FRIULI-VENEZIA GIULIA

Market Research

Sectors:

Advanced technologies for food industry, including biotechnologies

Mechanics, including electro-mechanics and construction technologies

Environmental management technologies

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Introduction

The enlargement process

This part of the introduction briefly outlines the characteristics and changes in the process of the eastward expansion of the European Union. It also includes some other worthy preliminary considerations on the principal effect of the imminent European political and economical changes and the impact on small and medium sized enterprises (SMEs) that in the FVG and other Italian regions, constitute a 'quality and quantity' viewpoint of the more relevant economic realities.

The first enlargement of the European Community was in 1973, when the six founder member countries (Belgium, France, Germany, Italy, Luxembourg and The Netherlands), expanded to nine member states (with the entrance of Denmark, Ireland and the United Kingdom); and then to ten in 1981 (Greece), to twelve in 1986 (Portugal and Spain) and finally to 15 in 1995 (Austria, Finland and Sweden). With the fall of the Berlin wall in 1989 and the consequent end of the cold war, the old geographical-political order was considerably altered, thereby shaking the existing international equilibrium. The process of European integration was quickly accelerated when the axis tipped more towards Central-eastern Europe.

On May 1st 2004, a mere 15 years later, ten new countries will be joining the European Union (to allow the new member states to participate in the election of the European Parliament, which will be held in June). Those countries are: Poland, The Czech Republic, The Slovak Republic, Slovenia, Hungary, Estonia, Latvia, Lithuania, Malta and Cyprus). This is undoubtedly a historical event for a "United Europe", whose population is forecast to grow by about 20% (and the area by 23%): the European Union will constitute the largest trading block in the world[1], having a single market of more than 450 billion citizens. It should also be noted that in the not too distant future Bulgaria and Romania will be joining (not before 2007 as negotiations are still underway) and that discussions with Turkey have not yet commenced.

According to the majority of observers the new arrangement will be favourable to trade, scale economies, competition and influx of investments, giving a new slant to an overall economical development and integration of Europe. The European Union, incorporating 25 countries will have strong appeal for manufacturing industries and providers of external services with some adjustments to be made to comply with the community standards, will allow marketing of products in this vast arena.

Mainly opposing this conjecture of the advantages are the reallocative costs that major foreign competition could exert on the member states, particularly in the sectors that are already in crisis or those that are strongly protected. The consequences for the consumer in both areas would seem positive: western influence in terms of price, eastern influence in terms of good quality and available services[2]. The dynamics of the enlargement are founded on a new division of labour, but it is still difficult to make precise conjectures on the structure and consequences thereof. The European Union's 'centre of gravity' is shifting eastwards creating a scenario in which the first step of the enlargement could offer greater advantages to the EU's peripheral countries as regards new markets.

[1] The enlargened European Union will become the world's major exporter, with a quota amounting to at least 20% of world exports ((Source: The European Commission).

[2] Please refer to P. Tiberi Vipraio, "Un quadro di insieme sui costi e i benefici dell'allargamento con particolare riguardo alle piccole e medie imprese", Papers of the Arge28 convention: growing with Europea, SME support in the border regions, October 2002.

In contrast, the centre - in particular, the countries bordering the potential new members such as Italy - could be affected by stronger competition. In fact, studies commissioned by the EU indicate that the number of sectors affected will be larger in border regions, also covering parts of the service sector such as retail trade or personal services, whereas, whereas the impact will be minor for the other countries in Europe[3].

Accession of new member states also increases the weight of the EU's influence upon international economics and politics. The next enlargement will move the frontiers by more than 500 km towards the East incorporating five new neighbours (Croatia, Serbia, Romania, The Ukraine, Byelorussia) thereby extending the boundaries with Russia and will, for the first time, reach the eastern Mediterranean zone (Cyprus) and the southern zone (Malta).

Nevertheless, the imminent enlargement creates unprecedented economic differences: the future members have a GDP per capita equal to approximately 40% of that of the current members (in line with buying power). The most similar case was the accession of Spain and Portugal in 1986, which increased the population by 16%, but the average GPD per capita in these countries was around 70% of the EU's figure (always in line buying power)[4]. Contrary to the earlier expansions however, the new members (excepting Malta and Cyprus) are completing the transition from management economies towards a market-based system. In the last ten years the prospective of accession has helped the Central-eastern European countries to consolidate their plural democracy and market economy, continuing with the reforms and transitions with the help of the EU.

Article 49 of the European Union treaty that came into force in 1993, states that each European State that has respect for the principal of liberty, democracy, the individual rights of man, the fundamental liberties and the status of rights could aspire to become a member of the Union. In 1993 the European Council of Copenhagen outlined the essential conditions for accession, i.e. the so-called "Copenhagen Principles".

- have achieved stability of institutions guaranteeing democracy, the rule of law Human rights and respect for and protection of minorities;
- Secures the existence of a functioning market economy;
- Secures the capacity to cope with competitive pressure and market forces within the Union
- Has the ability to take on the obligations of membership (such as the adoption of *acquis communautaire*), in particular those deriving from the economic and monetary Union

The primary "political" criteria is essential for the commencement of membership negotiations, whilst the other criteria has to be fulfilled at the moment of joining.

In particular, the adoption of the Euro will not take place at the same time as accession to the European Union, but only when it is sustainable for the individual State. In essence, the process involves three stages:

- The pre-accession phase in which the country must demonstrate progress towards achieving a solid competition-based market economy, likewise the sound macroeconomic stability;
- An intermediate phase between accession to the European Union and the adoption of the Euro, in which the new full member countries will access the Common Market and will consolidate their real position guaranteeing the sustainability of the common currency. The new member must have also implemented for at least two years the correct exchange rate mechanisms;
- Finally, in the last phase, they must satisfy the Maastricht Convergence criteria:

[3] Please refer to "Impact of the Enlargement of the European Union on Small and Medium-sized Enterprises in the Union, Final Report to the European Commission DG Enterprise, Rheinisch-Westfälisches Institut für Wirtschaftsforschung", Essen, in cooperation with European Policies Research Centre, University of Strathclyde Glasgow, November 2000.

[4] Source: The European Commission.

1) The deficit/GDP ratio must not exceed 3%;
2) The debt/GDP must not exceed 60%;
3) The average long-term inflation and interest rates must be around the Community average.

However, a precise timetable has not yet been established for adoption of the Euro by new member states, considering the difficulty of reconciling the aforesaid Maastricht criteria with respect to inflation and balance deficits with public investments as is necessary for any economy going through the transition phase. In fact the new members must sustain for years, the often very considerable expenses involved in implementing EU policies in sectors such as the environment and transport sectors. They must find the necessary funding to co-finance infrastructural projects that are admitted by transfers from the EU budget, whilst searching to satisfy the prerequisites necessary for adoption of a single currency, which, from what have we seen, presumes a limitation of the balance deficits.

The countries to be incorporated in the next expansion are generally starting from the same conditions, nevertheless the economic and political realities are often very dissimilar. In fact, although the 2004 enlargement will considerably increase the European population, the total GDP will rise by a much lower percentage. Notwithstanding the enormous efforts by the candidate countries their integration into the structure and existing programs will be a very delicate operation; in any case, the binding issues of enlargement will continue to dominate European policies during the coming years.

According to various studies, even though the benefits will be proportionally greater for the new countries because of their under-developed economies, there are also many attractive advantages for the member states, in essence, it will be a game with "a positive outcome". For the enterprises in the European Union, the enlargement will offer new opportunities: it is enough to consider that right from the pre-accession step, it is estimated that the community enterprises will have accumulated a considerable trade surplus, equal to approx. 100 billion Euro for the period 1995 – 2000, against the direct costs of the enlargement, which are estimated at about 71.2 billion Euro in the period 1990 – 2006.[5]. Moreover, as far as the current member states are concerned, the economic impact of the enlargement will be greater in those countries that have a common border with the new members, such as Germany, Austria and Italy.

Taking into account the considerable liberalisation of trade with the EU of the 90s, membership will simply mean passing from a free trade zone to a customs union. Therefore, in the early stages, there will be a limited impact of trade in goods with the new members, but the advantages will be felt in the medium-long term with an increase in investments and more specialisation in production. However, as after the enlargement, labour mobility may be limited for a few years, the investments will be fundamental to the economic growth of new member states. The prospects of accession to the EU has already increased the flow of foreign investments in the candidate countries, but it is not easy to predict if this tendency will be accelerated in the future. In the last few years trade and investments between the EU and its future members have increased at a steady rate[6], with considerable benefits in economic terms. Nevertheless, the process of enlargement must give consideration to the conditions of the newly created economic environment, in which opening of the markets will increase competition and put pressure on SMEs, particularly in the traditional sectors where they will probably be more exposed.

The abolition of goods controls at the borders, will fully integrate the new members into the market and the liberalisation of services, capital and labour circulation will prove to be more advantageous;

[5] Source: The European Commission. This estimate takes into account the cost of the Phare, Ispa, Sapard, projects aas well as the costs relating to accession of the countries in the European Union.

[6] As an example, the European Union absorbs almost 70% of the exports of the Central and Eastern European Countries (Source: The European Commission).

these are the same positive effects as those experienced with the introduction of the Single Market without frontiers in 1993. The free movement of citizens, or the fall of internal barriers, one of the pillars of the European Union, will follow the enlargement and will require a further deliberation by the Council of the European Union Ministers. The abolition of controls relating to people will be achieved only when all the prerequisites have been satisfied, particularly those regarding controls at frontiers outside the Union, to guarantee adequate safety conditions for all European citizens. Finally, a transient condition has been agreed upon for the next enlargement: the current member states can limit the inflow of labour from Central-eastern Europe for a period of no more than seven years[7].

The effects of enlargement on small and medium sized enterprises (SMEs)

In the European Union there are approximately 19 million SMEs, equal to approx. 99% of the enterprises that absorb the 74 billion employees. Likewise in the candidate countries the SMEs have become the 'doorway' to economic development; for this reason, even after the enlargement their continued involvement will be a driving force in the successful development of economic growth, competition and employment.

In the European Union there are approximately 19 million SMEs, equal to approx. 99% of the enterprises that absorb the 74 billion employees. Likewise, in the candidate countries the SMEs have become the 'doorway' to economic development; for this reason, even after the enlargement their continued involvement will be a driving force in the successful development of economic growth, competition and employment.

From a macroeconomic viewpoint the integration between a highly developed region and a less advanced region that has a high growth potential offers, as previously described, the possibility of attracting new mutually advantageous flows in terms of goods, services and production factors. In this sense the enlargement implies access to expanding markets, production and financial investment opportunities, and transfer of technical and managerial competence with consequent possibilities for companies to achieve a trade surplus and to make net investments in production and financial areas.

Nevertheless, there exists a threat of risks in this process. The impact of enlargement, in fact, brings with it different costs and benefits for the economic agents, distributed at a sectoral level: in the manufacturing sector it is reasonable to expect that high labour-intensity sectors are more at risk, as the availability of cheap labour continues to be a main source of comparative advantage for the candidate countries. The same holds for parts of the service sector, namely hotels, restaurants, and transportation, where European imports from candidate countries are quite significant. Furthermore, the quality of labour in the candidate countries is good on average, so it is probable that the specialised production sectors will also suffer pressure from competition. In the service division on the other hand, the current members of the European Union suggest more competitive advantages in the enterprise and financial services offered, balanced out by an improved situation of the candidate countries in the tourist and transport sectors[8]. Also to be considered is that the SMEs do not have the big business restructuring margins and could possibly be particularly vulnerable. The large enterprises, in fact, are naturally better equipped to exploit the advantages deriving from the international division of labour, because they are able to bear the costs associated with the

[7] The transition agreements is not applied to Cyprus and Malta, therefore the right to free circulation will be guaranteed between these countries and the current future members states. Neverthless, Malta is authorised to aply proteciton measures if there should be the risk of a consistant flow of workers on the island (given the reduced dimensions of the Maltese labour market).

delocalisation policies. It is true however that SME-specific factors have to be taken into account. The integration of SMEs into the international division of labour differs substantially from large enterprises. In fact, micro and small enterprises tend to serve local needs, whereas medium-sized enterprises often are hampered in their international activities by transaction costs associated with external trade and foreign investment. For the SMEs these factors, however, mitigate to a certain extent the possible repercussions of the enlargement of the European Union.

With reference to the direct impact of trade flows, it is worth remembering that the enlargement process was prepared long before by the pre-accession strategy so as to absorb the effects. Trade with the ten new countries of the European Union have already been liberalised to a great extent and Italy, in particular, has a comparative advantage with respect to the majority of candidates. In fact, a trade surplus in traditional products and macro-divisions, such as that of the chemical and mechanical industries has been recorded, even if Italian exports concentrate on market segments with a higher added value, that is to say in the highly specialised segments. On the import front, Italian imports from the Central-Eastern European Countries have a limited weight and even if they could record higher increase rates, they will probably continue to have a moderate significance over the next few years. The situation of neighbouring regions and those that border with the candidate countries seems to be relatively more delicate (as regards the Friuli Venezia Giulia region, for example, import-export trade with these countries assumes a decisively major role) where the SMEs, as well as the large enterprises, are experiencing job losses. In addition, the origin of this phenomenon cannot be clearly pinpointed due to the large restructuring processes that are underway, which, as their priority is towards large enterprises, could be the cause of negative effects on the SMEs operating in the same sectors and in integrated sectors, with a cascade mechanism.

Trade, however, must still be totally liberalised in defined divisions, including the automobile industry, and the services trade is still limited, even in the financial field. Furthermore, trade liberalisation of agricultural products has to be completed even if in the pre-accession period a considerable trade increase in the agro-food sector was recorded.

As regards the other side, that is countries who are next-in-line to joining the European Union, it is possible to affirm that the SME sector has played a leading role in the economic recovery and the transition towards the market, following the liberalisation and decentralisation of the economies. Two fundamental structural changes can be substantially attributed to the SMEs of these countries:

1. The strong economic and employment growth in services and distribution. In fact, the development degree in this sector is, in an economic sense, an important indicator of modernisation whereas previously, for political and ideological reasons, the situation was very unbalanced, weighted in favour of the manufacturing industry.
2. The reduction in the influence of large enterprises. The SMEs, in fact, have absorbed much of the available labour following the crisis of the industrial mergers, thereby playing an important role as a social buffer. There are many small private businesses that have arisen from the fragmentation of the larger complexes (so-called 'spin-offs') operating in the manufacturing-industrial, sub-contracting and services areas. One of the principal characteristics of these countries was in fact the structural weakness of the small enterprise (as there was little room for private initiatives).

[8] Please refer to "Impact of the Enlargement of the European Union on Small and Medium-sized Enterprises in the Union", Final Report to the European Commission DG Enterprise, Rheinisch-Westfälisches Institut für Wirtschaftsforschung, Essen, in cooperation with European Policies Research Centre, University of Strathclyde Glasgow, November 2000.

Accession to the European Union of the Central-eastern European countries surely constitutes another stimulus for the intensification of import-export trade. As regards the SMEs, for example those of Fruili-Venezia Giulia that, as a bordering region, will be particularly affected by the consequences of enlargement, the impulses towards an increase in import-export trade with these countries are multiple. The main motivation from the export side is that the markets have a high growth potential, given by a significant increase in product demand and a good prospect of growth in the medium-term. For the enterprises that are physically near the borders, trade relations often come as a natural consequence of their geographical proximity. The awareness, which is also very strong among entrepreneurs, that these markets are showing clear signs of growth and giving an insight of the potential, makes the role of the supporting bodies for internationalisation more significant, mainly as regards the SMEs who often pay the consequences of their size.
With regard to imports, besides the economic convenience due to the generally lower prices, another feature is the supply of raw materials that are lacking in Italy and in Friuli Venezia Giulia, and that are necessary for the operation of vital regional specialisation sectors such as the furniture/furnishing and steel and iron industries. In this sense, the advantages deriving from the geographical location of the supplier also play a crucial role that positively affects the possibility of frequent buying over the years, which is typical of the business sector, knocking down the transport costs and finding provisions that the local economy does not have, with ease.
The most common modus-operandi is one of direct control. This has the double advantage of incurring less expenses compared to outsourcing services, and of personally managing the strategy of penetration, thereby maintaining strict control over efficiency and effectiveness. In this sense the trade missions, participation in fairs, the use of sales agencies are indicated as particularly suitable channels for small enterprises.

As illustrated, the enlargement constitutes enormous political and economical challenges for the European Union and, in fact, it is one of the most ambitious projects known in the history of the Old Continent, which will certainly not be concluded in 2004. Increasing the current number of European Union countries from 15 to 25, as predicted for next year appears to be, as already summarised, the heralding of undoubted advantages and economic challenges for the current member states; what is certain is that it will widen the horizon of prospects for the SMEs. The objective of this report is to analyse, in the light of this scenario, the three priority sectors that have been individualised for the Friuli Venezia Giulia region.

The agro-food industry division

The structural picture

This section examines the sector relating to the food, beverage, and tobacco industry[9]; the primary division[10] has practically been excluded as it is usually considered jointly with the food industry due to its close correlation.

The data from the 8th Census of Industry and Services 2001 is not yet available, therefore reference will be made to the data supplied by courtesy of the Chamber of Commerce relating to active companies and the ISTAT regional economic accounts. ISTAT is also the source used for foreign trade.

In accordance with the community classification of economic activities ATECO 2002, the food, wine and tobacco industries have been subdivided into ten groups:

1. The production, processing and preservation of meat and meat-based products;
2. The production, processing and preservation of fish and fish-based products;
3. The fruit and vegetable sector;
4. The production of vegetable and animal oils and fats;
5. The dairy industry;
6. The processing of grain and starch products;
7. The production of animal food;
8. The production of other food products (including: the production of fresh pastries and bread products, rusks and biscuits, preserved pastry products, sugar, cocoa, chocolate, sweets and confectionery, food pastes, cuscus and other similar flour products, processing of tea and coffee, production of condiments and spices, homogenised preparations and diet foods and, finally, other food products such as sweeteners, puddings, precooked foods, vinegars and yeasts);
9. The beverage industry (including the production of wine, which is counted in the industrial division if produced by a business who buys grapes from third parties, but is part of the agricultural division if it is the result of the vinification of grapes deriving from the property of the business);
10. The tobacco industry.

The total number of companies in the food, beverage and tobacco industries throughout the Friuli Venezia Giulia region fell from almost 1,600 at the beginning of 1995 to 1,460 in 2000. At the end of this five-year period, which recorded a steady drop, there was an upturn to 1,500 companies at the beginning of 2003 (Figure 1). The significant contraction that characterised the second half of the 90s can, in good part, be attributed to the phenomenon of company reorganisation and rationalisation, particularly in the beverage and dairy industry sectors.

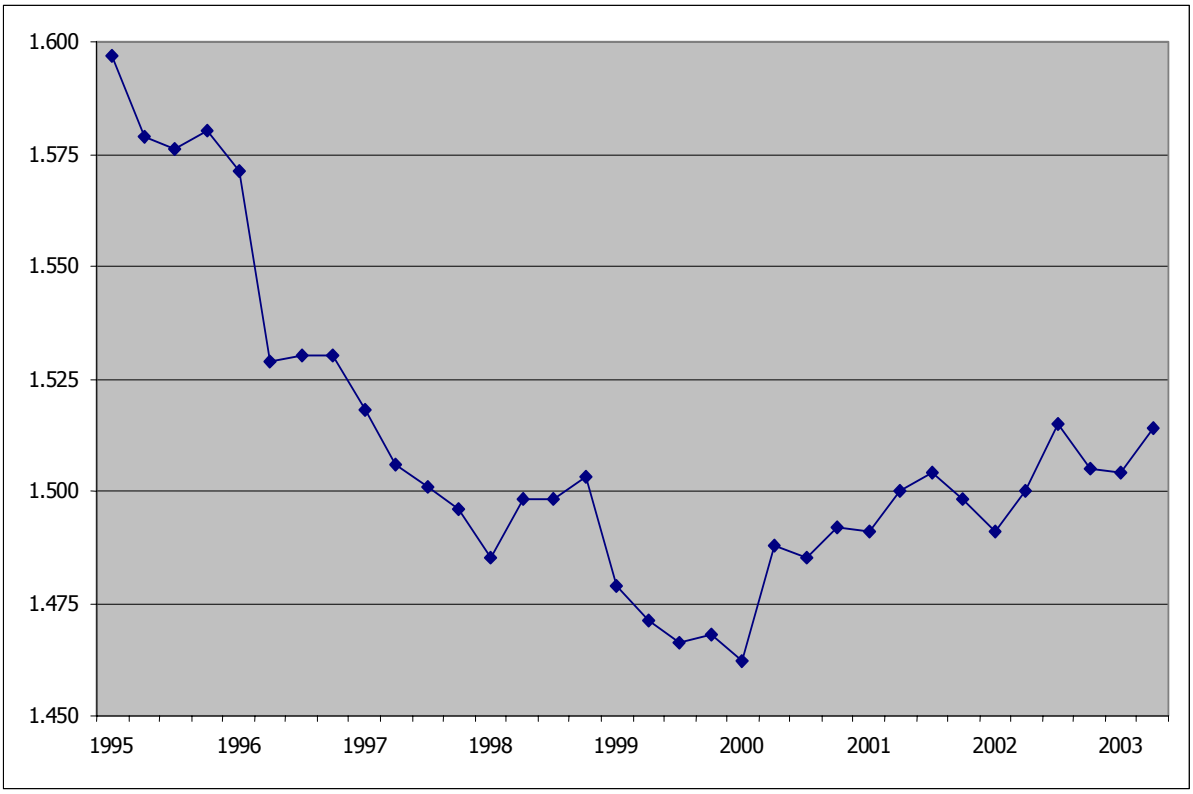
In 1995 the agro-food industry constituted 2.1% of the total number of active companies in Friuli Venezia Giulia; over the last few years, this percentage has considerably dropped, stopping at 1.5% in 2002. To a limited degree in the industrial sector, this incidence went from 6.3% in 1995 to 5.7% in 2002. This outcome is not just the result of the reduction in the number of companies in the sector,

[9] There are no enterprises operating in the tobacco industry in Friuli Venezia Giulia, however, in the data relating to foreign trade, there is import-export trade of products in the tobacco industry, although it is not very significant. The tobacco industryis included herein as, for statistical purposes, together with the food and beverage industry it forms a single class.

[10] Fatta eccezione per alcuni opportuni riferimenti al comparto agricolo, indispensabili per una completa valutazione della dimensione economica e delle caratteristiche del sistema agroalimentare del Friuli Venezia Giulia.

but also, and to a greater extent, the overall increase in the number of active companies in the region over the last few years. As regards their location, almost half of the companies are situated in the Province of Udine (which is by far the most extensive and most populated out of the four Provinces), just below a quarter in the Province of Pordenone, and the remaining companies in the other two Provinces, with a higher number in the Province of Triest (Figure 2).

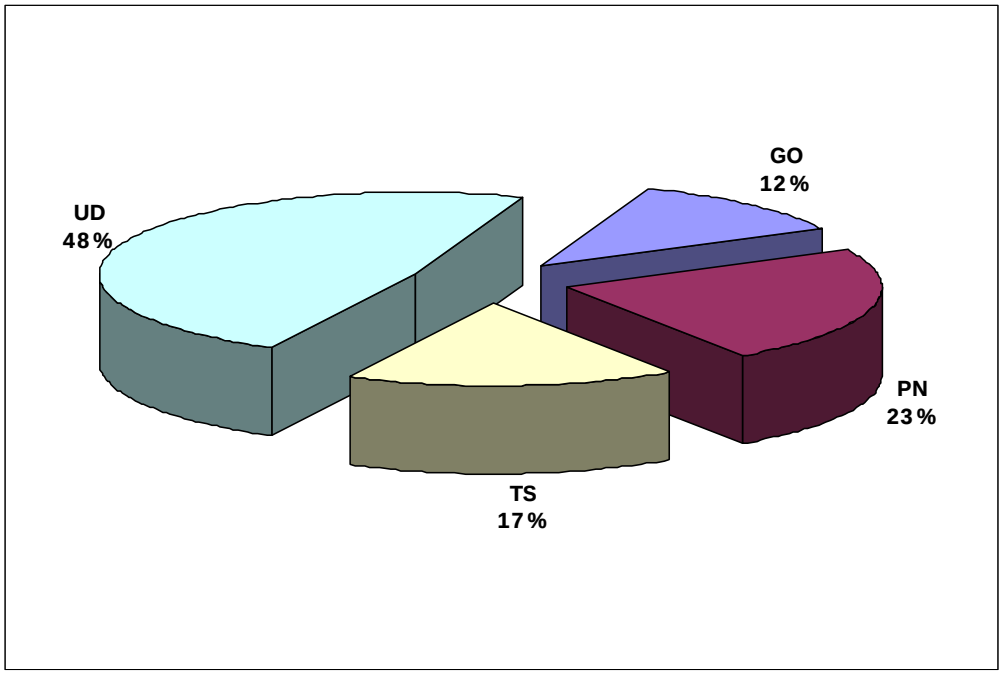
Figure 1: Number of active companies in the food and beverage industry[11] of Friuli Venezia Giulia, I quarter 1995-II quarter 2003. Source: Movimprese Infocamere



The number of employees in the sector during the 90s oscillated between 10,500 and 10,000[12], and only in the two-year period 1999-2000 did the value fall to 9,400, passing from a 2% to a 1.8% employment level in Friuli Venezia Giulia; to the contrary, as regards the employment of the industrial division alone, the incidence was recorded at around 6%. In the North-East[13] aggregates and Italy the employment incidence in the food industry was greater, as shown in Table 2; in particular, the North East in its whole (mainly Emilia-Romagna and Trentino Alto Adige) shows values that are clearly higher than the national datum.

