177.4	191.9	8.2	73,827	73,145	-0.9	376.1	373.0	-0.8
Olive oil	74.6	74.4	-0.3	10,989	11,217	2.1	52.8	53.7	1.7
Meat	58.8	61.8	5.1	11,965	13,690	14.4	2.9	4.4	51.7
Others	3.3	3.1	-6.1	1,151	1,114	-3.2	0.1	0.1	0.0
Total	**9,203.7**	**8,858.0**	**-3.8**	**-**	**-**	**-**	**2.271.7**	**2,385.1**	**5.0**

Source: Veneto Region Processing - Regional Statistics System Section on Ismea data

followed by the cheese sector, then oils. In terms of territory, this excellence involves all the regions of Italy, even if first prize goes to Emilia-Romagna with 41 products, followed closely by Veneto (36 products) and then Lombardy (31).

2013, again, confirmed the high degree of concentration of sales to internal consumption, which saw the first 10 products capture over 80% of the total: among these, the first 3 (Grana Padano, Parmigiano Reggiano and Prosciutto di Parma) totalled over half of sales realised in Italy, equal to 8.9 billion Euros in 2013, a drop of 3.8% compared to the previous year, mostly as a result of the continued internal consumption crisis. The opposite was true for 2013 foreign sales, which in 2013 recorded 2.4 billion Euros, equal to a 5% variation compared to the previous year.

Italy is the number one country in Europe for PDO and PGI products

The best sellers are Grana Padano, Parmigiano Reggiano and Balsamic vinegar of Modena: in this case, as well, a high concentration of sales are seen in a few products, as the first three count for approximately 60% of the total export value.

Therefore, with its 36 protected designations of origin, Veneto places second among Italian regions: among these we find 17 fruit and vegetable products (Treviso Radicchio, Marostica Cherries, Polesano Garlic, Cimadolmo Asparagus, Lusia Lettuce, etc.), 8 cheeses (Grana Padano, Asiago, Piave, Casatella Trevigiana, etc.), 7 cured meats (Soppressa Vicentina, Prosciutto Veneto Berico-Euganeo), 2 Extra-virgin olive oils, the Dolomite Apple from Belluno and the Scardovari Mussel.

A slice of Veneto tops the rankings as Grana Padano is produced in 5 of our provinces, while among the top ten products sold in Italy, there is one which is 100% Veneto: Asiago PDO cheese. The prestige which our PDO and PGI products enjoy is due in large part to high quality niche products which are among the range of products unique to the world, which number approximately 5,000 made by producers and on-farm processing across Veneto, over 4,000 hectares of cultivated land, hundreds of thousands of livestock for a production turnover of around half a billion Euros.

Our region has identified a further certification to sanction the quality of Veneto products: the quality system was enacted by the regional law no. 12/2001 "Protection and promotion of agricultural products and food quality", to qualify agri-food production and offer more guarantee to the consumer. The result was the creation of the regional "Verified Quality" (VQ) branding, which certifies farm and food products as obtained in compliance with the statutory rules of production.

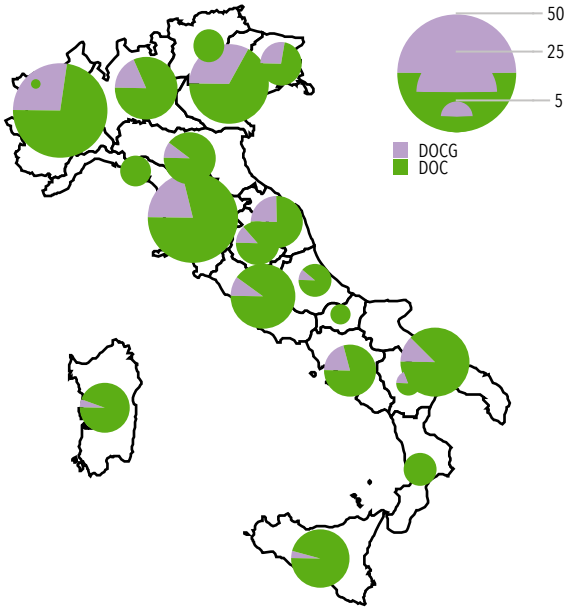
The brand is green for vegetable products, red for meats, blue for aquaculture and light-blue for dairy products. This statement is a guarantee of quality for the consumer with regard to the product purchased, also guaranteeing the complete traceability of the

products. The certification is voluntary and is recognised by public institutions for those products of higher quality compared to those obtained using normal production techniques. Then, across the entire country, there are the so-called Prodotti Agroalimentari Tradizionali, products that do not qualify for pan-European approval, and as such PAT is only applicable within Italy. Today there are 4,723 which belong to the main categories (drinks, meat and offal, cheese, vegetable products, baked goods, products of animal origin, fish and shellfish, fats) and are products for which the methods of processing, preservation and maturation are practised within a defined area, following traditional practices, continued for a period not less than 25 years. There are 371 products in Veneto which can bear this designation: it is this pool from which the future PDO and PGI products will come.

The wine

Wine deserves a special mention because of its designations of origin: within the PDO category, fall both DOCG and DOC wines, which in Italy total 73 and 332 different products, respectively, for a total of 405 wines. With 42 protected designation of origin wines, Veneto places third in Italy, behind Piedmont (58) and Tuscany (52).

Fig. 3.2.1 - DOCG and DOC by region. Year 2014



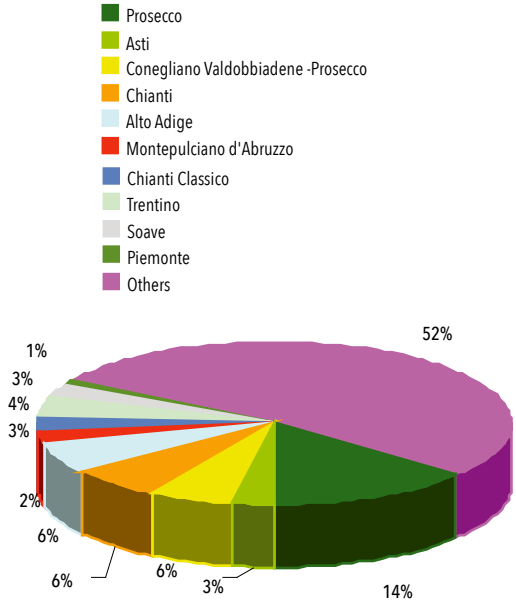
Source: Veneto Region Processing - Regional Statistics System Section on Istat data

Veneto is the top producer of Italian wine

Protected Geographical Indication (PGI) wines amount to 118 in Italy, ten of which in Veneto, the regions with the most designation overall are Sardinia and Lombardy with 15 each.

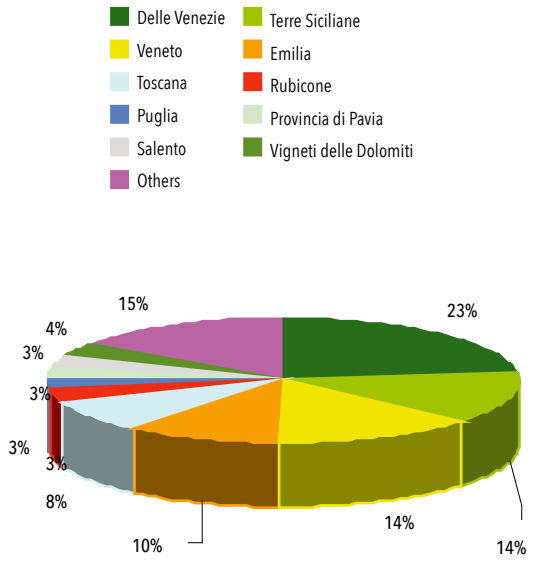
The production certified PDO in Italy for 2014 equalled 13.3 million hectolitres, with an economic value verging on 2 billion Euros. Among the 10 most productive and profitable designations, we find 3 Veneto PDO: first place went to PDO Prosecco with approximately 14% of the total Italian value, PDO Conegliano-Valdobbiadene Prosecco in third with 5.7% of the national total, and then PDO Soave with 2.5%. As for PGI, the 8.5 million hectolitres certified in 2014 produced a wealth of approximately 700 million Euros: also in this case, Veneto was a protagonist with the PGI "delle Venezie", shared with Friuli and the province of Trento, and captured almost 23% of the economic value, PGI Veneto, with 14% of the total value while the PGI "Vigneti delle Dolomiti", shared with Trento and Bolzano, took 4% of the total.

Fig. 3.2.2 - % distribution of the value of certified production for the first 10 PDO. Year 2014



Source: Veneto Region Processing - Regional Statistics System Section on Ismea data

Fig. 3.2.3 - % distribution of the value of certified production for the first 10 PGI – Year 2014



Source: Veneto Region Processing - Regional Statistics System Section on Ismea data

Organic

Organic agriculture is a system of agricultural production which has, as its main purpose, respect for the environment, natural balance and biodiversity, while at the same time protecting the health of the operator and the consumer. Organic farming is an integrated system in which the activities of man are combined with technologies which respect soil fertility, individual crops, the animals and environmental balance: these technologies, naturally, do not include the use of fertilizers, pesticides and synthesised chemical veterinary medicines and Genetically Modified Organisms (OMG).

The results translate into fertile soils, waters without pesticide residue and a lower level of nitrates, biodiversity, land conservation, a stronger bond with the territory and a significant contribution to the reduction of greenhouse gases.

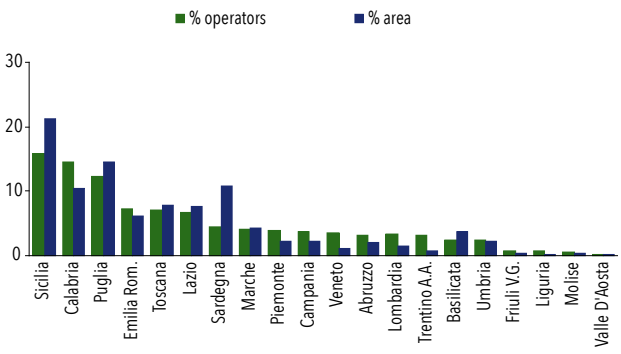
All of which reflects noticeably on the "environmental" management of the farm: reclamation and conservation of hedges, thickets, small ponds and the planting of trees.

It is a matter of fact that organic farming is good for both the producers and consumers: in contrast compared to the traditional sector, the cultivated surface area and consumption are increasing, not only thanks to a rising sensitivity to the environment but also the widely felt need to look after our health.

Around the world, the surface area and the operators dedicated to organic agriculture continues to increase: Australia remains the undisputed leader in dedicated surface area, with over 12 million hectares, while India has the greatest number of operators with over 600 thousand, divided between producers, exporters and importers.

Thanks to a progressive and continuous increase in both surface area and operators, which in 2013, with over 1.3 million hectares of organic agriculture (including that under conversion), Italy is sixth in the world, and second in Europe, just behind Spain; in addition, Italy is first overall in Europe for number of operators (producers, importers, exporters), numbering over 52,000 units, and seventh country in the world. In 2013, the number one Italian region for both number of operators and dedicated area was Sicily which, thanks to a double-figure annual increase for both indicators, easily took top spot in the rankings. For Veneto, instead, the area dedicated to organic farming, approximately 15 thousand hectares, has remained more or less stable in recent years, while there was an increase in the number of operators of around 2,000 units.

Fig. 3.2.4 - % distribution of the operators and the areas of organic agriculture by region. Italy - Year 2013



Source: Veneto Region Processing - Regional Statistics System Section on Istat data

The surface area in Veneto is primarily dedicated to grain crops, vineyards, fruit and pasture.

Organic continues to grow, in consumption and dedicated surface area

Organic farming is not only expanding rapidly in the production of goods. There is also consistent growth in the number of activities which promote the buying, selling and administration: in Italy, specialised shops have increased by 16% over the last 5 years with about 200 new openings and Veneto is the third region nationally in the number of these types of shops, after Lombardy and Piedmont. Not only, school canteens and restaurants in Italy are experiencing a real boom with double-figure growth between 2010 and 2014: places which offer organic menus recorded an increase of 65% and here, as well, Veneto is among the top three leading regions, as it offers one of the greater densities by population for places offering organic menus. The situation is similar for organic school canteens, which grew by 43% in Italy and Veneto brought home another laurel wreath: it is the second region in Italy, behind Lombardy, with 192 canteens, and third in density by population.
Lastly, it is estimated that the increasing global turnover of organic products is around 50 billion Euros, over 20 of which is concentrated in the United States. Germany follows, number one country in Europe, with 7 billion in sales, then France con 4 billion. The consumption of organic products in Italy also reflects the wave of enthusiasm which characterises the sector, in total contrast with the rest of food consumption: the Italian family increased its spending on organic products during the first 5 months of 2014 by 17.4% compared to the same period in the previous year, with a turnover around 2 billion Euros. The best sellers were fruit and vegetables, dairy products, pasta, rice and bread substitutes.

Will the agriculture of the future arrive from space ?

In the near future, agriculture will have to address several important issues: from how to feed an extra couple of billion people to how to reduce environmental impact in terms of exploitation, and the release and emission of pollutants (fertilisers, pesticides, CO2, etc.). Much can be done through genetic improvement, the adoption of new agricultural techniques and more efficient farming, but the possibility for interesting developments also come from a new farm model of mechanisation capable of taking advantage of space technology.

The key words which characterise the application of modern farm mechanisation are: georeferencing, data acquisition sensors, plot mapping, GIS, remote sensing and assisted driving. At the heart of this new green revolution is the precision allowed by satellite navigation and the global positioning system, better known as GPS (Global Positioning Systems). Currently, 4 systems are the most important: the American Navstar GPS with 31 satellites, the Russian Glonass with 24 operational satellites, the European Galileo with 6 satellites and the Chinese Beidou1 with 16 satellites. The latter two are global coverage systems. The application of GPS systems combined with data sensors and flow/force regulators to tractors, and other self-propelled or towed machinery, allows the introduction of what has been defined as "precision and conservation agriculture" to farming. It involves a method of agriculture which, thanks to the use of advanced technologies and IT monitoring systems, is capable of automatically processing information about the conditions of crops and soil, and on their variations in space and time, in order to do the right thing, in the correct timeframe and position.
The starting point of this technique is knowledge of the variation in space and time of each plot of cultivated land through georeferencing and the creation of maps which highlight homogeneous areas with respect to the parameters of interest. For example, the soil fertility map of a plot of land may be used for variable fertilisation depending on crop needs and characteristics of the land. But the applications may also be even more sophisticated and involve pesticide treatment, production mapping, pruning, etc.
This innovative technology is attracting the attention of leading enterprises and agricultural contractors. The application, which for some years, has been catching on in Veneto mainly involves assisted driving, which improves precision in the operation of tractors and self-propelled machines. In Italy, it is calculated that there are at least one thousand machines which operate with this system and, by now, all the most powerful tractors are equipped with GPS
as standard. Seeders, sprayers and fertilizer spreaders may also use this system for the purpose of detecting the agricultural surface and avoiding an overlap of the pass, with noticeable benefits to reducing the use of resources and environmental impact.

[2] Compiled by Veneto Agricoltura..

3.3 The economic impact on the agri-food system in Veneto

The agri-food supply chain

It is common opinion that agriculture in Italy and in Veneto, although supplying high quality products, covers a smaller slice in the creation of wealth compared to other sectors. Actually, farm production, in addition to being the guardian of good living, healthy nutrition and environmental management and protection, is linked to a "agri-food supply chain" which plays an important economic role.

In this sub-section, we will attempt to quantify the phenomenon of the "agri-food supply chain", which involves several economic activities, not only those which are purely agricultural, defining a sector perimeter of the chain at the level of the Veneto region and the estimate of its production of value added and employment, based on regional accounting data.

