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Key factors influencing economic  
relationships and communication  
in European food chains  
(FOODCOMM)

Review of sausage and rye bread chains



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## Foreword

This report is a part of key deliverable report (D3) of the EU funded research project FOOD-COMM, whose overall objective is to analyse the role (prevalence, necessity and significance) of economic relationships and communication in selected European food chains and to identify the economic, social and cultural factors that influence co-ordination within these chains. The report presents the results of research conducted for Workpackage 2 (WP2), one of 7 WPs within FOODCOMM project.

The research methods were desk based research and seven face-to-face depth-interviews for rye to bread and pig meat to sausage chains in Finland, to review the chains in terms of agri-food production and marketing and the social, cultural, economic and political factors (potentially) influencing economic relationships and communication. The interviewees were selected among representatives of producer, processor and distributor sectors. The representativeness and wide knowledge as well as professional experience were the main criteria used in selecting interviewees.

The structure of this report is following. First, Finland's national situation and agri-the food sector structure are outlined. They are followed by reviews of the sausage and rye bread chains building upon a desk research and the panellists consulted' interviews. Conclusions of the findings take place in the end of the sections.

Tiina Jakonen, Terttu Poranen and Jari Eloranta are responsible for the finishing touches to this publication. The Ruralia Institute wish to thank all the persons included in the process of the research and of producing this publication.

Sami Kurki  
Director, Professor

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## LIST OF ABBREVIATIONS AND ACRONYMS

CAP	Common Agricultural Policy
EDI	Electronic Data Interchange
ERS	Early Retirement Scheme
EU	European Union
EU-15	European Union group composed of 15 countries
GDP	Gross Domestic Product
ha	hectare
HoReCa	Hotels, Restaurants and Caterings
ICT	Information and Communication Technology
LFA	Low Favourable Area Support
R&D	Research and Development
SME	Small and Medium-Sized Enterprises
SWOT	Strengths, Weaknesses, Opportunities and Threats Analysis
VAT	Value Added Tax
WTO	World Trade Organisation



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## Abstract

Finnish agri-food chain is going through many structural changes. Incomes of farms have decreased and thus the number of farms has declined. However, the average size of farms and number of animals have grown. Production of rye has decreased but production of pork meat has increased steadily. Feed, bakery, meat, wholesale and trade sectors are concentrated and mostly national, but the market entry of foreign traders and processors has increased significantly during last decade. Although large processing companies dominate in the sausage and rye bread markets, the significant majority of companies are small or medium-sized. The Finnish food markets are stable and saturated and the consumption do not increase, but food habits are becoming more uniform with those of other European consumers and health issues as well as organic food have become important factors in consumer choices. Globalisation, the tight competition situation and changes in consumption habits put also pressures on the Finnish agri-food chain. Thus, the Finnish pigmeat sector and bakery sector are relevant cases in point due to their recent structural changes and present market situation.

### Pork meat to sausage chain in Finland

*Structural features:* The pigmeat chain has undergone significant structural changes in the past decade. The number of pig farms has declined and the trend is predicted to continue. At the same time, the number of sows and fattening pigs sold per farm has increased to achieve greater efficiency. Surplus production is mainly exported, because the pigmeat market in Finland is saturated. The price of pork meat largely corresponds with the EU average. The primary sector is seeking routes through which to achieve greater efficiencies due to problems of profitability. The processing industry and the retail sector are also continually seeking greater efficiency, for example through joint ventures abroad.

*Economic relationships:* Pig producers are generally well organised with strong horizontal and vertical links. They have horizontal organisations, which represent their interests and raise their professional skills at the national and local level. Producers are owners of three dominant Pigmeat processing co-operatives who act as intermediaries for the commercialisation of meat between farmers and processors and processors and the retail trade. Also other private processors and producers have close and deep relations. In general the relationships are stable and confidential and both are eager to have close relationships to predict production and permit better negotiation with the trade. Also considerable development work, collaborations and integration can be found especially in cooperatives. Furthermore, both formal and informal relationships exist in the horizontal and vertical relations. In terms of producers and processors, the relationship includes almost always written and long-term contracts and there is a mutual trust between partners. With processors and retailers, the contracts are also written but with less trust and less balanced negotiation power than in producer – processor relationship. Still, trust is the important element, although the negotiations have become more complex and price dominates negotiations. However, the relationships are stable because of mutual dependency especially between big processors and retailers and quite long-term or at least there is a certainty of continuation.

*Communication:* Written contracts are common in the Finnish pig chain, but personal contacts are appreciated among all partners because of feedback and deep information. The communication is often personal and regular, especially among farmers. Technology is widely used in communication in farms but also in pig houses and business: processors and retailers have electronic data exchange

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systems and the computer handles many routines especially in big enterprises. Information and communication technology (ICT) will be also part of the efficiency strategy which the Finnish sausage chain needs to stay in business.

*Influencing factors:* The main influencing factors for the Finnish sausage chain are developments towards concentrations in the feed, the processing and the trade sectors. Also structural changes and competitiveness of domestic primary production and reductions of the financial support are very important. However, it is expected that consumers prefer to buy domestic sausage and pig meat in consumer packages from a multiple retail chain also in the future, as sausage is an important part of Finnish cuisine.

### **Rye corn to rye bread chain in Finland**

*Structural features:* Rye consumption is the highest in northern growing areas, where rye is used in bread. While rye production in Finland has increased slightly in recent years, it has decreased on the long term. Because of low profitability, rye production is nowadays low compared with consumption of rye bread. The Finnish bakery industry consists of many small local bakeries, few medium-sized and few big bakeries. There are a few nationally known brands or products but people also prefer local products. The processing sector is going through structural changes because of overproduction and efficiency problems. Also the retail sector is suffering from price wars and hard competition, but it has resources to facilitate large horizontal or vertical collaborations.

*Economic relationships:* Horizontal relationships among rye producers are strong. The relationship between producers and processor is also personal and stable and there is a certainty of continuation partly because of lack of actors. The power is not always in balance especially in a spot market situation, where more mistrust exists. Usually rye farmers trade with one or a few malt houses or mills and quite often they have written contracts. Contract relationships are often personal, stable and long-term or there is a certainty of continuation. Also mutual trust and collaborations among producers and between producers and processors are common. The relationships between bakery industry and mills can be characterised as stable, long-term, informal, confidential and personal. This might also be due to the lack of actors or because of habits and long-term personal contacts. Although bakeries and mills have a tendency to maintain stable relationships, the competition situation has put pressure on price negotiations. Two big bakeries dominate more than half of the market, although their power is limited. Horizontal cooperation among bakeries is insignificant. However, the relationship between retailers and processors is strong and strategic, for example there is information exchange regarding sales, trends and consumer behaviour. Retailers have very stable relations with local bakeries because of mutual dependence. Mutual trust and confidence, for example in delivery certainty are seen as important elements of a satisfying relationship. Many relationships are long-term, although contracts are not always long lasting. Because of tough competition, the negotiations between bakeries and retailers are complex, but the situation is hardest among small local bakeries. The retail sector has the highest negotiation power.

*Communication:* Written contracts are common in the Finnish rye bread chain, but personal contacts are still appreciated among all partners because of feedback and deep information, for example in research and development (R&D). Contacts are often personal and regular, especially among farmers and between bakeries and retailers. Compared with the pig chain, the information flow is not as efficient and producers need to be more active in the search for information. Technology is widely used

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in communication and manufacturing processes. Processors and retail have electronic data exchange systems and computers handle routines especially in big enterprises.

*Influencing factors:* The sustainability of rye production depends on price of rye and on the agricultural support received by farmers. A reduction in support or price will have significant consequences for the mill, malt and bakery industries because then nearly all raw materials have to be imported. Other threats to the rye-bread sector are a) centralisation of trade, b) hard competition between domestic and imported raw materials and products, c) high production costs in Finland, d) high costs of raw materials and e) decrease of consumption. However, consumers are interested in functional products, health issues and pre-cooked products. This coupled with consumers' predilection for domestic products will be an important competition factor for the Finnish rye bread chain.

**Keywords:** agri-food chain, pork, rye, rye bread, sausage.

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## Tiivistelmä

Elintarvikeketju elää suurten rakennemuutosten aikaa Suomessa. Maatalouden tulotaso on alentunut ja maatilojen määrä vähentynyt. Maatilojen keskikoko ja eläinmäärät ovat kuitenkin kasvaneet. Esimerkiksi rukiin viljelyala on vähentynyt, kun taas sianlihan tuotantomäärä on kasvanut tasaisesti vuosi vuodelta. Suomalainen elintarviketeollisuus on toiminut pitkään suljetuilla kansallisilla markkinoilla, mutta ulkomaalaisten jalostajien ja kauppaketjujen markkinoille tulo on lisääntynyt merkittävästi viime vuosikymmenenä. Elintarviketeollisuus, kuten rehu-, leipomo- ja lihateollisuus, sekä tukku- ja kaupan ala ovat keskittyneitä ja kansallisia. Suomalaisessa elintarviketeollisuudessa isot jalostajat hallitsevat monia sektoreita, kuten makkara- ja ruisleipämarkkinoita, vaikka huomattava osuus kaikista elintarvikealan yrityksistä on kooltaan pieniä tai keskisuuria. Ruokamarkkinat ovat Suomessa vakaat ja kyllästetyt. Kulutus ei juurikaan kasva, mutta ruokatottumukset muuttuvat kansainvälisimmiksi ja terveysvaikutteisten tuotteiden ja luomutuotteista merkitys kasvaa entisestään koko ajan. Globalisaatio, kasvava kilpailu ja kuluttajien muuttuneet toiveet asettavat paineita suomalaisille elintarvikeketjulle. Näiden muutosten vuoksi suomalaiset sianlihasta makkaraksi- ja rukiista leiväksi –ketjut ovat ajankohtaisia tutkimuskohteita.

### Sianlihasta makkaraksi –ketju Suomessa

*Rakenteelliset tekijät:* Sianlihan jalostusketju on käynyt läpi suuria rakennemuutoksia erityisesti viimeisen vuosikymmenen aikana. Sikatilojen lukumäärä on laskenut ja tilojen määrän alentumisen on ennustettu jatkuvan. Samaan aikaan emakkojen ja lihasikojen lukumäärä tilakohtaisesti on kasvanut. Tavoitteena on ollut tehokkaampi tuotanto. Tuotannon ylijäämä on pääasiassa mennyt vientiin, koska Suomen omat sianlihamarkkinat ovat kyllästetyt. Suomalaisen sianlihan hinta on EU:n keskitasoa. Tuottavan sektorin tulevaisuuden tavoite on tuottavuuden ongelmien ratkaiseminen tehokkuutta parantamalla. Myös elintarviketeollisuus ja kaupan ala tavoittelevat parempaa tehokkuutta muun muassa ulkomaisten yhteisyritysten avulla.

*Taloudelliset yhteistyösuhteet:* Sianlihan tuottajat ovat yleisesti hyvin organisoituneet horisontaalisten ja vertikaalisten yhteyksien kautta. Tuottajilla on horisontaalisia organisaatioita, jotka ajavat heidän etujaan ja kouluttavat jäseniään paikallisella ja kansallisella tasolla. Tuottajat omistavat kolme suurinta jalostavaa osuuskuntaa tai yritystä, jotka välittävät tai myyvät sianlihaa eteenpäin. Myös muilla yksityisillä tuottajilla ja jalostajilla on usein läheiset ja pitkäkestoiset suhteet. Taloudelliset yhteistyösuhteet tuottajien ja jalostajien välillä ovat yleensä vakaat ja luottamukselliset. Molemmat osapuolet ovat halukkaita läheiseen yhteistyöhön, jotta tuotannon ennustus toimisi paremmin ja neuvotteluasema kauppaan vahvistuisi. Merkittävää kehitystyötä, yhteistyötä ja integroitumista esiintyy erityisesti tuottajien omistamissa isoissa osuuskunnissa. Horisontaalisissa ja vertikaalisissa suhteissa esiintyy sekä muodollisia että epämuodollisia suhteita. Tuottajien ja jalostajien välillä suhteet ovat usein kirjallisia ja pitkäaikaisia ja osapuolten kesken vallitsee luottamus. Jalostajien ja kauppojen kesken suhteet ovat usein myös kirjalliset, mutta suhteisiin sisältyy vähemmän luottamusta ja keskinäinen neuvotteluasema ei ole niin tasapainoinen kuin tuottaja-jalostaja suhteissa. Luottamus on silti suhteen tärkeä elementti, vaikka jalostajien ja kauppojen väliset neuvottelut ovatkin muuttuneet viime aikoina yhä monimuotoisemmiksi hinnan hallitessa neuvotteluita. Yhteistyösuhteet ovat kuitenkin vakaat, koska molemmat osapuolet ovat riippuvaisia toisistaan erityisesti suurten jalostajien ja kauppojen välisissä suhteissa. Suhteet ovat myös pitkäaikaisia tai osapuolilla on ainakin varmuus suhteen jatkumisesta.

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*Kommunikointi:* Kirjalliset suhteet ovat yleisiä suomalaisessa sikaketjussa, mutta henkilökohtaisia suhteita arvostetaan muun muassa palautteen ja tärkeän tiedon saannissa. Kommunikointi on usein henkilökohtaista ja säännöllistä erityisesti tuottajien kesken. Teknologiaa käytetään laajalti maataloudessa, kuten sikaloissa, mutta myös liiketoiminnassa: jalostajilla ja kaupoilla on käytössä elektronisia tiedonvaihto-ohjelmia ja tietokoneet vastaavat monista rutiineista erityisesti suurissa yrityksissä. Informaatio- ja kommunikointiteknologia (ICT) tulee olemaan myös osa tehokkaampaa strategiaa, jota suomalainen makkaraketju tarvitsee tulevaisuudessa.

*Vaikuttavat tekijät:* Rehuteollisuuden, jalostajien ja kaupan alan keskittyminen on suomalaisen sianlihasta makkaraksi –ketjun suurin vaikutustekijä. Myös rakennemuutokset sekä alkutuotannon kilpailukyky ja tukien alentuminen ovat hyvin tärkeitä vaikuttavia tekijöitä koko ketjulle. Makkara on kuitenkin niin tärkeä osa suomalaista ruokavaliota, että suomalaisten on arveltu ostavan myös tulevaisuudessa kotimaista makkaraa ja sianlihaa mieluiten isojen kauppaketjujen myymälöistä.

### **Rukiista ruisleiväksi –ketju Suomessa**

*Rakenteelliset tekijät:* Ruista kulutetaan eniten pohjoisissa maissa, joissa ruista käytetään pääasiassa leivässä. Suomessa rukiin tuotanto on noussut viime vuosina, mutta pitkällä aikavälillä tarkasteltuna rukiin tuotanto on vähentynyt. Vaikka ruisleivän kulutus onkin Suomessa merkittävää, on rukiin tuotanto alentunut heikon kannattavuuden vuoksi. Suomalainen leipomoteollisuus koostuu monista pienistä leipomoista, muutamasta keskisuuresta yrityksestä sekä parista isosta kansallisesta yrityksestä. Ruisleipämarkkinoilla on muutama kansallisesti hyvin tunnettu brandi, mutta kuluttajat suosivat myös paikallisten leipomoiden tuotteita. Rukiista ruisleiväksi –ketjun jalostavalla sektorilla on meneillään rakennemuutosten aika, sillä teollisuudessa on ylituotantoa ja tuottavuusongelmia. Alalla on lisäksi kova kilpailutilanne. Myös kaupan alalla on meneillään kova hintasota ja kilpailu, mutta kaupat ovat pystyneet kehittämään toimintaansa laajalla horisontaalisella ja vertikaalisella yhteistyöllä.