[11] Per quanto riguarda l'industria del tabacco, non si segnalano, nel Friuli Venezia Giulia, imprese attive nel periodo in esame.
[12] Please refer to Regione Autonoma Friuli Venezia Giulia, Direzione Regionale dell'Agricoltura, "Individuazione degli impatti delle politiche regionali e comunitarie sul settore primario della regione Autonoma Friuli Venezia Giulia. Spazi per un riorientamento della politica agricola regionale." Parte I. L'evoluzione del settore primario nella regione Friuli Venezia Giulia 1980-2000. IRES Friuli Venezia Giulia, Ottobre 2002, pag. 154.
[13] L'aggregato Nord-Est comprende: Emilia-Romagna, Veneto, Trentino-Alto Adige, Friuli Venezia Giulia.

Figure 2: Distribution of active companies in the food industry of FVG by Province (2002).



Source: Movimprese Infocamere

Table 1: Employees (average annual in thousands) in Friuli Venezia Giulia 1995-2000

Year	Employees in the food, beverage and tobacco industry of FVG	Total employees in the industrial sector of FVG	Total employees of Friuli Venezia Giulia
1995	9.9	158.7	502.3
1996	9.9	161.5	506.4
1997	10.3	161.8	505.8
1998	10.5	163.2	512.1
1999	9.8	158.6	516.9
2000	9.4	159.6	526.3

Source: ISTAT

As far as the internal components of the food industry are concerned, the divisions that have a major capacity to absorb labour, as well as the major number of local units, are those relating to the "production of other food products" (mainly fresh pastries and bread, but also the production of coffee and sweets and confectionery), the beverage, dairy and meat industries. Among these the "production of other food products" is worthy of mention as it has witnessed an increase in the number of employees and local units over the past twenty years, as well as a major weight in the meat division (particularly in terms of employees), without doubt linked to the growing valorisation of a typical regional product, the San Daniele Prosciutto, which constitutes the leading factor of the corresponding food district; moreover it is the only industrial food district in the region. This development proceeded parallelly with the growth, the importance of pork products in the regional agricultural production

basket[14], even if the local production has a limited effect on the total raw material supplies of the district, which is mainly from outside[15]. The typical arena of the San Daniele Prosciutto, in fact, includes eleven Italian regions[16] that contribute to supplying the raw material.

Table 2: Percentage incidence of employees in the food industry 1995-2000

Year	Percentage incidence of employees in the food industry out of the total number of employees in industry			Percentage Incidence of employees in the food industry out of the total number of employees		
	FVG	North-East	Italy	FVG	North-East	Italy
1995	6.24	8.07	7.21	1.97	2.93	2.23
1996	6.13	7.80	6.97	1.95	2.81	2.12
1997	6.37	8.04	7.05	2.04	2.92	2.14
1998	6.43	8.44	7.31	2.05	3.07	2.23
1999	6.18	8.16	7.12	1.90	2.93	2.14
2000	5.89	8.08	7.04	1.79	2.87	2.09

Source: prepared by Ires-FVG based on ISTAT data

Completely missing from the industrial transformation activities are: sugar works, tobacco factories and factories to process oil seeds, which is an evident indication that regional production arranges for these transformations in externally located structures. In a different way, the beverage industry and milk production (which has been strongly influenced by the community policies relating to the milk quotas), which absorb a remarkable percentage of employment have, over the past ten years, suffered a rather consistent contraction both in the number of employees as well as the local units[17].
The food industry sector contributes less than 2% of the added value produced by the economy of Friuli Venezia Giulia; considering only the industrial sector, the incidence just touches the 6% mark (Table 4). In absolute terms, the added value of the food industry at current prices in Friuli Venezia Giulia exceeded 400 million Euro in 2000.

[14] Come si vedrà nella sezione dedicata al commercio estero, le importazioni di carni e prodotti a base di carne nel complesso sono diminuite di quasi il 40% (in termini nominali) tra il 1995 e il 2002.
[15] Please refer to Regione Autonoma Friuli Venezia Giulia, Direzione Regionale dell'Agricoltura, "Individuazione degli impatti delle politiche regionali e comunitarie sul settore primario della regione Autonoma Friuli Venezia Giulia. Spazi per un riorientamento della politica agricola regionale." Parte I. L'evoluzione del settore primario nella regione Friuli Venezia Giulia 1980-2000. IRES Friuli Venezia Giulia, Ottobre 2002, pages 175-176.
[16] Le undici regioni sono: Friuli Venezia Giulia, Veneto, Lombardia, Emilia Romagna, Piemonte, Toscana, Umbria, Marche, Lazio, Abruzzo, Molise.
[17] Please refer to Regione Autonoma Friuli Venezia Giulia, Direzione Regionale dell'Agricoltura, "Individuazione degli impatti delle politiche regionali e comunitarie sul settore primario della regione Autonoma Friuli Venezia Giulia. Spazi per un riorientamento della politica agricola regionale." Parte I. L'evoluzione del settore primario nella regione Friuli Venezia Giulia 1980-2000. IRES Friuli Venezia Giulia, Ottobre 2002, pages 153-157.

Table 3: Added value (millions of Eurolire[18] 1995) Friuli Venezia Giulia 1995-2000

Year	Added value at basic prices of the food, beverage and tobacco industry	Added value at basic prices of the industry	Total added value at basic prices[19]
1995	367.3	6,385.3	20,738.9
1996	352.4	6,195.4	20,692.2
1997	377.9	6,160.6	20,909.9
1998	353.3	6,142.6	21,049.5
1999	343.0	6,152.9	21,407.4
2000	357.6	6,304.8	22,187.9

Source: ISTAT

Table 4: Added value percentage incidence of the food industry 1995-2000

Year	Added value percentage incidence of the food industry on the added value of the industrial sector			Added value percentage incidence of the food industry on the total economy		
	FVG	North-East	Italy	FVG	North-East	Italy
1995	5.75	8.11	7.27	1.77	2.79	2.18
1996	5.69	8.00	7.13	1.70	2.71	2.11
1997	6.13	8.05	7.17	1.81	2.74	2.12
1998	5.75	7.82	7.06	1.68	2.64	2.08
1999	5.57	7.37	6.79	1.60	2.48	1.98
2000	5.67	7.48	6.97	1.61	2.50	2.03

Source: prepared by Ires-FVG based on ISTAT data

Although from the data shown up to this point the importance of the sector, in economic terms, seems to be rather limited, it must be properly assessed together with the role of the primary division, which is heavily interrelated with the food industry. The importance of the agriculture, not only in economic terms, but also as far as environmental preservation and protection are concerned, should be remembered. To complete the picture the new frontiers of the sector, which is gradually hinging on typical and quality production, organic production and rural tourism (e.g. farmstays) should be considered. This tendency is evolving at the same pace as the demands from consumers, who are more and more aware of these themes, and the growing international competition that has increased due to the gradual, although slow, liberalisation of the agro-food product markets, which are making it more difficult to compete on the price side. In the Italian production field, for example, products deriving from organic farming have now exceeded the threshold of niche products, to become a real market segment; even quality certifications are taking on greater importance. In the same way, rural tourism is considered to be a promising strategy, at a European level, which is able to locate itself in evolved segments of demand and in a product type of a very personalised artisan nature[20].

[18] Con il termine "Eurolire" si intendono valori monetari rilevati in lire e convertiti in Euro per il periodo antecedente al 1998.
[19] Il valore aggiunto considerato è al lordo dei Servizi di Intermediazione Finanziaria Indirettamente Misurati (Sifim).
[20] Please refer to Regione Autonoma Friuli Venezia Giulia, Direzione Regionale dell'Agricoltura, "Individuazione degli impatti delle politiche regionali e comunitarie sul settore primario della regione Autonoma Friuli Venezia Giulia. Spazi per un riorientamento della politica agricola regionale." Parte I. L'evoluzione del settore primario nella regione Friuli Venezia Giulia 1980-2000. IRES Friuli Venezia Giulia, Ottobre 2002, pages 177-212.

The objective is therefore to integrate agriculture and food industry in a greater measure, promoting the local productions and combining the food consumptions to tourism and the cultural initiatives linked to the local traditions.
In the light of this, the agro-industrial system of Friuli Venezia Giulia still appears to be marked by a certain insufficient structure at a competitive level and a consistent delay in the development processes[21], except for some of the supporting sectors, such as the wine, meat and dairy product sectors. One of the strong points in these divisions is the strong bind with the land, except for the production of Prosciutto. These particularly dynamic sectors then contribute in a decisive manner to spreading a quality and typical image of the regional products, even at an international level[22].

[21] Le piccole e medie industrie friulane, in effetti, primeggiano a livello internazionale in settori che sono definibili più o meno "tradizionali", quali le calzature, i mobili, le sedie, i macchinari, il settore agroalimentare, puntando su fattori competitivi di tipo "non-price" come la qualità, il marchio, i servizi post vendita, mentre le altre regioni europee più industrializzate mostrano una marcata specializzazione nei settori high-tech, utilizzando soprattutto fattori competitivi di tipo tecnologico.
[22] Please refer to Marta Cosmina, Francesco Marangon, Sonia Prestamburgo, Andrea Segrè, "Il settore agricolo del Friuli Venezia Giulia. Le caratteristiche strutturali dell'agricoltura del Friuli Venezia Giulia", pag. 19, in Conseguenze dell'ampliamento ad Est dell'Unione Europea sulle regioni di confine poste alle frontiere esterne dell'UE, ISDEE, Preparity, Ottobre 2000.

Foreign Trade

In the last ten years the food industry of Friuli-Venezia Giulia has expanded internationally, a common trend also in the other regions of north-eastern Italy[23]; in fact, since 1994 this industry has consistently represented a credit item in the regional trade balance. During the nineties export value more than tripled whereas import value increased at a rate equal to half of the export value rate. It was only in 2002 that it came to a standstill. This brought exports to a value of less than 400 million Euro and the trade balance went from levels of around 150 million Euro (recorded in the two previous years) to about 110 million Euro. If we observe the historical progression of the food industry import and export trade in Friuli-Venezia Giulia during the 1991-2002 period, there is, in fact, a definite trade balance deficit, whereas in 1993 it nears a breakeven point. 1994, on the other hand, is the first year of the ten-year period in which an albeit limited surplus is recorded; from 1995 onwards the degree of cover remained stable at values above 120%, exceeding 160% in 2000, but with a downturn in the years to follow.

Table 5: Imports and Exports of the food and tobacco industries of FVG (millions of Euro at current prices[24])

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002[25]
Exports	110.2	118.9	185.7	227.9	272.1	297.6	328.3	334.9	341.8	386.1	413.9	397.9
Imports	156.4	174.2	188.4	227.2	256.2	244.1	252.3	247.8	241.6	237.8	264.8	290.1
Balance	-46.2	-55.3	-2.7	0.6	15.9	53.5	76.0	87.1	100.2	148.3	149.1	107.8
Normalised balance[26]	-17.33	-18.86	-0.73	0.13	3.01	9.87	13.09	14.94	17.17	23.77	21.97	15.67
Degree of cover[27]	70.5	68.3	98.6	100.3	106.2	121.9	130.1	135.1	141.5	162.3	156.3	137.2

Source: Prepared by Ires-FVG based on ISTAT data.

The calculation of further foreign trade indexes referring to the 1995-2000 period, for which ISTAT data on regional profit and loss accounts are available (**Errore. L'origine riferimento non è stata trovata.**), confirms for Friuli-Venezia Giulia the food industry's strong propensity to export, even compared with the aggregate of the North-east, and with values far above the national ones. In terms of trade openness in this sector, and therefore also taking imports into account, the recorded values are less than those of the North-east, but significantly higher than the national ones.

Furthermore, both the degree of openness and above all the propensity to export denote a constant growth trend for the period in question, not only for Friuli-Venezia Giulia but also for the other aggregates examined. These trends confirm the remarks expressed concerning the ever-increasing importance of foreign markets for the Italian food industry, in terms of both procurement and production outlets.

[23] Please refer to Progetto OPEN – Fondazione Nord Est, Foreign Trade and Tourism. Main export sectors, 2003, page 2.
[24] Expressed in Euro since 1999 and in Eurolire, or monetary values considered in Lire and converted into Euro, in the period prior to 1998.
[25] For 2002 the ISTAT data concerning foreign trade are preliminary. This also applies to the following tables that provide data on exports and imports for the same year, regardless of the geographical aggregate considered.
[26] The normalised balance is equivalent to the ratio (E-I)/(E+I) expressed in percentages, where E refers to exports and I to imports.
[27] The degree of cover is equivalent to the export-import ratio expressed in percentages.

Table 6: Degree of openness and propensity to export for the food, beverage and tobacco industry 1995-2000 (based on current price values)

	1995	1996	1997	1998	1999	2000
Degree of openness[28]						
FVG	143.8	142.6	142.4	145.8	148.7	153.8
North East	147.9	139.4	141.5	145.1	153.7	166.1
Italy	133.7	126.9	128.3	126.6	132.1	137.7
Propensity to export[29]						
FVG	74.1	78.3	80.5	83.8	87.1	95.1
North-east	62.9	62.9	65.3	67.7	73.8	77.2
Italy	53.6	52.8	53.0	53.5	57.5	59.6

Source: Prepared by Ires-FVG based on ISTAT data.

Table 7: Incidence of the food, beverage and tobacco industry on aggregate trade in Friuli-Venezia Giulia (values expressed in millions of Euro at current prices 2002)

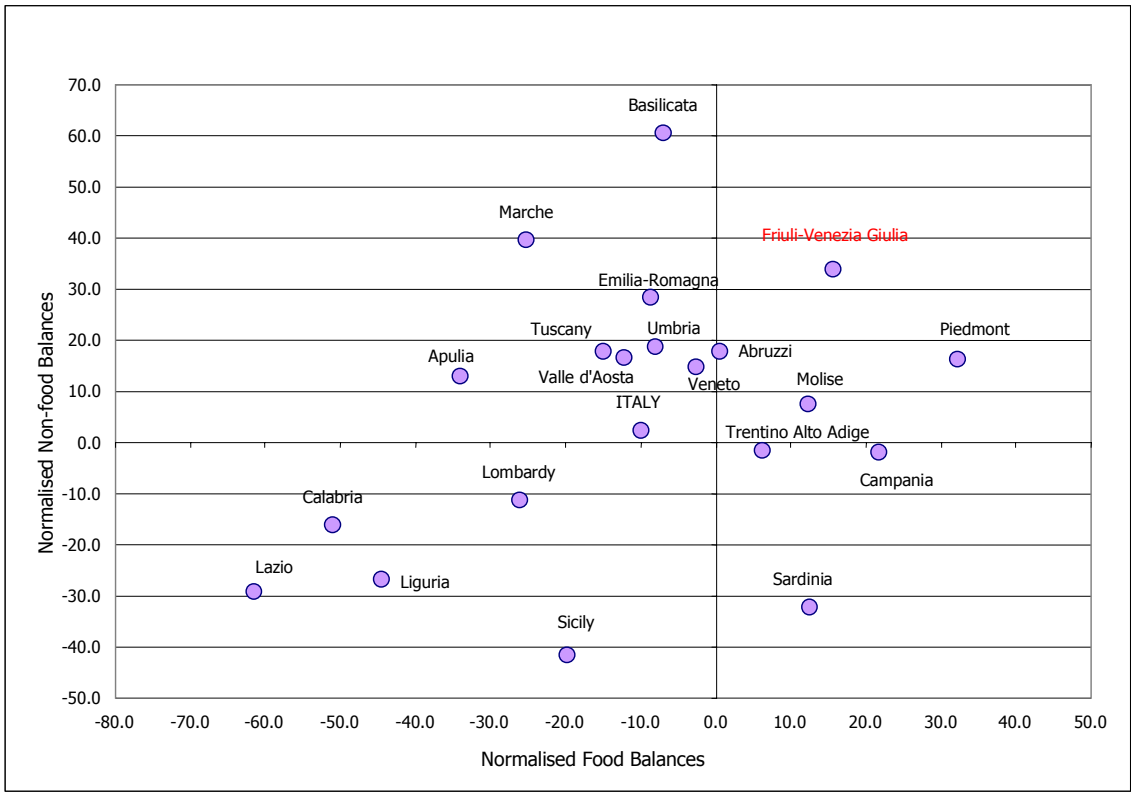
	Imports			Exports		
	Food industry	Total imports	Incidence %	Food industry	Total imports	Incidence %
Friuli-V.G.	290.1	4,550.3	6.4	397.9	9,022.4	4.4
Udine	74.6	1,631.9	4.6	113.4	3,383.7	3.4
Gorizia	71.9	783.8	9.2	77.9	1,734.9	4.5
Triest	87.7	1,090.7	8.0	118.2	963.2	12.3
Pordenone	55.8	1,043.9	5.3	88.4	2,940.6	3.0
North-east	5,625.6	57,348.5	9.8	5,272.9	83,633.6	6.3
ITALY	18,046.3	256,887.3	7.0	14,807.5	265,365.1	5.6

Source: Prepared by Ires-FVG based on ISTAT data.

The food industry of Friuli-Venezia Giulia, in terms of amount of import-export trade with foreign countries compared to the extent of overall trade, does not show a clear-cut distinction if compared the national average and even less if compared to the North-east as a whole. Imports (in value) of food industry products in 2002 accounted for 6.4% of all imports for the region; in the provinces of Triest and Gorizia this incidence was greater. Exports had a lesser incidence with the exception of the province of Triest, where 12.3% of export value is made up of products from the food, beverage and tobacco industry. In both cases, for both exports and imports, the national data and those referring to the North-east are decidedly higher.
If, on the other hand, we jointly consider the normalised balances referring to both food and other items in the last years (however only 2002 is considered in **Errore. L'origine riferimento non è stata trovata.**), Friuli-Venezia Giulia emerges as one of the regions with the best performance: in addition to normalised food balance values that remained stable above 15%, there are normalised non-food balance values of around 30%.

Figure 3: Normalised balances for agro-food products and other products for the region in 2002 (Ires-FVG report based on ISTAT data)

[28] The degree of openness was calculated as the ratio, expressed in percentages, between (E+I)/Added value of the food industry.
[29] The propensity to export was calculated as the ratio, expressed in percentages, between Exports and the added value of the food industry.



In fact, the majority of cases shows negative normalised balances for the food industry, often together with non-food normalised balances of the opposite sign. Friuli-Venezia Giulia, on the other hand, consistently belongs to the leading group of regions, where both balances are clearly positive.

In evaluating the regional data for foreign trade, however, it is important to bear in mind that the sum of regional values does not exactly coincide with the national datum due to the impossibility of attributing a part (albeit residual) of the flow to a specific province (it therefore comes under the category called "various provinces") and, consequently, to the corresponding region. The results of the regional analysis must then be interpreted with a certain degree of caution since the trade flows attributed to each region do not take into account intraregional trade; in addition, the presence of large markets, goods sorting areas or customs centres in a given region may lead to an overestimation of that region's foreign trade flows, to the detriment of another region that uses the same structures[30].

The division of imports and exports into their own internal components reflects the importance of the previously mentioned individual groups. For imports, we must in any event point out that the importance of the meat sector was halved in just a few years; in 1995, in fact, just over half of imports (in value) were for this type of product and in 2002 this figure was reduced to 27%. In decline, albeit to a lesser extent, is the import quota for the fresh and frozen fish sector, which went from 14.4% in 1998 to 9% in 2002. But on the other hand the amount of beverage imports increased

[30] Please refer to "Foreign trade of agro-food products", INEA, 1999, page 101.

(the nominal value increased by 65% between 1995 and 2002) as did "other food products" (their nominal value quadrupled during the period examined). The quotas for dairy products and fruit and vegetables are basically stable whereas ground products and starches and flours, animal food and oils and fats have greatly diminished. Finally, an irregular datum has been registered for imports of tobacco and tobacco-based products, which until 2001 were practically nil and in 2002 represented 4.4% of the total, or 12.7 million Euro.

Table 8: Classification of imports 1996-2002 (percentage of incidence on current price values)

	1995	1996	1997	1998	1999	2000	2001	2002
Meat and meat-based products	51.0	50.4	48.9	43.5	40.4	42.7	38.7	27.5
Preserved and processed fish and fish-based products	11.1	11.7	12.9	14.4	12.0	11.4	10.5	9.0
Mixes and preserves made from fruit and vegetables	5.9	4.9	7.1	7.3	8.0	7.5	8.5	5.4
Vegetable and animal oils and fats	0.6	0.4	0.3	0.4	0.5	0.5	0.4	0.3
Dairy products and ice cream	12.8	11.7	12.8	14.6	14.3	14.1	14.2	12.7
Ground products and starches and flours	1.6	1.7	1.8	1.8	1.9	2.1	2.0	1.7
Animal food	2.0	3.5	3.3	4.4	3.5	1.4	1.3	1.2
Other food products	7.9	8.1	5.1	5.2	8.9	8.1	13.4	27.5
Beverages	7.0	7.5	7.6	8.3	10.5	12.1	11.1	10.2
Tobacco and tobacco-based products	0.1	0.1	0.1	0.0	--	--	--	4.4
Total food and tobacco industry	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Prepared by Ires-FVG based on ISTAT data.

Conversely, export make-up in the past few years has remained more stable; there were moderate downturns in the category of ground products and starches and flours, fish and fruit and vegetables, whereas in the case of animal food the decline was sharper (from 3.1% to 0.4%). Also worthy of mention is the moderate increase in the significance of other food products and beverages.

Table 9: Classification of exports 1996-2002 (values expressed in Euro at current prices)

	1995	1996	1997	1998	1999	2000	2001	2002
Meat and meat-based products	13.8	13.9	13.5	13.5	13.3	14.8	15.4	13.8
Preserved and processed fish and fish-based products	6.2	5.2	4.9	5.0	4.8	4.5	4.9	5.4
Mixes and preserves made from fruit and vegetables	2.7	2.0	1.9	1.7	2.1	1.8	1.9	1.8
Vegetable and animal oils and fats	0.8	0.4	0.3	0.4	0.4	0.3	0.4	0.8
Dairy products and ice cream	2.2	2.2	1.8	1.9	1.4	1.6	2.0	2.2
Ground products and starches and flours	10.3	12.2	13.6	8.8	8.1	9.0	11.1	9.0
Animal food	3.1	3.4	2.9	2.7	3.0	2.1	1.5	0.4
Other food products	37.2	35.8	36.5	40.8	42.1	39.5	38.7	40.1
Beverages	23.3	24.7	24.3	24.9	24.6	26.3	24.2	26.3
Tobacco and tobacco-based products	0.3	0.2	0.4	0.3	0.2	0.0	0.1	0.1
Total food and tobacco industry	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Prepared by Ires-FVG based on ISTAT data.

Table 10: Nominal variations in exports and imports 1996-2002 (values expressed in Euro at current prices)

	Imports			Exports		
	1995	2002	Var % 95-02	1995	2002	Var % 95-02
Meat and meat-based products	130.6	79.6	-39.0	37.6	55.1	46.3
Preserved and processed fish and fish-based products	28.4	26.1	-8.1	16.8	21.5	28.0
Mixes and preserves made from fruit and vegetables	15.1	15.7	4.5	7.4	7.3	-2.5
Vegetable and animal oils and fats	1.5	1.0	-35.8	2.2	3.4	52.0
Dairy products and ice cream	32.9	37.0	12.4	6.0	8.6	44.0
Ground products and starches and flours	4.2	5.1	20.3	28.1	35.7	27.0
Animal food	5.1	3.5	-30.7	8.4	1.7	-80.2
Other food products	20.1	79.7	296.2	101.3	159.7	57.6
Beverages	18.0	29.7	64.6	63.4	104.6	65.1
Tobacco and tobacco-based products	0.2	12.7	5,635.8	0.7	0.3	-56.0
Total food and tobacco industry	256.2	290.1	13.3	272.1	397.9	46.3

Source: Prepared by Ires-FVG based on ISTAT data.

