Agricultural production chains in Slovenia

Market overview and analysis of agricultural and food production chains in Slovenia

Henrieke Esselink

October 2009

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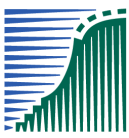

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On behalf of the Department for Agriculture, Nature, and Food Quality of the Netherlands Embassy in Budapest.
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In cooperation with the chair of Marketing and Consumer Behaviour, Wageningen University in Wageningen
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In cooperation with the Netherlands Embassy in Ljubljana.
Supervisor: Drs. P.V. Linssen

Preface

This market overview and analysis of the agricultural and food production chains in Slovenia is written on behalf of the Department for Agriculture, Nature, and Food Quality of the Netherlands Embassy in Budapest. First of all, thanks to Jelle Landstra, agricultural counselor, for giving me this internship opportunity.

As mentioned in the sentence before, this research has been the main part of the internship for my studies management and economics at Wageningen University. I would like to thank Frans Verhees, supervisor of the university, for his assistance and feedback.

To conduct this research I have been in the office of the Netherlands Embassy in Ljubljana from July till October 2009. In this way I would like to thank all my embassy colleagues for their assistance, enjoyable chats and delicious lunches.

This report could not have been written without the interviews with all the experts I asked for information. Many, many thanks to everyone who made some of their scarce time available to assist me, and that without any direct return.

And last but definitely not least, thanks to Liesbeth de Schutter for her input, ideas, help, critical comments and the nice trip to Vienna.

Neither the agricultural department in Budapest, nor Wageningen University, the Netherlands embassy in Ljubljana, nor the author are responsible for any mistakes written in this report.

Enjoy reading!

Henrieke Esselink
Ljubljana, October 2009

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Executive Summary

With slightly more than 2 million inhabitants, Slovenia is one of the smallest countries of the European Union. It is a parliamentary democratic republic since its independence in 1991. It is one of the most striving countries in transition. The accession to the EU came in 2004 and the euro as official currency has been introduced in 2007. Its economy is relatively open to the world.

Average size of a farm; 6.5 hectares
In 2007, 75,340 agricultural holdings were engaged in agriculture. The average size of 6.5 hectares per farm indicates the small scale structure of the sector. Most of the farms have small scale herds in the mountainous areas. The elevated landscape and the 60% forest cover limit large scale farming. The main agricultural area and the larger farms are located in the Podravska and Pomurska regions in the northeast. Developments in Slovene agriculture are similar to the rest of the world; smaller farms quit farming which gives space to the larger farms to enlarge more.

Policies for sustainable development of agriculture
The Ministry of agriculture, forestry and food is responsible for the agricultural policies. Since its EU accession, Slovenia has adopted the Common Agricultural Policy. Slovene policies strive towards sustainable development of agriculture, in which the production of safe, quality and affordable food is key. Furthermore, the environment and rural areas have to be maintained and protected as much as possible.

Beverages, dairy, meat, and bakery products large in food industry
The food industry contributed only 1.29% to the gross domestic product in 2008. The industry is closely related to the primary production from agriculture for the farmers. The largest branch in terms of turnover is the meat industry. The bread and bakery branch generates the second most turnover. Production of non-alcoholic and alcoholic beverages is the third largest food branch.

Dairy farming is considered as the key agricultural sector in Slovenia. Not only for the production of milk but also for the preservation of the landscape. Three large dairy companies process raw milk into milk products. 30% of the domestic produced raw milk is sold to Italian dairy processors and a small but growing volume of raw milk is imported. Slovenia's international competitiveness in primary production is decreasing over the years. Simultaneously, the dairy industry is not able to increase sales of domestic products, which decreases sector performance.

Beef production increasingly difficult
The production of beef comes from specialized beef cattle as well as from dairy herds. It is a rather fragmented sector with a relatively large number of slaughterhouses and processing companies. The financial performance of the meat industry is not very good since the largest processor of red meat is in a bankruptcy process since August 2009.

Two large pig integrations dominate pig production
In pig farming, basically three different categories of farms exist. The very small farms with less than 10 pigs for own consumption and the local market, the family farms that keep between 10 and 200 sows and, the large enterprises that produce

the large quantities. Two large, vertically integrated pig enterprises which control the entire production chain, from feed production, raising pigs, slaughtering, processing, distribution, and marketing and sales, are *Farme Ihan* and *Panvita*. They produce the major share of pig meat for the market. International competition is increasing, mainly due to the small scale of both production and slaughtering and processing of pigs. Pig meat is the most consumed type of meat in Slovenia.

The poultry sector is dominated by *Perutnina Ptuj*
The poultry sector is divided between the production of poultry meat and the production of consumption eggs. With approximately 60% of the Slovene market for poultry meat and eggs, the leading poultry integration is *Perutnina Ptuj*. It is an vertically integrated enterprise, with in-house production of feed, meat and eggs, slaughtering and processing, distribution system and retail stores. Others are *Jata Emona* and *Panvita*. It seems that production of poultry meat has the best future perspectives in the sense of good organization in modern integrated companies.

Poor development of horti- and floriculture production
The self-sufficiency rate of vegetables stands at 34%, which indicates the small scale production of vegetables. Large quantities of fresh and processed vegetables are imported. Just a few professional growers produce market vegetables, however production still takes place in plastic greenhouses only.

Floriculture is not very well developed and takes place on a very small scale as well. 90% to 95% of the plants and flowers available in shops and markets are imported, mainly from auctions in the Netherlands. The only modern nursery is *Ocean Orchids*, grower of orchids.

Other important agriculture and food branches are arable farming, the production of fruit and grapes, fisheries, manufacturing of bakery products, and the production of beverages. These branches contribute in either revenues, number of employees, and/or have an impact on the landscape and culture.

Retailers and consumers as driving forces of production chains
A few large retailers dominate the production chain. This makes the food industry largely dependent on the retailers. They are international players which are putting downward pressure on the sales prices of processors. At the end of the production chain, consumers have to put their money into it. Slovenes prefer high-quality, domestic produced products on the one hand, however they choose quite often the low priced products on the other hand.

Future perspectives
The small scale-scale and scattered structure of Slovene agriculture makes it not so much suitable for mass production which aims at the lowest production cost possible. It might be a good future opportunity to focus on specialist, high quality, ecologically produced (niche) products. However, to reach reasonable quantities of sales, these products should be widely available in the supermarkets, have a systematic way of branding, and consumers should be widely informed about the advantages of buying Slovene products. This requires large marketing budgets from the domestic food processors, which are not available yet. Nevertheless, the dairy and the poultry meat sector are doing relatively well.

1. Introduction

Agriculture, forestry, fishing and hunting contributed 2.06% to Slovenia's gross domestic product in 2008. Another 1.29% is added to the gross domestic product by the manufacturing of food products and beverages. Nevertheless, the significance of these sectors for Slovenia is larger than it seems on first sight due to the multipurpose roles it fulfills in the rural area.

The aim of this report is to provide a market overview of the Slovene agricultural production chains. The major production chains are described and briefly analyzed. The scope of this research is too wide to provide a real in-depth analysis of the different chains. Further research is necessary to get this detailed analysis.

Production chains start with the industries supplying to the farmers. The core of the chains are the agricultural holdings where primary production takes place. The produced raw materials are sold to the food industry to process it into several food products. The food products are distributed, eventually via wholesalers, to the retailers who sell it to the final consumer. Imports and exports take place in several stages of the chain.

The information used to write this report is gathered by primary and secondary research. Primary research is obtained via interviews with experts in several agricultural fields. Secondary sources of information are desk research and literature.

While reading this report, it should be taken into account that supply chains of agricultural products are more difficult than those in manufacturing. The main building blocks of the chain are biological, and the performance of the system depends on variable and often unpredictable processes such as growth and health.

Chapter 2 start with a general introduction about Slovenia. An introduction to Slovene agriculture is written in chapter 3. The chapters 4 till 10 describe the following different production chains; dairy, beef, pig meat, poultry meat, consumption eggs, vegetables, and floriculture. Finally, chapter 11 provides brief overviews of those agriculture and food branches not mentioned in a separate chapter, but that are worth mentioning anyway.

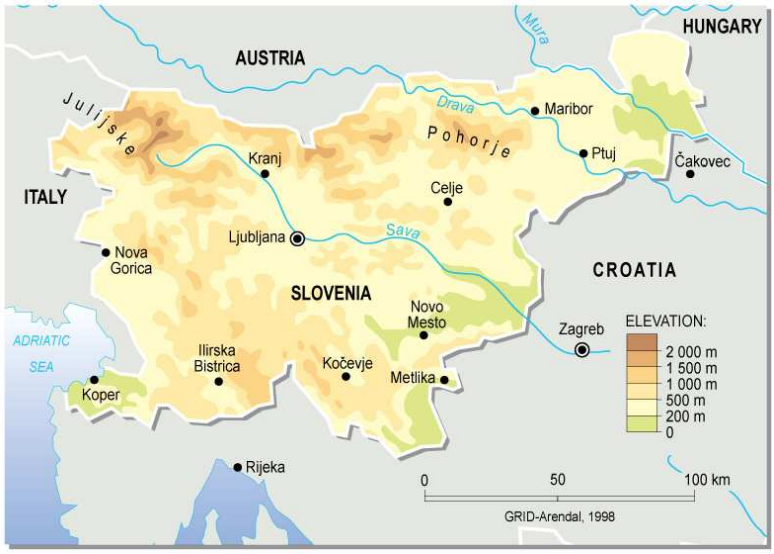
2. Slovenia in general

This chapter is an introduction to the Republic of Slovenia. Characteristics about the geography and the society are described in section 2.1 and 2.2 respectively. A brief history is written in section 2.3. Section 2.4 presents the political system. Finally, section 2.5 describes the Slovene economy.

2.1. Geography

Slovenia is located in Central Europe. It shares borders with Italy, Austria, Hungary and Croatia. It has a short coastline along the Adriatic Sea. The surface area is 20,273 km^2, which is half of the size of the Netherlands.
The capital and largest city is Ljubljana. Other important cities are Maribor, Kranj, Celje, Koper and, Novo mesto.

Figure 2.1; Map of Slovenia



Source: http://www.strategiestm.com (2009)

Slovenia's position between the Alps, the Dinaric Mountains, the Adriatic Sea and the Pannonian plain is the reason for its diverse climate. It has a continental climate in the centre, an Alpine climate in the northwest, and a sub-Mediterranean climate in the coastal area. The country is mostly elevated and around 60% is covered by woods and forests. So far 11.5% of land is under legal protection in nature reserves. Not surprisingly that these features influence the possibilities and developments of agriculture.

2.2. Society

According to the Statistical Office, Slovenia had 2,038,065 habitants on June 30th 2009. The main ethnic group is Slovene (83%). Italians and Hungarians form national minorities. Other minorities are former Yugoslavians (Serbs, Croats, Bosnians, Macedonians and Montenegrins), Albanians, and Roma or unspecified. Roman Catholicism is the most important religion among Slovenes. Other religions are Muslim, Orthodox, other Christian, unspecified or atheism.

The language is Slovene, also called Slovenian. This is a south-Slavic tongue that is mostly related to Croatian, Bosnian, Serbian and Montenegrin. Slovene is spoken by 2.4 million people, mainly living in Slovenia. The language is one of the most important features of the Slovenian culture. It is preserved through centuries even without national sovereignty. Nowadays, most Slovenes speak one or two foreign languages as well.

Besides language, art and culture helped the Slovenes to compensate for the lack of sovereignty within the Habsburg monarchy and the Yugoslavian Republic as well. The number and accessibility of cultural events is enormous, not only in the cities but in the small villages too.

Due to the geographical diversity, individual regions have developed various forms of economic activity, ways of life and cultural creativity. This makes the country attractive for tourists. They discover natural parks, ski resorts, thermal spas, beaches and different cuisines. The geography causes that numerous outdoor sporting activities are very popular.

2.3. History

The history starts 250,000 years ago, the time of the oldest proof of human habitation on Slovenian territory. Till the 14th century, many different tribes lived in Slovenia. Among them were Celtic tribes, the Roman Empire, Bavarians, Langobards, Frankish and Magyars. Around the 6th century, the Slavs started to develop an independent nation of Slovenes.

In the 14th century, Slovenia was taken over by the Habsburg empire. During the 600 years under the Habsburg dominance, the still important Slovene literacy language was created. By the end of the 19th century, industry had developed considerably and the people were similarly socially differentiated as in all the other developed European nations.

After World War I, Slovenia became part of the Kingdom of Serbs, Croats and Slovenes. This country was renamed several times between 1920 and 1991; it was referred to as Yugoslavia throughout this report. After World War II, all private property was nationalized. However, the break with the Soviet Union in 1948 was the starting point of a milder version of socialism.

As the most liberal part of Yugoslavia, Slovenia became strongly industrialized during the 1950s and 1960s. After the death of Josip Broz (Tito) in 1980, the economic and political situation became tense. This marked a new era in which Yugoslavia fell apart.

Slovenia became an independent country in 1991. Both the European Union and the United Nations recognized Slovenia in 1992. After the elections in 1992, the administration established a liberal political culture. The economy grew and adapted successfully to the world market. In comparison with other countries in transition it managed to prevent excessive social differentiation.

In May 2004, Slovenia was the first former Yugoslavian state that joined the EU and the NATO. The government with Prime Minister Janez Janša continued a successful economic policy. It succeeded in meeting the Maastricht criteria and joined the Eurozone on January 1st, 2007. Slovenia was the first member state from the 2004 accession round that successfully assumed EU Presidency in the first half of 2008.

2.4. Politics

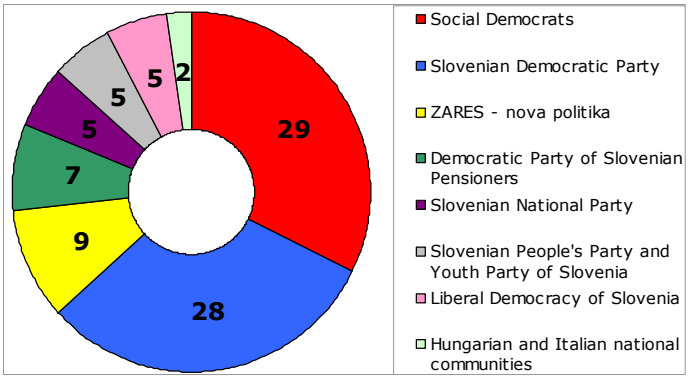
This section gives an overview of Slovenian politics. Paragraph 2.4.1 describes the political system and current administration. A more in-depth explanation of the Ministry of Agriculture, Forestry and Food is made in paragraph 2.4.2.

2.4.1. The political system and current administration

Since the disintegration of Yugoslavia, Slovenia is a parliamentary democratic republic. The present Constitution was adopted after the plebiscite in 1990 where 88% voted for sovereignty and independence. The state's authority is based on the principle of the separation of legislative, executive and judicial powers, with a parliamentary system of government. The people exercise their power through elections and referendums.

The legislative power is held by the National Assembly (Tweede Kamer), the National Council (Eerste Kamer) and the President. The highest legislative authority is the National Assembly. The 90 deputies are elected for a four-year term. Since the elections in 2008, the seats in the National Assembly are distributed among the parties as presented in figure 2.2.

Figure 2.2; Distribution of seats in the Assembly



Source: National Assembly of the RS

In the bicameral system, the National Council has less power than the National Assembly. Members of the Council are elected for five years. The Council consists of forty members and represents the social, economic, professional and local interests.

Since December 2007, Dr. Danilo Türk is the President of the Republic. Among other tasks, he represents the Republic of Slovenia and is the commander-in-chief of its armed forces. The president is elected for a five-year term.

The government has the executive power and it functions as a cabinet led by a Prime Minister. Since November 2008, the government consists of Prime Minster Borut Pahor, 15 Ministers as head of a Ministry and three Ministers without a portfolio. The current administration is on the centre-left side of the political spectrum. It is formed on the basis of a coalition agreement between the Social Democrats, ZARES, the Liberal Democrats and the Democratic Party of Pensioners.

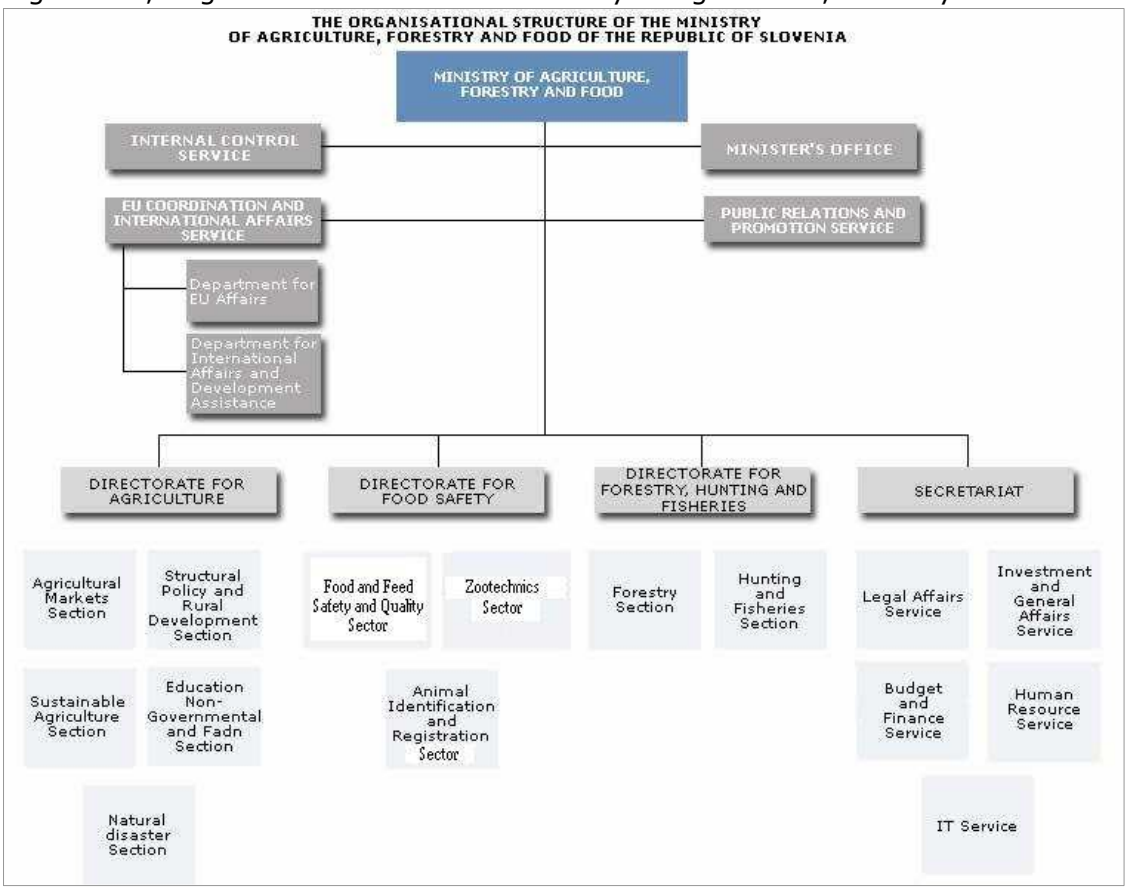
The third branch of the government is the judiciary. The highest judicial authority is the Constitutional Court. It has authority with regard to the protection of constitutionality, legality, human rights and basic freedoms.

Other important political institutions are the Court of Audit, the Bank of Slovenia, the Human Rights Ombudsman, the Information Commissioner, many interest groups and social partners, and the Slovenian Armed Forces.

2.4.2. Ministry of Agriculture, Forestry and Food

The Ministry of Agriculture, Forestry and Food (MAFF) is one of the fifteen ministries in Slovenia. It performs tasks in the fields of agriculture, rural development, forestry and hunting, food safety and quality, and fisheries. Figure 2.3 presents the organizational structure of the Ministry.

Figure 2.3; Organization chart of the Ministry of Agriculture, Forestry and Food



Source: Ministry of Agriculture, Forestry and Food

Directorates

The three directorates perform tasks in different areas of MAFF. The directorate for agriculture implements the Direct Payment Policy of the Common Agricultural Policy (CAP). It manages the complete range of agricultural policies. The directorate for food safety deals with food safety and food quality issues throughout the entire production chain. As the name implies, the directorate for forestry, hunting and fisheries deals with forestry, hunting and fisheries. The secretariat is responsible for running and supporting work of the MAFF.

Furthermore, the Ministry has four bodies to implement and execute their measures. These four bodies are; the Agency of the RS for Agricultural Markets and Rural Development (paying agency), the Inspectorate of the RS for Agriculture, Forestry and Food (control body), the Phytosanitary Administration of the RS and the Veterinary Administration of the RS.

Minister Dr. Milan Pogačnik
The Minister is head of the Ministry of Agriculture, Forestry and Food (MAFF). Since November 2008, Milan Pogačnik is the Minister in the administration of Prime Minister Borut Pahor. He has been Minister of Agriculture from April till December 2004 as well.

Milan Pogačnik is born in 1946 in Celje. In 1971, he graduated from the Biotechnical Faculty, Department of Animal Science. After obtaining his MSc and PhD degrees in the field of pathological morphology, he was elected Assistant Professor at the University of Ljubljana in 1984, Associate Professor in 1989 and Professor in 1994.

During his 33 years of work, Prof. Pogačnik has participated in the preparation of the Agricultural Development Strategy. He has developed an interdisciplinary research and development group which prepares research programs for the sustainable use of abandoned agricultural land. These technologies are being successfully implemented in other countries, including China. He received the highest award of the Republic of China for a foreign scientist in 2008.

As head of the Veterinary Faculty, he contributed to bringing the most veterinary activities in Slovenia together within one institution. In addition to this, he was also President of the University of Ljubljana Executive Board, Governor of VetNEST, member of the Executive Board of the European Association of Establishments for Veterinary Education, the President of the Veterinary Council at the MAFF, and advisor to the Minister of Agriculture, Forestry and Food.

Since 2007, he has been a member of the EFSA Executive Board. He is also a member of the ECVAM Scientific Advisory Committee and a standing member of the Slovenian delegation at the annual General Session of the OIE (Office International Epizootie) in Paris.

State Secretary Sonja Bukovec, MSc.
Sonja Bukovec is born in 1954. She graduated from the Faculty of Economics and Business in Maribor. In 1996, she obtained the title of certified government auditor and in 2000 her master's degree, from the Faculty of Economics, University of Ljubljana. In 2003, she qualified as an internal government auditor at the Ministry of Finance.

She worked in diverse leading functions at Ljubljanska banka and the Bank of Slovenia. At the Agency of the RS for Restructuring and Privatization, she was the managing director. She was government advisor and head of the budget section at the Ministry of Finance. As director-general at the Agency of the RS for Agricultural Markets and Rural Development, she acquired the SAPARD accreditation and the full accreditation for the payments of the EKUJS fund. Furthermore, she was a certified auditor at ITEO auditing company, resident twinning advisor at Agrar Markt Austria, and team leader at Agroconsulting company in Macedonia. Shortly, she has knowledge of the agricultural processing industry and expertise of the position of agriculture and rural areas in the Balkan countries. .

2.5. Economy

Since its independence in 1991, Slovenia's economic development has been successful, making it one of the most thriving countries in transition. The growth and stable economic policies made that Slovenia became the first new EU member to adopt the euro on January 1st, 2007.

Globalization and trade

The economy has traditionally and relatively as compared to other Communist states, been open to the world and it is highly dependent on international trade. The level of internationalization, measured by the average share of imports and exports in gross domestic product (GDP), is one of the highest in the region.

Although the Slovene economy is fully open and liberalized on paper, there are obstacles. Political and family ties are very important in business, resulting in nontransparent public leadership. Also the state has large share and influence in major companies and banks.

The structure of Slovenian merchandise imports and exports indicates that most goods are traded with EU countries. The main trading partners are Italy, Austria, Germany and Croatia. The EU-15 countries are important for imports and exports. On the export side, the markets of former Yugoslavia are important as well. The Netherlands is the sixth largest origin of imports for Slovenia and the 15th largest destination of exports. The main import products from the Netherlands are flowers.

Several business risk evaluations present Slovenia as the lowest risk country of the central and eastern European transition countries. The open-minded business environment offers good opportunities for investment. Another important indicator of how the Slovenian economy is integrated into the international business environment is the direct investment by foreign investors in Slovenia (inward investment) and of Slovenian investors in foreign countries (outward investment).

Economic growth

Table 2.1 provides the main economic indicators over the last years. The gross domestic product (GDP) has been growing every year. The real growth rate of GDP has been higher than the EU average. This has enabled a decrease in the development lag.

Table 2.1; Macro-economic indicators

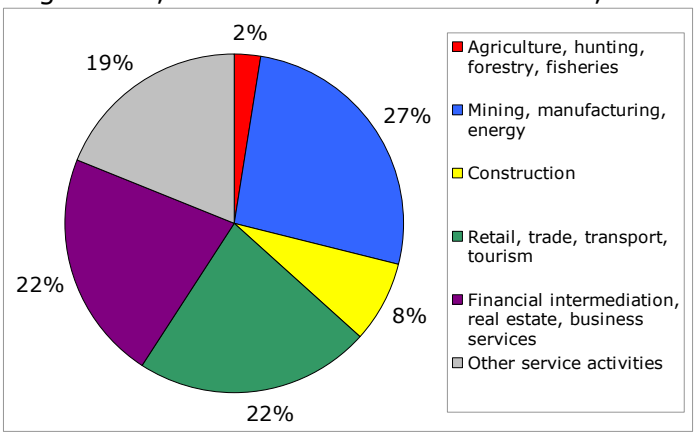
	2005	2006	2007	2008	2009 forecast	2010 forecast
GDP real growth rate (%)	4.3	5.9	6.8	4.1	-7.3	0.9
GDP in mill. €	28,704	31,013	34,471	37,403	38,905	41,435
GDP per capita (€)	14,346	15,446	17,076	18,464	19,151	20,345
Trade balance as % of GDP	-2.0	-2.8	-4.8	-4.6	-2.8	-
Export growth (%)	-	-	13.8	5.8	1.5	-
Import growth (%)	-	-	15.7	6.5	0.5	-
Rate of unempl. by ILO (%)	6.5	6.0	7.3	6.3	8.5	10.6
Labor productivity (% GDP per employee)	4.5	4.2	3.7	2.4	3.1	3.7
Inflation	2.5	2.5	3.6	5.7	1.0	1.5

Source: Statistical Office of the RS, Invest Slovenia, IMAD

Main economic activities
Figure 2.4 presents the contribution of the different sectors to GDP in 2007. Services contribute 41% to GDP, followed by manufacturing with 27%. Retail, trade and tourism are important as well, with a 22% contribution. The agricultural sector is declining as a considerable element in the economic structure.

This shift in economic structure indicates an increase in the importance of knowledge-based services. Technology-intensive production activities are becoming more important in manufacturing. The food industry is one of the larger branches within manufacturing, although its added value share has been gradually decreasing since 2000.

Figure 2.4; Contribution of sectors to GDP, 2007



Source: Statistical Office of the RS

An important business opportunity is tourism. Slovenia is a relatively undiscovered European destination with an enormous potential. The new trademark of tourism is; I FEEL sLOVEnia. This reflects the essence of Slovenia: everyone who visits it falls in love with it.

Small and medium-sized companies or enterprises (SME) play a key role in the economy. They create new jobs, contribute to a more competitive environment, and generate considerable income and added value. SMEs have the largest share of the service sector, where they ensure the most jobs. Nevertheless, the main sources of Slovenia's wealth and competitiveness come from the large companies.

The labor market
In line with the economic growth, there was an increase in employment over the last years. Due to the economic crisis however, unemployment increased in 2009. The estimate for 2010 is an unemployment rate of 10.6%.