*Taloudelliset yhteistyösuhteet:* Horisontaaliset suhteet ovat vahvoja rukiin tuottajien keskuudessa. Suhteet tuottajien ja jalostajien kesken ovat usein henkilökohtaiset ja vakaat. Näissä suhteissa varmuus jatkuvuudesta on osittain siksi, että alalla on vähän toimijoita. Valta ei ole suhteissa jakautunut aina tasapuolisesti. Tämä näkyy erityisesti kertakaupoissa (*spot market relationship*), joissa esiintyy myös enemmän epäluottamusta. Yleensä rukiintuottajat myyvät rukiin yhdelle tai muutamalle mallastamolle tai myllylle, joiden kanssa heillä on melko usein kirjallinen sopimus. Sopimussuhteet ovat usein henkilökohtaisia, vakaita ja pitkäaikaisia ja suhteissa vallitsee luottamus suhteen jatkuvuuteen. Myös keskinäinen luottamus ja yhteistyö ovat tavallista tuottajien kesken sekä tuottajien ja jalostajien välillä. Taloudellista yhteistyösuhdetta myllyjen ja leipomoiden välillä voidaan luonnehtia vakaaksi, pitkäaikaiseksi, epämuodolliseksi, luottamukselliseksi sekä henkilökohtaiseksi. Vaikka leipomot ja myllyt suosivatkin vakaita yhteistyösuhteita, kova kilpailutilanne on luonut paineita hintaneuvotteluihin. Kaksi suurinta leipomoa hallitsevat yli puolta ruisleipämarkkinoista, vaikka heidän valtansa on rajoittunutta. Horisontaalinen yhteistyö leipomoiden kesken on yleensä vähäistä. Taloudelliset yhteistyösuhteet leipomoiden ja kauppojen kesken ovat vahvoja ja strategisia ja suhteissa on esimerkiksi tiedonvaihtoa myynneistä, trendeistä ja kuluttajakäyttäytymisestä. Kaupoilla on vakaat suhteet paikallisten leipomoiden kanssa, koska keskinäinen riippuvuus on huomattavaa. Myös keskinäinen luottamus ja varmuus, kuten esimerkiksi toimitusvarmuus, nähdään tyydyttävän suhteen tärkeinä elementteinä. Monet näistä suhteista ovat pitkäaikaisia, vaikka itse sopimukset eivät olisikaan. Kovan kilpailutilanteen vuoksi neuvottelut leipomoiden ja kauppojen kesken ovat kuitenkin monimutkaisia

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ja vaikeita. Tilanne on vaikein pienillä leipomoilla. Kaupan alalla on suurin neuvotteluvoima rukiista leiväksi –ketjussa Suomessa.

*Kommunikointi:* Kirjalliset sopimukset ovat yleisiä rukiista leiväksi –ketjussa Suomessa, mutta henkilökohtaisia kontakteja arvostetaan kaikkien osapuolten kesken, koska henkilökohtaisten kontaktien kautta saadaan palautetta ja syvempää strategista tietoa esimerkiksi tutkimus- ja kehittämistyöhön. Kontaktit ovat usein henkilökohtaisia ja säännöllisiä erityisesti tuottajien kesken ja leipomoiden ja kauppojen välillä. Tiedon vaihto ei ole niin tehokasta ja tämän vuoksi tuottajien pitää olla aktiivisempia tiedon hakijoita kuin sianlihan tuottajien. Teknologiaa käytetään laajalti kommunikoinnissa ja jalostuksessa. Jalostajilla ja kaupoilla on usein käytössään elektroniset tiedonvaihto-ohjelmat ja tietokoneet hoitavat rutiinit erityisesti isoissa yrityksissä.

*Vaikuttavat tekijät:* Rukiin tuotannon jatkuminen riippuu vahvasti rukiin hinnasta ja maataloustuista. Hinnan tai tukien alentumisella on merkittäviä seurauksia myllyille, mallastamoille ja leipomoteollisuudelle, koska tällöin merkittävä osuus raaka-aineesta olisi tuontitavaraa. Muita uhkia rukiista leiväksi –ketjulle ovat a) kaupan keskittyminen, b) kova kilpailu kotimaisten ja ulkomaisten tuotteiden ja raaka-aineiden kesken, c) korkeat tuotantokustannukset Suomessa, d) raaka-aineiden korkea hinta ja e) kulutuksen vähentyminen. Kuluttajien kasvava kiinnostus funktionaalisiin tuotteisiin, terveysasioihin ja esipaistettuihin tuotteisiin yhdessä kuluttajien mieltymyksellä kotimaisiin tuotteisiin on suomalaisen ruisketjun kilpailuvaltteja tulevaisuudessa.

**Avainsanat:** elintarvikeketju, makkara, ruis, ruisleipä, sika.

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# 1 National Economic Environment

In 2004, the GDP<sup>1</sup> of Finland was €149.7 billion, with an economic growth of 3.2%. This represents a GDP per capita of €28,646, which is at the same level with other Nordic countries (Tilastokeskus, 2005). Compared with the other Nordic countries Finland started from a low level, but has had very strong growth (40%) during the last ten years. The share of agriculture and forestry of the GDP was 3.2% while industry was 25.5% in 2004.

In 2004 about 285,000 persons were employed in the food chain, which represents 12% of the total labour force. Agriculture, game and fishing employed 4% of the total labour force, whereas services accounted for 46% and industry, for 19%. The national average earnings in 2002 were €2,287 per month while in agriculture and fishery it was €1,551 per month. Additionally about 40% of incomes of farms come from agriculture (Tilastokeskus, 2005; Finfood, 2005a; Finfood, 2005b). Although incomes have commonly increased, food expenditure has not grown. Compared with other EU-15<sup>2</sup> countries, Finland is in relative terms a mean income and high-price country (Nordic Food Markets - a taste for competition, 2005).

## 1.1 Political Factors

Since Finland joined the EU in 1995, the Finnish agricultural support measures have been based on the CAP<sup>3</sup> of the EU (see Figure 1, Appendix 2). In Finland, subsidies are crucial for farmers, because the harsh natural conditions keep productivity below the EU average (Maa- ja metsätalousministeriö, 2001b; Kola, 2004). The support payments totalled about €1.8 billion, which represents 45% of the total return of agriculture and horticulture in Finland in 2004. Finland pays 56% of the necessary support from national funds and 44% from the agricultural budget of the EU (Arovuori and Kola, 2004). According to Lehtonen, Lankoski and Niemi (2005), it has been assumed that the CAP reform, possibly through partial or full decoupling of payments, is not likely to result in drastic decline of agricultural production in Finland. The effects on pork and poultry production will be minor, but the cultivated area of corn is expected to be reduced approximately 18.9% - 20.2% from the present area (Lehtonen, Lankoski et al., 2005). The compensatory allowance (LFA<sup>4</sup> support) is to ensure the continuation of farming in less favourable areas and keep them populated. The environmental support compensates farmers for the income losses resulting from the reduction in production and increase in costs as farmers undertake measures to reduce negative environmental impacts caused by agriculture. In 2005 the CAP, LFA and environmental supports to Finland totalled an estimated €1,260 million of which national funding was €431 million. The National Support Policy comprises the northern aid, national aid for Southern Finland, national supplement for environmental support and compensatory allowances and certain other forms of support. It aims to ensure the preconditions for agriculture in different parts of Finland and different types of farming. The national aid totalled an estimated €622,5 million in 2005 (Niemi and Ahlstedt, 2005). The Early Retirement Scheme (ERS) aims to address the constant structural problems of the age profile and poor viability of farm holdings. The ERS provides a pension for elderly farmers to retire and an opportunity for young farmers to take over holdings and practice farming. It has been most popular in Northern and central parts of Finland (Pietola et al., 2003, cited in The Territorial Impact of the CAP and RDP, 2004).

<sup>1</sup> Gross Domestic Product

<sup>2</sup> In alphabetical order, the EU-15 group of countries includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom

<sup>3</sup> Common Agricultural Policy

<sup>4</sup> Low Favourable Area Support

## 1.2 Social Factors

In the last 40 years, Finland has undergone a strong process of urbanisation. In the 1960s, the economy was mainly agricultural and forestry-based, while nowadays it is more industrial and technological (Tilastokeskus, 2005). The average household size of young and old people is getting smaller. The average age of people and the number of old people is getting higher (Finfood, 2005c). Also the average age of farmers has increased and is now 49 years (Niemi and Ahlstedt, 2005). In Finland, the education level is very high among all social classes and both sexes. The reasons for this include free education system and parents' legal rights to childcare. It is also very common for both parents to work outside the home. Prättälä (2003) states that these combined effect of socio-economic, political and population changes have created conditions in which messages of nutrition and public health experts can be accepted. For example the North Karelia Project contributed significantly to changes in the consumption of products with lower levels of saturated fat and salt. The food industry has also participated in the project (Tanttu, 2001). Finns have a positive attitude towards healthy products and Finland is also a pioneer in health-promoting and functional foods (Roininen, Tuorila et al., 2001; Tanttu, 2005). According to Paasi (1997), a strong national identity is a major survival strategy for Finland. Additionally, institutions such as family, schools and governmental institutions support this sense of identity.

## 1.3 Cultural Factors

Finland is ranked as having a high level of uncertainty avoidance, which means a low tolerance for uncertainty and ambiguity. Therefore Finnish people are prudent and rule-oriented and they institute laws, rules, regulations and controls in order to reduce the amount of uncertainty (Hofstede, 2003). Rules are seen as pragmatic, something unquestionable and inflexible (Fougère, 2004). This need to avoid uncertainty also forces organisations to use different kinds of methods of communications (Papalexandris and Panayotopoulou, 2004). Finland has a low score on power distance, which means that differences in social status exist, but people are less receptive to power difference (Hofstede, 2003). This egalitarianism can be observed for example in the education system (Fougère, 2004). Finnish culture is considered to be an individualistic culture. This means there is an emphasis on personal needs and independent goals, irrespective of whether Finnish people negotiate with in-group or out-group members. The last dimension considered here is masculinity/femininity. Finland is one of the five most feminine cultures in the world. It would suggest a society more oriented to feminine norms, such as relationships, people orientation and quality of life (Hofstede, 2003).

The other important dimension in analysing the link between culture and communication is the context dimension (Kersten, Köszegi et al., 2002). In low-context cultures straight communication is important, i.e. one is supposed to use facts and abundant details to communicate. Creation of a confidential human relationship does not play a major role (Gouttefarde, 1996). Finnish culture has both low- and high-context features. It can be classified as a low-context culture because of explicitness and straightforwardness in communication. For example the lack of detailed background can be considered as a lack of efficiency and lack of commitment from the other party. High context is characterized by a positive attitude towards silence and trustworthiness in relationships. Oral and written communication complement each other. Written communication is used more as a form of spreading and handling reports and oral communication when a matter is important and the involved parties need to see the immediate reaction of each others (Granlund and Lukka, 1998; Fougère, 2004).

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## **1.4 Market Factors**

Compared with continental Europe, the Finnish markets are small and dispersed. In 2004 the population of Finland was 5.25 million people (Tilastokeskus, 2005). The overall population density is about 15 per km<sup>2</sup> of land. However, the great majority of the population (59%) is concentrated in the urban areas of the Southern part of Finland (Nordic Food Markets - a taste for competition, 2005; Virtual Finland, 2005). Finland is also a relatively homogenous country: about 84% of the Finns are Lutherans, 1% belong to the Orthodox Church or other denominations and 14% have no religious affiliation. Only about 3% of people were born outside Finland (Tilastokeskus, 2005).

During EU membership the market share of the multiple trade chains has increased. However, globalisation has opened the markets and international retail companies have entered the Finnish markets. The range of products in retailer shops is expanding, technology improving, value added rising and the customer groups becoming more fragmented. Also the food industry is concentrated, although small-sized enterprises are characteristic of the sector (Uusitalo, 2004; Niemi and Ahlstedt, 2005).

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## 2 Overview of the Finnish Agri-The food sector

### 2.1 Production Structure, Level and Prices

Finland is a relatively big and heterogeneous country. Finnish forests cover 69% of total area (Finfood, 2005b). Cultivated arable area has grown slightly since 1995 and was about 2,218 million ha in 2004 (Niemi and Ahlstedt, 2005). The average thermal growing season varies from 180 days in the South to 120 days in the Northern part of the country, which is reflected in the yields. Productivity is approximately half of productivity in Central Europe (Maa- ja metsätalousministeriö, 2001a; Finfood, 2003). The number of farms in Finland has gone down by 29.11% since joining the EU and in 2004 there were only 70,893 farms (Tilastokeskus, 2005). EU membership has changed the structure of the Finnish agriculture from livestock to crop farms (see Table 1) while production volumes of greenhouse crops have grown. In 2003, the average farm size across the EU was 20 ha. Average Finnish farm size has increased from 23 ha in 1995 to over 31 ha in 2004. Yet at the same time Finland's share of agricultural land in EU was 1.8% in 2003. Furthermore, about 99% of the Finnish farms were privately owned (Niemi and Ahlstedt, 2005; Tulli, 2005; Finfood, 2005c).

Since Finland joined EU, the prices of corn have constantly decreased. At first market prices fell by 50 to 60% and after the Agenda 2000 reform the intervention price was cut by 15%. The reduction was smallest (28%) in milk prices and highest (65%) in egg prices. However, the production amount of corns has grown: wheat has doubled and barley quadrupled during the years 1960-2004. Instead, rye production has decreased down to one third. This has happened due to the changes in the support for crop production, the development of market prices and the change in the production structure (Niemi and Ahlstedt, 2005; Tilastokeskus, 2005). In the meat sector, poultry production has doubled and pork production has increased a fifth during in the years 1995-2004 (TIKE, 2005).

**Table 1.** Specialisation in Agriculture

	1995	2001	2002	2003	2004	2004%
Dairy farms	32,480	21,376	20,073	18,737	17,400.0	24.5
Pig farms	6,249	3,999	3,815	3,657	3,409.0	4.8
Poultry farms	2,239	1,147	1,087	1,040	781,2	1.1
Beef farms	9,394	5,296	5,044	4,888	4,616.3	6.5
Crop farms	42,287	41,448	41,419	41,708	41,191.8	58.0
Others	7,315	4,054	4,036	3,684	3,480.0	4.9
Total	99,964	77,320	75,474	73,714	72,882.4	100.0

**Source:** TIKE, 2005

### 2.2 Consumption and Self Sufficiency

The consumption of food and non-alcoholic beverages decreased from 16.4% in 1990 to 13.2% in 2002. Finland's total annual consumer expenditure on food and beverages was €16.6 billion in 2004, which is 11% of GDP (Niemi and Ahlstedt, 2005). The consumption of milk is highest in Finland compared with other EU-15 countries. Pig meat consumption has steadily increased. In 2004 consumption totalled 175.6 million kg, which is 10.6 million kg more than in 1995. Consumption of many food products is lower in Finland than in other EU-15 countries. For example Finns eat 33.8 kg of pork meat and 15.9 kg of poultry per capita (see Table 1, appendix 1), while in other in EU-15

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countries the averages are 43.8 kg and 23.3 kg per capita (Suomen Gallup Elintarviketieto Oy, 2005; TIKE, 2005). For a long time Finland has been self-sufficient in many important foodstuffs, such as dairy products, pork and eggs, etc (Tilastokeskus, 2005).

### 2.3 Import and Export

The exported value of the Finnish agri-food chain was €980 million in 2004. Foodstuff accounts for 91% of the total agri-food exports and 7.3% of the primary products. The most important export products were cheese, butter and other milk fats, sucro-chemical products and pork meat. Finnish exports have increased 41% since Finland joined the EU. Of the total foodstuff export 58% was to the EU countries in 2004. The main trading partners in import and export were Germany, Sweden and Russia in 2004. The good trade relations with Russia and Sweden are justified by geographic location and shared history. Imports have increased more rapidly than exports, by 74% since 1995. In 2004 the import of foodstuff was €2,297 million, of which 75% was from EU countries inside which area 14.8% was from Germany and 12.4% from Sweden. The most important import products were alcohol, fruits, cheese, vegetable, starch derivatives and coffee (Elintarviketeollisuusliitto ry, 2005; Niemi and Ahlstedt, 2005).

### 2.4 Future of Agriculture in Finland

According to Rikkonen (2005), the regional concentration of agriculture production will continue. Despite declining farm numbers, the amount of production will probably not decrease very much because the average size of farms will grow. Still, this might have influence on the food industry, for example the production of milk, bread and feed corns, beef and pig meat is expected to decrease (Rikkonen, 2005; Joensuu, 2005a; Finfood, 2006). The depopulation in the Eastern and Northern parts of the country in the rural areas will be the biggest challenge. The reduction of farm numbers has been higher in Eastern (29%) and Northern (21%) regions of Finland. Lately the number of jobs has decreased most in agriculture and forestry, but increased in services and building. The problem is that most jobs have disappeared in sparsely populated areas (Niemi and Ahlstedt, 2005). According to Niemi and Kola (2004) national agricultural policy is still important along with their natural, socio-economic and institutional conditions.