Among the main export items are the primary processing products of the food industry such as meats, wines and other beverages as well as the other foods (a category, which, as mentioned before,

encompasses a wide range of products, from baked products to coffee production)[31], which together make up more than three quarters of foreign sales.
On the whole, the value of imports increased nominally by 18.8%, whereas in the same period exports increased by almost twice this value, or 33.7%.
As in other northern regions in general, Friuli-Venezia Giulia also confirms its position in the national agro-food sector as a processor of products destined for the food industry, showing that it depends on the purchase of both raw products (mainly) and processed products, although it exports much more of the latter than the former[32]. In the past few years this role of importer of raw agricultural material (the so-called "commodities") has actually been enhanced as well as its role of exporter of food industry products[33]. In particular, Friuli-Venezia Giulia is in a position to take advantage of its strategic position with respect to Central-eastern Europe to establish a mutually advantageous relationship by importing raw agricultural products, exporting processed products and taking advantage of its specialisation in processing agricultural products. As long as this differentiation continues to exist, typical local products can be proposed, with special attention paid to the price-quality ratio, in a situation where consumers are more price-conscious[34]. These countries, in fact, generally tend to lag behind European standards with respect to food safety; this is typical, for example, of the processing of animal-based foods, which requires significant investment to comply with the regulations of the European Union.

Table 11: Percentage of imports for the food and tobacco industry of FVG according to geographical macroaggregates 1995-2002

	1995	1996	1997	1998	1999	2000	2001	2002
EU	69.5	72.6	70.1	70.0	74.0	72.5	71.2	60.5
Cent. Eastern Europe	22.6	17.7	17.6	16.9	17.4	20.6	22.1	33.7
Rest of the World	7.9	9.8	12.3	13.1	8.7	6.9	6.7	5.8

Source: Prepared by Ires-FVG based on ISTAT data.

As regards the origin of imports (**Errore. L'origine riferimento non è stata trovata.**), the 1995-2002 period saw a shift in a purchase quota from the European Union (from 69.5% to 60.5%) to the countries of Central Eastern Europe (from 22.6% to 33.7%). This result is almost exclusively attributable to the increase in imports of other food products coming from Serbia Montenegro, (which went from 5.9 million to 37.5 million Euro in two years, from 2001 to 2002) and from Croatia (from 8 to 19.8 million Euro, again between 2001 and 2002).
The distribution of exports according to geographical macroareas, on the other hand, did not undergo such significant variations. However, there was a "thinning" in the quota destined for Central Eastern Europe (from 19.1 to 14.8) and for the European Union (albeit much more limited), whereas the quota for the rest of the world increased.

[31] Please refer to "Foreign trade of agro-food products", INEA 1999, pages 114-116.
[32] Please refer to "Foreign trade of agro-food products", INEA 1999, page 108. Also, Maria Francesca Agabiti, Mario Gregori, "Foreign trade trends of agro-food products in Friuli-Venezia Giulia", in Economic Situation n° 3 of 1997, CREF, page 37.
[33] Please refer to Maria Francesca Agabiti, Mario Gregori, "Foreign trade trends of agro-food products in Friuli-Venezia Giulia", in Economic Situation n° 3 of 1997, CREF, page 47.
[34] Please refer to Maria Francesca Agabiti, Mario Gregori, "Foreign trade trends of agro-food products in Friuli-Venezia Giulia", in Economic Situation n° 3 of 1997, CREF, pages 40-41.

Table 12: Percentages of exports in the food and tobacco industry of FVG according to geographical macroaggregates 1995-2002

	1995	1996	1997	1998	1999	2000	2001	2002
EU	57.7	55.9	55.9	61.8	61.0	58.0	55.7	55.9
Cent. Eastern Europe	19.1	22.2	18.2	15.5	15.0	13.2	14.9	14.8
Rest of the World	23.2	21.9	25.9	22.6	24.0	28.8	29.4	29.3

Source: Ires-FVG report based on ISTAT data.

The analysis of trade balances with the areas examined in the 1995-2002 period shows how, with respect to the European Union, and starting out with a deficit (years 1995-1996), a period characterised by constant trade surpluses could have come about (**Errore. L'origine riferimento non è stata trovata.**). The trade balance with the Rest of the World similarly shows an increasingly significant surplus, except for a slight decline recorded in 2002. Only the trade of food products with the countries of Central Eastern Europe registered a clear deficit in 2002, especially, as already pointed out, with respect to Serbia and Montenegro and Croatia. Moreover, the previous years registered positive trade balances but we have to go back to 1995 to find another negative balance.

Table 13: Trade balances of the food, beverage and tobacco industry according to geographical macroaggregates 1995-2002 (values expressed in millions of Euro at current prices)

	1995	1996	1997	1998	1999	2000	2001	2002
EU	-21.0	-10.8	6.6	33.6	29.9	51.5	41.9	47.0
Cent. Eastern Europe	-5.8	23.0	15.5	10.0	9.3	2.1	3.3	-39.0
Rest of the World	42.7	41.3	53.9	43.4	61.0	94.7	103.8	99.8
Total	15.9	53.5	76.0	87.1	100.2	148.3	149.1	107.8

Source: Prepared by Ires-FVG based on ISTAT data.

Table 14: Normalised balances[35] of the food, beverage and tobacco industry according to geographical macroaggregates 1995-2002

	1995	1996	1997	1998	1999	2000	2001	2002
EU	-6.3	-3.2	1.8	8.8	7.7	13.0	10.0	11.8
Cent. Eastern Europe	-5.3	21.1	14.9	10.7	10.0	2.1	2.8	-24.9
Rest of the World	51.2	46.4	46.5	40.1	59.3	74.3	74.5	74.8
Total	3.0	9.9	13.1	14.9	17.2	23.8	22.0	15.7

Source: Prepared by Ires-FVG based on ISTAT data.

[35] Again, normalised balances have been calculated as a ratio (E-I)/(E+I) expressed in percentages, where E refers to exports and I to imports.

Table 15: Nominal variations in Imports and Exports in FVG according to geographical macroaggregates 1995-2002 (values expressed in millions of Euro at current prices)

	Imports			Exports		
	1995	2002	Var. %	1995	2002	Var. %
EU	177.9	175.5	-1.4	157.0	222.5	41.7
Cent. Eastern Europe	57.9	97.9	69.0	52.1	58.9	13.0
Rest of the World	20.3	16.8	-17.4	63.0	116.6	85.0
Total	256.2	290.1	13.3	272.1	397.9	46.3

Source: Ires-FVG report based on ISTAT data.

In the last 10 years, trade with Central Eastern Europe in the food sector has been characterised by a significant reduction in the meat import quota (from almost 70% in 1995 to less than 20% in 2002); however, meat exports, again in relative terms, remained more stable and actually registered a basic upward trend (from 7% in 1995 to 9% in 2002). Over a certain period of time, fruit and vegetables and dairy products registered an important decline in trade between Friuli-Venezia Giulia and the countries of Central Eastern Europe, for both import and export goods. The relevance of products for animals also decreased, especially on the export side, when in 2002 they only constituted 0.6% of the total value. The trade quota of the beverage industry was basically stable during this time period.

Table 16: Trade with Central Eastern Europe– Division of Imports (in value) 1995-2002

	1995	1996	1997	1998	1999	2000	2001	2002
Meat and meat-based products	69,1	61.6	49.6	48.9	46.3	57.4	31.9	18.6
Preserved and processed fish and fish-based products	0.1	0.0	0.3	0.1	0.1	0.3	1.1	0.6
Mixes and preserves made from fruit and vegetables	12.8	10.7	22.9	20.3	20.4	16.0	20.9	7.9
Vegetable and animal oils and fats	0.0	0.0	--	--	0.0	0.0	0.0	0.0
Dairy products and ice cream	8.5	11.2	11.3	11.7	8.7	6.4	7.0	3.3
Ground products and starches and flours	0.0	0.1	0.3	0.1	0.6	0.6	0.5	0.2
Animal food	0.0	0.0	0.0	0.9	3.6	3.3	1.6	1.0
Other food products	2.7	5.1	4.9	4.6	5.2	3.2	25.9	62.0
Beverages	6.8	11.3	10.7	13.3	15.0	12.7	11.1	6.5
Tobacco and tobacco-based products	--	--	--	--	--	--	--	--
Total food and tobacco industry	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Prepared by Ires-FVG based on ISTAT data.

Imports of other food products actually increased exponentially in the past two years and in 2002 they represented more than 60% of the overall total of the food sector, or about 60 million Euro (**Errore. L'origine riferimento non è stata trovata.**). These products come almost entirely from Croatia (20 million Euro in 2002) and above all from Serbia and Montenegro (almost 40 million in the same year). Even exports for this group turned out to be the most substantial from a monetary point of view (see the Tables below).

Also worthy of note is the relevance of fish and fish-based products, which in 2002 were the second most important export item for Friuli-Venezia Giulia to countries of Central Eastern Europe, whereas the corresponding imports continue to be negligible.

Table 17: Trade with Central Eastern Europe– Division of exports (in value) 1995-2002

	1995	1996	1997	1998	1999	2000	2001	2002
Meat and meat-based products	7.0	3.8	5.1	5.1	8.5	10.0	8.5	9.1
Preserved and processed fish and fish-based products	10.3	9.0	10.9	13.2	13.1	14.6	14.7	17.2
Mixes and preserves made from fruit and vegetables	6.5	4.7	5.5	5.5	6.6	7.9	6.2	5.5
Vegetable and animal oils and fats	3.5	1.2	1.0	1.1	2.0	1.8	2.0	4.9
Dairy products and ice cream	4.4	4.2	3.5	4.6	3.3	4.4	3.9	3.5
Ground products and starches and flours	8.3	21.2	17.8	13.1	16.7	7.5	11.2	5.1
Animal food	5.8	4.9	4.1	5.7	6.6	3.3	1.5	0.6
Other food products	34.2	30.3	36.4	38.5	31.8	37.5	38.9	37.5
Beverages	18.7	19.9	13.6	11.2	10.3	12.9	12.3	16.2
Tobacco and tobacco-based products	1.3	1.0	1.9	2.0	1.0	0.0	0.7	0.4
Total food and tobacco industry	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Prepared by Ires-FVG based on ISTAT data.

Examined below in more detail is trade with the four countries of Central Eastern Europe involved in the project "Look-East Net", i.e. Slovenia, Hungary, Romania and Bulgaria.

Table 18: Imports from a group of chosen countries 1996-2002 (values expressed in millions of Euro at current prices)

	1995	1996	1997	1998	1999	2000	2001	2002
Slovenia	16.8	15.5	19.3	21.0	21.0	20.8	17.0	18.9
Hungary	8.2	8.5	6.9	5.2	5.7	13.6	11.0	5.7
Romania	0.8	0.5	0.9	0.9	0.5	0.7	0.3	0.4
Bulgaria	0.5	0.3	0.2	0.5	0.9	0.2	0.9	1.3

Source: ISTAT

Table 19: Exports to a group of chosen countries 1996-2002 (values expressed in Euro at current prices)

	1995	1996	1997	1998	1999	2000	2001	2002
Slovenia	23.2	20.4	20.2	19.3	20.1	20.6	22.1	22.7
Hungary	0.8	0.9	0.6	0.7	1.0	1.0	0.5	0.4
Romania	0.6	0.4	0.2	0.4	0.2	0.4	0.4	0.3
Bulgaria	0.2	0.2	0.2	0.7	0.3	0.1	0.2	0.1

Source: ISTAT

Table 20: Trade balance with a group of chosen countries 1996-2002 (values expressed in millions of Euro at current prices)

	1995	1996	1997	1998	1999	2000	2001	2002
Slovenia	6.3	4.9	0.8	-1.7	-0.9	-0.2	5.1	3.8
Hungary	-7.4	-7.6	-6.3	-4.5	-4.7	-12.6	-10.5	-5.3
Romania	-0.3	-0.1	-0.7	-0.5	-0.3	-0.3	0.1	0.0
Bulgaria	-0.3	-0.1	0.0	0.2	-0.6	-0.1	-0.8	-1.2

Source: Prepared by Ires-FVG based on ISTAT data.

Of the four, Slovenia is the primary trading partner of Friuli-Venezia Giulia for food industry products. Trade amounts to 40 million Euro, with a positive balance for the last two years. Imports refer above all to meat, beverages and dairy products (**Errore. L'origine riferimento non è stata trovata.**), whereas regional exports are concentrated in the fish sector, which has been growing rapidly in the past ten years, other food products and beverages.

Hungary is important for the purchase of meat and meat-based products, whereas the value of regional exports is not very significant; therefore, the balance for Friuli-Venezia Giulia continues to be consistently negative with a deficit that in 2002 amounted to more than 5 million Euro.

On the other hand, the importance and extent of trade of food industry products with Romania and Bulgaria are much more moderate; the only consistent increase in Bulgarian imports was in fruit and vegetable mixes and preserves, which in the past two years reached and exceeded one million Euro, whereas on the export side we have above all the group of other food products.

Figure 4: The main regional export groups in Slovenia 1992-2002 (values in thousands of Euro at current prices). Source: ISTAT

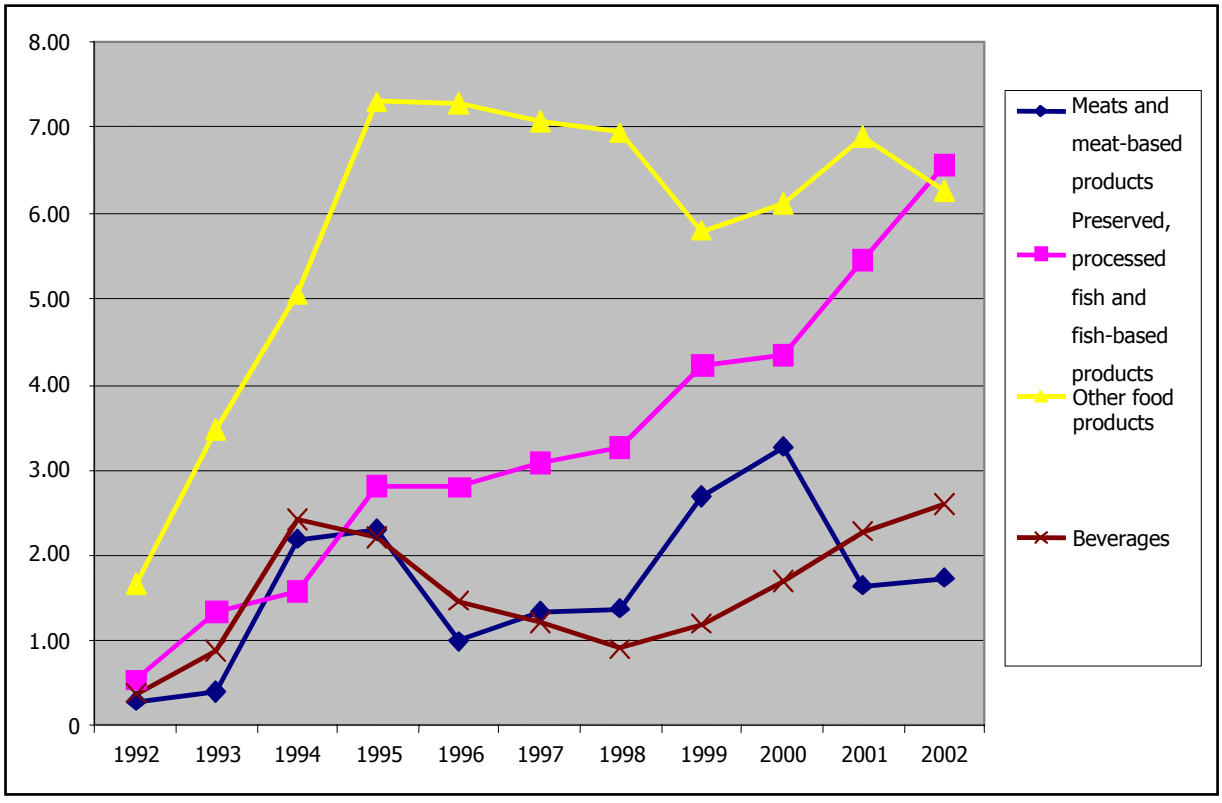


Table 21: Percentages of exports according to origin 20022002

	EU	Central Eastern Europe	of which 4 chosen countries	Rest of the world	World
Meat and meat-based products	67.4	22.9	17.3	9.8	100.0
Preserved and processed fish and fish-based products	74.5	2.2	0.0	23.3	100.0
Mixes and preserves made from fruit and vegetables	46.3	49.0	12.1	4.7	100.0
Vegetable and animal oils and fats	95.0	0.8	0.8	4.2	100.0
Dairy products and ice cream	90.2	8.7	8.7	1.1	100.0
Ground products and starches and flours	96.7	3.2	0.0	0.1	100.0
Animal food	71.6	28.3	28.1	0.1	100.0
Other food products	23.2	76.0	0.4	0.7	100.0
Beverages	74.7	21.6	20.3	3.7	100.0
Tobacco and tobacco-based products	100.0	0.0	0.0	0.0	100.0
Total food and tobacco industry					

Source: Prepared by Ires-FVG based on ISTAT data.

An analysis of regional imports divided according to group and origin in 2002 reveals the importance of the four countries in question regarding the purchase of meat (17.3%, mostly from Hungary), animal food and beverages (28.1% mainly from Slovenia). On the other hand, Slovenia turns out to be an outlet market for fish and fish-based products (about 30% of the total) and for vegetable and animal oils and fats (50% in value of total exports).

Table 22: Percentages of exports according to destination 2002

	EU	Central Eastern Europe	of which 4 chosen countries	Rest of the world	World
Meat and meat-based products	75.7	9.7	3.3	14.6	100.0
Preserved and processed fish and fish-based products	52.4	47.1	30.5	0.5	100.0
Mixes and preserves made from fruit and vegetables	47.5	44.9	19.6	7.7	100.0
Vegetable and animal oils and fats	11.1	85.2	50.5	3.7	100.0
Dairy products and ice cream	67.0	23.7	8.8	9.3	100.0
Ground products and starches and flours	6.5	8.4	3.5	85.1	100.0
Animal food	73.8	22.0	15.9	4.2	100.0
Other food products	66.6	13.8	4.3	19.5	100.0
Beverages	47.6	9.1	2.6	43.3	100.0
Tobacco and tobacco-based products	17.5	80.6	76.4	1.9	100.0
Total food and tobacco industry					

Source: Prepared by Ires-FVG based on ISTAT data.

Table 23: Percentages of imports according to group and origin 2002

	EU	Central Eastern Europe	of which 4 chosen countries	Rest of the world	World
Meat and meat-based products	30.6	18.6	52.5	46.4	27.5
Preserved and processed fish and fish-based products	11.1	0.6	0.0	36.3	9.0
Mixes and preserves made from fruit and vegetables	4.2	7.9	7.3	4.4	5.4
Vegetable and animal oils and fats	0.5	0.0	0.0	0.2	0.3
Dairy products and ice cream	19.0	3.3	12.2	2.5	12.7
Ground products and starches and flours	2.8	0.2	0.0	0.0	1.7
Animal food	1.4	1.0	3.8	0.0	1.2
Other food products	10.6	62.0	1.2	3.5	27.5
Beverages	12.6	6.5	22.9	6.6	10.2
Tobacco and tobacco-based products	7.2	-	0.0	-	4.4
Total food and tobacco industry	100.0	100.0	100.0	100.0	100.0

Source: Prepared by Ires-FVG based on ISTAT data.

Table 24: Percentages of imports according to group and destination 2002

	EU	Central Eastern Europe	of which 4 chosen countries	Rest of the world	World
Meat and meat-based products	18.7	9.1	7.6	6.9	13.8
Preserved and processed fish and fish-based products	5.1	17.2	27.9	0.1	5.4
Mixes and preserves made from fruit and vegetables	1.5	5.5	6.0	0.5	1.8
Vegetable and animal oils and fats	0.2	4.9	7.2	0.1	0.8
Dairy products and ice cream	2.6	3.5	3.2	0.7	2.2
Ground products and starches and flours	1.0	5.1	5.4	26.1	9.0
Animal food	0.6	0.6	1.1	0.1	0.4
Other food products	47.8	37.5	29.2	26.8	40.1
Beverages	22.4	16.2	11.4	38.8	26.3
Tobacco and tobacco-based products	0.0	0.4	1.0	0.0	0.1
Total food and tobacco industry	100.0	100.0	100.0	100.0	100.0

Source: Prepared by Ires-FVG based on ISTAT data.

According to the ratio between export and import quotas for the four countries, or the degree of pro-quota commercial cover, there is a clear trade surplus in the fruit and vegetable and dairy sectors with the four countries considered, which, on the other hand, have the advantage of being specialised in the trade of beverages and meats. With the countries of Central-eastern Europe as a whole, however, Friuli-Venezia Giulia registers very high values for fish and fish-based products: In fact, they constitute an outlet for almost 50% of exports, whereas the import quota is about 2%.

Table 25: Degree of pro-quota trade cover [36] according to geographical areas 2002 (main groups)

	EU	Central Eastern Europe	4 chosen countries	Rest of the world	World
Meat and meat-based products	1.12	0.42	0.19	1.49	1.00
Preserved and processed fish and fish-based products	0.70	21.76	n.r. [37]	n.r.	1.00
Mixes and preserves made from fruit and vegetables	1.02	0.92	1.62	1.63	1.00
Dairy products and ice cream	0.74	2.73	1.02	8.16	1.00
Ground products and starches and flours	0.07	2.61	n.r.	1.00	n.r.
Other food products	2.87	0.18	n.r.	n.r.	1.00
Beverages	0.64	0.42	0.13	11.61	1.00

Source: Prepared by Ires-FVG based on ISTAT data.

[36] This index has been calculated as the ratio between exports referring to the corresponding geographical area and total exports (export quota) and imports referring to the corresponding geographical area and total importss (import quota).
[37] Ratios having a numerator or a denominator of less than 1% are not considered relevant and therefore not included.

Prospects of the sector: quality production and the challenges of a global market

This final part makes some conclusions concerning the strengths and weaknesses of this sector and the prospects connected with the internationalisation process of the markets and the expansion of the European Union, in terms of opportunities and risks [38].

The growth of the agro-food sector in Friuli-Venezia Giulia (but not only in Friuli-Venezia Giulia) is first of all greatly influenced by two main factors: on the one hand the agricultural policies of the European community and particularly the assigning of production quotas by the European Union, which makes it impossible to increase the production quantities of agricultural products[39], and on the other hand the internationalisation processes that are becoming increasingly manifest in this sector as well, which have sharpened competition because of producers entering local markets (the case of Californian or South African wines, for example) and which increasingly pit local industry against the large groups that sell food products all over the world. In the nineties, in fact, the appearance of new distribution outlets in this country such as *hard discount* stores and shopping centres made the food industry face new challenges in terms of both competition in distribution and the entry of new competitors able to sell at low prices. These new distribution outlets have induced the large food companies in particular to diversify their products to satisfy the demands of an extremely segmented market; this has led companies to make new investments in buildings and production plants to improve the quality standards of widely consumed products and to check competition by introducing more economical production lines. Many large companies have also adopted merger and take-over strategies.

Regionally, there is a clear distinction between certain companies that make products of excellence characterised by high quality and considerable investment in technology as well as other aspects and a considerable part of food industry companies, which compete on international markets and mainly focus on price and standardised quality. These companies offer products with moderate levels of differentiation, as in the case of animal food, non-certified meat and milk-based products, some beverage products, industrial pasta and baked goods: these items, as can be easily noted, are not generally produced by regional businesses. In addition, certain sectors, such as cereals, fruit and vegetables, plants and flowers, are not structured for processing and are simply restricted to collection and distribution[40].