The wages policy ensures an increase in wages in relation to growth in labor productivity. According to Euromonitor International, the average gross income per month in 2008 was €1538. In comparison, the gross income per month in 2008 was €631 in the countries of former Yugoslavia, €834 in the EU-12 countries and €2597 in the EU-15 countries.

Apart from this, the level and amount of education has increased rapidly over the past decades. When more people are reaching a higher level of education, the result is a well-educated labor force. This makes it possible to change to a society based on knowledge with a good research and development system.

Financial market
The capital market regulations are in line with the EU standards of developed financial markets. Since the adoption of the Euro, investments from foreigners are simplified. At the Ljubljana Stock Exchange, shares and bonds of Slovene companies are traded. Other important institutions in the capital market are the Securities Market Exchange and the Central Securities Cleaning Corporation.

The Bank of Slovenia is the central bank and exists since 1991. As part of the European Central Bank it implements the common monetary policy, co-manages the official monetary reserves of the Member States and, promotes the smooth operation of payment systems.

There are 20 banks operating in Slovenia. By far the largest one is Nova Ljubljanska Banka (NLB) with a market share of 32%. Three other banks, each with a market share of around 6.5%, are SKB Banka, UniCredit Banka Slovenija, and Banka Koper. The Deželna Banka Slovenije is the one that is more focused on farmers than the other banks. It is the only bank with a special farmers department.

Economic and financial crisis
The financial crisis hit Slovenia late and less severe than in other EU member states. The reason is that Slovene banks had less links with foreign banks and the government had firmer grip on the banks than elsewhere.

The economic crisis on the contrary has hit Slovenia strongly, since its economy is highly export oriented. The sectors that are hit most by the crisis are the textile industry, household appliance producers, metal processing industry, automotive industry, electronics and electrical engineering industry and the real estate business.

Several measures have been taken to fight the crisis, but the results are rather modest. Measures in the field of employment mainly aim at the preservation of social peace. New jobs were created mainly on the basis of self-employment of people, who merely are surviving and not having serious business plans for the future.

Furthermore, the flow of liquid funds which banks raised from the 'bank guarantee scheme of the state' to enterprises in forms of loans is also rather modest. The enterprises that succeeded in getting loans at banks are mainly using it to fund their current activities and not for investments.

As a consequence of the crisis, unemployment has increased considerably from 60,660 in August 2008 to 88,106 in August 2009. Unemployment would reach over 100,000 if the state would not give subventions for the part time work. In the first half of 2009 more than 3000 individuals established sole proprietorship for which the state gave extra funds. Recent social strikes in companies organized by workers themselves show that employees are dissatisfied with their salaries and that trade unions lose influence.

3. Introduction in the agriculture production chain

This chapter provides a general overview about the agriculture and food sector in Slovenia. Other relevant topics are described as well. Among these are agricultural policies, the environment, the retail sector, and consumer characteristics. Section 3.1 is an introduction in the Slovene agriculture. Developments over the past years are mentioned in section 3.2. Section 3.3 is about agricultural policies. Organic farming is covered in section 3.4. The different functions of the rural area are described in section 3.5. Section 3.6 introduces the food processing industry. A brief overview of the retail sector is given in section 3.7. Finally, the Slovene consumer is mentioned in section 3.8.

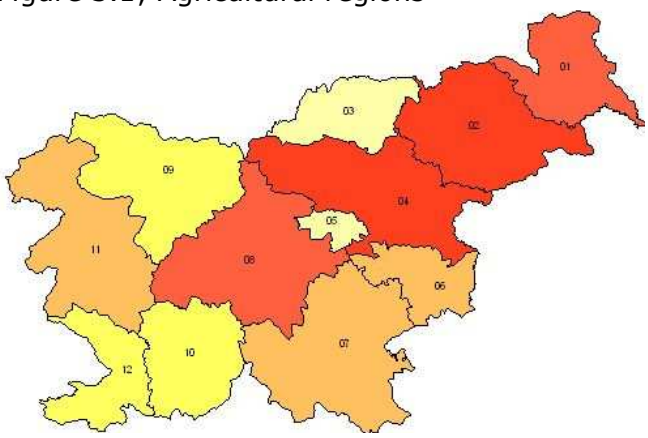
3.1. Introduction in Slovene agriculture

This section provides an introduction in the Slovenian agricultural sector. The contribution of agriculture, forestry, hunting and fishing to the gross domestic product was only 2.0% in 2008. Of course, the significance is greater than it seems from this number. The sector fulfils multipurpose roles in the rural area among which; earning income for farmers and the preservation of landscape.

3.1.1. The agricultural area

The total amount of utilized agricultural area (UAA) is 488,774 ha. This is almost 25% of the total surface area of Slovenia.

Figure 3.1; Agricultural regions



Source: Statistical Office of RS

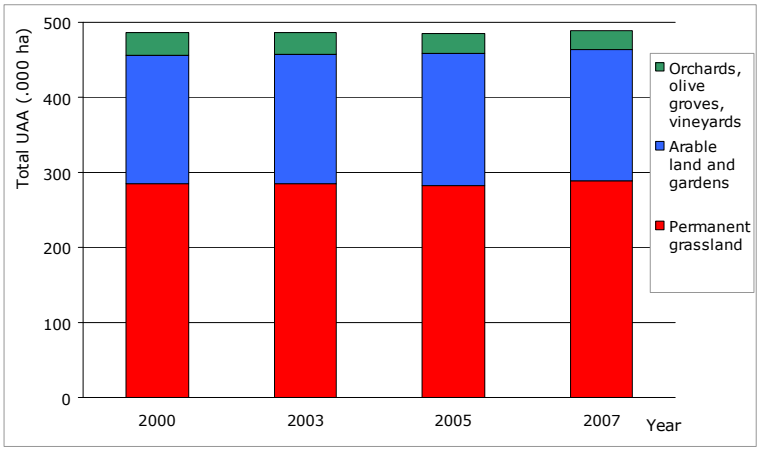
Figure 3.1 presents the agricultural areas in Slovenia. The dark red colored regions, Podravska (2) and Savinjska (4) have the most farms, the highest value in monetary terms and the main part of UAA. This is followed immediately by Pomurska (1) and Osrednjeslovenska (8). The least intensive agricultural areas are Koroska (3) and Zavaska (5 – the small area around Ljubljana).

The Pomurska and Podravska regions in the northeast are seen as the main agricultural regions. The density of farms is highest there. Furthermore, these regions are more or less flat which makes it suitable for agricultural production.

Substantial production of agricultural products of almost all sectors takes place in the northeast of Slovenia. Orchards, olive groves and vineyards are located in the hilly areas and along the coast as well.

Figure 3.2; Utilized agricultural area (2007)

Figure 3.2 represents the UAA regarding its purpose. Permanent grassland represents 60% of UAA. More than 20% of UAA is used for arable land and gardens. Arable land is mainly used for the production of feed as maize, root crops and green feed. These numbers confirm that livestock farming is important.



Source: Statistical Office of RS.

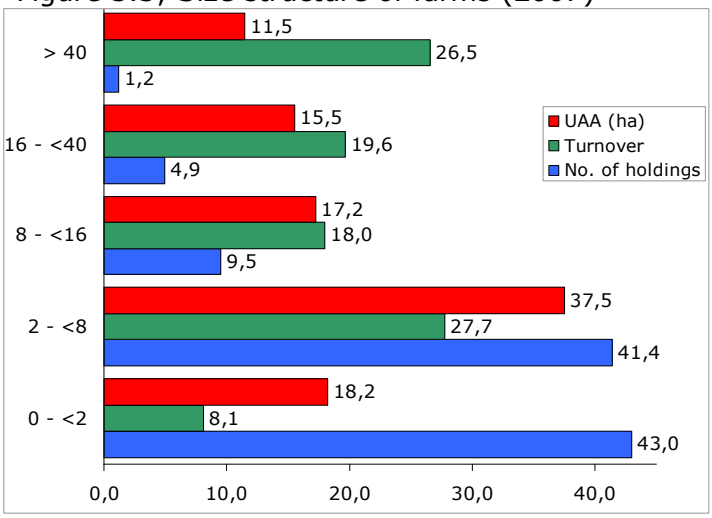
Almost 500,000 hectares of land within Slovene boundaries are defined as less favored areas (LFA). LFA's are hilly and mountainous areas with Karst features or other factors that limit the possibilities of farming. Only 10% of the farms have no LFA's within their boundaries.

3.1.2. Size of agricultural holdings

According to the data from the Statistical Office of RS, a total of 75,340 agricultural holdings were engaged in agriculture in 2007. These holdings used 488,774 hectares of the UAA and they added €741.4 million to the gross domestic product.

Figure 3.3; Size structure of farms (2007)

Figure 3.3 presents the size structure of agricultural holdings regarding their size in hectares. The data presented in the figure are percentages. The number of farms with less than 8 ha was 84.4%, while they utilize 55.5% of land and add just 35.8% to the total turnover. On the other hand, only 1.2% of the holdings utilize more than 40 ha on average, while they use 11.5% of land and make 26.5% of the turnover.



Source: Statistical Office of the RS

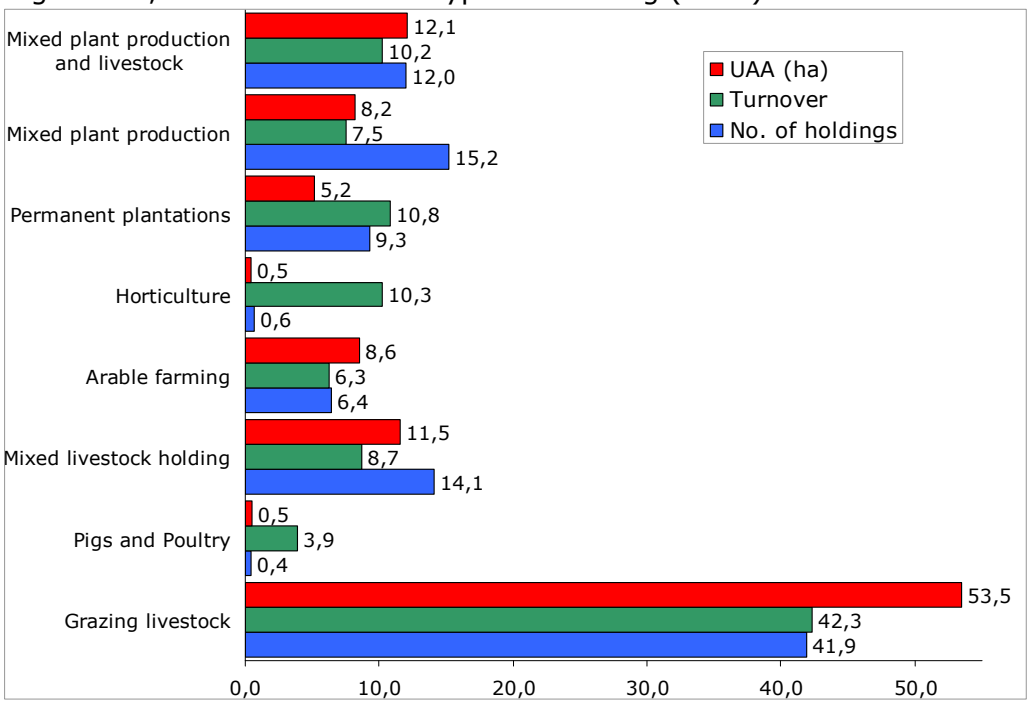
In 2007, the average size of an agricultural holding totals 6.5 ha. This small scale structure is rather unfavorable for large-scale market production. The main reason for this structure is the hilly, mountainous landscape. This prevented the building of a lot of state farms, during the Socialist era.

The second reason is the age structure of farmers on family farms. The share of farmers older than 55 years was 34% in 2007. Generally, they own small farms and are producing small quantities as long as they are able to do that. The government has taken some measures to encourage ageing farmers to retire, and to encourage the young to decide to take it over. The ratio between age groups is more favorable on the larger farms. Farms with more than 10 ha, are for 80% owned by farmers younger than 55 years.

3.1.3. Types of farming

Figure 3.4 presents the shares in utilized agricultural area, turnover and the number of holdings by type of farming. Except for the horticulture sector, the shares in these three measures are not very diverse.

Figure 3.4; Shares of different types of farming (2007)



Source: Statistical Office of the RS

Both figure 3.4 as well as figure 3.5 on the next page show that grazing livestock or, in other words cattle farming is by far the largest agricultural sector. Therefore, dairy and beef production are described in the chapters 4 and 5 respectively. The production of fodder is addressed in these chapters briefly.

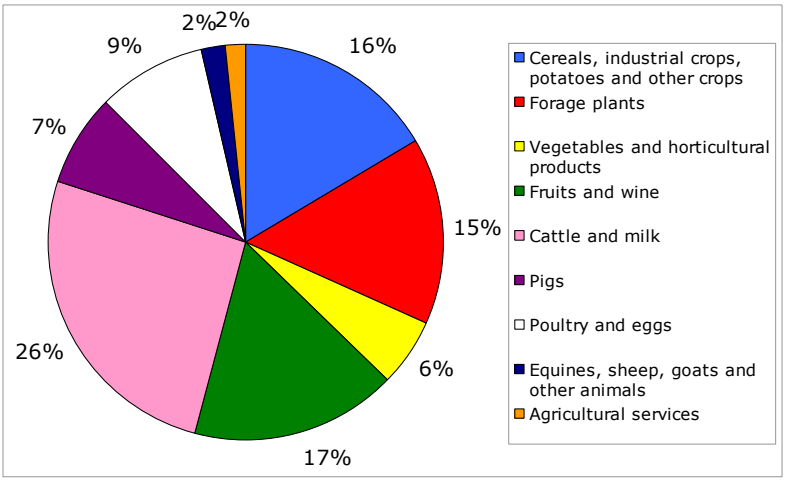
Pigs and poultry do not have very large shares in these figures. However, some large scale and modern production of pigs and poultry exists, which is described in the chapters 6, 7 and 8 respectively.

The production of vegetables and floricultural products does not take place on a large scale, however these chains always are of interest for the Netherlands. Therefore, these production chains are mentioned in the chapters 9 and 10.

Chapter 11 mentions different agricultural and food sectors briefly. These are arable farming, the production of fruit and grapes, fisheries, manufacturing of bakery products and the manufacturing of beverages.

Figure 3.5; Gross agricultural output per sector (2007)

Figure 3.5 presents the contribution of different agricultural products to the gross agricultural output. The total value of agricultural output was € 1,113 million in 2007. At the same time, 2.0% of GDP equals €828.7 million. The fact that the value of agriculture as a share of GDP is lower than the gross agricultural output indicates that imports exceeds exports.



Source: Statistical Office of the RS

3.2. Developments in agriculture

This section gives an overview of the backgrounds of the agricultural development. The start is the Socialist era, when land has been expropriated by the state to form large state farms. The unfavorable landscape and the mentality of the Slovenes caused that the majority of farms did not get into state farms. The former state farms still exist as agricultural enterprises. After independence, expropriated land is returned to the original owners who divided the small pieces between their children.

Under the Socialist era, the independent farmers were not allowed to own more than ten hectares of favorable agricultural land. Slovenes have the mentality that land is the type of property which is not sold if not completely necessary. Ownership of land is fragmented, due to the reasons mentioned above.

Nowadays, farmers (have to) rent several small pieces of land from different owners, mainly on the basis of short-term contracts. This makes it difficult for farmers to build up some capital and to reach economies of scale.

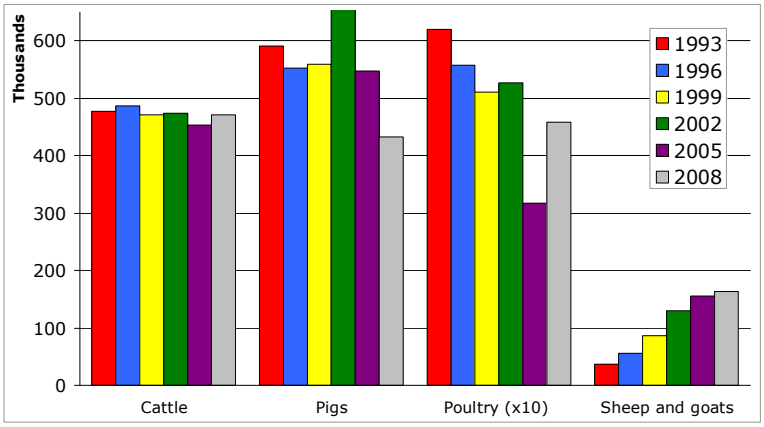
Trade in land does not happen on a large scale. Almost no land owners are willing to sell their property, even not when they are living in cities. The prices of the available land varies a lot and is dependent on several circumstances. For land restricted farming, land reforms may be a good opportunity. However, it will be very complicated to get this done in the near future.

Livestock and animal products

Because of an intensive restructuring and consolidating process during the 1990s, the number of farms decreased rapidly after independence. In the 2000s this decrease is still going on but slowed down.

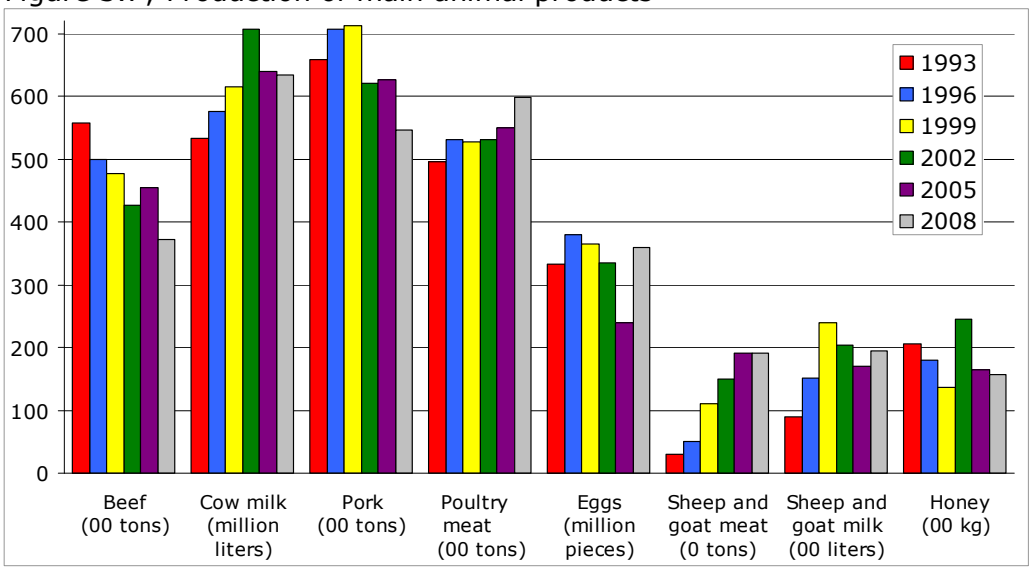
Figure 3.6 presents the development in the absolute number of livestock between 1993 and 2008. Figure 3.7 presents the trend in the amounts of meat and the other important animal products produced between 1993 and 2008.

Figure 3.6; Number of livestock over the years



Source: Statistical Office of RS

Figure 3.7; Production of main animal products



Source: Statistical Office of the RS.

Figure 3.6 and 3.7 illustrate some interesting developments. The number of cattle is more or less on the same level, while the amount of beef produced is decreasing and the amount of milk produced is increasing. This indicates that cattle farmers are specializing towards more milk production (and less beef production).

Both the number of pigs and the amount of pig meat produced is decreasing. The number of poultry is decreasing, while the amount of poultry meat produced is increasing and the amount of eggs is more or less at the same pace. This indicates more meat and egg production per chicken.

The number of sheep and goats is increasing, as is the amount of sheep and goat meat and milk. For Slovenia, the production of honey is of particular interest since it is producing a lot of honey relatively. Over the last years, the production of honey decreased.

3.3. Agricultural policy

Agriculture in Slovenia started already in 1999 to prepare for the EU accession in 2004. Before the introduction of the Common Agricultural Policy (CAP) it adapted its own national agricultural policy to it to ensure a smooth transition. The most important instrument of financial aid to farmers, the direct payments, was introduced. These payments are guaranteed support coupled to the amount of inputs. Direct payments are intended for compensation of lost revenue due to the reduced market-price protection.

These measures and the funds from the SAPARD pre-accession aid program made a smooth transition to CAP possible. The Rural Development Program (RDP) 2004 – 2006 and the CAP reform in 2007 were a transition towards the RDP 2007 – 2013.

RDP 2007 – 2013

The envisaged RDP 2007 – 2013 was introduced in 2007. The program is written by both Slovenia and the European Commission. It includes the development goals and policy for agriculture and forestry and is divided in the following axes;

1. Improvement of the competitiveness of the agricultural and forestry sectors;
2. Improvement of the environment and rural areas;
3. Improvement of the quality of life in rural areas and the promotion of diversification activities;
4. Leader incentive intended for the construction of local employment capacities and diversification.

The 2nd axis is seen as the most important and therefore 50% of the funds are spent on measures within this axis. The 1st axis absorbs 33% of the budget and the 3rd axis receives another 11%. Over the period 2007 to 2013, €1,157 million is reserved to spend on the program. €900 million is financed by the EU and the rest, €257 million is paid by the Slovene government.

Subsidies

The Agency of the RS for Agricultural Markets and Rural Development is charged with making all the payments to the farmers. In 2008, they paid €182.1 million from European funds and €116.6 million from the Slovene budget.

The payment system seems very complicated. Nevertheless an attempt is made hereafter to describe the different possibilities for farmers. Concrete payments can be divided in basically three different fields;

- **Direct payments**, the non-production dependent payments for farmers. Three types of payment rights are the payment per hectare of the entitled surface area, a payment right for the production of fruits, vegetables and potatoes, and a payment right for fallow land.

  Meanwhile, some production-coupled payments remained to prevent any major abandonment of production. These are the premiums for animals, subsidies for legumes, energy plants and shellfish and payments for individual supplements as milk, sugar and cattle farming.

- **Measures on agricultural markets**, these are international trade, intervention and promotion.

- **Rural Development Plan 2007 – 2013**, contains early retirement measures, support for the introduction of EU standards, support for technological development and modernization in agri and food, countervailing payments for less favorable areas, agri–environmental measures, support for the diversification of on-farm activities and other subsidies.

Future perspectives of agriculture policy
Slovenia supports small scale family farming and sustainable agriculture. The vision and goals of agricultural development till 2020 state the following. Stable production of safe, quality and affordable food, maintenance of cultivated land and fertility of agricultural areas, protection of land against pollution and excessive use and implementation of environmental protection and nature conservation principles are the pillars of agricultural development.

Therefore, EU policies that limit subsidies for large farms and stimulate lifestyle concepts as "organic" and "alpine" farming are favored by farm policies. Support for organic agriculture is strong. The government is aiming to devote 15% of agricultural land to organics by 2015, while it was 6% in 2007. All political parties promote environmental friendly and sustainable agriculture.

Due to their function as residential and tourist areas, the rural areas are important in Slovenia. Politicians support rural development programs within the EU. Between 2007 and 2013 a total of €900 million will be provided by the EU for such programs. These EU funds are to be matched by national funds totaling more than €1.2 billion.

The economic crisis
During the current recession, the aim of the agricultural policy is to overcome the consequences of the crisis. In practice, this means that payments of all CAP measures for 2008 are ensured by June 30th, 2009. This includes the direct payments, payments for farming in LFAs and agri-environmental measures. Furthermore, the planning is to make most LFA payments for 2009 already in December of this year.

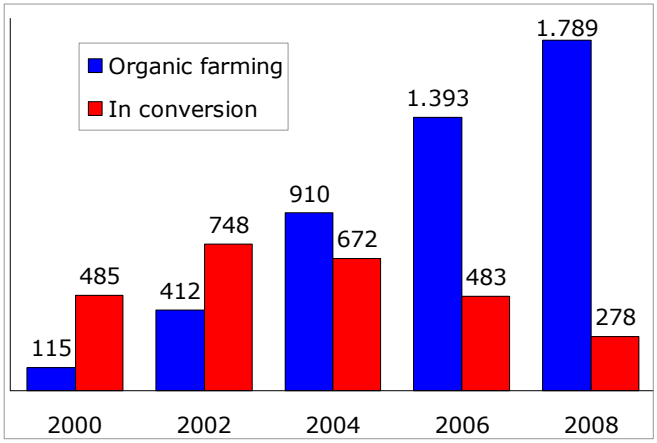
Furthermore, in September 2009, several short term measures to support the Slovene farmers on the low prices of milk and wheat are made. In the beginning of October 2009, Minister Pogačnik is calling in the EU for extra short-term measures to help farmers cope with the crisis and the dire situation on the milk and dairy products market.

3.4. Organic farming

Organic farming is basically the production of agricultural output without the use of chemicals or GMOs. Figure 3.8 presents the development of the number of farms with organic production and the number of farms with production in conversion from regular to organic farming. It shows an increasing number of organic farms.

In 2007, 5.8% of the total utilized agricultural area is used for organic farming in Slovenia. For comparison, this number is 4.7% for the EU-15 countries and 2.5% for the Netherlands. The Slovene government is aiming to devote 15% of the agricultural land to organics by 2015.

Figure 3.8; Number of organic farms



Source: Ministry of Agriculture, Fishery and Food

Table 3.1 presents the amount of land used for organic farming in 2008. It shows that organic farming takes place most on permanent grassland. This is mainly grassland were suckler cows are grazing. The production of organic milk is low because of the limited domestic market.

Table 3.1; Land (ha) used for organic farming (2008)

	Organic farming	**In conversion**
Permanent grassland	23,285.5	3,023.5
Arable land	2,193.1	415.1
…of which vegetables	88.8	12.4
Orchards	588.3	124.0
Vineyards	52.5	138.2
Olive groves	5.5	10.8

Source: Ministry of Agriculture, Fishery and Food

Experts tell that fruits and vegetables are the main products produced organically. Small scale producers are selling these products directly on the farm and on local markets.

The organic or biological products on the supermarket shelves are imported mainly. Reasons for this are the small scale production and the dispersed way of certification. To get organic farming towards a more professional level, several organizations should merge and have one straightforward way of certification.

The future perspectives for organic farming are quite good. The strong support for organic farming by agricultural policies makes that payments to organic farmers are increasing. This gives the opportunity to improve quality standards and factor productivity. Furthermore, organic, traditional, specialist, high-quality products seem to be the domestic niche products in which Slovene agriculture is able to compete with the strong multinational brands.

3.5. Different functions of the rural area

The rural area has a broad range of different functions, among which agriculture, hunting, forestry, nature conservation and tourism. This section makes an attempt to describe the non-agricultural functions of the rural area.

Forestry

Forests are a very important part of the landscape, since they cover officially almost 60% of the surface area. Unofficial numbers indicate even larger numbers. In terms of forest cover, Slovenia is in the third place in Europe, after Sweden and Finland. In 2007, there were 489,000 forest holders with an average surface area of less than 3 hectares. Such fragmentation makes professional work and optimal wood utilization difficult. The contribution of forestry to Slovenia's gross national product has been around 0.2% for years.

At the moment, the potential of forest biomass is large and not fully utilized. Forest experts see that the future of forests lies in the important role it can play in the acquiring of so-called green energy. Another point is the integration within forest proprietors associations, joint wood sales and certification.

Forests are the natural coverage for almost the entire surface area of Slovenia. When agricultural land is abandoned, forests start to grow and the land is not available anymore for agriculture. This is seen as a significant problem by experts. Measures to preserve agricultural land and restrict the growing forest area are taken on a small scale, but no national plan is in place to prevent this.

Important organizations which are involved in preserving forests and optimizing the economical value of forest are the *Farmland and Forest Fund of the RS*, the *Slovenia Forest Service* and the *Slovenia Forestry Institute*. The six largest firms that are involved in forestry and logging are *GGP d.o.o.*, *GG Maribor d.d.*, *GG Slovenj Gradec d.d.*, *GG Novo Mesto d.d.*, *GG Bled d.o.o*, and *Gozdarstvo Grča d.d*.