### 2.5 Food Industry

In Finland, the food industry is one of the most important industries after metal and engineering, forest, and chemical industries. The main food industry sectors are meat processing, dairy, bakery, brewing and soft drinks. The gross value of production was €8.7 billion (about 8% of all industries), with a value added of €2.1 billion in 2004. The food industry employed about 37,800 people. Finnish food enterprises are mainly small or medium-sized (see Table 2, Appendix 1) (Elintarviketeollisuusliitto ry, 2005; Elintarvikeyritykset, 2005; Grönroos and Välimäki, 2005). During the first years of EU membership, the turnover of the Finnish food industry was reduced by 4.7%. The reduction was not higher because the lower prices stimulated an increase in the consumption volumes. The value of production decreased the most in meat, dairy and milling, where the raw material is a significant cost factor. However, the growing consumption in prepared food and tripling broiler consumption facilitated the situation (Niemi and Ahlstedt, 2005).

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The food industry has experienced many changes in the last 10 years: membership of EU, structural changes in the trade sector, internationalisation, enlargement of the EU and deregulation of trade. According to Grönroos and Välimäki (2005), the concentration of the retail sector may have positive impacts on large food companies, which have resources to participate in developing technological solutions. Import and export of food products will increase. For example the import of frozen bakery products and pastries from Baltic countries has increased in recent years, but for small and medium-sized enterprises export is insignificant. Domestic sale of food was over 89% and the usage of domestic raw material 85% in 2004. So far consumers' valuation of domestic products has protected the Finnish food industry. Still, internationalisation has affected food prices, which are determined by European market prices. Additionally, the lower profitability of the Finnish primary sector has decreased the production of raw material. Other problems are overcapacity of production, decreasing prices, stable consumption and opportunistic consumers. The upswing of markets and the capacity utilisation rate are low. Thus the only way to grow is to increase value added, rationalise production, specialise, bond services to products, increase technology utilisation and become international. These problems have led to the reduction of the food industry companies. Despite strong structural changes, bakery and dairy industries still have production overcapacity, which has led to price wars (Grönroos and Välimäki, 2005).

## 2.6 Retail Sector

The value of Finland's daily consumer goods trade including HoReCa<sup>5</sup> and alcohol retail sale was €20.5 billion in 2004. Trade employed about 248,600 people, of which part-timers made up 40%. The Nordic retail sector is clearly more concentrated than, for example in Germany or the UK. Table 2 shows daily consumer goods sale shares in 2004. The total sales of daily consumer goods in shops were €11.639 billion, from which the share of retail chains was about 95%. In 2005 Finnish chains further merged their retail operations through acquisitions (Päivittäistavara-ry, 2005). According to Nordic Food Markets report (2005) the trade needs large volumes to achieve sufficiently efficient operations in vast and sparsely populated countries.

**Table 2.** *The Structure of Daily Consumer Goods Markets*

Chain	% Share	Number of shops	Chain	% Share	Number of shops
K Group	35.3	1085	Lidl	2.8	86
S Group	34.3	768	Stockmann	1.5	6
Tradeka	10.0	572	Others not part	4.7	869
Spar Group	6.8	287	of alliances		
Wihuri	4.6	519	Total	100.0	4192
<b>Source:</b> Päivittäistavara-ry, 2005					

The multiple retail chains also manage the wholesale sector. So, Kesko Food Ltd, Inex Partners Oy and Tuko Logistics Oy serve their group stores because chain systems manage the majority of the product range of the chain stores. Wholesalers Kespro Oy, Wihuri Oy Aarnio Metro chain, Meira Nova Oy and Heinon Tukku Ltd are particularly significant for HoReCa sector. The retail chains own three of them. The chains are mainly privately owned or their stocks are exchanged in public, but the vertically integrated S-group is a combination of local cooperatives owned by consumers. However, the economic behaviour and market strategies of the chains are quite similar (Aalto-Setälä, 2002; Päivittäistavara-ry, 2005).

<sup>5</sup> Hotels, restaurants and caterings

The shopping behaviour is changing in Finland and therefore the trade industry also wants deregulations on Sunday opening hours, over-the-counter medications, light alcoholic beverages and land use and construction. The trade wants also to decrease the VAT<sup>6</sup> on foodstuffs from 17% to 12% (Päivittäistavara-ry, 2005). Additionally, migration, a strong increase in the number of vehicles, increasing versatility of product ranges, developments in IT, changes in the population's age structure and consumption habits pose big challenges to both trade and the food industry. As a result of the changes, the number of market-type shops has dropped from 9,400 in 1978 to 3,600 in 2004, but total shop space within the supermarket sector has increased by 20%. The market share of hypermarkets and large supermarkets was 51% in 2003, which is the average in European countries. Also the size of hypermarkets' is high in Finland. The market share of discount markets was 13% in 2003. The share of discounters is growing fast (Aalto-Setälä, 2002; Nordic Food Markets - a taste for competition, 2005; Päivittäistavara-ry, 2005).

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<sup>6</sup> Value Added Tax

### 3 Pork meat to Sausage Chain

#### 3.1 Importance and Relevance

The meat industry is an important part of the Finnish food industry. The gross value of the meat processing and slaughtering sector was about €2,226 million and value added was €496 million in 2004. It accounts for 24% of the total value added of the food industry and about 1.6% of total industry in Finland (Lihakeskusliitto, 2005). Inside the agricultural sectors in Finland, pork meat is one of the most important not only in terms of production volume, but also in terms of total gross return, job generation and farm income. Pig meat represents about 13% of the return on agriculture production at market price and in terms of the value of the production it is the second most important agricultural product after milk. The gross return of this sector was €245.9 million. In 2004 production volume of pork meat was 198.5 million kg, which is more than double compared with beef production. Pork meat is one of the few products whose production has increased since Finland joined the EU (see Table 3). In terms of farm income the average taxable income of a pig farm is higher than that of the average farm. The number of pig farms was 3,365 in 2004 (Finfood, 2005; Niemi and Ahlstedt, 2005; TIKE, 2005).

**Table 5.** Production of Pig meat

Crop yield	Unit	1960	1970	1980	1990	1996	2004
Pork	mil. kg	54	106	169	187	172	198
Source: TIKE, 2005							

Pork meat is the most consumed meat in Finland. Average consumption was 33.8 kg per person in 2004 (see Table 1, Appendix 1), more than double compared with poultry (15.9 kg per person) and higher than beef (19 kg per person). Consumption of pork meat increased 2.6% and totalled 175.6 million kg in 2004, which is 10.6 million kg more than 1995 (TIKE, 2005). Still, pork meat consumption in Finland is lower than the EU average and it has increased only a few kilos after joining the EU in 1995.

#### 3.2 Import and Export

Exports of Finnish pig meat has increased insignificantly in recent years (see Table 4) (TIKE, 2005). Today Russia represents less than 20% of pig exports, while in the 1990s it was 50%. The EU members are now the most important destination (50%), partly because in the new EU member states the fattier carcass parts of the pig are still more popular than in the old member countries (Niemi and Ahlstedt, 2005).

**Table 4.** Pig Meat Production, Consumption and International Trade

Pork million kg	1995	2001	2002	2003	2004
Total production	166	176	184	193	199
Consumption	165	168	166	172	176
Exports *	9	19	27	36	39
Imports *	10	12	12	13	16
* Estimated meat in carcasses Source: TIKE, 2005					

The volume of imported pig meat was 15.8 million kg in 2004. It represents 7.5% of the domestic markets. The import of sausages has increased considerably between 1995 and 2004 (see Table 3, Appendix 1). Pieces of meat are imported from Denmark and Germany, while about half of the imported meat products, for example ready meals and sausages, come from Germany. Imported meat is mainly used in restaurants, retail stores and as a raw material for processed meat products such as ready meals (Niemi and Ahlstedt, 2005; Tulli, 2005; Välimäki, 2005).

### 3.3 SWOT Analysis of Meat Industry in Finland

**Table 5.** *SWOT Analysis of Meat Industry*

<b>STRENGTHS</b>	<b>WEAKNESSES</b>
<ul style="list-style-type: none"> <li>■ Meat is a stable product</li> <li>■ Markets are relatively stable</li> <li>■ Product and production knowledge are high</li> <li>■ Purity and high quality of raw materials</li> <li>■ Technology is new and at a high level</li> <li>■ Shared tastes and traditions, small markets and distant location protect from import</li> <li>■ Few strong and well-known brands</li> </ul>	<ul style="list-style-type: none"> <li>■ Internal competition and lack of collaboration</li> <li>■ Few unknown trademarks and low production volume</li> <li>■ Underutilisation of capacity/cost efficiency</li> <li>■ Profitability</li> <li>■ Structure of capital/debts</li> <li>■ Business management skills</li> <li>■ Lack of experience in internationalisation</li> <li>■ Stronger bargaining power of commercial customers</li> </ul>
<b>OPPORTUNITIES</b>	<b>THREATS</b>
<ul style="list-style-type: none"> <li>■ Collaboration</li> <li>■ Rationalisation of products and logistic collaboration</li> <li>■ Local/special/niche products e.g. functional products</li> <li>■ Customer-oriented product development</li> <li>■ Innovativeness, flexibility and knowledge of markets</li> <li>■ Advantages of information technology</li> <li>■ Collaboration in export</li> <li>■ Transparency and safety of domestic food products</li> <li>■ Effective use of energy, new sources of energy</li> </ul>	<ul style="list-style-type: none"> <li>■ Stronger bargaining power of commercial customers</li> <li>■ Export (own trademarks of commercial customers)</li> <li>■ Weak exploitation of research results</li> <li>■ Decreasing competitiveness of primary production (domestic meat)</li> <li>■ Reduction of domestic meat/agricultural policy</li> <li>■ Enlargement of EU in Eastern Europe</li> <li>■ Animal diseases</li> </ul>

**Source:** Välimäki, 2005

### 3.4 Structure of Pork Meat Sausage Chain

The pork-to-sausage chain in Finland has many similarities but also specialities compared with the other Western European countries. In Finland the breeding farmer and the fatterer is often the same family farmer. It is also typical that the producer or coalition of producers own large piggeries. After the pigs are fattened, they are sold to processors. Farmers sell their pigs directly or through the acquisition and advisor organisations of cooperatives. Open cattle markets for meat purchases are not used in Finland. The acquisition and advisor organisation (e.g. A-Farmers) works as a middleman and lobbyist of producers and processors in the pig chain. Often both parties own together the acquisition and advisor organisation, which purchases and supplies the meat from farmers to processors. According to Välimäki (2005) and the panellists consulted, the Finnish meat sector is characterised by cooperatives, which have an 85% market share in slaughtering. Slaughterhouses and processors are often the same company and the share of integrated slaughtering and processing units is high. The share of subcontracting is low. The large meat processors control meat markets, although the most of enterprises are small (Välimäki, 2005). Processors sell their products to external markets (export) and/or to the domestic ones. They sell, for example to multiple retail chains, multiple wholesalers owned by multiple retail chains and institutional kitchens etc. Institutional kitchens often get their products directly from processors especially in meat sector, because processor can offer relevant product advices. Processors, wholesalers and food service sector also import meat. Live pigs are not imported or exported. A consultation panellist states that in Finland the producers collect products according to orders of each customer and then the consignments are transported to the logistic terminals or stores of the chains. Multiple retail chains and their wholesalers have their own logistics centres/terminals or distribution depot systems. In central terminals the different consignments of each customer are put together and delivered forward. The common trade practice is "carriage paid to" (CPT). Niemi and Ahlstedt (2005) state that "The largest food trade companies have rapidly become organised into chains, i.e. concentrating their purchasing. Today the purchases of about 80% of foodstuff are concentrated into certain major suppliers and distributed through national logistic channels, while only 20% of foodstuffs are purchased locally". Figure 1 presents pork sausage chain types in Finland. Broken line arrow illustrates intermediaries and/or less common product flows. Statistics relate to 2004.

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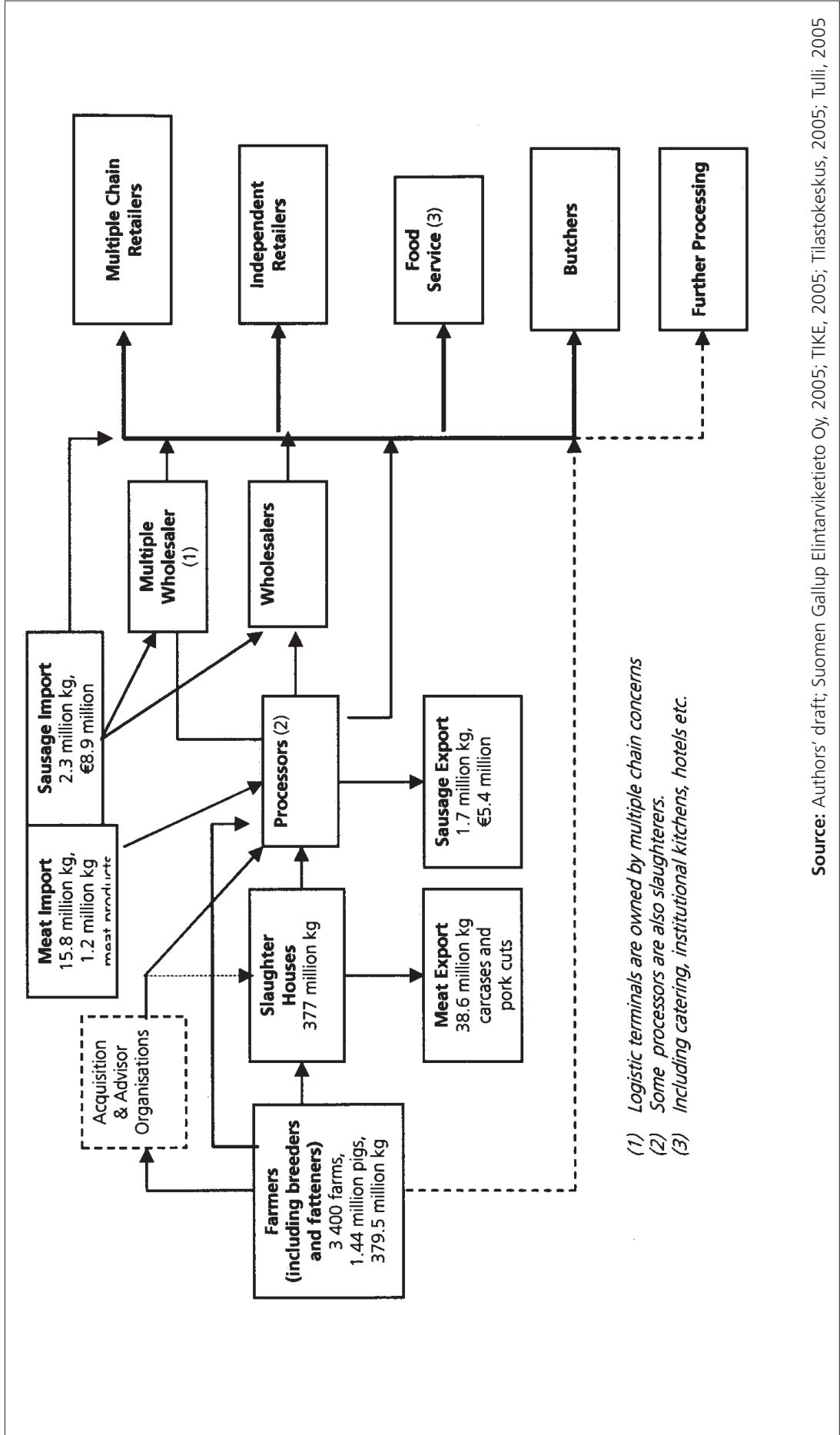


Figure 1. Pork Sausage Chain in Finland

Source: Authors' draft; Suomen Gallup Elintarviketieto Oy, 2005; TIKE, 2005; Tilastokeskus, 2005; Tulli, 2005

## 3.5 Production

### 3.5.1 Structural Features

The pig meat chain has gone through significant and fast structural changes during the past ten years: the unit size of piggeries has grown and meat companies as well as farmers have met international competition. Pig producers have been obliged to invest more and raise production levels to be competitive. The number of farms specialising in pig husbandry was about 3,400 in 2004. The number of pig farms was reduced by 45% between 1995 and 2004. After the next ten years there might be fewer than 2,000 pig farms in Finland. Most of the pig farms are and will be located in the Southern and Western Finland (Finfood, 2005; TIKE, 2005; Finfood, 2005b). Three production systems are common in Finland: 1) specialised breeding units, 2) specialised fattening/finishing units and 3) integrated units (combining breeding and fattening). However, in 2005 there were only 24 sow houses with over 700 sows (Finfood, 2005). According to Lihakeskusliitto (2005), the numbers will increase significantly in the near future. In 2002 the average number of sows per farm was 54, in 2004 it was 63 and the goal in 2012 is 110 sows. It is predicted that in 2012 the average number of fattening pigs sold per farm will be 2,500, which is approx. 80% more than in 2004. This will mean that structural changes are required: the share of small and medium-sized pig farms is expected to go down significantly, while the share of large farms with over 3,000 pigs is expected to become triple until 2012. In addition, the farms over 3,000 fattening pigs are expected to increase their market share from 37% to 55% of all fattening pigs (Lihakeskusliitto, 2005). So far, small combined houses have been slightly in the majority, but the share of large sow houses owned by several producers is increasing.

