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**COMPETITIVENESS STUDY OF THE FRUIT AND VEGETABLE
SUPPLY CHAIN IN THE NETHERLANDS.**

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1. INTRODUCTION

The fruit and vegetable production sector plays an important role in the agriculture and in the national economy of The Netherlands. The good natural endowments of the country and the tradition of vegetable production is the basis of high quality fruit and vegetable production. In spite of the economic recession, the Dutch horticultural sector closed the year of 2010 with good results. The Dutch horticultural sector has been described as a top sector by the CDA-VVD coalition parties in 2010. The turnover of the Dutch horticultural sector is 7 billion euro per year, 3 billion of which come from greenhouse production. More than half a million people are employed in the horticultural and related sectors. Economic experts predict the year 2011 to close with similar good results.

1.1 Actuality and importance of the topic

The significance of this subject is determined by the important position of the fruit and vegetable production sector within the economy of The Netherlands. (The importance of the topic is that the Dutch fruit and vegetable production sector is one of the most important economic sectors of The Netherlands.) The Dutch horticultural sector is the result of centuries of development, with high technology and an excellent competitive market position worldwide. The Dutch horticultural products have an excellent image with high quality. In the present dynamic and changing world, the EU-producers are faced with increasing expectations of their products and production systems. The international trade and market requires unified, traceable products and reliable producers. The costs of producers and wholesalers have increased significantly due to the EU environmental- and food safety regulations and of the high requirements of product quality (due to EU environmental and food regulations and rules of product quality). The overproduction plays an important role in the international trade activities of fruit and vegetables. This can be explained by the use of high production technology, increasing volumes of production, better quality of products and appearance of new producer countries. The over-production puts a big pressure on the gross margins of the wholesalers by lowering sell prices and reducing profit. Preserving the competitiveness of Dutch horticultural products on the national and international markets is essential. The Dutch wholesalers are facing an increasing challenge by the appearance of new producer countries on the market to rearrange and strengthen their export position. The overproduction has influence on the gross profit of wholesalers, because overproduction leads to decreasing prices and profits as well. It is important to save the market position of Dutch horticultural products. The appearance of new producer countries on the market is a challenge for wholesalers to re-arrange and strengthen their export position.

According to the European Union's fruit and vegetable market regulations, the fresh fruit and vegetables and the raw materials (to manufacture) belong to the less regulated products. The main reason behind this is the unique structure of production. The market regulation has no quantitative restrictions or quotas and the production can be increased freely if the market conditions allow this. The strict quality requirements play a central role, which means that the products have to be competitive on the EU market. This information is important for the participants of the sector and their future to be able to build up their market position. Furthermore, quality assurance and food safety issues are in the centre of attention.

The key element of market regulation is to develop good Producer Organisations (PO). According to the statistics in 2004 more than 1400 PO's worked in the EU co-ordinating 34% of the fruit and vegetable production. Referring to the European Commission [2007], the share for 2013 should be

increased to 60%. The new reformation of the sector became effective from 1st January 2008. The main aim of the reformation is to strengthen the negotiation position of the members and to use environmental friendly production technologies in a wider circle.

The EU reform requires all Member States to develop their own national strategy complying with their own targets, including the development possibilities of the sector and the tasks to be implemented by PO's.

The Horticultural Association as a labour organization is active on national and international level:

- organizing market research.
- reviewing the advertising opportunity.
- improving quality issues.
- organizing campaigns.
- incentive programs for consumption.

Nowadays, the problem of the rapid development of supermarkets is also noticeable. The retailers are making considerable efforts to obtain and retain consumers. New marketing strategies are being developed for this purpose. In the past there were some shops with a special range of products, they provided better service than others or it was possible to use credit cards. This has all changed. Nowadays many stores offer similar choices. The gap between supply and services are shrinking. Many stores decreased their service, but the "low cost shops" increased their service. Consumers are better educated and they are more economical. They do not see the point to pay more for the same brand, especially when the differences between services disappear.

At the same time, we live in an accelerated world where people want more and more things, certain conveniences are getting more important. Consumption and related shopping habits are constantly changing and forming. Different government programmes and campaigns consciously influence the consumers in their buying habits and eating patterns.

In conclusion, the aim of the government programmes and campaigns is to achieve a healthy, quality life for people and to help changing their bad lifestyle by giving more information to influence the consumption of more fruit and vegetables.

1.2 Aims

The main aim of my dissertation is to determine the most important trends and developments of the Dutch fruit and vegetable sector, underlining the changes of scale in production, the reorganisation of trade and the new consumer habits.

In my dissertation I try to give a comprehensive picture of the Dutch fruit and vegetable production sector. I analysed the volume and value of Dutch fruit and vegetable and mushroom production on fields and also in greenhouses. It is important to find out, why the production scale is changing and what are the causes and effects on the trade sector.

The export and import activities have a significant effect on the horticultural production and sale. The Netherlands has a favourable economic geographic location and because of that an important distribution role in the international trade. Therefore, I analysed the Dutch export and import trade, the present market position of Dutch fruit and vegetables and their place and importance in the international trade.

My aim is to introduce the features of the Dutch fruit and vegetable wholesale sector, to analyse re-arrangement of the selling system, and determine effects on wholesale trade networks, and to present the regulation of the trade chain with knowledge of product standards and the needs of a food security system.

In this rapidly changing sector, it is important to know the connection between the different elements of production and selling and the distribution channels. To make future strategies of the AGF wholesale sector, it is necessary to determine the main indicators (Key indicators) that influence the operation of the fruit and vegetable wholesale network. I try to point out the new direction of the development of the AGF sector and to determine new sector specific trends.

With my own research, I wish to analyse the situation of the fruit and vegetable retail trade in the Netherlands. In my dissertation, I gave special attention to the examination of supermarkets and greengroceries out of the different retail enterprise types, which are active in fresh fruit and vegetable sales. I try to show future trade possibilities by comparing supermarkets and greengrocers. It is a big challenge for retailers to meet the expectations of the market in product selection and in purchase decision. It will be a key factor in the competition between retailers.

The qualitative research was carried out among greengrocers, and the quantitative research among consumers. I try to determine the factors in which the greengrocers differ from the supermarkets in the present market situation, and in which way they are more competitive versus supermarkets. The primary purpose of the quantitative research was to find out the expectations of consumers, to know the push and pull factors which have an influence on their choice of purchase place. The other important purpose was to study the differences between greengrocers and supermarkets and to determine those elements which enhance the consumers in their buying decisions at greengrocers.

The second quantitative research was carried out among consumers to study the consumers' needs, expectations and wishes of the fruit and vegetable consumption. I try to present the changes in fruit and vegetable consumption and I try to determine the new trends.

2. MATERIAL AND METHOD

To achieve the tasks and targets of my thesis I have used the following material and method.