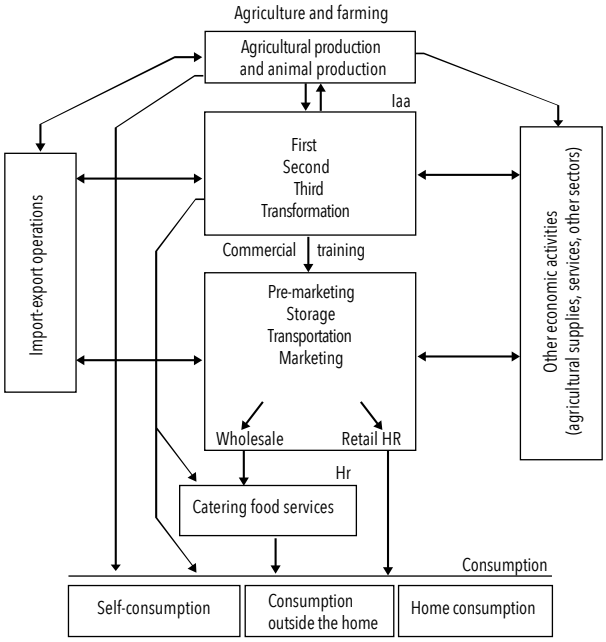
The definition of the agri-food supply chain which comes from the literature and on which we are based is by the French agronomist Malassis (1973): "the route followed by a product in a production system", understood as "a set of agents and operations that contribute to the formation and the movement of a product until its end use".

It is a definition from which the classic descriptions of the supply chain for activities, and the flow of goods originate: they are used to identify the sequence of operations; from the initial substantial input to a market output, gathering together the entire extent of a certain process of transformation of a good. With respect to Malassis's definition, they define the roles of those who perform the operations of production, distribution and administration which contribute to the product formation and movement until the final stage of use.

The food chain is particularly complex and intersected, involving all three sectors of economic activity: agriculture, with the production of the raw materials; the industry, through their transformation and the supply of machines; tertiary, mainly distribution and marketing, as well as food services.

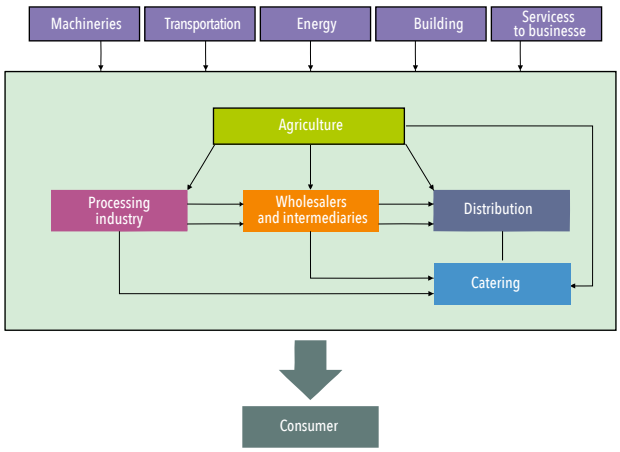
These sectors are connected, directly or indirectly, through a multitude of economic agents which enable the farm product to arrive, after various stages, to the end consumer. The stages and connections are supported by agents outside of the supply chain, who ensure it functions properly: the provision of agricultural machinery and multiple services, such as tran

Fig. 3.3.1 - The diagram of the agri-food supply chain according to the definition of Malassis



Source: Malassis and Ghersi, 1995

Fig. 3.3.2 - The diagram of the agri-food supply chain under examination



Source: Veneto Region Processing - Regional Statistics System Section

[3] Malassis L., Ghersi G., Introduzione al sistema agroalimentare. 1995. Ed.Il Mulino. Arena R., Rainelli M. and Torre A., Dal concetto dell'analisi di filiera: un tentativo di chiarimento teorico. L'Industria, 6 (3), 1985. Tolomeo. The agri-food sector between tradition and innovation - Final Report November 2013.4 Sono le aziende agricole venete al Censimento agricoltura del 2010, ultimo dato disponibile.

sportation, logistics, supplies, service activities like administration, product marketing and advertising, consultancy, analysis, etc. The farm product may reach the consumer directly through farm shops, farmers markets, or agritourism farms, or through organised distribution and/or catering. It may also be sent to processing businesses which then send the product to the consumer through distributors and/or the food services sector.
In some cases, the same industrial processing is characterised by several stages: the transformation of the harvested product into semi-finished, and then finished products.
Moreover, the aspects of complementarity with other supply chains cannot be overlooked.
Two important points of contact, for example, are with the tourism sector, which may contribute to increasing the value of the food services sector in a decisive manner, setting in motion development potentials not yet fully exploited, and with the activities of land protection, which clearly and directly involve the methods of organisation of the activities in the agricultural sector.

The main players in the agri-food supply chain

The main players in the supply chain and those more easily quantifiable are those linked to agricultural production (farming, forestry and fisheries), manufacturing industry (food industry, wines and other drinks and tobacco), trade and distribution (wholesale and retail trade of food and drink products) and food service accounts.
The grouping of operators in the different areas of the food industry guarantees a contribution of the highest order, and currently increasing, to the regional economy. The food chain in Veneto numbers approximately 165 thousand businesses, of which 120 thousand belong solely to the farming sector , which employs 506 thousand workers (259 thousand are those in the agricultural sector).

The agri-food sector produces a great amount of wealth

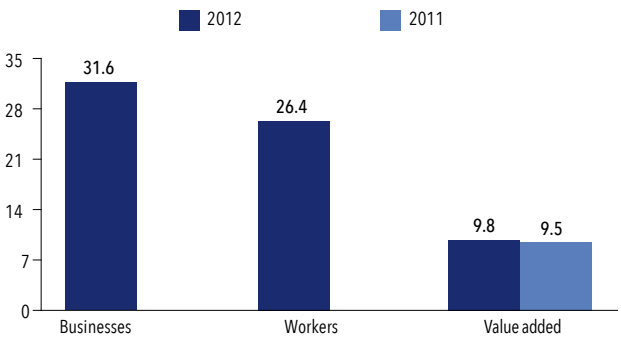
It is estimated that in 2012, the supply chain generated a value added close to 15 billion Euros, equal to 9.8% of the overall wealth generated in Veneto, and growth of +1.4% compared to the figure recorded in the previous year. The businesses in the chain represent approximately 32% of the businesses in the region, while the share of workers is equal to 26.4%.

Tab.3.3.1 - Number of businesses and workers involved in the agri-food supply chain in Veneto - Year 2012

	Businesses	Workers
Agriculture (a)	119,384	259,092
Food ind.	3,334	37,050
Beverage industry	312	5,278
Wholesale trade	6,221	24,744
Fixed shop retailing	12,049	76,437
Catering services	22,915	103,965
Total	164,215	506,566

(a) Figure available for 2010 *Source: Veneto Region Processing - Regional Statistics System Section on Istat data*

Fig. 3.3.3 - Businesses, workers and value added of the agri-food supply chain: % share of the entire economy. Veneto - Years 2011 and 2012



Source: Veneto Region Processing - Regional Statistics System Section on Istat data

The purely agricultural sector constitutes a fundamental component of the agri-food supply chain in terms of businesses and workers: over 72% of agri-food businesses in Veneto are engaged in the agriculture stage of production, while the importance of workers drops to 51%, considering all the people involved in the production stage, regardless of days worked (approximately 65 standard working days per year). However, the importance of value added generated by the agricultural component is significantly lower (19%), this due to the excessive fragmentation of production and limited productivity of the sector. Businesses involved in the stage of industrial proces-

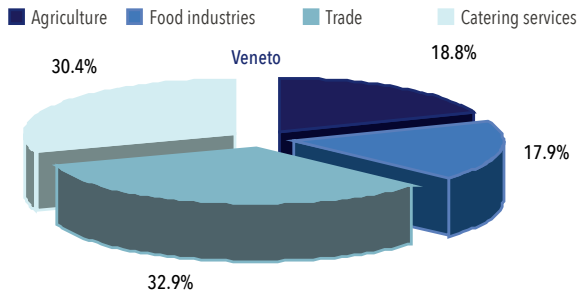
[5] Farms in Veneto according to the 2010 Agricultural Census, the most recent data available..
[5] Meaning 8 hour days.

sing are 2.2% of the agri-food sector total, while the weight of workers rises to 8.4%. The share of the value added generated by the industrial component (18%) is quite similar to that generated by the agricultural component within the supply chain.

The wealth produced by commercial activities is widespread

The component of commercial intermediation produces the most consistent share of value added of the agri-food supply chain, approximately a third of the total, equal to 4.8 billion Euros in 2012. Over 18 thousand businesses are involved in the distribution stage of the industry (11%), while the effect from workers rose to 20%, thanks to the important contribution of employment tied to the retail trade (over 76 thousand workers).
Also relevant is the effect which covers the catering stage: 14% of businesses, more than 20% of the workers and approximately 30% of the wealth produced by the agri-food industry.

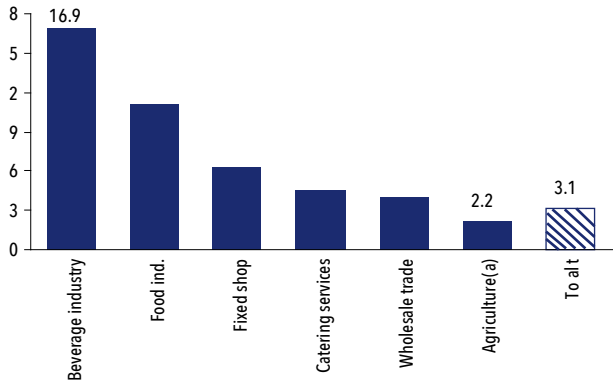
Fig. 3.3.4 - % distribution of value added in the agri-food supply chain for the principal players. Veneto - Year 2012



Source: Veneto Region Processing - Regional Statistics System Section on Istat data

A look at the average size of businesses in the Veneto agri-food supply chain emphasises the presence of a high number of small businesses, in line with the national trend, especially in the agricultural sector: 3 workers per business in the agri-food supply chain compared to a regional average of 4 workers.
Among the diverse sectors in the chain, industry shows a greater average size, equal to approximately 12 workers per company, which becomes 5.5 workers in the case of businesses involved in trade, and 4.5 workers in the catering and bar sector. In the agricultural sector, the average size is approximately 2 workers per company.

Fig. 3.3.5 - Average size of businesses in the agri-food supply chain in Veneto by economic category - Year 2012



(a) Figure available for 2010
Source: Veneto Region Processing - Regional Statistics System Section on Istat data

The structure of the sectors

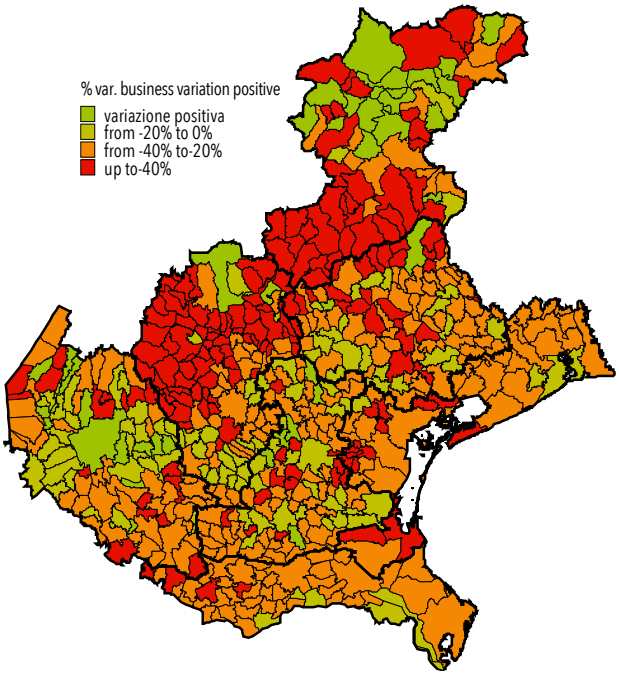
This section will further explain the structural and economic aspects of the main players in the agri-food supply chain, looking in greater detail at the agricultural sector, the food industry and the sector of intermediation, retail trade and food services.

Farms

The reference data relative to the agricultural sector in Veneto and nationally are from the 2010 agricultural Census and were widely analysed in previous editions of this report, particularly in Chapter 7 of the Statistical Report 2013 - Transformation.
The Italian agricultural sector, especially over recent years, has experienced a highly complex period, influenced by the economic crisis, the volatility in the price of agricultural commodities, by changes in the CAP and, not least, by the new challenges linked to environmental sustainability. All this, added to the demands of a renewed entrepreneurial capability and the needs related to an increased agricultural profitability, has contributed to the profound changes which have been recorded by various agricultural censuses,

and which have, in some way, led our local agriculture to move much closer to European standards.

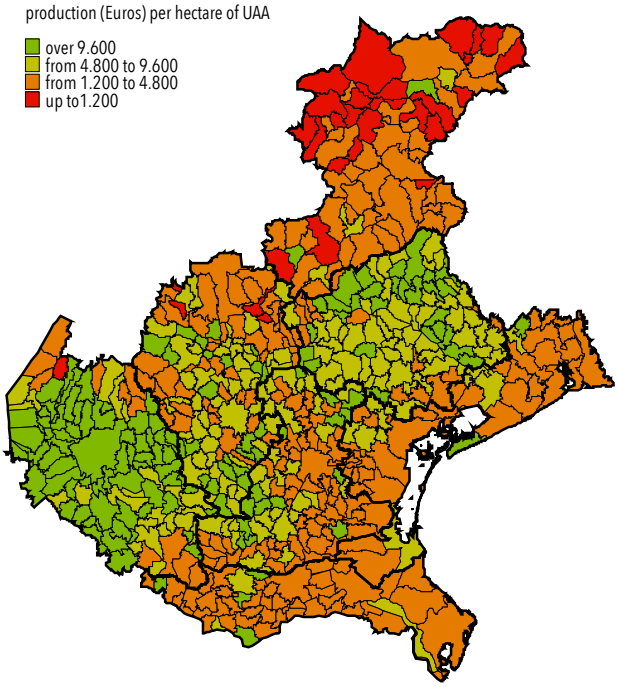
Fig. 3.3.6 - % variation of farms compared to the previous municipal Census. Veneto - Year 2010



Source: Veneto Region Processing - Regional Statistics System Section on Istat data

It is in this situation that farms, both in Veneto and Italy, operate and try to find balance: they are becoming fewer in number, and increasingly larger, on average, than in the past. In fact, the Utilised Agricultural Area (UAA) average in the last 10 years alone has increased by over 40%, both in Veneto and Italy, to 6.8 hectares and 7.9 hectares, respectively, while the number of farms in Veneto and Italy fell by 32.4%; as a result, the UAA total recorded a much smaller decrease of 4.6% in our region and 2.5% at a national level. In 30 years, half of Veneto farms have disappeared but only 11% of the UAA, equal to over 100 thousand hectares of cultivable land.
Regionally, the greatest farm loss, considering the variation between 2000 and 2010, is concentrated in municipalities of the foothill and mountain area in the provinces of Vicenza, Treviso and Belluno. In contrast, positive variations are concentrated in a few municipalities in the province of Verona and, especially Belluno, the province which is home to the highest percentage of young people compared to the total number of farms. From the point of view of average productivity per hectare of UAA, the value of Veneto is almost double the figure for Italy, with 6,785 Euros versus 3,874 Euros.

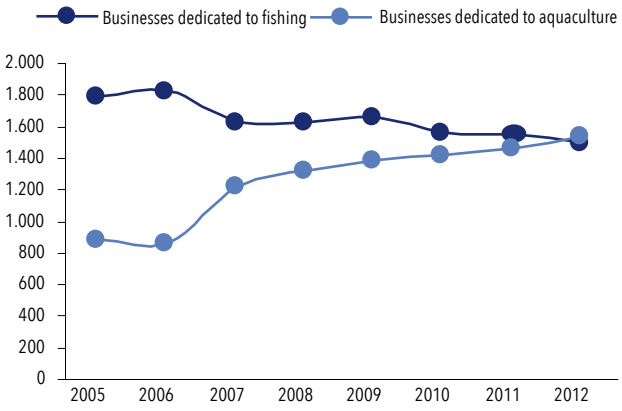
Fig. 3.3.7 - Average production (Euros) per hectare of UAA and by municipality. Veneto - Year 2010 production (Euros) per hectare of UAA



Source: Veneto Region Processing - Regional Statistics System Section on Istat data

For the purpose of locating the areas of highest profitability in our region, we have calculated this value by the UAA belonging to the farms of each municipality in Veneto: the highest profitabilities are located in the municipalities of the provinces of Verona and Treviso, where the association with more economically profitable specialisations is higher. Lastly, the fishing industry in Veneto, today finds itself in a phase of profound transformation primarily induced by a series of external factors which have forced structural adjustments upon each sector, as well as changes in production: the Veneto fishing fleet reflects the characteristics of small-scale fishing and the age of the boats reveals a need for renewal.