Nature conservation and hunting

In Slovenia, national, regional and other parks are under natural protection. These parks preserve the different types of landscapes and nature. This policy of nature conservation attracts many tourists.

The amount of forests and mountains make that an extensive wildlife exist. Bears, wolfs and other animals are present in the rural areas. Not for the happiness of farmers. To prevent that the amount of animals become too many, hunting is a well-accepted way of controlling wild animal populations.

Recreation and tourism

Several recreational and tourism activities take place in the rural areas. In general, Slovenes are very much outdoor people who like hiking, skiing, climbing, and biking. The potential to attract tourists to Slovenia due to this kind of activities is enormous. Agriculture plays a key role to preserve the typical, attractive landscape.

On farm tourism takes place on a small scale. It is supported by government subsidies and seen by policy makers as an important way to preserve the livability of the rural areas.

3.6. Food processing industry

The raw materials produced by the agricultural sector have to be processed in order to sell it on the market. Processing and adding value to the raw materials is the core of the food processing industry.

In 2007, 1,006 companies were registered as manufacturers of food and beverages. They reached a turnover of €2.1 billion. In 2008, the food industry added only 1.3% to the gross domestic product. The added value to GDP decreases from 2.4% in 2000 till 1.3% in 2008. This is mainly due to a more rapid growth of other sectors.

Table 3.2 presents the official figures about the food processing industry between 2003 and 2008. However, there is some discussion whether this is the right picture or not. Notice the increasing number of enterprises while the number of employees is decreasing. Simultaneously, turnover, production value, gross capital formation and profits are increasing. The economic performance of the industry seems quite positive here.

However, this is actually not the right picture. Ajpes, the agency for Public Legal Records and Legal Services, reports a net loss of €2.8 million for the food industry in 2008. Several experts mention the negative performance of the industry as well.

Table 3.2; Key data on manufacturing of food and beverages

	2003	2004	2005	2006	2007	2008
No. of enterprises	824	808	806	947	1,006	-
No. of employees	22,208	19,510	21,461	19,038	18,397	-
Turnover (mill. €)	2,044	1,803	1,935	2,007	2,116	-
Production value (mill. €)	1,796	1,792	1,717	1,843	1,899	1,946
Gross capital form. (mill. €)	149.3	175.2	89.1	91.1	91.7	-
Profits / losses (.000 €)	-	-5,552	26,536	35,300	90,405	-
% added to GDP	2.26	1.89	1.68	1.58	1.48	1.29
Consumer expenditure on food (mill.€)	3,085	3,137	3,232	3,364	3,685	4,001

Source: Statistical Office of the RS

Before the EU accession, the food processing industry was heavily protected by subsidies. There was no pressure on the producers to achieve economic optimum. Sophisticated economic approaches have not been developed in such a way as their foreign competitors. At the same time, the quality of products was at the same level or even higher than in other EU countries.

The accession opened up the market and the level of subsidies deteriorated. The processors had to invest heavily to modernize and improve competitiveness. It was necessary since they had to fulfill the EU hygiene requirements and lost market protection. The investments increased indebtedness and influenced financial business performance negatively.

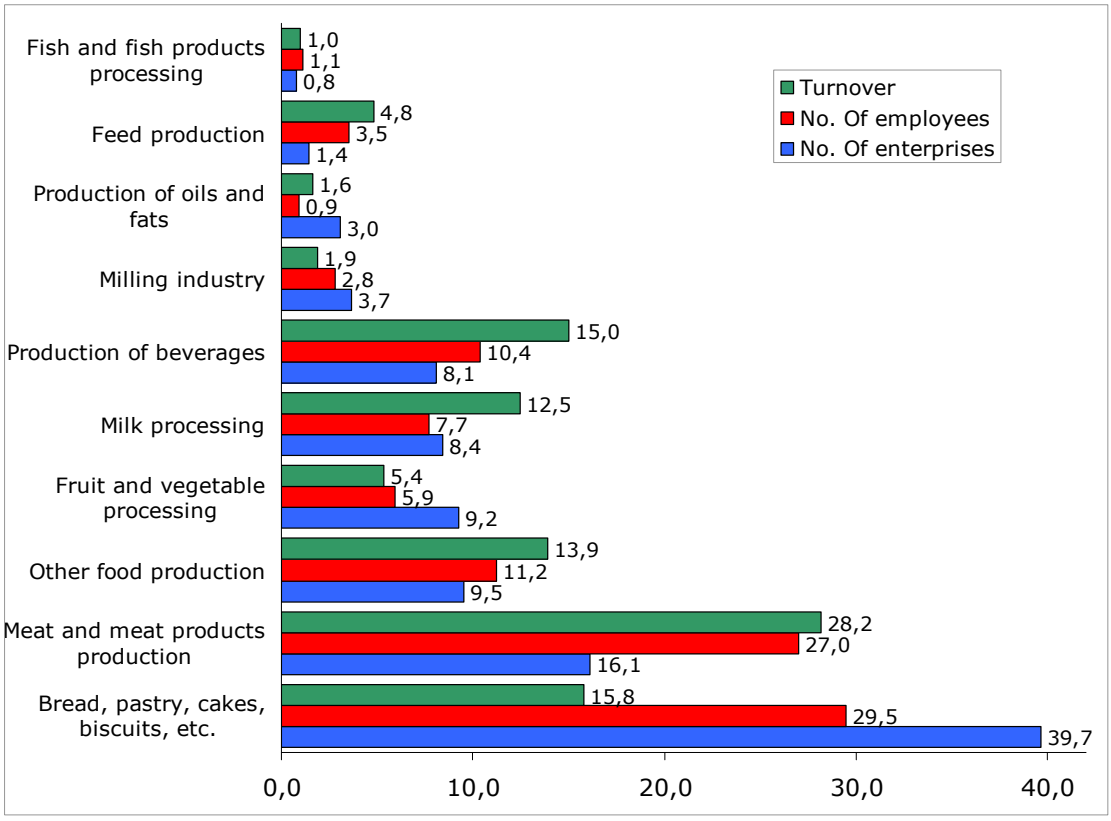
Nowadays, the competitiveness of the Slovene food industry is rather modest but it is increasing. The main strengths are the high quality of products, the connotation of natural, healthy, and less artificial products, the strong presence on the domestic market, and the preference of Slovene consumer for domestic products.

The major weakness of the sector is the fragmentation. The consolidation process is still going on but slowed down over the last years. Other weaknesses of the sector are cost ineffectiveness and underdeveloped marketing approaches. The product assortment is wide enough, but not deep enough. The retailers put downward pressure on prices. This is the main reason for the negative margins and profitability in 2008.

Branches of the food processing industry

Figure 3.9 shows the shares of the individual branches of the food industry in total turnover, employment and the number of enterprises in 2007. This figure gives an indication of the contribution of the branches to the entire food sector.

Figure 3.9; Shares of different branches in the total turnover, employment and number of enterprises in the food processing industry in 2007 (%)



Source: Statistical Office of the RS

The highest turnover is generated by the production of meat and meat products. This is mentioned in the chapters 5 (beef), 6 (pig meat), and 7 (poultry meat).

The second largest in terms of turnover is the bread and bakery branch. This is the largest in terms of the number of enterprises and number of employees. The bakery branch as well as the milling industry are mentioned briefly in section 11.4. The third largest branch is the beverage production, which is mentioned in section 11.5.

Other branches are too small to mention separately or are mentioned within the context of the corresponding production chain.

Important food processors
Table 3.3 presents the main Slovene based food processors. According to industry experts these companies are highly influencing the food market.

Table 3.3; Main Slovene food processors (2008)

Name	Core activity	No. of empl.	Turnover (,000 €)	Net profit (,000 €)
Perutnina Ptuj Gr.	Production of poultry meat	3,381	241,000	8,639
Žito Group	Bakery and bakery products	1,514	118,217	(1,421)
Droga Kolinska Gr.	Coffee, tea, drinks, spreads	2,780	387,692	6,207
Ljubljanske Mlek.	Dairy processor	629	165,600	3,400
Mlinotest Group	Mfr. of grain mill products	843	50,000	749
MIP Group	Meat processor	In bankruptcy process		
Pivovarna Laško	Brewery	No data on 2008 available.		

Source: Company websites

Not that many multinational companies have entered the Slovene market. This is mainly due to the small scale structure of the market. The ones who entered primarily play on low prices. Supermarkets import also production from some multinational players, for example Unilever and Danone.

International trade
Slovenia's imports of food products were 2.14 times higher than exports in 2007. The absolute value of food imports was €1,261 million against €590 million in exports. Food and beverages contribute 2.9% to the total exports of manufactured products. On the import side, it contributes 5.4%. Both imports and exports increased approximately 2.5 times with equal amount per year between 2002 and 2008.

The product groups that contribute the most to the trade deficit are fruit and vegetables, cereals and cereal preparations, and coffee, tea, cocoa, and spices. These products are mainly imported from Italy, Austria and Germany. Fruits and vegetables are imported from the Netherlands as well. Slovenia holds a net export position in milk. 30% of the domestic production is sold to Italian dairy processors, because of the higher prices obtained in Italy. At the same time, raw milk is imported from Hungary and Slovakia were milk prices are lower than domestically.

Future perspectives
It is expected that the consolidation process in the food industry is continuing. Since the size of the domestic market is small, food manufacturers have to export products to reach some economies of scale. However, it is not easy for Slovene producers to compete with the multinationals on low priced products.

However, potentials for competitive advantage lie in highly differentiated products for the domestic market. By superior quality, good image via advertising, effective and continuous product innovation and creative design, it should be possible for the relatively small, domestic, producers to be fairly competitive.

3.7. Retail

The retail sector in Slovenia is highly concentrated since the largest three retailers hold about 80% of the sector's turnover. Mercator is the largest domestic retailer with a market share of approximately 45%. Retailers number two and three are Spar (from Austria) and Tuš. Foreign retailers started to penetrate in the Slovene market a few years ago. Among these are E.LeClerc (from France), and the German discounters Lidl and Hofer.

Furthermore, several small retail shops exist. These shops are varying from one-man businesses to specialist retail chains. Among these are bakeries, butchers, wineries, fruit and vegetables shops, florist shops, and others. Where necessary, the specialist shops are mentioned in the chapters with the accompanying sector.

Over the last years, intensive restructuring and consolidation of the retail industry is reflected in the pressures on purchase prices and contracting conditions. Retailers have invested heavily to reach economies of scale through the operation of large store formats and chains of stores. Implementation of sophisticated logistics and distribution systems and new technology has improved efficiency. Therefore, an increasing amount of transaction and distribution costs is shifted towards the food processing industry.

Furthermore, the food retailers have successfully introduced the private labels. To a large extent, these private labels are produced by the domestic producers. Consumers buy these products as the low price but similar quality alternative to the producer brands. At the same time, the producer brands manufactured by domestic companies are still dominating.

Another point is that the Slovene supermarkets are international players and purchase products from everywhere. Therefore, the supermarkets have strong bargaining position over their suppliers. This puts a downward pressure on the selling price of producers. The good range of products and the good standards of service are other strengths of the Slovenian retailers.

Slovene retailers have some weaknesses as well. These are the strong dependence on the domestic market with a rather small potential for international expansion, and the comparatively small enterprises.

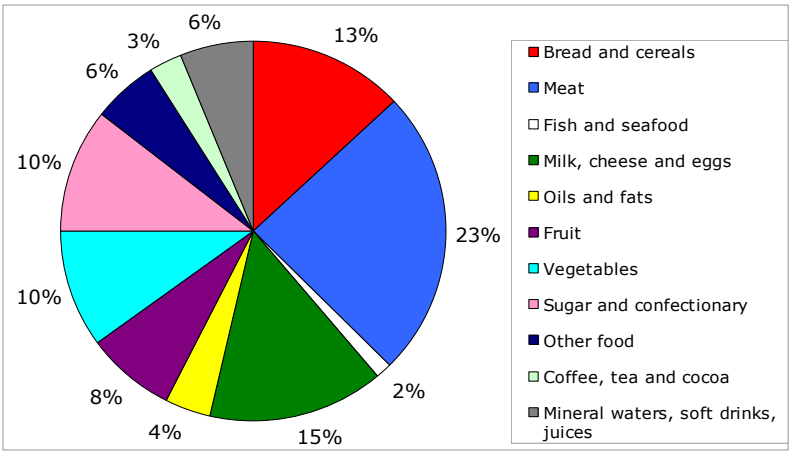
In the end, Slovenia is similar to other European countries. The retailers are a very powerful link in the production chain. The vertical dominance has increased and is now among the main factors for radical reduction of food industry business performance.

3.8. The Slovene consumer

It is not easy to describe a typical Slovene consumer, but an attempt is made in this section. An average Slovene has spent €15,908 in 2007. 16.5% of this, €2,621 is spent on food and non-alcoholic beverages. Figure 3.10 presents the shares of the different food and non-alcoholic beverages in the total expenditure on food.

Figure 3.10: Consumer expenditure on food (2008)

Figure 3.10 shows the high expenditure on meat. Other food products with a reasonable share are milk, cheese and eggs, bread and cereals, vegetables, and sugar and confectionary.



Source: Euromonitor International

Generally, two types of consumers can be distinguished in Slovenia. Based on expert opinions it is estimated that 15-20% of the consumers are willing to buy a high quality food product that is domestically produced. Others buy products with fair quality-price equilibrium, especially in the current economic times. So, it can be said that price and quality are the basic differentiators for purchase decisions.

First of all, there is a small group (±15%) of "quality consumers". These people have a more than average amount of money to spend and prefer excellent quality products. Characteristics of these products are ranging from domestically or organically to traditionally produced.

Then there is the large group (±85%) of price sensitive consumers. Disposable income and family size proved to have a significant effect on being price sensitive. These consumers buy private label products instead of producer brands. It seems that despite the lower perceived quality, Slovenian consumers accept the price-quality ratio of private label products.

Research of Kuhar and Tič (2007) confirms the evident trend of increasing private label food market shares in Slovenia. Approximately 45% of the consumers buy private label food frequently. Only about one fifth of consumers does not buy it all or very rarely. Dairy products, processed vegetables and salt are among the product groups that are bought most under private label. Beer is not bought frequently under private label, which is expected.

4. The dairy food chain

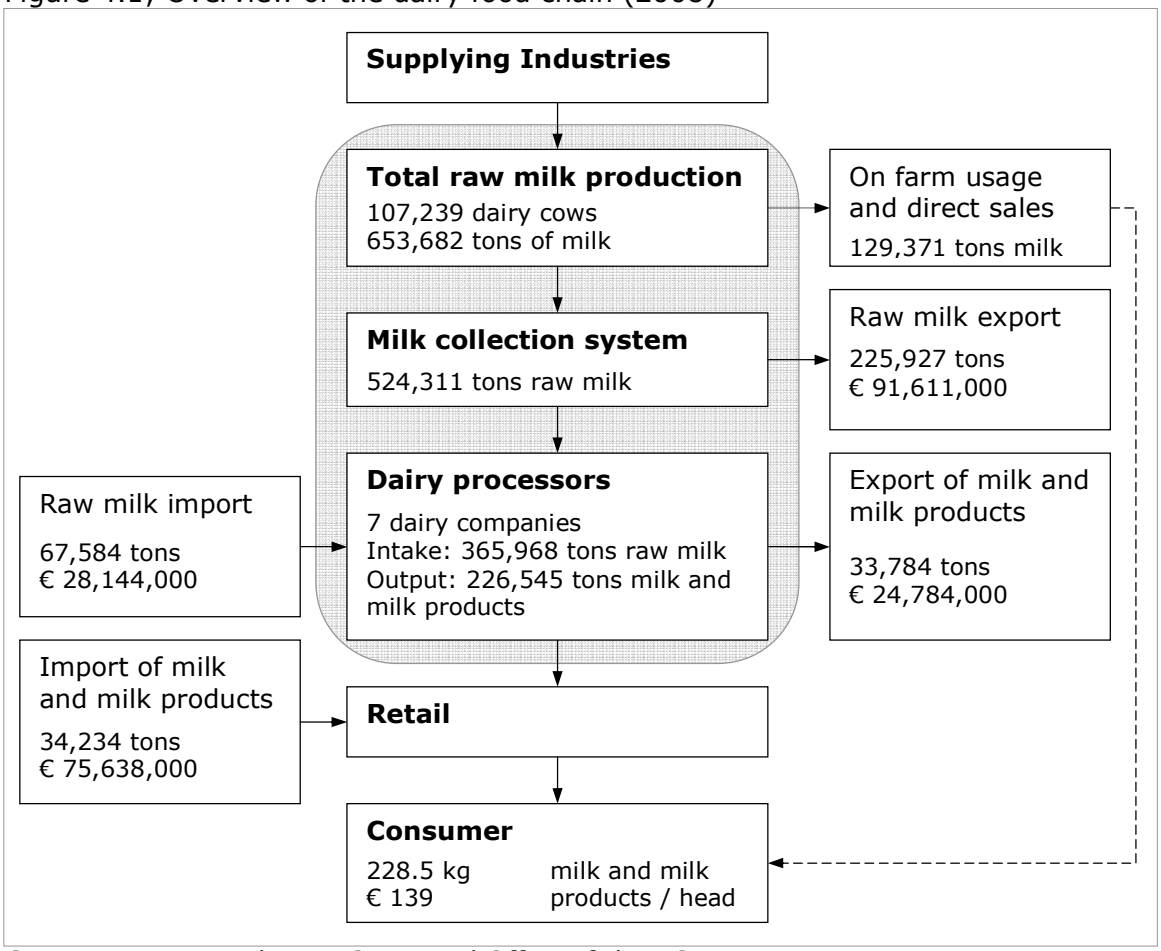
The dairy cow sector is considered as the key agricultural sector in Slovenia. In 2007, the production of milk contributed 15% to the gross agricultural output. Furthermore, the way it fits in the mountainous rural areas is very important.

Section 4.1 starts with a schematic overview of the dairy food chain. Thereafter, the different links of the chain are explained. Section 4.2 elaborates about the driving forces influencing the behavior of these links. Finally, section 4.3 concludes with a brief SWOT analysis, the balance of power and some future perspectives.

4.1. Overview of the dairy food chain

A schematic overview of the dairy food chain is presented in figure 4.1. The data are from 2008 when 563,682 tons of milk was produced. Only 80%, 524,311 tons of milk is collected for further processing. For comparison, the Netherlands collected 10.9 million tons and Hungary collected 1.4 million tons of milk. More than 40% of Slovenia's raw milk is exported to Italy. Only seven companies process raw milk into dairy products. The processing branch is consolidated since the three largest processors hold 90% of the market.

Figure 4.1; Overview of the dairy food chain (2008)



Source: own compilation, Statistical Office of the RS

4.1.1. Supplying industries

The main input for dairy cow breeding and optimizing milk production is feed. Among other inputs are machinery and cow shed equipment.

Cattle feed

Fodder like silage corn, silage grass, and hay, is mainly produced on farm. Compound feed is used to optimize the milk and beef production. *Jata Emona d.o.o.* is the largest producer of compound feed and supplementing minerals for cattle.

Machinery, cow shed construction and equipment

The amount of tractors and machines on Slovene dairy farms is high. The main reason is the subsidies available for modernization. These funds are not always used in the most efficient way. Furthermore, farmers seem to like tractors and machines as a hobby as well. They are not buying the most cost efficient mechanization but also the popular brands to show off.

The construction of cow shed is executed by Slovene construction firms. The specialized materials and equipment are mainly imported. Among these products are feeding automats, milking machines, hygiene products, cow mattresses, and climate control systems. Origins of imports of cow shed equipment are the Netherlands, Germany, Austria and Italy.

For both mechanization and construction materials, suppliers are rather dispersed. It can be organized by producer organizations, by small and medium sized enterprises, directly imported, etcetera.

4.1.2. Dairy cow farming

In 2008, 170,412 cows were reared of which 107,239 dairy cows and 63,173 suckler cows on a total of 38,559 agricultural holdings. In the milk recording scheme were 82,875 dairy cows included on 8,608 farms producing market milk.

Table 4.2; Size structure of dairy farms (2007)

	Dairy cows		Farms	
	#	%	#	%
Total	124,190	100.0	19,196	100.0
1–2	11,193	9.0	8,044	41.9
3 – 4	11,882	9.6	3,535	18.4
5 – 9	24,387	19.6	3,702	19.3
10 – 14	20,623	16.6	1,772	9.2
15 – 19	15,083	12.1	908	4.7
20 – 29	17,832	14.4	759	4.0
30 – 49	13,291	10.7	365	1.9
50 – 99	6,474	5.2	104	0.5
>= 100	3,425	2.8	8	0.0

Source: Statistical Office of the RS

Table 4.2 presents the size structure of dairy farms with and without milk recording. More than 40% have one or two cows and about 80% have less than ten cows. About 12% keep more than 15 cows, which accounts for 45% of the national herd. The average of 12.5 cows per farm indicates that small-scale family farms still dominate milk production. For comparison, the EU-15 average is 35 cattle per farm. Varying from 10 in Austria to 85 in Denmark.

The production of milk is increased over the last years, till 653,500 tons in 2008. The delivery to dairy processors for processing increased from 70% of the production in 2000 to 80% in 2007. This is mainly due to the fact that small farmers are quitting milk production. Another reason is that farmers become more commercial oriented. The milk not sold to dairy processors is used for calf feed consumption or sold directly as fresh milk or products.

Milk production has undergone specialization and consolidation over the last ten years. The number of farms has decreased and the milk yield per cow has increased during this period. However, in comparison with the EU-15 countries, the milk yields are still rather low. This is also true for the neighboring countries, Austria, Italy and Hungary, which have higher yields as well.

The average milk yield in 305 days (one lactation year) was 6,043 kg with 4.05% fat and 3.26% protein in 2008. However, the difference between farms is significant. Agricultural enterprises or former estates had an average yield of 7,512 kg with 3.89% fat and 3.21% protein. A cow on an average family farm produced 5,980 kg milk that contains 4.06% fat and 3.27% protein.

The first reason for these low average yields is the low share of specialized milk breeds in dairy herds. The number of Holstein-Frisian cows is only 31%. Around 47% of the national herd is Simmental type and another 16% is Brown Swiss. These cows are more suitable for combined milk and beef production. The second reason for the low yields is the large share of dairy farms in the less favored areas where forage production is limited mostly to grasslands.

Nevertheless, the quality of the raw milk is good. In 2008, 92% of the purchased raw milk is classified as extra quality and an addition 6% as first quality.

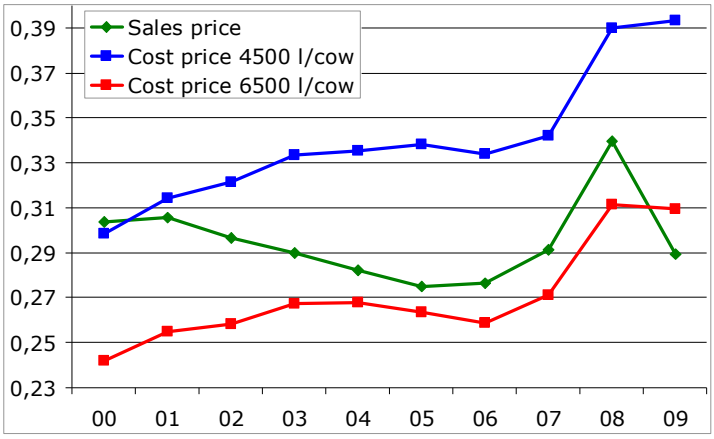
Milk prices

Figure 4.2 presents the development of the sales and cost prices of milk between 1998 and 2009. Prices of 2009 are based on the first half of 2009. Generally, Slovenian prices follow the trend in the EU, but at a lower level. The prices were significantly lower than in Italy, which increased the competitiveness of the sector.

Milk prices paid to the farmers decreased since the adoption of the CAP. The dairy processors used the introduction of dairy premiums to justify cutting prices. As a result, cooperatives started to sell raw milk directly to Italian dairy processors. In 2006, milk prices started to recover and increased gradually till the end of 2008. Since then, the price is in a free fall and decreases fast. Now, in September 2009 it seems that the price is stabilizing but it is difficult to predict what is going to happen in the (near) future.

The difference between farm-gate and dairy-gate prices is rather high. One reason is the widespread network of milk routes and milk collecting centers. Another reason is the high commission fee for administrative services related to milk collection, charged by intermediates between farmers and dairy (mostly cooperatives).

Figure 4.2; Sales and cost prices of milk in €/liter



Source: Agricultural Institute of Slovenia

Figure 4.2 also shows the cost prices of the farms. Two types of farms are distinguished here. Farms with an average production of 4500 liter per cow and farms with an average production of 6500 liter per cow. The cost price of farms with 4500 liters per cow is higher than the sales price. The cost price of farms with 6500 liters per cow is below the sales price. Farms with the low milk yields have always had troubles to obtain profits.

Revenues and costs

Table 4.3 presents revenues, costs and added value per head for an average cow that produces 4500 or 6500 liters of milk in 305 days. Not surprisingly that milk production is the main source of revenues. By-products (e.g. sales of calves) and subsidies hold a substantial share as well. Caused by the sales of milk, revenues are much higher if a cow produces 6500 liters than when the production is 4500 liters.

Most expensive is the purchase of goods and services, where feed holds the largest share. This is in line with the earlier observation that feed companies are important suppliers. Other substantial costs are depreciation and household labor and capital.

Table 4.3; Average composition of revenues and costs for different milk yields per cow in €/head (2008)

	4500 l per cow	**6500 l per cow**
Revenues - total	**2318.02**	**3064.10**
- sales of milk (0.340€/l)	1530.00	2210.00
- by-products	554.74	554.74
- subsidies	234.20	300.69
Costs – total	**2543.19**	**2878.60**
- goods and services	1535.20	1775.26
• cattle	217.90	217.90
• feed	953.70	1166.93
• other	364.97	390.43
- depreciation	152.39	152.39
- labor and capital	855.31	950.95
Net added value	**896.26**	**1416.41**

Source: Agricultural Institute of Slovenia

Notice that total costs are higher than total revenues when the production equals 4500 liters. However, the net added value is still positive. This is caused by the calculation method of these data, wherein the so-called internal realization lowers the costs.
Furthermore, the net added value shows that the high productive cows are more profitable.

The small scale dairy production cannot compete on a liberalized European market. Therefore, Slovenia has always been against the elimination of the EU milk quota. An important issue for the agricultural policy is the implementation of measures cushioning the increased risks from higher volatility in (feed)costs and prices.

The milk collection system
The milk collection system is an important link between the dairy farmers and the dairy processing companies. The dairy processors collect the milk directly from the larger farms. This are the farms that produce approximately 50,000 kg or more yearly.

A smoothly operating collection system for small quantities of milk exist in the mountainous areas. Farmers bring their milk to collection stations along the milk routes. Cooperatives are responsible for transportation to dairy processors and maintaining collection stations. This is a quite expensive system, which causes the difference in farm-gate and dairy-gate prices of raw milk.

4.1.3. The dairy processing industry

Traditionally, the milk processing industry has been one of the leading food industries in Slovenia. In 2008, 530,374 tons of milk was collected for processing, of which around 78% was delivered to domestic dairy processors. The rest was exported directly to Italian processors. Slovene dairy processors process raw milk purchased from domestic suppliers as well as imported milk.

Products
The main products of the dairy processors are fresh milk, fermented dairy products, cream and cheese. The development in quantities produced is reflected in table 4.4.