Personal experience

My personal experience gained in the field of fresh fruit and vegetable trade has played a significant role in preparing my thesis. I have been working as an export manager at Harva International BV since 1993, where I have actively been involved in the company's market research activities besides selling fruit and vegetables. Changes and developments in the commodities market directly influence my daily work. I experienced the pressure on AGF (Aardappelen, Groenten en Fruit – Potatoes, Fruit and Vegetables) wholesalers when – besides sales and purchases – we had to give extra services to our business partners such as packing, processing, distribution and transport. These activities required increased attention and investment. At the same time, as a wholesaler we also had to face the fact that our expenses increased significantly due to EU regulations. Environment protection, food safety and quality issues became important. It was of utmost importance for the company to acquire different certificates, such as GZS (Greenery Zorgsysteem – Greenery Control System), BRC (British Retail Consortium) and ISO (International Organisation for Standardization). Due to the fact that some countries' developments speeded up considerably, competition increased in the wholesale market. This competition started the process of some exporting wholesalers building up their importing activities and purchasing their products directly from fruit and vegetable farmers abroad. Over the years I have continuously been taking part in round table talks organized by ING Office of Economy. During these talks, changes in the AGF sector, development possibilities, new trends and topics were discussed in connection with competition. I am in daily contact with KCB and Frugi Venta, the association for the protection of wholesalers.

Investigative research, analysis and evaluation

I have used the method of investigative research, analysis and evaluation method mainly in the literary chapter, to increase my knowledge of Dutch fruit and vegetable cultivation and trade. My research was helped by the colleagues and database of KCB (Kwaliteits-controle-Bureau - Quality Control Office) and PT (Productschap Tuinbouw - Association of Gardening). I have put great emphasis on finding out the opinions of experts. Personal interviews were needed when written material was not available or where changes were not yet documented. In addition, I always follow quick information by AGF, which enables me to be up-to-date with the actual situation, the changes, and the planned future steps of the Dutch fruit and vegetable wholesale market.

I have studied essays and analysis of experts in connection with regulations of the trade chain and food safety. In addition, following daily and monthly newspaper reports has also helped me increase my knowledge of this topic and understand its processes. Nowadays, the Internet is becoming more and more important as an information source. Therefore, I acquired several articles and studies in an electronic format besides the original paper essays, which I have managed to use in my research. I have also become familiar with the Dutch and European legal regulations governing fruit and vegetable growing and trade. The number of these is unlimited, as there are several new rules or modifications each year.

During the processing of literary sources, planning and executing the research, I have been trying to follow the guidelines of General Research Methodology by Pál Tomcsányi. When writing the literary chapter I have been paying special attention to demonstrate the Dutch fruit and vegetable

cultivation, the changes caused by companies increasing in size and the development guidelines with a wide range of statistic data. My plan was to give a complete summary of the past, the present situation and the future outlook of the AGF sector as well as the rightful existence of retailers.

Collection and processing of data; analysis

Collecting data about the Dutch fruit and vegetable cultivation has been continuous since 1995. I consider it important to analyse the data of so many years, since this makes it possible to evaluate processes, find and define trends and to forecast possible processes. Data concerning land, quantity of produce and realized income has been supplied to me by CBS (Central Bureau voor de Statistiek – Central Office of Statistics), and my tables have been organised according to this data. Data concerning the size and the number of agricultural companies has been collected from the website of PT (Productschap Tuinbouw – Association of Gardening). I have also found information on the Internet about the import and export trade of fruit and vegetables in the Netherlands with the help of the website of KCB (Kwaliteits-Controle-Bureau – Office of Quality Control). Data concerning the number, size, turnover and market share of wholesalers has been provided by HBAG (Hoofd Bedrijfschap Agrarische Groothandel – Association of Agricultural Wholesalers). Other data in connection with wholesalers has been found on the website of AGF. Data concerning the connection between cultivation and sales has been provided by ING, Economisch Bureau (ING Office of Economics), while calculations concerning the distribution channels of fresh fruit and vegetables have been copied from booklets of PT (Productschap Tuinbouw – Association of Gardening). Finally, data in connection with the number of supermarkets and retailers has been found on the website of CBS and of Nielson (market research company).

Research findings were processed and organised with the help of Microsoft Excel. This was followed by evaluation and analysis, where my main concern was to be able to draw consequences, explain the examined data and identify and define trends.

Qualitative and quantitative market research

Another aim of this essay was to examine Dutch greengrocers position in the market, their competitiveness against supermarkets, as well as to point out changes in consumer habits and define trends in consuming fruit and vegetables. To achieve this I have used qualitative and quantitative market research methods, because I felt that only by applying these two methods together during my research would I be able to give satisfactory answers to the surfacing questions.

By the end of the 1990s there were defined trends in international **qualitative market** research. Its practical and theoretical tendencies are in connection with the globalisation of business life and with the requirements of following customer demands. There is a difference between the processes of the practical and theoretical qualitative market research, though an interaction between them can be shown. As required nowadays both the development of practice and theory can be illustrated by the APT formula (M.P. Wilson, 2001):

Algorithm: the order of research,

Promptness: showing research findings and consequences in the short term,

Translation: from the method of consumers expressions to the language of qualitative research.

I attempted to find answers to some open questions by using the qualitative method, where it was impossible to give a list of answers or where it was important to investigate slight differences and illustrate the different attitudes to the topic. This enabled me to become deeply involved in some questions, to answer the “why?” questions and to understand the relationship between reason and

result. I have used the most well-known method of professional personal interviews, and I have consciously tried to find out the following:

- to map out preferences, analyse their ingredients
- to define fruit and vegetables as products, to define the services of shops, images of companies and the relative positions of competitors (in our case supermarkets and greengrocers)
- to become familiar with mechanics of decision making in connection with purchasing and consumption and to discover what influences purchasing
- to discover and analyse the expectations and motivations of consumers and buyers.

By using the **quantitative method** I aimed to provide exact statistics data concerning the whole target group, as well as comparing the different groups. I used the quantitative method for the following: to define ratio, set up an order, show layers, to examine the patterns and opinions of the average consumer. I used questionnaires and I wanted to find information about:

- how consumer trends have changed in the last few years
- how consumers decide where to purchase their fruit and vegetables
- the opinion of consumers
- the most important elements of the positions and roles of supermarkets and greengrocers.

Questionnaires

I began my questionnaires with the most general areas, as I did not want to discourage people by asking difficult questions at the beginning. A good introduction defines the rest of the research and influences the expectations towards the research. One must not deviate from the aim stated at the beginning. I attempted to connect the different topics of the questionnaire “gently”. The statements and claims have to make sense and follow each other in an order that suits the logic of the respondents. I put the most sensitive questions into the conclusion of each section. By this time I have won the trust of the respondent, so I could ask them open questions. Questions regarding personal data were left to the end. Fortunately, in the case of the respondent not being willing to complete this section, the questionnaire can still be evaluated.