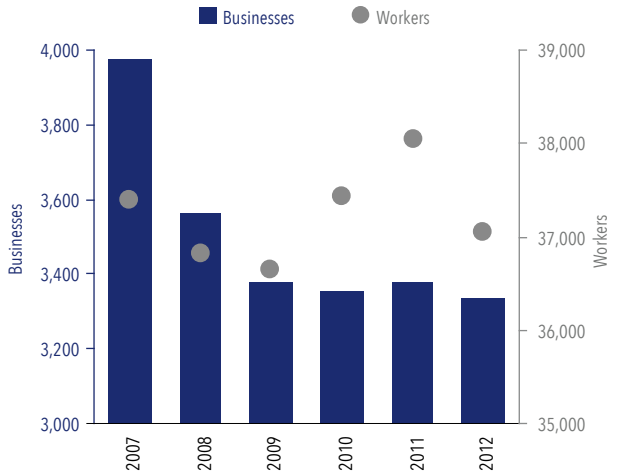
Fig. 3.3.8 - Trend in the number of fishing and aquaculture businesses Veneto - Years 2005:2012



Source: Veneto Region Processing - Regional Statistics System Section on Infocamere data

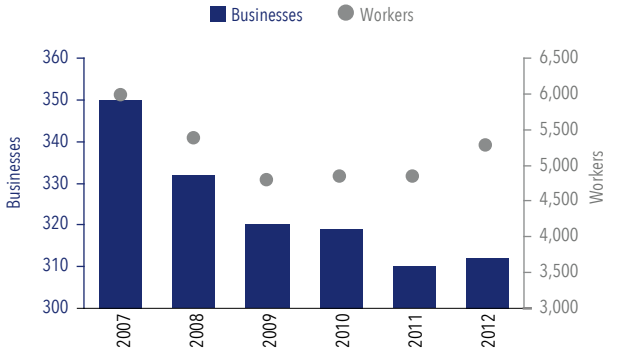
From the economic/social point of view, the sector was characterised by strong entrepreneurial individualism and increase in production costs, particularly for energy. The excessive fragmentation and the conspicuous presence of approximately 3,000 fishing and aquaculture micro businesses, did not help the relaunch of fishing and entrepreneurial activities.
Food industry

Fig. 3.3.9 - Number of businesses and workers involved in the food industry. Veneto - Years 2007:2012



Source: Veneto Region Processing - Regional Statistics System Section on Istat data

Fig. 3.3.10 - % share of businesses and workers in the food industry by individual sector. Veneto - Year 2012



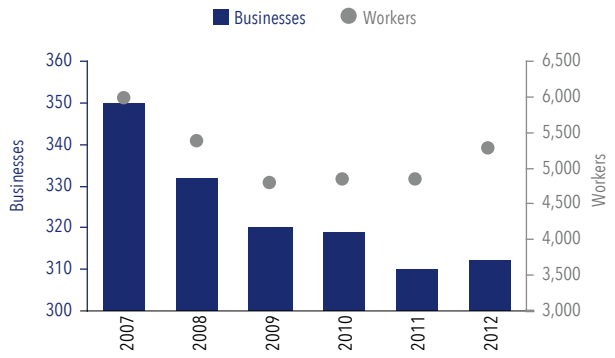
Source: Veneto Region Processing - Regional Statistics System Section on Istat data

The international crisis of 2008 and the resulting stagnation of internal consumption led to a reduction in the number of businesses in the industry of the food industry: between 2007 and 2012, the negative balance of businesses was 643, involving mainly small and very small farms which have had greater difficulty reaching markets which are further and more promising. On the other hand, the number of workers has remained almost the same, thanks to the help of exports which have driven the growth in sales of the medium to large businesses in the sector. In 2012, businesses in the food industry sector were 3,334 and employed over 37 thousand workers.
Approximately 66% of businesses in the sector are engaged in the preparation of baked goods and farinaceous products, representing over 46% of overall employment in the sector.
Just under 14% of the businesses concentrate on the production of other food products and 9.1% in the processing and preservation of meat. Businesses attributable to the dairy industry represent just over 5% of the food processing sector.
The distribution of workers is more evenly spread: the meat sector employs more than a quarter of workers in the sector (26.1%); 12% in other food products, 7% in the dairy industry and 5% in the processing and preservation of fruit and vegetables.
More than half of businesses in the food service industry declare annual sales of less than 200 thousand Euros, while approximately 30% have sales between 200 thousand and one million Euros. Only 8% of businesses in the sector have sales above 5 million Euros.

The wine and other drinks production industry

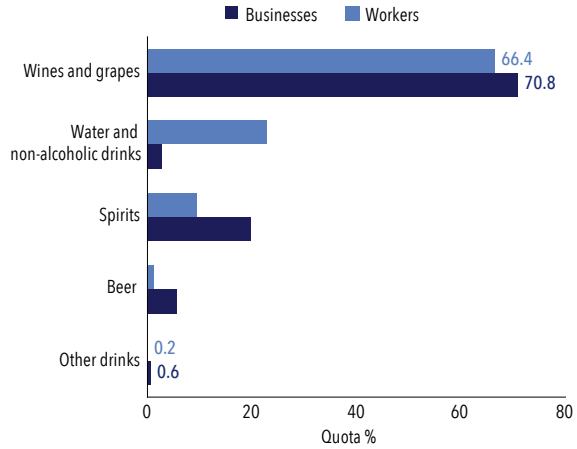
The performance of businesses and workers over recent years, between 2007 and 2012, shows a significantly negative trend for the wine and other drinks production sector, with a decrease of 10.9% in the number of businesses (38) and 11.7% in the number of workers (701). Only in 2012, there were signs of a turnaround: Veneto businesses in the sector numbered 312, while the figures recorded for workers did not reach those of 2007, once again recorded growth (+9.1% compared to 2011) verging on 5,300. The distribution of individual sectors revealed the Veneto tradition of wine production, such as prosecco, valpolicella and soave, but also the distillation of grappa and the capitalisation of the sources of mineral water. The sector of wine produced from grapes included over 70% of the businesses in the sector and approximately 66% of the workers employed in the drinks industry. By looking at the average size of businesses, two different groups of businesses are revealed: micro-sized and small businesses (from 3 to 14 workers), which above all involve the sectors of beer, spirits and wine production, and the medium-large businesses belonging to the water and non-alcoholic drinks industry (134 workers per business).

Fig. 3.3.11 - Number of businesses and workers involved in the wine and other drinks industry. Veneto - Years 2007:2012



Source: Veneto Region Processing - Regional Statistics System Section on Istat data

Fig. 3.3.12 - % share of businesses and workers in the wine and other drinks industry by individual sector. Veneto - Year 2012

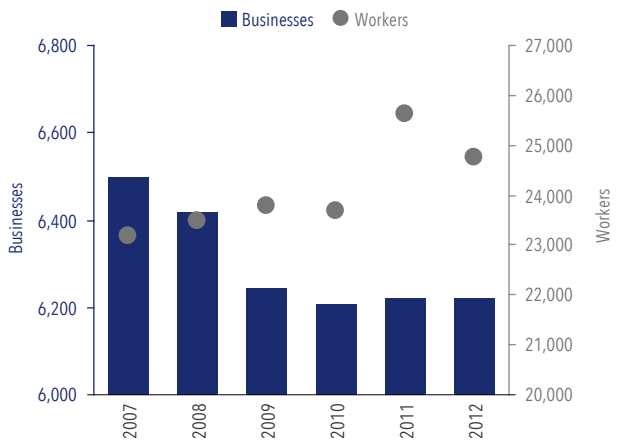


Source: Veneto Region Processing - Regional Statistics System Section on Istat data

In 2012, 51.6% of businesses in the wine and other drinks industry reported sales equal to or less than 1 million Euros and approximately 25% exceeded sales of 5 million di Euros per year.

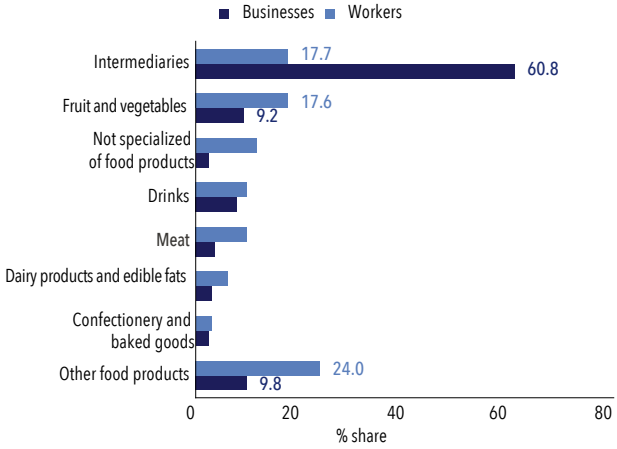
Wholesale trade of food products

Fig. 3.3.13 - Number of businesses and workers in the wholesale trade of food products. Veneto - Years 2007:2012



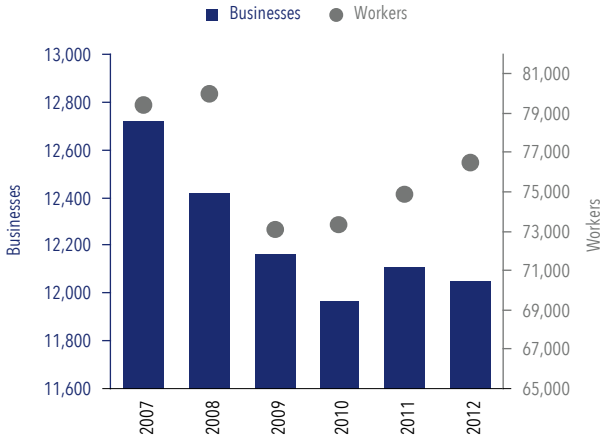
Source: Veneto Region Processing - Regional Statistics System Section on Istat data

Fig. 3.3.14 - % share of businesses and workers in the wholesale trade of food products by individual sector. Veneto - Year 2012



Source: Veneto Region Processing - Regional Statistics System Section on Istat data

Fig. 3.3.15 - Number of businesses and workers in the retail sale of food products. Veneto - Years 2007:2012



Source: Veneto Region Processing - Regional Statistics System Section on Istat data

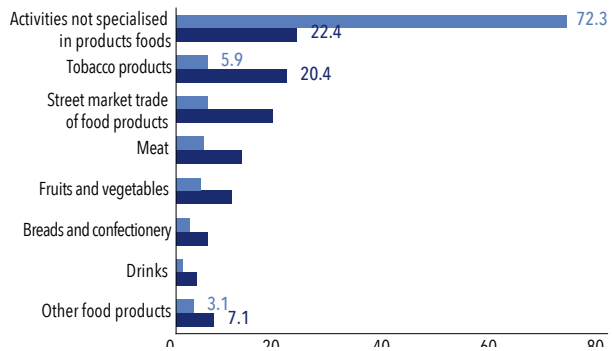
In 2012, wholesale businesses operating along the agri-food supply chain in Veneto numbered 6,221, divided between intermediaries (3,780, equal to 60.8%) and businesses in the wholesale trading of food products (2,441 equal to 39.2%). Among wholesalers, the predominant sectors were those of the selling of fruit and vegetables and the wine and other drinks sector. The number of workers in the wholesale food trade touched on 25 thousand.
The average size of businesses in the sector is approximately 4 workers per business, which becomes 8 if the intermediary sector is excluded.
The predominance of intermediaries is the reason that over 60% of businesses in the sector declare sales equal to or less than 100 thousand Euros and only 18% have sales above one million Euros.

Fixed shop retailing

The trend of recent years highlights the decrease in businesses in the retail sale of food products is slowing after the fall in consumption which occurred as a direct result of the economic crisis of 2008. The situation appears to be slightly different when looking at employment trends: recently (2011 and 2012), there is evidence of a rise in employment driven by large-scale distribution.

In 2012, the number of Veneto businesses operating in fixed shop retailing of food products was 12,049, employing 76,437 workers. Approximately 60% of these are attributable to specialised organisations, while non-specialised organisations achieve a share of 22%. The largest share of workers in the sector were in non-specialised distribution, approximately 72% in 2012, particularly in large scale distribution businesses.
Street market traders of food products numbered 2,148 (17.8%) and, because of their small size, employed 4,367 workers, equal to only 5.7% of those working in the entire sector.

Fig. 3.3.16 - % share of businesses and workers in the retail trade of food products by individual sector.



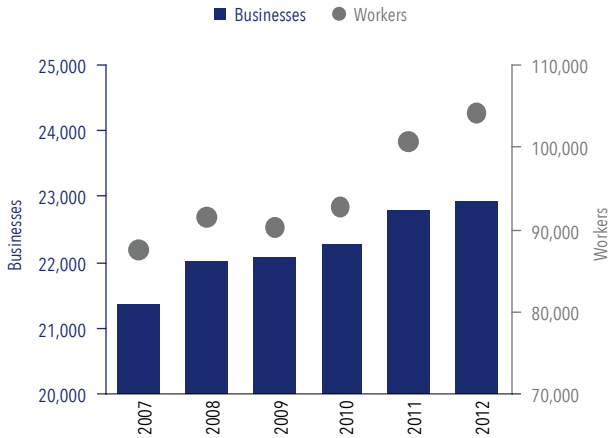
Source: Veneto Region Processing - Regional Statistics System Section on Istat data

Approximately 73% of businesses in the sector declare a revenue of less than 200 thousand and becomes 96% if the threshold being looked at is less than one million Euros. Only 0.7% of businesses in the sector have revenues above 5 million Euros.

Food services

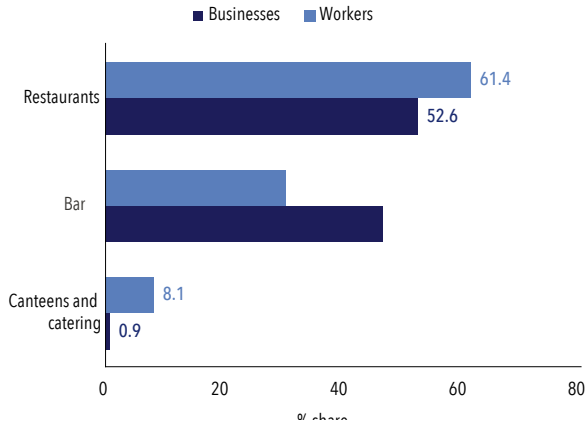
Food services includes three types of activity: restaurants, canteens, and catering and bars.
The trend over the six year period of 2007-2012 highlights a positive dynamic for both businesses and workers in the food services sector. Food services is one of the sectors which weathered the economic crisis better: in the period under review, businesses in the sector increased by approximately 1,500 units, and only activities not serving hot food, and bars, recorded a slight decrease, while employment across the entire sector recorded an increase of 16 thousand workers. In 2012, in Veneto, 52.6% of businesses in the industry were restaurants, which employed 61.4% of the workforce in the sector, 46.5% in bars and activities not serving hot food and only for 0.9% in canteens and catering, which did however employ 8.1% of food services workers.
The distribution of businesses according to sales class saw more than 51% of businesses in the sector declare a turnover that did not exceed the threshold of 100,000 Euros, while only 1.6% had a turnover greater than one million Euros.