According to Niemi and Ahlstedt (2005), the variation of producer prices is the consequence of disturbances in the EU markets, such as the swine epidemic in Netherlands in 1997 – 1998. The price of pig meat (€1.20 per kg) at the end of 2004 was almost the same as it was during the first months of EU accession in 1995, but the real price for the whole year was 10 - 15% higher than 1995. However, today the price in Finland is roughly equivalent with other EU countries (Finfood, 2005; Niemi and Ahlstedt, 2005).

### 3.5.2 Economic Relationships

Farmers are generally well organised in Finland and they have long-term and influential horizontal relationships. They have the Central Union of Agricultural Producers and Forest Owners (MTK) organisation, which is a well-known large organisation looking after the interests of member farmer in Finland. Practically all farmers are members. Another well-known organisation is ProAgria, which has 16 ProAgria Rural Advisory Centres. ProAgria works as an advisory organisation and about 85% of Finnish farmers are its customers. Finnish producers have put their strengths together also in cooperatives, particularly in the meat sector. Thus meat producers have increased their negotiation power vis-a-vis the processors. While the cooperatives own directly or through middlemen many processors, they can influence the trade sector, too. The panellists consulted state that cooperatives and market concentrations can acquire a strong position in small markets with a small population. There are also many national and local collaborations and voluntary associations of producers. They work as advisory associations, for example to improve the professional skills and to strengthen the horizontal networks of farmers. They may have machines in joint use or they can have recreational services etc. In addition, producers are often informally networked and these horizontal relationships are often

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characterized by both trust and personal bonds. Joint ownership of machines and contract works are examples of informal relationships at the farm level, although short sowing and harvesting times do not favour collaborations. More formal relationships between other farms are also common. For example pig farmers need to have sufficient land on which they can dispose pig-slurry. Therefore they need land or access to the land of other farmers. Written forms are needed because of statutory environmental obligations and financial support criteria.

Two big companies called Suomen Rehu Oy and Rehuraisio, which is a part of Raisio Oyj, dominate the animal feed sector. These companies hold over 80% of the market. Producers have an important decision power in Raisio Oyj through the direct ownership or MTK (Uusitalo and Pietola, 2001), but the panellists consulted still claim that farmers should have a stronger horizontal collaboration in equipment and animal feed purchases. One example is A-Rehu, owned by cooperatives, which works in the feed and corn trade. In the pig feed sector A-Rehu has a significant local market share. However, in 2006 the Finnish feeding sector went through significant changes such as acquisitions.

### 3.5.3 Communication

The panellists consulted state that horizontal communication with other farmers is common and personal. Mobile phones, fixed telephones and the Internet are widely used. The Internet passes information and makes communication easier, for example chat forums and emails have become very popular. Among farmers, communication is related to production schedules, quantities, development work and quality. Additionally, new piggeries are very modern and computers for climate control/ventilation, automatic showers, feed equipment, growth monitoring and book-keeping etc. are commonly used. According to the panellists consulted, meat producers and processors often have special data systems or extranets to transfer information directly from farm to feed producer or meat processor and vice versa. The purpose of this information exchange is to develop effective production methods and to improve the quality of the production. The information contents include, for example slaughter weights, growth information and book keeping.

A panellist held that the farmer organisation MTK has a strong position as the supervisor of farmer interests in agricultural policy issues and the organisation works in providing and delivering information concerning agricultural issues, while ProAgria concentrates on delivering professional information and increasing the producers' professional skills. Additionally, advisor organisations and processors also organise joint projects or training. Strong organisations are seen as important and functioning channels of information in Finland. According to the panellists consulted, communication between producers and processors is bidirectional, especially between cooperatives and producers.

### 3.5.4 Country-Specific Influences

Although CAP will influence the pig chains, the panellists consulted see that the national agricultural policy is the most important political force. Finnish pig producers have a national financial support system, which has a significant impact on the income of producers because of the high production costs in Finland. However, CAP and national agricultural policy seems to favour size growth of Finnish farms. Thus it lobbies for investing in large piggeries, although the political and market situations are not as stable as before.

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According to the panellists consulted, another important country-specific factor is the age structure of producers. Many producers will retire in the near future and fewer farmers will continue farming, partly because farming is considered to be hard and the income levels are quite low in Finland. If the production amounts remain at the same level in the future as today, this will cause more investments: it will require larger piggeries and more arable land. However, large piggeries will also be problematic from the point of view of the environment. The panellists consulted view that in Finland environmental regulations are very strict and they restrict building. However, agricultural waste can be used, for example in landfill gas power plants. This might provide a new opportunity for agriculture in Finland.

The panellists view that Finnish farmers have high education levels, especially young producers, who often have a college-level education. Also quality training, in which ProAgria has an important role, is common and popular today. While the share of young producers and the quality trained producers will grow, this might have a positive impact on profitability and the development of pig production but also the amount of part-time farming might increase. The Finnish animal disease situation, too, is good, since strict controls, the cold winter and long distances between farms help to avoid diseases. Also live animals are not sold in livestock auction marts and they are not imported or exported. Additionally, animal medicines are strictly controlled in comparison with many other countries. These facts may have a positive impact on consumers' food image.

## **3.6 Processing**

### **3.6.1 Structural Features**

The meat industry is very concentrated in Finland. Primary and secondary processors are commonly connected by ownership. The meat sector has many small enterprises and only a few very big enterprises. There were about 460 meat processor and/or slaughtering establishments in Finland in 2004 (see Table 2, Appendix 1). The meat processing industry employed approximately 10,200 people, of which 2,100 were in slaughtering and 8,100 in processing in 2003. In recent years this number has risen. About 65% of all establishments had less than 10 employees but the share of these small establishments was 2.8% of the whole turnover of the sector. The gross value of the meat processing companies was €1.93 billion and value added was €443 million in 2003. The gross value of slaughtering companies was €293 million and value added was €53 million (Elintarvikeyritykset, 2005; Välimäki, 2005).

The 20 biggest companies produce over 90% of gross value of the sector (Lihakeskusliitto, 2005). The ten largest companies account for 70% of the turnover of the meat industry and they have 75% of all domestic employees (Välimäki, 2005). This is about 28% of all employees of the food industry. The biggest companies are cooperatives or family owned. The cooperatives and family owned companies have equal shares of the market. Mainly producers and their associations or cooperatives own cooperative meat-processing companies (Karttunen, 2005; Lihakeskusliitto, 2005). This is common especially in sausage markets. Table 6 shows the size and ownership of the biggest processors.

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**Table 6.** *The Biggest Food Industry Companies in 2004*

Company	Net sales mill. euros	Employees	Ownership
Atria Yhtymä Oyj	834	3638	Cooperative*
HK Ruokatalo Group Oyj	680	4713	Cooperative*
Saarioinen Oy	277	2156	Family owned
Järvi-Suomen Portti	126	729	Cooperative
Snellmann Oy	105	453	Family owned
Pouttu Oy	60	344	Family owned
* Cooperatives own a majority of stocks <b>Source:</b> Karttunen, 2005 ; Lihakeskusliitto, 2005			

In the slaughtering business the cooperatives have an even bigger share: Atria Oyj, HK Ruokatalo Oy and Järvi-Suomen Portti have 85% of the whole business. The biggest family owned slaughtering companies are Saarioinen Oy and Oy Snellman Ab (Lihakeskusliitto, 2005). The biggest processors have integrated slaughtering and processing units. There also exist many privately owned small and middle-sized slaughterhouses (Välimäki, 2005), but their market share is small and mainly local.

The current profitability crisis is not surprising in the Finnish pig meat industry because this crisis is part of the normal and regular development path. Thus, the main goal of the chain is to raise productivity. Joensuu (2005b) reported about a pig breeding company Finnpig Oy, which works to raise the quality, efficiency and profitability of the chain. Finnpig Oy is owned by A-Farmers Oy and LSO Foods Oy, which are owned by two main cooperative processors and producers (Joensuu, 2005b). Despite the crisis, profits in the meat sector have increased in family-owned companies, Saarioinen and Snellman, which had the highest profits in 2004. The meat sector has used several strategies to increase profitability, for example by backward integration into primary production, exporting processed products, having joint ventures abroad and importing cheap raw materials. The use of domestic meat can be a competitive advantage but many companies have international connections as well. HK Ruokatalo has subsidiaries and joint ventures in the Baltic countries and in Poland, where it owns the biggest meat processor Sokolów together with Danish Crown. Atria has subsidiaries in Sweden, Russia and the Baltic countries (Grönroos and Välimäki, 2005; Karttunen, 2005). Competition is hard in international markets and operations require major resources. Specialists claim that Finnish food producers succeed in international markets only with high quality special products (Grönroos and Välimäki, 2005). The big companies also dominate the Finnish sausage markets with strong and well-known brands especially in the grill sausage sector. Välimäki (2005) states that sausages are predominately produced in big production units where the processing is cost efficient. Sausage is also the most common pig meat product in Finland. Small meat processors have niche markets of sausages, for example organic, health, spicy and ethnic sausages.

### 3.6.2 Economic Relationships

According to the panellists consulted, the strength of the pig meat chain is close and deep relationships between producers and processors. The economic relationship is generally considered stable and quite confidential. Some processors even see that their role is to be a producer's partner and a strategic developer. Contracts are often long-term or medium-long term and there is a mutual need for (written) contracts (see figure 2). Furthermore, relationships are long lasting, although the con-

tract period might be medium-long. The panellists considered that trust between partners is quite good; at least it is better today than before joining the EU. Additionally, (in cooperatives) the strong existence of middlemen does not separate farmers from processors. On the contrary, these middlemen organisations work as holding glue and provide an information channel between partners. Their goal is to develop the relationship between farmers and processors. Meat companies were often founded by producers and producers still own them or part of them via middleman organisations. According to the panellists, the main purpose of cooperatives is to get enough profits for producers. Thus processors and producers work for the same goal. Uusitalo and Pietola (2001) state that the vertical and horizontal collaborations of cooperatives in Finland cannot be considered just vertical or horizontal, but as both of them at the same time.

Uusitalo and Pietola's (2001) study shows that contract production has grown: in 1992 74% of piglet and 53% of fattened pig producers had written contracts with processors. In 2000 the respective numbers were 93% and 84%. Today the situation is at least as good. The contracts are often long-term and the producer rarely makes processors compete with each other. Uusitalo and Pietola claim that producers enter into written contracts more frequently with cooperative processors (95%) than with privately owned companies (70%). However, the conclusion is that contracts between pig producers and processors are very often written. The content of contracts and the producer prices per weight classes (2 to 3) vary among slaughterhouses, because content and price depend on the kind of products contracted for: ham, sausage, liver sausage, ready meals etc. Examples of this variation are the common contracts of so-called high quality meat: the producer gets higher price if the fattening conditions and meat quality are very good. The contract includes inter alia strict health, documentation, ethical and other regulations. Also active information flow between the slaughterhouse, vet and producer is required. Moreover, slaughterhouse controls and ascertains piggeries by taking samples and doing spot checks. This kind of contract production requires many written documents and contracts (feed, slurry, vet, environmental issues, health and disease issues etc.) with other partners too, although often they are required also by laws and regulations of Finland and the EU (Sianlihan tuotanto Atria Laatulihatiloilla, 1999).

The panellists state that the reasons for written long-term contracts are mainly economic and trust-related. Especially processors need binding contracts because this way they are able to predict production and secure quality and further marketing. Thus they also have a better negotiation position against the retail trade. Big meat processors normally have contract fatteners, but Hiekkataipale (2004) states that small and medium-sized meat processors mostly supply raw material from other enterprises or from their own breeding houses, in which case they might also own the whole chain from production to processing and finally to selling in their own shops. Often these companies have special niche products, small markets and/or they are local farm shops.

Slaughterhouses and processors, especially cooperatives, provide many services to farmers: advisory services, production follow-ups, planning and production services, market reviews, feed and equipment interventions and interventions of breeding animals (Uusitalo and Pietola, 2001). Also the panellists consulted gave similar examples of collaborative chains: genetic, feedstuff and profitability development, companionship projects, constructional advisors, financing, etc. Meat processors have helped producers and coalitions of producers to establish big sow houses. This contributes to ensure the quantity of the meat and increase production efficiency. Moreover, the relationship between farmers and the transportation sector can be considered personal, confidential, stable and long-term. The middleman, like cooperatives, often takes care of the transportation.

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The panellists consulted state that cooperative processors have a big market share and in the future their loyalty to producers will probably be even stronger. This is the result of strong competition within the markets and retail sector. However, the balance of power might be changing: according to Esa Härmälä, chairman of MTK, and Finfood (2005c) the meat producers' position has become weaker compared with slaughterhouses and the meat processors' position has become weaker compared with trade. The panellists are also concerned about conceivable changes in power balance between producers and processors.

### 3.6.3 Communication

According to the panellists, communication between processors and farmers usually occurs through face-to-face contacts, phone and email. The Internet and electronic data systems are mainly used for exchange of large amounts of information about production schedules, quantities, slaughters, about booking, feeding and developmental information etc. Electronic communication tools are becoming more important and part of the normal relationship in producer – processor relationships. Big processors also publish their own magazines. In addition, seminars, training sessions and other activities help processors pass information to producers. The communication is relatively open and transparent. The panellists consulted claim that communication is also bidirectional because both partners consider communication as important. Bulletins of Finfood (2005c; 2005e) state that one of the strengths of the Finnish food chain is the transmission of information inside the chain and exploitation of information technology. Additionally, plenty of information has been collected, but now the exploitation of this information is considered to be the next step for the Finnish food chain.

The communication between meat processors and final consumers is considered to be strong. The panellists consulted state that the brand owner is responsible for delivering information to consumers. However, both trade and processors have collected a lot of information about marketing, sale, brands, images and research and they share information with each other often, regularly and widely. The panellists consulted agree that information concerning sales and consumer groups etc. flows quite well. Additionally, they collaborate in marketing but collaboration could still be made closer and more cost efficient by reducing overlap.

### 3.6.4 Country-Specific Influences

In the view of the meat processors, the most important political influences are national agricultural policy and export refunds. Diminishing export refunds and free world trade will impact on the pig meat production and processing sectors because of overproduction and export. However, the market price of Finnish pig meat is about the same as in world trade and thus abolition of export refunds will not be a problem.

There are two circumstances that protect the Finnish meat industry (Finfood, 2005c). First, there is no Europe-wide brand in the meat industry. Secondly, the Finnish meat industry knows its consumers, chain trades and conditions very well. Moreover, big meat companies know the markets close to Finland because of their foreign operations. In the future the share of foreign sales will be more important, because domestic markets are already saturated. Also, the meat industry has recently improved its productivity and competitive position. Raised productivity of producers and processors and

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structural changes are seen as the main ways to secure and develop the Finnish pig meat production especially when more international brands come to Finland and the consumption of sausages will not increase equivalently. Also consumers' loyalty to domestic products may not be as strong in future as today and their raised awareness of food issues will require more from the food chain, state the panellists consulted. In recent years the consumption of sausages has changed considerably. Today Finnish consumers value sausages more and the assortment is large. So-called premium products and healthy low-fat products have become more popular. The premium sausages have about 50% market share in the grill sausage product group, albeit they haven't been on the market for a long time. The panellists consulted state that sausages are not sold easily as functional products, but actions in health issues are still needed. Health products already have a strong position in Finnish food culture along with sausages, which always have had a strong position.

### **3.7 Distribution and Retail**

#### **3.7.1 Structural Features**

Most meat products sold in Finnish retail outlets come via multiple chain wholesalers or directly from processor. The share of independent retailers and butchers is very small. This is because retail business is highly concentrated in Finland. The structural features of the retail sector are presented in the sections "Food Industry" and "Retail Sector".