I used two basic types of questions in my questionnaires:

- Open questions. I used these to discover spontaneous thoughts and more complex connections.
- Closed questions. These are easier to process, because I can limit the respondent. There are Yes/No questions and multiple choice questions.
- Scale questions. These are a type of closed questions (Likert Scale) used when we want to find out someone’s opinion in connection with a question and that how strong this opinion is. The essence of the Likert Scale is that the respondents can range their answers according to how much they agree with it. (1 (a) = does not agree at all, 5 (e) = strongly agrees. Other answers range between these two, like marks in a school report.)

The final version of the questionnaires were posted to the consumers at the beginning of 2009 together with the official promotion material of Groenten en Fruit Bureau. Replies were sent back in the enclosed envelopes without naming the sender, thus ensuring total anonymity. 16% of the returned questionnaires were suitable for evaluation. Returned questionnaires were evaluated with

the help of Microsoft Excel. In my essay I have put the main emphasis on evaluating the experience gained during the research, as well as comparing and analyzing results.

SWOT analysis

Due to the importance of the AGF sector in commerce, I have also used SWOT analysis (Kotler, 1990), which contains the analysis of the Strengths, Weaknesses, Opportunities and the Threats of the Dutch fruit and vegetable wholesale network. SWOT analysis starts with identifying the strength and weaknesses of the internal environments. Strengths include the resources (also gained skills and favourable positions) in which the sector has an advantage. On the other hand, weaknesses are resources where the sector has disadvantages. Analysing the external environment gives a picture of the opportunities and threats facing the sector. Opportunities are those external and unchangeable facts which provide a favourable position for development. Threats are those external factors, which can influence the sector unfavourably and can hinder development. External factors can not be influenced by the sector, it can only adjust to them. To prepare the SWOT matrix, objective analysis and processes based on experts' estimations can be used. During the analysis the 8-10 most important factors, their effects and importance have to be identified and then put into the SWOT matrix (Roóz, 2007). I have used the SWOT matrix in my thesis due to the fact, that with the help of it, I can draw attention to the strengths and weaknesses of the Dutch fruit and vegetable wholesale market, so that it can contribute to the successful operation of the AGF sector and can exploit its opportunities in a competitive situation.

3. RESULTS

The results of my research are summarized as follows:

3.1 The market position and competitiveness of greengrocers versus the supermarkets

All business enterprises should focus on consumer demands in the market to achieve profits. It is difficult for small businesses to determine who can be targeted with products and services, and who their competitors and their strategic partners are. Marketing activities are based on the information gathered by market research; it is a complex investigation with the aim to examine the following key areas [Tasnádi, 2006]:

- Analysis of the general market situation and expected changes.
- Analysis of the demand and customer needs, identifying motivation, research of consumer behaviour, target analysis.
- Supply- and competition analysis with determination of competitors.

The consumer study was carried out to highlight those factors which show how the groceries can be competitive against the supermarkets and how they can survive in the present situation. The primary purpose of the research was to find out the expectations of the consumers and push and pull factors which are influencing the choice of place of purchase (supermarkets or greengrocers). Another important aim of the research is to indicate the elements in which the greengrocers differ from the supermarkets, which helps to enhance the consumer in his decision to buy in the greengrocers. For the research, qualitative methods and in depth interviews were used. In this case I relied on the opinion, experience and knowledge of twenty interviewed greengrocery owners. The results of this qualitative research were a reliable base to make a good questionnaire for the quantitative research. It was necessary to collect responses from 800 questionnaires covering the whole the Netherlands. The questionnaires had to be completed by the individual who regularly does the shopping. They should be between 35 and 60 years old, and should buy a minimum of 10% of their fruit and vegetables at the greengrocers. The qualitative research was carried out at the end of the year of 2008, while the quantitative research was done in 2009. The questionnaires were sent together with the official promotional material of the “Groenten en Fruit Bureau” by mail. The respondents sent back the questionnaire in the enclosed return envelope, without indicating their name. In this way complete anonymity was guaranteed. 16% of the questionnaires was returned and could be evaluated.

32% of the questioned individuals do shopping 4-6 times a week, 51% 2-3 times a week and 17% only once a week. Half of the interviewed people do the shopping as often at the greengrocers as three years ago, 30% more often, while 20% less often. Individuals between 30 and 39 years of age shop more often at the greengrocers as younger or older people. The decision about purchasing fruit and vegetables is either already made at home or spontaneously in the store. Only a small percentage of the respondents choose to purchase according to a pre-made shopping list. The greengrocers have better results in sales of fruit, while the supermarkets achieve a better position in sales of vegetables.

The greengrocers and the supermarkets were compared according to some important factors. (Table 1.)

1. Table Comparison of greengrocers and supermarkets

Greengrocers – deep range of products	Supermarkets – wide range of products
<p>The following vegetables are available at the greengrocers: a lot of different varieties of lettuce, asparagus, herbs and some “ready to use” products.</p> <p>The following fruits are also found on the shelves of the greengrocers: mandarins, cherries, raspberries, strawberries, plums, oranges and exotic fruits.</p> <p>Consumers can find everything in the greengrocers: seasonal products, new products and exotic fruits and vegetables.</p>	<p>The following vegetables are available in the supermarkets: beans, peas, carrots, lettuce, broccoli, cauliflower, onions, tomatoes, peppers, cucumbers, mushrooms, salads.</p> <p>The following fruits are sold in the supermarkets: apples, kiwi, bananas, melons, grapes and citrus products.</p> <p>Supermarkets have regularly special offers to customers.</p>
Greengrocers – Strengths	Supermarkets – Strengths
<p>Primary criteria: selling of high quality goods. Other important criteria: the freshness and the taste of the product and ready to eat (the product can be consumed immediately).</p> <p>The main principles of the greengrocers: maximum service of the customers, personal contact, product presentation, product guarantees.</p>	<p>Consumers can find everything in one place. There is self-service in the supermarket and it has regularly good offers to the consumers.</p> <p>There is a good balance of the price and the quality of the offered products.</p>

(Source: Own preparation, 2011)

Advertising and special product offers are essential marketing elements of the supermarkets. These elements play a much more important role in influencing consumer behaviour by supermarkets than by greengrocers. More than half of the customers are influenced in their decisions by commercials and promotions. At the greengrocers the presentation of the product is the most important factor that influences buying decisions of consumers. The greengrocers have an “expensive” image. The quality of offered products is in balance with the selling price.

The origin of the product is not a negligible factor in the purchase. 50% of consumers pay attention to the country of origin of the product and about 17% of the consumers prefer to buy products of Dutch origin. The country of origin of the products is more important for the older than for the younger generation. The interesting conclusion is that 75% of the consumers are willing to buy fruit and vegetables which are produced in their own district.

The knowledge of consumers and consumer behaviour are important for making marketing decisions. Studies have shown that the older generation, as well as housewives without children, prefer to buy fruit and vegetables at greengrocers.

The greengrocers achieve success with customers of the Albert Heijn supermarkets, because the product range of greengrocers complements well the range of fruit and vegetables of Albert Heijn supermarkets.