Fig. 3.3.17 - Number of businesses and workers involved in food services (bars, canteens and restaurants). Veneto - Years 2007:2012



Source: Veneto Region Processing - Regional Statistics System Section on Istat data

Fig. 3.3.18 - % share of businesses and workers in food service industry by individual sector. Veneto - Year 2012



Source: Veneto Region Processing - Regional Statistics System Section on Istat data

The areas with high manufacturing specialisation in the food industry

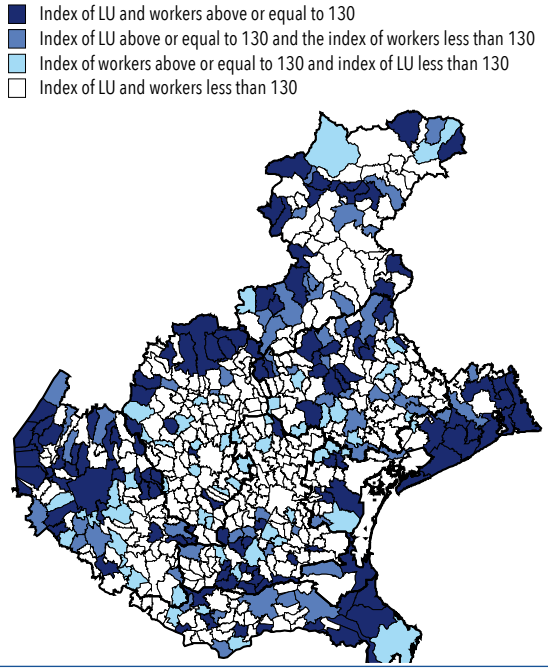
We wanted to further analyse the food industry in Veneto, to examine whether there were areas with higher production specialisation in the region.
To accomplish this, several indicators of production specialisation were calculated (ISA and ISU), any clusters of municipalities adjacent to each other, highly specialised in a defined sector. Some data related to the identified areas was also analysed to understand their relevance compared to the sector total in the region. The indicators of production specialization show the degree of municipal concentration of a sector compared to the regional average.
The results of the indicators were represented graphically through four coloured spots:

- Municipalities with a high concentration of local units and high concentration of workers (dark blue).
- Municipalities with a high concentration of local units, but low concentration of workers, or large presence of small and medium businesses (light blue);
- Municipalities with a low concentration of local units, but a high concentration of workers, or presence of large companies in the area (sky blue);
- Municipalities with a low concentration workers of local units (white).

[6] (Workers in sector y in municipality x /Total manufacturing workers in municipality x) / (Workers in sector y in the region / Total manufacturing workers in the region)*100.
[7] (LU in sector y in municipality x /LU total of manufacturing workers in municipality x) / (LU in sector y in the region / LU total of manufacturing workers in the region)*100.
[8] The economic literature and various regional regulations set the threshold used to identify a municipality with "high production specialisation" equal to 130, or greater than 30% of the corresponding regional index.
[9] These are the individual production units of businesses.

This map allows the matching and preservation of all the information from the two individual indicators, giving an overview of the sector under review. These areas were highlighted, and it was checked if there existed a true nucleus of municipalities adjoining one another, able to act as a gravitational centre, around which an entrepreneurial fabric with a defined production specialisation developed.

Fig. 3.3.19 - Food industry, wine and other drinks. Production specialisation of local units (LU) and workers by municipality (*). Map showing the average regional figure (set at 100). Veneto - Year 2011



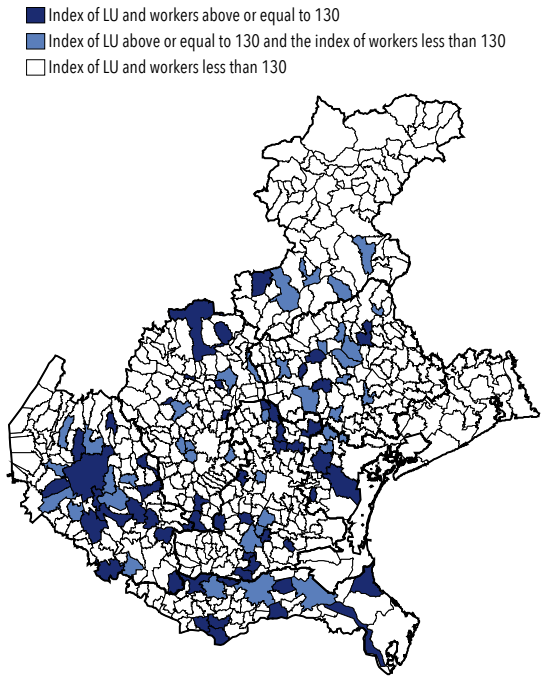
*(*) Index of manufacturing specialisation of workers = (Workers in sector y in municipality x /Total manufacturing workers in municipality x) / (Workers in sector y in the region / Total manufacturing workers in the region)*100*
*Index of manufacturing specialisation of LU= (LU in sector y in municipality x / LU totals of manufacturing in municipality x) / (LU in sector y in the region / LU totals of manufacturing in the region)*100*
Taking 100 as the regional average, an index value equal to 130 means that the manufacturing specialisation of the municipality is greater than 30% compared to the regional average.
Source: Veneto Region Processing - Regional Statistics System Section on Istat data -9th Industry and Services Census 2011

In the areas outlined, the summary statistics containing the number of municipalities within the area was calculated, as well as the importance of workers and the local units present in the area compared to the regional total of the economic sector reviewed, the value of exports for each identified area and the value of research and development costs realised by businesses located in the identified regional breakdown. The graphic representation of the indicators of specialisation in the food industry sector do not seem to allow, due to the presence of various types of agri-food production, the identification of a true nucleus of municipalities adjoining one another, able to act as a gravitational centre. It does, however, highlight the high concentration of several municipalities which push to revise the methodology for each production in the food sector. In this way, it was possible to identify certain areas with a high concentration of local units operating in the processing of fruit, fish and wine.

Processing of fruit

From the map below, the presence of a cluster of municipalities in the area of Verona which specialise

Fig. 3.3.20 - Processing of fruit. Production specialisation of local units (LU) and workers by municipality (*). Map showing the average regional figure (set at 100). Veneto - Year 2011



*(*) Index of manufacturing specialisation of workers = (Workers in sector y in municipality x /Total manufacturing workers in municipality x) / (Workers in sector y in the region / Total manufacturing workers in the region)*100*
Index of manufacturing specialisation of LU = (LU in sector y in municipality x / LU totals of manufacturing in municipality x) /

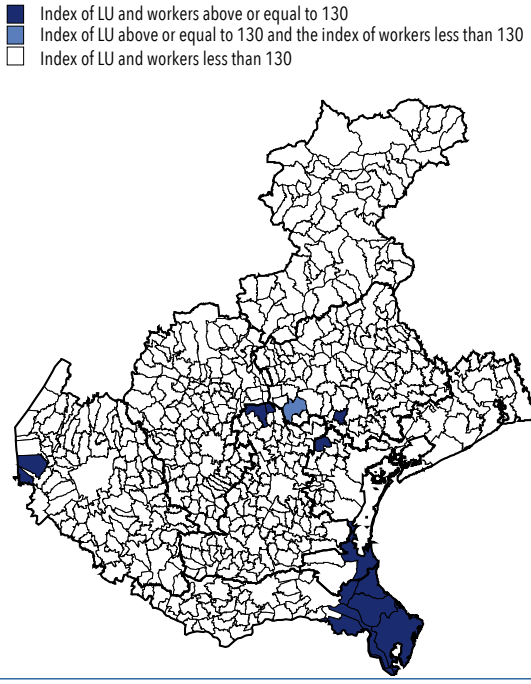
[10] Ateco 2007 three-digit code 103.
[11] Ateco 2007 three-digit code 102.
[12] Ateco 2007 four-digit code 1102 (the universe of reference is manufacturing, therefore canteens classified as farms were excluded).

*(LU in sector y in the region / LU totals of manufacturing in the region)*100*
Taking 100 as the regional average, an index value equal to 130 means that the manufacturing specialisation of the municipality is greater than 30% compared to the regional average.
Source: Veneto Region Processing - Regional Statistics System Section on Istat data – 9th Industry and Services Census 2011

in the processing of fruit seems clear. In the 31 municipalities in the area, there are approximately 20% of total local units and 32.4% of total workers in the fruit processing sector of the region. A fifth of the goods exported by Veneto from this sector (for a value of approximately 37 million Euros) comes from here, and a quarter of the Research and Development (R&D) budget of the sector is invested here.

Fishing industry

Fig. 3.3.21 - Fishing industry. Production specialisation of local units (LU) and workers by municipality (*). Map showing the average regional figure (set at 100). Veneto - Year 2011



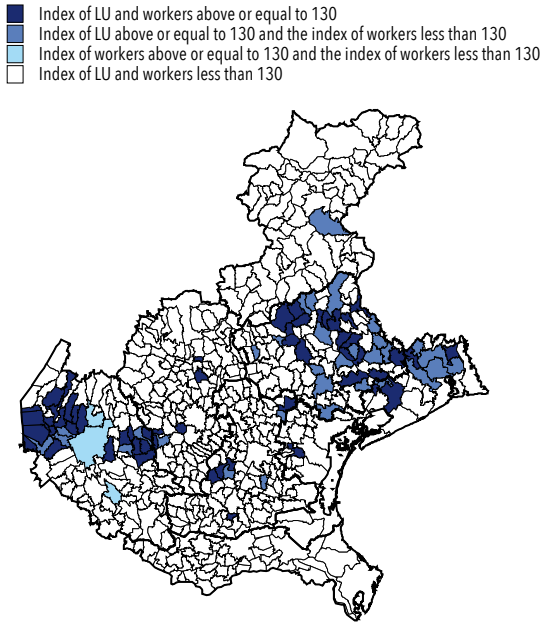
*(*) Index of manufacturing specialisation of workers = (Workers in sector y in municipality x /Total manufacturing workers in municipality x) / (Workers in sector y in the region / Total manufacturing workers in the region)*100*
*Index of manufacturing specialisation of LU = (LU in sector y in municipality x / LU totals of manufacturing in municipality x) / (LU in sector y in the region / LU totals of manufacturing in the region)*100*
Taking 100 as the regional average, an index value equal to 130 means that the manufacturing specialisation of the municipality is greater than 30% compared to the regional average.
Source: Veneto Region Processing - Regional Statistics System Section on Istat data – 9th Industry and Services Census 2011

The analysis of the concentration of the fishing industry clearly shows the presence of a cluster of municipalities in the southern area of the Veneto coast. In the 7 municipalities identified, there are approximately 68% of total local units and 78.3% of total workers in the regional fishing industry. Exports from this area are 65.2% of the Veneto fishing industry (for a value of approximately 30 million Euros), and Research and Development (R&D) activities are only performed in this area.

Wine sector

The graphic representation of the methodology used by the wine sector highlights the presence of four areas. The first two areas (Valpolicella and Soave) are clearly visible and almost contiguous, while the borders of the Prosecco di Conegliano and Eastern Veneto

Fig. 3.3.22 - Wine industry. Production specialisation of local units (LU) and workers by municipality (*). Map showing the average regional figure (set at 100). Veneto - Year 2011



(*) Index of manufacturing specialisation of workers = (Workers in sector y in municipality x /Total manufacturing workers

*in municipality x) / (Workers in sector y in the region / Total manufacturing workers in the region)*100*
*Index of manufacturing specialisation of LU = (LU in sector y in municipality x / LU totals of manufacturing in municipality x) / (LU in sector y in the region / LU totals of manufacturing in the region)*100*
Taking 100 as the regional average, an index means that the manufacturing specialisation of the municipality is greater than 30% compared to the regional average.
Source: Veneto Region Processing - Regional Statistics System Section on Istat data -- 9th Industry and Services Census 2011

do not seem easily identifiable and have been defined on the basis of the presence of large exporters of one or the other variety in the bordering areas, which in the case of Prosecco di Conegliano crosses the borders of the historic district.
The prosecco processing zone prevails, in terms of local units and workers (over a thousand), while Valpolicella is predominant for export value (over 465 million Euros). These four areas export wines of over 1.1 billion, approximately 90% of Veneto wine. Research & Development (R&D) for the industry is only carried out here, with a prevalence in the Soave area: in 2011, businesses located in the four areas invested 832 thousand Euros in wine research.

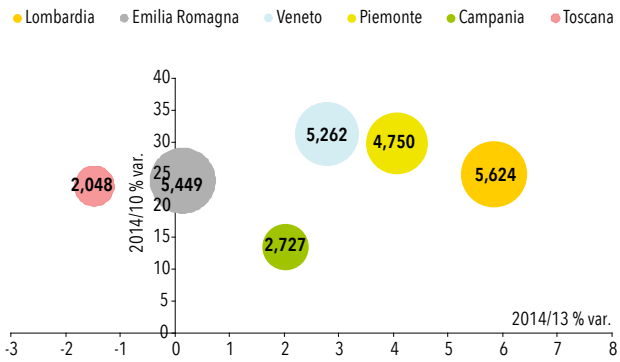
3.4 Agri-food exports

In 2014, Italy exported goods valuing approximately 400 billion Euros around the world. Of these, a share equal to 8.6% (a growth of 2.4% compared to the previous year) were goods from our agricultural and food industry. Lombardy was the leading region in Italy for agri-food exports, with 5.6 billion Euros and a growth of 5.8% compared to 2013, overtaking Emilia-Romagna which remained more or less stable compared to the previous year.

Veneto third region in Italy for export value of agri-food products

Veneto confirmed its third position in the ranking with 5.3 billion Euros, a 2.8% increase compared to 2013 and, considering the top regions in Italy, it is also the one which has realised the greatest increase in performance over the last 5 years, equal to +31.2%, albeit all regions considered grew by rates which were always greater than +10%, and equal to +23.2% for the country as a whole, confirming the success of our products across the world.

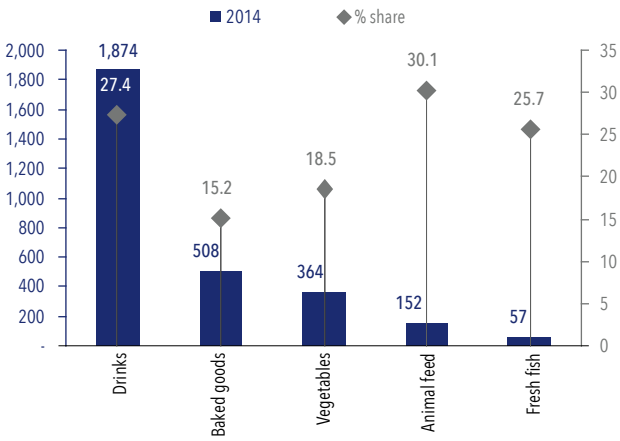
Fig. 3.4.1 - Agri-food exports: 2014(*)/2013 % variation, 2014/2010 % variation and value of the top Italian regions for the latest year



(*) 2014 provisional
Source: Veneto Region Processing - Regional Statistics System Section on Istat data

Veneto stands out not only for the impressive growth of the total agri-food exports over the years, but it is also the top Italian exporter of many products: drinks, fresh fish, baked goods, animal feed, and vegetables (in primis, radicchio) represent our best sellers abroad, and often account for an important share of Italian exports for that category.

Fig. 3.4.2 - Agri-food exports: total value (thousand Euros) and share of total Italian exports by category. Veneto - Year 2014



(*) 2014 provisional
Source: Veneto Region Processing - Regional Statistics System Section on Istat data

[13] Meals consumed outside accommodation facilities and net budget for travel costs of round trip journeys
[14] Source: Coldiretti survey of Italian holiday within the national borders.