Consumer prices of sausages have not varied much since 1995. At the end of 2004 the price of sausages was almost the same as it was during the first months in the EU in 1995 (TIKE, 2005). Sausage is the main product of Finnish meat industry. Finnish sausages are quite similar to German fleischwurst, bratwurst, knockwurst and jagdwurst (Rahola, 2005; Välimäki, 2005).

#### **3.7.2 Economic Relationships**

Today, according to the panellists, the vertical economic relations between retailers and processors are mainly stable, i.e. business partners do not rotate partners frequently and chain members seek repeated transactions in long-term relationships in order to fortify trust and build confidence. The economic relationships are quite formal, long-term and confidential. There is also a balance of power among the chain members, which is necessary for the sustainability of the relationship and business. In addition, the relationships are diversified but consist in short-term transactions in the semi-permanent economic relationships. Relationships are more short-term between small processors and multiple chain traders than between large processors and multiple chain trade. Many researchers (Tapionlinna, 2000; Viitaharju and Lähdesmäki, 2003; Hiekkataipale, 2004) also state that wholesalers in the food sector generally value long-term and stable relationships and reliable partners. This will guarantee the continuous quality of products and short negotiations because the partnership is already established and the partner is well-known and trustworthy. The panellists consulted argue that relationships are often based on strategic co-operation, for example R&D<sup>7</sup> in package and size matters, consumer behaviour, statistics, consumption forecasts and trends. Especially in strategic and R&D situations the relationship is considered less formal and more personal. Trade and industry also use written quality control contracts for risk situations. The spot market is a rare situation although the strict competitive environment puts pressure on this: exceptions are the Internet auctions used by retailers for big purchases, for example in private label products.

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<sup>7</sup> Research and Development



The panellists state that the most important element in the successful relationship between trade and processors is trust. It is a precondition for every negotiation. In the meat sector, trust, respect and morale are even more important: the relationships have to be stable and long-term especially between big processors and multiple retail chains because they are dependent on each other. In particular, big processors have strong and well-known brands and on the other hand the retail sector is concentrated in the hands of a few trade chains. Thus there has been a balance of power until today. Also personal meetings with customers are considered to be very important for the maintenance of good relations with customers. Even though relationships with processors are mainly long-term and stable, sometimes business relationships have to end. Viitaharju and Lähdesmäki (2004) found that the most common reasons for ending a relationship were low demand of product and problems with delivery or schedules in Finnish food chains.

Transportation, secondary processors, marketing business and wholesale compose the distribution sector. Viitaharju et al. (2004) state that the relationships within the sector are in general formal and based on written contracts. Wholesalers and secondary processors are the two groups that use more informal and oral contracts. Relationships between these two groups are less formal because of the constant change in price of raw material or because of the long-term cooperation on the supplier side, sometimes lasting for many generations. Therefore written contracts with small input suppliers are rather rare. Additionally, the panellists consulted state that written contracts are common between big partners.

In negotiations between SMEs<sup>8</sup> and wholesale stores or large public organisations, the buyer may easily have the bargaining power. The reverse may be true if the seller has a niche or special product (Viitaharju and Lähdesmäki, 2002a). According to Välimäki (2005) and many the panellists consulted, the Finnish trade sector has more negotiation power than the food industry. This causes problems for small companies, for example in market entry. The negotiations have also become more complex and they include new areas like joint marketing, shelf access payment etc. The panellists and Nordic Food Markets report (2005) note that processors need to participate in in-store activities and private label system, which has increased the power of retailers. Also price has become more important and a more dominant factor in business negotiations. Studies of Viitaharju, Lähdesmäki (2002a) and Vihma (2005) have showed that price and price-quality ratio are very important factors in business negotiations. Even so, the annual negotiations between retail trade and processing industry have become very tough because of the tight competitive situation in the markets. Also, actions of discounters like Lidl and acquisitions of trade chains add more pressure (Viitaharju and Lähdesmäki, 2002a; Vihma, 2005). The panellists consulted consider that in annual negotiations, general issues are mostly discussed, for example requests for delivery quantities, rebates, promotion subsidies, price and stipulations regarding audits. Special delivery times, for example Midsummer and Christmas can be defined also in written contracts.

Furthermore, Viitaharju and Lähdesmäki (2003) claim that the horizontal relationships among retailers are considered to be very strong, based on a strong trade chain management or collaborations of independent retailers. The most important partners for horizontal collaborations are the other neighbourhood retail stores operating in the same chain. As for other businesses, retailers have only some cooperation with them and it is not very systematic and official (Viitaharju and Lähdesmäki, 2003). On the contrary, the Nordic Food Markets report (2005) claims that in the retail sector the trends towards integration are horizontal and vertical because nowadays there are hardly any supermarkets left which are not part of some kind of marketing and/or independent purchasing cooperation.

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<sup>8</sup> Small and Medium-Sized Enterprises

### 3.7.3 Communication

The panellists state that the communication between retailers and processors can be considered mainly personal. This communication is also considered confidential and close. Partners exchange information about consumption levels, season sales, consumer behaviours, delivery timetables, etc. The information exchange, such as orders, delivery, billing, stock accounting and routines, is commonly handled by electronic data exchange system especially with large processors. According to some panellists, "All routines are taken care of electronically". Instead, practical, strategic or marketing matters are discussed in person and at regular meetings, because they need consideration and discussion. Also Viitaharju and Lähdesmäki (2003) obtained similar results. According to them, the communication between processor and retailer is dominated by daily affairs, for example price and orders. Usually telephone, fax, e-mail or mobile text messages are used especially in retailer - small processors relationships. Still, personal contacts are highly appreciated: through them, SMEs get valuable consumer feedback without having their own direct sales outlet.

In the retailing and processing sectors, information technology is widely adopted. Trade and food industry have developed collaborations in sophisticated software systems, such as EDI<sup>9</sup>. They have managed to increase effectiveness, control deliveries and exploit information technology. Trade chains collect an electronic product information bank, where information on food products, such as ingredients, is stored. Retailers believe that the role of the ICT<sup>10</sup> is going to increase in the near future and they are willing to invest if necessary (Viitaharju, Lähdesmäki et al., 2004; Välimäki, 2005). In addition, regulations, transparency, labels and the need for consumer behaviour information promote modern technologies and information flows. Retailers' customers are mainly local final consumers. Therefore, the role of loyalty programmes is very important. All the biggest retail chains have loyalty programmes. Retailers think that the loyalty cards strengthened customer relations and they appreciate the feedback of their customers (Viitaharju, Lähdesmäki et al., 2004).

### 3.7.4 Country Specific Influences

The tradition for buying meat in supermarkets is very pronounced in Finland compared, for example with France, where independent butchers have a large market share. There are also different retail structure and shopping patterns: consumers do not spend as much time shopping as consumers in Southern Europe. Thus, the assortment of pre-packed fresh meat is large. Nowadays Finnish consumers prefer consumer packed meat products and ready meals probably because of a more hectic lifestyle and willingness to save time. However, about half of Finns have their hot lunch in canteens or institutional kitchens. In addition, Finns do not visit grocery shops as many times per week as people in Middle Europe (Nordic Food Markets - a taste for competition, 2005). This might be because of long distances and uncomfortable weather conditions. The panellists consulted argue that even health, quality and domestic issues are important, price is still a very important issue in the sausage buying situation. Food is also a socio-political question and therefore many originally political actions influence: agricultural policy, food crises, quality programmes and world trade.

Many Finns consider sausages an important part of the food culture. Thus it's common and an essential element of basic fast food in many social events. The consumption of sausage contributes to the sense of identity of the Finns. Mostly sausages are very light on spices and therefore frequently eaten with mustard or ketchup without a bun. Sausages are usually grilled, roasted over coals or

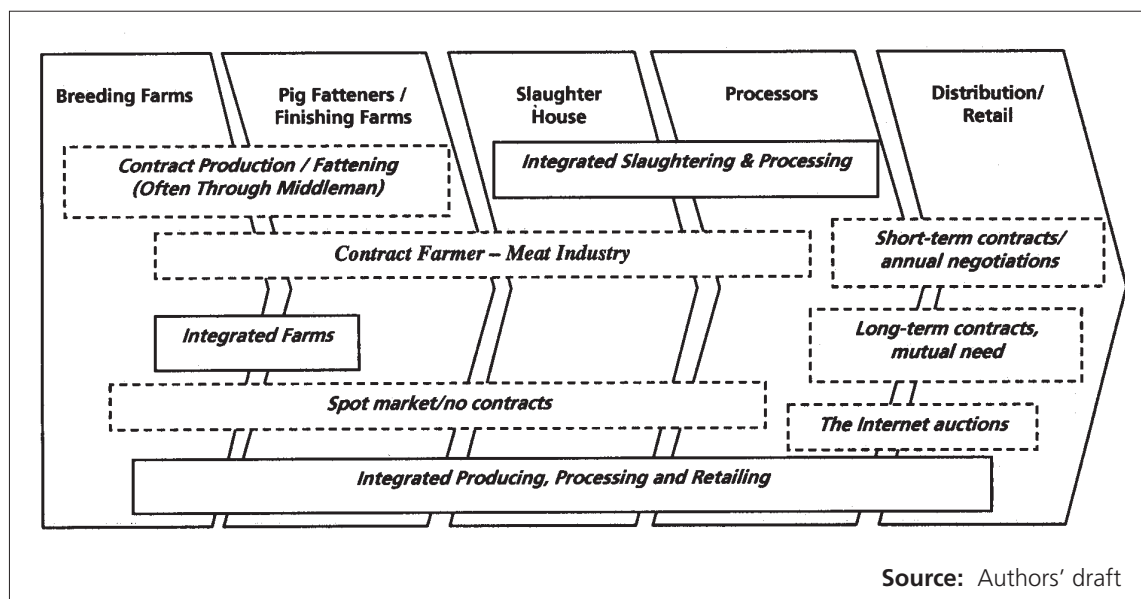
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<sup>9</sup> Electronic Data Interchange

<sup>10</sup> Information and Communication Technologies

cooked on sauna heating stones (Tanttu, 2001). Summer is the most important season for grilled sausage, although sausage is an important product all year through.

Although the sausage has been a part of the Finnish cuisine for a long time, the ingredients have been changing recently. These changes are related to increased consciousness of Finns on food health issues. The animal fat in sausage is often replaced with healthier vegetable fats and enriched with ingredients that have beneficial health effects (Food consumption and dietary changes, 1999; Tanttu, 2001). Lindeman and Stark (1999) claim that nowadays eating vegetables, healthy or non-fattening food may serve as a similar basis for identity, social categorisation and moral valuation as religions characteristically used to serve. According to the panellists, pig producers are more conscious about consumers than rye producers. This has connections to close relationships between producers and the meat industry as well as health and environmental movements.



**Figure 2.** Economic Relationship of Pig Meat Chain in Finland

## 4 Corn to Rye Bread Chain

### 4.1 Importance and Relevance

The bakery industry is the most important sector in the food industry in terms of the labour force and the number of establishments. It employs over 10,600 people, which is 27% of the whole of the food industry. The bakery enterprises cover one third of all enterprises in the food sector (see Table 2, Appendix 1). Labour intensity and small company size are characteristic of bakery industry, although the production amounts are decreasing. Production of the bakery industry is approximately 400 million kg in a year. Production of bread is about 215 million kg. The bakery industry uses 150 million kg wheat flour and 75 million kg rye flour in a year. The share of soft bread was 9% of the gross value of the food industry in 2003 (Elintarvikeyritykset, 2005; Grönroos, 2005).

The importance of rye bread in Finland is not just economic but also socio-cultural. Rye bread has always been an important part of Finnish meal and Finnish consumer consider rye bread as a very domestic product. Bread consumption is currently around 200 million kg a year or 40 kg per capita. The consumption of rye bread is about 12 kg per capita per year, which is 30% of the total consumed bread (Rye Know How. Finnish Rye Bread, 2005). Domestic rye consumption has increased since 1995 from almost 82.7 million kg to 92.7 million kg in 2004 (see Figure 3). The share of bread and corn products was approximately 16.8% of all consumed food products. The consumption is clearly highest in its northern growing areas, where the use of rye is based on local traditional and nutritional practices (Elintarviketeollisuusliitto ry, 2005).

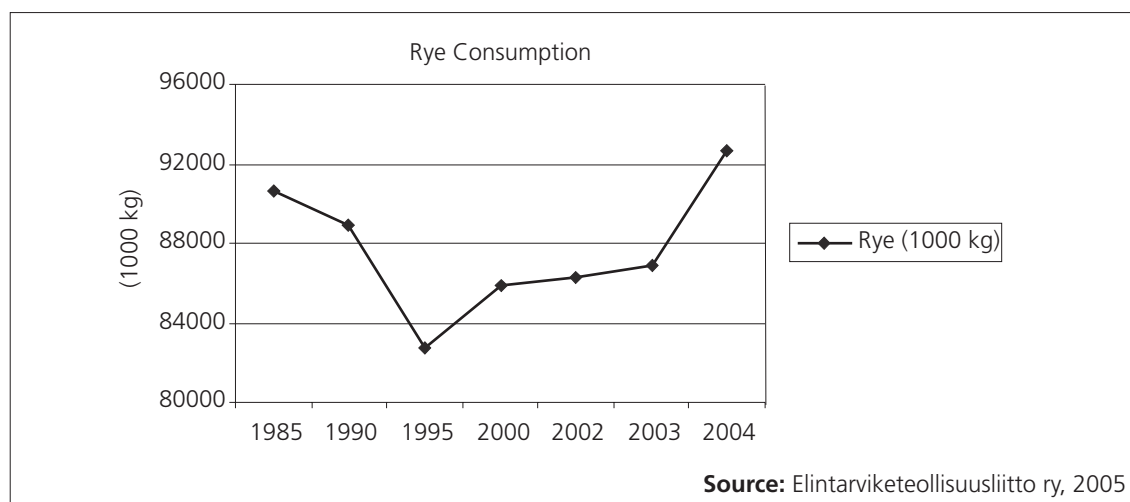


Figure 3. Rye Consumption

### 4.2 Import and Export

The import of rye to Finland is significant, although the amount has varied considerably (Figure 4). Imported rye was 53 million kg in 2004 (Table 4, Appendix 1) and self-sufficiency was 62%. The self-sufficiency is decreasing while the consumption is increasing. Thus, imported rye will be more important. Import of bakery products has grown recently. Import of (soft) breads amounted to 10.7 million kg in 2004. Export of grain, milling products (Table 5, Appendix 1) and bread have been insignificant. The value of bread export was €2.9 million in 2004. Bakery products accounted for less than 5% of all food export in 2004 (Grönroos, 2005; TIKE, 2005; Tulli, 2005).