The greengrocers must come up with new ideas to win customers. 60% of the consumers approve the introduction of self service at the greengrocers, where they can choose the products themselves. Selling frozen fruit and vegetables are not a success at the greengrocers. However, 50% of the customers of greengrocers like the introduction of the soup and wok vegetable packages.

The customers believe that supermarkets should improve freshness, quality and taste of their products, and product guarantees should be better developed.

The attractiveness of greengrocers still lies in their supply of fruit. It is important that greengrocers give extra attention to fine quality and good taste of the products (e.g. in the case of press oranges having additional information about taste and juiciness.)

The greengrocers should improve their communication about their weekly offers. With this extra attention and extra service they can improve their market position. Good promotion and advertising can make market advantages for the groceries.

The most significant difference between supermarkets and greengrocers is the personal contact between consumer and shop assistant.

Qualitative market research carried out at greengrocers

Qualitative methods are generally used to get more detailed and nuanced information. A relatively small number of in-depth interviews are used to collect data. The results are not quantifiable.

Based on these interviews with the greengrocers, the main points were determined on which consumers base their purchase decision to do their shopping at the groceries:

- Product quality and the taste of the product.
- Product knowledge and personal attention.
- Depth of the assortment.
- Product can be purchased per piece.

Determinants of fruit and vegetables purchase in supermarkets:

- Product range.
- One stop shopping.
- Low price image.
- Wide range of products.

The greengrocers have to give special attention to where and which fruit and vegetables they purchase, because the quality and price of these products are the base that they can remain competitive against supermarkets. The quality is the primary criterium for the choice of different suppliers. Some greengrocers purchase their products in Brussels, because there they can get special top quality lettuce varieties and mushrooms and other top quality products.

After analysing the behaviour of consumers buying from greengrocers the conclusion can be made that on weekdays the older generation and the two-member households do their shopping first of all, while in the week-ends the younger generation or bigger families do their shopping. Most of the

consumers of the greengrocers like buying Dutch products and ready to eat products. It is interesting that the majority of greengrocers are located nearby Albert Heijn supermarkets.

Table 1. shows the difference between supermarkets and greengrocers. We can see that the supermarkets have a wide range of products. Consumers of Albert Heijn are often going to greengrocers, because they can find there a deep range of products. The product range of these greengrocers complements well the product range of fruit and vegetables of Albert Heijn. In general greengrocers and supermarkets are competitors. The greengrocers are not real competitors of each other, they rather consider each other as colleagues. They intentionally work to build a good image. They would like that the consumers are associating their grocery store with a nice, clean shop where you can get a good quality product, with a high level of service and information about the product. Consumers should not see greengrocers any more as a “market repository”.

The owners of greengrocers are open to cooperate in selling their products. They are willing to do joint advertising, promotions and demonstration of new products on the market. They show less willingness for cooperation on the side of supply. They prefer to order their own products individually, because it is logistically easier, faster and also cheaper. About the different quality marks they also have different opinions.

Quantitative market research under consumers

The written questionnaire is the most wide-spread quantitative research method for standard data collection. The researcher collects relevant information with the help of the questionnaire. The quantitative methods give numerical results.

Using qualitative market research, I gathered information about the market situation and the opinion of owners of greengrocers. The questionnaire contained 27 questions with focus on the following subjects:

- Changing of buying habits of consumers in the past few years.
- Factors influencing the fruit and vegetables buying decision of consumers.
- Factors influencing the choice between the supermarkets or in the greengrocers when buying fruits and vegetables.
- Which products do consumers buy at the supermarket and which ones at greengrocers and what is the reason behind this?
- What is the opinion of the consumers about the offered products?
- Attitude of the consumers to the different ways of advertising and promotions.
- Opinion of the consumers about the self service and the personal contact during shopping.
- Market position of the greengrocers and their main roles.
- Market position of the supermarkets and their main roles.

There are some small changes in the buying habits of the consumers in the past few years. 51% of the respondents buys their fruit and vegetables at greengrocers at the same frequency as three years ago, while 29% shops more frequently and 20% less frequently at the greengrocers. One-fifth of the surveyed consumers make a shopping list and the decision what to buy at home. 40% of the consumers decide in the shop even when they have a shopping list. The other 40% prefers looking around in the shop and making buying decision at that moment.

The greengrocers have relatively strong market position in selling different varieties of lettuce, asparagus and ready-to-eat vegetable salads. However, consumers prefer buying beans, peas,

carrots, Brussels sprouts, broccoli, potatoes and mushrooms in the supermarket. The younger generation prefers purchasing ready salads and sliced, pre-packed products from the supermarkets.

The conclusion of the evaluation of closed questions is that most of the consumers prefer buying fruit and vegetables in the supermarkets and not in the greengrocers. Most of the time carrots, onion varieties and sliced, pre-packed vegetables are bought in the supermarkets. The younger generation prefer doing the shopping in the supermarket where the vegetables are sliced and pre-packed and placed next to the semi-finished food products. They do not often buy celery, kohlrabi and other traditional vegetables. The older generation prefers buying tuber products and leafy vegetables at the greengrocers. Consumers between 40 and 65 years do not buy sliced and pre-packed vegetables or semi-finished food products in the supermarkets. The families often buy beans and peas in the supermarkets. The two-member families often buy herbs in the greengrocers.

The greengrocers have a prominent role in selling strawberries, mandarins, oranges, cherries and plums. Most of the consumers prefer to purchase these fruits at the greengrocers. Other fruits such as bananas, apples and kiwis are more often bought in the supermarkets.

Answers of the closed questions give similar results than the answers of open questions. The greengrocers prefer to sell fresh strawberries, raspberries, blackberries, red currants, fruit salads and some other special exotic fruits which lure consumers into their shops.

When consumers decide to buy fresh fruit and vegetables at greengrocers, the following factors have influence on their decision:

- The quality and the freshness of the product.
- The taste and the colour of the product.
- The personal contact with the shop assistant.
- The product guarantee.

When the consumers decide to buy fresh fruit and vegetables in supermarkets, the following factors have influence on their decision:

- The self-service.
- One-stop shopping.
- The price.
- Sliced, pre-packed products.

From the answers of questionnaire, the following trend appears:

The older generation prefers to buy fruit and vegetables at the greengrocers. The main reasons are the personal contact with the shop assistant and the opinion that the product is healthier and the quality is better.

The younger generation prefers to buy fruit and vegetables in the supermarkets. The main reasons are the one-stop shopping principle, the self service and the wide range of sliced, pre-packed and semi-finished products. Also the prices are in general lower than at the greengrocers.

According to consumers the greengrocers should make changes in the following points:

- Reduction of the price level.
- The introduction of self service.
- Selling of sliced, pre-packed vegetables.
- Selling of semi-finished food products.
- All products should be available in one grocery store.

According to the consumers the supermarkets should make changes in the following points:

- The freshness of the offered products.
- The quality of the offered products.
- The product guarantee.
- The reduction of price level.
- The taste of the products.
- Personal contacts with the shop assistant.