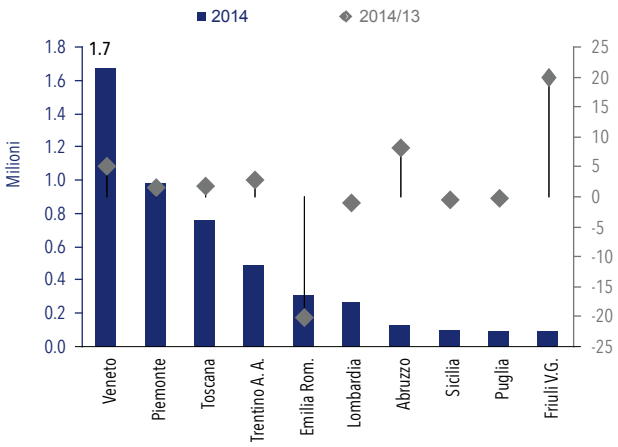
Wine is the best selling product for Veneto by quantity and value

Veneto exports of drinks, of which approximately 90% is represented by wine, accounts for a figure equal to a 27.4% share for Italy; a share which rises for animal feed (30.1%), achieves 25.7% for exports of fresh fish, 18.5% for vegetable, and 15.2% for baked goods.
Drinks and beverages are also the top overall product exported by Veneto: with almost 1.9 billion Euros, they make up 35.6% of the export total of our region. Next is an aggregated category of products which includes sugar, tea, coffee, cocoa and spices, and at 559 million Euros, represents 10.6% of the total.
In third place we have baked goods with total exports of 508 million Euros. Among the top categories, the one that which experienced the most consistent growth in the last 5 years is, without doubt, oils, doubling the value of its export and achieving a value of 186 million Euros. Most exported products, with the exclusion of fruit which had continuous declines in the years examined, recorded highly consistent increases which were almost always in double-figures, as seen in meat-based products, which grew by +47%, dairy by +46.3%, baked goods by +45.9% and, inevitably, drinks with +42.9%.
With regard to destinations, Veneto counts many European countries, among its most loyal customers: Germany ranks first, with a fifth of the value we export, next the United Kingdom and Austria. The most dynamic countries, while not yet achieving particularly high annual values, are China and Croatia which in the last year grew by 9.4% and 28.8%, respectively. Meanwhile over the last 5 years, China has almost quadrupled its value and Croatia more than doubled with +130.2%. The United States and United Kingdom also demonstrated considerable dynamism with last year increases of +12% and +7%, respectively, while over the last 5 years, the United Kingdom grew by 60% and the USA by +52.1%.
Russia, on the other hand, saw a decline after several years of consecutive and consistent increases, seeing imports from Veneto drop by -19.1%, in large part due to the blockade on imports which Russia, itself, decided to apply to the agricultural products from several countries, and which began in August 2014. This was in response to the sanctions put in place against Russia by this same group of countries of which Italy is part. The goods which have been most affected are, obviously, those subject to the blockade, such as dairy products (-50%), fresh fruit (-39.8%) and preserved fruits and vegetables (-51.7%).

Wine exports

Veneto has, for many years, held a highly solid position with regard to the world of wine: in terms of quality and quantity, not is it the most productive region in Italy, but also the one with the highest export value. This tradition would not be denied, in 2014, with Veneto once again coming top of the table with a new export record just touching on 1.7 billion Euros and an increase of over 5 percent compared to 2013.

Fig. 3.4.3 - Wine exports: value (million di Euros) and % var- compared to the previous year by region - Year 2014(*)



(*) 2014 provisional
Source: Veneto Region Processing - Regional Statistics System Section on Istat data

Among the first ten Italian regions, Friuli-Venezia Giulia achieved the highest growth with a record variation, compared to 2013, equal to +20%, next followed by Abruzzo (+8.3%) and Veneto. Apulia, Sicily and Lombardy remained stable, while Emilia-Romagna was in free-fall with -20.2%.
Over a third of the value which Italy exported around the world came from Veneto, which again in 2014 exceeded 5 billion Euros: in this way, our country placed second in the world ranking of largest exporters, behind France and ahead of Spain.

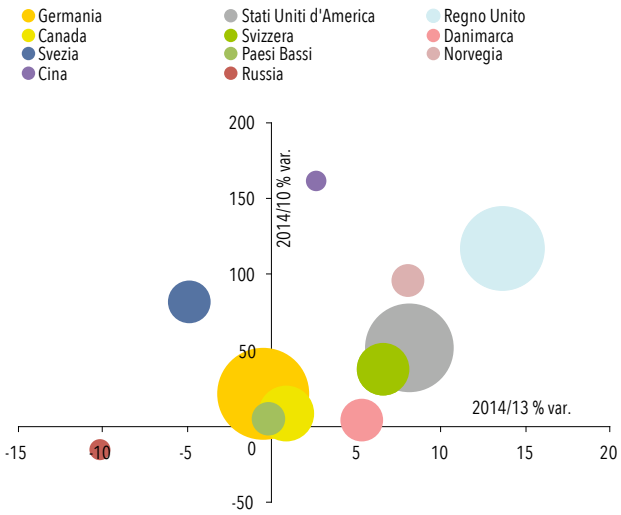
[15] Inclusive type holidays, which include the cost of at least two types of the following services: transportation, accommodation, meals, other services

Our most loyal customer is Germany, creating a fifth of the value of Veneto exports with 328 million Euros, a drop of -0.5% compared to the previous year, which grew by 21% over the last five years.
The United States, which placed second, grew by +7.8% over the last year and 52% since 2010; impressive growth recorded by the United Kingdom of almost 14% compared to the previous year, and more than doubling over the last five years.

Non-stop growth for the export of spumante

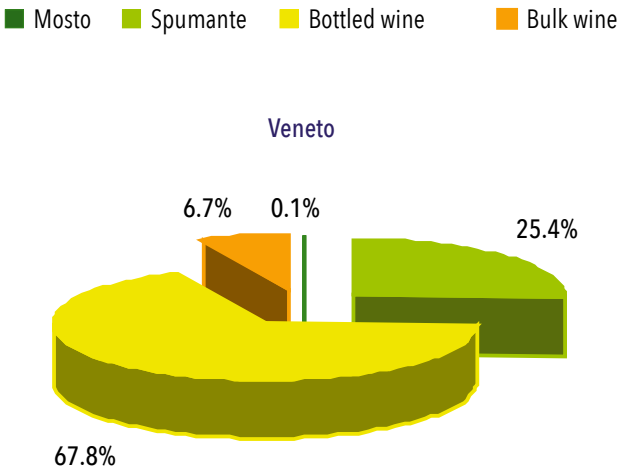
The Nordic countries such as Norway (+8%) and Denmark (+5.4%) also recorded growth between 2013 and 2014; very good was the result of France (+7.6%) and Australia (+19.4%), which over the last five years is also the country with the largest growth (+175.3%), when looking at the 20 most important importers. Slowdowns for Austria (-0.9%), Sweden (-4.9%) and Russia (-10.2%). China grew (+2.5%) if only with a change in speed compared to the double-digit figure it regularly enjoyed in recent years.

Fig. 3.4.4 - Wine exports: 2014(*)/2013 % variation, 2014(*)/2010 % variation and value for the latest year by country



(*) 2014 provisional
Source: Veneto Region Processing - Regional Statistics System Section on Istat data

Fig. 3.4.5 - Wine exports: % distribution by variety. Veneto - Year 2014



(*) 2014 provisional
Source: Veneto Region Processing - Regional Statistics System Section on Istat data

Then considering the variety of wine, it is spumante which achieved the greatest success: in fact, it represented 15% of export value in 2010, today covering a quarter, with 423 million Euros and a per annum growth never lower than +20% in the last 5 years, and expected to exceed +25% over the last year.

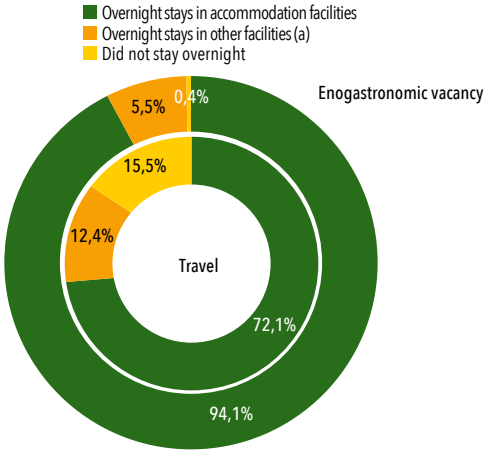
3.5 Tourism, the driving force of the agri-food sector

The very close relationship between tourism and foreign trade is well known. The true promoters of made in Italy products will be those who have been privileged to enjoy our wine and food, and made purchases while here. Arriving home they will be motivated witnesses to the quality and the originality of our production.
The complex, interconnected and self-referential tourist-export system was created by a wide number of stakeholders, relationships and choices. If given the right resources, it could act as a lever for growth to return. It was in this context, that the framework of the regionally directed project welcoming inter-

[16] 2007-2013 yearly average.

national buyers in Veneto was put together, to raise awareness not only about our products, but also our region, traditions, and the environment, in light of a promotional campaign that also took advantage of the intangible value of our culture.

Fig. 3.5.1 - Foreign travellers who came to shop and for an eno-gastronomic holiday. Veneto - 2007-2014 period



(a) Guests of relatives or friends, in property house, boat cruise, nursing home
Source: Veneto Region Processing - Regional Statistics System Section on Bank of Italy data

Now let us focus attention on two tourist types which, if satisfied, will surely contribute to the promotion of the made in Italy brand: those who chose our region for an eno-gastronomic holiday and those who come to shop. To do this, we used the data collected by the Bank of Italy for the survey of international tourism in Italy and looked at foreign travellers who arrived in Veneto over the 2007-2014 period. To make the field of view as similar as possible to that of the usual Istat survey, we looked only at visitors staying overnight in accommodation facilities, used largely by those who come to Veneto strictly to shop (72.1%) and almost the entire total of those who expressed eno-gastronomy as their reason (94.1%).

The eno-gastronomic tourist spends 132 Euros per day

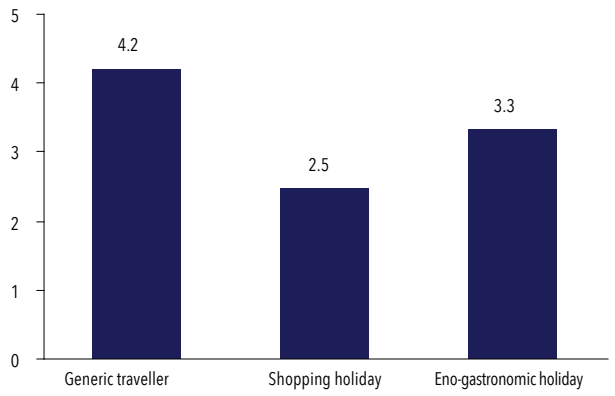
The pleasure of tasting one of our culinary specialities, hopefully accompanied by the enjoyment of our renowned indigenous wines, is a strong tourist attraction: eno-gastronomy, in fact, is always a strong-point in the list of things our region has to offer. It has even become the main or secondary reason for trips to Veneto for approximately 20-30 foreign travellers for every 1,000. It involves the majority of travellers who combine the pleasure of dining with a visit to a city of art (more than 80% of cases) and approximately a quarter of a daily spending budget of 132 Euros reserved for dining . Italians are also attracted by good food, so much so, that about a third more of the holiday budget is reserved for spending on meals and the purchase of eno-gastronomic products than is spent on accommodation. The historic moment when more was spent by Italians for food, overtaking the amount spent on accommodation, occurred in 2014, with the emergence of an ever greater tendency to seek less expensive and alternative accommodation, alongside the strong increase in purchases of agri-food products.
Turning to foreigners who spend time in our region, among the many and traditional reasons like holiday and work, the openly declared journey with shopping as it main motivation, appears to be a niche phenomenon. In fact, if almost everyone purchased something to have it as a memory of the place visited, the desire to seek out and purchase specific products remains the main reason of travel, for far fewer visitors. The setting out of guidelines of shopping tourism were based on the main and secondary reason for travel as declared by the tourist.

The shopping tourist spends 269 Euros per day

This involves approximately 3 foreign customers for every 1,000 who stay overnight in accommodation facilities in Veneto. Those who travel to shop spend more than everyone else: 269 Euros per day, excluding costs of the round trip. In this context, the traveller spends the largest share of their budget on purchases: 56.5% is spent on souvenirs, gifts, clothing, food and drinks, while for generic holidays, around 17% of the budget is spent on these.
The eno-gastronomic holiday and the shopping trip share the short length of stay in Veneto which works out, on average, to around 3 nights.

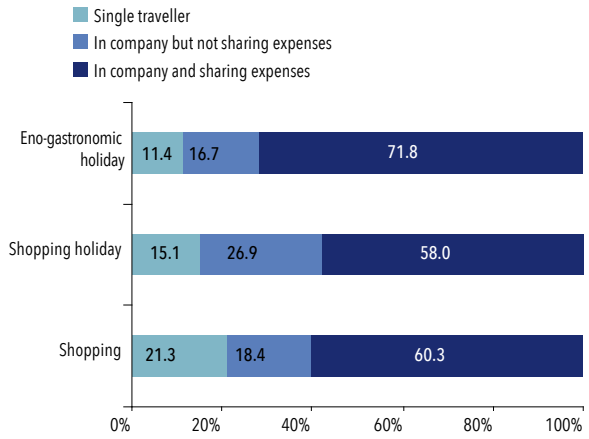
[17] Excess weight is determined based on the body mass index (BMI), calculated by weight in kilos divided by (height in metres squared). The threshold value are: A BMI between 25 and 29.9 is overweight and a BMI equal to or greater than 30 is obese.
[18] Monitoring system "Okkio alla PROGRESS" 2013.
[20] WHO, "Using price policies to promote healthier diet", 2015.

Fig. 3.5.2 - Average stay of foreigners in accommodation facilities for reasons of travel (nights). Veneto - 2007-2014



Source: Veneto Region Processing - Regional Statistics System Section on Bank of Italy data

Fig. 3.5.4 - Foreign clients travelling for shopping or for an eno-gastronomic holiday. Spending behaviour. Veneto - 2007-2014



Source: Veneto Region Processing - Regional Statistics System Section on Bank of Italy data

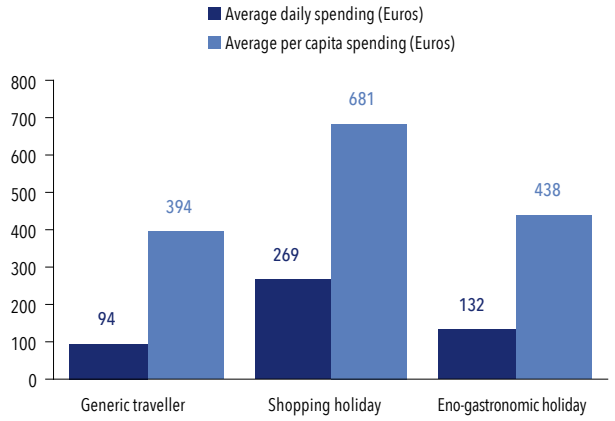
Travelling in company

These two particular types of trips are usually in the company of others, as only 11.4% take a eno-gastronomic holiday alone, 15.1% in the case of shopping trips, compared to 21.3% of generic trips by foreigners in Veneto. Travelling in company does not necessarily denote "pooling funds", and in fact, approximately a quarter of those who travel to shop do not share expenses.