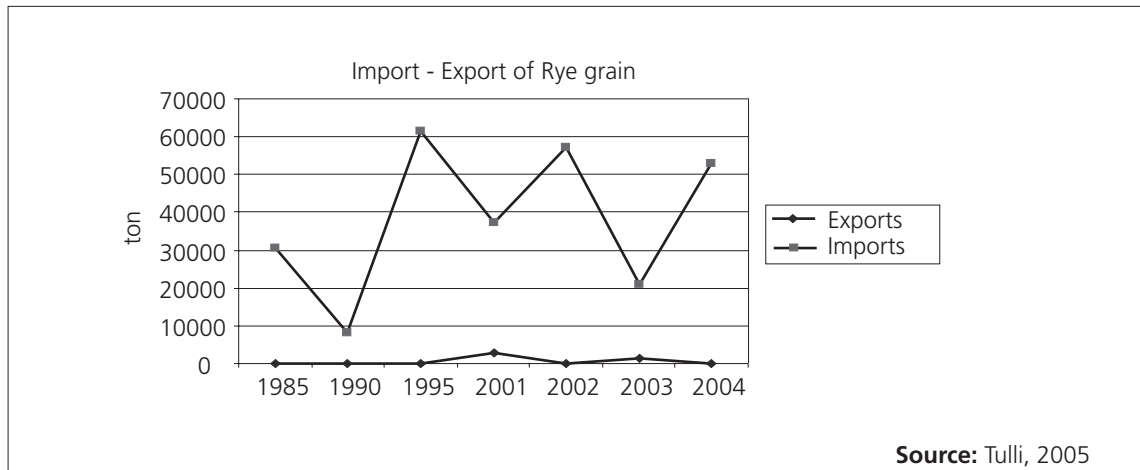


Figure 4. Import - Export of Rye

### 4.3 SWOT Analysis of Bakery Industry in Finland

Table 7. SWOT analysis of the bakery industry

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>■ Know-how of Finnish food products: taste and convenience</li> <li>■ Taste and freshness of products, quick turnover</li> <li>■ Popularity of products, safety image</li> <li>■ Healthiness of products</li> <li>■ Affordable prices</li> <li>■ Strong Finnish food culture</li> <li>■ A strong know-how of bakery product</li> <li>■ A strong know-how of whole-grains</li> <li>■ A strong know-how of frozen bakery products and high degree of processing</li> <li>■ A high structure of big bakeries compared with bakeries in Central Europe.</li> </ul>	<ul style="list-style-type: none"> <li>■ Small companies and profitability is low</li> <li>■ Inefficiency of manufacturing process</li> <li>■ Overcapacity</li> <li>■ Non-rational manufacturing of perishable goods</li> <li>■ Labour-intensive, labour costs</li> <li>■ Inflexibility of working hours</li> <li>■ Hard to get labour, low interest, bad working circumstances: evening and night works, heavy work</li> <li>■ Low price of basic products</li> <li>■ Traditionality, handwork attitudes</li> <li>■ Collaboration is hard</li> <li>■ Low investments in R&amp;D and education</li> <li>■ Weakness of business knowledge</li> </ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>■ Specialisation</li> <li>■ Collaboration between organisations and subcontracting</li> <li>■ New market channels</li> <li>■ New product innovations</li> <li>■ New ways of using products</li> <li>■ Exploitation of health image</li> <li>■ Functional products</li> <li>■ Affordable products</li> <li>■ Decrease of home baking</li> <li>■ Frozen products</li> <li>■ Exploitation of local food thinking</li> </ul>	<ul style="list-style-type: none"> <li>■ Centralisation of trade: supplier policy, purchase policy, variety policy</li> <li>■ Hard competition situation</li> <li>■ Private labels (imported)</li> <li>■ Import</li> <li>■ Costs of labour</li> <li>■ Costs of material</li> <li>■ High value-added tax (17 -22% in food)</li> <li>■ Consumer behaviour, values of consumers</li> <li>■ Consumption of young people (decrease of bread consumption)</li> <li>■ Image loss of healthiness and safety</li> </ul>

Source: Grönroos, 2005

## 4.4 Structure of Rye Bread Chain

According to the panellists consulted rye and other corn producers do not have as much contract production as pig producers. Markets are more like spot markets and contracts are often short or medium-long. Finnish farmers get only one harvest in a year. Rye is not a common animal feed plan in Finland, so nearly all eatable rye is used for malt or flour of bread. Rye producers sell their production to corn traders, malt houses or mills. Multiple retail chains have a big market share in the corn trade. Big corn traders also supply seeds, fertilizers and information to producers of many sectors. The rest are small local traders. The panellists state that when rye is concerned, local malt houses and mills are more common and important business partners than the corn traders. There is only one notable rye malt producer in Finland, called Laihian Mallas Oy. Its clients include mill selling rye malt and flour to bakeries. Bakeries are often small and without resources for own milling or malt producing. Thus middlemen have strong positions in the rye bread chain. Corn traders and the mill industry also import rye, especially from Poland and Germany, because the consumption of rye is high in Finland compared with the production. Bakeries sell their product mainly to the multiple retail chains, institutional kitchens (catering) or in their own bakery shops. Bakeries are often small and they operate locally (e.g. municipality, province) and their selling products perish easily or the products have short selling time. Therefore they deliver breads directly to local stores. Figure 5 presents processed rye bread chain types in Finland. Broken line arrow means less common product flow types. Statistics relate to 2004.

## 4.5 Producers

### 4.5.1 Structural Features

Grain growing is the most important production line in Finnish agriculture. The yield varies considerably around the country, although certified seeds are generally used. The processing industry also supports the usage. The highest yields are located in the Southern and Western parts of the country. About 41,600 farms had grain production in 2004. This is 58% of all farms. The most common crops are barley and oats. Their cultivated arable land was 858,000 ha in 2004. Instead, in 2004 the total volume of rye production was 62 million kg, which was produced in a total area of 27,000 ha, of which 7,000 ha organically (see Table 8). In 2005 the amounts were 32 million kg and 14,000 ha (TIKE, 2005). About 91% of the yield was irreproachable (Suomen Gallup Elintarviketieto Oy, 2005). Rye is extremely rarely the main production line in Finland. The panellists consulted see rye as a marginal product and many producers grow some rye only to keep up the tradition. Rye varieties are mainly winter grains in Finland. Therefore rye is sown in autumn at the same time as the other crops are harvested. It also needs long drying time and good weather conditions. Thus the Finnish producers are concerned that rye is too risky as a main production line.

EU membership has dramatically changed Finnish corn trade. For example the market price of corn fell by 50-60% in 1995 and later Agenda 2000 decreased prices even more. The price of rye was about €424 per thousand kg in 1994, while in 2000-2004 the average market price was €126 per thousand kg (see Table 6, Appendix 1). It has followed the price of wheat quite closely. Average production costs of corn were 45.7 cent per kg in 2003, while the average market price was 11.7 cent per kg. Additionally, studies have shown that labour costs on large corn farms with over 100 ha are about half of the costs on farms with 30-50 ha (Niemi and Ahlstedt, 2005; TIKE, 2005). The price

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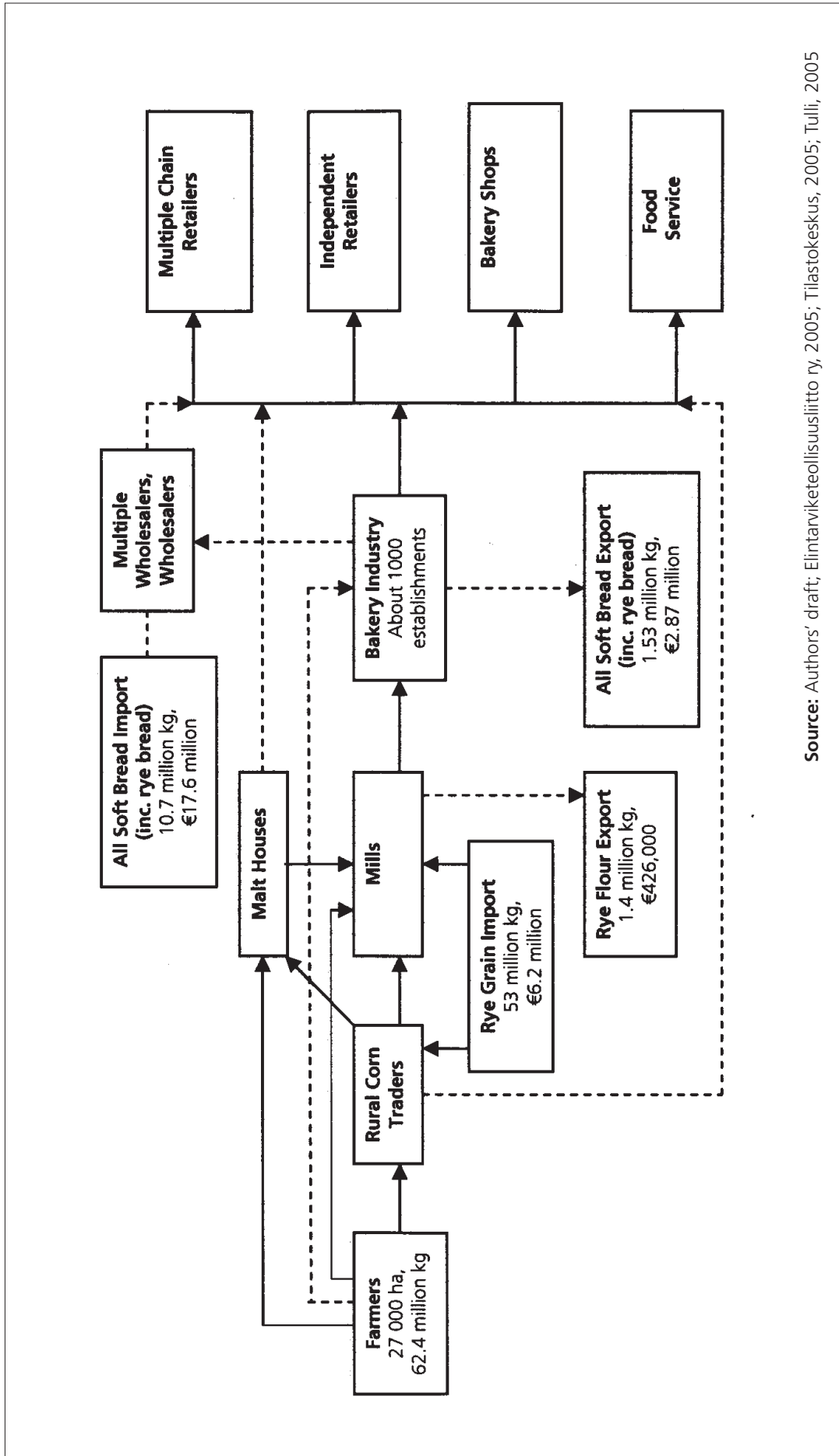


Figure 6. Rye Bread Chain in Finland

of rye flour has decreased lately while the price of rye bread had increased (see Table 7, Appendix 1) (Tilastokeskus, 2005).

**Table 8.** *Rye Production, Area and Yield*

<b>Rye</b>	<b>1995</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Area (in 1 000 ha)	21	45	29	30	31	26.9
Total yield (M kg)	58	108	64	73	73	62
Yield kg/ha	2,770	2,430	2,210	2,400	2,390	2,320
Source: TIKE, 2005						

#### 4.5.2 Economic Relationships

Producers have strong horizontal networks with each other in Finland (see same section in the pig chain). According to the panellists consulted, the relationships among local rye farmers are quite strong, for example contract sowing and joint or contract use of machines such as the high-tech direct sowing-machine. However, formal horizontal collaborations among rye farmers are less common and unlike the pig sector, corn producers do not have strong vertical collaborations through horizontal networks. Instead, collaborations, for example in seed and fertilizer purchases are based on personal and informal relations, whereas pig producers have strong and formal cooperatives in up and down relations.

Rye producers mainly operate with mills, malt houses or corn traders (see Figures 5 and 6). The bakeries rarely supply rye directly from the producers. However, the relationships between rye producers and malt houses or corn traders are mainly stable, long-term, informal and personal. This is because of the lack of actors and because of traditional habits and personal contacts. There are only a few local malt houses, mills and corn traders. Usually farmers trade with one to three partners and price is still the dominant factor. In recent years, cooperatives and collaboration have increased in producers' corn trade. Because of these collaborations, farmers have better negotiation positions against the processor, although the market share of collaborative traders is still small and they operate locally. Unlike the meat or milk sectors, there are no actors who would keep the prices of corns stable and satisfactory for producers in corn sector. Also, rye and other corns can be easily stored and imported from abroad. Thus the domestic rye production is not as secured and stable as the pig production. In addition, the panellists consulted claim that practices in the corn sector trade are unsatisfying and the contents of contracts vary. The panellists consulted and the literature view that there are two main relationship forms between producers and processors in the Finnish rye bread chain (see also Figure 6):

1. A spot market situation is more common in the producer – corn trader relationship. The price is the most important factor in negotiations. The relationship is not as stable and long-term as in contract farming. Also more mistrust can be seen. According to the panellists consulted and Pietola, Pulkkinen and Hornborg (Finfood, 2005f) processors and corn traders have the market power vis-a-vis the rye producers. Furthermore rye is treated as a bulk product. Therefore rye farmers can easily change their corn buyer or quit rye farming. The producer and processor may have a written contract, often with standard clauses. Partners can negotiate about extra terms, for example quality, but producers need to be active in this matter. Contracts are often for a single purchase, although the relationship may be long-term and there



can be a certainty of continuation. According to the panellists, a spot market form of the rye chain will not work in a long run because rye is too expensive to grow and producers need a more stable situation. Therefore in the rye chain contract production is becoming the rule.

2. Contract farming. More common in producer – malt houses or mill relationship. Price is still important, but normally also higher than in spot market relationships. The relationships are more stable, long-term and they include more mutual trust and need. In some cases there is a power balance among farmers and producers, rye is treated as developable product and collaborations are common. Collaborations may even have R&D forms, for example in variation of seeds and fertilizers. Producers may have strong local horizontal collaborations to decrease expenses, for example in logistics or through direct sowing. On the other hand, these may increase local rye production and horizontal networks. Contracts with processors are mainly written and short-term or medium long (from one harvest to three years), but the relationships are long-term and there is a certainty of continuation. Quality, special varieties etc. can bring extra payments to a contract producer. Special terms are mentioned, although contents are often quite simplified. Without collaborations and extra payments, rye might be too expensive to produce. Additionally, due to contracts, processors can assure quantity and quality of raw material. The panellists consulted argue that today 40-50% of rye producers have contracts and in future the number will be much higher. Instead, malt barley producers nearly always have contracts. An example of a contract relationship is the situation between contract farmers and Laihia Mallas Oy (a rye malster). The rye producers are local farmers and they are closely connected to the local processor. The processor is also strongly connected to the farmers, because this way it gets raw material from the area nearby and it can influence the quality and quantity of rye. The power relationship is in balance, the relationship is explicit and there is a mutual need for trade. Producers and processor have also some shared development measures. The panellists and Oravuo (Finfood, 2005g) claim that contract farming is the most important way to guarantee Finnish rye production in future. However, price is still the most important factor in economic relationships and therefore imported rye is seen as a threat to Finnish rye production. This means that Finnish rye production needs contract farming and better producer prices. For example Helsingin Mylly Oy, which is the one of two dominant rye mills in Finland, will have more contract rye farming in the near future (Lehtonen, 2006).

#### 4.5.3 Communication

According to the panellists, farmers exchange information with other farmers, for example about sowing habits, harvest amounts, varieties and growing techniques. They also get the same information from business partners and professional organisations, governmental extension services, mills, malt houses and corn traders. This information includes research results and quality issues and its goal is to develop production. ProAgria has an important role in the implementation of quality systems for farms. In horizontal and vertical relationships communication is mainly personal and informal and made by mobile phone. The Internet is commonly used as a tool for information exchange. With small mills or malt houses, contract producers can change confidential information and criticism and feedback are common. Meanwhile with large corn traders the information exchanged is more general. Thus, the producer needs to be active. Moreover, organisations like MTK and ProAgria are active and important information channels, but corn producers still need to be active information seekers. Personal knowledge is a very important element of information sharing. Compared with pig farmers, communication between rye producers and processors is more difficult due to the small

farm sizes, high number of farmers, many middlemen and the more passive role of both partners especially in spot market situation. Therefore farmer integration and horizontal networks as well as processors' special interests to share information are very important when assuring product quality and quantity.

Viitaharju and Lähdesmäki et al. (2004) noticed that the adoption of information communication technology among small rural producers is rather limited: the most frequently used technologies are telephone (100%), mobile phone (100%), email (66%) and The Internet (53%). Home pages (33%) and professional software (44%) are less commonly used. Intranet and extranet (0 – 2%) were seldom used. The main reasons for non-adoption of technology are doubts about producers' old age and learning and suitability of technology. Producers were also very sceptical against ICT, although happy with the technology they had. However, the panellists consulted state that ICT is commonly used and its utilization will be even more common in the future. Professional software systems and extranets will become more common as in animal farms today. This is a likely to happen, because the number of computers and mobile phones is very high and The Internet penetration is good in Finland.

#### 4.5.4 Country-Specific Influences

According to the panellists, agricultural policy is the most important political force in rye production. Under the CAP reform, rye intervention has been abolished. This has improved the competitive situation of Finnish rye compared with imported rye but it has also decreased domestic production. The importance of a national agricultural policy has grown, as long as grain growing has a low profitability. Furthermore, rye is expensive to farm because of the high cost of drying and labour and the related expenses. The price level has been low until today. The producer's share of bread price is so small that a higher producer price would not change consumption habits. Cultivated areas per farm are mainly small and there are very few or none for whom rye is the main production line. Generally, producers have switched their production to other corns, mainly wheat and barley, which guarantee higher subsidies with less risk and lower costs. Finfood (2005f) reports that proposals for improvement are contract cultivation, improving surplus and value added and derivative markets. The panellists agree that production-linked supports are needed.

The main reason for producing rye to date has been the traditionally important part of rye bread in the Finnish diet. New technologies, seed strains and more effective collaborations with horizontal and vertical networks are important way to develop rye production. Moreover, Finnish farmers have already strong and long-term connections through producers' organisations and local horizontal networks, though individualistic culture does not support this direction.