3.2 Determination of trends in fruit and vegetables consumption.

The background of the market research

The origin of the international 5aDay programme is the United States. The 5aDay for better health programme is a national initiative with the aim to increase fruit and vegetables consumption among Americans to 5-9 servings a day. The basic ideas of the American 5aDay program were taken and have been used almost all over the world. The program has become since then the world's largest public private nutrition education initiative. Each country shaped this program according to its own culture and tradition. On request of the European Union the Dutch Government started the campaign "Fresh Factory" in 2006. This project received also financial support from the European Union.

The primary aim of this campaign was to educate consumers about how diet can be healthier and diversify it by using more fresh fruit and vegetables. After this successful campaign in 2010, as a continuation, the three-year General Promotional Campaign titled: "I will join you with 2X2" was initiated by the Dutch Government.

The main purpose of this programme was to improve the health and quality of the life of the population of the country. This health programme aims to change their lifestyle and their attitude by providing scientific information to promote healthy diet rich of fruit and vegetables.

The quantitative research had the aim to:

- Find out the expectations and needs of consumers.
- Determine the factors which influence the buying decision of consumers.
- Know the changes of habits of consumers.
- Determine new trends.

The questionnaire was designed to answer the following questions:

I tried to get some answers by the help of the questionnaire:

- How did the fruit and vegetables consumption habits change in the last three years?
- What do the consumers cook and how?
- What kind of decision do the consumers make when they buy fruit and vegetables?
- What is the trend of snack vegetables consumption?
- How do the consumers stimulate their children to eat more fruit and vegetables?
- What stimulates the consumers to purchase and to prepare fruits to eat?
- What are the consumer trends?

Criteria of the research:

We have received 800 completed questionnaires from the consumers, which met the following main criteria:

N= 400 consumers, younger generation:

- Age is between 20 and 39
- Respondents : 2/3 women and 1/3 man

N= 400 consumers, older generation:

- Age is between 40 and 59
- Respondents : 2/3 women and 1/3 man

During the research the emphasis was on the younger generation.

Other criteria were:

- 50% of the respondents have family (children); the other 50% are single or live in two-person households (no children).
- Respondents spread across the Netherlands equal to inhabitants per province.
- Respondents do the shopping themselves and cook 2-3 times a week.

Summary of the results.

Evaluation of fruit and vegetable consumption:

According to the individual estimation of the respondents the consumption of fruit and vegetables is often below the average norm (200gr/person/day). 48% of the younger generation and 35% of the older generation consume less fruit and vegetables than the average norm. One third of the responding young people are not satisfied with their own vegetables consumption, while 18% of older people think that they should eat more vegetables. Half of the consumers do nothing to improve the amount of vegetables they eat. The other half of the consumers try to keep a healthy, balanced diet. If they do not eat enough fruit and vegetables on one day, they try to make it up the next day by eating extra fruits or taking vitamin pills in order to achieve a healthy balance. The estimated fruit consumption is even lower than the vegetable consumption. 36% of the younger generation and 42% of the older generation consume the norm of 2 pieces of fruit per person per day. Half of the consumers are not satisfied with their fruit consumption. However they also do nothing to compensate this lack of vitamin source. The younger generation has a different opinion about the changes in fruit consumption in the last three years. According to 43% of respondents, there is no change in fruit consumption. 47% say that it has increased, and 10% say there is a decrease.

Evaluation of the purchase of fresh vegetables

Three-quarter of the consumers regularly - at least once in every two weeks – buy fresh vegetables, which are not sliced and not pre-packed. More than the 50% of the respondents regularly buy sliced and pre-packed vegetables.

Evaluation of cooking

The younger generation spends less time and energy to prepare a warm meal than the older generation. During a week 76% of the young people spent half an hour or less time on cooking.

60% of older people also spent half an hour or less on preparing a warm meal. On weekends people spent even less time on cooking. Next to the traditional potato-vegetable and meat dish, the Italian food, Chinese dishes or other international foods have become more popular. Two-thirds of young people do not know how to use vegetables in a more varied way. 50% of young people use the cooking tips from the package very often.

Among the young people (between 20 and 39 years) we can determine the following cooking types:

- Wide cooking repertoire (78%).
- Cooking is an interesting experiment (72%).
- Traditional kitchen (60%).
- Beginners at cooking (35%).
- Healthy cooking style (31%).

Among the older people we can identify the following cooking types:

- Dislike the traditional kitchen (42%).
- Beginners at cooking (21%).
- Narrow cooking repertoire (37%).
- Healthy cooking style (37%).
- Cooking is an interesting experiment (72%).

The cooking types were identified according to my qualitative research. This shows significant differences between the groups of young people and older people.

The “world menu” (complete packages) as inspiration:

The “world menu” package (Knorr or Maggi) is very popular among young people (77%). They use the cooking tips and the ideas from the package to prepare the meal. 66% of older people also use regularly the “world menu” package. Both groups use enough fresh vegetables for this menu according to their own opinion.

The vegetables are prepared in different ways for different use:

- Sliced into small parts and used for wok cooking together with meat (84%).
- Boiled vegetables are popular for consumption (82%).
- Vegetables are very often used for salads (32%).
- Steaming of vegetables is becoming more and more popular.

The younger generation likes to buy different bio-products, but does not pay attention to the seasonality of different vegetables. It is an important purchase factor that the products are already sliced, pre-packed or easy to use. In general, the younger generation does not know how vegetables can be prepared in different ways, and is not interested in how the nutrition value of vegetables is changing during preparation.

Vegetable consumption during the day as snack:

One third of the respondents - both younger and older people – like to eat vegetables as a snack during the day. Women more frequently consume vegetables than men. The consumption of snack vegetables is becoming more popular for many reasons. It is tasty and healthy and can replace unhealthy snacks; it is a non-fat product, but still gives energy and it has a good effect on the consumers mentally. Half of the respondents are consuming snack-vegetables not only at home, but also in their workplace and in school. Generally they take the snack-vegetables from home or buy it in the supermarkets. A small percentage of respondents buy snack-vegetables at stores of petrol

stations or in canteens. According to the consumers there are sufficient numbers of places which offer snack-vegetables but the range of snack-vegetables is very narrow. Very often only cherry tomatoes, mini cucumbers, mini peppers or mini carrots are offered. Only 10% of respondents knew radish and hard celery as snack-vegetables. Two thirds of respondents consume snack vegetables in the afternoon, while one third in the evening.

Children’s consumption of fresh fruits and vegetables:

Half of the younger respondents (age between 20 and 39) have young children. Parents encourage their children to eat more fruits and vegetables by acting as a good role model. Resourceful parents try to influence their children’s fruit and vegetables consumption in many ways:

- Put a fruit bowl on the table as a snack instead of crackers.
- Make some delicious sauces next to steamed vegetables.
- Creation of menus by taking into account what their children like to eat.
- Actively involving children in the preparation of supper.

According to the parents, children’s consumption of fruits and vegetables is important because:

- It is healthy.
- It stimulates growth.
- The fibre content has positive influence on the metabolism.
- The vitamin and mineral content are important.
- It gives energy.
- It has a role in disease prevention.
- It influences mental development.