Table 4.4; Production of main dairy products (in .000 tons)

	2002	2003	2004	2005	2006	2007	2008
Fresh consumption milk	172.1	159.0	178.8	178.8	156.2	164.5	155.6
Fermented dairy prod.	38.9	37.2	35.3	33.5	34.5	33.3	33.2
Cheese products	22.6	24.2	23.8	22.0	20.4	18.7	19.5
Cream	14.7	15.6	18.3	15.5	13.8	15.2	15.9
Butter	4.0	5.0	4.1	3.5	2.9	2.6	2.3

Source: Statistical Office of the RS

Profitability
After the EU accession, the performance of the dairy sector deteriorated drastically. Between 2004 and 2007, an average dairy processor made losses. Two reasons caused this. First of all, the export subsidies went down after accession. Secondly, the increased competition put downward pressures on the prices of end products.

These factors put the sector into a process of intensive restructuring. Dairy companies made large investments to fulfill EU hygiene requirements improve efficiency and spend more money on marketing. From 2004 till 2007, the turnover of the industry fluctuated and the number of employees decreased. The productivity increased substantially during this period.

In 2007, the gross value added (GVA) per employee was €29,335, which is approximately one-tenth lower in the dairy industry than the average for all food sectors. Comparison of this indicator for the Slovene dairy industry with the international competitors shows that Slovene GVA per employee reaches only 56%

of the average EU-25 level. In many countries the GVA per employees in the dairy industry is much higher, ranging from €67,800 in Austria to €81,100 in Ireland.

These numbers show that the dairy industry has lost much of its position it had before. In 2008, the milk prices paid to the farmers were high, which worsened the economic performance of the dairy processors. In 2009 however, milk prices decreased drastically, and it seems that the dairy processors finally end with profits this year.

Main dairy processors
Seven companies are registered as manufacturers of dairy products in Slovenia. Three large companies that produce large quantities are mentioned hereafter. The four smaller dairy processors are fairly competitive producers of niche products.

The three largest dairy processors process around 90% of the domestic produced milk and all the imported milk. However, they are rather small in comparison with their foreign competitors. The ownership of the large dairy companies is either by agricultural cooperatives or by shareholders. So far, there is no foreign capital in Slovenian dairy industry. This is in line with general low presence of foreign investments in the economy.

Ljubljanske Mlekarne d.d. is by far the largest dairy processor and wholesaler of milk in Slovenia. It employs almost 700 people on three locations in Ljubljana, Maribor and Kočevje. This is rather small in comparison with the leading European dairy companies, but equals the size of the largest dairy companies in Hungary. Approximately 50% of all milk in Slovenia is processed by LM into white milk products, cheeses and ice cream. The main trademarks are MU, Alpsko Mleko, Ego, Maxim, Jošt and diverse ice cream brands.

The second and third largest dairy processors are *Mlekarna Celeia d.o.o* and *Pomurske Mlekarne d.d.* These companies are very similar. Both of them have approximately 180 employees and process around 20% of the milk intake in Slovenia. Nevertheless, locations, branding and trade are different.

A small and developing dairy processor is *Mlekarna Planika d.o.o.* It buys raw milk only from the regions around Tolmin, Kobarid and Bovec. It focuses on high quality products without any additives. The brands *Planika* and *Bohinjka* are available in the leading supermarkets.

4.1.4. Distribution and trade

Slovenia is a net exporter of raw milk since more than 40% of the produced milk is exported directly to Italy. At the same time, the large Slovene dairy companies import raw milk from Slovakia, Romania and Hungary.

Table 4.5 presents the development of import and export quantities of the main dairy products and raw milk. The quantities traded for all products increased between 2002 and 2008. For butter and whey, it keeps a net export position over the years. At the same time, the net export position of cheese, milk products, cream and yogurt shifted towards a net import position.

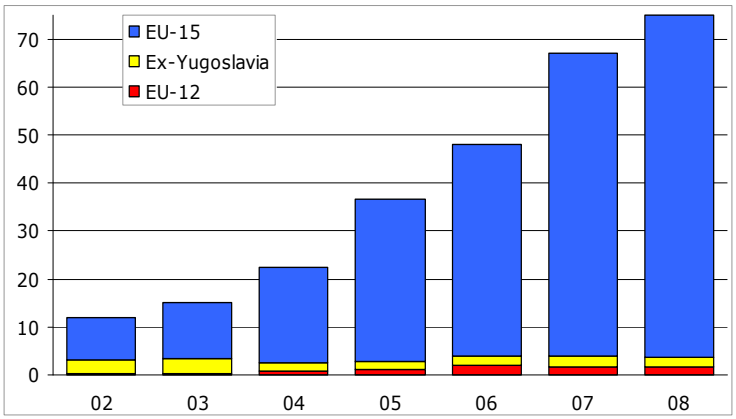
Table 4.5; Export and import of main dairy products and raw milk (in .000 tons)

	2002	2003	2004	2005	2006	2007	2008
Import							
Butter	0.2	0.2	0.2	0.3	0.5	0.6	0.7
Cheese	2.4	3.0	4.4	6.5	9.3	11.9	14.4
Whey	0.3	0.4	0.4	0.5	0.5	0.6	0.5
Milk products, cream, yogurt	2.2	3.7	5.9	10.4	12.8	17.1	18.6
Raw milk	0.3	0.2	1.5	14.4	52.9	41.8	67.6
Export							
Butter	1.8	3.5	2.1	1.9	0.9	0.7	0.5
Cheese	3.9	6.2	5.1	4.7	3.4	2.9	3.1
Whey	7.9	13.3	12.7	18.1	29.7	27.9	18.3
Milk products, cream, yogurt	17.6	16.7	12.1	9.6	9.3	9.5	11.3
Raw milk	48.3	35.6	59.5	104.4	192.1	218.9	225.9

Source: Statistical Office of the RS

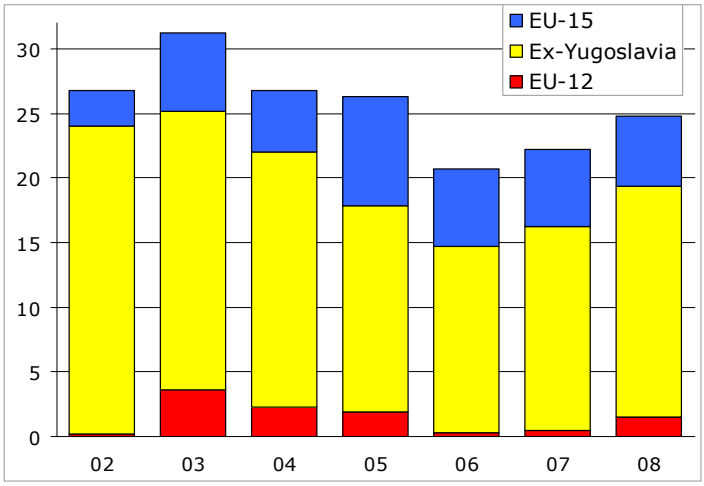
Figure 4.4 presents the main origins of imports of dairy products between 2002 and 2008 (raw milk is not included in the figure). Total imports have increased six times in this period. The EU-15 is the dominant supplier. Especially Germany, Austria and Italy are important sources of imports.

Figure 4.4; Origins of imports (in million €)



Source: Statistical Office of the RS

Figure 4.5; Destinations of exports (in million €)



Source: Statistical Office of RS

Figure 4.5 presents the main destinations of exports of dairy products between 2002 and 2008. The total value of exports is roughly at the same level over these years. The main destinations of exports are the countries of former Yugoslavia. The exports to the EU-15 countries stands at a stable level over this period.

The main reason for the changes in direction and amounts of international trade is the accession of Slovenia to the EU in 2004. The market with the EU-15 and the EU-12 countries opened up, which especially increased the imports of dairy products from the EU-15 countries. Preferential trade agreements with the former Yugoslavian countries were abolished, which should cause a decrease in trade. However, this decrease is not that large. The reason is the market for Slovene quality dairy products in Croatia and Serbia mainly.

4.2. Driving forces

Retail and consumption are the main driving forces that influence the behavior of the entire supply chain. The most important characteristics of these directing factors for dairy products are mentioned hereafter.

Supermarkets; key player in dairy products

For all different dairy products, the retail is a highly influencing link in the supply chain. Of all the milk that is sold to consumers, 95% is sold in supermarkets. This makes dairy processors dependent on supermarkets as the buyer of their products.

Furthermore, dairy products are sold to a large extent under the private labels of the major retailers. The producer brands of Slovene and foreign companies are in the shelves as well. For the basic milk products as flat milk and yogurt, consumers do not perceive a difference in quality between private labels and producer brands. For these products the private labels are very important. The producer brands have a larger share of the more innovative, fancy products. This are for example yogurt drinks, yogurt with taste, cheeses etc.

Since the retail sells the majority of dairy products, they put downward pressure on the selling prices of the dairy companies. They are tied up to the contracts with supermarkets. This makes the retail the most powerful link in the dairy chain.

Consumption of dairy products at a stable level

Table 4.6 presents the consumption of the main dairy products between 2003 and 2007. It shows that the consumption of fresh milk and cream decreased over this period. Simultaneously, the consumption of fermented dairy products (yogurt and probiotics), cheese and butter increased. This makes that total consumption of dairy products is at a stable level. Future expectations say that probiotic drinks and yogurts as well as low fat products will have an increase in market share. The consumption of drinking milk will decrease in the near future.

Table 4.6; Consumption of main dairy products (in kg per capita)

	2003	2004	2005	2006	2007	Growth '03-'07
Fresh consumption milk	61.7	61.2	63.4	51.3	54.2	-12.2%
Fermented dairy products	13.8	14.8	16.6	17.6	17.8	29.0%
Cheese products	10.8	11.4	12.2	13.0	14.0	40.0%
Cream	7.9	8.4	7.3	6.9	7.8	-1.3%
Butter	1.0	1.1	1.2	1.2	1.2	20.0%

Source: Agricultural Institute of Slovenia

4.3. Chain dynamics

This section provides a conclusion of the entire production chain. Strengths, weaknesses, opportunities and threats of dairy farms and dairy processors are summarized. The balance of power and the future perspectives conclude this section.

Balance of power

In the Slovenian dairy food chain, the retailers are the dominant player. The high level of vertical power and the entry of price fighters made it possible to introduce business practices that adversely affect the competitiveness of the dairy processors.

The power of the retail puts high pressure on the sales prices of the dairy processors. Margins of the processors became tighter since the Accession. As a result the processors pay lower prices to the farmers. Farmers in turn need more money from the government to survive. Slovene farmers receive extra subsidies compared to other European farmers in the sense of payment for less favorable areas.

Beside the evident negative effects on dairy suppliers' business performance the result in Slovenia might be that dairy processors have reduced budgets for product and market development, leading to lower quality and less consumer choice.

SWOT-analysis

Dairy farms

Strengths	**Weaknesses**
- good quality of milk - competitive on price in EU	- small scale structure - low level of specialization - low average gross margins - high cost of milk collecting - low labor productivity due to LFAs
Opportunities	**Threats**
- raw milk export to Italy and Austria - organic milk production - farm restructuring by land reforms - increase of production yields through more specialized milk breeds	- abolishment of milk quotas could increase pressure on milk prices - import of raw milk from Hungary, Slovakia put downward pressure on milk price

In the middle-long term, dairy farms are still able to profit from the low cost price by the exports of raw milk. In the long run however, it is necessary to enlarge and professionalize. This does not have to reach competitive scale in the EU, but it is the increase of the average size of six cattle per farm. Hereby, land reforms are necessary, but not definite yet. Land reforms are necessary from a Western point of view, but it will be very complicated to apply this in practice. Margins in the dairy production will decrease as a result of the abolishment of milk quota. And the lack of knowledge with regard to feed, management and technology in comparison with countries with a large dairy sector are weaknesses of the sector.

Dairy processors

Strengths	**Weaknesses**
- high consolidation level - lower milk costs than EU average - strong supply base - loyalty of consumers to domestic dairy products	- small scale domestic market - high cost of milk collecting - low productivity due to small scale - low margins due to high pressure on prices by domestic retailers.
Opportunities	**Threats**
- imports of cheaper raw milk from Slovakia, Hungary, Romania - production of high quality, added value niche products - exports of processed products to former Yugoslavian countries	- further import penetration of strong multinational brands - retail puts further pressures on prices and contracting conditions - milk price is relatively high compared to further eastern European countries

The consolidated dairy sector in Slovenia still profits from the relatively low cost price while the consumer income level develops in the direction of the EU-15 level. Hereby some space and possibilities come through for niche products in the artisanal and biological segment. On the one hand is the Slovene market very small and with the increased power of the retailer (especially price fighters) increasing pressure on enlargement en decreasing costs in the processing branch. The Slovenian sector does not have lots of possibilities and it expects an increase in imports of raw materials / basic products. No foreign investments means that future budgets for product and market development in the domestic dairy industry are not increasing / decreasing. Imports of cheap raw milk from eastern located countries (especially Hungary) is expected to increase.

Future perspectives

Considering the small size of the Slovene consumer market and production volumes, the strategic choice of the Slovene dairy chain should involve the production of high value, preferably biological, products. Some sources mention that biological production would be the only way forward in dairy farming. At the same time, scale enlargement, yield improvement and factory rationalization should contribute to lower cost prices.

Several trends started already and are expected to intensify in the future. Milk production is taking place on larger farms and it is moving away from more distant areas. However, as long as there are considerable price differences with neighboring markets, raw milk exports and imports may also increase.

The competitiveness of the dairy processing sector plays a key role in the future development of the production chain. Further consolidation of factories is necessary to reduce production costs and, most important, focusing on product and market development of profitable new products has to increase sales. At the moment, there is only one smaller processors active in organic dairy products.

It is clear that the main challenges for the future of the Slovenian dairy sector are coming from market and not from policy side.

5. The beef chain

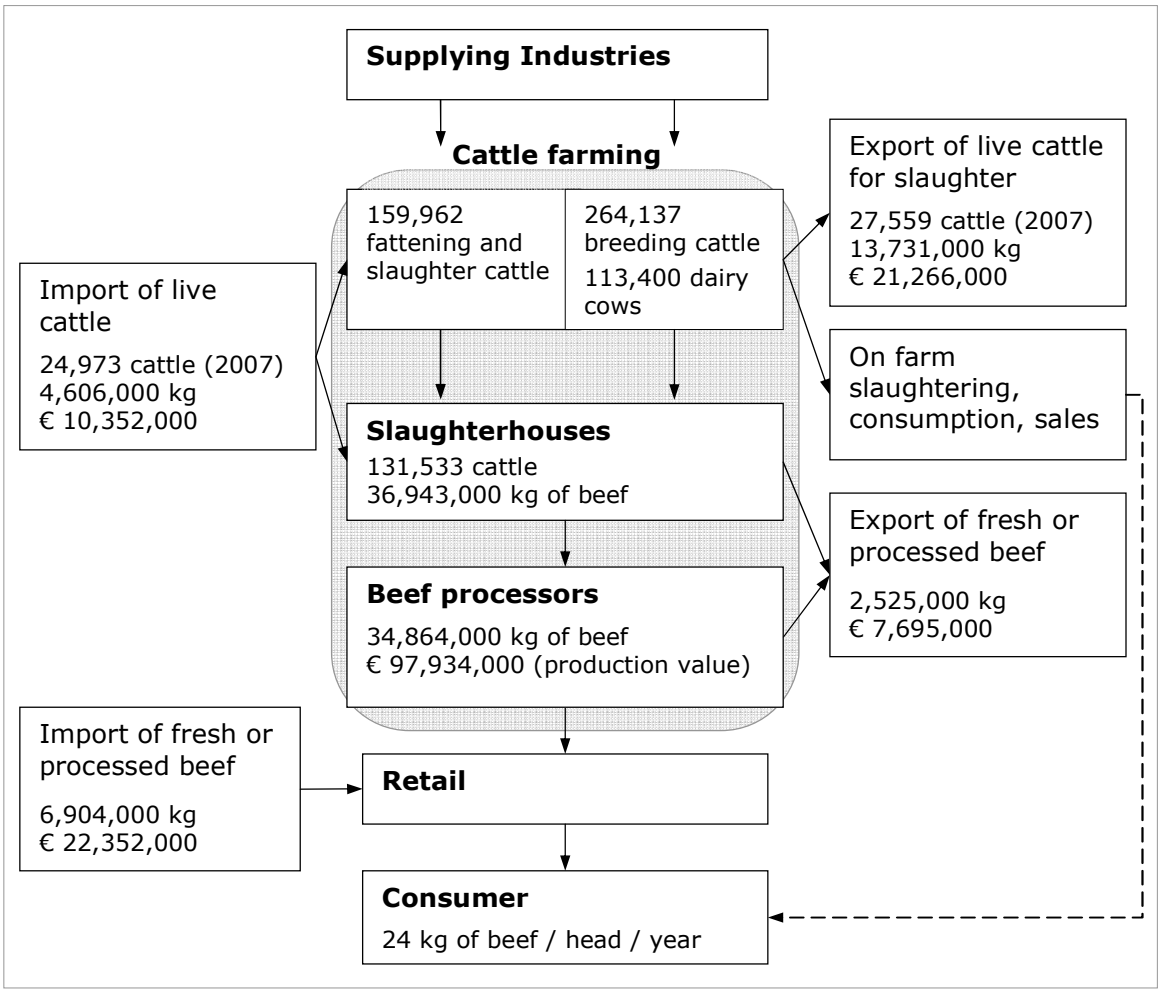
In 2007, the different branches of the meat sector together account for 30% of the gross agricultural output. Of this, the beef sub-sector contributes around 13%.

This chapter describes the most important characteristics of the beef chain. Section 5.1 provides an overview of the production chain. The driving forces of the chain are described in section 5.2. Finally, section 5.3 concludes with the chain dynamics.

5.1. Overview of the chain

Figure 5.1 gives an overview of the beef production chain. The largest share of beef (±56%) comes from fattening calves and bulls up to 24 months. Only 15% of beef is produced as a by-product of dairy cows. The slaughterhouses and processing industry are vertically integrated but rather small in comparison with the European market leaders. An elaboration on the different parts of the chain is made in the paragraphs 5.1.1 till 5.1.4.

Figure 5.1; Overview of the beef production chain (2008)



Source: Own compilation, Statistical Office of the RS

5.1.1. Supplying industries

Cow feed consists at least of grass, silage grass, hay, and corn. These different types of fodder are mainly produced by the farmers themselves. Compound feed is not used by all suckler cow farmers, but most of them feed it additionally.

Where farmers are not able to produce their own feed, there are several large enterprises in Slovenia that produce cattle fodder and feed. The largest producer of compound feed for cattle is *Jata Emona d.o.o.* It is also a wholesaler of grains, seeds and feeds. Another large supplier of fodder and feed for cattle is the *Panvita Group*.

5.1.2. Cattle farming

Beef cattle are supplied by both dairy farms and specialized beef cattle farms. Therefore table 5.1 presents the size structure of all cattle farms in Slovenia. Cattle are reared in herds with less than nine cattle on 63% of the farms. At the same time, 77% of the national herd is kept on farms with more than 10 cattle.

Table 5.1; Size structure of cattle farms (2007)

	Cattle		Farms	
	#	%	#	%
Total	472,363	100.0	40,842	100.0
1–2	12,394	2.6	7,610	18.6
3 – 4	26,062	5.5	7,470	18.3
5 – 9	71,935	15.2	10,787	26.4
10 – 14	67,935	14.4	5,795	14.2
15 – 19	48,901	10.4	2,899	7.1
20 – 29	72,408	15.3	3,032	7.4
30 – 49	82,548	17.5	2,205	5.4
50 – 99	56,481	12.0	861	2.1
>= 100	34,056	7.2	182	0.4

Source: Statistical Office of the RS

Suckler cows are the type of cattle which are reared with the only target to produce beef. In 2008, there were 63,173 suckler cows in 22,191 herds. This means an average of 2.8 cows per herd. Among these were only 25 herds with 30 to 99 suckler cows.

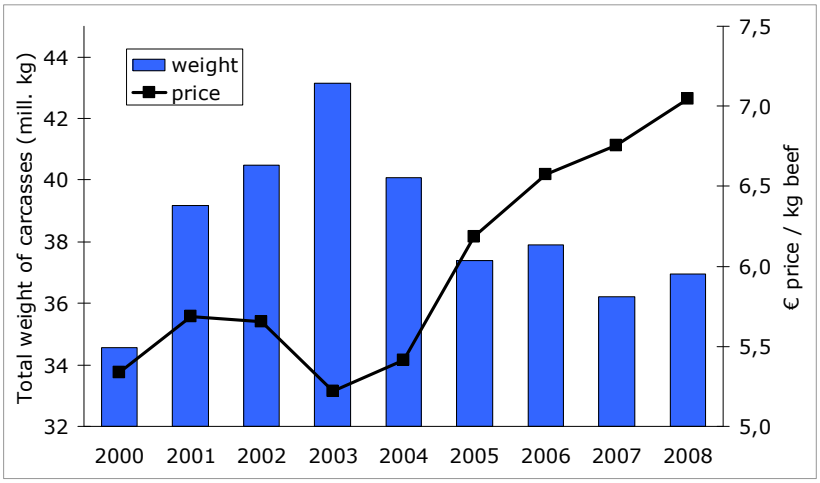
The small herds of suckler cows are present all over Slovenia and they are seen as important in the preservation of the (mountainous) landscape. The main breed among suckler cows is Simmental or upgraded Simmental (60%). Other breeds are Brown-Swiss, Charolais, Limosine, Cika (domestic breed), or crossings among these.

Several agricultural enterprises exist in the specialized production of beef. The enterprises mainly buy calves for fattening. These calves are imported as well as bought from the small scale suckler herds. Former state farms that rear specialist beef cattle are *Litijska Mesarija d.d*. and *GO-KO Ltd*, both firms within the *Farme Ihan* group.

Prices, costs and margins

The amount of beef produced has been quite stable over the past years. This is presented by the bars in figure 5.2, which show the total slaughtered weight in million kilograms.

Figure 5.2; Beef prices and slaughtered weight (2000-2008)



Source: Own compilation, Statistical Office of the RS

The line in figure 5.2 presents the development of the beef price per kilogram between 2000 and 2008. Two things are important here. Firstly, the price drops when the total slaughtered weight increases and the price raises when this weight decreases.

Secondly, figure 5.2 indicates that the economic conditions for beef production improved after EU accession. Beside higher price level, producers benefited also from a rise in prices as a result of an upward trend of prices on the EU beef market. This is the result of a global down cycle in beef supply. However, prices of all beef categories still remain below the EU-25 average.

Table 5.2; Revenues and costs for young fattened cattle in €/head (2008)

Revenues - total	**1197.85**
- sales price (€1.524/kg)	838.09
- by-products	113.04
- subsidies	246.72
Costs – total	**1364.95**
- goods and services	1067.26
• cattle	326.27
• feed	677.63
• other	63.35
- depreciation	53.91
- labor and capital	243.78
Net added value	**254.31**

Source: Agricultural Institute Slovenia

Table 5.2 shows the composition of revenues and costs for an average young fattened cow. Main revenue is sales price paid by the slaughterhouse. Sales of by-products and subsidies contribute significantly to the revenues. On the cost side, production and purchase of feed is the main expenditure, followed by the cost of young cattle. Absolute costs are higher than revenues, whilst the net added value is positive. This (low) income is generated due to an internal calculation method. This means that own feed is produced but fed to cattle at market price.

The data in table 5.2 show that the amount of subsidies as share of the revenues is significant. These subsidies are mainly production coupled subsidies which are paid per head. The data show that beef production is not the most profitable agricultural sector and it would not be a recommendation for foreigners to invest in it.

5.1.3. Slaughterhouses and processing industry

Historically, slaughterhouses and meat processors are largely vertically integrated. In the pig and poultry sector, the meat concerns are vertically integrated with the primary production. This is not the case in the beef sector, where production and slaughtering are separated. A total of 28 slaughterhouses in Slovenia have slaughtered 131,533 cattle in 2008. This indicates a very small scale industry, since market producers in western Europe slaughter at least 100,000 cattle yearly.

Table 5.3 presents the number and weight of different types of cattle that are slaughtered in 2008. 56% of the produced beef comes from calves and bulls up to 24 months, which indicates that more than half of the produced beef comes from specialized beef production.

Table 5.3; Cattle slaughter in 2008

	No. of cattle	**Slaughtered weight (tons)**
Cattle - total	131,533	36,943
Calves	25,489	2,276
Bulls, up to 24 months	52,695	18,340
Heifers	13,177	3,379
Bullocks (oxen)	649	204
Cows	19,447	5,398
Bulls, over 24 months	20,076	7,347

Source: Statistical Office of the RS

Beef products in Slovenia are slightly different from those in Western-Europe. Pre-packed beef is available in the supermarkets. However, Slovene consumers prefer fresh beef and this is the main way that beef is sold.

Developments over the last years

Mergers and acquisitions characterized the consolidation process in the industry over the last years. This has been a consequence of the negative financial performance as a result of the relatively small scale and the large investments needed to fulfill the EU hygiene requirements after accession.

Despite this rather intensive process of restructuring, the processing sector is still generally fragmented. The majority of small-scale processors have not developed enough to differentiate explicitly and it is difficult for them to compete with (multinational) large-scale processors.

Important slaughterhouses and beef processors

The largest meat processor in Slovenia is the *MIP Group.* The group has concentrated its activities in the north-eastern part of Slovenia (where is the concentration of cattle). The *MIP Group* has a yearly capacity of 30,000 slaughter cattle and consists of the slaughterhouses and processors *MIP d.d.* and *Pomurka d.d.* In addition, it has its own cattle stock, pig farm, 32 sales units, and a plant in Croatia. Exact data and information on the group is unclear since the entire group is in a bankruptcy process since August 2009. The future perspectives for the group are unclear.

Celjske Mesnine d.d. has the capacity to slaughter 30,000 cattle per year. Under the trademark "Z'dežele" it sells 4,000 tons of cooked, semi-preserved (pasteurized), and preserved (dry meat) products yearly. Furthermore, *Košaki Tmi d.d.* produces 3,000 tons of meat products yearly and has the capacity to slaughter 25,000 cattle yearly. With 15,000 slaughtered cattle yearly, *Kras d.d.* slaughters a substantial number of cattle as well.

However the *Farme Ihan Group* is more focused on pig and pig meat production, it is also doing some business in cattle and beef. It owns the former state farm GO-*KO Ltd* were specialist beef cattle is reared. *Litijska Mesarija d.d.* and *Meso Kamnik d.d.* are slaughterhouses and processors of beef. The group is the smallest processor of beef. *Meso Kamnik d.d.* has a capacity of 9,000 cattle for slaughter yearly. *Litijska Mesarija d.d.* slaughters and processes cattle for individual farmers and in addition, it runs 21 retail shops for meat and meat products.

These large processors, especially the *MIP Group* and the *Farme Ihan Group*, are very much vertically integrated. The groups are able to purchase cattle feed, produce cattle for slaughter, and slaughter and process them. In addition, they are involved in wholesale and distribution of meat and meat products. They even sell the produced meat in the own retail shops for which they can control marketing as well. Shortly, these groups control the entire production chain (for their shares of the market).

Unfavorable financial situation of meat processors

Together the five processors mentioned above have a capacity to slaughter 109,000 cattle yearly. With 131,500 slaughtered cattle in 2008, it means that the other 23 companies have only 22,500 cattle left to slaughter. This might indicate two things. First of all, the 23 companies are very small. Secondly, the five market leaders have large overcapacity. Or thirdly, and this is the most reasonable, it is a combination of both.

This is one of the reasons for the unfavorable financial position of the slaughterhouses and meat processors at the moment. The largest red meat processor in Slovenia, *MIP Group*, just went into a bankruptcy process and the others are not obtaining high profits.

As figure 5.2 shows, the prices to buy meat from the farmers were really high in 2008, while the volume is at a low pace. This means that slaughterhouses have high purchase costs, which decreases the margins. The low output volume made that revenues were low. In addition, the pressure on sales prices increased with the economic crisis. Altogether, this causes a negative business performance of the beef processors.