The success on the world market of companies characterised by these operating standards is tied to their capacity to rationalise costs and identify suitable outlets. According to producers, even for these companies the consolidation of this sector depends on its capacity to introduce process innovations, establish synergies with other companies, integrate or create food-related businesses and implement suitable marketing strategies. The internal rationalisation process of a company must take place hand in hand with the establishment of a territorial system able to limit the importance of structural weaknesses and to allow higher levels of efficiency. Thus, some of these companies can continue to compete on an increasingly "global" market, where there are companies whose size and biotechnological innovation capabilities are scarce in Friuli-Venezia Giulia.

The situation related to products of excellence is quite different; here the organisation of the business and the ability to commercially valorise a product are focal. This is a commonly held belief among the "main players" of the agro-food sector, where in the future it will become more and more important to

[38] The considerations made in the paragraph are also taken from statements collected during quality interviews with entrepreneurs, executives, trade representatives of the sector.

[39] Please refer to Maria Francesca Agabiti, Mario Gregori, "Trends in foreign trade of agro-food products in Friuli-Venezia Giulia", in Economic Situation n° 3 in 1997, CREF, page 35.

be able to market typical products characterised by recognised quality standards, that are highly distinctive and that are able to stand up to increasingly fierce international competition.

TYPICAL AND QUALITY PRODUCTS

Even after the food emergencies of the past years, consumers are gradually becoming more conscious and demanding, opting more and more for quality and traditional products. The tendency to appreciate typical local products and high-value products in general is due to new market orientations where consumers are seen as being increasingly intent on discovering or rediscovering the "products of the territory", to the new cultural tendencies in general, aimed at enhancing local character, diversity and typicality, to the material culture expressed through a given product and finally to the new opportunities created by community and national legislation, which has led to the definition of an articulate range of tools to safeguard typicality and quality in the agro-food sector[41]. In terms of types of agricultural products, regulations (EC) n° 2081 and 2082 from 1992 have set up DOP (Denomination of Protected Origin), IGP (Protected Geographical Indication) and the certificates of distinctiveness, which truly safeguard the products. The trademark, in addition to allowing the product to be identified, ensures that production traditions and food history, and therefore the specific identity of the product itself, are respected[42]. In particular, in sectors where processing assumes decisive characteristics (such as cheese, meat and cold pork meats), or where there have been problems that have obscured the image of quality and safety of the product, the consumer seems to be more willing to pay extra[43].

Italy, with its more than 100 products registered as DOP or IGP, together with France, ranks at the top of the European Union; as for wines it has about 300 DOCs and more than 20 DOCGs; the main quality products in Italy are wines and cheeses.

In Friuli-Venezia Giulia there are only two[44] products that have received a DOP (Denomination of Protected Origin), one of the main types of protection allowing the product to be identified and ensuring that production traditions are respected: Montasio cheese in 1996 and the prosciutto of San Daniele in the same year.

In particular, pork meat processing is one of the leading sectors in the agro-food system in Friuli-Venezia Giulia, which has a significant number of ham and sausage factories. It is important to note

[40] Please refer to Marta Cosmina, Francesco Marangon, Sonia Prestamburgo, Andrea Segrè, "The Agricultural Sector in Friuli-Venezia Giulia. Structural characteristics of agriculture in Friuli-Venezia Giulia", pages 19-22, following the eastward expansion of the European Union to include the regions situated at the outer borders of the EU, ISDEE, Preparity, October 2000.

[41] Please refer to Autonomous Region of Friuli-Venezia Giulia, Regional Agricultural Office, "Determining the Impact of Regional and Community Policies on the Primary Sector of the Autonomous Region of Friuli-Venezia Giulia. Opportunities to redirect regional agricultural policy". Part I. The evolution of the primary sector in the region of Friuli-Venezia Giulia 1980-2000. IRES Friuli-Venezia Giulia, October 2002, pages 193-212.

[42] According to "Italian Agriculture Counts 2001", the contribution of typical products to the agro-food economy constituted 7% of Gross National Saleable Product in 2000 (Please refer to "Italian Agriculture Counts 2001", National Institute of Agrarian Economy, page 119).

[43] Please refer to the survey published in the VIIIth Nomisma Report, according to which 76% of consumers are in favour of paying a higher price if this guarantees the quality and safety of purchased products. The same survey shows that, although the level of awareness is still quite low in Italian consumers, there are however no other situations in the EU where there is a greater awareness of protective community trademarks. In Europe, the Italian datum in fact denotes the highest awareness of the DOP trademark, with a value which is much higher than the community average; as for the IGP, this is a trademark that is generally less well known.

[44] Actually, among the products having obtained a DOP in Friuli-Venezia Giulia, these also include "Salamini italiani alla cacciatora", which, however, are common to various other Italian regions.

that the industrial strength of ham production, especially the aforementioned prosciutto of San Daniele, is noteworthy, especially if we consider that relations with local producers are limited, as the raw materials mainly come from other regions of Italy. This phenomenon also occurs, although to a lesser extent, when pork meat is processed into other types of cold meats.
As for the more significant problems of this sector, they occur in pork meat processing and are mainly due to the continued presence of certain shortcomings in technological development, availability of refrigerators and seasoning rooms, robotics and computerisation of the systems that control the products and the facilities[45]. In the dairy sector as well, there are technological deficiencies and inadequacies in the product collection, processing and sales structures, especially in the refrigeration systems and the heat treatment of milk, in the conditioning systems of the cheese maturing stores and in the purification and utilisation systems of processed by-products, as well as hygienic-sanitary deficiencies, mainly in milk transport from the collection centres to the processing plants and to the product sales outlets[46].

In addition to the meat and dairy sectors, also worthy of mention are the excellent wines of Friuli-Venezia Giulia, which include ten regional DOC areas[47] (two of which are shared with Veneto[48]), three IGTs[49], and one DOCG wine[50]. In fact, the wine sector, which represents about 2% of domestic production, is definitely the most significant on the regional agricultural production scene. The wine is sold mainly by wine co-operatives that process the grapes harvested by the members and by small and medium-sized wine producers or by certain industrial groups that are only involved in the sales aspect[51].

[45] Please refer to Autonomous Region of Friuli-Venezia Giulia, Regional Plan for Rural Development 2000-2006, Attachment 8, page 134.
[46] Please refer to the Autonomous Region of Friuli-Venezia Giulia, Regional Plan for Rural Development 2000-2006, Attachment 8, page 137.
[47] DOC: Denomination of Controlled Origin; a recognition of product quality given to wines produced in limited areas (usually small/medium-sized), bearing their geographical name. Generally, the name of the vine species comes after the Doc and production specifications are strict. These wines are authorised for consumption only following a thorough chemical and sensorial analysis. The ten areas are: Carso, Colli Orientali del Friuli, Collio Goriziano, Friuli Annia, Friuli Aquileia, Friuli Grave, Friuli Isonzo, Friuli Latisana, Lison Pramaggiore, Piave or Vini del Piave.
[48] Lison Pramaggiore and Piave or Vini del Piave.
[49] IGT: Typical Geographical Indication (recognition of quality attributed to table wines characterised by generally large production areas and which do not have very strict production specifications). In Friuli-Venezia Giulia they are: Alto Livenza, Delle Venezie, Venezia Giulia, of which the first two are also present in Veneto.
[50] DOCG: Denomination of Controlled and Guaranteed Origin, held in this region by the Ramandolo wine. This is a special recognition of excellence in quality given to certain DOC wines that are well-known in the country and abroad. These wines are subject to stricter controls, must be sold in bottles of less than 5 litres and must carry a government trademark guaranteeing its orgin and quality, allowing the bottles produced to be numbered.
[51] Please refer to to Autonomous Region of Friuli-Venezia Giulia, Regional Plan for Rural Development 2000-2006, Attachment 8, page 142.

Enlargement of the European Union: potential and critical points

The European Union enlargement process implies a series of changes of particular relevance for the agro-food division. The main changes relate to the removal of important barriers in the agricultural and food trade, the imposition of a complex series of standards based on the Common Agricultural Policy (PAC), balance limitations, veterinary and phytosanitary standards, and trading policies. The fall of these trade barriers undoubtedly constitute an advantage for the regional division because, like the whole economic system in general, it reduces export costs and removes the restrictions for expansion towards such markets. Moreover, as already highlighted in the part relating to foreign trade, the reduction of costs relating to import-export trade will give the sector a boos into specialising in the transformation of food products, by importing raw agricultural materials from these countries and generating a contrary flow to exportation of food industry products.

The geogrphical position, as is well-known, constitutes an additional factor that should promote trade penetration of regional companies into Eastern Europe. Furthermore, it is to be higlighted that recent studies have generally redimensioned the initial alarmist forecasts, which anticipated a crisis in the sector deriving from price competition from the East European producers. In fact, as regards the latter, accession to the EU market is conditioned by observing the severe normatives in the phytosanitary field and in general all the regulations imposed by the community policies (for example limits to planting vines, controls on the use of labour, etc.). Moreover, to be remembered is that these studies based production competitivity of the Central Eastern European Countries on the vast availability of production factors at a good price, like the land and labour, but underestimated the importance of adequate capital investment, an essential factor for a modern agro-food sector to be competitive on the markets of the developed countries[52]. This opinion is always the most widespread, even throughout the regional enterprises, especially as regards those of quality productions, therefore, with a countertrend compared to the concerns that arose only two years ago.

In fact, the privatisation processes in these countries has only partly rationalised the organisation of production activities, whereas the acquisition of innovative technologies is still poor, as well as the efficient reorganisation of agro-food transformation and marketing sectors. In almost all the East European markets, in effect, the sales sector is still rather inefficient and in general, the agro-food systems need a thrust as regards modernisation, incentives and investments to be able to fully access the European Union. On the other hand, the poor competitivity of the products from the Central Eastern European Countries is shown by the fact that over the last few years, these countries have not be able to fully use their export quotas at reduced (or zero) tariffs towards the EU, and have recorded a general worsening in the agro-food trade balance.

Furthermore, it is easy to predict that the introduction of more severe production standards that are part of the *acquis communautaire*, will lead to a rise in the production costs of the new member states. The increases in the price levels of agro-food products in the Central-Eastern European Countries, accessing the European Union will take place in a situation in which, with the increase in the per capita income available, a recovery in the food consumptions is predicted. Nevertheless, the

[52] Please refer to Regione Autonoma Friuli Venezia Giulia, Direzione Regionale dell'Agricoltura, Individuazione degli impatti delle politiche regionali e comunitarie sul settore primario della regione Autonoma Friuli Venezia Giulia. Spazi per un riorientamento della politica agricola regionale. Parte IV. Lo scenario derivante dal prossimo allargamento dell'Unione Europea e dalla modifica degli accordi commerciali su scala internazionale, IRES Friuli Venezia Giulia, Ottobre 2002, pages 11-12. Please refer to anche De Filippis F., Salvatici L., Dopo Seattle: l'agricoltura nell'agenda dei negoziati commerciali del WTO, QA - La Questione Agraria, 1, 2000.

prices to the producer, especially in the primary sector, still remain generally lower compared to the EU levels[53].

SAN DANIELE PROSCIUTTO

As regards the production of San Daniele Prosciutto, the regional participation in the first stage of the production line is quite reduced and encounters a number of obstacles, due to a self-controlling system by virtue of which in the last few years, it has been difficult to set up new establishments. The fact of having such a restrictive territorial limit (limited to the sole Municipality of San Daniele, as provided for by law) creates a physical restraint to new establishments, and consequently a limited quantity as far as production is concerned. The San Daniele Prosciutto Consortium consists of almost thirty producers (i.e. 100% of the producers of Sand Daniele Prosciutto) a third of which are artisans, a third are SMEs and a third are industries, to cover a total of 500 employees. A major strength of this district is that of having avant-garde industries from the technological and production facility viewpoint. In fact, the facilities are quite recent or have been recently modernised. Another strong point of the companies in the district is that they operate in an established market with a product that has for some years maintained its current high position of recognition and status in the arena of the Made In Italy agro-foods. The principal market for the San Daniele Prosciutto is obviously national, but almost 20% of the production is destined for export, mainly to France (almost 50%), where evidently the consumers have a strong appreciation of the quality, to Germany (about 15%), and to other EU countries[54] and Switzerland. In recent years, non-European countries have become more important, such as the USA market[55], but also Japan now has some relevance. Instead, the penetration in the Central-Eastern European Countries has not yet taken off, not even in terms of promotion by the Consortium, which includes the producers of Prosciutto from the district. Factors tied to the cost of producing quality products such as San Daniele Prosciutto could be the reasons for the limited market presence in Central-Eastern European where consumers are still much more price sensitive. Added to this are reasons pertaining to commercial risk, which is still high in some countries in the area, together with the cultural difference, and the limited knowledge about the product. In this scenario, however, there is considerable interest from the members of the Consortium in the Russian market; a market which still has to be explored, but that appears to have great potential, with a concentration of consumers who have a high buying power and where promotional and product marketing initiatives are possible in the short-term.

According to the majority of entrepreneurs, in this scenario the potential of the regional agro-food division is very high, as in the other production sectors. Assuming an economic growth in the Eastern European countries, the presence of a vast new market, and above all the long-tem forecast of the rising consumer buying power, appear to be the pressing motives for an optimistic outlook.

[53] Si confronti l'Audizione Ismea alla Commissione Agricoltura del Senato Settembre 2000

[54] Tra i quali si segnala l'Austria che, a seguito dell'ingresso nell'Unione Europea, ha abolito le quote che stabilivano un tetto alle importazioni di prosciutti crudi dall'Italia, quote che a San Daniele venivano esaurite già nei primi mesi estivi.

[55] In realtà le esportazioni negli Usa sono state bloccate per venti anni, dal 1968 al 1988 a causa della presenza dell'afta epizootica. In proposito Please refer to Alessandra gruppi, Il settore alimentare nel Friuli Venezia Giulia: il prosciutto crudo di San Daniele, in Congiuntura n° 1 del 1995, CREF, pag. 43.

At the moment, the regional enterprises of quality productions find a considerable market niche in the so-called "nouveaux riches" of the East. In particular, the quality regional products that represent a "status symbol" for these targeted consumers, transcend the pure and simple consumption of the product. Even the sales strategies followed, or to be followed, are those used by the "Made in Italy" brand throughout the world, that exploit brand recognition to the most, generating imitation phenomena that are then targeted to an enlargened market. Currently, in Eastern Europe regional products are channelled to the more prestigious eating places and restaurants to reach the high income consumer target, but with the ongoing prospective of creating multiplier effects on other consumers.

MONTASIO CHEESE

Montasio cheese is deep-rooted in the regional territory in terms of production and consumption. It has many different production lines, as well as a Consortium of producers and maturing companies to safeguard the production of Montasio cheese (Consorzio per la Tutela del Formaggio Montasio), which was established in 1984 and to date has 50 producers and about 15 maturing companies, all of which are rather small. The Montasio cheese production area is rigorously identified as being in Friuli Venezia Giulia region (approximately 70%) and in the Eastern Veneto region (in the Provinces of Belluno and Treviso, and in some areas of the Provinces of Padua and Venice). Each year over one million whole Montasio cheeses are produced and marketed[56].

Although Montasio cheese, contrary to the certified San Daniele Prosciutto and the regional wine that have received wide national and international recognition, has a well-defined image on a national level and interesting prospects as regards export[57], has a low distribution, even on a national level. In fact, Montasio cheese is marketed mainly in northern Italy and in some of the Central regions (such as Tuscany, the Marches and Lazio), and therefore, is not yet well-known and appreciated by the consumer outside the production area. As far as foreign markets are concerned, the quota destined for export is still modest and the European market is mainly France, Benelux and Germany, whereas the non-European countries include those that have a significant presence of Friulan emigrants, such as the USA, Canada and Australia. The Central-Eastern European countries, on the other hand, still do not constitute a significant outlet market. To be able to exploit the enlargement opportunities of the common market, a road that could be taken would be to invest in promotional activities, preferably at a Consortium level, both to win over the cultural resistance due to different eating habits, and to create an image based on typical product and high quality, which are necessary to have an effect on foreign markets. In a highly competitive market like the food industry, and particularly that of cheese (it is enough to think of the other quality Italian products such as Grana Padano and Parmigiano Reggiano cheese, with a preponderant quota of the national market), the competitive advantage does not come only from the price, but also and in an ever-increasing measure, from quality guarantees.

[56] The weight of a full Montasio cheese is approximately 7 Kg.
[57] See Mauro Volponi, "Il settore produttivo del Formaggio Montasio", in Situation n° 3 of 1995, CREF, pages 37-52.

For this division, the current growth potentials appear to be considerable, as already emphasised in the second paragraph of this report, as the quota of added value of the regional enterprises deriving from sales to the East is still residual with respect to markets within the EU and the North-American market, which absorb over 70% of regional agro-food exports. The importance of the Eastern countries is still limited due to their recent history, in which the crisis of income deriving from the transition process has made them "less desirable" markets for their regional quality products. This consideration is even more valid in comparison to other manufacturing divisions, as the agro-food products are directly linked to the family income. Moreover, it appears from the interviews that the feeling is that the major portion of countries in question have achieved a political and economic stability, which reduces the sales risk to suitably acceptable levels. In addition, contrary to some of the pessimistic forecasts found in literature at the end of the nineties, the bureaucratic-normative obstacles relating to purely commercial aspects have, in most countries, bee overcome and today do not represent a significant restriction to enlargement eastwards.

THE COLD CHAIN IN THE FOOD SECTOR

One of the major factors that influences the circulation of agro-food products is the distribution degree and technological innovation adopted in the distribution network. A good portion of food products, in fact, is subjected to "cold" preservation techniques, which represent one of the most effective ways to preserve the organoleptic, safety/hygienic features of the products. The growing importance attributed to the "cold chain" (meaning all the refrigeration activities that the foods are subjected to from the time of production to the time of display), has determined a rapid growth in businesses operating in the production, installation and maintenance of systems used for cold preservation (in particular, cold stores, refrigerated counters and displays, refrigerator vans) in Friuli Venezia Giulia. According to ISTAT data (1996), 80 companies are active in the region in the refrigeration sector (for non domestic use), with a total of 1,500 employees. It is possible to estimate the number of companies operating exclusively in the food industry at about 60 units; a value that some sources indicate to have increased in the last five years at a rate of over 40% . Apart from spreading rapidly, the division is also subjected to a constant technological innovation process both as regards the mechanical and operating components (low environmental impact refrigerators, electronic controls and digital microprocessors). Most of the production by the refrigeration companies is currently absorbed by the internal/local market or the European Union market (especially the German area), whereas contracting with the Eastern countries is less consolidated and is of a sporadic nature. Having stated this, it is important to emphasise how the new catchment areas in the Eastern European states are of considerable interest for the regional enterprises in the medium and long-terms, rather than immediately. Demand within the European Union seems to be sufficient to guarantee good margins for the companies in the sector who are not considering the competitor increase as a clamp-down for development. The EU markets do not appear to be saturated and this is fully in line with the characteristics of the sector: considerable technological innovation (reducing the life cycle of refrigerating systems), environmental normatives (which impose constant upgrading and updating and controls of the systems in operation).

The companies in the cold chain sustain a deep interest in the Eastern countries with a medium-long term insight, when the markets of the European Union could suffer a standstill. for these reasons, the attention of the operators in the sector is paid to the building up relations and expanding the distribution networks in the Easter countries accessing the EU as of 2004. The penetration into new catchment areas does not seem to be taking place through company acquisitions or joint ventures, but through a distribution network, especially towards those countries that show more political and economic stability (for example, Poland, the Slovak Republic and Hungary). The states that have still not accessed the EU are less appealing due to the heavy risk and quality and quantity levels of consumptions that are too far from the European standards.

Finally, from the opinions of the interviewees, a great growth potential is linked to the strong entrepreneurial spirit and the enthusiasm of the partner or agent in the Eastern European countries in relation to new initiatives, which is typical of economies that only in recent years have been led to market logics.

COLLIO WINE PRODUCTION

The vine-growing, wine producing area of the Collio, which stretches over 1,500 hectares, is a reality made up of small enterprises that have historically[58] directed their quality production to build up a reputation on the market. With the imminent enlargement of the European Union and in particular the accession of Slovenia, this area will find itself competing on the common market with its neighbouring region "Brda" in Slovenia. DOC "Golska Brda" wine produced in Slovenia is currently found on the Italian market in quantities that have clearly increased over recent years. The issue raised by the producers relates to the different qualities of the two products; moreover there is a fundamental issue of the "Collio" brand, a real heritage that local entrepreneurs are not prepared to share, and however, it must be protected from the possibility of fraud and abuse. For now, however, there is a clear distinction between the Slovenian and Gorizia Collio production, especially as regards the addition of sugar to increase the alcohol content, which the Italian producers are not allowed to adopt. The local producers share a general concern with respect to the Slovenian analogue that before long will become a common market competitor. On the other hand, Slovenia's accession to the European Union could prove to be an opportunity, particularly a it could favour associated promotion and marketing of products. The hope is that everything moves towards a synergy in the sense of joint offers, which would permit covering a more important role on international markets to achieve an indispensable critical mass, and this should also stimulate company competition, albeit there is still resistance by the operators, above all in Italy. The "global market" challenges have already arrived with the penetration of new producers from countries such as Argentina, Australia, New Zealand, Chile, South

[58] Il consorzio di tutela dei vini Consorzio per la Tutela dei Vini del Collio esiste da oltre 35 anni, così come la DOC è stata ottenuta nel 1968.

Africa[59], that has already eroded portions of the market that have historically be occupied by Italian and France.
As regards the markets of Central Eastern Europe, no systematic promotional initiatives have been put in action, and for the time being there are only initiatives by the individual companies or offhand activities such as participation in trade fairs. The majority of companies belonging to the Consortium are small enterprises (but this is the general picture for wine producers in the region) thereby constituting a slow down in trade development. In fact, there are problems relating to costs due to the distance and suitability of the structures. In addition to this, the protection policies should be applied by the Governments of the countries that are not accessing the EU in the near future. Moreover, in these countries, also due to cultural reasons, they have a large-scale distribution of low quality, cheap wines, whereas the top quality wines are considered a *status symbol* and are only available for a restricted number of consumers. There are a few initiatives being taken in this sense by the larger individual companies, who are starting to penetrate markets such as the Russian market, which is considered to have the greatest potential. In fact, considerable investments are being made in the country in prestigious restaurants, which is a privileged channel for distributing the product. Also as regards direct investments made by regional producers, some countries arouse interest, such as Romania and Bulgaria, where advantageous opportunities could be perceived. Considerable attention is paid towards these markets, and short-term initiatives that are aimed at product introduction and recognition, perhaps supported by those bodies assisting with internationalisation, are not to be excluded. However, for the time being, the reference markets are those that are already well consolidated[60].

The major difficulties that companies in the sector have currently had and will have to face probably in the medium-term period include:

- The presence of protectionist policies that are still applied to some products in the countries belonging to the second group of the enlargement and in the ex-Soviet Republic countries.
- A relevant limit in the eating habits in Eastern Europe. The regional products, in fact, do not fall within the local consumer traditions and to reach the desired conditions of large-scale consumer products, therefore surpassing the niche products for an *elite* consumer market), heavy promotional investments would be necessary as well as suitable marketing strategies. In this sense, the roles of local trading partners as well as bodies and associations to support the internationalisation process appear to be decisive;
- The presence of highly competitive multinationals whose strength is based on low prices seems to be the major obstacle for expanding the market of both regional products with a high quality and those based on standardisation (for example non-certified meat-based and milk-based products, industrial production of pasta and bread products). The multinationals, thanks to their size (giving them the capacity to bear any loss arising from bad investments) also add to their strength the capability of adopting marketing strategies that are suitable for the particular situation of transition economies;

[59] Per fare un esempio, il Sudafrica è uno di quei paesi che, per condizioni climatiche, ha due o tre vendemmie all'anno, il che può tradursi in due produzioni diverse nello stesso anno; si aprono quindi notevoli problemi relativi ai prezzi, alle quantità prodotte e alla qualità.
[60] In particolare l'Austria, la Germania e l'Inghilterra, ma anche, al di fuori dell'Europa, gli USA.

- The reduced size of the majority of regional companies (as in other manufacturing divisions in Friuli Venezia Giulia) constitutes a considerable obstacle to the possibility of expansion in little known market in where there are no reference points. In this case, too, it seems evident that the associations and associated bodies should provide the SMEs with the necessary support. In particular, the Consortiums o quality products (wine, Prosciutto)indicate that there are still too few companies that are moving towards the Eastern markets due to the poor knowledge of these areas as regards both the internal market regulations of these countries as well as the lack of adequate trading contacts.
- The main risk that was most apparent from the interviews that were carried out, is linked to the choice of local partner. The negative experiences of regional companies in the Central-Eastern European Countries in fact, are attributed almost entirely to local distributors and brokers that were unrealiable or insufficiently adequate for the complex trading penetration into new markets.