Younger clients

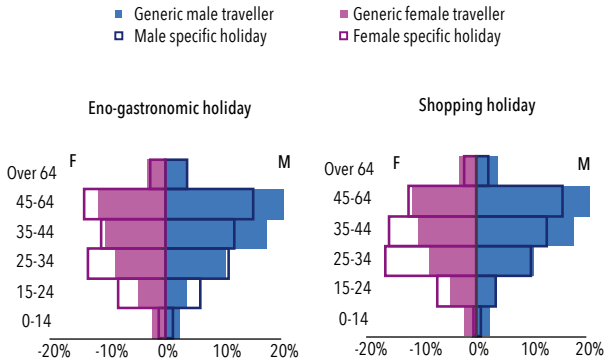
Both these reasons for travel see a high level of participation by the female population: while in the overall figure for foreign visitors to Veneto, women do not exceed 41%, in the case of eno-gastronomic holidays, there as many women as men, and in the case of shopping holidays, women become the more interested gender (54.5%). Predictably,

Fig. 3.5.3 - Average spending of foreigners travelling for shopping or for an eno-gastronomic holiday. Veneto - 2007-2014



Source: Veneto Region Processing - Regional Statistics System Section on Bank of Italy data

Fig. 3.5.5 - Percentage distribution of foreign travellers by reason for travelling, gender and age. Veneto - Years 2007-2014



Source: Veneto Region Processing - Regional Statistics System Section on Bank of Italy data

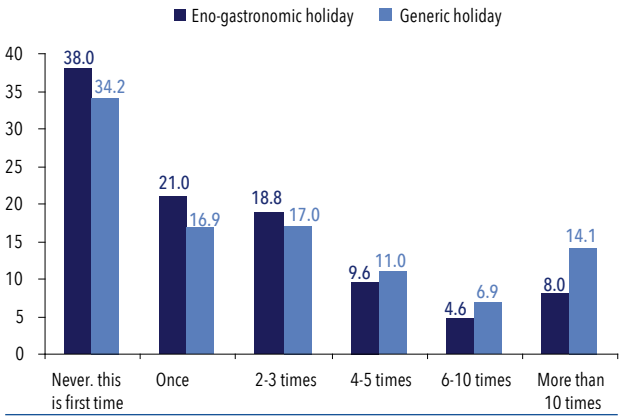
[21] Excess weight is determined based on the body mass index (BMI), calculated by weight in kilos divided by (height in metres squared). The threshold value are: A BMI between 25 and 29.9 is overweight and a BMI equal to or greater than 30 is obese.
[22] Monitoring system "Okkio alla PROGRESS" 2013.

the number of children brought on holiday drastically reduces, but at the same time tourists who travel to shop and for enogastronomic holiday are younger overall.
The use of traditional facilities results to be more widespread: while the generic foreign tourist who comes to Veneto chooses to stay in a hotel, in approximately 69% of cases, in the two cases analysed here this figure exceeds 80%.
Another difference, though small, is seen in the composition of respondents through their employment status. Employed workers, as ever, represented the predominant category, but in the case of shopping holidays the share of pensioners dropped by half (approximately 5% in contrast to 8% of generic holiday), while there was an increase of share several percentage points for the self-employed (approximately 15%) and housewives (4%). The employment status of those who travel exclusively for eno-gastronomic reasons are not much different to the generic foreign tourist who visits Veneto.

High customer turnover

The population who take an eno-gastronomic holiday is composed of "new" clients in 38% of cases, a slightly higher than 34.2% of generic travellers in Veneto. The quality of the offer and a positive response to the expectations are two important factors to achieving the loyalty and trust of eno-gastronomic tourists and encourage repeat visits.

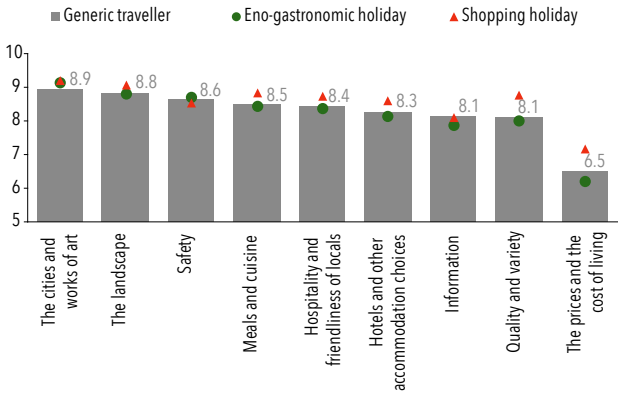
Fig. 3.5.6 - Percentage of foreigners on holiday by number of previous visits. Veneto - Years 2009-2014



Source: Veneto Region Processing - Regional Statistics System Section on Bank of Italy data

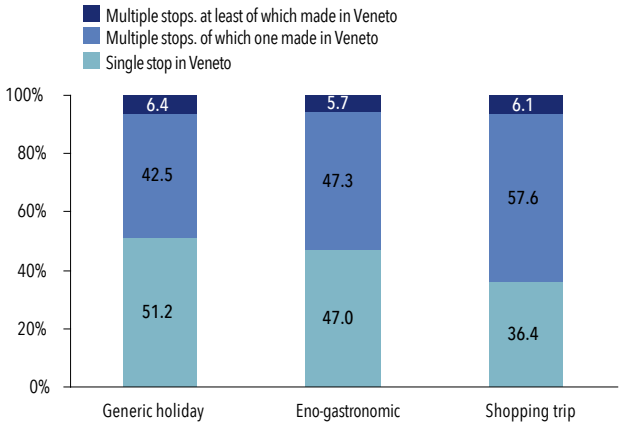
At this point. it would be interesting to analyse the opinions expressed by the traveller at the end of their experience. Just before returning to their home countries, foreign tourists, especially those who had stayed in an accommodation facility in Veneto, were asked to give a score for different aspects of their experience, on a scale from 1 to 10. In general, the scores were quite high, and among the most appreciated aspects were the offerings of art, the environment, safety, and the food; bringing up the rear, however, the opinion on prices. The opinions expressed by those who declared they were in Veneto for an eno-gastronomic holiday were more or less in line with the opinions given by the generic foreign tourist, slightly less generous about the availability of information and prices. Travellers who love to shop seemed particularly satisfied, and demonstrated a greater appreciation for all aspects of their trip, particularly the products available in shops, also giving passing marks to prices (above 7).
With regard to how the trip was planned, it was noted that share of foreigners who opted for an organised holiday or a tourist package in the case of shopping holidays represent approximately one quarter of respondents, in line with generic holiday, while eno-gastronomic holidays the share rises to approximately one third for those who preferred this option.

Fig. 3.5.7 - Average medium score given by foreign tourists about their holiday (*). Veneto - Years 2007-2014



Source: Veneto Region Processing - Regional Statistics System Section on Bank of Italy data

Fig. 3.5.8 - Percentage of foreigners interviewed by number of stops made and the reason for travelling to Veneto. - Years 2007-2014



Source: Veneto Region Processing - Regional Statistics System Section on Bank of Italy data

The person who undertakes a trip with the intention of enjoying our cuisine or to purchase our local products is more likely to try other experience, once they arrive. In fact, travellers who, come to our region, make a single stop, dropping from 51.2% of generic trips to 47% for eno-gastronomic holidays and 36.4% of travellers who come to shop. This underscores, once again, how important an effective promotion of the made in Italy brand is, one that can be the catalyst for positive results on the tourist economy, not limited a single region, but which multiply and cross administrative borders.

The main foreign markets

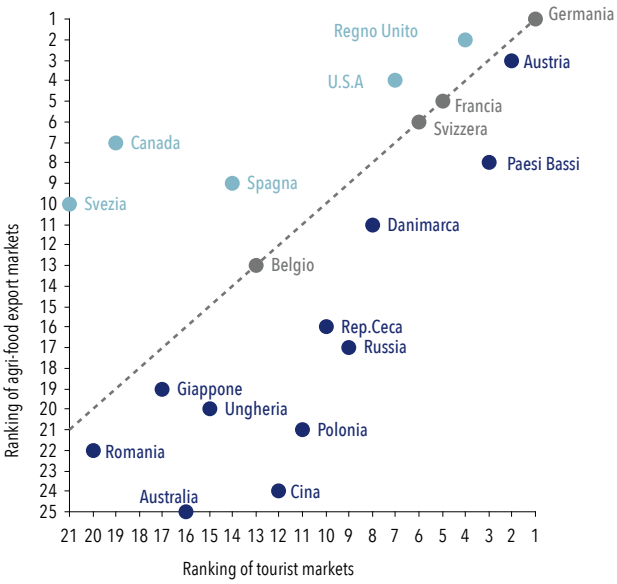
The promotion of Veneto businesses in national and foreign markets and the promotion of products and the overall image of the agri-food industry are objectives that the Veneto Region has pursued and continues to do so, together with the integrated marketing of the region with regard to the productive, the environmental and culture aspects.

The renowned Italian eno-gastronomy, Venetian in particular, constitutes a point of strength of our offering: no traveller can resist trying one of our products and typical recipes. The tourist, who enjoys Venetian delicacies while here, is also more likely to purchase the same products when they return to their country.

In the area of the self-referential system of tourism-export is, therefore curious to compare the Countries of origin of foreign tourists with the export markets of agri-food from the Veneto. In the graph it is possible, from the colour grey, to identify the countries which occupy the same position in the rankings drafted on the basis of tourist numbers and Euro value of agri-food exports. The first positions of each ranking appear to be very similar, with Germany soaring to first position, significantly out-distancing the other countries: in 2014, 34.6% of foreign tourists in Veneto were German, and 21.6% of agri-food exports from Veneto were to Germany. The countries which occupied a higher position in the export rankings are light blue in colour. like Sweden which is only 21st among tourist countries of origin, but is 10th in agri-food exports, thanks to a 13.8% average per annum rate of growth in the period from 2007-2014.

Conversely, the countries which assume a greater importance in the tourism sector are in blue. Among these, China stands out in 12th place, for number of overnight bookings, while in the rankings for agri-

Fig. 3.5.9 - Foreign market by position in the ranking of tourist presence and agri-food exports. Veneto - Year 2014



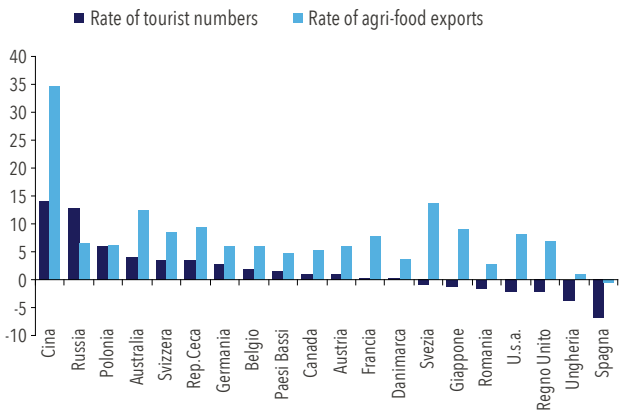
Source: Veneto Region Processing - Regional Statistics System Section on Veneto Region and Istat data

[23] The synthetic indicator for sacrifice: varies from 0 to 100, where 0 represents the best situation, where purchases are equal to or greater than previously, while 100 indicates the worst condition, experienced by families forced to sacrifice both the amount and quality for each type of product considered (bread, pasta, fresh meat, fish, fruit and vegetables).
[24] Food and Agriculture Organization, Agency of the United Nations.
[25] Founder and President of Last Minute Market, a project which proposes transforming waste into a resource and which created Waste Watcher, a food waste monitoring centre.
[26] European Commission - DG Environment Unit C1, "Food Waste in the EU: a study by the European Commission", Barcelona, 2011.

food export, it appears again in 24th place. But it seems only a matter of time, seeing the high rate of growth in exports to China, and the sector registering a record high with a +34.8% average annual growth and confirmation of the continuing rapid increase in the latest year as well (+9.4%). The Russian market, which until 2013 showed highly sustained rates, summarised by a +15.7% per annum average growth in tourist numbers, and +11.6% in agri-food exports. In 2014, this situation abruptly changed, both in tourism (-3.7%) and exports (-19.1%). Among the principal markets, only Spain shows a negative figure on both fronts.

Japan, which does not feature among the top rankings in either tourism or exports, is of noticeable interest for future development, considering the level of the amounts they spend: 180-190 Euros average spent per day, once they reach their resort destination. The Japanese, who are among the clientele most desired by accommodation facilities, almost always hotels and quite often high quality (70.8% of overnight bookings are 4-5 stars), are also highly appreciated by merchants, as approximately a third of the budget is set aside for the purchase of souvenirs, clothing, etc. A survey was conducted for the Bank of Italy at border crossings, which allows us to reach this estimate, only included spending at the destination, therefore excluding the costs sustained for the journey.

Fig. 3.5.10 - Rate of average per annum variation in tourist presence and agri-food exports of the principal foreign markets. Veneto - 2007-2014 Period



Source: Veneto Region Processing - Regional Statistics System Section on Veneto Region and Istat data

Agritourism

When looking at eno-gastronomy, the agritourism sector cannot be ignored. In addition to providing a closeness with nature and freedom from the chaos of the large urban centres, it seduces its guests with a unique 180-190 Euros average spent per day, once they reach their resort destination. The Japanese, who are among the clientele most desired by accommodation facilities, almost always hotels and quite often high quality (70.8% of overnight bookings are 4-5 stars), are also highly appreciated by offering which reflects the Veneto region; its history, its traditions, the civility of the communities in which we live: on agritourism farms, it is possible to enjoy typical products which reflect the local gastronomic traditions, as well as stay overnight in a warm, welcoming environment. The agritourism offerings in the Veneto, with 1,44 national figure, a share exceeded by only two regions where this type of tourist offering, historically, has deep roots: Tuscany (19.7%) and Trentino Alto Adige (16.8%), and Lombardy (7.3%).

In the Veneto, 61.8% of these farms offered accommodation in 2013, while 54% offered food and drink. The offering in 44.2% of farms provides, in addition or as a substitute, product tastings, that is the serving of directly usable agricultural and livestock products, such as milk or fruit and/or products which require an initial transformation, such as oil, wine and cheeses. Each farm practising agritourism may possess more than one authorisation, so facilities in the Veneto offer various combinations of services provided. In approximately half of Veneto farms practising agritourism, the offer is specialised: 29.1% offer only accommodation, 12.1% only food and drink, and 7.3% only product tastings. Alongside these, many farms have a mixed offering with 14.4% providing complete service: accommodation/dining/product tastings.

In Veneto, the province of Verona has the greatest number of farms practising agritourism (25.9%) and a detailed look at the three main authorisations again shows the area of Verona in first with regard to accommodation, but on the food and drink/product front, the province of Treviso has more agritourism businesses, with overall seating for approximately 11,600 guests. The province of Vicenza ranks second with approximately 9,000, while Verona is third with just over 7,000. These figures, added to those of the other provinces, allows Veneto to provide seating for 42,267 guests.

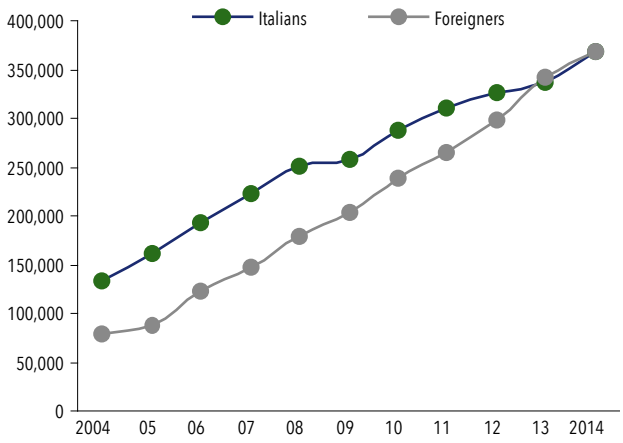
[27] Waste Watcher "Monitoring centre for the food waste of Italian families - 2013 Report", Bologna, 2013.
[28] Idem.
[29] Andrea Segrè da C. Cattivello, "Lo spreco di cibo in Italia", notiziario Ersa n.1/2013.

To whet the appetite of guests and to spread the word about our quality products, the purchase of agricultural products and/or foods produced by the farm is possible in 29.6% of farms practising agritourism: this activity is most widespread in the provinces of Vicenza and Belluno, where it involves 47.1% and 39.7% of farms, respectively.
From the overall view of tourist accommodation in Veneto, where traditional facilities still perform a fundamental role, a significant increase in the number of customers who choose a farm-stay for their holidays, has been noticed of in recent years It still remains a niche tourism market, chosen by only 1.4% of Veneto tourists who booked accommodation in 2014. The preference, however, for this type of offer is growing at a steady rate. The tourist flows of farms practising agritourism in our region are recording high annual rates of growth, double the rates achieved in Italy: in fact, between 2008 and 2013, the number of arrivals in Veneto increase by +10% on average, overnight stays by +9.3% (compared to +5.5% and +4.1%, nationally). In 2014, increases were of the same magnitude: +9.1% arrivals , and +8.6% overnight stays.