5.1.4. Distribution and trade

The large, vertically integrated processors control the wholesale marketing of beef. Within groups as *MIP* and *Farme Ihan*, wholesale departments look after the wholesale and distribution of beef to supermarkets and butcher shops. In addition, they have their own retail shops.

These groups are also the main importers and exporters of cattle, beef, and beef products. Slovenia is a net exporter of live cattle and a net importer of beef and beef products. In 2007, Slovenia imported 24,973 living cattle which are mainly calves for further fattening. Then 27,559 living cattle were exported, mainly cattle for slaughter with main destination Austria. The prices on the domestic market have been low and therefore farmer sell stock for slaughtering to Austria, where they obtain higher prices.

For beef and beef products, imports are approximately three times higher than exports. These imports are mainly from Austria, Italy, Germany and Poland.

5.2. Driving forces

The retail and the consumer are the two final links in the production chain. Since consumers pay the revenues of the chain and retail more or less decides consumption, these are the driving forces of the production chain.

Rather dispersed retail trade of beef

The retail trade in beef is, in contrast with several other food products, rather dispersed among different kind of retail shops and supermarkets. The majority of unprocessed beef is sold in supermarkets and in butcher shops. In most supermarkets, pre-packed beef is available in the self-service chilled department.

The supermarkets are faced with higher competition in the red meat division compared to other product lines. This competition comes from small and medium sized specialist meat shops, which exist in different varieties. These meat shops are closely connected to the processors or even part of the same group.

A total of 22 companies are registered at the Chamber of Commerce as specialized retailers of meat and meat products. These are mainly small shops with zero to three employees. The main chains of meat retailers are *MIP Maloprodaja d.o.o.* (32 shops, part of the bankrupt MIP Group), *Litijska Mesarija d.d.* (21 shops, part of Farme Ihan), *Panvita* and *Perutnina Ptuj*.

This dispersion of red meat selling points makes the supermarkets less powerful in the red meat branch compared to other branches. The pressure on prices of Slovene processors is less than you would expect. However, supermarkets import most of their red meat and are able to sell it for low prices. In this way, the supermarkets influence the processors and small retail shops. They have to work efficiently to produce and sell their products for competitive prices.

Fresh beef still preferred over pre-prepared beef
The consumption of beef has been at an average of 24 kg per inhabitant per year, which is more than the average EU-25 consumption. It is the third largest share in meat consumption, after pig and poultry meat.

Slovene consumers are used to high quality of their food products and "Cooking from scratch" guides the red meat eating patterns in Slovenia. This explains the slow introduction of pre-prepared beef. Slovenes are moving towards more convenient products as well.

In the short-term, no great changes in beef consumption are expected. The long term expectation is that pre-prepared meat dished will gradually become stronger which could change traditional consumption patterns.

5.3. Chain dynamics

This section concludes with the main chain dynamics. First of all, the balance of power throughout the chain is mentioned. Secondly, the main strengths, weaknesses, opportunities and threats of farms and processors are described. And finally, the future perspectives of the beef chain are addressed.

Balance of power
With the exception of a few large enterprises, the level of vertical integration in the chain is rather low at the moment. Due to this and the high amount of imports, the supermarkets have a strong position the supply chain. They put downward pressure on the output prices of the meat processors which tightens their margins and lowers business performance.

The meat processors which have their own retail shops and sell their meat and meat products there, are increasingly challenged by the supermarkets. The reason for this is that meat is an important product line in supermarkets. This tends to attract consumers who are willing to buy low price meats. The strong position of the supermarkets is illustrated by the bankruptcy of the *MIP Group.*

SWOT-Analysis

Cattle farms

Strengths
- extensive breeding practice which contributes to a quality image
- dual purpose breeds on dairy farms
- availability of permanent grassland

Weaknesses
- small scale farms
- low average margins and dependence on subsidies

Opportunities
- extensive or organic production (supported by policies)
- farm restructuring

Threats
- higher volatility commodity prices
- cheap cattle or beef imports
- increasing competition from poultry

Slaughterhouses and beef processors

Strengths	**Weaknesses**
- high quality image - vertically integrated (with retail) - level of modernization, technology and quality standards are good - differentiation into pig meat	- high cost of cattle collecting (small producers and spread geographically) - large differences in quality of cattle - poor financial situation and low margins
Opportunities	**Threats**
- pre-prepared and packaged meat - high quality, organically production - co-operation with supermarket chains	- imports by retailers - increasing volatility in cattle prices - further pressures on prices and contracting conditions from retail

Future perspectives

The potential for intensive massive production at all stages of the chain does not exist in Slovenia. Therefore, intensive vertical coordination within the beef chain is very likely the key determinant for long-term development. The target for domestic producers might be to produce above standard quality to differentiate from import products.

The long-term prospect for the beef sector is difficult, not only in Slovenia but world-wide. The extensive beef farming can assure a high-quality product, provided vertically coordinated and marketed by a strong processor. The processing sector is well equipped, has tradition and contemporary knowledge, and is relatively market oriented. However, an increasing number of processors suffer from low margins, overcapacity and stronger competition in retail. Therefore, further consolidation is expected, either by takeovers or bankruptcies. This may improve efficiency and financial strengths of remaining players. Successful implementation of quality schemes, for example organic meats, may also support access to higher margin segments. Shortly, with some improvements a solid beef sector can exist in Slovenia.

6. The pig meat chain

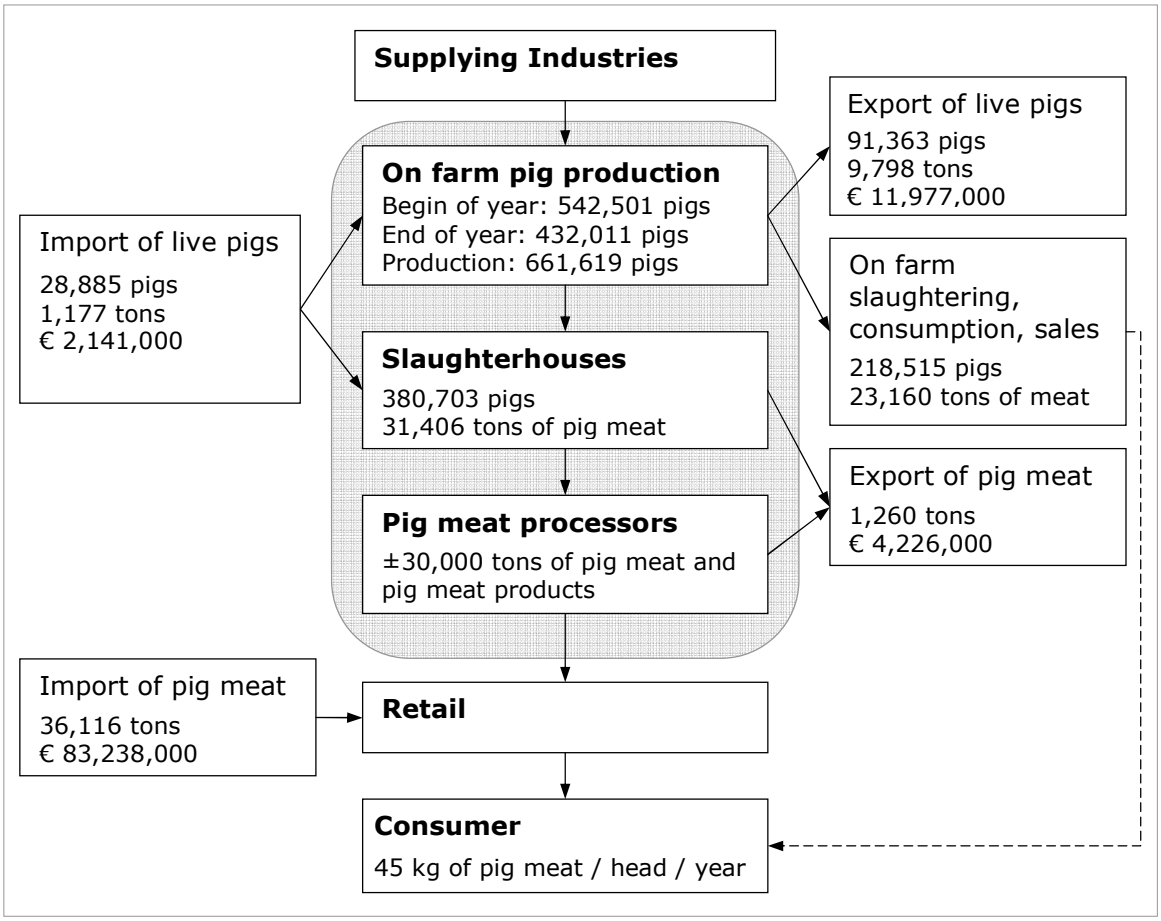
The pig sector is an important meat sector which contributed 28% to the total meat production and 7% to the gross agricultural output in 2008.

6.1. Overview of the chain

Figure 6.1 presents the general overview of the pig meat chain in Slovenia. The data in the figure are from 2008. Three different production systems for the production of pig meat can be distinguished for the production of pig meat. These are the large integrated meat processors owning and contracting pig farms, the medium sized family farms (mainly between 20 and 400 pigs), and a large number of small backyard farms (92% of the farms have less than 20 pigs).

Two large players in the chain are *Skupina Panvita d.d.* and *Farme Ihan d.d.* These groups are vertically integrated and have smaller firms in all the different parts of the chain. They define the market and produce large quantities of pig meat in Slovenia. Therefore, these companies are mentioned several times throughout this section.

Figure 6.1; Overview of the pig chain (2008)



Source: Own compilation, Statistical Office of the RS

6.1.1. Supplying industries

Several different companies are supplying to pig meat producers. The most important input that is needed on a daily basis is feed. Furthermore, genetics (semen), equipment for pig sties and piglets are sufficient as well. The largest suppliers are mentioned hereafter.

Compound feed products for piglets, fattening pigs, breeding sows and boars are produced by different feed companies. Also supplemental feed mixtures, vitamins and minerals are included in their portfolios. The large Slovene players in the production of pig feed are *Jata Emona d.o.o.* and *Panvita Proizvodnja krme d.o.o.*

The basic construction of pig sties is mainly done by general Slovene construction companies. The specialist equipment for pig sties is largely imported from different EU-25 countries. Many small and medium sized enterprises exists in this business. Currently, the pig accommodations and technology level is comparable to the EU-15 level in the large enterprises. In the family farms and very much in the backyard farms, the pig sties are more outdated.

6.1.2. Pig farming

The core function of pig farming is the production of pig meat. In 2007, 544,000 pigs were held on 31,690 farms. Table 6.1 presents the size structure of pig farms.

The table shows that more than 85% of the farms keep only one to nine pigs. These small farms breed pigs for self sufficiency and for the local market. Slovene law allows keeping and slaughtering one pig yearly without any registration. Usually, these extensive farms produce feed themselves and do not have relations with slaughterhouses.

Table 6.1; Size of pig farms, 2007

	# of farms	# of pigs
Total	31,690	544,405
1 – 2	12,538	22,029
3 – 4	8,851	30,579
5 – 9	5,169	32,519
10 – 19	2,572	34,330
20 – 49	1,342	39,327
50 – 99	508	34,860
100-199	431	61,971
200-399	197	52,666
>=400	81	236,126

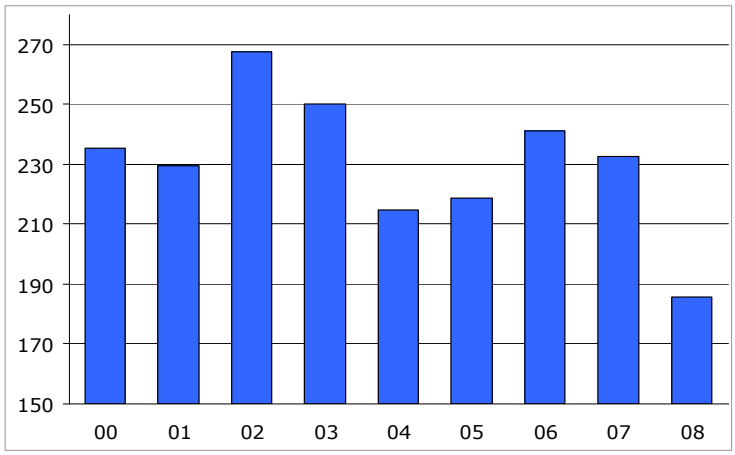
Source: Statistical Office of the RS

Only less than 2% are large, specialized enterprises with 100 or more pigs per holding. On average, they own 540 pigs per holding and account for approximately 60% of the national pig herd.
In 2008, four large farms on six locations produced between 20,000 and 100,000 fattening pigs per year. Two of the biggest production facilities are *Panvita d.d.* and *Farme Ihan d.d.,* of which an elaboration is written hereafter.

A Slovenian selection program called Slohibrid has been working since 2005. With Slovene landrace and Yorkshire as mother lines, and Piétrain and German landrace as sire lines, pigs with higher quality meat are bred. In 2009, the pig herd consists of the following races. For sows; 24.4% is Slovene landrace, 58.3% are hybrids and, 17.2% are others. For the boars; 31.1% are Slovene landrace, 38.1% are German landrace and Piétrain and 23.3% are hybrids.

Figure 6.2 presents the number of fattening pigs between 2000 and 2008. Experts mention that the EU Accession and the opening of the market have not caused negative consequences for producers. The domestic pig meat production follows the usual cyclical oscillations.

Figure 6.2; Number of fattening pigs (in thousands)



Source: Statistical Office of the RS

Financial situation

Since Slovenia is part of the open European market for pig meat, prices follow the movements in the European prices. In the composition of the revenues and costs, which is presented in table 6.2, two groups of pig farmers are distinguished. First of all, the small farms with less than 20 pigs, which are feeding combi feed. This is a combination of self-produced crops as maize and grain and a relatively small quantity of compound feed. The large, professional farmers are in the second group. They use high energy rations, basically compound feed, to fatten their pigs.

Table 6.2 presents the average composition of revenues and costs for the two different types of pig farming in 2008. For both the small scale and the large scale farms the costs were higher than the revenues. The table presents a snapshot on 2008, when the costs of feed were much higher than the years before. This influenced financial business performance negatively. It is difficult to conclude sharply on the basis of these data, since it is impossible to calculate the revenues and costs per kg pig meat.

Table 6.2; Revenues and costs for different types of pig farming in €/head (2008)

	Combi feed	**Strong feed**
Revenues - total	**155.29**	**128.29**
- sales of pigs (1.205€/kg)	132.51	120.46
- by-products	9.57	7.83
- subsidies	13.21	0.00
Costs – total	**166.36**	**159.03**
- goods and services	137.69	140.71
• pigs	40.94	40.94
• feed	80.76	85.23
• other	15.99	14.54
- depreciation	7.06	6.24
- labor and capital	21.61	12.07
Net added value	**23.26**	**-18.49**

Source: Agricultural Institute of Slovenia

The small scale, combi feed farms keep the pigs for a longer time period and sell heavier pigs to the slaughterhouses (or slaughter them on farm). Another source of income for these farms is the subsidy that they obtain for organic farming practices.

The large scale, more industrialized farms sell fattened pigs to slaughterhouses at a lower weight and have therefore lower revenues. They do not keep their pigs for a long period of time which downsizes the total costs, especially due to lower labor and capital costs.

Leading pig enterprises
The two large pig integrations, *Farme Ihan* and *Panvita*, are highly vertically integrated. They are quite traditionally (not so much innovative) enterprises with in-house activities throughout the entire production chain. This starts with production of feed, then breeding and fattening of pigs, and later on they do slaughtering and processing of pig meat. The chain ends with organizing wholesale, distribution, marketing and sales via supermarkets and their own butcher shops.

With four production location throughout Slovenia, *Farme Ihan d.d.* is the leading piggery. The capacity to produce 141,000 fattening yearly is utilized for approximately 90%. On the farms, 121 workers are employed. The farms have the ISO 9001 and 14001 certification, whilst large investments are made at the moment to reach a higher efficiency level. The farms are vertically integrated with the slaughtering and processing firms of the *Farme Ihan group*, *Farma Ihan MPR* and *Meso Kamnik*. They produce meat for supermarkets and own retail shops under the brand *'Anton'*. Furthermore, *Farme Ihan* has its own biogas installation to produce electricity and in-house veterinary services.

Panvita Prašičereja d.o.o. is part of the *Panvita Group* and has two large pig farms in the Pomurska region. They have the capacity to produce 124,000 fattening pigs yearly. According to their data, this is 33% of the market pigs in Slovenia. The farms are vertically integrated with *Panvita MIR*, the meat processing firm of the Group. They process it into meat products under the brands *Pigi* and *AVE*.

6.1.3. Slaughterhouses and processing industry

The production of fresh, chilled and frozen pig meat consists of slaughtering pigs and the processing of the carcasses. Usually, both steps take place within one company. In 2008, 599,218 pigs were slaughtered with a total of 54,566 tons of pig meat. Table 6.3 presents the number and type of slaughtered pigs in 2008.

Table 6.3; Slaughtered pigs (2008)

	#	%
Total	599,218	100
In slaughterhouses	380,703	63.5
Piglets	22,024	3.7
Fattened pigs	356,154	59.4
Breeding pigs	2,027	0.3
Young boars	498	0.1

Source: Statistical Office of the RS

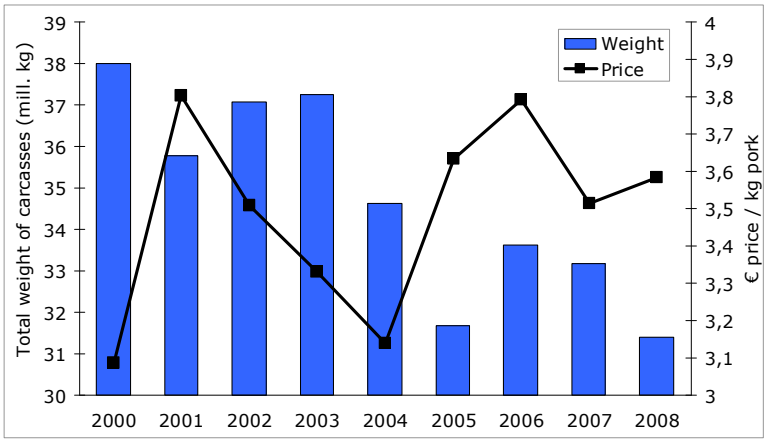
As mentioned before, Slovene law allows slaughtering of one pig per farm each year. In line with the amount of pigs on small farms, one-third of all slaughtering is done on farms. This pig meat is used for own consumption.

The pig meat industry is rather concentrated. Only 11 companies slaughter pigs and process pig meat. Some of these are completely specialized in slaughtering pigs; others are also doing cattle, poultry, horses, or sheep and goats as well. Two-thirds of slaughtering of pigs takes place in slaughterhouses.

Prices, margins, profitability

Figure 6.3; Pig meat prices and slaughtered weight

Figure 6.3 presents the development of pig meat prices and total slaughtered weight between 2000 and 2008. The bars show the total weight of carcasses that is produced in slaughterhouses. The line shows the fluctuation in price per kg of pig meat that is paid to the farmer.



Source: Own compilation, Statistical Office of the RS

Figure 6.3 shows that pig meat is a commodity; high prices when the quantity is low and low prices when the quantity is high. The accession and the coincided opening of the EU market in 2004 are seen as the major turning point for the industry.

First of all, opening up the market caused an increase in exports. Austrian slaughterhouses are paying higher prices to farmers which increased the export of live pigs for slaughter. It causes a drop in pig supply to the domestic slaughterhouses. They had to increase their prices to be internationally competitive.

Secondly, processors had to adapt the EU hygiene requirements after accession. Despite of this rather smooth process, investments for modernization were needed. This increased indebtedness and influenced business performance negatively.

The processing industry has to be internationally competitive nowadays. However, they are not able to compete on prices in the international market. The financial situation in the industry is not very good. One of the largest red meat processors, MIP Group is in bankruptcy.

Important slaughterhouses and pig meat processors

The *Farme Ihan Group* has two slaughter and processing facilities within its group. These are *Farme Ihan MPR d.o.o.* and Meso Kamnik d.d. Farme Ihan MPR is the largest one with a capacity of 150,000 pigs per year. With 56 employees, it processes 8,400 tons of pig meat yearly. The products are sold to the Slovene market under the brand "Anton". This brand is well-known and stands for safe, healthy, and quality pig meat from Slovene origin.

Meso Kamnik d.d. is a very small processor owned by the *Farme Ihan Group,* It slaughters and processes 38,000 pigs and 9,000 cattle yearly. It distinguishes itself by processing Slovene animals only. Furthermore, it is a large wholesaler and retailer with 21 butcher shops throughout the country.

Panvita MIR is the slaughter and processing firm for pigs within the *Panvita Group*. It produces 16,000 tons of fresh, packed, pre-prepared and dried meat and meat products yearly. It produces brands as *Pigi* and *AVE*. *Pigi* is special, Slovene high quality pig meat trademark. The products are sold to the main supermarkets as Mercator and Spar, in their own specialized meat shops and sold for export.

6.1.4. Distribution and trade

The wholesale marketing of pig meat is largely in the hands of the processors. They sell the meat to the Slovene retailers and in their own butcher shops. The processors are also the main importers and exporters of living pigs and pig meat.

Slovenia is a net exporter of live pigs for slaughter. Austria is the main destination of slaughter pigs since the prices paid for live pigs are higher there. Since EU accession, import of live pigs stands more or less at the same level of 1,100 tons per year. The exports soared from 233 tons in 2004 to 9,798 tons in 2008. The export of live pigs was more than eight times higher than the imports in 2008.

For fresh, chilled and frozen pig meat is imported since the self-sufficiency rate for pig meat in Slovenia is around 80%. The import of pig meat increased 1.6 times from 22,528 tons in 2004 till 36,116 tons in 2008. Exports increased four times from 321 tons in 2004 till 1,260 tons in 2008. These number show that Slovenia imported 29 times more pig meat than it exported.

Shortly, living pigs are exported to Austria, slaughtered in Austria and the meat is imported again. One reason for this trade pattern is the higher price that Austrian slaughterhouses pay for live pigs to the farmers. Another reason is the more efficiently operating Austrian slaughterhouses and processors. They are better equipped than the Slovenes, which makes them able to produce at lower cost.

6.2. Driving forces

Factors from outside the chain that influence the pig chain mostly are the retail and the consumer. Another important directing factor that is not mentioned explicitly is the role of laws and rules with regard to animal welfare and the quality and safety of meat.

Supermarkets put downward pressure on processors' selling prices

The retail trade in pig meat is rather dispersed among different kind of retail shops and supermarkets. The supermarket chains are putting downward pressure on the prices of the pig meat producers – as they do with producers of all products. This makes the margins of processors even tighter, and they are not able to pay a good price to the farmers. Therefore, farmers are selling to Austrian slaughterhouses. This again increases the shortage of pigs for slaughter for the Slovene processors.

Considerable amounts of butcher shops are still present everywhere. These are partly privately owned and partly part of a chain of butchers. The large processors, as *Perutnina Ptuj* and *Meso Kamnik* have their own shops where they sell first class fresh meat and meat products. This way of vertical integration throughout the production chain causes higher margins and profits for the meat groups.

Pig meat is the most consumed type of meat
Traditionally, pig meat is the most consumed kind of meat. An average Slovene eats 45 kg of pig meat per year. This is more than the average EU-25 consumption but it is expected to decrease slightly over the next few years.

Pig meat is mainly bought as unprocessed meat or as an ingredient of sausages and salamis. Consumers prefer pig meat from domestic origin and are willing to pay for a good quality product. However, in the current crisis consumers are selecting their purchases more on the basis of price.

6.3. Chain dynamics

The section concludes about the entire pig meat production chain. First of all, the balance of power throughout the chain is mentioned. Secondly, strengths, weaknesses, opportunities and threats of pig farms and pig meat processors are summarized. Finally, the future perspectives are described.

Balance of power
The level of collaboration and integration between the different links in the pig chain is quite high. The largest industrial pig farms are related to the leading slaughterhouses and pig meat processors either formally through capital integration or through formation of less formal strategic alliances.

It seems that power is more or less balanced throughout the entire production chain. However, the retail puts downward pressure on processor prices.

SWOT Analysis

Pig farms

Strengths
- less vulnerable for price volatility (limited external financing, generally high own feed production)
- large, market producing farms are highly vertically integrated

Weaknesses
- small scale of farms
- small scale of pig herd
- poor housing / technology on farm
- low margins
- poor access to knowledge (genetics, farm management, technology)

Opportunities
- improvement in technical results
- exports for slaughtering to neighboring markets
- support for extensive farming

Threats
- increasing production costs (labor, environment)
- compliance with EU welfare regulation (January 1st, 2013)
- competition from poultry meat

Pig meat processors

Strengths
- vertically integrated; total chain control from feed to retail
- some strong brands
- good image with Slovene consumer

Weaknesses
- fragmented supplier base
- too small scale to cooperate with retailers
- increasing purchasing costs
- small domestic market

Opportunities
- improvement in efficiencies in pig farming and slaughtering
- export quality meat to neighboring markets

Threats
- further import penetration and decrease in market shares
- growing negotiating power from retailers
- competition from poultry meat
- integrated enterprises are vulnerable to price, cost and import fluctuation

Future perspectives

In contrast with the beef sector, prospects for the Slovene pig meat sector are less favorable. The large share of small scale farms disturb the market and quality efforts. Producers cannot benefit the extensive production system as with cattle production. Slaughter pigs need a much higher content of energy (grain) based feed, which adds to the production costs, especially for the larger scale farms. Furthermore, the relatively small scale of slaughtering and processing facilities will prevent the industry to be able to compete on the EU market. As a result, processors are forces to focus on the small domestic market.

Intensive vertical collaboration and coordination between the different links in the pig chain is very likely the key determinant for long-term development. If the large farms, slaughterhouses, processors and specialist butcher shops work closely together in all stages of the production chain, margins enlarge and profitability increases.

Furthermore, high-quality specialized and/or traditional products produced for niche markets, is also an opportunity to increase sales. These products demand flexibility of work and can be produced with larger margins. This can be a business opportunity for the smaller slaughterhouses and processors.

