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Noora Kovalainen, Jyrki Niemi and Ellen Huan-Niemi

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Abstract

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This study is a review of food security in Finland from the 17th to 21st century. The historical roots of food security in Finland are in Crown magazines and later parish granaries which were used to store grains to serve as insurance measures for Finnish communities due to the annual fluctuations in grain yields. Finland's location at the northern edge of the boreal zone had throughout the years created disadvantages in grains cultivation, therefore consecutive years of crop failures in the 1690s and the 1860s resulted in severe famines. The two world wars also caused food insecurity in Finland mainly because of trade embargoes to import foodstuffs due to inferior trade policies imposed by the ruling government. After the world wars, Finland created institutions to ensure security of supply by stockpiling as well as improving general crisis preparedness which has drastically enhanced food security in Finland. Finnish agricultural policy has also had an important role in supporting and increasing self-sufficiency in food production. Finland's ability to ensure food security as well as views on the state's role in safeguarding food security have changed throughout the country's history. Finland has continued to invest in food security through sustainable agriculture and environmental conservation. The country also has a strong emphasis on health and food safety in its food policies. Economic development over the years has contributed to various aspects of societal well-being, including food security. A key factor that contributed to improved food security in Finland is increased purchasing power. This increased purchasing power allows people to afford a diverse and nutritious diet, thus reducing the risk of food insecurity. Currently, Finland enjoys a high level of food security with a diverse and modern food production system. However, challenges such as climate change, global trade dynamics, geopolitics, and evolving dietary preferences continue to shape the country's approach to food security in the 21st century.

Keywords: Finland, food security, history, famines, crisis preparedness, agriculture, institutions

Tiivistelmä

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Suomen ruokaturvaa ovat koetelleet historian aikana katovuodet ja sodat, joilla on ollut merkittävä vaikutus siihen, miten ruoan huoltovarmuus on pyritty turvaamaan. Ruotsin vallan aikana suurina kuolonvuosina 1695–1697 koettu ankara nälänhätä oli Euroopan mittakaavassa ainutlaatuinen. Viljasadot jäivät huonojen säiden vuoksi epätavallisen niukoiksi tai ne menettiin kokonaan. Syötävää etsivien kerjäläislaumojen levittäessä tappavia tauteja arviolta yli neljännes Suomen väestöstä kuoli. Katovuosien aiheuttamien hankaluuksien lieventämiseksi aloitettiin 1720-luvulla viljan varmuusvarastointi, kun veroviljaan perustuvien kruununmakasiinien rinnalle perustettiin pitäjänmakasiineja. Järjestelmä ei tosin osoittautunut toimivaksi, sillä pitäjänmakasiinit olivat useimmiten tyhjiä kadon sattuessa.

Venäjän vallan alku 1800-luvulla ei tuonut muutosta krooniseen viljapulaan Suomessa. Kruunun- ja pitäjänmakasiinien järjestelmää ylläpidettiin edelleen vallan vaihduttua. Oman maan viljantuotantoa pyrittiin suojaamaan korkeilla tulleilla, joiden taustalla oli ajatus, että Suomen oli ruokittava kansansa oman tuotantonsa avulla. Käytännössä viljantuonnin vapauttaminen Venäjältä romutti kuitenkin edellytykset tämän tavoitteen saavuttamiseen. Heikot sadot 1860-luvulla johtivat niin pahaan viljapulaan, että viljatulleista luovuttiin kokonaan vuonna 1864. Useiden huonojen satovuosien seurauksena koettiin vuosina 1866–1868 suuret nälkävuodet. Tuhansia ihmisiä menehtyi nälkään tai nälän heikentäminä erilaisiin kulkutauteihin. Tämä vauhditti Suomessa osaltaan siirtymistä viljanviljelystä karjatalouteen, koska se nähtiin vähemmän sääherkäksi verrattuna kasvinviljelyyn.

Ennen itsenäistymistä Suomessa ei merkittävästi varauduttu mahdollisten kriisien varalta. Ensimmäisen maailmansodan syttyessä Suomi oli autonomisesta asemasta huolimatta osa Venäjää, eikä erityisiä kriisinhuoltoon liittyviä suunnitelmia ollut laadittu. Venäjällä puhjennut vallankumous ja maataloustyöläisten lakko keväällä 1917 johtivatkin Suomessa nopeasti vaikeaan elintarvikepulaan. Itsenäistyneessä Suomessa yhdeksi maatalouspolitiikan tavoitteeksi asetettiin leipäviljan omavaraisuus. Suomen omaa viljantuotantoa ryhdyttiin suojaamaan korkeiden tullien avulla, mikä johti vähitellen kotimaisen tuotannon kasvuun.

Toisen maailmansodan alkaessa kriisivarautuminen oli Suomessa jo selvästi paremmalla tasolla verrattuna ensimmäiseen maailmansotaan. Suomen ja Neuvostoliiton välinen sota aiheutti kuitenkin uhan ruokaturvalle katkaisemalla kansainvälisen kaupan ja pienentämällä merkittävästi ruoan kokonaistarjontaa. Välttämättömyystarvikkeiden säännöstelyllä pystyttiin peruselintarvikkeiden jakelu silti hoitamaan jotakuinkin tyydyttävästi. Keskeisenä toimijana säännöstelyssä oli syyskuussa 1939 perustettu Kansanhuoltoministeriö, jonka tehtäviin kuului johtaa elintarvikkeiden ja eräiden raaka-aineiden kotimaista tuotantoa, jakelua sekä kulutusta.