Agritourism +9.1% arrivals, and +8.6% overnight stays

Compared to other Italian regions, agritourism in Veneto ranks fifth in the number of beds, but rises to fourth place for the results achieved in 2013 in terms of arrivals and overnight stays.
Guests are still mostly Italian (57% of arrivals in 2014), but the number recorded by farms in Veneto over the years demonstrates an ever increasing penetration of foreign markets, so much so that overnight stays by international guests exceeded 50.3% of the total in 2013. The number of national arrival, however, demonstrates continuous growth, but at a rate much lower than that of foreigners.
As well, the number of tourists who choose agritourism in Veneto for their holiday, is also characterised by seasonality, especially if looking at incoming tourism. To measure the strength of this phenomenon, then ratio for the concentration of tourist arrivals over the months of the year was calculated (R).
This indicated the distance of the distribution of the monthly arrivals actually recorded compared to the perfect equi-distribution and has a value of 0, the minimum value which indicates an absence of seasonality (no concentration of arrivals), and a maximum of 1, the theoretical limit which would be reached if all tourists arrived in a single month (maximum concentration).

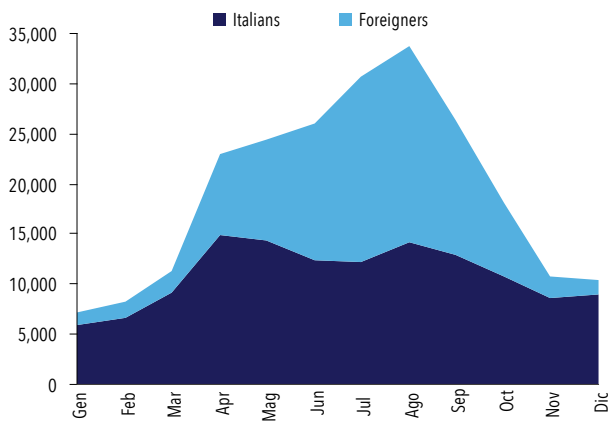
Fig. 3.5.11 - Overnight stays in agritourism farms by tourist origin Veneto - Years 2004:2014



Source: Veneto Region Processing - Regional Statistics System Section on Istat and Veneto Region data

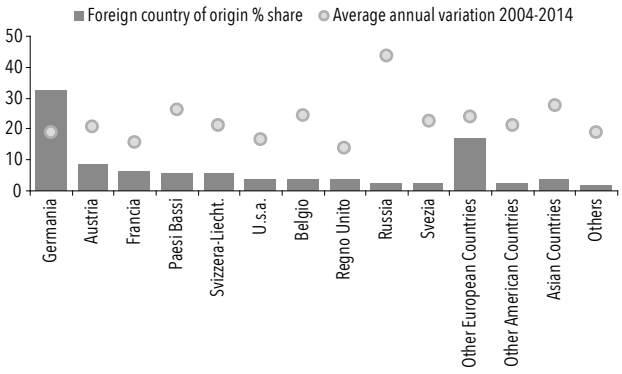
This indicator, calculated for agritourism arrivals in Veneto was 0.3, but rose to 0.5 in the case of foreigners while dropping to 0.2 for Italians, who probably

Fig. 3.5.12 - Tourist arrivals in agritourism farms by month and origin. Veneto - Year 2014



Source: Veneto Region Processing - Regional Statistics System Section on Istat and Veneto Region data

Fig. 3.5.13 - Average annual % variation 2004-2014 and % share of foreign tourist overnight stays in agritourism facilities by country - Anno 2014



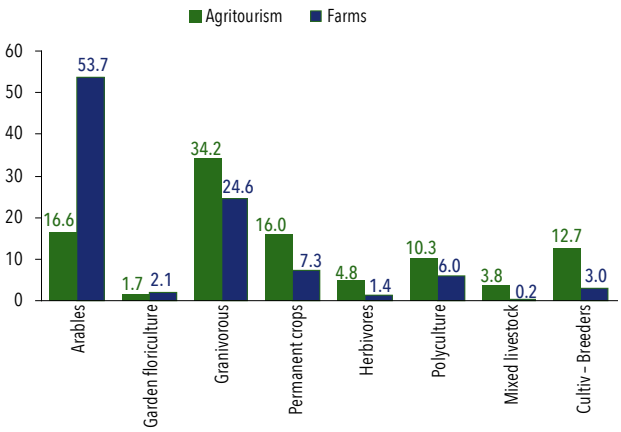
Source: Veneto Region - Regional Statistics System Section on Istat and Veneto Region data

use this type of facility as a place to relax and enjoy nature at the weekends throughout the year, in equal measure.
At the top of the rankings for foreign markets which frequent this type of accommodation is Germany, with a large gap compared to the other nations. In this sector, as with Veneto tourism in general, there has been a marked increase in the number of Russians, although they still appear 9th in the rankings.

A look at farming

The Agricultural Census taken in 2010 provides a more detailed picture of farms which also offer agritourism, increasing the value added to the rural economy. Agritourism farms distinguish themselves from generic farms, above all, in their greater propensity to have other sources of income connected to the farm: these range from on-farm transformation of vegetables or animals to the first-stage processing of farm products, educational farms, animal feed production, and sub-contracting work. In addition to this, agritourism businesses are known for a higher dynamism and entrepreneurial orientation with regard to the farm: not only are these businesses generally larger, younger, and more informed and have managers with higher levels of university education, but they also carry out a higher number of activities outside of traditional farming and have a greater tendency to use computer tools and the web. These characteristics guarantee farms with agritourism a profitability which is three times greater compared to the average Veneto farm: in fact, the standard output of agritourism structures exceeds 138,000 Euros per year per farm, compared to a regional average of 46,000 Euros. It is also true that these activities are mainly concentrated in the higher earning farm specialisations, identified through the Technical-Economic Orientation (OTE) . Meanwhile, more than half of farms in Veneto are specialised in arable farming, cultivation characterised by a lower average standard output (approximately 13,000 Euros per farm). For farms with agritourism, the most popular specialisations are permanent cultivation (34.2%) - it is not an accident that half of these farms in Veneto own land planted with grapevine - livestock breeding (16%) and mixed farming with cultivation and livestock (12.7%).

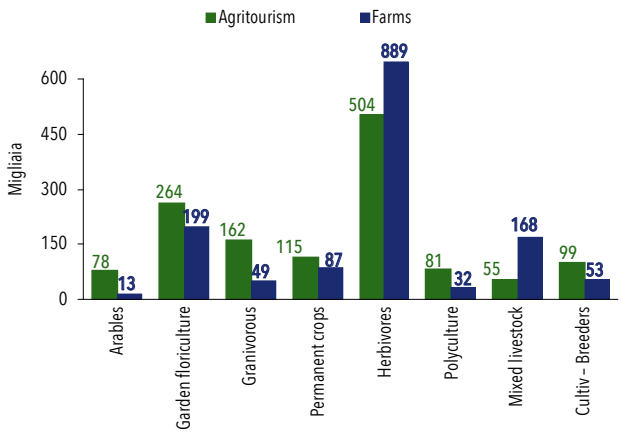
Fig. 3.5.14 - Distribution % by Technical-Economic Orientation and type of company.



Source: Compiled by Veneto Region - Regional Statistics System Section from Istat data

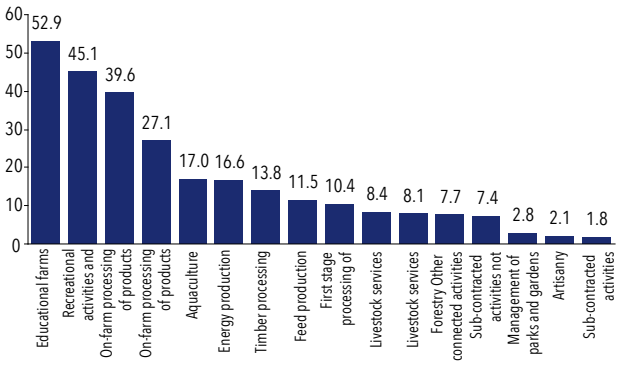
The most profitable specialisation of all, for both these types of farming, is the farming of granivores, principally poultry: the average profitability for Veneto farms touches on 900 thousand Euros, while farms with agritourism, which are smaller in size with a reduced number of livestock, the value is 504 thousand Euros.

Fig. 3.5.15 - Profitability (in thousands of Euros) by Technical-Economic Orientation and type of company.



Source: Compiled by Veneto Region - Regional Statistics System Section from Istat data

Fig. 3.5.16 - Farms with agritourism: % share of non-agricultural activities out of the total number of farms.



Source: Compiled by Veneto Region - Regional Statistics System Section{1] from Istat data

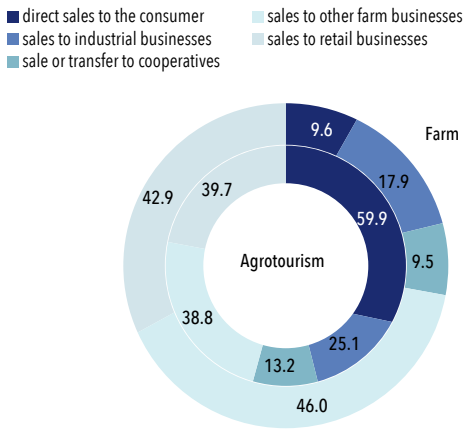
In addition, farms offering agritourism, prefer crops such as vegetables, grape growing and fodder, compared to those which do not practise this activity, while almost half have a wooded area on the property. With regard to livestock, two thirds of agritourism farms have at least one type, with a particular preference for horses, poultry and swine.

Seventy percent of the farm income in Veneto is from the sale of farm produce, while the share drops to 48% in the case of agritourism, as income from non-agricultural activities becomes more important. In addition, almost one agritourism business in two performs at least one other activity, the preferred one being on-farm processing of products. This type also has a higher propensity to social farming, as over half of all educational farms are a part of an agritourism business. The same is true for almost half of the farms with recreational and social activities.

A further source of income is the marketing of farm products: for agritourism farms this accounts for 48% of farm earnings and where 86.6% of farms in Veneto market their own products, this percentage rises to over 90% for agritourism farming. The preferred sales channels for all farms are selling to commercial businesses and/or the sale-consignment to co-operatives. Agritourism farms, on the other hand, have a completely different sales strategy, with an overwhelming majority preferring to sell directly to the consumer.

Also, where farms in Veneto concentrate sales of their products in a few categories, fundamentally cereals, grapes and industrial crops, agritourism farms offer a much wider variety of products of the farm: cereals, wine grapes, vegetables, fruit, transformed products, live animals and wine.

Fig. 3.5.17 - % distribution of farms which sell their own products by sales channel and by farm type. Veneto - Year 2010



Source: Compiled by Veneto Region - Regional Statistics System Section from Istat data

3.6 Nourish, feed

EXPO wants to be the opportunity for reflection on the quality and healthiness of the food we eat, how it is produced and how it affects the environment from which it comes. It also would like to be a further occasion "to reflect upon, and seek solutions to, the contradictions of our world. On the one hand, there are still the hungry (approximately 870 million people were undernourished in the period 2010-2012) and, on the other, there are those who die from ailments linked to poor nutrition or too much food (approximately 2.8 million deaths from diseases related to obesity or to being overweight)." . The Milan Charter, the manifesto of EXPO 2015, foresees the commitment of citizens, businesses and civil society to ensure the right to food: equal and universal access to food, the production of healthy and safe foods, a wider awareness about the composition of the foods which give us nourishment, the support and spreading of the culture of a healthy diet, through education about nutrition.

With the slogan "From farm to plate, make food safe", launched to celebrate World Health Day 2015, dedicated to healthy eating, the World Health Organisation draws attention to the factors of non-healthiness and danger linked to the food we eat. The increasing industrialization of food production, and the globalization of their distribution, create new potential risks that a food product contaminated with bacteria, viruses, parasites or chemicals may quickly arrive on the tables of many people, even across great distances. A local problem can quickly become an international emergency and uncovering the causes is much more complex when the ingredients of a single plate of food come from many different Countries. The WHO estimates that 351 thousand deaths were the result of contaminated food in 2010, with children more at risk: over 40% of people affected by food contamination are less than 5 years old. This not only has health implications, but also affects the economy, especially in a globalised world: for example, bacterial contamination (Escherichia coli) which hit Germany in 2011 and cost 1.3 billion dollars in losses to agriculture and industry, with 236 million dollars in aid from Countries in the EU.

Another threat to health is malnutrition all its forms, in that a poor diet over the course of a lifetime may be the cause of chronic illnesses and other serious problems. The increase in the industrial production of food, rapid urbanisation and changes in lifestyle lead to a change in dietary habits, as well. People consume increasing amounts of food which are high in calories, fats, sugars and salt, while not eating enough fruit, vegetables and fibre. For this reason, the WHO periodically its recommendations for a healthy diet to all Countries, which includes nutritional advice regarding the quantities of nutritional elements according to age, also urging governments to create a healthy "dietary environment", through the promotion of healthy foodstuffs and providing information about correct dietary habits. In fact, our daily diet depends on the individual food choices we each make, socio-cultural factors, as well as the availability and cost of healthy foods. This is why the WHO asks all governments to adopt a pricing policy which helps to promote healthy diets . The French government, for example, acted by placing a tax on sugary drinks and proposing a tax on the industrial use of palm oil. There have also been parliamentary discussions in Italy with regard to this issue.

The risks: overweight and obesity

Overweight and obesity are among current factors of non-healthiness and dangers linked to the food we eat. Overweight, in fact, seems to be the cause of cardiovascular disease, stroke, diabetes, musculoskeletal problems and some types of tumour. It has been calculated that more than half of the world population is either overweight or obese, a figure which is increasing, and which involves not only rich Countries, but also Countries with emerging economies.

In 2014, among European Countries, 58.6% of the adult population was overweight, with rates of 54.9% of women and 62.6% of men . In Italy today, this proportion is among the lowest with 35.8% of women and 55.1% of the male population. This phenomenon is, however, on the rise in Italy and more so in Veneto: the percentage of people who are either overweight or obese rose from 43.2% in 2005 to 45.1% in 2013 (34.5% are overweight and 10.6% are obese). Among adults, excess weight rises with age, and more greatly affects men, the socially disadvantaged and those with a low level of education.

It is also appropriate to monitor the excess in weight of children, so that it is possible to assist in changing their dietary habits and style of life. Among children

Tab. 3.6.1 - Percentage of people over the age of 18 who are overweight or obese according to various characteristics. Veneto and Italy - Year 2013

	Veneto	Italy
Men	46.4	55.6
Women	31.4	36.8
18-24 years	13.8	17.6
25-44 years	34.8	35.4
45-64 years	51.7	52.9
65 years and older	61.1	59.7
Completed middle school or did not	64.0	61.9
Middle school education	48.4	49.6
High school leaver's certificate	37.5	38.6
University degree or post university degree	28.4	31.9
Total	45.1	45.8

Source: Compiled by Veneto Region - Regional Statistics System Section from Istat data

between 8-9 years of age in Veneto, 23.5% have excess weight (17% are overweight and 6.5% are obese). The regional percentage is among the lowest in Italy (30.7% of children in Italy have weight issues), but it does, however, involve a large percentage of the infant population .

A person's perception of their own weight is a revealing factor to be considered because it plays a role in any lifestyle changes they may eventually make. While the obese are generally aware of being so, (91% admit to this problem), people who are overweight do not. Forty-six percent of those who are overweight are convinced they are the correct weight and only a minority (15.5%) follow a weight-loss diet. Women are more likely to have a more accurate perception than men, in general, given that 70% of overweight women agree versus 44% of men.

Food choice

The recommendations for a correct diet provided by the WHO in January, 2015, focus on fruit and vegetables, sugars, fats and salt.