## 4.6 Processing

### 4.6.1 Structural Features

The bakery industry employed over 10,000 people in Finland in 2004. Nation-wide bakeries employed about 37%, 12 middle-sized employed 15% and the small bakeries employed about 48% of all employees in the industry. There were about 1,000 establishments in 2004. Many of these are very small and family owned (see Table 2, Appendix 1). About 68% of bakeries have less than 4 em-

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ployees. The bakery industry is highly concentrated in Finland. The biggest bakeries, Fazer Leipomot Oy and Vaasan & Vaasan Oy, have 3.7% of establishments but they hold about 60% of the markets, while medium-sized hold about 20-30%. Compared with other industries, subcontracting is low in the Finnish food industry, the bakery industry having the lowest subcontracting amount, only 21% (Suomen Leipuriliitto ry, 2004; Elintarvikeyritykset, 2005; Grönroos, 2005).

The most important customer group of the bakery industry is retail trade. However, the shares of retail trade and bakery shops are decreasing, while the shares of institutional kitchens and the HoReCa sector are increasing. The two largest bakeries have nearly the whole of Finland as their market area. They also have many establishments around Finland. In addition, they have worked several years in the Baltic countries and in Sweden and Russia. Mainly they have internationalised through acquisitions. The small bakeries, in turn, have usually just the local area nearby as their market area. About 55% of small and medium-sized bakeries consider the local area as their potential market. Medium-sized bakeries may use the whole of Finland as their market area. Although the Finnish bakery industry operates mainly locally, there are a few national and well-known brands and products, which are sold almost in every retail shop. Also taste habits are becoming more uniform, which supports national brands. Recently the bakery industry has developed important innovations, such as carved and functional products, special rye flours and crushed grain products (Grönroos, 2005).

#### 4.6.2 Economic Relationship

Bakeries have very little or no relationship with producers directly. Few local bakeries use local rye as their competitive advantage, but mainly bakeries supply flours and malt from mills. For example a rye malster Laihia Mallas Oy, which is the only considerable rye malt house in Finland, works as subcontractor or supplier to many mills. According to panellists, the relationships between the bakery industry and mills can be characterised as stable, long-term, informal, confidential and personal. This might be because of a lack of actors especially in the rye sector or because of habits and long-term personal contacts. Furthermore, a need for essential, special and reliable mill products might be the reason for long-term and stable relationships and personal contacts. However, the panellists consulted claim that power between actors is balanced. Viitaharju and Lähdesmäki et al. (2004) argue that the relationships in the food sector are often based on mutual trust and understanding as a result of years of cooperation. Also Hiekkataipale's (2004) study shows that Finnish food SMEs have long-term and stable relationships. The panellists consulted noted that confidential and good working relationships are considered very important, as they have impacts on quality and effectiveness. In the past, mills provided consultation help for bakeries, which helped to strengthen relationships. However, Grönroos (2005) and the panellists consulted state that normally vertical integrations between bakeries and mills are rare. Exchanges are done in open market but there is an increasing tendency to maintain stable relationships with suppliers to assure quality and deliveries. However, the tough competitive situation in the bakery sector has put pressure on price negotiations.

Some bakeries have special ways to ensure short response times and close relations to trade and consumers. One example mentioned by the panellists is the delivery system, by which the bakery takes their unsold bread back from shops. This is a competitive asset, but also the way of controlling sales and consumer behaviour. In addition, this way the bakery meets the buyers of bread departments daily and gets feedback instantly. If logistics is taken care of by an outsider, for example the transportation company, there is a risk that the bakery will lose its contacts with final consumers.

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Normally bakeries are small family firms with limited resources. Horizontal networks among bakeries are not very strong, although exceptions can be found in R&D work and joint purchases. Panellists claim that big bakeries have horizontal collaborations with their own establishments. Moreover, the bakers' trade union has an important position in horizontal collaboration and communication. It publishes a magazine and collects general information. Viitaharju, Lähdesmäki et al. (2004) view that although processors are aware of the benefits of integrations, chain integrations are not common because of a fear of bureaucracy. Also Hiekkataipale (2004) states that SMEs in bakery industry have very little horizontal collaborations.

#### 4.6.3 Communication

Communication between producers and suppliers or customers is rather informal and written contracts are not generally used. Only one third of the entrepreneurs have written contracts with their customers, although written documents are very common when dealing with big and public customers. The contracts are seen more as a question of business policy than lack of trust (Viitaharju, Lähdesmäki et al., 2004).

Viitaharju and Lähdesmäki (2002a), Grönroos (2005) and the panellists consulted state that small food entrepreneurs consider personal contacts with the customers as an essential tool to gain feedback, improve business skills and control business operations. Even if logistics is taken care of by an outsider, personal contacts are considered very important in the bakery sector. Entrepreneurs handle them by phone or face-to-face meeting. Between SMEs and intermediate chain members, communication usually concerns daily affairs, for example orders, price, quantity and logistics. Communication between bakery and mill or trade is usually face-to-face (personal), especially in strategic matters. However, the Internet and other technical tools are used as common tools for communication. This is seen as a way to gain feedback and essential information. Preferred communication methods are mobile phone, The Internet and fax. Among other bakeries, communication is also personal and occurs with face-to-face. In horizontal communication, personal acquaintanceships and trust are seen as even more important. Grönroos (2005) argues that due to lack of resources, very small bakeries do not sufficiently exploit ICT, even though it could benefit the whole chain in terms of logistics and other processes.

#### 4.6.4 Country-Specific Influences

The panellists argue that CAP, national supports and termination of export subsidies of the EU will affect the milling industry, because a large part of consumed and processed rye is imported to Finland. Also if the production price stays low, imported rye will have an even more important role. This is seen as a double-edged sword: being dependent on domestic rye production is risky because rye is a demanding corn to grow. On the other hand the price of imported rye can vary considerably. Therefore chain members see that supply of raw material is essential, especially in the rye bread chain. Another political influence is VAT: processors want lower taxes, which could improve the competitive position of Finnish products. However, lower taxes probably would not increase consumption very much, because rye bread is not connected to social status or position. Instead of local taste habits, international tastes and imported bakery products are more likely to play a role. Frozen products and pre-cooked products, which are often imported, have also become more popular. These products might be a threat or opportunity for Finnish bakeries. Karelian pastries are a Finnish example of a successful frozen bakery product.

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## 4.7 Distribution and Retail

### 4.7.1 Structural Features

The bread sold in shops comes directly from bakeries or via multiple chain wholesalers. The share of independent retailers and bakery shops is quite small. This is because retail business is highly concentrated in Finland, the assortment of breads is large and distances long in the countryside. People also prefer to buy their bread at retail shops. Institutional kitchens often buy bread directly from local bakeries. The structural features of the retail sector are presented in the sections "Food Industry" and "Retail Sector".

### 4.7.2 Economic Relationships

According to the panellists consulted, the relationship between bakeries and retailers is often quite close, informal, long-term and characterised by trust and collaboration, although strict competition situations in bakery and trade sectors put pressures on relationships. Trust is seen as a prerequisite for a business relationship. Relations are stable and long-term, although orders are made daily. Moreover, the relationships are often based on strategic cooperation, for example R&D in bread tastes, consumer behaviour, statistics and trends. According to the panellists consulted, regular information sharing has had a positive impact, for example trust on economic relationships. The panellists consulted see that collaboration and sharing information about trends etc. are very important. Certainty in logistics and uniformity of quality are seen as the key influencing factors of the relations. The shelf life of bread is short and it is easy for consumers to switch to another product. In addition, price competition is very hard in the retail sector and bakery industry. Especially the market shares of discounters and imported bread products have grown. Therefore close relations and short response times are needed in the whole bread chain.

Big bakeries and retailers have written contracts as the framework of relations, but written contracts are quite common also with smaller bakeries (see Figure 6). The most important issues in contracts are price, quality and continuity of supply. Written contracts are common, for example because of the supervisory policies of retailers as well as the legal regulations, said the panellists. Still, all interviewees emphasized the importance of informal and personal contacts. Big wholesalers and chains have employed people to maintain personal contact and relationship with suppliers. Critical assessment is seen as a part of normal dialogue and it is given freely by phone or personally.

Two national bakeries with a large product assortment have the whole of Finland as their market area. From the bakeries' point of view this means that, in theory, retailers do not need small local bakeries. However, consumers demand local bakeries because of local tastes, specialities or just for a change (Viitaharju and Lähdesmäki, 2003). Therefore the panellists consulted argue that the products of small bakeries are important for retailers and there is a considerable power balance situation between big and small bakeries and between bakeries and retailers. Viitaharju's and Lähdesmäki's (2002b) study showed that multiple retailers with many suppliers are not interested in changing suppliers, because the search would tie up resources like time and energy. Also trust is seen as a very important part of the relationship. Still, SMEs see that negotiations between multiple wholesalers call for large volumes or a special product, which may be a barrier to market entry. Also the panellists consulted claim that market entry is difficult because hard competition within the sector. Additionally, as we noted in the pig chain section, horizontal relations among retailers of the same multiple

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chains are very strong. This is due to chain management, marketing and purchase collaborations as well as information exchange and comparison at the national level. Therefore, direct selling to local retail shops is considered easier as far as negotiation power is concerned.

### 4.7.3 Communication

The panellists consulted state that the communication between bakery industry and trade is intensive, regular and bidirectional. Communication is often unwritten and informal and takes place by phone or personally. Mutual trust is seen as a precondition of information exchange and fruitful negotiations. Although communication often considers supply continuity, technical issues, changes in demand, consumer behaviour, trends and weak signals and promotion actions, price is still the one important element of communication. Viitaharju, Lähdesmäki (2002b) and the panellists view that communication between food processors and retailers concerns often more than just price because it is important to discuss for example consumption trends and feedback. Thus bakeries and retailers have sales follow-ups and other collected written information, which they share with each other personally or by The Internet. This is possible, even at national level, because the retail sector is concentrated and it has good resources to wide data collection. However, a large amount of information can be exhaustive, especially that one provided by The Internet. Thus the panellists state that the key element in information flows is to find the essential and correct information quickly. Otherwise the large information flow will hamper the communication between partners.

Viitaharju and Lähdesmäki (2004) claim that generally ICT is more readily adopted among intermediaries than among small producers. Secondary processors had adopted a lower level of ICT than transportation business and wholesalers. For example while secondary processors had adopted more phone, fax and computer in the office, transport business had sophisticated software, intranet and EDI. Generally intermediaries think their business has already enough ICT. However, they are aware of the increasing dependency on ICT (Viitaharju, Lähdesmäki et al., 2004). According to the panellists consulted, also the bakery sector is characterised by intensive use of ICT, such as the Internet. Orders are made through EN-code and sent electronically to bakeries. Bakeries and retailers do not always have matching programmes and very small bakeries do not have the required resources for electronic systems, which creates problems in relations. Electronic systems will be even more important in future, which may cause structural changes among small bakeries. However, Viitaharju and Lähdesmäki (2002b) and the panellists consulted claim that even if wholesalers wish to get orders electronically, personal contacts are appreciated in a controlled way.

### 4.7.4 Country-Specific Influences

Rye is used in many ways in Finland. The most important is bread: rye bread, loaf, rye crisp and sour crisp rye-bread. Preservatives are not often used while souring and the long baking time make them useless. Different regions have their own rye traditions in addition to the nationwide favourites. Finland has the northernmost rye fields and the average crop is low. But light summer nights and low seed crop give rye a special strong and exotic aroma. Also home-brew, mämmi (Finnish Easter pudding), Karelian pastry, rye porridge, rättänä (sweat bread with blueberries), kalakukko (a bread with mainly fish inside) and even red ochre paint are common rye products (Muut ruistuoitteet, 2005). The traditional sour rye bread is known in Finland, the Baltic area, Poland, Belarus and Russian Federation. During the last decades, rye consumption has generally decreased in countries where consumption

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has traditionally been high, and increased where consumption has been low. However, research on rye and its positive health effects as a functional product has already raised interest with consumers and corn industry (Rye Know How. Finnish Rye Bread, 2005).

Western and eastern bread cultures merge in Finland. Thus there is a large variety of breads compared with the size of population. Today consumers demand a large assortment and consumption has shifted towards more highly priced products (Grönroos, 2005). Rye bread has always been popular among the elderly population, but recently it has gained ground among the younger generations (Jones, 2004). This may be due to increased knowledge of the health effects or new convenient products. According to Hupkens, Knibbe and Drop (1997), high-fibre bread consumption is more common with the higher-middle class women: their bread is more often whole grain and brown. Central European research may have connections to the Finnish health movement. Prättälä, Helasoja and Mykkänen (2001) state that the consumption of rye bread has generally decreased, but among the female population, especially urban, increased probably because of the availability. Traditionally, bread is sold in large loafs, which are not currently practical for small households preferring fresh bread. During the 1990s, small package types appeared to the markets, which sell fresh pre-packed bread. The panellists consulted claim that price, placing, age structure, consumption habits, travelling and new tastes, brand or name of (local) bakery and consumers' fragmented free-time are the main influencing factors for bakeries and retailers.

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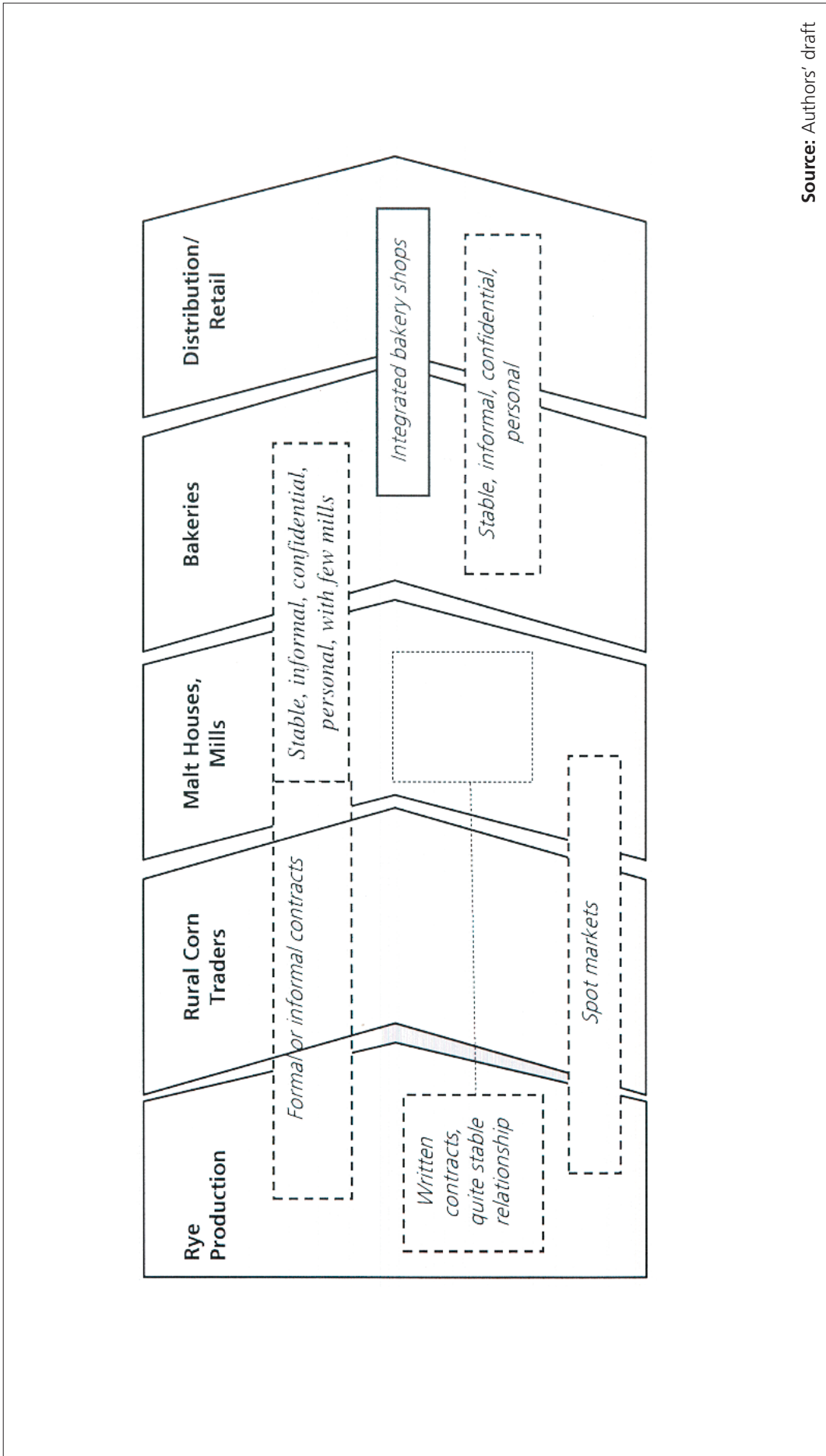


Figure 6. Economic Relationships of the Rye Bread Chain in Finland

Source: Authors' draft



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## 5 Conclusions

In Finnish sausage and rye bread chains the economic relationships vary among different members. The relationships are complex and they have elements of many relationship forms. For example in the rye chain, members may have long-term and stable relationships, even in a spot market situation. In the pig chain, the relationships are generally more stable and integrated through ownership: producers and processors have a common goal and strategic development tasks. Contract rye production has similarities to contract pig production, but collaboration is not as strong. Hofstede's (2003) studies show that individualistic cultures, like Finnish, do not support collaborations and common goals. Therefore it is interesting to notice that the Finnish pig chain has a high degree of collaboration and integration and that chain members see this as a necessity. Relationships between retailers and bread or sausage producing companies are formal but at the same time personal and stable, because the chain actors depend on each other. Mutual trust, too, is evident. Horizontal relationships among farmers are rather informal and personal but very common. With processors and retailers the horizontal relationships are informal and personal but also less common, except in transaction within the same organisation or chain. In both chains all chain members prefer formal written contracts at every stage of the chain. Written contracts are seen as frames of the relationship but not as a mark of mistrust. The reasons for written contracts are mainly economic and trust-related, such as higher reliability of quantity and quality of raw material and product deliveries. The contract period is usually quite short. Still, the relationships are considered continuous in both chains, especially in the pig chain. According to Hofstede (2003) Finnish culture is characterised by high uncertainty avoidance and therefore Finnish society is rule-oriented in order to reduce the amount of uncertainty. A predilection for formal and written contracts and stable relationships characterises uncertainty avoidance.