WHAT STRATEGIES SHOULD BE FOLLOWED?

Interviews with operators in the sector highlighted the internationalisation strategies as being:

- The importance of the local partner: this appears in absolute as the discriminating factor in determining the success or failure of a trade investment in the Central-Eastern European Countries;
- Training of local managerial staff: this is closely linked to the previous point. Training, or alternatively assistance (i.e. technical, but also managerial), that the regional company must supply its local partner with is extremely important; otherwise the constant presence of company human resources directly on the local markets to monitor and direct the activities is necessary;
- Mutual promotion: seeing the physiological restrictions relating to the modest company size, it appears to be necessary for the regional company to move towards the Central-Eastern European Countries in an associated manner; the role of the brand name: in relation to what seem to be the major potentials for the regional agro-food industry (i.e. those linked to quality production) a valid marketing strategy would be to strengthen the brand name.

INTERNATIONALISATION PROCEDURE AND THE ROLE OF THE ASSOCIATED BODIES

As regards the procedure that companies in the division should base their strategy on to penetrate the markets of the Central-Eastern European Countries, up to now, the trading line has been privileged as opposed to that of direct investments. The main reasons for this fundamental choice are:

- Direct investments are still relatively risky, in terms of costs, for the generally small enterprises in the sector;

- Ago-food products par excellence, which constitute the leading products in the division, are strongly linked to the territory, the valorisation and the importance of the tradition and quality of the product;

- Given the considerable importance of know-how in the sector, heavy investments would be required in terms of training human resources. Moreover, the weight of technology in the production cycles of the division are not to be underestimated: In other words the technology-human resources mix would be extremely expensive to export;

- The limited role of the bodies and associations to support internationalisation, who should provide an indispensable tool for the small enterprises. The role of these bodies and associations is often judged by the entrepreneurs as being insufficient, especially during the first stages, when the initial contacts are made in loco.

The following table summarises the prospects of internationalisation of the regional enterprises in the agro-food division. Some of the elements highlighted are common to the internationalisation process of regional enterprises eastwards (or outwards in general) and are not strictly connected with the sector analysis (for example, the economic-institutional problem).

SUMMARY OF THE AGRO-FOOD SECTOR	
STRONG POINTS	**WEAK POINTS**
Quality production: strength of the brandname	Quality production: prices too high for large-scale consumption
Know-how and highly skilled human resources	Reduced size of the enterprises
Favourable geographical position	Multinational competition
OPPROTUNITIES	**RISKS**
New market with great growth potential	Political instability of the countries in the second group
Advantages deriving from the fall in duties	In some cases (particularly in the countries belonging to the second group): markets conditioned by clientele, corruption
Penalisation of local producers who have to bear the costs of adapting to the EU standards	The failure of an economic development, outlet problems for quality products.
	Poor tradition towards quality products of FVG (only "nouveaux riches")
	Structural funds to favour accession countries

The mechanical and electro-mechanical industry

The structural picture

The purpose of the following analysis is to study the mechanical industry in Friuli Venezia Giulia in terms of quantifying the enterprises and the import and export flows of machines and mechanical, electrical, electronic and optical equipment, so as to delineate its condition and find the possible consequences of the future process of enlargement towards Eastern Europe on the SMEs.
The setting of the industry has been made on the basis of the NACE classification, rev. 1.1. The sectors included in the analysis relate to subsections DK (manufacture of mechanical machines and equipment) and DL (Manufacture of machines and electrical, electronic and optical equipment), with details up to three figures (groups):

1. Manufacture of machines and equipment for the production and use of mechanical energy, excluding aircraft, vehicles and motorcycles;
2. Manufacture of other machinery for general use;
3. Manufacture of machinery for agriculture and silviculture;
4. Manufacture of machine tools;
5. Manufacture of other machines for special uses;
6. Manufacture of arms, arms systems and ammunition;
7. Manufacture of household appliances;
8. Manufacture of office machinery, processors and computer systems;
9. Manufacture of electric motors, generators and transformers;
10. Manufacture of equipment for the distribution and control of electrical power;
11. Manufacture of wires and insulated cables;
12. Manufacture of batteries and electrical accumulators;
13. Manufacture of lighting fixtures and electric lamps;
14. Manufacture of other electrical appliances;
15. Manufacture of electronic tubes and valves and other electronic components;
16. Manufacture of transmitters for radio and TV broadcasting and telephone appliances;
17. Manufacture of receivers for radio and TV broadcasting, equipment for recording and reproduction of sound or images and associated products;
18. Manufacture of medical and surgical equipment and orthopaedic equipment;
19. Manufacture of measuring, control, test, navigation and similar instruments and equipment, excluding industrial process control equipment;
20. Manufacture of industrial process control equipment;
21. Manufacture of optical equipment and photographic equipment;
22. Manufacture of clocks and watches.

The data necessary for the analysis were taken from the following sources:

- Movimprese, Infocamere websites, for enterprise demography;
- Chamber of Commerce of Udine, for information relating to the number of local units;
- ISTAT website, for the value of regional imports and exports.

From the national survey data referring to 2002, the mechanical industry seems to have suffered the most from the slackening world demand and the decrease in domestic demand regarding investment goods in machines and equipment[61]. A rather limited drop (1%) in the production of machines and mechanical equipment was recorded, on an Italian level, whereas the production of office machinery, processors and computer systems dropped by 47.9%, and by 1.8% the production of TV and telecommunication equipment. To make the situation more complicated was the reduction in added value (2.4% compared to 2001) and the increase of 0.7% in unemployment, which determined a drop in the average sectoral production[62].
These initial hints make us understand how the division, both on a national and local level, is experiencing a very delicate moment, associated with the general negative economic situation, particularly that of the electrical and electronic sector.

Errore. L'origine riferimento non è stata trovata. considers a breakdown in the number of operative enterprises in Friuli Venezia Giulia from 1996 to 2002 per sub-section and in the overall mechanical sector.
Over the most recent period taken into consideration, the 2,475 mechanical companies in the region were divided as follows: 45% in the Province of Udine, 29% in the Province of Pordenone, 10% in Gorizia and the remaining 16% in the province of Triest. These enterprises represent on average 2.5% of those in the region.
The two sub-section show a net unbalance in favour of the enterprises belonging to the electrical, electronic and optical machine and equipment industry, which represent on average 61% of the overall mechanical, a percentage that dropped to 60% in 2002 due to the reduction of 2% between 2001 and 2002 caused by the crisis that involves the sector in question.

Errore. L'origine riferimento non è stata trovata.*: Operative mechanical enterprises (with detailed subsections) and total number of operative enterprises in Friuli Venezia Giulia*

	1996	1997	1998	1999	2000	2001	2002	Var % 96-02
Mechanical machines and equipment	994	999	974	1,000	989	983	1,001	0.7
Electrical, electronic and optical machines and equipment	1,577	1,539	1,557	1,542	1,516	1,506	1,474	-6.5
Total of operative mechanical enterprises	2,571	2,538	2,531	2,542	2,505	2,489	2,475	-3.7
Total operative enterprises	88,809	105,482	102,975	102,760	102,437	102,436	102,253	15.1
% mechanical enterprises out of the total operative enterprises	2.89	2.41	2.46	2.47	2.45	2.43	2.42	

Source: d Movimprese, Infocamere data

There is a downturn in the number of operative mechanical companies in the period considered (-3,7% from 1996 to 2002); the major drop is found in the electrical, electronic and optical machine

[61] See "La situazione e l'evoluzione congiunturale del settore metalmeccanico", Federmeccanica.
[62] The added value and employment data reer to the metal and mechanical division on the whole, including products in metal, autovehices and trailers and other transport means. "La situazione e l'evoluzione congiunturale del settore metalmeccanico", Federmeccanica.

industry (-6.5%), whereas the trend in the mechanical machinery and equipment sector is quite steady (+0,7%). On the other hand, the number of enterprises operating in Friuli Venezia Giulia shows an overall growth from 1996, which has become steady since 1998; the irregular value between 1996 and 1997 was due to late regularisation in the register of companies of farmers who have only been obliged to register since 1996 (an 18.8% increase has been recorded). On the whole, the number of active enterprises in the region has increased by 15.1% in the seven years, compared to the opposite trend of the mechanical industry.

The new registrations show a decreasing trend over the period[63], and the value thereof has halved since 1996 (200 registrations) to 2002 (only 99). Nevertheless, this trend is in line with the overall data on a regional level, which note a reduction from 18,148 in 1996 to 7,327 in 2002, but not with those of the manufacturing industry (Section D), which has experienced a far greater drop.

Even the trend of discontinuance of businesses has decreased[64], nevertheless the balance between registrations and discontinuance has been negative from 1997 to 2002 (in the last year, a negative downward peak of a good 40 units was recorded), except for 1999.

If the mechanical companies in the region are distinguished by their corporate structure, the number of joint-stock companies and partnerships in the mechanical industry is continuously growing (from 48% in 1996 to 52% in 2002); this value is clearly higher than the average number of companies in the region (32% in 1996, which dropped to 31% in 2002). The In 2002, 48% of the one-man businesses was in the mechanical sector, while 67% of the companies in the region were one-man businesses.

The industry is therefore is affected by a progressive strengthening from the structural and organisational viewpoint, which is proven by the move from one-man businesses to the corporate forms; moreover, the fact that the discontinuance of companies is mostly applicable to one-man businesses, could hide a transformation towards new activities or more complex corporate structures that require a major economic commitment.

Table 26: Local units in the mechanical industry (with detail per sub-section) in Friuli Venezia Giulia

	1998	1999	2000	2001	2002	Var % 98-02
Mechanical machines and equipment	1,195	1,219	1,233	1,237	1,273	6.1
Electrical, electronic and optical machines and equipment	1,832	1,815	1,807	1,799	1,779	-3.0
Total	3,027	3,034	3,040	3,036	3,052	0.8

Source: Chamber of Commerce of Udine

Over the period of 1998-2002 the local mechanical units increased by 0.8% (Table 26): namely, the local units that are part of the sub-section relating to mechanical machines and equipment increased by approximately 6%, i.e. from 1,195 to 1,273 units in the region; on the other hand, a slight downturn was recorded (3% in the five-year period considered) in the operative units in the electrical, electronic and optical machine and equipment industry (from 1,832 units in 1998 to 1,779 units in 2002).

[63] Only in 2001 was there a slight increase, due particuarly to the increase in company registrations int he machinery and mechanical equipment division.

[64] Excepting the incrase recorded in 2002.

This contraction can be attributed to the considerable intensification of competition from the Asian countries and an indirectly linked decrease in domestic demand: in fact, to stimulate the weakened demand, the enterprises involved have had to lower prices and some of them have not been able to face the new competitive situation to cover overheads; this has provoked restructuring in the production or, in the worst case, abandoning of the market[65].
The more economically active provinces are those of Udine and Pordenone, which, compared to the marginal role of the Giulia area, have shown a true mechanical vocation: Friuli alone represents approximately 74% of the sector per number of local units.

Considering the detail in the number of local units per class of employees (Table 27), it can immediately be seen how the industry in Friuli Venezia Giulia is characterised by the prevailing number of small and medium enterprises: in 2002, 96.3% of the local units had a number of employees below 50. About 37% of the local units has zero to one employee, whereas the major class is that of local units with an average of two to five employees (25%). Nevertheless, it can be noted how the number of local units with over 50 employees has increased over the five-year period, rising from 2.9 to 3.7 (the number of units has increased from 89 in 1998 to 113 in 2002).

Table 27: Local units of the mechanical industry by size of enterprise in Friuli Venezia Giulia

	Undeclared	0 employees	1 employee	2-5 employees	6-49 employees	over 50 employees	Total
1998		708	861	816	553	89	3.027
		23.4	28.4	27.0	18.3	2.9	100.0
1999		832	792	786	534	90	3.034
		27.4	26.1	25.9	17.6	3.0	100.0
2000		899	716	763	562	100	3.040
		29.6	23.6	25.1	18.5	3.3	100.0
2001	332	422	791	784	596	111	3.036
	10.9	13.9	26.1	25.8	19.6	3.7	100.0
2002	472	388	739	763	577	113	3.052
	15.5	12.7	24.2	25.0	18.9	3.7	100.0

Source: Ires-FVG process based on data from the Chamber of Commerce of Udine

Moreover, the data taken from last census (1996) relating to the number of employees per size of enterprise, shows that 31.5% of the employees in the mechanical machinery and equipment subsection work for companies with less than 50 employees, whilst 50.9% (a good 9,681) are employed in companies with over 200 employees (among the most important being Danieli & C. Spa, Pozzo Spa and Le Officine Riunite in the Province of Udine and Zanussi in the Province of Pordenone). This clear polarisation therefore emphasises the industrial character assumed by the sector.

Table 28: Local units in Friuli Venezia Giulia divided by number of employees, with detail of sub-section 2002

	Undeclared	0 employees	1 employee	2-5 employees	6-49 employees	over 50 employees	Total
Mechanical machines and equipment	16.9	12.7	17.9	21.3	26.2	4.9	100.0
Electrical, electronic and	14.4	12.7	28.7	27.7	13.7	2.8	100.0

[65] "Key competence for the development of human resourses in small enterprises of Friuli Venezia Giulia", ISFOL 2000.

optical machines and equipment							

Source: Ires-FVG process based on data from the Chamber of Commerce of Udine

The electrical, electronic and optical machine and equipment industry, on the other hand, seems to show a less marked industrial feature (Table 28), since 28.7% of the units have a single employee. The sector would appear to be formed by a great number of extremely small enterprises that mainly consist of the proprietor assisted by one employee, but in reality the incredible number of dental mechanic laboratories in the region weighs on this figure. From the 1996 census data, the resulting producers of electrical equipment and systems (electric machines, systems and switchboards) within this industry have been characterised by medium-large sized enterprises[66], inasmuch as they involve considerable investments in purchasing machinery. The development of this production sector has been induced by other large companies in the area (Danieli and Zanussi being the main ones) which have outsourced the production of machinery and electrical equipment components to specialised and individual companies, who therefore carry on a sub-contract activity.

It is obvious how the regional context is characterised by the presence of two completely distinct realities.
On the one hand there is an incredible number of small and micro enterprises, representing over 96% of the active mechanical units that are purely family-run, with a lack of innovation and large investments and characterised by the handing down of know-how through the generations: this type of production model no doubt has difficulties in developing on an international level compared to the large industry, given the high costs linked with internationalisation and the management resources that are mainly family-based, therefore in most cases creating difficulty when it comes to corporate reorganisation.
On the other hand the presence of large, structured enterprises in the region (two giants operating in the industry with over 1,000 employees and a further 29 with 200 to 999 employees). These units, which alone absorb a consistent number of the total employees in the sector, have the exact features of the large industry, consequently the approach towards foreign markets is completely different compared to those of the small business.
The problem concerning the internationalisation process, together with an analysis of the risks and opportunities of the eastward expansion of the European Union, will, however, be outlined in the last paragraph and will be dealt with in that context.

[66] In 1996 this sector related to 21.2% of the local units and 40.3% employment out of the total employment rate in the mechanical division.

Foreign trade

This section takes into consideration the import-export trades within the mechanical sector in the Friuli Venezia Giulia region to the following aggregates at a world level:

- The European Union;
- Central-Eastern Europe (Central Eastern Europe)[67];
- Rest of the world[68].

The purpose of this analysis is to understand where the mechanical product export and import flows in Friuli Venezia Giulia are directed and where they originate from, so that the exchange levels can be dimensioned considering a more specifically detailed level in the sector considered.

Within Central-Eastern Europe, foreign relations will be considered with some of the candidate countries for EU membership, particularly Slovenia and Hungary, that are included in the main group which opened negotiations in 1998, and Romania and Bulgaria, that started negotiations with the European Union at the beginning of 2000. The import and export flows towards these States will be analysed, the comparative advantages that the Friuli Venezia Giulia market boasts with these States will be highlighted and, on the other hand, the comparative advantages of the four candidate countries with this region.

The purpose of this survey is represented by the formulation of assumptions on the possible consequences of EU enlargement eastwards of this division, which plays a particularly important role in the region, involving on average[69] 19.3% of imports and 36.8% of products exported out of Friuli Venezia Giulia throughout the world.

The historical trend of Friuli Venezia Giulia's import-export trade referring to the mechanical industry is shown in Table 29.

Table 29: Import-export trade of Friuli Venezia Giulia for the mechanical division from 1995 to 2002 (values expressed in millions of Euro at current prices[70])

	1995	1996	1997	1998	1999	2000	2001	2002[71]
Exports	2,220.4	2,368.2	2,637.9	3,039.7	2,952.5	3,207.7	3,661.1	3,112.7
Imports	580.1	575.0	589.9	671.3	724.5	908.2	935.7	963.5
Balance	1,640.3	1,793.3	2,048.0	2,368.3	2,228.1	2,299.4	2,725.4	2,149.2
Normalised balance[72]	58.6	60.9	63.4	63.8	60.6	55.9	59.3	52.7
Degree of cover[73]	382.8	411.9	447.2	452.8	407.6	353.2	391.3	323.1

Source: Prepared by Ires-FVG based on ISTAT data

If 1999 is excluded, exports were on an upward trend until 2001; the last year considered shows an inversion in the trend, which is also confirmed in the first few months of 2003, mainly due to the

[67] This includes, the following regions in agreements with the ISTAT classification: Albania, Byelorussia, Bosnia Herzegovina, Bulgaria, Croatia, Estonia, Latvia, Lithuania, Macedonia, Moldavia, Poland, The Czech Republic, The Federal Republic of Yugoslavia (Serbia and Montenegro), The Slovak Republic, Romania, Russia, Slovenia, The Ukraine, Hungary.
[68] Great residual that consists of all the other countries that do not fall within the previous aggregations.
[69] Calculated over the 1995-2002 period.
[70] [70] Expressed in Euro since 1999 and in Eurolire, or monetary values considered in Lire and converted into Euro, in the period prior to 1998.. This is valid also for the data that follows.
[71] For 2002 the ISTAT data relating to foreign trade are provisional. This consideration is also valid for the subsequent tables that present data relating to exports and imports in the same year, independently from the geographical aggregate considered.
[72] È pari al rapporto (E-I)/(E+I), dove E sono le esportazioni e I sono le importazioni, espresso in termini percentuali.
[73] È pari al rapporto tra esportazioni e importazioni, espresso in termini percentuali.

contraction in exports in the electrical, electronic and optical industry (exports of this product suffered a reduction of 32% between 2001 and 2002).
Import levels, to the contrary, have been on the continuous increase since 1996 and the commercial balance, although broadly positive and has increased for almost the whole period considered[74], suffered a discrete drop in 2002. This reduction can be seen in the analysis of the normalised balance, that in 2002 reached the minimum for the period considered, that is 53% against 59% of the previous year.

The value of the mechanical product exports from Friuli Venezia Giulia towards the main aggregates on a world level are shown in Table 30.

Table 30: Export values of Friuli Venezia Giulia from 1995 to 2002 (values expressed in millions of Euro at current prices)

	1995	1996	1997	1998	1999	2000	2001	2002
EU								
Mechanical export	1,057.4	1,107.5	1,267.0	1,599.9	1,636.6	1,914.9	1,896.7	1,633.5
Total export	3,427.9	3,357.9	3,619.8	4,393.7	4,335.7	4,973.9	4,953.6	4,559.9
%	30.9	33.0	35.0	36.4	37.8	38.5	38.3	35.8
Central Eastern Europe								
Mechanical export	285.4	286.1	311.2	297.6	294.6	338.7	417.3	484.9
total export	1,120.8	1,036.2	1,101.0	1,065.0	1,007.3	1,167.6	1,360.0	1,397.1
%	25.5	27.6	28.3	27.9	29.3	29.0	30.7	34.7
REST OF THE WORLD								
mechanical export	877.6	974.6	1,059.8	1,142.2	1,021.4	954.1	1,347.1	994.3
total export	1,893.3	2,177.6	2,207.6	2,678.3	2,297.3	2,794.9	2,993.1	3,065.4
%	46.4	44.8	48.0	42.7	44.5	34.1	45.0	32.4
WORLD								
Mechanical export	2,220.4	2,368.2	2,637.9	3,039.7	2,952.5	3,207.7	3,661.1	3,112.7
total export	6,442.0	6,571.7	6,928.4	8,137.0	7,640.3	8,936.4	9,306.6	9,022.4
%	34.5	36.0	38.1	37.4	38.6	35.9	39.3	34.5

Source: ISTAT data

Friuli Venezia Giulia exports in the mechanical division represent on average 36.8% of the total amount of exports in the region; a figure that has slightly decreased in the last period considered (34.5%). Therefore, it concerns a division that considerably weighs on the total dynamics of the regional economy, which is well known to be strongly favourable to opening outwards.
These dynamics show a trend that is generally on the increase, except for the 1998-1999 two-year period and the last year taken into consideration, as already mentioned; the first period, as with the situation on a national level, shows a downturn in imports-exports towards Asia due to the fact that these countries are becoming the new competitors, especially in the electronics industry[75] (in 1998 developing Asian countries represented a quarter of the world producers, with a world market share of 10.8%). In fact, the most consistent drop has been experienced by grouping the rest of the world (REST OF THE WORLD), the overall value having decreased from 1,142 million Euro to 1,021 million

[74] Except for 1999.
[75] See "I nuovi mercati dell'est, opportunità e sfide per le Imprese del Friuli Venezia Giulia", IRES-FVG 2000.

Euro, which was particularly due to the effect of the contraction in exports of electrical, electronic and optical products. This reduction also dragged on into 2000, a year in which the value of exports in the mechanical industry towards the rest of the world (Table 31) dropped from the 37% recorded in 1998 to 30%. Between 2001 and 2002 the export value of mechanical products dropped by 15% due to a contraction in exports towards the rest of the world (from 38% to 32%), whereas imports-exports with the European Union and Central Eastern Europe increased. In the five-year period, the amount of mechanical exports in Central Eastern Europe approached the total amount of mechanical exports in the regional foreign trade (34-35%), thereby indicating a sort of "maturing" of the markets, which is comparable with those of the UE and the rest of the world, at least in terms of size.
The main direction of the mechanical exports from Friuli Venezia Giulia is represented by countries belonging to the European Union, which absorb 52.5% of the productions. Only 15.6% is directed to the Central-Eastern European countries, whilst 31.9% is directed towards the rest of the world. Over the eight-year period taken into examination, however, if the European Union figures, such as the mechanical outlet market in Friuli Venezia Giulia, have further risen from 47.6% to 52.5%, the same has taken place for Central-Eastern Europe, which shows an increase of 2.7 percent (from 12.9 to 15.6%). It is therefore interesting to observe how the importance of these countries for the regional mechanical industry grew steadily over the period taken into examination. It is evident how the restructuring of the economies from the transition process has contributed to creating a new market for the regional mechanical productions.

Table 31: Percentages of mechanical exports in Friuli Venezia Giulia according to macroarea destination

	1995	1996	1997	1998	1999	2000	2001	2002
EU	47.6	46.8	48.0	52.6	55.4	59.7	51.8	52.5
Central Eastern Europe	12.9	12.1	11.8	9.8	10.0	10.6	11.4	15.6
Rest of the World	39.5	41.2	40.2	37.6	34.6	29.7	36.8	31.9

Source: Prepared by Ires-FVG based on ISTAT data

The regional export value is clearly unbalanced in favour of mechanical machines and equipment, the figure being 75.9% against 24.1% of electrical, electronic and optical machines.
The production sectors that are mostly directed towards foreign markets are:
- The remaining item relating to other machines for general use;
- The remaining item relating to other machines for special use[76];
- Domestic appliances, a value that is undoubtedly influenced by the giant Zanussi in the region.

As regards the groups of products that are mostly exported, 82.1% of domestic appliances is directed towards the European Union and 56.9% of other machines for special use is directed towards the rest of the world.
Out of the electrical and electronic equipment, the export value shows less net deviations among the groups: the largest portion destined abroad is that of radio broadcasting, television and telephone equipment, although the value is rather meagre (4.6% of Friuli Venezia Giulia exports).
Table 32 highlights the trend (from 1995 to 2002) of the value of Friuli Venezia Giulia imports, namely for the mechanical sector and in relation to the overall import.

[76] Weighing on this item isthe business created by Danieli & C. Spa, a company that designs and produced machinery and plants for the steel industry and exports 98% of its production, therefore, it is the world's fifth largest supplier.