7. The poultry meat chain

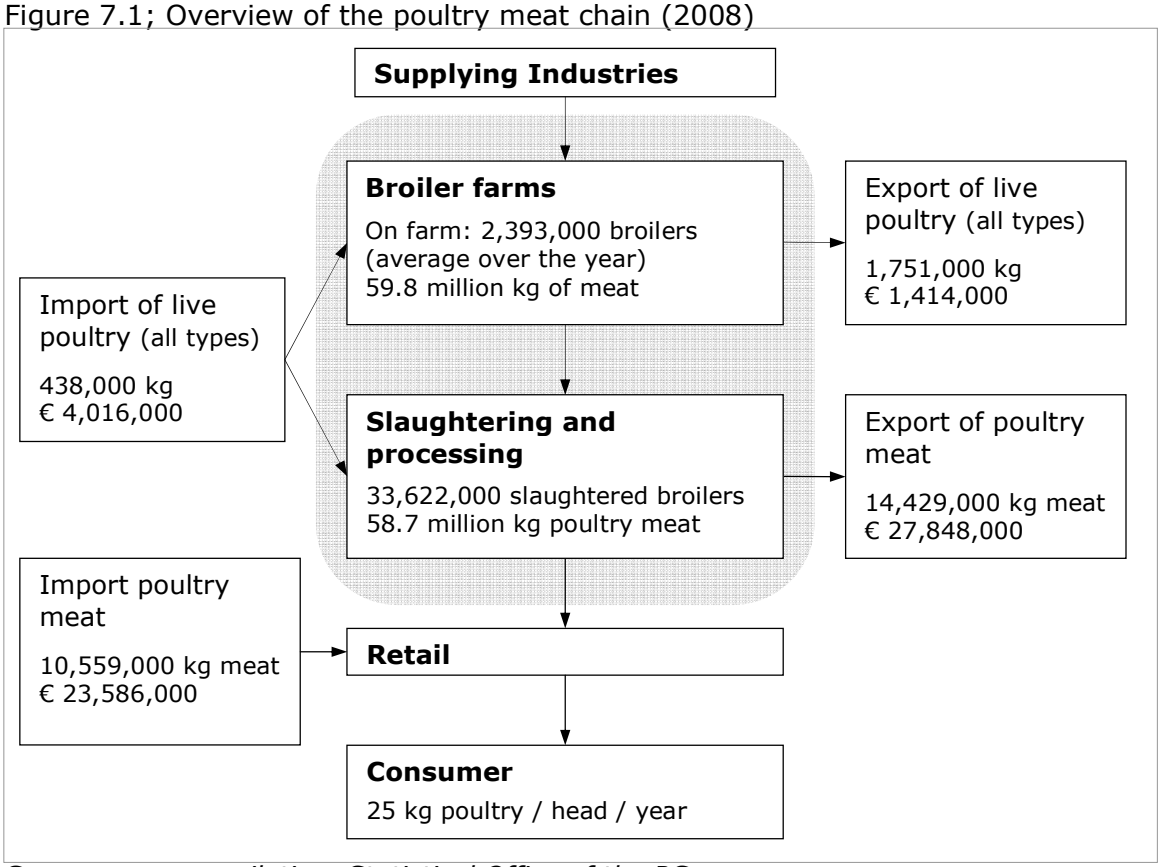
The poultry chain can be divided into a poultry meat chain and a layers and eggs chain. The poultry meat chain is described in this chapter. The layers and eggs chain is mentioned in chapter 8. The poultry farming and processing sector is small, but one of the most modern and dynamic agricultural sectors in Slovenia.

The production of poultry meat contributes approximately 6% to the gross agricultural output. Section 7.1 gives an overview of the production chain. The driving forces of the chain are explained in section 7.2. Section 7.3 concludes about the chain dynamics.

7.1. Overview of the chain

Figure 7.1 presents an overview of the poultry meat chain. The poultry sector is characterized by a high level of concentration, specialization, vertical integration and efficiency. The three leading poultry enterprises, *Perutnina Ptuj*, *Pivka Perutninastvo*, and *Panvita Agromerkur,* are intensively upstream integrated businesses, either through cooperatives or by direct contracting with farmers. Farmers provide labor and appropriate rearing facilities, whereas the three enterprises supply young chicken, feed and veterinary services. At the end of the cycle the enterprises slaughter, process the meat, and sell to the wholesalers and retailers.

Figure 7.1; Overview of the poultry meat chain (2008)



Source: own compilation, Statistical Office of the RS

7.1.1. Supplying industries

The core of the poultry meat chain in Slovenia is formed by three integrated enterprises; *Perutnina Ptuj*, *Pivka Perutninastvo*, and *Panvita Agromerkur*. They are the suppliers to for hatching eggs, one-day old chicken, and young broilers.

These large agricultural enterprises have in-house production of fodder, compound feed, and supplemental vitamins and mineral mixtures, both for own use and for commercial sales. Poultry farmers get supplied by these companies. The enterprises deliver the veterinary services as well. The medicines are bought from *Krka pharmaceuticals* and multinational pharmacies.

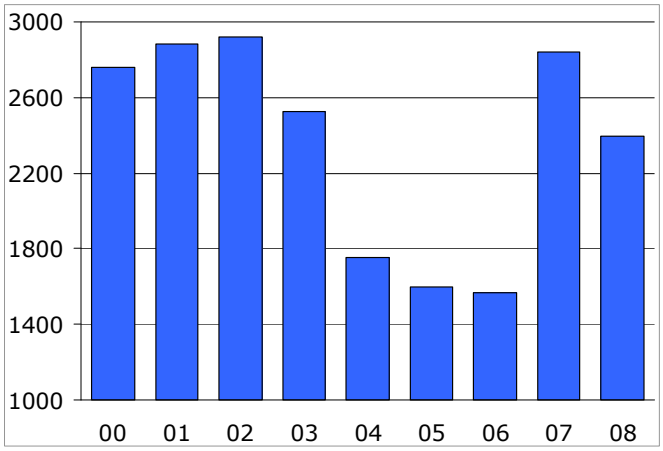
Materials for poultry houses are imported on a just in time basis. Whenever necessary, individual farmers or the enterprises import these materials.

7.1.2. Poultry farming

The production of poultry meat takes place on broiler farms. In 2008, 2.39 million broilers were reared on approximately 3,000 farms.

Figure 7.2 presents the development of the number of broilers between 2000 and 2008. It shows a substantial decrease in the number of broilers from 2004 till 2006. The main reasons are the extra requirements that came in place with the EU accession in 2004 and the impact of the Avian Influenza in 2006.

Figure 7.2; Number of broilers (thousands)



Source: Statistical office of the RS

Table 7.1; Size structure of broiler farms (2007)

	# farms	# broilers
Total	3,003	3,430,688
1 – 49	2,621	40,025
50 – 99	102	5,499
100 – 499	71	12,133
500 – 999	8	5,314
1000 – 2999	12	20,551
3000 – 4999	8	28,595
5000 – 9999	45	301,956
>= 10,000	137	3,016,615

Source: Statistical Office of the RS

Table 7.1 provides an overview of the size structure of broiler farms. The fact that 87% of the farms rear between one and 49 broilers, indicates that several small farms still exist. Simultaneously, 88% of the national herd is kept by 137 farms with over 10,000 broilers. This type of farms produces the majority of poultry meat for the market and is collaborating with the leading enterprises.

Prices, margins and competitiveness

Table 7.2; Composition of revenues and costs for broilers in €/head (2008)

Revenues - total	**2.45**
- sales of meat	2.44 €1.083/kg
- by-products	0.01
- subsidies	0.00
Costs – total	**2.65**
- goods & services	2.40
• animals	0.51
• feed	1.68
• other	0.21
- depreciation	0.08
- labor and capital	0.17
Net added value	**-0.03**

Source: Agricultural Institute of Slovenia

Table 7.2 presents the average composition of revenues and costs of an average broiler. First of all, the net added value is negative. Secondly, feed generates the highest cost which proofs the evidence to co-operate with the large enterprises for poultry feed supply.

The production of poultry meat for the market takes place on farms contracted by one of the three enterprises. The contracts foresee in the delivery of all necessary supply and in the guaranteed purchase of fattened broilers. The farmers provide labor and the appropriate rearing facilities.

This collaboration is favorable for both the farmers and the processors. It is the way to reach cost efficiency. However, both parties are tightened to the contact, which makes them less flexible.

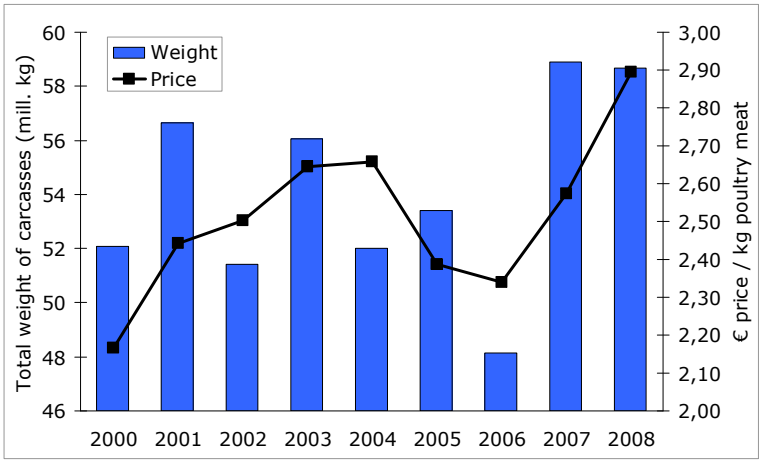
7.1.3. Processing industry

The three large enterprises, *Perutnina Ptuj*, *Pivka Perutninarstvo* and *Panvita Agromerkur,* are mainly processors of poultry meat. In 2008, 34.5 million pieces of poultry are slaughtered. Of these were 97.3% broilers, 1.1% hens, and 1.5% turkeys. In recent years, the production of poultry meat has an average around 55,000 tons.

Prices, margins and profitability

Figure 7.3; Poultry meat prices and slaughtered weight

Figure 7.3 presents the development of meat prices and slaughtered weight from 2000 to 2008. The bars show the weight of carcasses produced in slaughterhouses. The line shows the fluctuation in price paid to the farmer per kg of poultry meat. Poultry meat is a normal good. When the supply is high, the prices are low and the other way around.



Source: Own compilation, Statistical Office of the RS

The EU accession has not caused enormous consequences for the poultry meat processors. Poultry has never been supported by subsidies on a large scale. The drop in slaughtered weight and the low price in 2006 are caused by the Avian Influenza. Consumer demand dropped 30% that year. After this low point, the market recovered and reached an even higher level as before.

Important poultry slaughterhouses and processors
Perutnina Ptuj d.d. is with 55% of the Slovene market in 2008, the largest poultry meat processor. The group is based in Ptuj, Slovenia and consists of ten subsidiaries which are located in Croatia, Bosnia, Serbia, Romania, and Austria. In 2007, the group produced 76.6 million broilers, 44.5 million hatching eggs, 170.4 million tons feedstuff, 59.0 tons poultry meat and 20.3 tons poultry products.

The core business is the production of poultry meat and poultry meat products. In 2007, the sales in poultry meat totaled €51.0 million and the sales in poultry meat products totaled €37.1 million in Slovenia. This is 60% of the total group revenues. *Perutnina's* brands are *Naturally Fit*, *Poli*, and *Jata*. It has its own distribution system with uninterrupted cooling to deliver to its customers and its own shops.

Pivka Perutninarstvo d.d. held 18% of the poultry market in 2008 and is a subsidiary of *Jata Emona*. *Pivka's* core business is the production of poultry meat, meat products, table eggs, and eggs products. It works closely together with the parent company that provides feed stuffs and deals with the sales of meat and eggs. The products are sold in the supermarkets chains and in own shops.

The activities of *Panvita Agromerkur d.o.o.* are located in the Pomurje region. It includes the production of hatching eggs and day old chickens, chicken growing and slaughtering. In collaboration with farmers, 2.7 million chickens are produced in 2008. *Agromerkur* has its own slaughterhouses. From there it goes to *Panvita MIP d.o.o.* that processed 15,113 tons of meat products in 2008. Their brand "Salam Halal" is special because it is the only Slovene halal produced poultry meat.

7.1.4. Distribution and trade

The distribution of poultry meat and products from the processors to their own retail shops and supermarkets is executed by their own transport system. The main reasons to do it themselves are lowering costs and the uninterrupted cooling to the shops which ensures better quality.

The Slovenian poultry meat sector has always been integrated into the international market. This integration is mostly present due to the three large processors. Slovenia holds a net export position in poultry meat. In 2008, exports were 14,429 tons and imports were 10,559 tons. Since the EU accession, both the volume of imports and exports increased at the same rate. The main export markets are Croatia and Bosnia. Italy is a destination of exports as well as the main origin of imports.

7.2. Driving forces

Retail in supermarkets and small(er) butcher shops
The role of the supermarkets in the sales process of poultry products is similar to other animal products. Supermarkets have the brands from the large processors on their shelves. In this way, they are always trying to put downward pressure on the purchase prices of the processors. This decreases the margin of the processors and thereafter of the producers as well.

A significant share of poultry products are sold in the small meat shops as well. The three enterprises have their own meat retail chains. This way of vertical integration increases the margins of these enterprises. At the same time, it decreases the complete power of the supermarkets.

Poultry meat as the healthier substitute for red meat
Generally, Slovene consumers like fresh meat. However, for poultry meat pre-packed and processed meat is widely accepted. Especially frozen food as breadcrumbs covered chicken steaks and Cordon Bleus are quite popular. Therefore, the processors are able to make the value-added (wider margin) processed products. For quite some years already, the consumption of poultry meat averages around 25 kg per capita per year.

At the same time, poultry meat is the most important meat substitute for red meat. This means that the consumption of poultry meat is slightly increasing while the consumption of red meat is decreasing. An average consumer chooses poultry meat over red meat because of the healthier aspects of poultry meat.

7.3. Chain dynamics
The section concludes about the entire poultry chain. First of all, the balance of power throughout the chain is mentioned. Secondly, a SWOT analysis summarizes the main points of the integrated poultry meat chain. Finally, the expected future developments are described.

Balance of power
The poultry meat sector is characterized by a high level of concentration, specialization, vertical integration, efficiency, rather favorable economic developments and also satisfactory business performance.

The most powerful link in the chain is the processing industry. They have lots of bargaining power and good contracts with the farmers that are producing for them. Since the processors deliver feed, young chicken and veterinary services to the farmers, the farmers have lower (financing) costs but will deliver for lower prices to the processors as well. The individual processors have such a significant size that they have some power to negotiate prices with the retail chains.

Simultaneously, the supermarket chains are selling large quantities of poultry meat. This means that the supermarkets have some bargaining power over the processors.

SWOT Analysis of the poultry meat chain

Strengths	**Weaknesses**
- controlled production of broilers which assures higher quality product - vertically integrated production chain causes scale and efficiency advantages - strong meat brands - modern production, slaughtering, processing and distribution equipment	- low flexibility for farmers and processors due to long term contracts - relatively small scale in international environment which weakens trade position - large capital requirements throughout the production chain
Opportunities	**Threats**
- improvement of animal welfare and further branding of high quality products - growing market for convenient and further processed products	- oscillation of prices on the (international) market - disease outbreaks - further pressures on prices and contracting conditions from retail sector

Future perspectives

The Slovene poultry sector has benefited a lot from its highly integrated chain structure. It has good perspectives to focus on high quality standards and to work together with retail chains. On the other hand, also due to the consumer preference for domestic products, the Slovene industry has limited opportunity to grow its scale of domestic activities. Therefore, it is expected that internal competition will rise and further consolidation may be expected. Another opportunity is to develop further or to expand to other markets in south-eastern Europe.

8. The consumption eggs chain

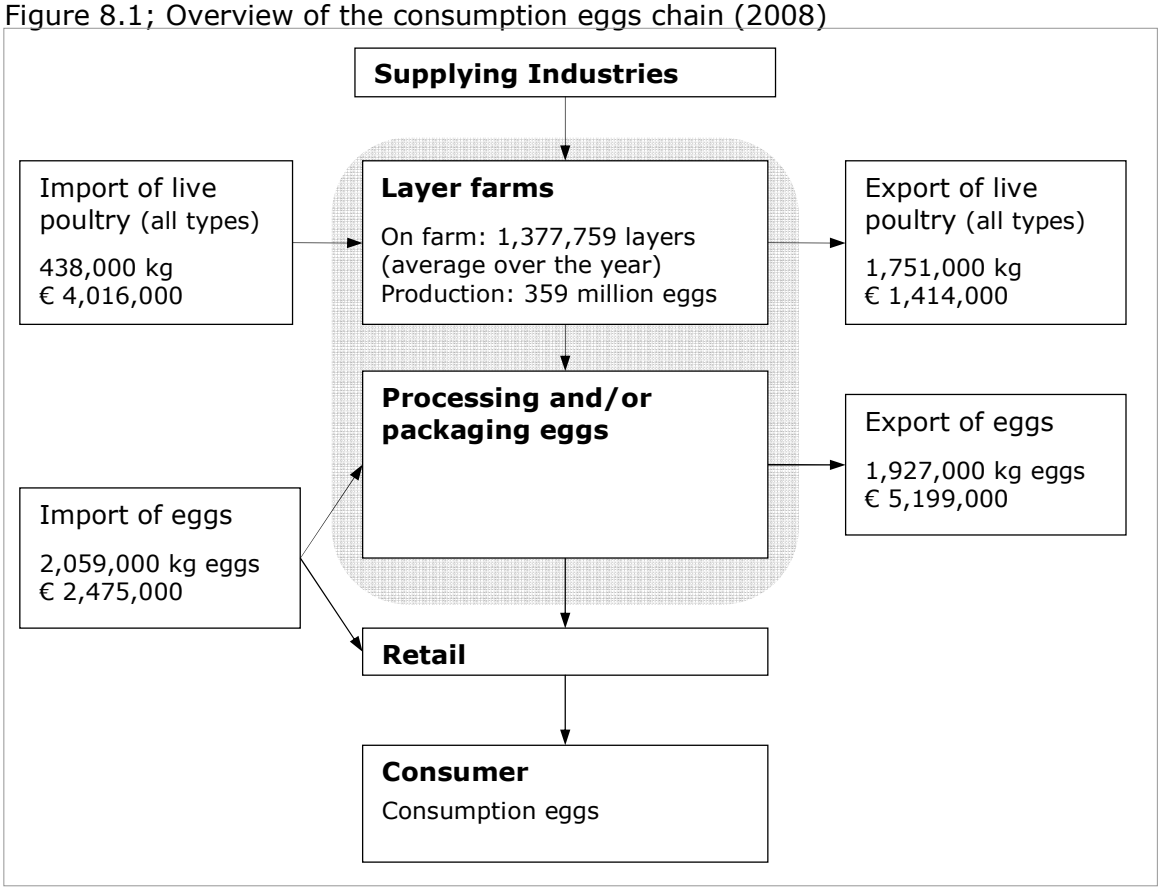
It is already mentioned in chapter 7 that the poultry chain differs from other agricultural production chains in the sense that it contains two products. Chapter 7 mentioned the poultry meat chain. This chapter describes the consumption eggs chain.

The production of eggs contributes approximately 3% to the gross agricultural output. Section 8.1 provides an overview of the production chain. The driving forces of the chain are explained in section 8.2. Section 8.3 concludes about the chain dynamics.

8.1. Overview of the chain

Figure 8.1 presents an overview of the consumption eggs chain. However, the data in the figure are not complete, since they are not available. The production of eggs is organized similar as the production of poultry meat. The chain is dominated by two leading enterprises. Characteristic for the chain is the high level of concentration, specialization, vertical integration and efficiency. The two leading enterprises have contracted farmers and supply them young chicken, feed and veterinary services. In turn, the farmers deliver the eggs to these enterprises for further distribution or processing.

Figure 8.1; Overview of the consumption eggs chain (2008)



Source: own compilation, Statistical Office of the RS

8.1.1. Supplying industries

The core of the consumption eggs chain in Slovenia is formed by two integrated enterprises; *Perutnina Ptuj and Pivka Perutninastvo.* They have in-house production of fodder, compound feed, and supplemental vitamins and mineral mixtures, both for own use and for commercial sales. Poultry farmers get supplied by these companies. The enterprises deliver the veterinary services as well.

Materials for poultry houses are imported on a just in time basis. Whenever necessary, individual farmers or the enterprises import these materials.

8.1.2. Poultry farming

The production of eggs takes place on layer hen farms. In 2008, 1.38 million layers were reared on approximately 38,000 farms.

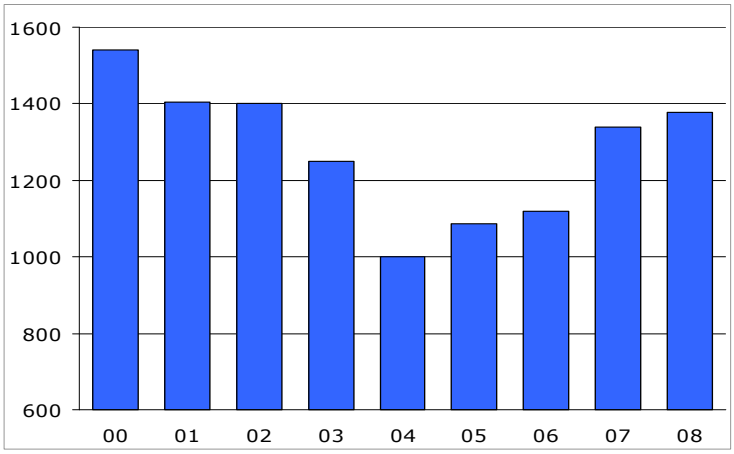
Table 8.1; Size structure of layer farms (2007)

	# farms	# layers
Total	37,978	1,272,588
1 – 9	18,047	99,554
10 – 29	18,660	247,298
30 – 99	1,072	40,623
100–499	114	19,534
500–999	17	11,255
1000 – 2999	26	43,235
3000 – 4999	15	58,749
5000 – 9999	16	107,805
>= 10,000	9	644,536

Source: Statistical Office of the RS

Table 8.1 provides an overview of the size structure of layer farms in 2007. This size structure is typical for the primary level in Slovenia. Most farms (96.7%) own between one and 29 layers, producing eggs for own consumption or the local market. Only nine holdings keep more than 10,000 layers and about 50% of the national herd. These nine holdings produce the majority of market eggs.

Figure 8.2; Number of layers (thousands)



Source: Statistical office of the RS

Figure 8.2 presents the development of the number of layers between 2000 and 2008. It shows a decrease in the number of layers from 2004 till 2006. The main reasons are the extra requirements that came in place with the EU accession in 2004 and the impact of the Avian Influenza in 2006.

Prices, margins and competitiveness

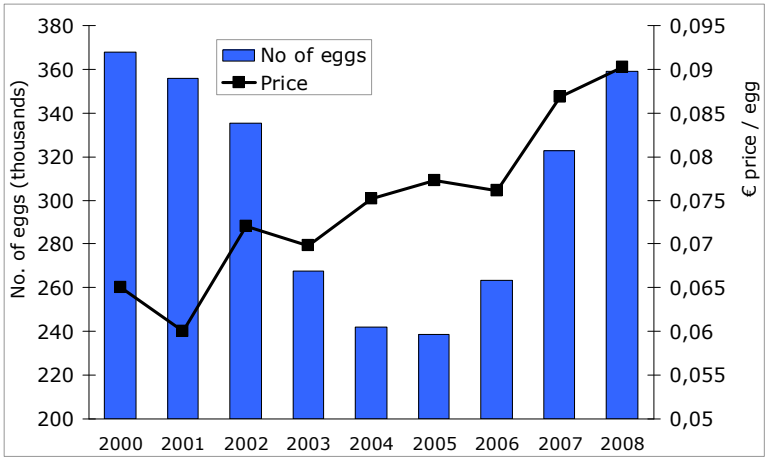
Table 8.2 presents the average composition of revenues and costs of an average layer hen. First of all, notice the positive net added value for layer hens. Secondly, feed generates the highest cost which proofs the evidence to work closely together with the large enterprises for poultry feed supply. Experts mention that costs of feed are even higher when farmers do not collaborate with one of these enterprises.

Table 8.2; Revenues and costs for layer hens (eggs) in €/head (2008)

Revenues - total	**26.03**
- sales of eggs	24.45 €0.090/egg
- by-products	1.58
- subsidies	0.00
Costs – total	**27.09**
- goods and services	21.97
• animals	4.91
• feed	13.17
• other	3.99
- depreciation	1.40
- labor and capital	3.73
Net added value	**2.74**

Source: Agricultural Institute

Figure 8.3; Egg prices and number of eggs produced



Source: Own compilation, Statistical Office of the RS

Figure 8.3 presents the development of egg prices and the number of eggs produced between 2000 and 2008. The bars show the total number of eggs that is produced on farms. The line shows the fluctuation in price per consumption egg that is paid to the farmer.

Figure 8.3 shows a rapid decline in the production of eggs between 2003 and 2006. This is caused by the EU accession in 2004 and the Avian Influenza in 2006. From 2007 on the production of eggs has returned to normal levels again. The prices increased continuously between 2000 and 2008.

The production of eggs takes place on the farms which are collaborating with one of the two enterprises. The contracts foresee in the delivery of all necessary supply and in the guaranteed purchase of eggs. The farmers provide labor and the appropriate rearing facilities.

The vertical collaboration is favorable for both the farmers and the distributors and processors. It is the way to reach cost efficiency. However, both parties are also tightened to the contact, which makes them less flexible.

8.1.3. Distribution, processing and trade

In 2008, 359 million eggs are produced and packed or processed. In recent years, the production of eggs is averaged around 296 million pieces. The distribution and packaging of eggs is mainly executed by the two large enterprises. They pack and distribute the fresh eggs to the distribution hubs of the supermarket chains and they sell them in their own shops. Eggs produced for further processing into egg products are sold to companies which actually produce these products. This are large food companies, for example *Droga Kolinska*, or pharmacists.

Important distributors and traders of eggs

Perutnina Ptuj d.d. is with 55% of the Slovene market in 2008, the largest egg producer and distributor. The group is based in Ptuj and consists of ten subsidiaries which are located in Croatia, Bosnia, Serbia, Romania, and Austria. In 2007, the group produced 76.6 million broilers, 44.5 million hatching eggs, 170.4 million tons feedstuff, 59.0 tons poultry meat and 20.3 tons poultry products.

Pivka Perutninarstvo d.d. held 18% of the poultry market in 2008 and is a subsidiary of *Jata Emona*. *Pivka's* core business is the production of poultry meat, meat products, table eggs, and eggs products. It works closely together with the parent company that provides feed stuffs and deals with distribution and sales of meat and eggs. The products are sold in the supermarkets and in the own shops.

External trade

The Slovene poultry sector has always been integrated into the international market. The export of eggs stands around 1,600 tons per year since 2002. The import of eggs increased from 132 tons in 2002 till 2,059 tons in 2008. After the EU accession in 2004 the imports of eggs increased drastically. From a net exporter till 2006, it became a net importer of eggs from 2007 and onwards.

8.2. Driving forces

Supermarkets important in the sales of eggs and egg products

Similar to several other products, supermarkets play a key role in the sales of eggs and egg products. First of all, the eggs. It is a simple product; it is sold in a simple cardboard box and basically only the quantity differs. Producers and supermarkets try to differentiate eggs in regular produced eggs and biological produced eggs. And furthermore in multigrain eggs and so on. In this way, they are trying to differentiate and put downward pressure on the purchase prices of the processors. This decreases the margin of the processors and thereafter of the producers as well. The major share of consumption eggs is sold in supermarkets. What is not sold in supermarkets is produced by small farmers for own consumption or bought on local markets.

Eggs considered as basic consumer goods

It is difficult to tell something about the consumption of eggs in Slovenia. Consumers are similar in their consumption as elsewhere in Europe, which means that eggs are consumed on a regular basis, consumer prefer ecological produced eggs, and furthermore, they do not really have an opinion on it.

8.3. Chain dynamics

This section concludes about the consumption eggs chain. First of all, the balance of power throughout the chain is mentioned. Secondly, a brief SWOT analysis summarizes the main points of the consumption egg production chain. Finally, the future perspectives are described.

Balance of power

Similar to the poultry meat sector, the production of eggs is also characterized by a high level of concentration, specialization, vertical integration, efficiency, rather favorable economic developments and also satisfactory business performance.

The most powerful link in the chain are the distributors / two large enterprises. They have bargaining power over, and good contracts with the farmers that are producing eggs. Since these enterprises deliver feed, young chicken and veterinary services to the farmers, the farmers have lower costs. The individual enterprises have such a significant size which allow them to negotiate on prices with retailers.

Simultaneously, the supermarket chains are selling large quantities of eggs. This means that the supermarkets have some bargaining power over the processors.

SWOT Analysis of the egg chain

Strengths	**Weaknesses**
- controlled production of eggs which assures higher quality product - vertically integrated production chain causes scale and efficiency advantages - modern production, slaughtering, processing and distribution equipment	- low flexibility due to long term contracts - relatively small scale in international environment which weakens trade position - large capital requirements throughout the production chain
Opportunities	**Threats**
- improvement of animal welfare and further branding of high quality products - application of egg products in several products outside the food industry (e.g. pharmaceuticals)	- oscillation of prices on the (international) market - disease outbreaks - further pressures on prices and contracting conditions from retail sector

Future perspectives

The Slovene poultry sector has benefited a lot from its highly integrated chain structure. It has good perspectives to focus on high quality standards and to work together with retail chains. On the other hand, also due to the consumer preference for domestic products, the Slovene industry has limited opportunity to grow its scale of domestic activities. Therefore, it is expected that internal competition will rise and further consolidation may be expected. Another opportunity is to develop further or to expand to other markets in south-eastern Europe.