Although Mikkola and Seppänen (2005; 2006) and Kottila, Maijala and Rönni (2005; 2006) studied organic chains with different products, the researches have many contact points to the FOODCOMM project. For example, Mikkola and Seppänen state that relationships are complex and partnership relationship is the most efficient concerning trust. The literature review and interviews of the FOODCOMM project highlighted that in the Finnish pig chain, strategic bonds and integrations are common and relations are long lasting. This is because partners prefer stability and are keen to develop the efficiency of meat production and to make the necessary investments. Moreover, trust is commonly noticeable. Instead, in the rye chain, the relationships are spot market or contract relations and the trust is less common. The rye chain is also more fragmented than the pig chain, in which strong cooperatives and the quality assurance scheme provides integration. Additionally, the pig sector is more integrated at the processing level, while slaughtering and further processing usually takes place at the same factory and contract production is a more significant feature. However, there is no ownership connection through the whole pig or rye chains except in very smallscale operations.

Compared with pig meat consumption, rye consumption has recently varied considerably, which has made markets unstable in Finland. Rye production does not require large investments and middlemen have a different role than in the pig chain. Thus spot market conditions have generally been formed in the rye sector but not in the pig sector. According to Hofstede's (2003) research, Finnish uncertainty avoidance culture does not support spot market situations but contract farming. However, in both chains personal and social contacts and communication are highly appreciated and preferred especially in future orientation. Hierarchy is quite negatively felt and members prefer a stable power balance situation like Hofstede's (2003) studies indicate.

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The adoption and use of information and communication technologies in the Finnish agri-food chains varies from actor to actor. In general, all members have adopted basic technologies, such as telephone, email, the Internet and common industrial engineering. Technology is considered as a tool of routine tasks. In the processing and retail sectors the adoption is high especially in big establishments. These actors also adopt the highest technologies quickly. The reason for this might be the technical progressiveness of Finnish society and/or the Finnish predilection for impersonal and efficient communication methods. However, the study results show that communication is often personal, official and regular, especially among farmers. Although processors and retailers have formal communication and they prefer to use ICT, they also prefer personal and official communication especially in strategic information exchange. According to Granlund and Lukka (1998) oral communication is generally used when the matter is important and immediate reaction is needed to be seen. Also Mikkola and Seppänen (2005; 2006) accentuate social relations and the importance of trust in economic relationships. Kottila, Maijala and Rönni (2005; 2006) state that communication flow is deficient in Finnish food chains, producers rarely get information concerning consumers and partners often change information just with the nearest members. The results of FOODCOMM project show that Finnish pig and rye producers were less informed about consumers than other chain members. Therefore, efficient communication through whole chain and new technologies are needed in raising the profitability of all chain members.

The Finnish agri-food chains are influenced by many factors: apart from agricultural policy, especially national, socio-cultural and market factors are important. The CAP reform will influence Finnish agriculture structure: farms are expected to be bigger, more specialised, more integrated and farmers are expected to be more entrepreneurial or to have also some other business activities. Size growth will be seen especially in pig meat production, although strict environmental and animal welfare regulations are seen as hampering the restructuring process. Corn production, too, is expected to decrease. Under the CAP reform, rye intervention has been abolished. This is expected to decrease producer prices of rye and to increase price fluctuations. Therefore the panellists and literature claim that rye needs production-linked subsidies. Furthermore, current Finnish agricultural policy has had a considerable role in the maintenance of pig and rye production because without it the production costs are too high. The national agricultural policy is connected to CAP and the situation is not seen to be stable. However, the panellists consulted see that the Finnish agriculture sector will adapt to the CAP reform changes and survive. Compared with rye production, pig production will not be significantly distorted by the CAP. Other political actions, such as quality schemes and actions to foster innovations and competitiveness are important for development work and future orientation. In addition, WTO commitments and liberalisations in agri-food markets will put pressure on Finnish agri-food chains: efficiency and special competitive advantages are becoming more important to all chain members.

For the pig and rye sectors there is a strong emphasis on country of origin labelling because Finnish consumers prefer domestic products. Additionally, Finnish people have a positive attitude to light and functional products and they can afford to buy them. This is noticeable especially in rye products. According to Hofstede (2003), Finnish people are individualistic and they have soft values (femininity dimension). Thus Finnish society is easily health conscious and concerned about health issues from individualistic point of view. Furthermore, a good animal disease and environmental situation are competitive advantages in exporting pig meat. The small and dispersed Finnish markets, changing production structure, concentrations of retail trade and trade's role as chain captain, increasing global competition and free trade, price wars and efficiency problems of many sectors and food consump-

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tion have many influences on the whole agri-food chain. All these influencing factors have shaped the relationships and communication of the Finnish agri-food chains. However, the relationship types and communication methods are not as stable or inflexible: they change if needed. For example in the rye chain, the relationship type is moving from spot market to contract production because otherwise the production and processing sectors have problems with profitability and raw material supply. In the pig chain, integration is seen as a competitive advantage. To conclude, it can be said that economic relationships and communication interact with the business environment and actors inside and outside the chain. Moreover, the product also influences the relationships and communication.

To survive in this difficult setting, large food processing companies and retail trade will have to improve their cost-efficiency, while for small and medium-sized companies the main opportunity is to take advantage of market niches and geographic location. To achieve the same, producers need, among other things, excellent breeds of animals and strains of plants, modern technology and horizontal and vertical collaborations. However, the most important elements are certainty of continuation and trust in the future, because without them the chain members are not able to make investments and plans for the future.

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## Appendix 1: Additional Tables

**Table 1.** Food Enterprises by the Employees and Sectors in 3/2005

	<20	%	>20	%	TOTAL	
Slaughtering and meat processing	404	13.6	54	18.4	458	14
Fish products	302	10.2	14	4.8	316	9.7
Fruits, berries and vegetables	504	16.9	24	8.2	528	16.2
Dairy products	104	3.5	35	11.9	139	4.3
Mill products	173	5.8	9	3.1	1091	33.4
Bakery	996	33.5	95	32.3	1091	33.4
Beverages	130	4.4	18	6.1	148	4.5
Other food products	361	12.1	45	15.3	406	12.4
<b>Source:</b> Elintarvikeyritykset, 2005						

**Table 2.** Consumption per Capita of Foodstuff and Agricultural Products

Consumption kg/capita	1995	2001	2002	2003
Grain	69.8	75.3	76.3	76.5
Potatoes	59.6	61.7	61.7	61.4
Meat total	60.3	64.8	65.5	67.7
Beef and veal	18.8	17.8	17.9	18.4
Pork	32	31.9	31.8	33
Poultry meat	9	14.5	15.4	15.8
Other meat	0.6	0.5	0.4	0.5
Liquid milk products	198.1	186.9	185.1	184.3
Milk	145.6	137.1	136.2	136
Sour milk products	37.1	37	36.3	35.9
Cream	6.3	5.8	5.7	5.8
Butter	5.2	3.5	3.1	2.9
Cheese	15.3	17.8	17.6	18
Ice cream (litres)	14.1	13.3	13.5	13.7
Butter-vegetable oil mix	2.6	2.9	2.9	3
Margarine	8.3	7.9	7.6	7.3
Eggs	11.7	10.1	10	9.7
Sugar	35.4	32.3	32.9	32.1
Fruits and berries	75.9	91.1	86.2	87.3
Vegetables	61.7	63.1	64.5	64.1
Fish (cutted)	14	13.9	14.4	15
<b>Source:</b> TIKE, 2005				



**Table 3.** *Import –Export of Sausages*

	1985	1990	1995	2001	2002	2003	2004
Exports							
ton	12,392	8,271	2,336	1,856	1,840	1,478	1,668
1,000 €	42,434	17,689	6,404	6,222	5,994	4,967	5,379
Imports							
ton	23	13	871	625	965	1,977	2,297
1,000 €	86	63	3,420	3,139	4,451	8,018	8,889
<b>Source:</b> Tulli, 2005							

**Table 4.** *Import - Export of Rye*

	1985	1990	1995	2001	2002	2003	2004
Exports							
ton	1	0	0	2,774	0	1,450	92
1,000 €	1	0	0	175	0	337	20
Imports							
ton	30,696	8,043	61,367	37,435	57,213	20,879	52,966
1,000 €	3,641	723	8,616	4,669	5,990	2,432	6,224
<b>Source:</b> Tulli, 2005							

**Table 5.** *Import –Export of Milling Products*

	1985	1990	1995	2001	2002	2003	2004
Exports							
ton	1	0	272	202	755	981	1,399
1,000 €		0	58	72	272	290	426
Imports							
ton		0	0	2	67	53	0
1,000 €		0	0	1	19	16	0
<b>Source:</b> Tulli, 2005							

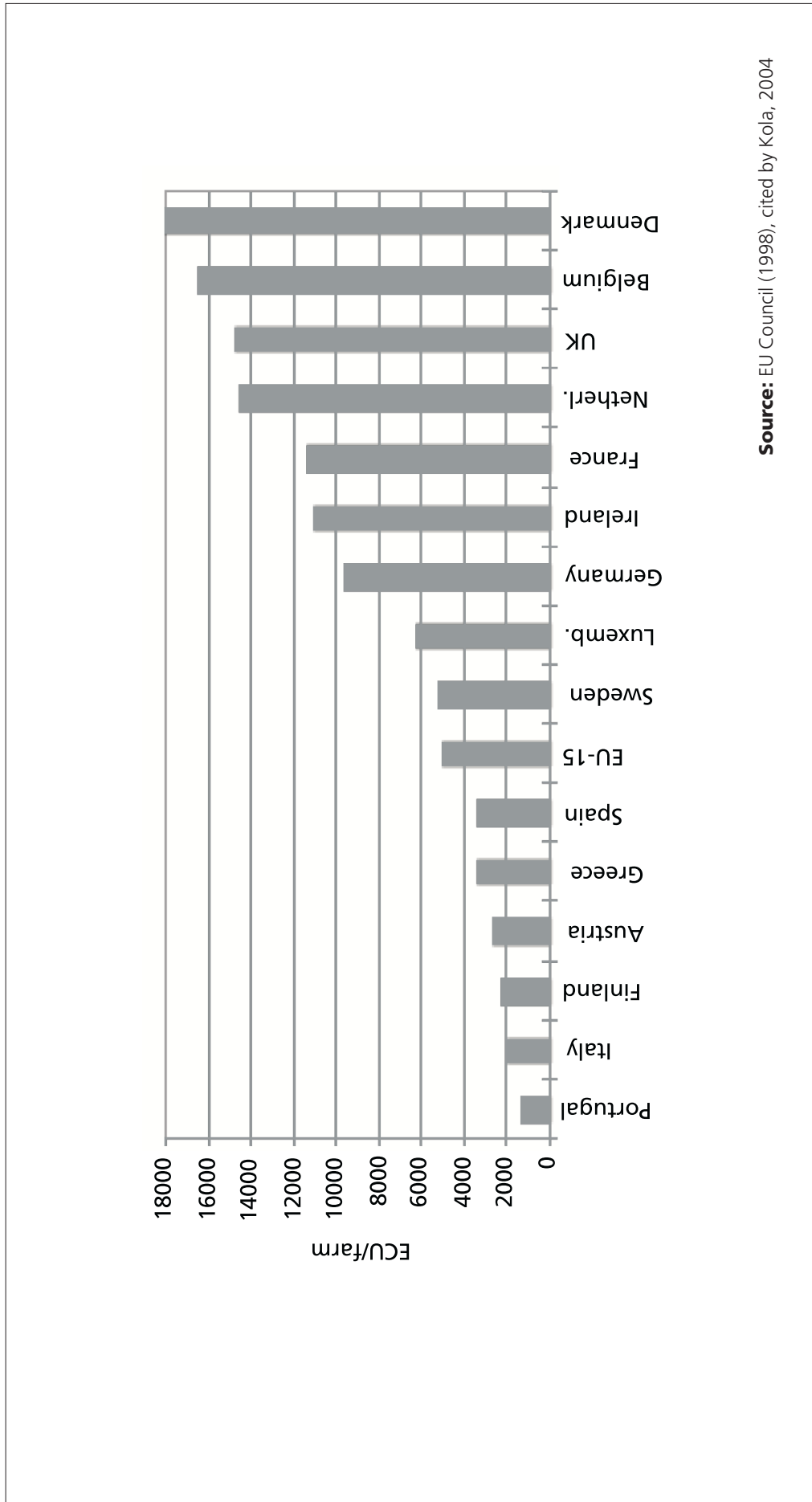
**Table 6.** *Producer Prices of Rye*

	1995	2000	2001	2002	2003	2004
				€/1 000 kg		
Rye	149.52	131.02	131.31	126.57	124.88	120.91
<b>Source:</b> TIKE, 2005						

**Table 7.** Average Retail Price

	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
	<b>€/kg, €/litre</b>				
Rye flour	0.84	0.84	0.81	0.76	0.74
Wheat flour	0.63	0.62	0.63	0.62	
Rye bread	2.65	2.78	2.81	2.97	3.02
<b>Source:</b> Tilastokeskus, 2005					

**Appendix 2:** Additional Figures



**Figure 1.** CAP Expenditure in the Member States, Euro per Farm Annually in the Period of 1995-1997

### Appendix 3: Interviewees

#### Depth Interview Details

Chain	Stage	Interviewee Name	Method	Job Title	Organisation
Pig meat	Farmer	Vesa K. Latvala	Face-to-face	Manager, M.Sc. (Agriculture)	Latvalan Maatila Oy
Pig meat and rye	Farmer	Yrjö Ojaniemi	Face-to-face	Executive Manager, M.Sc. (Agriculture)	Regional Union of Agricultural Producers and Forest Owners in Southern Ostrobothnia, West Finland (MTK)
Rye	Farmer	Juha Pensas	Face-to-face	Manager, Entrepreneur	The farm of Juha Pensas
Pig meat	Processor	Juha Gröhn	Face-to-face	Vice President of Atria Group Plc, Managing Director of A-Farmers Ltd	Atria Group Plc, A-Farmers Ltd
Rye	Processor	Hannu Malmivaara	Face-to-face	Managing Director	Pirjon Pakari Ky
Pig meat	Retailer	Martti Marttala	Face-to-face	Marketing Manager	Etelä-Pohjanmaan Osuuskouppa (S Group)
Rye	Retailer	Jari-Matti Suominen	Face-to-face	Entrepreneur, Managing Director	K-citymarket Seinäjoki (K Group)



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