Table 32: Value of Friuli Venezia Giulia imports from 1995 to 2002 (values expressed in millions of Euro at current prices)

	1995	1996	1997	1998	1999	2000	2001	2002
EU								
Mechanical imports	379.0	377.6	400.4	437.9	449.1	583.1	545.0	589.9
Total imports	1,662.5	1,544.2	1,754.6	1,947.1	2,004.1	2,442.7	2,236.6	2,171.3
%	22.8	24.5	22.8	22.5	22.4	23.9	24.4	27.2
CENTRAL EASTERN EUROPE								
mechanical imports	54.2	53.5	46.6	55.5	60.5	71.1	84.6	102.6
total imports	747.2	610.0	685.1	758.7	802.8	1,132.4	1,167.5	1,186.0
%	7.3	8.8	6.8	7.3	7.5	6.3	7.2	8.7
REST OF THE WORLD								
mechanical imports	146.9	143.9	142.9	177.9	214.9	254.1	306.1	271.0
total imports	808.4	710.3	769.6	860.7	899.1	1,219.1	1,507.9	1,193.0
%	18.2	20.3	18.6	20.7	23.9	20.8	20.3	22.7
WORLD								
mechanical imports	580.1	575.0	589.9	671.3	724.5	908.2	935.7	963.5
total imports	3,218.0	2,864.6	3,209.3	3,566.5	3,706.0	4,794.2	4,911.9	4,550.3
%	18.0	20.1	18.4	18.8	19.6	18.9	19.1	21.2

Source: ISTAT data

On a national level, starting from the second half of the nineties, an increase in the Italian imports from all candidate countries could be noted due to the considerable reductions in tariffs, among other things, that took place in the two-year period and the rise in the direct Italian investments in Central Eastern Europe[77]. As a consequence of these factors, without, however, ignoring other possible causes, imports relating to the mechanical division in Friuli Venezia Giulia also appear to have grown, and have been growing since 1996 for the whole period considered. Even the percentage relating to this sector has undergone an increase from 18% in 1995 to 21% in the last year.

The major trading partners of Friuli Venezia Giulia for the sector being examined (Table 33) are, however, the countries belonging to the European Union, with an import figure of 589 million Euro against an overall world figure of 963 million Euro in the last year taken into consideration. However, the imports with countries of the European Union, which in 1995 were equal to 65.3% of the overall value started loosing ground to Central Eastern Europe, the percentage of which rose from 9.4% to 10.6% (afar a downturn in the three-year period from 1997 to 2000), and mainly to the Rest of the World, with an increase from 25.3% to 28.2%.

The groups that absolutely represent a major figure in terms of imports in Friuli Venezia Giulia are the following:

- Machines for the production and use of mechanical energy, with 77.4% coming from countries belonging to the European Union;

[77] See Stefano Manzocchi e Beatrice Pierluigi, "Allargamento a Est dell'Unione Europea: gli effetti sul mercato dei beni".

- Other machines for general use;
- Other machines for special use;
- Domestic appliances, 73.9% of which comes from the European Union.

Table 33: Percentage of imports for originating macroaggregate of FVG

	1995	1996	1997	1998	1999	2000	2001	2002
EU	65,3	65,7	67,9	65,2	62,0	64,2	58,2	61,2
Central Eastern Europe	9,4	9,3	7,9	8,3	8,4	7,8	9,1	10,6
Rest of the World	25,3	25,1	24,2	26,5	29,7	28,0	32,7	28,2

Source: prepared by Ires-FVG based on ISTAT data

With respect to the composition of the exports previously examined, the relationship between the subsection of machines and mechanical equipment and that of electrical, electronic and optical machines is clearly more balanced. The comparison between the associated import and export figures, therefore, witnesses the presence of comparative advantages of Friuli Venezia Giulia for the mechanical group in the strict sense, whereas for the regional specialisation concerning the electromechanical group it appears to be less evident. It is interesting to observe the weight of electrical generators and transformers as regards the theme of this report; almost half of the value comes from Central Eastern European countries.

The import and export trade of Friuli Venezia Giulia with the four main Look-East Net countries are analysed herewith. Among them, the main outlet market of Friuli-Venezia Giulia for products in this division (Table 34) is the Slovenian market, although the weight of the sector on the overall imports-exports is lower. Its importance has decreased over the years considered, as in 1995 this figure was 23.6%; the export value to Slovenia in 2002 exceeded the overall value of mechanical products exported to the other three countries considered in the analysis. In more detail, the products exported from Friuli Venezia Giulia fall within the industry of mechanical equipment for about two thirds of the total in the last year (Table 35).

Table 34: Value of Friuli Venezia Giulia exports from 1995 to 2002 (values expressed in millions of Euro at current prices)

	1995	1996	1997	1998	1999	2000	2001	2002
BULGARIA								
Mechanical export	6.3	3.3	2.4	3.5	2.1	4.1	6.0	8.0
total export	11.6	6.8	5.7	7.7	6.9	9.4	12.9	15.3
%	54.2	48.9	41.3	46.0	29.5	43.9	46.6	52.6
ROMANIA								
Mechanical export	7.3	10.2	11.0	11.7	9.3	12.4	16.6	14.3
total export	15.2	22.1	23.8	28.4	19.2	26.3	36.7	37.0
%	48.1	46.1	46.2	41.1	48.6	47.3	45.3	38.7
HUNGARY								
Mechanical export	21.4	14.2	19.3	20.1	22.7	26.5	39.9	43.1
total export	73.6	54.3	65.3	71.0	66.9	82.8	106.6	99.4
%	29.0	26.2	29.5	28.3	33.9	32.0	37.5	43.3

SLOVENIA								
Mechanical export	93.2	72.5	76.9	77.2	84.5	84.7	86.0	77.9
total export	394.5	311.2	334.9	340.9	367.2	393.1	406.2	373.3
%	23.6	23.3	23.0	22.6	23.0	21.6	21.2	20.9

Source: ISTAT data

Hungary follows in terms of importance of the exchange volumes, with an export value of 43 million Euro, which represents a good 43% of the total exports from Friuli Venezia Giulia in that area. The trend, from 1995 onwards, is constantly on the increase; on average, 34.2% of the products belong to the electrical, electronic and optical industry, even if machinery and mechanical equipment are progressively losing ground, inasmuch as their value has dropped from 82.6% in 1995 to 48.5% in 2002.

A slightly unstable, but growing trend are the mechanical exports towards Bulgaria, even if their value is clearly lower than those of other countries (representing about one ninth of the exports towards Slovenia). Their relative value was, however, very high in 2002, exceeding half of the total exports from Friuli Venezia Giulia (52.6%).

For this country, the imported products refer almost exclusively to the machines and mechanical equipment industry; on average, only 11.1% of the products is represented by electrical, electronic and optical machines, however, there is a decreasing trend (only 5.8% in 2002).

The exports to Romania show a general growing trend, with a decreasing value in 1999 due to a decrease in the exportation of electrical and medical and surgical equipment. On the other hand, as far as this country is concerned, the mechanical sector is progressively loosing ground, as exports in the industry are not increasing at the same rate as the overall ones. Of considerable importance (79.4%) is the mechanical equipment sector, whilst the electrical, electronic and optical sectors represent only 20.6% of exports in the division products.

Table 35: Percentage of exports per subsection and country of destination (year 2002)

	BULGARIA	ROMANIA	HUNGARY	SLOVENIA
Mechanical machines and equipment	94.2	79.4	48.5	66.2
Electrical, electronic and optical machines and equipment	5.8	20.6	51.5	33.8

Source: prepared by Ires-FVG based on ISTAT data

From the analysis of imports of mechanical products by Friuli Venezia Giulia (Table 36) the data relating to the value of imports of mechanical products from Hungary is immediately evident; it represents about one third of the total amount of imports from that country. Moreover, this value is greater than the amount of imports coming from the other three countries considered (in 2002) and alone represents almost 40% of imports of mechanical products from Central Eastern Europe. In detail, the mechanical products and equipment, which up to 2001 were the major portion of imported

products[78], gave way to the importation of electrical, electronic and optical equipment in 2002, which in 1995 represented only 16% of the overall sector.

[78] Except for 1996, whiich represents an irregular value (excess) for the item relating to import of electrical motors, generators and transformers trasformatori elettrici.

Table 36: Value of imports in Friuli Venezia Giulia from 1995 to 2002 (values expressed in millions of Euro at current prices)

	1995	1996	1997	1998	1999	2000	2001	2002
BULGARIA								
mechanical imports	0.6	0.2	0.1	0.2	0.6	1.9	2.4	2.4
total imports	14.8	9.8	13.1	8.2	11.4	10.9	19.8	11.9
%	4.2	1.5	0.5	2.2	5.5	17.5	12.1	20.6
ROMANIA								
mechanical imports	1.5	1.3	1.9	2.7	3.1	4.4	4.9	5.9
total imports	24.8	22.1	32.0	37.9	54.4	76.6	73.0	93.5
%	6.1	5.7	5.9	7.2	5.7	5.7	6.6	6.3
HUNGARY								
Mechanical imports	5.6	11.0	9.9	12.6	15.3	23.5	30.4	40.8
total imports	110.4	90.8	105.6	101.2	83.5	114.2	118.9	125.9
%	5.1	12.1	9.4	12.4	18.4	20.6	25.6	32.4
SLOVENIA								
Mechanical imports	24.3	21.4	21.6	24.2	20.2	24.0	26.6	25.2
total imports	159.2	133.2	158.3	160.4	230.1	404.0	382.3	332.0
%	15.2	16.1	13.6	15.1	8.8	6.0	7.0	7.6

Source: ISTAT data

By analysing the historical evolution instead, it is easily understood how Slovenia initially played a leading role, however, the absolute value of mechanical imports being quite steady over the period analysed. On the other hand, there was a drop in the relative value represented by the mechanical division, which from 15% in 1995 shows a value of just about half of that in 2002, as the imports on the whole doubled over the eight-year period. Even in relation to this Country, the weight of the machines and mechanical equipment (Table 37) is progressively reducing (representing 58% on average, in 2002 the value was 52%), whilst, as already seen, imports of electrical, electronic and optical machines and equipment from Hungary is becoming increasingly more important

An increase in the mechanical imports, even if on the whole they are marginal values, has been experienced with Romania (from 1,515,785 € in 1995 to 5,889,301 € in 2002); in the country, this division represents on average only 6.2% of the total amount of goods to Friuli Venezia Giulia, and this relative value has generally been quite steady over the whole period of 1995-2002 due to the same increase in the imports from the country into the region. 90% of the imports is represented by mechanical equipment, nevertheless the electrical, electronic and optical machine sector is progressively increasing its weight (in 2002 it represented 16.5% of the total import of mechanical products).

On the other hand, the sector being examined is gaining considerably more importance in exchanges with Bulgaria, the value of which in 2002 for mechanical products exported to Friuli Venezia Giulia (almost exclusively represented by mechanical machines and equipment) represented about 21% of the total flow into the region; nevertheless the overall value of imports is the smallest among the countries considered, as it was equal to only 2,443,931 € in 2002.

Table 37: Percentage of imports per subsection and country of origin (year 2002)

	BULGARIA	ROMANIA	HUNGARY	SLOVENIA
Mechanical machines and equipment	92,6	83,5	46,3	51,9
Electrical, electronic and optical machines and equipment	7,4	16,5	53,7	48,1

Source: prepared by Ires-FVG based on ISTAT data

Observation of the indicators such as sectoral trade shares[79] helps to individualise the presence of comparative advantages in the import-export trade between Friuli Venezia Giulia and the four subject countries, an element that allows to assess the development prospects of such traffic. It is to be stated that the values referred to Bulgaria and Romania show a rather limited explicative capacity, considering the small value of exchanges with these countries; of greater relevance are the indicators referring to Hungary and, in a major measure, Slovenia, the most important outlet market out of those considered. As far as Hungary is concerned, the values of high specialisations are found in the subsection of electrical, electronic and optical equipment, whether electrical motors, generators and transformers and insulated wires and cables present a normalised value of over ten points. As regards the Slovenian market, the advantage in this sector is less evident, but however, is greater than that of the machinery and mechanical equipment division.

A certain penetration strength for the regional mechanical industry is shown in the following groups:

- machinery for agriculture and silviculture;
- machine tools;
- office machinery, processors and computer systems;
- equipment for the distribution and control of electrical power;
- batteries and electrical accumulators;
- lighting fixtures and electric lamps;
- electronic tubes and valves
- medical, surgical and orthopaedic equipment;
- receivers for radio and TV broadcasting.

It is immediately noticed how the specialisation of mechanical products in Friuli Venezia Giulia on the markets of the four candidate Countries is shown mostly in the electrical, electronic and optical equipment division, witnessing greater competitivity, at least to date, in technology intensive production.

As regards import shares, Bulgaria has a high penetration degree of its products in Friuli Venezia Giulia especially in the machine tool section, where the value of imports from Bulgaria is ten times higher than the value of the same group of products imported on a world level. The presence of these penetration values is, however, partially influenced by the poor import trade value between Friuli Venezia Giulia and Bulgaria, and by the fact that the mechanical sector (which relates to a fifth of the total export from this State) is particularly concentrated in a few groups in the division.

The Romanian market has almost never reached a high penetration degree in Friuli Venezia Giulia, whereas the Hungarian market presents a high penetration degree for electrical motors, generators and transformers and insulated wires and cables and domestic appliances. The Slovenian market, on

the other hand, does not present excessively high normalised values in any of the groups in the division.
To summarise, the groups in which the four countries have a comparative advantage as regards Friuli Venezia Giulia in terms of market penetration are:

- domestic appliances;
- electrical motors, generators and transformers;
- insulated wires and cables.

The problems relating to overpositioning in the specialisation are encountered, therefore, in the following groups in the subsection of the electrical machines:

- electrical motors, generators and transformers;
- insulated wires and cables.

For these two groups the comparative advantages of each country need to be assessed[80].

To quantify the specialisation degree of Friuli Venezia Giulia and the four countries in the mechanical sector in more detail, the normalised trade balance can be measured (compensated for the overall unbalance in trade and the size of import-export trade) against a given country[81].
Table 38 summarises the index values of the comparative advantages per sector of the mechanical division; all the values of the index refereed to the two subsections are positive, thereby indicating an advantage of Friuli Venezia Giulia as regards each candidate country.

Table 38: Index of comparative advantages revealed (RCA) per subsection (calculated on values at current prices), year 2002

	BULGARIA	ROMANIA	HUNGARY	SLOVENIA	SUM
Mechanical machines and equipment	0.45	0.71	0.17	0.56	0.43
Electrical, electronic and optical machines and equipment	0.33	0.77	0.12	0.32	0.23
Total	0.44	0.72	0.14	0.47	0.35

Source: prepared by Ires-FVG based on ISTAT data

As regards Bulgaria, Friuli Venezia Giulia has an advantage for the largest part of the products falling within the mechanical division (the import value for electronic equipment is, in fact, zero); negative values of the index are found in the groups of electricity control equipment and the residual items of electrical equipment, products that the region does not export in that country.
The comparative advantage that Friuli Venezia Giulia has is evident also by the comparison with Romania, which, like Bulgaria, presents values close to the unit for products falling within the electronic division. Negative values are found, in this context, in the insulated wire and cable group.

[79] Corresponding to the relationship bettween the export (or import) quotas of the mechanical sector in Friuli Venezia Giulia compared to the total export (import) towards a single country and the export (or kimport) quotas of the total mecahnical sector in Friuli Venezia Giulia over the regional export (import) total .
[80] From an analysis of comparative advantage index, Friuli Venezia Giulia has a comparative advantage for the insulated wire and cble division, whereas the competitive situation relating to electrical motors, generators and transformers is substantially blaanced.
[81] This index assumes values ranging between–1 (if Friuli Venezia Giulia does not export any produt of the group considdered) and +1 (if Friuli Venezia Giulia does not import any goods from the section examined). A positive (negative) value indicates that there is a comparative advantage (disadavantage) towards each candidate country; if it is equal to zero, the import and export quotas are exactly the same

A generally similar situation, also if in a slightly less evident measure, is found in Hungary: Friuli Venezia Giulia boasts a comparative advantage in almost all products in the electronic division, except for the electronic valve and tube group. The index sign is negative also for domestic appliances.
Slovenia, among the countries taken into consideration, is the one that has least differentiation in the electronic division, which is an indication of a more developed economy; in the other divisions, the index value is almost always positive, except for electrical equipment, valves and electronic tubes and measurement and control instruments (slightly).
On an aggregate level, Friuli Venezia Giulia presents comparative advantages in the following groups[82]:

- batteries and electric accumulators;
- lighting fixtures and electric lamps;
- transmitters for radio-broadcasting;
- receivers for radio-broadcasting.

The four countries observed, on the other hand, have a competitive advantage in the sector of electrical equipment.

[82] The arms and clock and watch groups are ignored due to the negligibility of the values referring to foreign trade for these divisions.

Enlargement of the European Union: potential and critical points

In the following paragraph the prospects of internationalisation of the regional mechanical division towards Central Eastern Europe will be brought to light, on the basis of the analysis of associated literature and elements gathered by means of qualitative interviews with entrepreneurs, directors, sector trade representatives.
The mechanical industry, as seen, is one of the supporting divisions of the regional economy.
Moreover, it is characterised by a strong propensity towards exporting, as witnessed in the data shown in the second paragraph. The Eastern European markets are becoming more and more interesting for the regional entrepreneurs, particularly considering the reconversion process of the Central Eastern European industrial sectors, which has created a strong demand for intermediate goods. However, a strong component is present in trade import-export trade deriving from passive traffic perfectioning, an aspect that had already been examined in previous works relating to the process of enlargement of the EU[83]. It is to be observed that it has not been possible to investigate the phenomenon of production delocalisation during the course of this analysis, which, however, constitutes a method that involves the division in a significant manner, if not for the size of investments intrinsically connected to it.

As far as the market potential is concerned, a gradual change in the interests towards Eastern Europe should be highlighted. The local producers have always had a certain tendency towards trade relations with Central Eastern Europe, given the historical and geographical reasons. This interest, as known, grew considerably stronger during the transition process as there was a market characterised by the availability of low cost production factors, thanks to the availability of raw materials and cheap labour. Today, running alongside this aspect, the size of Central Eastern Europe seems to have continuously grown as a production market for the regional mechanical industry (as is clearly proven by the export data examined previously).
The interviews carried out, however, have shown that towards the end of the nineties the general approach of the enterprises towards Eastern Europe have changed. In fact, initially the attitude of the regional mechanical enterprises towards the Eastern markets was mainly passive: the local entrepreneurs did not need to look for new outlet markets to promote their products abroad since the import-export trade initiative came directly from the non-community customer, who contacted the enterprise for trade. Since 1998 the regional enterprises have had to change their approach, thereby becoming themselves propositive towards potential foreign partners: the outlet market, in relation to the increase in competition, should now be achieved and won with specific commercial manoeuvres and strategies.
The local entrepreneurs recognise the importance of the commercial function in procuring new foreign markets, and this interest has been revealed in the fact that they seem to be willing to invest in enhancing this aspect (through participation in trade fairs abroad and other forms that offer the possibility of contact with foreign partners). Therefore the necessity to gather useful information on how to promote new trade relations has increased and the request of the enterprises involved is shown in the search for assistance and guiding for an activity set on internationalisation As regards the question during the course of the enquiry, the request for internationalisation support from the associated bodies, was revealed, but tared more to the requirements of the enterprises.

[83] "I nuovi mercati dell'est, opportunità e sfide per le Imprese del Friuli Venezia Giulia", IRES-FVG 2000; "Progetto Preparity: Conseguenze dell'allargamento ad Est dell'Unione Europea sulle regioni di confine poste alle frontiere esterne dell'Unione Europea", ISDEE 2000.

The most relevant method in the relationships between regional mechanical enterprises and Central Eastern Europe mainly regard subcontract relations. Relationships with companies in the east involve requesting part of the local processing from foreign enterprises; these phases of the production processes are, however, based on projects and models supplied directly by the company in Friuli Venezia Giulia, and this means a quality standard that is, in any case, equal to the regional quality with a considerably lower processing cost.
The leading element is thereby represented by the fact that in this way, the same product is obtained at a lower cost; the convenience of carrying out work in the countries of Central Eastern Europe, besides offering the aforementioned advantages on the cost of labour and the greater availability of raw materials, is represented by the reduced expenses of the foreign enterprises in terms of structuring and management, which are a lot less compared to those in this region. A particular factor which arose during the interviews, and was exclusively referred to a specific company, related to the fact that the sub-contract relationship was not to operate with the effect of a "price leverage", but exclusively to increase yields.
The most frequent relationships that the local enterprises build up with the foreign producers, besides the aforementioned sub-contract relations, are those of a co-operative type, to manage some of the production process phases mutually: in this context, the local entrepreneurs almost exclusively step in as far as the technological aspect is concerned (by supplying machinery, specialised personnel, transfer of know-how), going beyond the simple contribution of financial means.
Relations of a collaborative and sub-contract type are mainly promoted by entrepreneurs at the top of structured companies, with an organisation for corporate functions, in which the commercial aspect is delegated to one or more people within the structure. The reality of the family-run business in Friuli Venezia Giulia can rarely build up relations of this type, since the proprietor, the only managerial resource, should split him/herself between the company in Italy and the one abroad, and not paying enough attention to the company because he/she has to manage the business over the border. In fact, in the regional situation, where there are small and medium enterprises, it is rare to give a proxy to the foreign partner, and it is always the local entrepreneur who handles business directly or delegates this function to someone in his/her structure/business. Whether it is for this internationalisation method or the pure trade relations, the presence of medium-high level managerial or technical human resources (for example production manager, project manager, sales manager, etc.) is fundamental for the investment in Eastern Europe to be profitable.
Following the first stage, in which Central Eastern Europe was considered exclusively as a market for purchasing raw materials and semi-finished goods at low cost, the interest of local entrepreneurs passed over from simply a market for purchasing products to an outlet market. This thrust came about from the increased competitivity of the global market, on the one hand, and the undoubted economic growth and stabilisation of the Eastern European countries who are valid buyers of a *skill intensive* industry such as the mechanical industry in Friuli Venezia Giulia, on the other. This seems to give more stimulation to the regional entrepreneurs and the vast dimension of the market (the interviews carried out indicate a strong interest in Russia), even if the relationships with the smaller business (for example the Czech Republic or Moldavia) seem to be more profitable compared to the greater businesses (for example Poland). An element which was collected during the course of the investigation relates to the *technology intensive* companies*:* the choice of operating with a commercial type and not delocalising strategy could be linked to the importance of not transferring the know-how if this is the main competitive advantage of the company.

Usually, commercial relations are built up with producers with which there has already been a consolidated commercial relationship over the years and characterised by mutual trust. From this same contact, other commercial or production contacts can be made.

PRODUCTION DELOCALISATION

Among the other forms of internationalisation, direct investment abroad seems to be the least used by local entrepreneurs, contrary to what has taken place in the neighbouring Veneto region. Unfortunately the difficulty in obtaining data on the regional IDEs is well known (for example some studies report only about ten cases, with an evident underestimation of the phenomenon for the whole period of the nineties). In reality, as the region is dominated by SMEs, there are probably "softer" forms of internationalisation (subsupply or trade exchange)[84]. The problems in this sense relate to the financial size of the investment as well as to organisational problems that are still unsolved in Central Eastern Europe.

A further element that should push towards a growth in the internationalisation process depends on the improvement of the insurance cover. In the past, an obstacle to perfecting the foreign contact in terms of supply, purchase, sub-contract and collaboration was represented by the absence of insurance products that were able to offer a cover for SMEs in the case of problems in regularly tying over the agreement: SACE, in fact, did not provide for any form of cover for the small enterprises, most of which had to turn to private insurance companies. Now SACE has reformulated its products, offering this opportunity to the SMEs.

METHOD OF INTERNATIONALISATION AND ROLE OF THE ASSOCIATED BODIES

- The method through which the local entrepreneurs can turn to new outlet markets are diverse: they can promote trade relations, establish sub-contracting relations, activate production delocalisation, form Joint Ventures. Whatever the method with which the internationalisation process takes place, the fundamental decision to make the initiative a success is the choice of the local partner; in particular as regards the SMEs, the main problems could arise from the poor opportunities of finding reliable and competent partners..

- As shown in this paragraph, the role of the internationalisation bodies seems to be determinant, especially at the initial contact stage, to individualise reliable local partners. The interviews carried out, notwithstanding the number does not allow to reach a conclusion, indicate a certain degree of dissatisfaction relating to the services offered to the enterprise, which is not considered very suitable for the specific company requirements.