The most important incentive for the purchase of fruits and vegetables:

The younger generation’s fruit and vegetable purchase is stimulated by the following factors: product offers (also the seasonal offers), the opinion of friends, cooking proposals and suggested recipes on the package. Furthermore, consumers are influenced by supermarkets’ flyers, offers of new recipes and advertisements or websites. The different cooking courses, food demonstrations and internet forums do not have a significant incentive, however they are more popular among younger people. I have created the SWOT matrix of the consumers of fresh fruits and vegetables by incorporating the most important factors of the consumer analysis (Table 2).

2. Table SWOT matrix of the consumers of fresh fruits and vegetables

Consumer strengths	Consumer weaknesses
Healthy diet Awareness Positive attitude	Lack of time Lack of knowledge Tastes – habits
Opportunities for consumers	Threats for consumers
Campaigns Intensity The influence New food trends	Accelerated pace of life Good planning (time) Education A good example.

(Source: Own preparation 2011)

3.3 SWOT analysis of the Dutch AGF sector

Due to the commercial importance of the AGF sector, I have completed my dissertation with SWOT analysis, which contains the analysis of the Strengths, Weaknesses, Opportunities and the Threats of the Dutch fruit and vegetable wholesale network. The SWOT matrix of AGF sector shows the strengths and weaknesses of the Dutch vegetable and fruit sector. This analysis demonstrates what is working well in the sector and where changes are necessary in the present situation. It also shows the possible opportunities and threats of the AGF sector. This knowledge can contribute to the success of the sector in the future. The wholesalers of AGF sector should choose the right market segment if they want to stay competitive on the market. After the SWOT analyses of the AGF sector the most important factors were included to compile the SWOT matrix of AGF sector (Table 3.)

3. Table SWOT matrix of the AGF sector

AGF sector - Strengths	AGF sector – Weaknesses
<ul style="list-style-type: none"> ▪ Wide range of products. ▪ Well organized selling. ▪ Good quality of products. ▪ Good knowledge of products. ▪ Extra services. 	<ul style="list-style-type: none"> ▪ Lack of consulting services. ▪ Building image. ▪ Gaps in marketing and advertising. ▪ Level of the management.
AGF sector - Opportunities	AGF sector –Threats
<ul style="list-style-type: none"> ▪ Expand import position. ▪ Increase margin. ▪ Product innovation. 	<ul style="list-style-type: none"> ▪ Oversupply. ▪ Competition among wholesalers. ▪ Decreasing accessibility. ▪ Lack of added value.

(Source: Own preparation 2011)

By building on the strengths of the sector, and by turning the opportunities into advantages, the weaknesses and threats can be reduced. In the market competition, countries who can build on their own strength can get a better position in the international trade. Some of these advantages are due to natural abilities such as geographical location (port of Rotterdam, largest port of Europe).

4. NEW AND NOVEL SCIENTIFIC RESULTS

The novelty of my dissertation is that the processes and interrelations concerning the Dutch vegetable and fruit production, trade and consumption have not been explored in this form before. I have not only thoroughly examined the interrelations regarding the sector, but also gave a wide and comprehensive picture of the contacts between different elements – producer, wholesaler, retailer and consumer. I also want to highlight that even if a sector operates well, it should be permanently developed in order to keep its market position. Considering the objectives drafted in the introduction and on the basis of my research, the new and novel scientific results can be summarized as follows:

- I have examined the Dutch fresh vegetable and fruit production in the recent period with scientific scrutiny and in a specific way. I have proved with the collected data that the increasing production scale is an essential consequence of the trade restructuring and the new market demands of the recent period. I have underlined that combining the forces of producers and re-building of their horizontal relations is inevitable for maintaining their competitive positions.
- I have analysed the Dutch vegetable and fruit export and import trade, highlighting the favourable economic geography situation of the Netherlands, its distribution role, active participation in the re-export, also driving the attention to the new competitors on the market: Marocco, Israel and Turkey.
- I have explored and introduced the changes in AGF sector in details and used competitive situation analysis to determine those main indices which significantly influence the operation of the wholesale trade network. I have summarized the new directions of development in AGF wholesale sector.
- I have proved with my research, in relation to the retail trade, that the expansion of supermarkets cannot be stopped and it is in close connection with the restructuring of distribution system of AGF sector and the changing consumer habits. I also point out that the vegetable retailers can be competitive – to a decreasing extent – with the supermarkets in the Netherlands and I have confirmed this statement on the basis of own research (interview, questionnaire).
- I have analysed with own methods, on the basis of own research (questionnaire), the changes in the Dutch vegetable and fruit consumption and revealed the changes of consumer needs. I have reviewed those factors which have had the greatest impact on the purchasing decisions of consumers in the examined field.

5. CONCLUSIONS AND RECOMMENDATIONS

During my research I have drawn conclusions that can be applied in practice and can help the work of actors in the Dutch vegetable and fruit sector, their preparation for the future and understanding of the past. At the same time, the changes in the Dutch system and the new development tendencies can also be good examples for other countries. On the basis of my research results and considering the objectives drafted in the introduction, I summarize the conclusions and recommendations according to the following:

The Dutch vegetable and fruit production sector should face increasing expectations regarding both its products and production systems. Moreover, the growing competition and the overproduction also complicates the maintenance of market positions. The market requires unified, traceable products and reliable producers. The negotiating position of Dutch producers is relatively weak because the role of auction markets has been reorganized. The producers have to build up horizontal cooperation in addition to the vertical relations. As regards auction markets in the traditional sense, this horizontal relation was strongly present (e.g. modulization of products), but it has become invalid due to the restructuring of market roles. The lack of it can still be felt under the current conditions, therefore the reorganization of horizontal relations according to the new situation - by also maintaining the vertical relations - is advisable.

The vegetable and fruit producers, including the greenhouse producers, are strongly affected by some temporary and structural changes in connection with the competitive positions and profitability of producers. Temporary changes include the weather conditions, farm land growth and the decreasing demand. Economic crisis and the fluctuating exchange rate are the most important temporary factors which affect the producers. The weather is changing, too, there are sometimes extreme weather conditions and this climatic change can have negative impact on production. The applied technology can prevent the negative impact but permanent development is needed by considering the extreme situation. The structural changes concerning the producers include the changes of sales system, the increasing energy and labour prices, the increasing supply (e.g. the Moroccan tomato or the Israeli pepper supplies are growing on the market). The pressure of competition on Dutch producers can be reduced by technical innovation and product differentiation. The Netherlands is in advantageous position compared to many other countries owing to its production, trade logistics and innovation skills. Besides the utilization of this expertise, the permanent technical development and progress in product differentiation is also advisable.