The recommendations of the WHO

Firstly, it must be stressed that a healthy diet should include at least 5 daily portions of fruit or vegetables and requires pulse vegetables, seeds and whole grains. Less than 10% of total calories may come from added sugars and less than 30% from fats. Unsaturated fats, such as olive oil, are preferred to saturated fats, such as butter. Hydrogenated fats which are found in industrial foods (snacks, confectionery and baked good products, margarines) are to be avoided. Lastly, only 5 grams (approximately a teaspoon) of salt, preferably iodised, should be consumed so as to control blood pressure. Our Ministry of Health promotes these recommendations through the food pyramid, a graphic explanation which aims to demonstrate the importance of different foods and the role they should have in the weekly or daily diet. It is a "translation" of the recommendations made by the WHO, displayed through dishes and portions which are normally found on tables across Italy. For example, the quantity of "grains" is represented by dishes of pasta or rice in a way which makes it possible to understand the recommended servings. It shows how 2-3 daily portions of bread, pasta or rice, 2 eggs and two portions of fish and 2 of pulse vegetables per week, 2 glasses of milk or yoghurt per day, become instructions which are more simple to follow, even when doing the shopping.

What we eat and our eating habits

If diet refers to the variety and quantities of food which we normally consume, eating habits is also determined by a few behavioural habits linked to the way we eat: if we have a suitable breakfast, if we eat lunch at home or elsewhere, if we consider our main meal to be lunch or dinner.

Eating the main meal of the day at home permits the close monitoring of ingredients and the method of cooking. Having a proper, balanced breakfast means avoiding unhealthy snacks.

The way breakfast is eaten will improve over time, as 16.7% of the population in Italy, and 84.3% of in Veneto say they have a suitable breakfast, that is they eat something as well as drink tea, coffee, milk or juices. In general, lunch is the main meal (In the Veneto this is considered to be 67.4% of the population), even if there is a rising number of those who lunch on the go and, therefore, take greater care in preparing the evening meal (25.2%).

More pulse vegetables tend to be eaten, as the of people who eat them at least a few times a few rises to 35.8% (30%, previously) such as fish (51.7% of Ve-

Tab. 3.6.2 - Percentage of three year and older by dietary habit. Veneto and Italy - Years 2008 and 2013

	Veneto		Italy	
	2008	2013	2008	2013
Proper breakfast(a)	79,8	84,3	79,2	79,7
Fruit vegetables				
at least 5 portions a day	6,0	4,6	5,7	4,8
more than 1 portion a day	85,0	84,4	85,1	83,5
Fruit at least twice daily	63,0	63,8	-	-
Bread, pasta, rice at least once a day	86,0	81,7	85,6	82,4
Pulse vegetables at least several times a week	30,0	35,8	44,2	49,4
Fresh fish at least once a week	48,8	51,7	57,5	57,9
White meat at least several times a week	80,5	81,7	79,9	82,5
Beef at least several times a week	70,4	62,3	71,2	66,9

a) Suitable breakfast: have something to drink (tea, milk, coffee....) and eat something. Source: Compiled by Veneto Region - Regional Statistics System Section from Istat data

netians consume it at least a few times a week), but there is still a wide margin for improvement.

Fruit and vegetables: few people follow the recommendations of the WHO

Approximately 84% of people already eat more than one portion daily for fruit and vegetables, while only a few who eat at least 5 portions of these a day, because as prescribed by the WHO: are just 4.6%, in a decrease from the 6% recorded in 2008. This tendency, more than change in personal choices, is most likely due to the economic crisis affecting ability of purchasing these products, for many families, became too costly. In contrast, the the general decrease in the number who eat bread, pasta or rice, at least once a day; here the tendency to reduce carbohydrate seems prevalent, possibly an effect of the media, even mainstream, giving attention to hypo-calorific diets or the identification of problems linked to the consumption of these foods.
Social-cultural conditions determine our dietary habits: the choice of dishes, the amount and variety of the foods we include in meals not only depend on personal taste but also on the awareness of products and available possibilities, and available income. Those who have greater economic resources are able to eat a more rich and varied diet (see Table 3.6.3).
The unemployed are subject to a significant dietary disadvantage when compared to those with a job: only 69.5% of unemployed (versus 79.8%) eat fruit and vegetables at at least once a day, while more often eating cured meats (14.2% at least once a day compared to 7.1%), bread, pasta or rice more than once a day (33.6% versus 25.1%).
Attention to a healthy diet is seen more in the population having a higher level of education, who tend to eat fruit and vegetables more often (for example, 7.6% of this group consume at least 5 portions a day compared to 3% of those who completed only middle or primary school) and slightly less meat and pasta (see Table 3.6.4).
Age is also a factor in the development of dietary habits, with regard to the shaping of taste preferences and food knowledge. The consumption of fruit and vegetables is seriously low in young people, with only 53.2% of children under 13 who eat at least 2 portions a day. The percentage rises slightly among adolescents (62.5%) but, as soon as they are old enough to choose their meals, other foods are preferred and the consumption of fruit and vegetables decreases once again, (58% between 20 and 25 years)
Great awareness and attention develops over time with age. Adolescents and children are also more inclined to eat snacks: more than half eat them more than a few times a week.
The good practice of using olive oil (80.3% of Venetians) when cooking or as a condiment with dishes, as opposed to other oils and fats is now widespread. Surely in greater measure by those with a higher level of education.
In addition, limiting the amount of salt used in dishes is now a habit for 72.4% of people, just as the use of iodised salt has (54.5%).
These are steps that can be implemented in the everyday preparation of food in the home, but is not really a possibility when eating out. Lunch is eaten at home, their own, at a friend's or that of a relative, in 75.7% of cases; naturally, those who work find it difficult to lunch at home (59.5%), even if the crisis has enforced changes in this regard (56.5% in 2008), leading to a preference to have lunch indoors. The use of company canteens has also decreased, in part replaced with lunch in the office "in front of the computer", one

Tab. 3.6.3 - Percentage of population by dietary habit and available economic resources. Veneto - Year 2013		
	Total insufficiency or minimal	Adequate or excellent
At least 5 portions of fruit or vegetables each day	3.9	4.2
Vegetables at least once a day	56.8	59.1
Vegetables at least once a day	47.5	51.2
Fruit at least once a day	69.0	73.8
Beef at least several times a week	58.7	65.3
White meat at least several times a week	79.9	83.1
Fresh fish at least once a week	49.6	53.7
Bread, pasta or rice, at least once a day	82.5	81.2
Source: Compiled by Veneto Region - Regional Statistics System Section from Istat data		

Tab. 3.6.4 - Percentage of population by dietary habit and level of education. Veneto - Year 2013				
	Completed middle school or did not	Middle school education	High school leaver's certificate	University graduate or postgraduate
At least 5 portions of fruit or vegetables each day	3.0	2.9	4.9	7.6
Vegetables more than once a day	19.8	19.9	24.3	24.4
Vegetables more than once a day	14.4	14.8	17.4	21.0
Fruit more than once a day	35.5	35.2	34.1	39.1
Beef at least several times a week	62.3	60.2	63.7	59.1
White meat at least several times a week	83.4	80.3	79.8	81.6
Pesce almeno qualche volta la settimana	54.2	50.2	49.5	51.7
Bread, pasta or rice, at least once a day	86.7	82.2	79.0	73.9
Source: Compiled by Veneto Region - Regional Statistics System Section from Istat data				

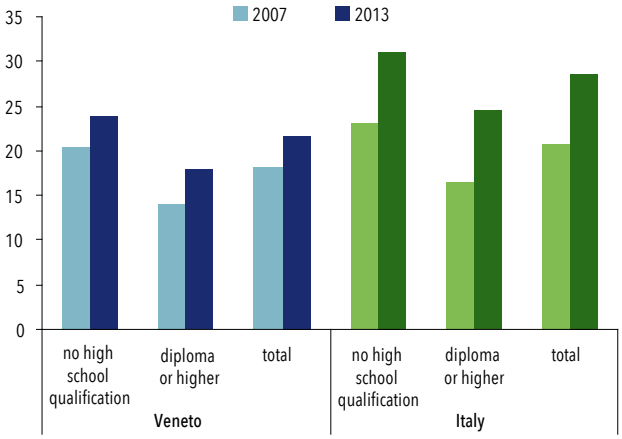
might say; 15% of workers lunch brought from home or went to a take-away, compared to 12.3%, in 2008.

How much is spent on food

Figures for the average amount spent on food per month by families show how the crisis has led to a reduction the amount spent on meals outside the home. More generally, over the last five years, families with fewer economic possibilities have reduced spending in every area, including food (by approximately 40 Euros per month); not so for those who have a higher level of income. For example, when the level of education of the head of the family as a proxy for the socio-economic condition of the family is looked at, example, among those with a university degree, food spending increased from 440 to 470 Euros per month. The majority of families say they continue to purchase the principal food products - bread, pasta, fresh meat, fish, fruit and vegetables -as before, both in terms of quantity and quality. There is, however, a percentage which is not negligible and has risen over recent years; those who have admitted the need to face hardship. Approximately one third of families purchase less, 7% sacrifice quality in order to maintain the level of quantity, while approximately 6% sacrifice both quantity and quality.

The synthetic indicator for the various sacrifices made by families confirms that, otherwise, intuitive fact: for the Veneto the value was 18.1 in 2007 and has now risen to 21.7, indicating an increase in the sacrifices made in the choice of foods, though it is still inferior to the situation faced by the average family in Italy

Fig. 3.6.1 - Synthetic indicator of food sacrifice by families considering the education level of the head of the family. Veneto and Italy - Years 2007 and 2013(*)



(*) As the index value increases, the level of sacrifice rises, 100=maximum sacrifice (both in the quality and quantity of each type of food product considered), 0=purchase is equal to or more than previous year or each type of food product considered. Source: Compiled by Veneto Region - Regional Statistics System Section from Istat data

(from 20.7 to 28.6). The families which most needed to review spending and lower consumption was the middle class: the synthetic indicator of sacrifice among families where the head of the family has a medium low level of education rises to 23.9.

A final figure not to be under appreciated: in 2013, 7.2% of the population in Veneto (more than 360,000) were unable to eat one suitable meal (fresh meat, fish or vegetarian equivalent) at least once per day; this was, however, still lower than the overall Italian average of 14.2%, and the European average of 10.5%.

Food waste

It may seem to be a paradox to discuss the decreases in food spending due to insufficient income while at the same time looking at food waste. A paradox only in appearances, however: as we have seen, not everyone reduces their food spend by the same extent, or for the same reasons, given the socio-cultural differences and disparity of income. In addition, waste is often unintended as it may depend on the industrialised processing of food and the distribution model. The need to save may lead to the purchase of fewer fresh products or taking advantage of the discounted offers from large distributors for purchases of a determined quantity of products (buy 3, pay for 2, bulk purchase, etc.). In both cases, there is an increased probability that some food will spoil and be thrown away before it is eaten by the family.

Tab. 3.6.5 - - Average monthly spending on food (in Euros) by families considering the education level of the head of the family. Veneto - Years 2007 and 20013

	2007				2013			
	No high school qualif.	High school qualif.	University graduate or higher	Total	No high school qualif.	High school qualif.	University graduate or higher	Total
Total food spending	**466.80**	**436.00**	**437.39**	**456.50**	**428.93**	**442.77**	**466.60**	**436.34**
Bread, pasta and cereals	80.08	81.63	82.25	80.67	72.31	80.27	80.88	75.25
Fresh meat	101.53	93.06	78.25	97.07	98.74	86.61	105.21	96.23
Fresh fish	36.75	31.34	34.60	35.27	34.31	34.26	42.98	35.17
Milk, cheese and dairy	64.51	58.60	64.94	63.19	56.21	60.38	59.97	57.68
Fruit and vegetables	65.57	62.90	68.46	65.26	59.32	66.10	72.75	62.44
Dining out	82.74	143.07	156.39	104.64	75.65	123.81	163.92	97.13

Source: Compiled by Veneto Region - Regional Statistics System Section from Istat data

However, eating too much may, in a certain sense, also be considered waste. How exactly is food waste defined? The FAO makes a distinction between the global food loss and actual waste. Loss refers to the lowering in quantity or nutritional value of food meant for human consumption, whose causes are mainly attributable to inefficiencies and inadequacies in the chain of production, meaning before it arrives for distribution. True waste, instead, refers to food which is wasted, both at the points of sale, due to spoiling, or from families who over-purchase. But no single definition, common to all Countries, yet exists. In Italy, Andrea Segrè has contributed to the definition of food waste as all products which, along the entire agri-food supply chain, were discarded or lost and despite having lost their commercial value, they have not lost their nutritional value for which they could still be destined for human consumption. This, therefore, would be defined as total wastage, that is products which are no longer food and have no economic value, while relative waste is when products no longer have value as food but may have some economic value (compost, livestock feed, etc.) or do not have economic value but are food (food products recovered from production wastage or the market).

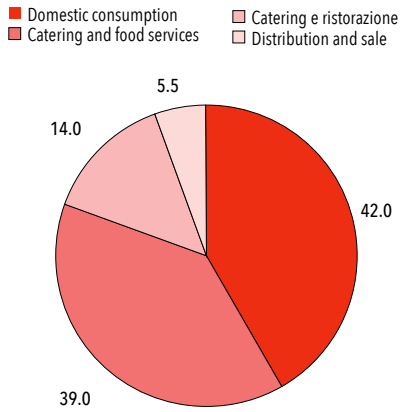
The long chain makes it difficult to quantify the amount of waste.

The lack of a single definition, as well as policies for suitable reductions and monitoring, makes it difficult to quantify.

The supply chain in the agri-food sector is extremely long and complex, composed of various stages, each of which needing be monitored to reduce losses and waste.

A first major step includes all activities related to cultivation and agricultural production, where there are diseases and infestations, along with the difficulties related to the techniques of handling, storage and transportation, as well. Many fruit and vegetable crops, then remain in the field, unharvested as they are not considered marketable for various commercial reasons. The second stage relates to transformation, where products are processed on an industrial level which, due to technological limitations, produces waste. The third stage, distribution, plays a large role in determining the amount of waste through unsold goods, due to marketing strategies and appearance and quality standards not met by the product. The final stage is represented by final consumption by the food services industry and families; here waste is mainly due excess purchasing or during the preparation of dishes and the difficulty in understanding and applying recommendations for storage and conservation. A study by the European Commission analysed and provided an initial estimate of the quantity of food waste in Europe which accumulates from the second stage, onwards; it involves 89 million tonnes per annum, approximately 180 kg per capita each year, 25% of family purchases. According to these estimates, which are still approximate, the large part of waste (42%) is attributable to domestic consumption, that is purchasing habits, handling and conservation of foods, and to the stage of industrial transformation (39%).

Fig. 3.6.2 - Distribution of food waste by sector. EU28 - Year 2011



Source: Directorate-General for Environment of the European Commission

In Italy, an estimate, made by the Department of Agricultural Science and Technology of the University of Bologna, obtained from evaluating the difference between the quantity of food available and what was consumed, gave a value of approximately 20 million tonnes of food wasted annually. Among the most common causes of family wastage is improper conservation for which food turns mouldy or develops a foul odour. But there is also the issue of over-purchasing as a result of over-estimating the quantities required, leading to bulk buying, as well as because they only

do one food shop per week . Fruit, vegetables, cheese and bread are fresh products most commonly thrown out; cooked products include pasta, ready-made and pre-cooked meals.
This concerns behavioural habits which are also linked to cultural factors: as the families, themselves, stated , in the south of Italy, food is generally discarded if too much has been prepared, in other regions because it was past its use by date or spoiled or it began to develop an unpleasant odour or taste. In Veneto, the most common cause of waste is, in contrast, over-purchasing due to large package sizes. Food waste has many consequences which do not concern only food, including all the factors which play a part in its production: from the land which is used, the degradation of its topsoil caused by the loss of nutrients, land deforestation and pollution from fertilizers, to decreased drainage and ability to hold groundwaters, along with the quality of the air, caused by greenhouse gas emissions. The reduction of waste is therefore, an ecological practice as well as ethical, and to make it happen requires a cultural rediscovery of the value of food, and stop thinking about it as solely a commodity: "the act of eating has become so habitual and taken for granted that it is no longer given the respect and the importance it merits (...). The act of eating has lost its true value, at least for a part of the world, not only in terms of economic worth but also, and most importantly, ethical, social, cultural and biological".