[84] The numerous studies highlight how the large portion of regional enterprises that invest in the Central-Eastern European Countries in reality belong to a group of enterprises, also quite large: the medium-small characteristics of the regional enterprises would threfore result rather overestimated. See Tiberi P. "Internationalisation in Eastern Europe. A pilot study, in "Est-Ovest", ISDEE, Trieste, n.6, 2000.

When examining the elements of uncertainty and the risks present in the opening process of the mechanical division in the East, it can be noted that the opinion relating to the competitive advantage in the Central Eastern European countries is now attenuating. The westernisation process of these territories is gradually being completed and the cost economies are resembling each other more and more. Among the candidate countries, especially those included in the leading group that opened negotiations in 1998, an increase in the quality of the working process and local products is often noted; the case of adopting the certified quality systems is more frequent both in the working process as well as when manufacturing the final product. The quality of production is approaching that of Friuli Venezia Giulia, and on the other hand the Central Eastern European countries still enjoy the advantages of lower costs. If this progressive process represents an advantage for sub-contract relations, it proves to be risky for the division, as there are more low cost products with high quality standards, which are therefore very competitive.

Other consequences of the progressive westernisation of Central Eastern Europe lies in the fact that, to find the major competitive advantage, the regional producers are forced to gradually move the centre of the markets to be reached further eastwards; if we once referred to the closer countries such as Slovenia and Hungary, now we need to move to Romania, and from here to Moldavia. Each move, however, implies a evident increase in the expenses, therefore regional producers must bear the losses in the various steps that they have to face.

Further problems are linked to the stage after concluding the contract, which may be particularly linked to red tape, such as visas and permits to stay[85], or the weakness of the foreign financial system. The lack of payment instruments that are similar to the regional ones and the presence of institutes that are not particularly sound, in the past proved to be restrictive in the regular performance of the contact: this obstacle, however, has been overcome with the progressive westernisation, which have led to the branches of large Italian financial institutes opening up in the Central Eastern European countries. It is true, however, that in the countries involved in the second stage of the enlargement or the ex-Soviet Republic countries this is still a problem.

Even recruiting of qualified labour can be an obstacle as far as a foreign investment is concerned. In fact, if the level of professional competence of the local labour does not seem to be particularly low, although it can vary considerably from country to country (even if the mechanical division experiences a good tradition almost throughout Eastern Europe) and localisation of the company (whether it is in a big city or far from a large centre), the level of management is still inadequate. A production or job manager coming directly from Friuli Venezia Giulia, who is able to control the overall production process and observe the delivery times, constitutes the discriminating factor for the success of the internationalisation process of the enterprise (at least for a few years yet). This appear to be valid also when there are production collaborations or just a sales relationship (delivery times seem to be a considerable problem to date for the enterprises interviewed in this investigation). However, the importance of an initial training period for the human resources of the Eastern European partner seems to be evident.

Problems relating to Governments who are not suitable for investments were only experienced in the past: now it is possible to establish a company entirely with foreign capital. In some countries, however, it is still impossible to purchase the land property[86].

[85] In fact, the foreign company may have to come with its own team to dismantle a plant and install it abroad, or to commission it or inspect the material.

[86] In Romania, for example, the land is given only on a twent-year basis. In other cases it is necessary to check that there are no bind such as mortgages.

WHAT STRATEGIES SHOULD BE FOLLOWED?

- The SMEs and organisation enhancement: the internal structure should be reorganised, with the assignment of specific functions (such as sales) to those who have specific professional competence;
- Presence of company representatives in loco: to set up a local office could be fundamental both to control the progress of any jobs, for financial reasons and to handle the bureaucratic and normative problems (language problem, which can be overcome by a local staff working alongside Italian staff);
- Presence of a local partner: this could help to reduce the information asymmetries and lack of connections in the production and bureaucratic systems, which still exist in many places.

The past failures of regional companies in their relations with Central Eastern European countries can be directly attributed to the difficulties arising on a macroeconomic level, relating to the general institutional uncertainly, to the uncertainty as regards the operative context, to the complexity of the bureaucracy-normatives, as well as the deficiencies relating to the regional entrepreneurial structures, which have not managed to adapt to the changing requirements. The first consequence of opening many SMEs in the East is reflected in the corporate structure, which rarely provided the addition of people intended to maintain relations with the Central Eastern European countries. The regional reality, in fact, is characterised by the considerably number of SMEs, man of which are purely family-run businesses where practically all the managerial functions are carried out by the entrepreneur.

SUMMARY: FVG MECHANICAL SECTOR	
STRONG POINTS	**WEAK POINTS**
Gradual structural and organisational strengthening of the regional enterprises with respect to opening towards the East	Presence of many small and micro enterprises often family-run businesses
Presence of competitive advantages in market segments with a higher added value deriving from sub-contract relations	New competitors on the market (Asian countries, China and South America) with high quality standards
OPPORTUNITIES	**RISKS**
A vast destination market for the mechanical division	Risks regarding the reliability of local partners
Procurement markets characterise by the availability of raw materials and still low labour costs	Lack of/Poor availability of sufficiently qualified managers and intermediate technicians
Potential economic growth of the Central Eastern European countries in the average term with consequent increase in demand.	The growth of industries in the Central Eastern European countries implies a risk of new competitors on the third markets
	Transfer of know-how for technology intensive enterprises could have a boomerang effect
New forms of insurance cover relating to credits for SMEs	Poor solidity of the financial system in the countries that belong to the second portion of the enlargement phase
Major economic stability of the countries entering the EU	Competitive advantages are moving more and more eastwards

The environment management division

The structural picture

The growing awareness of the need to protect and restore the environment has led to a development in a virtually new industrial sector that is defined as "ecoindustry" and consists of all the economic activities aimed at producing goods and services that reduce pollution and the consumption of natural resources, including technologies, procedures and products to respect the environment.
The aims of this study are therefore to look for an improved comprehension in the sector, through the data available, finding the strong and weak points, finding the opportunities and risks deriving from the enlargement process of the European Union eastwards.
Ecoindustry is a relatively unknown sector, as it is a rather young branch, which besides, is difficult to delimit and quantify. According to a Swiss study, the operators in the ecoindustrial sector are divided into two main groups.

- activities that are completely ecoindustrial, that consist of three traditional economic branches, that have always been considered as environmental: water conditioning, waste treatment and waste disposal, recovery and preparation for recycling, as well as the wholesale trade of used and residual materials;
- partially ecoindustrial activities that fall within the traditional economic branches, the activities of which are, nevertheless, considered partially environmental (often only in a small part), such as, for example, the activities in the building trade, machine construction, the chemical and public educational system.

The sector therefore escapes from a clear definition as it includes a certain number of activities directly connected to the environment (waste, renewable/recycled energy etc.) and a series of areas (design, plant engineering, etc.) that is not directly, and exclusively, referable to the environmental sector. The news and data gathered are, given the peculiarity of the sector that is not referable to one or more clearly defined ISTAT codes, of course, not homogeneous. A "broader" definition of the environmental enterprise, and therefore occupation, implies additional problems to the complex statistical quantification for the sole environmental industry in a narrow sense. Any consideration must therefore be based on a mix of estimations and forecasts, the complete reliability of which cannot give a definite judgement at the moment.
The study of the ecoindustrial sector in Friuli Venezia Giulia was, therefore, carried out through analysing the statistical data available and through a direct verification of the sector's situation in the region by a direct contact with regional entrepreneurial subjects that operate in the environmental sector.
It is possible to assess the environmental technology in the strict sense by referring to the OCSE/Eurostat4 standard definition of "ecoindustries", or all the activities that produce goods and services for the purpose of measuring, preventing, limiting, reducing to the minimum or correcting the environmental damage to water, air and the ground, as well as problems relating to waste, noise and the ecosystems.
The definition consists of three categories of activity:

1) pollution management, both of a preventive as well as corrective nature (for example, the reduction of emissions and environmental risk and the repair of environmental damage);

2) clean products and technologies (integrated), that is all those activities that constantly improve, reduce or eliminate the environmental impact of general technologies;
3) management of resources (for example renewable energy and water procurement).

The estimates relating to the sizes of ecoindustry supplied herewith are based on the official statistics of the environmental expenditure in the strict sense, with reference to the entire economy. In order to read and interpret these statistics two important aspects should be taken into account:

- Firstly, all the technology influences the environment in some way, and therefore OCSE and Eurostat recognise only those expenses that are clearly motivated by the need to protect the environment. In practice, this means that if an enterprise develops a motor with lower operating costs and, at the same time, is less polluting, the technology is not considered "environmental" as far as the statistical definition is concerned.
- Secondly, probably the data underestimates the expense for "clean" products and technologies (integrated) due to the assessment difficulties, for example, the difficulty of individualising "clean" products, resulting in only a partial inclusion in the statistics. A specific problem arises from the fact that the data does not take into account the many "*win-win*" solutions, that represent new opportunities for the enterprises and at the same time improve the environment. Consequently, the estimates of the sizes of ecoindustry give only an approximate indication of the current market developments in some sectors that are more directly connected to environmental protection and management of natural resources, but certainly do not offer a complete picture of the environmental technologies used.

Moreover, it is possible to attempt giving a definition of the enterprises of the ecoindustrial sector by using the Seat categories of the "ecology" sector. The categories being examined, that are sufficiently representative on their whole of the green industry, are:

- *Water conditioning and treatment (plants and equipment).* The category contemplates all those subjects that deal with design and construction of plants for the treatment of civil and industrial sewerage water. Essentially two areas can be individualised: the first for plants to treat urban reflue water, to clean public sewers, for drinking/dimineralising/conditioning/decarbonifying/filtering/ osmosis of the water and the second for plants to treat industrial water, that is to treat the reflue water;
- *Water conditioning and treatment (services).* This deals with companies that have strong analogies with those shown in the categories "ecology, studies, consultancy and services and conditioning of civil and industrial sewerage water (plants and equipment)". They opiate specifically as suppliers of services, among which the treatment of reflue, environmental interventions, transportation and treatment of sludge;
- *Conditioning of atmospheric polluting agents (plants and services)*. This item includes the companies that design, build and install systems to prevent atmospheric pollution, such as suction, dedusting and gas dedusting systems, conditioning systems for sewerage water, ecological aspirators, air treatment systems, solvent recovery systems using active carbons and incinerator fume treatment systems;
- Conditioning of civil and industrial sewerage water (plants and equipment). This includes the implementation, intended as design, construction and installation, of plants for the disposal of solid waste by means of incinerating, composting and recycling. This does not contemplate for the implementation of dumps and associated percolate conveyor systems or the production of biogas. The activity of the companies included in this category, which is characterised in a specific manner in the individual waste disposal sectors per type of user and quantity to be

disposed, is individualised by three areas of intervention (urban, civil and industrial plants), corresponding to the respective types of waste treated;

- *Ecology (studies, consultancy and services)*. This deals with the activity relating to the management of ecological plants for the treatment of reflue water or the disposal of solid waste, that is including not only the study and consultancy activity, but also provision of services and management of plants in the waste disposal and reflue water treatment field. In particular, the public subject mainly benefits from the activities pertaining to the conditioning of water and solid urban waste, the private subject mainly benefits from industrial waste disposal services. As regards solid waste, the management activities are divided between the supply of the disposal service and the associated activities of collecting, transporting and treating waste;
- *Solar and alternative energy (plants and components).* This includes the companies that manufacture and install plants taking advantage of renewable, photovoltaic, thermal, hydroelectrical sources or those who produce solar panels;
- *Urban waste collection (service).* This mainly includes operators, that is municipal operators, consortiums, specialised companies or concessionaires, which collect, transport and dispose of solid urban waste, partly superimposing the industrial and special waste item (disposal and treatment;
- *civil, industrial and special waste (plants, machinery and equipment).* This category, which has recently been established (1998), includes subjects that implement plants for the conditioning of sludges, industrial waste treatment, waste collection in compliance with the quality (UNI, EN, ISO 9001) and safety standards or further for the disposal of toxic and noxious waste;
- *industrial and special waste (disposal and treatment).* This includes those companies that operate in the transport, storage, disposal of assimilable, special and toxic-noxious urban waste, such as conditioning of sludges and cesspools and industrial waste, companies that also dispose of hospital waste, for health safety with thermodistruction processes (incineration), that collect used vegetable oils and animal fats and used batteries and those that carry out various types of disposal in dumps. These companies mostly carry out such services on behalf of third parties.

Up until the eighties, the environment sector essentially consisted of enterprises that operated through technologies and interventions for the control and dedusting of the polluting phenomena downstream human activities (monitoring of environmental divisions; waste collection and disposal; reflue water conditioning; dedusting of emissions in the atmosphere and noise emissions).
The size of this world market was evaluated around the 300 billion Euro mark in 200 and it is thought that it could increase to 740 billion Euro by 2010. A recent study by the European Commission assessed that there is a considerable capacity for the increase in European ecoindustrial exports, in particular to developing countries. A considerable expansion in the environmental sectors in Central and Eastern Europe, South-East Asia, China and South America is forecast. These markets currently represent 30% of the world total, and by 2010 it is forecast that the figure will exceed 40%.

Already in 1993, the European Union's "Growth, competitivity and employment" white paper forecast that "..according to agreed estimates .. about 3 million jobs for the Community, evenly divided over the assistance service, improvement in the quality of life and environmental protection ". This figure, in the environmental sector leads to a datum of 1 million employees, a value that is coherent with the estimates made by OCSE for 1990.
The same European Commission (Building a sustainable Europe, 1997) informed that, on the basis of the Ecotec-Eurostat estimates, the operators/employees in the environmental sector amounted to 3.5

million, 2 of which were linked to clean technologies, renewable energy, recycling of waste, protection of nature and landscape, whereas the remaining units related to the environment sector in the strict sense, as defined above.
More recently the Commission, confirming the data stated, estimated from 500,000 to 1 million new jobs would be obtained by 2010 in the renewable energy sector alone.
The Ecoindustrial sector is therefore extreme important for Europe: a limited definition of the sector, which excludes activities such as resource administration and renewable energy, assigns approximately 1.7 million jobs, whereas a broader determination (which includes these categories) attributes up to 3.5 million jobs. This definition includes non-polluting technologies, renewable energy, waste recycling, protection of the landscape and nature and ecological renewal of the urban areas.
The data available indicate that in 1994 in the European Union, the ecoindustrial sector produced something like 41.7 billion USD of gross added value (approx. 0.5% of the GDP) distributed more or less equally among the member States (Ecotec *et al.,* 1997). Already in 1999 the European ecoindustry (UE-15) recorded an overall turnover of 183 billion Euros (equal to 2.3% of the EU GDP), with an employment of approximately 1.6 million (equal to 1% of the total employment). In the EU the most reliable estimate of the GDP figure intended for environmental protection and resource management revolves around 3%.

In Table 39 a comparison can be made between the total expenditure of the public sector and the private sector of most of the European States and some of the candidate countries in the period from 1990 to 1999, even though the data collection methods are different for each country and data may be incomplete.

Table 39: Total expenditure (public sector and private industry) in millions of ECU. Eurostat/New Cronos source.

	1990	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
Germany	17,202	20,168	23,140	23,844	23,928	23,994	22,225	19,085	-	-
France	12,012	12,836	13,534	15,161	16,982	17,990	18,880	19,513	20,194	-
Austria	1,539	1,714	2,988	3,351	2,981	3,699	3,530	3,799	3,997	-
Italy	1,458	1,985	1,538	-	-	-	-	-	152	-
Bulgaria			37	89	65	74	70	78	127	-
Hungary	-	-	-	-	-	-	-	-	-	516
Romania	-	-	-	233	282	389	444	518	655	-
Slovenia	-	-	-	-	-	73	58	78	63	-

Source: Eurostat

The EU ecoindustries produce goods and services amounting to approximately 183 billion Euro per year (equal to approximately 500 Euro per capita). Pollution management and clean technologies represents approximately 127 billion Euro and management of resources (excluding renewable energy-operated systems) almost 56 billion Euro. In real terms, the overall expenditure for pollution management and clean technologies has increased by 5% per year since 1994.
The private sector represents an increasingly consistent portion, with 45% of the overall expenditure in 1994 and 59% in 1999. The EU ecoindustries offer jobs to over 2 million people directly. The total number o jobs created directly by pollution management and clean technologies has increased by 500,000 units since 1994 to now.

In the candidate countries, the ecoindustries in the pollution management and clean technology sector produce goods and services amounting to approximately 10.3 billion Euro per year (equal to 1.9% of the GDP of these countries).
In Italy the ecoindustrial sector is growing from 1991 to 1998, the number of economic operators has risen from 4,443 to 6,476, with an increase of almost 46% (Table 40).
There are various reasons for this growth tendency/trend: the initial multiplicative effect of the normative provisions; a concentration after the initial start-up phase of the activity; greater competition with associated selection of less-efficient operators.
Furthermore, half way through the ten-year period a progressively new scenario took form, based on a more advanced philosophy of approaching the environmental problem. Thanks to a greater consideration of the environment, other economic activities have come alongside: prevention of the phenomena and pollution risks; promotion of the saving and recovery of resources and energy; awareness/sensitivity to "ecologically correct" behaviours; greater attention paid to the "ecological quality" of products. Among the basic reasons that explain this new scenario, the change from the "order and control" policies to agreed forms of voluntary agreement, and greater attention to the consequences of distribution and consumption on the environment, are highlighted.

Thorough reading of the data shows that the growing trend within the sector is mostly attributable to the waste division: namely, during the '97-'98 period, the companies offering industrial and special waste disposal and treatment services increased by 10%; this is a category that affects the total sector by approximately 23%. Not to be underestimated is the growth in the number of "ecological" companies (studies, consultancy and services), which not only contemplates the study and consultancy activity, but also the supply of services and management of plants in the waste disposal and reflue water treatment fields. In terms of incidence on the sector, such activities take up a relevant portion (approximately 30%) thereby further showing the increasing demand for environment services, particularly as regards the management of the waste cycle.
The water division records more limited/lower growth rates: water (services) treatment and conditioning item, which bears a 6% weight on the sector, grew by 5%, whereas that relating to plants and equipment increased by 5%, continuing to have a significant affect (20%), grew just slightly (1.3%). In fact, the "civil and industrial sewerage water conditioning (plants and equipment)" recorded a downturn (-4%), which nevertheless represents 4% of the companies.
This data is to be referred to the propulsive thrust exercised by the environmental policies in the various sectors of intervention. As regards waste, for example, it can be considered that the recent growth in the number of operators is at least partially linked to a process of functional decentering and multiplication of the subject involved in the management cycle. To the contrary, the water sector seems to have suffered from the slow enforcement of the Galli law (n°.36/94).

The activities that recorded the best performances between 1997 and 1998 were:

- solar energy and alternative energy (+4%);
- water conditioning and treatment (+5%);
- waste disposal and treatment (+10%);
- environmental studies, consultancy and services (+9%).

The latter two fields represent the most relevant part of the environmental business, accounting for more than 50% of the operators.

From the territorial point of view, it is to be highlighted that more than 20% of the operators are concentrated in Lombardy, well ahead of the other regions (Veneto 10%, Lazio 8.5%, Piemonte 8%, Emilia-Romagna 7.7%, Tuscany 6.5%).
Not to be underestimated is the datum on the growth of operators between 1997 and 1998, as much as it may be positive, it is considerably lower that the growth rate of operators in the first portion of the ten-year period: in total, the average variation during the period from 1991 to 1994 is 20%, whereas between 1994 and 1997 the increase is of 15%, a value that is more than double the average value recorded between 1997 and 1998 (+6%).

The following tables represent the distribution of operators in the green industry in the various regions, highlight the incidence of the individual categories on a local level. First of all, notwithstanding a slight repositioning over the last period, Lombardy is certainly the most "equipped" region as far as environmental operators are concerned (21.3% of the total amount).
On a more aggregate level, the heavy concentration of enterprises in the north-west (33%), which, all the same, has shown a decrease in its weight over the last ten-year period, relating to localised companies (-6.8%) and a recovery in the south which from 16.7% in 1988 has progressively increased to 25% in 1998.

As far as the other territorial districts (north-east and central) are concerned, there are no great differences and their percentage weight has been the same for 10 years.

Table 40: The evolution in the green industry[87] in Italy (added value and value %). Source: prepared by Censis based on Seat data.

Sector categories	**1991**	**1994**	**1997**	**1998**	**Var. % 91-94**	**Var. % 91-94**	**Var. % 97-98**	**Var. % 1998**
Industrial and special waste (disposal – treatment)	649	1048	1390	1524	61.5	32.6	10	23.5
Civil, industrial and special waste (plants, machinery and equipment)	-	-	-	3	-	-	-	0.04
Urban waste collection (service)	648	440	513	525	-32.1	16.6	2	8.1
Ecology (studies, consultancy and services)	1052	1561	1803	1968	48.4	15.5	9	30.3
Civil and industrial sewerage water conditioning (plants and equipment)	335	355	345	332	6	-2.8	-4	5.12
Water conditioning and treatment (plants and equipment)	1073	1178	1268	1285	9.8	7.6	1.3	20
Water conditioning and treatment (services)	339	368	394	413	7.8	7.1	5	6.4
Conditioning of atmospheric polluting agents (plants and	176	196	199	197	11.3	1.5	-1	3

[87] Con industria verde si fa riferimento agli operatori appartenenti alle seguenti categorie Seat: depurazione e trattamento delle acque (impianti ed apparecchi), depurazione e trattamento delle acque (servizi), depurazione inquinanti atmosferici (impianti e servizi), depurazione scarichi civili ed industriali (impianti ed apparecchi), ecologia (studi, consulenza e servizi), energia solare ed energie alternative (impianti e componenti), nettezza urbana (servizio), rifiuti civili, industriali e speciali (impianti macchinari ed attrezzature), rifiuti industriali e speciali (smaltimento e trattamento).

services)								
Solar energy and alternative energy (plants and components)	171	186	220	229	8.8	7.5	4	3.54
Total	4443	5332	6132	6476	20	15	6	100

Source: Censis, Report on the Social Situation of the Country

Table 41: Regional distribution of operators in the green industry (added value and value %).

Regions	1988	% distribution in 1988	1994	% distribution in 1994	1997	Distribution % in 1997	1998	Distribution % in 1998
Friuli V. G.	77	2.5	135	2.5	139	2.3	156	2.4
North-west	1207	39.8	1871	35.1	2031	33.1	2124	33
North-east	692	22.8	1211	22.7	1367	22.3	1454	22
Centre	627	20.7	1013	19	1232	20.2	1284	20
South and islands	502	16.7	1237	23.2	1502	24.5	1614	25
ITALY	3028	100	5332	100	6132	100	6476	100

Source: prepared by Censis based on Seat data.

Table 42: Distribution of operators in the green industry per region and category (val.%) 1998.

Regions	**I[1]**	**II[2]**	**III[3]**	**IV[4]**	**V[5]**	**VI[6]**	**VII[7]**	**VIII[8]**	**IX[9]**	**Total**
Piemonte	17.2	6.5	3.1	4	32.1	3.6	14	-	19.5	100
Valle d'Aosta	13.6	-	-	4.5	36.4	-	27.3	-	18.2	100
Lombardy	20.6	7.3	4.3	3.5	32.6	1.9	7.4	-	22.4	100
Trentino A. A.	13.7	7.2	2	3.2	36.6	17	13	-	19	100
Veneto	23.3	5.4	6.2	4.6	24.2	2.1	8.8	-	25.4	100
Friuli V. G.	10.2	5.1	2	5.1	47.4	3.2	3.9	-	23.1	100
Liguria	13.7	4.9	0.5	3.4	29.4	4	10.3	-	33.8	100
Emilia Romagna	27	7	6	9	25	4.4	3.6	0.2	17.8	100
Tuscany	26	6	2	4	34	3	4	-	21	100
Umbria	11	4	-	5	37	12	9	-	22	100
Marche	21	3	3	10	30	2	3	-	28	100
Lazio	18	7	2	8	23	5	7	0.2	29.8	100
Abruzzo	18.2	3	2	4	47.8	1	2	-	21	100
Molise	14	-	-	7	41	7	-	-	31	100
Campania	18	2	1	4	34	4	7	-	30	100
Apulia	16	8	0.5	6.2	28	4.1	19	-	18.2	100
Basilicata	12	-	2	2	43	4	10.4	-	25	100
Calabria	28	5	2	5	22	2	1	-	34	100
Sicily	23	11	1	6	24	3	10	0.3	21.7	100
Sardegna	12	11.5	2	6	28	0.4	13	-	26.1	100
Italy	**20**	**6.4**	**3**	**5.1**	**30.3**	**3.5**	**8.1**	**0.04**	**23.5**	**100**

1*:* Water conditioning and treatment (plants and equipment);
2*:* Water conditioning and treatment (services);
3*:* Atmospheric polluting agents (plants and services);
4*:* Conditioning of civil and industrial sewerage water (plants and equipment);
5*:* Ecology (studies, consultancy and services);
6*:* Solar energy and alternative energies (plants and components);
7*:* Urban waste collection (service);
8*:* Civil, industrial and special waste (plants, machinery and equipment);
9*:* Industrial and special waste (disposal-treatment).