Summing up it can be concluded that cooperation and joining forces is needed in the production sector in order to enter the international market with a unified supply as well as to keep market positions and remain competitive with the newly emerging actors on the market. The cooperative forces should target the extension of knowledge, innovation, joint marketing activities and long-term sustainability. The innovation and investments should focus on the reduction of energy costs because these are the highest costs in the production sector. The farm sizes have increased very much in the last ten years owing mainly to the urging need to reduce costs. But it cannot be continued endlessly because the costs cannot be decreased below a certain level. Producers should be aware of the fact that cost reduction in itself is not enough for remaining in competition in the long run. Therefore it is important to use energy sources in a new, economical way: e.g. the producer should produce electric energy on his own and the excess quantity could be given to the power plant, and in turn, if he needs some extra energy, he should get it from the power plant. This activity can be performed in cooperation by the producers (horizontal contacts) which is even more favourable for them.

The role of the Netherlands is very significant in the international vegetable and fruit trade. It can be explained not only by its special economic geography location, but also with the fact that its trade and production traditions were always successfully developed according to the demands of the given era. The Netherlands was the greatest vegetable exporter of the world in 2005, with 12,4% market share (TradeMap, 2005). With this result it has preceded Spain (12,1%), Mexico (10,1%), China (9,6%) and the United States (7,7%), who have key role in international trade. As regards fruit export, the Netherlands is the 9th in the world rank, with 2,8% market share (TradeMap, 2005). The Dutch vegetable and fruit export is increasing. The export values have grown by 40% in the last five years. The vegetable and fruit sector is very significant within the Dutch agriculture: it has 18% share (CBS, 2010). In 2009, the vegetable and fruit export was 3 billion kilogram, 90% of which was vegetable. Onion, tomato, pepper and cucumber were the most important export vegetables. 90% of the Dutch products are sold in the EU. The greatest competitor of the Netherlands is Spain, but there are some new countries emerging on the market with reliable products, e.g. Marocco, Israel and Turkey. The greatest markets for Turkish products are the Eastern European countries, because these are more favourable from logistics point of view. It puts pressure on the sales of Dutch products and renders the Dutch export efforts to Eastern European countries more difficult. Price and quality are the most important elements in the international competition. The Netherlands could keep its competitive advantage in tomato and pepper sales, while it has lost from its market share in the cucumber sales. I suggest to further improve the well-built vertical relations of exporters, to build new market positions in the Eastern European markets and strenghten the already available ones. I have in mind primarily the long-term market development, where quality, food safety regulations and traceability, as well as the value added and promotion of products are also important factors.

The Dutch fresh vegetable and fruit import was more than 4,2 million ton in 2009. 75% of this quantity was fresh fruit, out of which apple, citruses and banana import was the most considerable. More than 50% of the imported fresh vegetable came from Spain, Canary Islands, Belgium and Germany. 13% of the imported fruit comes from Belgium, the next is Spain with 11% import share. The greatest fruit suppliers out of the European Union are: South Africa (15%), Chile (11%) and Brazil (7%). The quantity of fruit imported from France has decreased very much in the last few years. The situation of Dutch import can be examined from two aspects: on the one hand, the imported goods are for the permanent supply of the domestic market, on the other hand, the Netherlands re-export the imported goods, thus strengthening its international market positions because the partners can be supplied with tomato even when it is not in season in the Netherlands. The efforts of the country to ensure permanent, reliable market supply is reflected in the re-export data of the last fifteen years, because the re-export has been tripled during this period. Although there was a slight decrease in re-export in the last two years, because England and Germany has imported directly, leaving out the Netherlands. My recommendations concerning the increase of import and re-export: reshaping the concept of logistics within the sector, utilizing the advantages of „Betuwe Line” (Rotterdam-Ruhr Area railway connection especially for goods traffic) that is the transportation by railway, the reduction of port costs by new developments, further updating the automation of customs clearance and strengthening of domestic vertical relations.

There are real changes in the Dutch vegetable and fruit wholesale trade. The number of companies in the sector had slowly decreased from 1997, while in the last few years there was a slight growth again. The total wholesale trade turnover was between 8 and 9 billion during the recent years. In 1996, 80% of the auction markets amalgamated and made a new company, a wholesale trade distribution centre together. As the result of permanent development of auction markets, new companies offering different sales methods were set up which meet the special demands of supermarkets and hypermarkets, too. This change was inevitable and aimed the development of

vertical relations. The Netherlands – besides export and import – have made every effort to build a strong domestic market thus reducing the pressure from international competition. Supermarkets are the greatest market of AGF with 74% market share. In the first chapter of my thesis I drafted the SWOT matrix for AGF sector, with the help of which I determined the strong and weak points of Dutch vegetable and fruit trade sector. The AGF sector works well because it has wide variety of goods, sells high-quality goods, high level of product knowledge which is a basic condition for building up good business relations. The utilization of possibilities for AGF sector is important in the competitive situation and it can contribute to the successful operation of the sector therefore I suggest to review the following points:

- Horizontal cooperation with different trade unions (e.g. Productschap) can be advantageous for AGF sector.
- The strengthening of cooperation with different forms of business in the vertical trade relations may offer new possibilities for AGF sector.
- The development of image building, promotion and marketing activities is inevitable for the future of AGF sector.
- The selection of well-trained management is a must, because there is no success without resolute business plans.
- Due to the cooperation with supermarkets (74%) there is a great demand for processed, sliced and ready-to-eat vegetables and fruits. If the AGF sector wants to be active in this field, the price margin should be increased and safe sales positions should be built up.
- The product innovation should also be improved, the development cannot be stopped because otherwise the competitive position cannot be maintained or increased.

By knowing the main indices affecting the market, I have determined those dangers for the prevention of which the AGF sector should prepare:

- The balance of supply and demand in AGF sector is broken up because many new exporter countries emerge on the market. Thus a strong supply market is evolving where there is a considerable pressure on the gross profit of AGF.
- When the Dutch producers look for new possibilities and place the production of some goods in other countries, they strengthen the wholesale trade system of the given country and an increased competitive situation is evolving between the Dutch AGF sector and the “new” wholesalers of the given new country of production.
- The retail traders should also face difficult economic situation and it can be often observed that they purchase the goods directly from the producers and try to leave out the AGF wholesaler from the trading process.
- The market position of retailers is strengthening by their continuous growth and concentration, and it puts a great pressure on the price income realized by AGF wholesalers.
- The infrastructure is highly developed in the Netherlands, but the roads are very crowded, traffic jams are frequent, therefore the costs of quick and reliable transport have increased. This fact is very disadvantageous for AGF wholesalers in the international trade. Alternative transportation possibilities or the modification of business hours should be explored – organization of early morning or late evening loading – but in these cases the analysis of labour costs is also important.
- The value added to a product is a very important element in both the national and international trade. Those merchants who simply buy and sell will slowly disappear from the market. Only those wholesale traders remain in the business in the future who prepare and pack their products, increase them with added value according to the needs of consumers, and thus strengthen their own market positions.