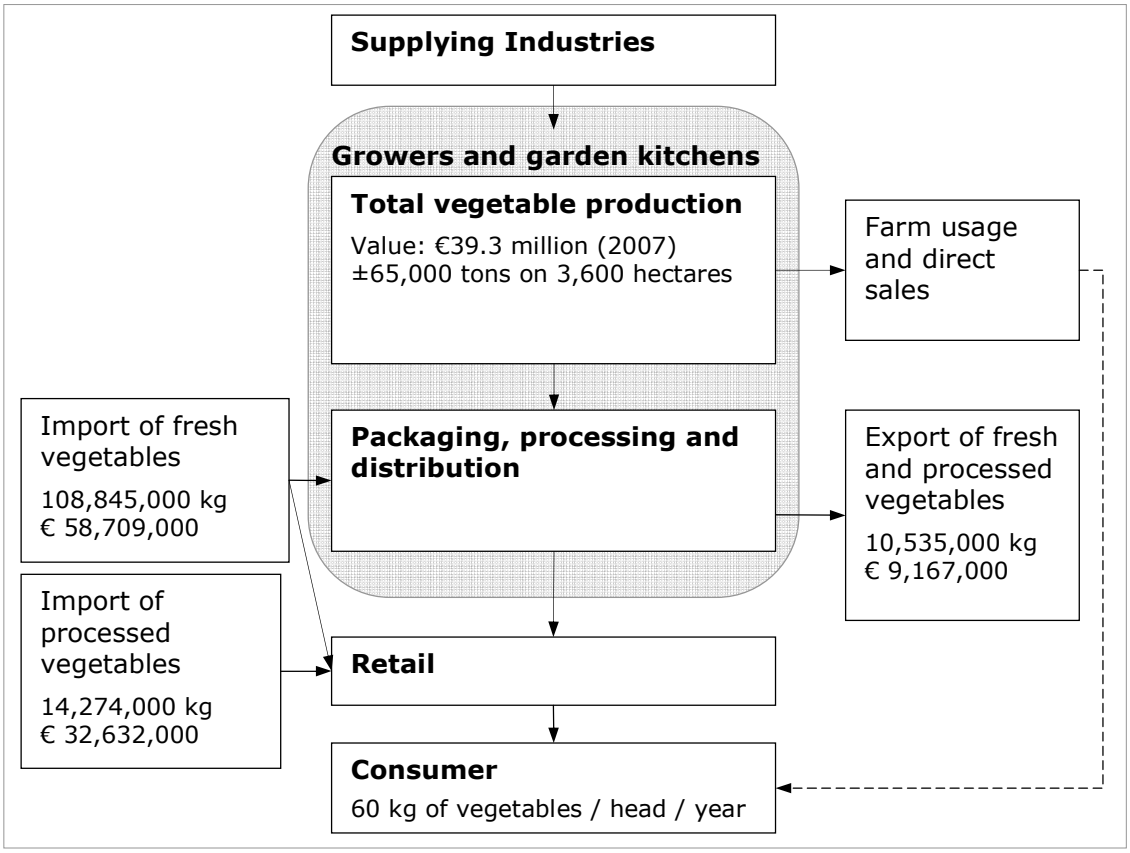
9. The vegetable production chain

This chapter describes the vegetable production chain in Slovenia. The suppliers, growers and the processing of vegetables are mentioned in section 9.1. Section 9.2 explains forces influencing the chain. The conclusion is written in section 9.3.

9.1. Overview of the chain

Figure 9.1 presents a schematic overview of the entire production chain of vegetables. Slovenia is one of the smallest producers of vegetables in the EU. Few professional growers produce reasonable quantities for the market. Lots of production takes place in garden kitchens. These vegetables are used for own consumption or sold on the local market. The self-sufficiency rate of vegetables is around 34%, which makes imports necessary to fulfill consumer demand.

Figure 9.1; Overview of the vegetable production chain (2008)



Source: own compilation, Statistical Office of the RS

9.1.1. Supplying industries

The basic inputs for vegetable production are seeds and seedlings. Pesticides, fertilizer and minerals are needed for both indoor and outdoor production. For outdoor production, machines as tractors, seeders, and harvesters are necessary. Indoor production requires greenhouses and the accompanying equipment.

In 2007, 773 farms produced seeds and seedlings on 215 hectares of arable land. Seeds and seedlings are produced and grown by the Slovene *Semenarna Group*. The multinationals are *Syngenta*, *Bayer*, *Enza Zaden* and *Monsanto*.

Pesticides, fertilizers and minerals are needed for the conventional production of vegetables. The suppliers of pesticides are *Bayer*, *Syngenta*, *Pinus* and *Karsia*. Slovene producers of fertilizers and minerals are *Jurana*, *Karsia*, and *Agroruše.*

The largest share of distribution of these inputs is taking place through the garden centers and the small agricultural shops. The garden centers *Kalia* and the agricultural centers *Rodovita* are the largest retail chains in this segment. They are owned by the *Semenarna Group*. Other farm supply shops are owned by large feed producers or producer organizations. Customers of these shops are both hobby and professional growers of vegetables. Different kind of equipment as flower pots, garden tools, and decoration stuff is also available in those shops.

Large machineries for outdoor production are mainly tractors, seeders, sprayers, washing and packaging machines and harvesters. A large amount of these machines are imported from Italy, among them *Urbinati*, *Mass*, and *Rosa*. Other (second hand) favorite brands are *John Deere* and *Deutz*.

The level of indoor production of vegetables in greenhouses is low. The most professional production of vegetables in Slovenia takes place in plastic greenhouses. One of the largest builders of greenhouses is *RAR Novi d.o.o.*, which builds only plastic greenhouses for professional production. It builds glasshouses for hobby gardening only. Generally, suppliers of plastic greenhouses are non-specialized, small companies which sell other garden equipment and machinery as well.

9.1.2. Vegetable production

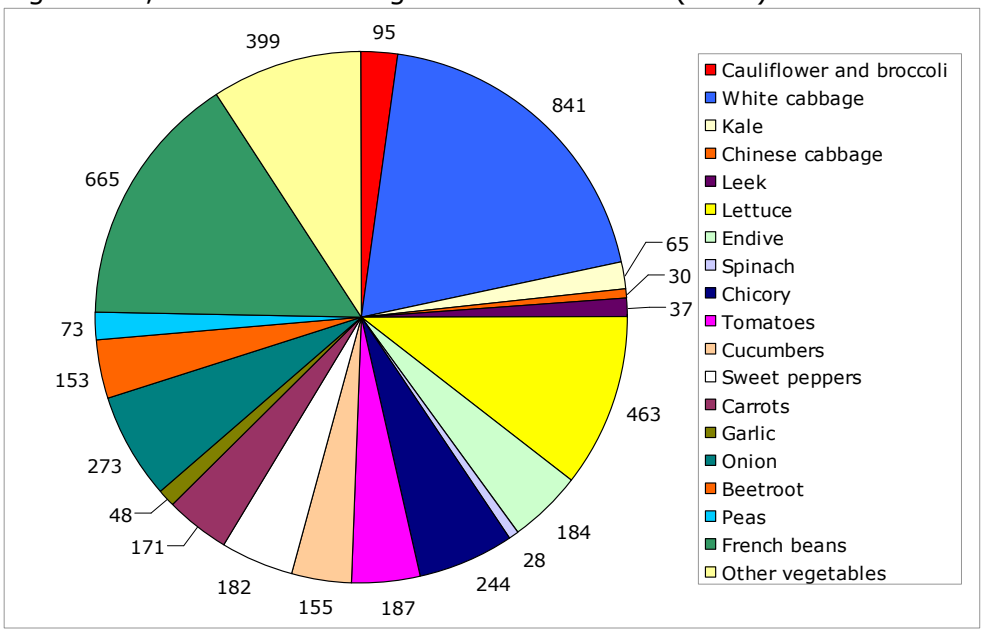
Production of vegetables takes places by a limited number of professional growers as well as in garden kitchens. The largest production volumes come from the Pomurska and Podravska regions in the north-east and in the Spodnjeposavska and Gorenjska regions in the middle of Slovenia. The total value at producer prices of the production of vegetables was €39.3 million in 2007, of this approximately 90% comes from professional growers. No production coupled subsidies are in place.

In 2007, a total of 65,000 tons of vegetables were produced on 3,600 hectares of land. These numbers have not changed drastically over the last years. Vegetable growing as hobby gardening and for own consumption takes place on approximately 2,000 hectares (56%) of land. In this way, they produce 27,000 tons (42% of total production) vegetables. These small growers are producing organically and are responsible for around 70% of all organic agricultural production in Slovenia.

Just a few specialized growers of vegetables exist. In 2007, 57 specialist field vegetable producers used 474 hectares to produce field vegetables. 157 producers used 736 hectares for specialist production of market garden vegetables. Combined production of field crops and market gardening took place on 1,549 hectares by 120 producers. Altogether, they produces approximately 38,000 tons of vegetables for the market.

Figure 9.2 presents the number of hectares used for the production of vegetables in 2008. For both the used area as well as the value, the most important vegetables are white cabbage, lettuce, endive, chicory, tomatoes, cucumbers, sweet peppers, carrots, onion, beetroots and French beans.

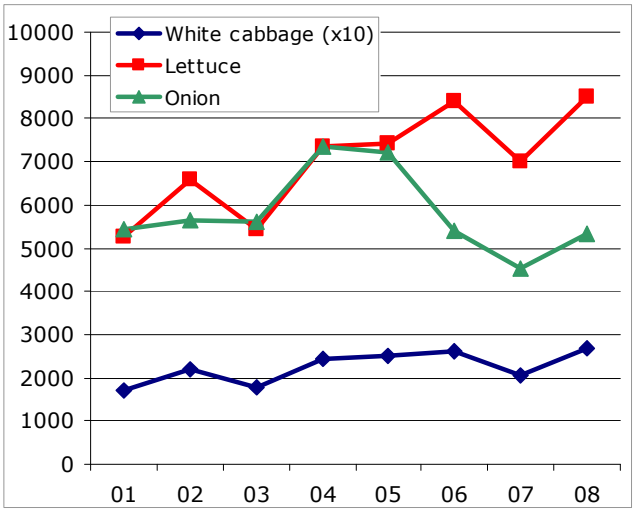
Figure 9.2; Production of vegetables in hectares (2008)



Source: Statistical Office of the RS

Figure 9.3 presents the development of production quantities of the three main vegetables between 2001 and 2008. The figure shows that the production of white cabbage increased slightly over the years. The production of lettuce increased and the production of onions decreased. For other vegetables the trends are increasing, decreasing and continuous. Shortly, the development of quantities produced of different vegetables is hard to predict and depends completely on the vegetable type.

Figure 9.3; Production quantities '01-'08 (tons)



Source: Statistical Office of the RS

Level of professionalization
The weather and land characteristics of Slovenia benefit the production of vegetables in greenhouses. Although the climate is more extreme than in the Netherlands, with warmer summers and colder winters, there is a high level of sun hours. Geothermal energy is available in the earth in the north-eastern part of Slovenia. This can be used to heat the greenhouses during the winter. Experts say that high-tech greenhouses could increase the production of vegetables.

The level of professionalization is very low. In 2009, no vegetable production in glasshouses exists. Indoor production of vegetables does take place in plastic greenhouses only. In the 2006 data on indoor and outdoor production of vegetables are 8,011 growers and 1,723 hectares of land included. Of these, 118 hectares is used by 1,564 growers for indoor production. And another 1,421 hectares is used for outdoor production by 5,689 growers.

Only around 30 professional growers with indoor facilities are producing reasonable quantities for the consumer market. These growers grow mainly strawberries, sweet peppers, tomatoes, lettuce and diverse seedlings. In contrast, growers that use arable land for the production of vegetables outdoors are mainly growing white cabbage, French beans, union, chicory, and lettuce.

One of the reasons that the sector is not fully developed is the lack of knowledge of the growers. The amount of capital available to invest in vegetable production is rather low. Investments in modern technology are high. In addition, Slovenes are not really willing to buy knowledge from abroad.

9.1.3. Processing industry

Approximately 35% of the domestic, professionally grown vegetables are used for further processing into vegetable juices, canned vegetables or baby food. Basically the only large company specialized in processing vegetables is *ETA Food Industry d.d.* Under the brand "*Natureta*", it produces pasteurized, sterilized, dried and frozen vegetables, compotes, marmalades, tomato pastes, mustards, and readymade dishes. In 2007, their revenues were €21.1 million and net profits of €1.8 million. 82% of this is reached in Slovenia. The other 18% of revenues are earned with exports to the former Yugoslavian countries mainly.

9.1.4. Distribution and trade

In Slovenia, the largest share of produced vegetables is used directly on farm or sold on local (organic) markets. Further distribution to auctions or wholesalers does not take place on a very large scale. The professional growers have contracts with *ETA Food Industry* to sell vegetables to them for further processing. Domestically, auctions or other high volumes of trade in vegetables does not exist.

In 2009, 31companies are registered as wholesalers of fruit and vegetables. Among these are two large companies, *Geaproduct d.o.o.* (turnover 2008: ±€27 million) and *Unifruit d.o.o.* They purchase fruit and vegetables domestically and from abroad. Distribution and storage is their main job. The large companies deliver to large consumers, the supermarket chains and, catering companies.

The rate of self-sufficiency in vegetables is decreasing over the last years and stands around 34% in 2007. The imports of vegetables were around ten times higher than exports in 2008. In 2008, 10,525 tons of vegetables with a value of €9.3 million are exported. In the same year, 123,118 tons of vegetables were imported for €91.3 million. Slovenia's dependency on vegetable increases since the imports are increasing and the self-sufficiency rate is decreasing.

In 2008, 56% of the exported vegetables were fresh or chilled vegetables and 44% were processed vegetables. The main destinations of exports are Croatia, Serbia, Romania and Italy.

On the import side, 64% were fresh or chilled vegetables and 36% were processed vegetables in 2008. The four most important origins of fresh and processed vegetables are Italy, Austria, the Netherlands and Hungary. Especially potatoes and unions are imported from the Netherlands.

9.2. Driving forces

Supermarkets key in sales of vegetables
Vegetables are sold in two varieties; fresh and processed vegetables. First of all, the fresh vegetables, they are basically sold in two places; in supermarkets and on market places. With approximately 75% of the total sales, supermarkets hold a high share of the vegetable sales. All supermarket chains have a department with fresh vegetables (and fruits). Slovene supermarkets import these via auctions from wherever they are the cheapest.

Fresh vegetables sold on local market places come from different origins. Professional market vendors import their products via wholesalers. There are also several market vendors selling locally produced, organic vegetables. Domestically and organically produced vegetables are basically sold in this way.

Research of Kuhar and Juvančič (2006) shows that purchase of organic vegetables depends on the availability in retails stores. This is an opportunity for both the supermarkets and the domestic producers of organic vegetables; make it available in the supermarkets and increase sales.

Secondly, the processed vegetables are sold via the supermarkets. These groceries have a lot of bargaining power over their suppliers and want to buy as cheap as possible. They put pressure on the selling prices of the processors.

Characteristic for processed vegetables is the high potential for private label penetration. It is the strategy of supermarkets to sell under the cheaper private label instead of the more expensive producer brands. In Slovenia, most of the processed vegetables (sour gherkins, red beetroot and sauerkraut) under private label for Mercator are produced by the market leader. This makes the actual quality difference between private labels and producers brand almost zero. Due to this, the power of the retailer over the processor is quite large.

Consumption below EU-27 average
The consumption of fresh and processed vegetables in Slovenia has increased with 18% since the accession. The fresh vegetables account for 17% and the processed vegetables for only 1%. In 2008, an average consumer eats a total 60 kg of vegetables. For comparison, the average in the EU-27 countries was 79 kg per head per year and the recommended amount by the CINDI is 88 kg per head per year. The main reason for the low consumption is the traditionally meat-rich diet of Slovenes.

Nowadays, most Slovene consumers prefer reasonably quality and low price products over the more expensive high quality products. On the other hand, Slovenes are also getting more aware of the need to have a healthier, balanced diet. Here exists an opportunity for both traditional and organic vegetable producers to sell their healthy, natural products directly to the consumer.

For processed vegetable products, consumers increasingly buy private labeled products instead of the producer brands. Especially in the current economic situation, consumers cannot afford too expensive products.

9.3. Chain dynamics
This section concludes about the entire production chain. First of all, the balance of power throughout the chain is mentioned. Secondly, a brief SWOT analysis summarizes the main points of the vegetable growers and processors. Finally, the expected future perspectives are described.

Balance of power
The supermarkets put downward pressure on the prices for suppliers. They again put pressure on the prices of the growers. As a result, the growers, traders and processors lack capital for investments in technologies. This reduces the competitiveness of domestic players further and increases the role of international suppliers and traders.

SWOT Analysis

Vegetable growers

Strengths	**Weaknesses**
- good climate conditions with enough sun hours - availability of geo-thermal energy - high share organic products	- small scale structure and low level of professionalization - lack of knowledge and experience - lack of capital to make large investments in technology
Opportunities	**Threats**
- large potential market for domestic products - increasing demand for organic products	- neighboring countries have more natural possibilities to expand and cheaper labor

Vegetable traders

Strengths	**Weaknesses**
- high level of international trade - professional buyers	- small domestic market - limited domestic suppliers
Opportunities	**Threats**
- growing regional supplies (Croatia, Hungary, Romania) - increasing demand for organic products due to economic growth	- increasing international competition - further pressures on prices and contracting condition from retail sector

Future perspectives

Slovene growers are pessimistic about their future. The vegetable chain lacks competitiveness in price and quality. As a result of the high share of imports, perspectives for scale enlargement, professionalization and market growth for domestic players is limited.

Business opportunities mainly exist in trade and logistics services since there is a need for retailers to be supplied just in time with large volumes of constantly high quality vegetables.

The best opportunities for growers exist in large scale investments in modern greenhouses, with the use of geo-thermal energy to reduce production costs. This requires high financial inputs and even then the success depends on the simultaneous development of other activities as marketing and logistics. The risk on investments in horticulture is high, however it might be justified in the long term.

A positive trend for the vegetable industry is that people are more and more aware of having a healthier lifestyle. This means that they are aware of organic produced vegetables, the amount of vegetables they consume and the origin of it. It might be a future development to brand both fresh and processed vegetables with an organic or biological brand or join supermarket supply chains with a certified quality assurance scheme.

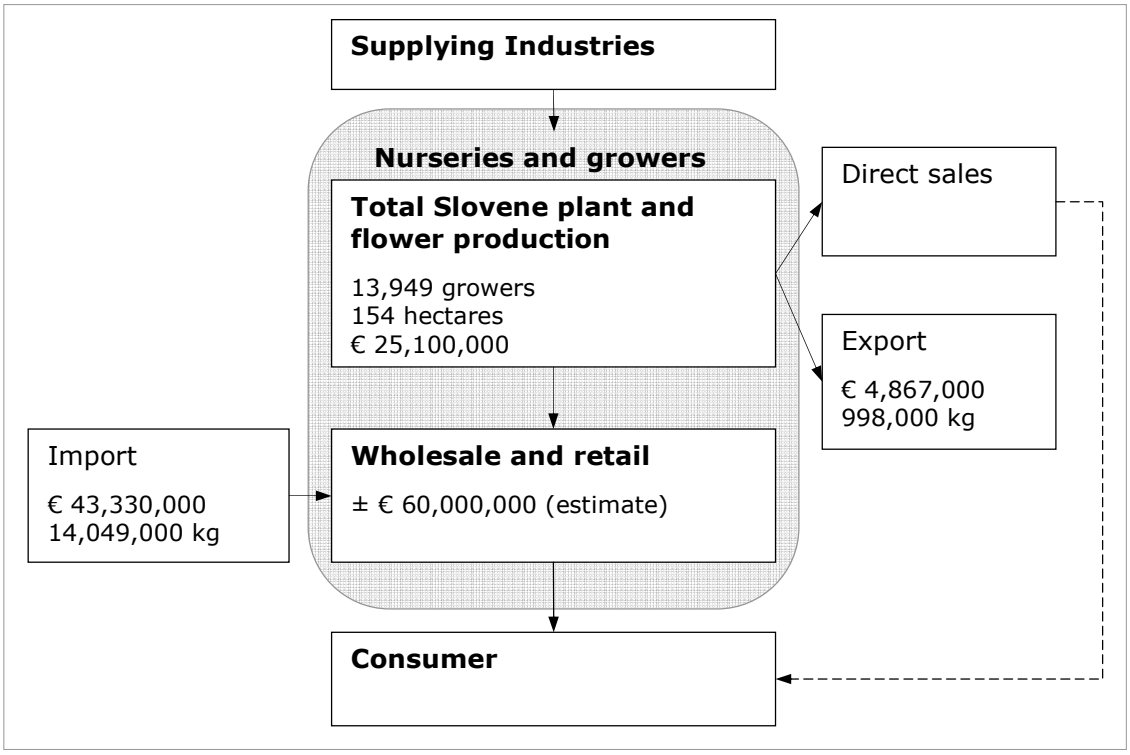
10. The floriculture chain

In this chapter, floriculture includes nursery plants, ornamental plants, cut flowers and plantations. Section 10.1 gives a general overview of production, trade and sales. Section 10.2 elaborates on forces influencing the behavior of the chain. Finally, section 10.3 concludes on floriculture in Slovenia.

10.1. Overview of the chain

Since flowers and plants are non-edible products, the chain differs from the other sectors in this report. Floriculture in Slovenia is a very small scale sector in Slovenia. 95% of the market flowers and plants are imported from diverse auctions in Europe, but mainly from the Netherlands. Figure 10.1 presents a general overview of the chain.

Figure 10.1; Overview of the floriculture chain (2008)



Source: own compilation, Statistical Office of the RS

10.1.1. Supplying industries

The basic inputs for plant and flower production are seeds and seedlings. Pesticides, fertilizer and minerals are other necessities for growing pot plants and flowers. For indoor production, greenhouses and the accompanying equipment are needed.

An important producer, distributor and retailer of seeds and seedlings is *Semenarna Ljubljana d.d.* The multinationals *Syngenta*, *Bayer*, and *Enza Zaden* sell through agents flower seeds to the supermarkets and garden centers in Slovenia.

For conventional production, pesticides, fertilizers and minerals are needed. Pesticide suppliers are *Bayer*, *Syngenta*, *Pinus* and *Karsia*. Producers of fertilizers and minerals are the Slovene companies *Jurana*, *Karsia*, and *Agroruše.*

Distribution of these inputs takes place through the garden centers and the small agricultural shops. The *Semenarna Group* owns the largest retail chains in this segment. These are the garden centers *Kalia* and the agricultural centers *Rodovita.* Feed producers and cooperatives own other garden and agricultural stores. Both hobby and professional growers of flowers and plants are customers of these shops. Different kind of equipment as flower pots, garden tools, and decoration stuff is also available in those shops.

Indoor production of plants and flowers in greenhouses does not happen on a large scale. Only one glasshouse for pot plants exists in Slovenia. The most professional production of plants and flowers takes place in plastic greenhouses. One of the largest builders of greenhouses is *RAR Novi d.o.o.*, which builds only plastic greenhouses for professional production. It builds glasshouses for hobby gardening only. Generally, suppliers of plastic greenhouses are non-specialized, small companies which sell other garden equipment and machinery as well.

10.1.2. Floriculture production

The level and amount of floriculture production in Slovenia is very low. In 2007, 13,949 growers used 154 hectares of agricultural land for production of flowers and plants. This means an average of 110 m^2 per grower, which compares to a home garden size. Furthermore, 181 holdings are registered as specialist producers. They use 285 hectares and reach an average of 2.13 hectares per holding. These numbers show that production takes place mainly in garden kitchens.

Around seven professional growers work in the Prekmurje region in the north-east of Slovenia. These family businesses produce cut flowers the national and international market. Balcony plants and annuals like pelargonium's, petunias, violas and begonias are the main species. These plants and flowers are grown in either open air gardens or in plastic greenhouses.

Ocean Orchids

Ocean Orchids d.o.o. is the only company in Slovenia which produces in a modern glasshouse (with high-tech Dutch technology from *Kubo*, *Sosef*, *Hortilux*, *Verwaardt climate control*, *JAVO*). This makes it most innovative and modern enterprise in the floriculture sector. It is the only company in south-east Europe that produces potted flowering orchids for the market. In a three hectare glasshouse, 1.3 million orchids per year are potted and grown. The target markets are Slovenia, Italy, Hungary, and the countries of former Yugoslavia. The orchids are also sold through the auctioneer *Flora Holland*.

The only tropical garden of Slovenia is placed in their glasshouse as well. It is opened for public, which is seen as a good marketing strategy. Visitors can buy orchids directly and it creates brand awareness. At the moment, Ocean Orchids researches the possibilities to invest in growing tomatoes.

10.1.3. Auctions and trade

The growers in Slovenia mainly sell their products directly to the local market. In the short term, growers see this as the way to maximize profits and enlarge margins, since transport and auction costs do not have to be paid.

Approximately 40 to 50% of the production is not sold directly, but is going to auctions or is exported. The main destinations of exports are Austria, Croatia, Italy and Serbia and have a total value of €4,867,000.

Since the production is modest, imports are almost ten times larger than exports. The total value of imports is €43,330,000 and come mainly from the Netherlands. Austria, Germany, and Italy are origins of import also. The largest auction in Europe, *Flora Holland* is the main source of plants and flowers in Slovenia. Experts estimates that 93% to 95% of floriculture sold in retails shops or on markets comes from the auction in the Netherlands.

10.1.4. Wholesale and retail

The three largest wholesalers of cut flowers and pot plants in Slovenia are *Gardenia*, *Contrast* and the Croatian based *Agrokor*. The yearly operating revenues in the wholesale is around €60 million yearly, of which the three market leaders hold around 60%. These companies have own retail shops all over the country.

The small market vendors have together 20% of the market. Most of them are part of an organization which imports flowers. As mentioned before, 93-95% of plants and flowers sold in Slovenia are bought at auctions in the Netherlands.

The level of computerization throughout the entire production chain is high. Everything is recorded in a computer system, orders to the auction are going by computer and all sales are recorded in the system as well.

Important wholesalers and retailers

Gardenia Ars Florae d.o.o. is a wholesaler with 20 retail shops which are concentrated in Ljubljana. These shops are mainly located in the shopping centers and other busy locations. Their market share stands around 20% for several years already. Small private owned flower shops are delivered by them as well.

For *Gardenia*, sales consist for 50% of cut flowers (mainly roses and gerberas), 30% pot plants and 20% accessories. Seeds and bulbs are sold seasonally only. The customers are companies and organizations (20%) as well as private consumers (80%). The philosophy of Gardenia is to be have an unique, well-dressed flower shops where customers can buy good quality products.

Two other large wholesalers in the pot plant and flower business are the Croatian based *Agrokor d.d.* and the Slovene *Contrast d.o.o.* Both these companies hold a market share of approximately 20% as well.

An extensive overview of florist shops, wholesalers, producers and suppliers that are registered at the Chamber of Craft and Small businesses in Slovenia is available on the website; www.florist.si.

10.2. Driving forces

Basically three things influence the behavior of the entire chain. These are the international environment, wholesalers and retail, and the consumer.

Dependence on international trade

The international environment influences both producers and wholesalers. It influences producers in such a way that they have to produce in an internationally competitive way. Slovene producers do not believe that they are able to do that, which means that they are afraid to invest and enlarge.