Source: prepared by Censis based on Seat data.

RESEARCH

To extrapolate the expenditure for research in the environmental field from the general picture is not easy due to the limited data[88]. Even as far as research is concerned, the environmental sector however seems to have suffered less than others from the major severity in public expenditure and from the general stagnation in the economy that has characterised the last ten-year period. The government subsidies for research in the environmental field in Italy from 1983 to 1998, with a countertendency with respect to the general trend, have increased both in nominal terms as well as real value. Although a flexion was recorded between 1991 and 1995, the subsequent recovery seems to have been decisively more sustained, both with respect to aggregate public expenditure, as well as the specific item of expenditure for research. Italy's position compared to other countries of the G7, as regards the level of government grants/subsidies for environmental research, does not seem to be particularly negative: although countries like the United States, Germany, France or even the United Kingdom on average have higher public budgets available for environmental research, the difference with our country appears to be decisively less serious that the existing one for the research field in its whole and, from the data available, it shows that the environmental theme is far from ignored in the government research expenditure in Italy.

The prospects of the sector in view of the changing environmental awareness

A concept that has paved its way over the last few years is that the current economic growth will not be sustained in the long run unless it takes the environmental problems that it generates into account. At the same time, however, we have started to confirm the idea that economic development and environmental protection are not necessarily incompatible, that perhaps ecology and economy are not two completely antithetical terms

The key word is "sustainable development": that is a development that takes into account the environmental problems generated by production, which tends to improve the environmental performance of the enterprise and not only the quantity or quality of the product, pushing the enterprises towards ecoefficiency, which internalises environmental costs in terms of consumption of resources and environmental pollution, that allows a return for the enterprises following improvements in the environmental performance.

Sustainable development must be pursued at a national and international level, but to make sure that it is not only a statement of intentions, it must be applied throughout the production and consumption world. Therefore, the enterprises play a crucial role in this: they have to internalise the environmental costs of the products and move towards process ecoefficiency, through modifications in the organisation, technologies and management.

[88] Le considerazioni che seguono, riprese da ENEA "Rapporto Energia e Ambiente 2000" capitolo 6, si basano unicamente su dati OCSE a partire da informazioni fornite dagli uffici centrali di statistica dei Paesi membri, che riguardano gli stanziamenti per R&S effettuati dai Governi centrali e federali per l'obiettivo della protezione ambientale (prevenzione e trattamento dei danni). Questi dati, non comprendendo i budget dell'industria privata o dalle organizzazioni non governative, possono essere considerati come delle stime parziali.

A series of specific economic instruments move in this direction, which when applied to the production system can give returns in terms of savings in raw materials and energy, increasing the competitive capacity and acquiring market advantages thanks to a better image. Within the ecomanagement of the enterprise, running parallelly to the development of certifiable environmental management systems such as the EMAS Community Regulation or the ISO 14001 standard, other innovative management instruments are gradually being introduced, such as the life cycle analysis (LCA) of products, initial environmental reposting and benchmarking, environmental balances, the use of clean technologies (CT/CP): these are instruments with different characteristics but which mutually integrate in a viewpoint of integrated and innovative enterprise management directed towards the continuous improvement of performances. Better environmental performance means optimising the corporate management, reducing costs, efficiency, valorisation of human and natural resources, management and technological innovation, new market opportunities, improved relations with various social and institutional actors as well as, more or less directly, the requalification of the territory (Ecoindustrial parks, EMAS applied to industrial areas).

Moreover innovative paths and experiences taken on willingly by the industrial system are highlighted: after the introduction of the quality certification of products and processes (ISO 9000), safety requirements (DI. 626/94), environmental management (ISO 14001, EMS) in the company's management, the direction to follow, which is not easy but inevitable, is towards management integration.

Obviously there are still various obstacles compared to the widespread use of these new instruments, especially for SMEs: the difficulty of long-term thinking, the lack of internal human resources, strategies that are more reactive than preventive with respect to the environmental factors, the opposition to modifying consolidate operating procedures rather than a convinced commitment towards prevention and environmental management are obstacles that are still rather widespread in our production tissue/network. Nevertheless, more and more indications and tendencies on a local, national and international level are emerging regarding the potential that these new environmental management instruments have in contributing to the numerous internal and external advantages offered both in terms of management and professional innovation as well as greater competitivity

Due tot he international situation, the *environmental management* sector is currently at a standstill, particularly in Friuli Venezia Giulia: the reduced economic availability have forced the regional companies to slow down on investments and expenditure, awaiting precise indications that affect the world and regional markets.

Moreover, there are some niches that have not particularly suffered from the economic situation, as the market demands are very specific (for example waste management).

The future prospects, according to the operators interviewed, are therefore positive except for the initial inertial of the local companies that are not always keen to make considerable investments: the possibility of the sector growing is also justified by the fact that there are many financing lines available, not only for direct activities, but also through transversal actions in neighbouring sectors (industry, services, technological innovation).

The unknown is linked to the fact that the environment is considered a transversal sector, and therefore any intervention on environmental themes means setting off chain effects on the production system and services, with the consequential costs and problems: it is possible to say that sometimes the "environmental service" is not purchased beers it is too expensive and complex.

The attention to the environment links a whole series of components that are difficult to evaluate (technological, economic, consensual components), which must be kept in mind as it is a sector with strong interest both for political planning as well as public opinion: a striking example is the problem

of waste treatment (costs, plants, localisation, technologies). This means that the environmental sector should be increasingly considered both in the private and public sectors.

Enlargement of the European Union: potential and critical points

The environmental situation in the States involves in the enlargement of the European Union may seem to be worrying: in 1989 most of the countries concerned inherited a situation of considerable pollution and diminishing environmental infrastructures, with many critical points and places that were unusable due tot he accumulation of waster or the extraction of minerals. Nevertheless, in the last ten-year period the future member states have made substantial progress as regards environmental protection, particularly in treatment reflue water and improving the quality of air.
In some areas, the candidate countries have better standards that those of the current member states and with the enlargement the same environmental standards will be in force throughout all the current and future member states in that have been preparing themselves for years for the EU's new high environmental protection levels, sharing the priorities for continuous improvement, knowing that lowering the water pollution levels will offer great benefits in terms of improvement in the public health.
Conversely, in other territories, the countries that are accessing the European Union have demonstrated a poor awareness towards environmental protection. This immediately contrasting behaviour finds a suitable explanation based on two reasons: on the one hand, the different social-economic condition of the accessing states, and on the other the diverse application of the environmental standards in matters of atmospheric pollution, natural (water and soil) and acoustic resources.
The accessing states who have an economic and social situation that is not far from the levels of the current members of the European Union, show a high degree of attention to the themes concerning pollution, especially if they are subject to engaging in trade relations with German member states. The latter appear to be particularly severe in applying the European standards in environmental matters, influencing and "imposing" that the legislative discipline also be observed by its trading partners from the East.
The different attention paid to environmental protection by the accessing states is also a direct consequence of the "ecoindustrial category" in which they operate. Whilst it seems that there is a high degree of awareness in the field of waste management and disposal, this does not seem to be so as regards the energy management division.
The EU environmental policy forecasts ambitious environmental protection levels, duly agreed upon and enforced by member states: normatives relating to quality in the following sectors have been envisaged: air, waste disposal, water, the application of EU standards in matters relating to atmospheric pollution, waste and protecting nature, controlling industrial pollution, chemical products and genetically modified organisms, noise, safety in the nuclear field and protection from radiation. All these standards must be observed by the new state members too, with considerable investments made, so that the citizens of the enlarged EU can achieve the high quality of life that everyone expects and deserves.
Moreover, accession of new members will bring about an increase in the wealth and variety of species and habitat, increasing the EU's natural heritage.

Enlargement of the EU therefore extends the high level of environmental protection that has already been achieved to many other countries so that an increasingly greater number of European citizens can live in a less polluted and healthier environment. In fact, the ecological problems have no frontier/boundary: common measures are necessary to face the environmental problems such as climatic changes, the reduction in the ozone, the loss of biodiversity or deterioration of the water resources of entire regions. It is necessary to guarantee that water is free from toxins or polluting substances, that the air is pure and that waste is disposed of in safe conditions throughout Europe. The greater the number of countries involved in this effort, the better the results and consequences of European authority towards the world in this vital sector.
Each future member state must find the financial resources needed to instate the environmental standards in the national legislation, but the EU and member states have also played an important role. The European Union, within the pre-accession programmes have supported various initiatives in the environmental field, for example Phare and ISPA, and have encourage the future member states to participate in the Life programmes.

The Sixth Environmental Action Programme (6th EAP) has requested that the integration between the sectors be strengthened so as to reach the sustainable development target.
As part of their contribution in the 6th EAP, the candidate countries stated that they were currently in a proper position to avoid taking some of the development courses that had been taken in the past by member states, that proved to be potentially damaging to the environment. In fact, these countries still have the opportunity to promote environmental protection as a catalysing element for economic growth, now that their economies are in the process of rapid growth and they are now "on the same lines" of the EU countries. The promotion and use of integration instruments such as strategic environmental assessment (VAS), economic instruments and not only, besides the assistance offered by the EU member states, they will sustain this process. The intention to consider the environmental objectives on a breakeven level with respect to the economic and social objectives can already be seen in the political documents of each country that is accessing the EU, documents in which the environmental protection is considered a factor that is necessary for economic growth and not a non-indispensable cost.
The candidate countries have placed their attention during their participation at the 6th EAP on the following points:

- to assure that, after enlargement of the European Union, the environmental and sectoral integration is a top priority of the new member states;
- to strengthen the sense of responsibility in the more polluting sectors;
- to avoid taking the existing EU policies as a model without taking into due consideration the local situation or possible future developments.

THE MAIN ACTIONS FORECAST IN THE SIXTH ENVIROMENTAL ACTION PROGREAMME (6th EAP)

- Complete activation of the environmental acquis;
- Adoption of policies and directions that allow a sustainable development (for example promoting the Strategic Environmental Assessment (VAS));
- Support of alternative proposals for road transport (for example taking into account the way in which the Community supplies financial support);

- An accurate plan of road transport such that the new developments do not damage the cities, nature or the flora and fauna;

As far as the European entrepreneurial system is concerned, the environment is becoming a competitive factor that cannot be ignored when preparing market strategies. In fact, the companies who decide to introduce an environment management system and to advise of their environmental operation, for example by means of certification or environmental registration of the site, drawing up an annual environmental balance, labelling "green products" (Ecolabelling) is on the increase.
The real growth of the ecoindustry could even exceed that of other economic sectors, also thanks to the emerging market in Eastern Europe and the constant development of the community environmental policy, which in the end should be enforced even in the candidate countries. In detail, the following are estimated:

- The world market for environmental technologies will amount to 740 billion Euro in 2010,with a highly competitive European economy;
- The sectors with greater potential in the environmental-employment relations are the manufacturing industry, transport, energy, agriculture, consumer services (awareness).

A recent study shows that in some countries that are crossing the transition phase, especially those that have faced their environmental problems with resolution (such as Poland and the Czech Republic), a rapid growth in the enterprises operating in the ecological field was recorded, whereas in other countries the capacity to supply environmental goods and services is still rather limited (USAID *et al.,* imminent publication). In a study by OCSE, it was estimated that in 1995 the market for environmental goods an services was worth about 5 billion USD in the Central Eastern European Countries (PECO), including the Balkans and Russia).

The integration and enlargement of the European Union to the candidate countries represents a challenge for some problems that arise:

- The administrative capacity in the environmental sector in countries candidating for accession is still poor, mainly on a regional and local level; moreover, the co-ordination level among the sectoral policies is poor. For these reasons, at the advanced stage of the enlargement process, one of the priorities of the European Union is to strengthen the administrative capacity.
- Although there are considerable differences between the 15 member states and the candidate countries in terms of type of environmental programmes, conditions for the sustainable development and sectoral integration, all of them share the same problems such as integration of the problems, considerations and environmental applications in the other sectors.
- The starting point is to reach a strong and well developed environmental policy; in the future it is therefore necessary to go beyond the simple approaches of a legislative type and wider and more intense involvement of the various subjects concerned is necessary. For the private sector this means that solutions based on market mechanisms are not only interesting but can also be effective from the environmental viewpoint.
- A whole range of instruments is already available; legal, economic and strategic planning, stimulation of technological innovation, information and dialogue. The challenge consists of using a whole series of instruments in an intelligent manner: instruments that are still not utilised much up to this moment are the voluntary agreements and contracts between the Governments and the other interested subjects.

- Positive examples of Environment integration can be found in the Common agricultural Policy reform or in the Water sector. One of the major challenges that must be faced relates to the transport sector, in which the signs of a split in the economic growth and environmental pressure are few or zero
- The role of the European Commission is very important in the follow-up and drawing up of timely reports on work progress. Environmental Management and the National Environment Ministers could play an important role in persuading the ministries responsible for ecological/environmental impact generated by the other sectors.

ENVIRONMENTAL CONSEQUENCES OF LIBERALISATION OF IMPORT-EXPORT TRADES

The environmental consequences of liberalising trade in Europe are deal with in two recent studies (Oosterhuis & Kuik, 1997 and OCSE, 1997a), from which the following conclusions can be made:

- The differences between the countries in matters of environmental standards do not influence the expansion strategies of enterprises in a significant measure, whereas the fear of weakening competitivity, by applying severe environmental standards tends to make the environmental policies less aggressive;
- With the globalisation, the governments will have less one-sided influence on the behaviour within their countries (for example with the application of ecological taxes). Nevertheless, the pressures in favour of multilateral agreements will increase – the international enterprises are able to activate any environmental measures more promptly when the right incentives are given (international);
- imports of polluting products and substances in Eastern Europe from Western Europe probably does not represent a relevant problem; the same can be said for the environmental pressure of production plants. In both cases the EU standards must be observed (after a transition period);
- Agriculture in Eastern Europe will probably develop with a more destructive impact on the environment and the landscape assets will disappear, as is the case with Western Europe;
- The development of transport is inevitable and, with every probability, it will entail the construction of new infrastructures;
- Illicit exports of hazardous waste could be a problem;
- Liberalisation should give a thrust in the economic growth with contrasting environmental consequences. With adequate environmental policies, the growth could be also be advantageous for the environment. On the other hand production and the consumption of products that are hazardous for the environment could increase, notwithstanding the introduction of more severe policies aimed at reducing the intensive exploitation of resources.

Recent studies indicate that the long-term advantages in the environmental sector given by the enlargement of the European Union are far greater than the initial investments that the candidate countries have had to bear to bring themselves in line with the EU environmental normatives and EU

investments to assist them. Adaptation to the community normatives on the environment in the ten candidate countries of Central and Eastern Europe will involve an estimated investment of approximately 120 billion Euro. This investment is convenient not only in terms of environmental improvement, but also in financial terms. The studies carried out show that the adoption of the EU environmental normatives will offer significant benefits and reduce costs in health and forest protection, buildings, fields and the fish division in the enlargened Union. The total estimated value of the advantages for the new member states ranges from a minimum of 134 to a maximum of 681 billion Euro, more than 50% deriving from the improved quality of the air.
Any delay in the enlargement process would mean not only depriving the Union and the future member states of these mutual advantages, but without the participation of new member states, the Union would be even less prepared to face the future ecological challenges, with negative repercussions on the quality of life and wellbeing of all citizens.
The European companies find themselves in an excellent situation to have access to the increase in demands for environmental services in Central and Eastern Europe due tot he geographical proximity and the gradual harmonisation with the Community environmental practices and regulations in Central and Eastern Europe.

ALTERNATIVE SOURCES OF ENERGY: AN INVESTMENT FOR THE FUTURE

A portion of companies forming the environmental sector focuses its activities in the field on the use of renewable resources and in particular solar energy. The heat and light produced by the sun are able to operate heating systems (for hot water and heating) and photovoltaic systems (for the production of electrical energy).
The rapid spreading of companies operating in the management of solar energy in Friuli Venezia Giulia cannot only be justified thanks to the major consumer awareness towards environmental themes, but also the support given by regional public bodies (through promotional activities and contributions to partially cover the purchasing cost).
The Eastern markets are particularly interested in such new forms of energy, not so much for the reduction of environmental impact as much as the possibility of good economic savings for the families.
To be higlighted is how in some accessing states (Poland and the Slovak Republic, in particular) the presence of multinationals commercialising such products is now consolidated, and the activity of spreading and developing a distribution network has exceeded the consumers initial mistrust.

Enlargement of the European Union offers numerous and interesting possibilities for companies in Friuli Venezia Giulia, as they are favoured by the central geographical position with respect to the new territory that will joint Europe: just think of the geographical distance of the region with respect to the Balkans.
Interviews that were carried out with privileged witnesses operating in the division made it possible to highlight various opportunities for the ecoindustrial regional system.
An element that was indicated many times, relates to the post-enlargement community financing system. The candidate states will enter the Objective 1 areas and therefore with a very high intensity

of subsidy. The future availability of community funds for investments in the environmental sector (event with a high probability seeing the purpose of the structural funds) represent a considerable opportunity for regional enterprises. Moreover, the heavy/strong environmental criticalness has already supplied regional companies with the possibility of intervening in transnational projects on complex problems that involve more territories (for example a single project for recovering the Danube from the source to the river mouth) and this event still seems to be probable in the short-medium term.

The restructuring process in the industrial division should offer the possibility of implementing and managing "green plants" ex-novo and the opportunity of experimenting new technologies (even though they are financed through various community programmes). Moreover, to be emphasised is the possibility of taking advantage of a few interventions financed by the Italian Environment Ministry that are intended to sustain the research and planning programmes within the integrated water cycle, which some operators have already turned to in collaboration with various Eastern countries. In general, however, the considerable attention paid to the environmental sector by accession to the European Union, according to those interviewed, is the most interesting element as far as the regional ecoindustrial enterprises are concerned.

One of the elements that mostly stimulates the regional operators to direct their interest towards the future European Union member states is the high potential of human resources operating in the environmental sector divisions. The technical and professional skills are guaranteed by a high degree of education at all levels (operating, management and executives), besides the production/sectoral tradition in some fields that distinguishes these states (for example, the metallurgical and mechanical sector). Furthermore, great emphasis must be reserved not only for the operators' technical capabilities of accessing countries, but also considerable enthusiasm and profuse commitment in the new entrepreneurial initiatives.

During the course of the interviews, alongside the opportunities offered, many problems arose. For smaller enterprises, language and the associated translation (particularly the normatives and regulations in the field that are more severe that in any other sector) still seems to be a considerable obstacle and imply a degree of uncertainty as regards the activities. Also significant is the deficit from the contact viewpoint, which could lead to the supply of environmental services. Moreover, some signs highlight how the negative results from some experiences in the Central Eastern European Countries in the past arose from the mistrust towards foreigners, which was also due to the "pedantic" approach that some Italian companies manifest in their contacts with companies in the candidate countries (whereas the common opinion is that the human resources in this sector are adequately prepared). Considerable difficulties may arise, especially as regards the Balkan area, due to the strong patronage system that still exists in the local bodies.

As regards the larger enterprises, who invest conspicuously in the Central Eastern European Countries, the major difficulties arise from the lack of medium and long-term planning in the environmental field, which make the results of any long-term investments uncertain. An additional element that seems to slow down and create difficulties in the development of enterprises consists of the accessing countries not being equipped with suitable information systems, especially if they are specific and require consistent infrastructural investments.

Moreover, the regional companies tend to maintain a rather low investment and financial exposure level that is dependent upon the results: this could favour the insertion of more dynamic companies coming from other regions to the disadvantage of the local companies who could see the advantage of their geographical position and past efforts being frustrated.

In some cases, the limited financial exposure is also determined by the consistent burden of the investment programmes proposed by the supporting bodies, in that it is difficult to amortise on restricted turnovers.

METHODS OF INTERNATIONALISATION

The varying composition of the environmental division makes it difficult to summarise the best strategies for operating in Central Eastern Europe (in particular the company size conditions the operating methods). Nevertheless a few valid general conclusions have been made:

- To valorise, involve and train the local resources by means of presence and participation in loco (exchange of experiences);
- To make investments especially through opening offices in Central Eastern Europe Countries and/or through establishing Joint -Ventures with local partners;
- To pay attention to the patronage system in the division in some of the Western European Countries;
- To avoid a "pedantic" approach towards local companies: the preparation of many technicians in the Central Eastern Europe Countries is equal to or higher than that of many regional companies;
- To promote more involvement and support by the institutional representatives in countries accessing the European Union (for example the Italian embassies).

It is interesting to observe the element gathered as regards the internationalisation tools to support enterprises. The companies interviewed in the *environmental management* sector do not have a clear picture of the role of the associated internationalisation bodies, probably because of the excessive tendency of companies to the "DIY" …., but also because there is a lack of knowledge as to which bodies can help and what they can actually offer.

Therefore, an evident communication deficit exists between the public bodies and the private business, which could be interested in an operational support for new initiatives in Eastern European Countries.

In some cases, there is an involvement by the companies of bodies that are institutionally appointed to favour the internationalisation processes, but almost exclusively to offer support (particularly in the accounting, purely administrative and logistic phases). Even on these occasions, the initial contacts and relations have been built up directly by the enterprises, without any support from the associated institutions.

Hence, two forms of tasks can be perceived that the associated bodies could cover: an institutional role, linked to defining the agreements with governments (at various levels, i.e. national, regional and local) and finding qualified information (legislations, financial facilities, contacts), and a technical role (aspects that mainly relate to small regional enterprises) that can space out from recruiting of specialised personnel (translations, local normatives) to the organisation of sectoral meetings and individualisation of reliable partners (corporate agreements, *joint ventures*, opening of offices).

ROLE OF THE ASSOCIATED BODIES

The inter-sectoral variety and the vast range in the size of enterprises that characterise the eco-industrial division is shown in the quite different requirements as regards the requested support to internationalisation. Therefore, it is possible to distinguish between the requirements of the microenterprises (for example professional practices or small engineering companies):

- To recruit personnel specialised in communication/translating;
- To recruit personnel specialised in local normatives;
- To organise sectoral meetings;
- To supply information relating to local law, possible financial facilities;;

…and those of the more structured enterprise (such as the multiutility companies, who operate in the recycling and recovery sector):

- To create contacts with institutions;
- To promote agreements with governments and regions.

In both cases, a common request seems to emerge:

- To individualise possible partners;
- To check the reliability of the partners.

It would therefore be necessary to individualise an "institutional" marketing plan to be applied in a capillary manner directed to the regional system of companies, with the scope of presenting a clear panorama/view of the bodies that deal with internationalisation, their tasks and the type of help that can be obtained.

SUMMARY OF THE ENVIRONMENTAL MANAGEMENT SECTOR	
STRONG POINTS	**WEAK POINTS**
An extremely interesting sector both in terms of political programming as well as public opinion in that there is a connection between them thanks to a considerable number of components.	A sector that is currently at a standstill due to the international situation.
Availability of targeted financing for specific actions in the environmental sector, also from other sectors (e.g. industry)	Chain effect due to the indirect factors of the sector (relations with production and services)
	Difficulty in issuing authorisations for plants and technologies by the institutions
	Issue of limited authorisations that make long-term investments uncertain
	Language problems (German is the most popular language used) in understanding/translating normatives, laws and regulations
	At times, the regional companies have poor knowledge of the technical and legal normatives of candidate countries
OPPROTUNITIES	**RISKS**
Financing from the European Union for state in Objective 1 area	Difficulty in medium to long-term planning and programming of environment interventions due to the poor local culture in environmental management
Adaptation and uniformity of candidate country normatives to the coded legislations and procedures in the European Union	Different legislations in the candidate countries: the technical normatives of the sector are sometimes more precise and punctual that the Italian/European ones
Possibility of implementing/managing technological plants and experimenting new technologies (for example study of industrial originating odours)	Long times may be required to implement the European environmental policies
Possible planning of unitary transnational interventions in the candidate countries	Mistrust towards foreigners present in the candidate countries

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