The retail trade sector is the last but one in the distribution chain which leads from the producer to the final user or consumer. Retail trade includes all those activities which aim the sales of goods or services directly and personally – that is not for business purposes – to the ultimate consumer. The essential feature of retail trade is the direct distribution of goods to the consumer. In the current dissertation I gave special attention to the examination of supermarkets and greengroceries out of the different retail enterprise types which are active in fresh vegetable and fruit sales. There is a special competitive situation where the retail traders make serious efforts to obtain and keep consumers. They elaborate new marketing strategies and their decisions are always related with the target market and the consumer. The variety of goods of retailers is always formed according to the target market, that is the purchasing needs and consuming habits of consumers. The retail trader can make consistent decision about the variety of goods, the price level, shop decoration, promotion aim or media but only after determining and learning the targeted clients. It is important in this decision to choose the variety and quality of goods with which he wants to appear on the market.

There will always be competitors on the market with similar variety and quality of goods. In the last 10 years, a strong concentration could be observed in the retail trade sector. The expansion of supermarkets is an unstoppable process. If we examine the actual figures, it can be declared that the supermarkets have 87,4% market share in vegetable sales, the market sales are ranked the second with 4,8% share, while the greengroceries have 4,1% share in the market. In 2009, the fresh vegetable turnover of supermarkets was 1,5 billion, which is a 25% growth in turnover compared to year 2005 in case of vegetable sales. While the total turnover of fresh fruits in Dutch supermarkets almost reached 1,1 billion EUR in 2009. If this value is compared to that of 2005, the turnover in fruit sales grew by 28%. Examining the vegetable sales data of the last five years, it can be stated that the greengroceries are losing their market positions. If we review the vegetable sales in groceries in the last 10 years, it can be declared that the quantity of vegetables sold has declined by 59,80%. Especially the mass products - like tomato, cucumber and lettuces – are rather purchased in the supermarkets. In case of some goods – e.g. aubergine or asparagus – we can see that the consumers still prefer to buy them at the groceries.

In my opinion, these changes are – on the one hand – related with the changes of the distribution system of AGF sector, because people like to prepare foods quickly and easily. On the other hand, the objective of different government projects is the improvement of the citizens' lifestyle and attitudes. The main objective of the campaign is to help and enhance the development of the lifestyle and attitude of the citizens with scientifically based information in order to encourage the consumers to eat more vegetable and fruits for the sake of their own health. By the examination of the retail trade sector I can see that it is necessary to review and analyse the consumer behaviour related to vegetable and fruit purchase and consumption. This market research helped me to determine those factors which can orient the greengrocers to keep their existence and competitiveness to supermarkets.

The main objective of qualitative and quantitative research that was described in the previous chapter of my dissertation was to learn the expectations of consumers towards greengrocers' and to determine the stimulating or hampering factors that affect the choice of purchasing place – supermarket or greengrocery. The other important objective of research was to indicate those points in which the greengrocers differ from the supermarkets, in which they excel and enforce the clients in their decision to shop at greengrocers. Following the evaluation of questionnaires, the new consumer trend has become clear: the older generation prefers to buy at greengrocers because the personal contact is important for them and they think that the the vegetables and fruits sold by the greengrocers is healthier and of higher quality. The younger generation prefers the supermarkets because they can buy everything in one place, they like self-service, they can find wide variety of

pre-packed and sliced vegetables and the prices are lower than at the greengrocery. On the basis of the responses from the consumers, the following changes are suggested for the greengrocers in order to improve their market positions to the supermarkets: reduction of price level, introduction of self-service, sales of pre-packed vegetables, distribution of ready-to-eat foods and distribution of other goods that are in demand.

On the basis of qualitative research, I have concluded that the Dutch greengrocers are open to the cooperation but concerning mostly the sales part: they are willing to have joint promotion, campaign and introduction of new products on the market. They are less inclined to cooperate on the purchase side. It is recommended to build horizontal relations, joining forces, building up image, refurbishing shops and selling under a common brand.

The second market survey targeted the research of consumers. I tried to explore the needs of consumers, the factors influencing the purchasing decisions. I have examined the reasons for changing consumer habits. I have stated that the consumers deliberately focus on healthy nutrition, which is also encouraged by different government projects. The greatest problem I encountered in the examination of the consumers was the accelerated pace of life, lack of time and lack of information. I suggest to further develop the government actions and to introduce information campaigns and promotion in this field.

6. SUMMARY

The main purpose of my doctoral dissertation is to analyse the changes and developments in the Dutch fruit and vegetable production, trade and consumption in the last two decades. The fruit and vegetable production sector is the most important economic sector in the Netherlands and this fact motivated my choice of topic.

In recent years, the observation that the Dutch products preserved their competitiveness on both the national and international markets, has gained more and more importance. This is a complex process that can only be understood if the production, trade and consumer behaviour are analysed together. The growers have to appear on the market with a product which meets the standards of food safety regulations and traceability. The production costs of the growers have increased significantly because of EU environmental- and food safety regulation and of the high requirements of product quality. In the past 15 years the size of the fruit and vegetable farms has been increasing as a general trend. The growers producing on a larger scale with modern technology achieve higher yields per square meter and have lower costs than the growers producing on small or medium scale. Furthermore, the over-production of fruit and vegetables plays an important role in the international trade. This can be explained by the fact that certain countries are developing their own production sector using high technology, so more products of higher quality are getting introduced to the international market. The over-production puts a big pressure on the gross margins of the wholesalers which means low prices with low profit.

Dutch wholesalers are facing an ever increasing challenge by the appearance of new producer countries to rearrange and strengthen their export position. The Netherlands built up not only a robust international trade but also a strong and stable national market. Forty percent of Dutch products are sold on domestic markets. The traditional selling methods however, such as the auction clock system, are losing their importance.

Meanwhile the number of auctions dropped due to economic reasons. The advantages of the big auctions are: homogeneous products, large number of buyers and sellers on the same market, no influence on prices (balance of demand and supply) and free flow of information. Today the auctions can offer different selling methods and can satisfy various needs, thanks to the continuous development of selling systems of the auctions and to the mergers of several smaller auctions. The choice between different selling methods depends on the type and size of the company and the seasonality of the products. The new auctions are able to survive due to their large market share, large wholesale operations and special purchase combinations at national and international level. From the analysis of Dutch fruit and vegetable production and trade activities, I can conclude that the sector is characterized by a strong vertical relationship. The situation of the supermarkets and groceries were analysed in detail as part of the Dutch retail sector. Retailers are making a big effort to develop new marketing strategies to keep their customers and gain new ones. Also, retailers always make their decisions by carefully considering the target market: the consumers. The expansion of supermarkets has been increasing rapidly for the last years. The AGF sector is re-ordering its selling system by adapting to the new demands of supermarkets. My research confirms that the greengrocers' indeed have the opportunity to survive despite the growth of the supermarkets in the Netherlands. My research reveals changes in consumer habits, discusses the needs of the consumers and the factors influencing the purchasing decision of consumers.

7. RELATED SCIENTIFIC PUBLICATIONS OF THE DISSERTATION

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