Thereafter it influences the wholesalers. Since the domestic supply is rather low and not consistent, they have to import plants and flowers. Slovene wholesalers have to buy and put in the retail shops what is available on the international market. This already means that this is a branch where Slovene wholesalers and retail are not such a powerful link in the supply chain.

Wholesalers and retail determine supply and demand

The three market leaders, *Gardenia*, *Contrast* and *Agrokor*, are both wholesalers and retailers. They buy their flowers and plants at auctions and afterwards it is delivered to their own retail shops as well as to privately owned retail shops. Since the retailers are willing to have continuous supply of products, buying via a wholesaler at an auction is the most efficient way. Due to this, almost no individual contract with growers exist. In this system, the wholesalers basically determine supply and demand.

Plants and flowers as luxury goods

Plants and flowers are luxury goods for Slovene consumers. Since prices are quite high, due to auction and transport costs, plants and flowers are really bought as a gift and not as a usual weekly purchase. Roses and gerberas are the most popular flowers. In the current recession, the sales of plants and flowers decreases and demand shifts from cut flowers towards houseplants.

10.3. Chain dynamics

This section concludes about the production chain. First of all, the balance of power throughout the chain is mentioned. Secondly, a brief SWOT analysis summarizes the main points of the growers. Finally, the future perspectives are described.

Balance of power

It seems that the international environment influences the entire production chain mostly. The wholesalers and the retail are completely dependent on the auctions. Since the main auction in Europe is located in the Netherlands, it is very expensive to get the flowers into the shops. Flowers and plants are distributed over a long distance, which increases cost and decreases the quality.

Simultaneously, the wholesalers and retailers have some power. They decide on the product assortment in the shops and whether or not to buy directly from Slovene producers. The consumer has little power since their preferences influence the assortment of retail and wholesale. The producers try to compete with retail when they are selling products directly from the nursery or on local markets.

SWOT Analysis

Floriculture growers

Strengths	**Weaknesses**
- good climate conditions with enough sun hours - availability of geo-thermal energy - relatively cheap labor available - good road infrastructure	- small scale and low level of professionalization - lack of knowledge and experience - high cost of energy in Slovenia (higher gas prices than in NL) - no auction in south-east Europe - technology is not available
Opportunities	**Threats**
- professionalizing of the distribution channel	- neighboring countries have even more natural possibilities to expand and cheaper labor - globalization makes local production unnecessary

Future perspectives

International competition is high and plants and flowers are luxury goods in Slovenia. This means that not that many growers are interested in growing them. Despite the fact that natural circumstances to produce flowers and plants in glasshouses are good, it is not expected that this is going to expand on a large scale. Even though, Ocean Orchids has proved the possibility.

The main reasons are a lack of knowledge, the technology is not available in south-eastern Europe (has to be imported), the production of food is easier (only seasonal work), and Slovene mentality is generally not that entrepreneurial that growers are willing to take the risks.

Nevertheless, some potential for floriculture production exist in the northeast of Slovenia. 200 million people live and work within 500 km from this region. The availability of geothermal energy and sufficient labor, and the good climate makes the region potential exports of Dutch greenhouse technology. Furthermore, the Slovene government is actively involved in making some new horti- and floriculture policies. A study group is founded (by the MAFF) to research the exact opportunities. Herein, one of the directors of Ocean Orchids is nominated as specialist advisor.

11. Other important sectors

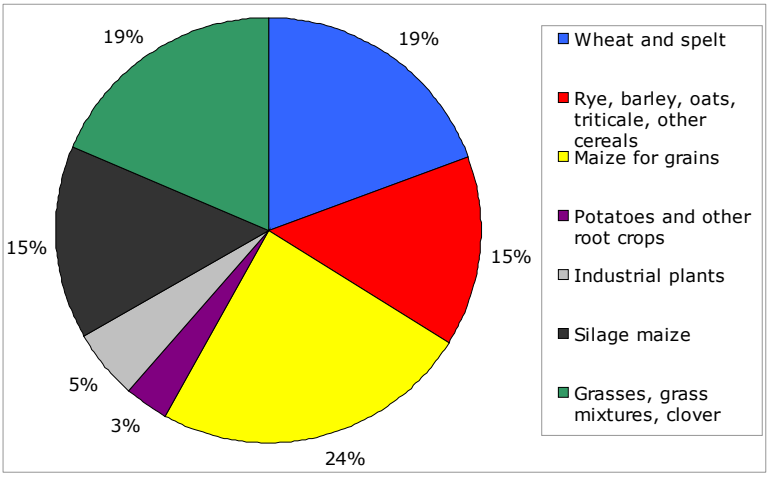
This chapter provides brief overviews of those agriculture and food branches that are significant for Slovenia. However, the decision is made not to describe these branches in individual chapters. The sections 11.1 till 11.5 describe arable farming, the production of fruit and grapes, fisheries, bakery products and beverages.

11.1. Arable farming

In 2008, 36.6% of the total utilized agricultural area is covered by arable land. It is 180,303 hectares, which are used by 70,143 agricultural holdings. In 2007, 95.7% of the holdings work on less than 10 hectares of arable land. This indicates the small scale structure of farms. Between 2002 and 2008, both the total number of arable and the number of farms with less than 10 hectares of land decreased with 15%. This indicates a consolidation process in which small farms quit farming. Simultaneously, the number and size of large farms is increasing.

The total value at producer prices of crops was €519.2 million in 2008. An additional €320,000 is paid to farmers as production coupled subsidies.

Figure 11.1; Crops on arable land (2008)



Source: Statistical Office of the RS

Figure 11.1 presents the distribution of arable land among different crops in 2008. Cereals are grown on 58% of arable land, especially wheat and spelt, and maize. The largest share of grains is used for animal feed. Silage maize for fodder is produced on a large scale as well. This is mainly produced on small pieces of by individual farmers. It is used directly on farms as feed for their own animals.

Table 11.1 presents the development of the production of the main arable crops between 2002 and 2008. The production of the traditional wheat and spelt decreased and this is substituted by other cereals as rye, barley, oats, and triticale. Growing of potatoes decreased due to the high production costs and the cheaper imports of retail from, among others, the Netherlands. Furthermore, the production of maize for grains decreased, while silage maize increased. This is due to a change in fodder preferences for cattle and pigs. The production of grasses and grass mixtures increased in this period.

Table 11.1; Production of most important arable crops in .000 tons

	2002	2004	2006	2008	Growth '02–'08
Wheat and spelt	175	147	134	160	-8.4%
Rye, barley, oats, triticale, other	64	79	83	99	54.2%
Potatoes	166	171	107	100	-39.6%
Maize for grains	371	358	276	320	-13.9%
Silage maize	1,066	1,210	1,052	1,133	6.3%
Grasses and grass mixtures	147	168	162	197	34.1%

Source: Statistical Office of the RS

Important producers

The producers of large quantities of arable crops are particularly the large integrated enterprises which are also involved in animal production. One of them is the *Panvita Group,* a large poultry and pig integration. It cultivates over 3,400 hectares with wheat, rape plant, grain maize and barley. The plants are produced for human consumption, fodder, and seeds. *Panvita* produced 45,000 tons of these agricultural products and 59,000 tons of fodder in 2008. The company website states that they are the leading producer of fodder for pigs in Slovenia.

Dobrodej Slovenija, part of *Jata Emona*, produces reasonable quantities of feedstuff for the market. It has also wholesale of grains, seeds and feed. *Perutnina Ptuj, Farme Ihan,* and small animal farmers produce fodder for own use mainly.

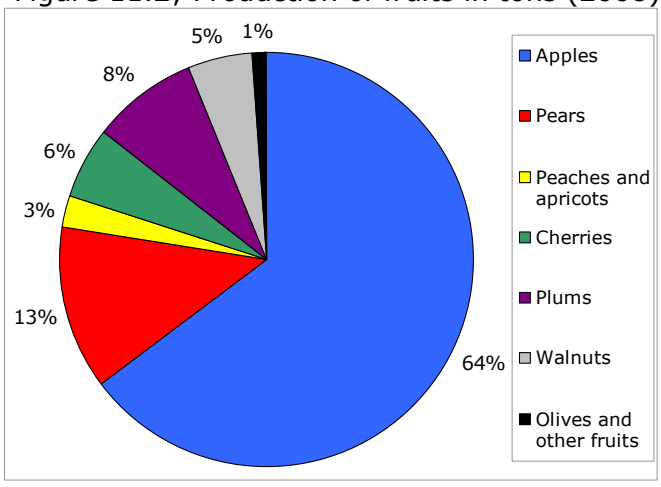
11.2. Production of fresh fruit and grapes

In 2008, the production of fruit and grapes took place on 25,014 hectares. This is 13.9% of the utilized agricultural area. The total value at producer prices was €97.1 million in 2008. In economically terms, Slovenia is not a large player in the production of these products in Europe. However, production of fruit and grapes is considered as an important part of the culture and landscape.

Fruit production and processing

In 2007, 1,706 producers were producing fresh fruit in 4,017 hectares of orchards.
Figure 11.2 presents the main varieties of fruits produced. It is clear that apples are by far the most important. It is followed by pears and plums. In 2009, ten companies are registered as growers of apple, pears, and stone fruits. The largest producers of fruits in Slovenia are *Evrosad d.o.o.* and *Meja Šentjur d.d.* Both companies are involved in the production of apples, pears and peaches.

Figure 11.2; Production of fruits in tons (2008)



Source: Statistical Office of the RS

Table 11.2 presents the development of the production of the main fruits and grapes between 2002 and 2008. The production of fruit and grapes decreases sharply over this period. However, it has to be taken into account that the production depends highly on the weather conditions. In that sense, 2008 was a bad year, so the decrease in production might be less drastically if data on 2009 would be considered. Nevertheless, the production of fruits and grapes decreased in this period. The main reason for this is quitting of the small growers.

Table 11.2; Production of the main fruits and grapes in tons

	2002	2004	2006	2008	Growth '02–'08
Apples	93,900	92,942	79,878	71,613	-23.7%
Pears	5,907	5,274	4,136	3,136	-46.9%
Peaches, nectarines, apricots	9,171	13,659	10,486	5,813	-36.6%
Grapes	122,985	134,792	105,486	105,719	-14.0%

Source: Statistical Office of the RS

Fruit is sold directly from the farm, on local markets and to the producers of canned fruit and fruit juices. Distribution and trade in fresh fruit is done by specialized wholesalers. Two large wholesalers of fruits are *Geaproduct d.o.o* and *Unifruit d.o.o.* These companies purchase fruit domestically as well as abroad and sell them to the supermarket chains and catering companies.

The largest processor of fruits is *Fructal d.d.* It produces a broad range of products under diverse brands. *Fructal* products are fruit juices, nectars and smoothies under the brand *Fructal*. Other brands are *Frutek*, Fruc, and *Frutabella*. It produces fruit preparations for the dairy industry as well.

Dana d.d. is the other large producer of fruit juices. Under the brand *DAN* it produces several fruit juices for the Slovene market.

Grapes and wine

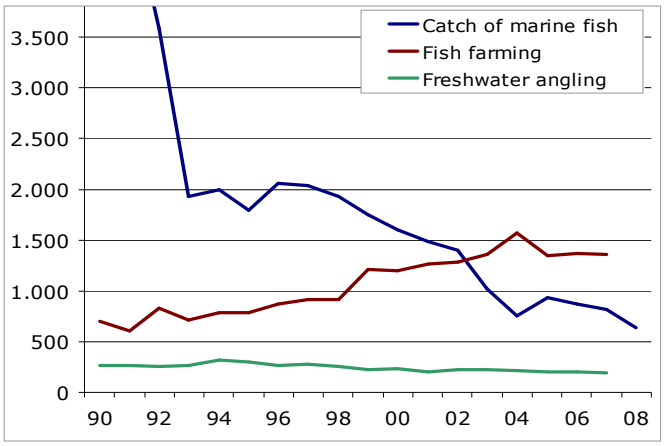
In 2008, the producer value of the production of grapes was €14.9 million and the final production of wine generates €108.95 million. This is generated with 105,719 tons of grapes, grown on 16,086 hectares of vineyards. Two-third of the total production is white wine grapes and one-third is red wine grapes.

Production takes place on both hobby and professional scale. The hobby producers produce small quantities, mainly for their own use. The large wine companies regularly own vineyards and produce wine out of their grapes. Among the main companies in the wine business are *VinaKoper*, *Vipava 1894*, *Ljutomerčan*, *Radgonske gorice*, and *Vinska klet* "*Goriška Brda*".

11.3. Fishery

Fishery cannot be considered as a significant contributor to the national economy. In 2007, 281 people were employed in the sector. The production value was €3.3 million, which is 0.0091% in the gross domestic product.

Figure 11.3; Yearly production of fish (,000 kg)



The production of fish takes place in three different ways basically. These are the catch of marine fish, fish farming and freshwater angling. The development and the contribution of the three types to the total fish production over the years are presented in figure 11.3.

Source: Statistical Office of the RS

Marine fish catching

Figure 10.1 presents a fast decline in the catch of marine fish between 1990 and 2007. In 2008, 181 fishing vessels sailed out to catch fish in the Adriatic Sea. 159 of these vessels were smaller than 11.9m, which indicates the small scale of the business. The species that is caught mostly are European sardines with a contribution of 45% to the total caught. Other relevant species were anchovies, cuttlefish, whiting, musky octopus, and European sea bass.

Fish farming

Figure 10.1 presents an increase in fish farming over the years. The production of fish is divided in freshwater culture and mariculture. Freshwater aquaculture is the cold-water farming of salmonids and the warm-water farming of cyprinids. In freshwater fish farming, the major species contributing most of the production value are rainbow trout and common carp. In mariculture, these are the Mediterranean mussel, European sea bass and gilthead sea bream.

Fish farming is characterized by small self-employed family farms, most of which have one employee and some are assisted by unpaid family members. Obviously, the goal is the production of fish for consumption and the generation of income. It is also important in recreation, rural tourism, nature conservation and water management. This could provide increased employment and business opportunities for the rural populations in the future.

More information about fish farming in Slovenia is available on the website of the FAO: http://www.fao.org/fishery/countrysector/naso_slovenia/en#tcNA008A

Freshwater angling
Freshwater angling does not contribute much to the total amount of fish caught in a commercial way. However, it influences fish stock of the inland waters. It is also a part of the Slovene culture.

Processing of fish
Since fishing does not take place on a large scale, the amount of companies that process and preserve fish is limited. The only processor of canned fish in Slovenia is *Delamaris d.o.o.* They keep 45% of the domestic fish market. The other reasonable producer is *Frigomar d.o.o.* Both companies are located in Izola.

Trade and distribution
In Slovenia, fish is mostly traded and sold on the national market. Producers are mostly oriented towards sales on fish markets in their neighborhood. It is possible in almost every food store to buy frozen or canned fish. The fish available in supermarkets is mainly imported.

Slovenia is an importer of fish and fish products. There is a continuous import of fresh farmed species; sea bream, sea bass and salmon. Approximately 75% of the imports come from EU-15 countries and are frozen, dried or processed.

Consumption
Fish is not a daily food in Slovenia, but it has a great significance during holiday seasons and at Christmas time. The consumption of fish is approximately 5.5 kg per person per year, which is below the EU-25 average. Therefore, some experts say that good possibilities for further aquaculture development exist.

Other issues
Even though the fishery sector is not large in monetary terms, it is often a hot issue. This is for both environmental groups and politics. The environmental movement considers overfishing and the way of fish farming as the main concerns. In politics and policies, fishery is under the umbrella of the Ministry of Agriculture. The fisheries development plan 2007 – 2013 sets the goals and measures for the Slovene fishery sector. The plan is in place to ensure a sustainable development of the sector.

Furthermore, lots of Slovenes are (sport) fishermen, for whom the amount of fish in lakes and ponds is of interest.

Fishery organizations
More information about fishery in Slovenia is available at the following organizations and institutions.

Ministry of Agriculture, Forestry and Food – http://www.mkgp.gov.si
Fisheries Research Institute of Slovenia – http://www.zzrs.si

11.4. Bakery products

The manufacturing of bread, pastry, cakes, biscuits and other bakery products is the largest branch in the food processing industry. Almost 40% of enterprises, 30% of employees and 16% of total turnover of the food industry are on the account of the bakery branch. These numbers indicate several small bakeries, which makes sense if you think about the small bakeries around the corner. This section provides a brief overview of the manufacturing of bakery products.

Milling industry

Only six companies are registered as manufacturers of grain mill products at the Chamber of Commerce and Industry. The milling industry adds only 2% to the total turnover of the food industry. The most important company is *Mlinotest Zilviska Industrija d.d.* Besides the production of flour and other milled products, it produces pasta and bakery products. *Mlinarstvo in trgovina d.o.o.* is a specialist in milling of cereals into products for human and animal consumption.

Bakeries

Several small companies are registered as manufacturers of bakery and farinaceous products. These companies are ranging from one man or family owned bakeries to industrial enterprises with mass products of bread and bakery products.

By far the largest bakery in Slovenia is *Žito d.d.* The *Žito Group* is composed of more Slovenian and foreign companies. The mother company is *Zito d.d.* The activities are based on bakery, milling and pastries industry as well as on the production of pasta and frozen food.

Retail

The retail of bread and bakery products takes place through bakery shops and supermarket chains. The small bakery shops around the corner are increasingly part of a larger bakery chain. The supermarkets sell both pre-packed bread as well as bake off bread.

11.5. Beverages

The production of beverages consists of a broad range of different products with different characteristics. The production of beverages contribute 15% to the total food industry turnover, however just an overview of the main beverage producers is written hereafter. The reason for this is that the production of raw materials for beverages is not contributing a major share towards the economic value of agriculture. In 2009, 32 companies are registered as manufacturers of beverages. Exceptions have to be made for fruit, grapes and hop. The production of fruit and grapes is already briefly mentioned in section 10.2.

Non-alcoholic beverages

Basically two types of beverages exist; non-alcoholic and alcoholic beverages. First of all, the non-alcoholic beverages. Important categories are mineral waters, soft drinks, fruit and vegetable juices, and the hot drinks like coffee and tea.

The brands *Radenska ACE*, *Ora*, *Sprint* and *Stil* are produced by *Radenska d.d. Dana d.d.* produces several varieties of drinks, among which bottled waters under their own name. Slovenia also has a branch of *Coca Cola*.

The fruit and vegetable juice producers are already mentioned in section 10.2. To be complete, the largest producers are *Fructal d.d.* and *Dana d.d.*

One of the largest Slovene food companies produces is *Droga Kolinska d.d.* Their core business is the manufacturing of coffee and tea. The main brands are *Grand Coffee*, *Barcafé* and *Grand Pleasure*.

Alcoholic beverages

Secondly, the alcoholic beverages. Here are basically three different categories; beer, wine and liquors. The production of wine is not mentioned here anymore, see section 10.2 for information about that.

Slovenia has two large domestic beer brands. These are Laško and Union. Pivovarna Laško is basically a brewery and nowadays also major shareholder in several companies. The Union brewery is part of the Laško Group.

Slovenia has domestic brewed liquors, however it is not a large industry and they are not internationally on the market. Beverages companies as *Dana d.d.* and *Fructal d.d.* are producing liquors. Liquor brands like *Skandal*, *Prior* and *Liquor Matiss* are produced by *Fructal d.d.*

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Appendix I, Listed interviewed experts

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Andrej Horvat – Head of Marketing Slovenia, Croatia, BiH, Albania and Macedonia

Chamber of Agriculture and Forestry of Slovenia – www.kgzs.si
Tončka Jesenko – Head of Service for Crop, Forage and Vegetable Production

Chamber of Agriculture and Forestry of Slovenia – www.kgzs.si
Uroš Zgonec – Adviser Specialist for Animal Breeding

Gardenia Ars Florae – www.gardenia.si
Gorazd Račič – President

Inspectorate of the RS for Agriculture, Forestry and Food
Primož Marolt, MSc. – Director of Agricultural Inspection Service
Helena Srnel – Director of the Inspection Service for Food Quality

Kmetijska Založba d.o.o.
Tatjana Čop, MSc. – Journalist for agricultural journals and magazines

Semenarna Ljubljana d.d. – www.semenarna.si
Primož Štuhec, MBA – Commercial Director

University of Ljubljana, Biotechnical Faculty – www.bfro.uni-lj.si
Marija Klopčič, Ph.D. – Teaching Assistant

Appendix II, Listed organizations

Hereafter, the main organizations, institutions, services, and businesses in the fields of agriculture and food in Slovenia are listed in alphabetical order.

Governmental Institutions

Agency of the RS for Agriculture Markets and Rural Development
Dunajska 160, 1000 Ljubljana
W. www.arsktrp.gov.si

Farmland and Forest Fund of the RS
Dunajska 58, 1000 Ljubljana
W. www.s-kzg.si

Inspectorate of the RS for Agricult., Forestry, Hunting and Fisheries
Parmova 33, 1000 Ljubljana
W. via www.mkgp.gov.si

Institute of Macroeconomic Analysis and Development
Gregorčičeva 27, 1000 Ljubljana
W. www.imad.si

Ministry of the RS of Agriculture, Forestry and Food
Dunajska 56, 1000 Ljubljana
W. www.mkgp.gov.si

Phytosanitary Administration of RS
Einspielerjeva 6, 1000 Ljubljana
W. www.furs.si

Slovenia Forest Service
Večna pot 2, 1000 Ljubljana
W. www.zgs.gov.si

Veterinary Administration of the RS
Parmova 53, 1000 Ljubljana
W. www.vurs.gov.si

Other organizations, institutes and services

Agricultural Institute of Slovenia
Hacquetova 17, 1000 Ljubljana
W. www.kis.si

Chamber of Agri and Forestry
Celovška 135, 1000 Ljubljana
W. www.kgzs.si

Bureau Veritas Slovenia
Certification Agency
Linhartova cesta 49a, Ljubljana
W. www.bureauveritas.si

Chamber of Commerce and Ind.
Food Industries Association
Dimičeva 13, 1504 Ljubljana
W. www.gzs.si

Chamber of Craft and Small Buss.
Section of florists and gardeners
Celovška cesta 71, 1000 Ljubljana
W. www.florist.si

Chamber of Craft and Small Buss.
Section of food processing
Celovška cesta 71, 1000 Ljubljana
W. www.ozs.si

Consortium of Biotechnical Schools
Sevno 13, 8000 Sevno
W. www.biotehniske-sole.si

Cooperative Union of Slovenia
Miklošičeva 4, 1000 Ljubljana
W. www.zzs.si

Fisheries Research Institute Slov.
Sp. Gameljne 61a, Ljubljana-Šmartno
W. http://www.zzrs.si

Inst. For Hop-Growing and Brewing
Cesta Žalskega tabora 2, 3310 Žalec
W. www.ihps.si

Slovenia Forestry Institute
Večna pot 2, 1000 Ljubljana
W. www.gozdis.si

Small Buss. Development Centre
Dunajska 156, 1000 Ljubljana
W. www.pcmg.si

Uni Ljubljana – Biotechnical faculty
Jamnikarjeva 101, 1000 Ljubljana
W. www.bf.uni-lj.si

Uni Ljubljana – Veterinary faculty
Gerbičeva 60, 1000 Ljubljana
W. www.vf.uni-lj.si

Uni Maribor – Faculty of Agriculture
Vrbanska 30, 2000 Maribor
W. www.fk.uni-mb.si

Commercial businesses and companies

Agrokor Group
Food and agricultural products
www.agrokor.hr

Agroruše d.o.o.
Plant protection, fertilizers, substrates
www.agroruse.si

Bayer CropScience
Crop protection and seeds
www.bayercropscience.si

Celjske Mesine d.d.
Red Meat Producer and Processor
www.celjske-mesnine.si

Coca Cola HBC Slovenija d.o.o.
Soft drinks and bottled waters
www.coca-cola.si

Contrast d.o.o.
Wholesaler of flowers, pot plants, deco
www.contrast.si

Dana d.d.
Fruit juices, bottled waters, liquors
www.dana.si

Delamaris d.o.o.
Processing and preserving of fish
www.delamaris.si

Enza Zaden B.V.
Seed and seedling producer
www.enzazaden.nl

ETA, Food Industry d.d.
Processing of vegetables
www.eta-kamnik.si

Evrosad d.o.o.
Production of fruit
www.evrosad.si

Farme Ihan d.d.
Pig and pig meat producer
www.ihan.si

Flora Holland
Floriculture Auction
www.floraholland.com

Frigomar d.o.o.
Processing and preserving of fish
www.frigomar.si

Fructal d.d.
Fruit juices, baby products, liquors
www.fructal.si

Gardenia Ars Florae
Wholesale and retail of flowers & plants
www.gardenia.si

Geaprodukt d.o.o.
Wholesale of fruits and vegetables
www.geaproduct.si

GG Bled d.o.o.
Forestry and Logging
www.ggbled.si

GG Novo Mesto d.d.
Forestry and logging
www.ggnm.si

GG Slovenj Gradec d.d.
Forestry and logging
www.gg-sg.si

Jata Emona d.o.o.
Feed and Poultry production
www.jata-emona.si

Karsia d.o.o.
Crop protection products
www.karsia.si

Kras d.d.
Meat producer and processor
www.kras.si

Kubo
Greenhouse projects
www.kubo.nl

Ljutomerčan d.d.
Grape and wine producer
www.ljutomercan.si

MIP d.d.
Meat producer, processor and retailer
www.mip.si

Mlinarstvo in trgovina d.o.o.
Mfr of grain mill products
www.mlinarstvo.si

Monsanto
Vegetable seed producer
www.monsanto.com

GG Maribor d.d.
Forestry and Logging
www.ggmb.si

GGP d.o.o.
Forestry and logging
www.ggp.si

Gozdarstvo Grča d.d.
Forestry and logging
www.g-grca.si

Jurana d.o.o.
Fertilizers and soil conditioners
www.jurana.com

Košaki Tmi d.d.
Red meat producer and processor
www.kosaki.si

Krka Pharmaceuticals d.d.
Pharmaceutical company
www.krka.si

Ljubljanske Mlekarne d.d.
Dairy processor
www.l-m.si

Meja Šentjur d.d.
Production of fruit and eggs
www.meja.si

Mlekarna Celeia d.o.o.
Dairy processor
www.mlekarna-celeia.si

Mlinotest Group
Pasta, bakery prod., flour, milling prod.
www.mlinotest.si

Ocean Orchids d.o.o.
Orchids grower
www.oceanorchids.si

Pinus d.o.o.
Crop protection products
www.pinus-tki.si

Perutnina Ptuj d.d.
Poultry, poultry meat, feed production
www.perutnina.com

Pivovarna Laško d.d.
Brewery
www.pivo-lasko.si

Pomurka d.d.
Red meat producer and processor
www.pomurka.si

Radenska d.d.
Bottled water and soft drinks
www.radenska.si

Rastlinjaki RAR Novi d.o.o.
Building of greenhouses
www.raslinjak.si

Skupina Panvita, KG Rakičan d.d.
Agri, fodder, pigs, poultry, meat
www.panvita.si

Vina Koper
Grape and wine producer
www.vinakoper.si

Vipava 1894 d.d.
Grape and wine producer
www.vipava1894.si

Pivovarna Union d.d.
Brewery
www.pivo-union.si

Pomurske Mlekarne d.d.
Dairy processor
www.pomurske-mlekarne.si

Radgonske gorice d.d.
Grape and wine producer
www.radgonske-gorice.si

Semenarna Ljubljana d.d.
Seeds, seedlings, and retail
www.semenarna.si

Syngenta Agro d.o.o.
Seeds and pesticides
www.syngenta.com

Unifruit d.o.o.
Wholesaler of fruit and vegetables
www.unifruit.si

Vinska klet "Goriška Brda" z.o.o.
Grape and wine producer
www.klet-brda.com

Žito Group
Bread and bakery products
www.zito.si