Toisen maailmansodan jälkeen Suomessa jatkettiin omavaraisuuteen panostamista, ja Suomi oli elintarvikkeiden osalta pitkälti suljettu talous. Maatalouspolitiikka rakentui vuosia maataloustulolakien pohjalle, joilla varmistettiin maatalousväestölle tietty osa kansantalouden tulokehityksestä joko tukien tai hinnankorotusten avulla. Viljan tuottajahinnat pidettiin Suomessa kansainvälisesti erityisen korkealla 1970-luvulta lähtien sekä hintatuen että tiukan rajasuojan avulla. Suomen hintataso erkaantuikin harjoitetun maatalouspolitiikan seurauksena täysin

Keski-Euroopan hintatasosta. Sodan jälkeen myös Valtion viljavaraston varmuusvarastoja kasvatettiin.

Suomen liityttyä Euroopan Unioniin vuonna 1995 maatalouden toimintaympäristö muuttui täysin. Suomen harjoittama protektionistinen maatalouspolitiikka kävi mahdottomaksi ja maatalouden oli sopeuduttava EU:n yhteiseen maatalouspolitiikkaan. Maataloustuotteiden markkinahintojen tasoa ei voitu enää aikaisemmasta poiketen säädellä kansallisella rajasuojalla ja vientituella, minkä seurauksena maataloustuotteiden hinnat laskivat rajusti. Samalla oli sallittava maataloustuotteiden vapaa tuonti EU:n muista jäsenmaista, joten Valtion viljavaraston tuontimonopoli oli purettava. Viljan varmuusvarastointi siirtyi EU:n myötä perustetulle Huoltovarmuuskeskukselle. Suomi sai kuitenkin tietyn ehdoin oikeuden tukea maatalouttaan kansallisin varoin.

Nykyiset Suomen elintarvikehuoltoa tukevat järjestelyt perustuvat huoltovarmuuden turvaamisesta annettuun lakiin vuodelta 1992. Huoltovarmuuslailla on perustettu Huoltovarmuuskeskus, joka hallinnoi muun muassa viljan varmuusvarastointia. Ruokahuollossa lähdetään siitä, että energiasisällöltään normaali ravinnon saanti turvataan myös poikkeusoloissa. Valtioneuvosto on vahvistanut huoltovarmuuden tavoitteet eri sektoreille määritellen huoltovarmuuden painopistealat ja määrälliset tavoitteet varmuusvarastoinnille ja muille toimenpiteille. Nämä uusitaan kerran hallituskaudessa. Tavoitteet jaetaan yhteiskunnan kriittisen infrastruktuurin turvaamiseen ja kriittisen tuotannon turvaamiseen. Elintarvikehuolto on yksi kriittisistä tuotannonaloista mm. energiatuotannon, terveyshuollon ja maanpuolustusta tukevan tuotannon ohella.

Suomen kyky ylläpitää ruokaturvaa sekä näkemykset valtion roolista ruokaturvan varmistamisessa ovat muuttuneet läpi historian. Suomi on jatkanut panostusta ruokaturvaan kestävästä maatalouden ja ympäristönsuojelun kautta. Suomi painottaa myös voimakkaasti terveyttä ja elintarvikevarallisuutta ruokapolitiikassaan. Keskeinen ruokaturvan parantumiseen Suomessa vaikuttanut tekijä on ollut taloudellinen kehitys ja kansalaisten ostovoiman kasvu. Parantuneen ostovoiman ansiosta kansalaisilla on varaa monipuoliseen ja ravitsevaan ruokavalioon, mikä on vähentänyt ruokaturvattomuuden riskiä. Suomessa on tällä hetkellä korkea ruokaturvan taso ja monipuolinen ja nykyaikainen elintarviketuotanto- ja jakelujärjestelmä.

Asiasanat: Suomi, ruokaturva, historia, nälänhädät, huoltovarmuus, maatalous, instituutiot

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1. Introduction

COVID-19 pandemic and Russian invasion of Ukraine have brought food security as well as the security of supply into public discussion and policy makers' attention as well as the debate on food self-sufficiency in various countries and regions, including Europe. Food security is most often defined as the condition where "all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 1996). Security of supply means "preparation for potential crises and disruptions and continuity management by way of safeguarding critical functions so that society, the private sector and the population can continue to operate safely" (NESA 2021).

The climate of Finland is influenced most by its latitude: Finland is located at the most northern part of Europe with low temperature and relatively short summer that restrict and inflict a handicap on agriculture and food production in Finland. Partially due to this vulnerability, the last famine experienced during peace time in Finland was in the 1860s due to unfavourable weather conditions that caused widespread crop failures along with the spread of livestock epidemics particularly among cattle that further reduced the availability of food (Häkkinen 2018). Generally, the political discussion on food security in Finland has been centred around the idea that Finland is far away from everything and isolated, and thus Finland should survive on its own (Aaltola et al. 2016). These views are based on the historical experiences especially during the two world wars that caused a serious threat to food security in Finland. A lot has changed since then, and recently Finland was ranked as number one in the world for food security in a comparison of 113 countries (EIU 2022).

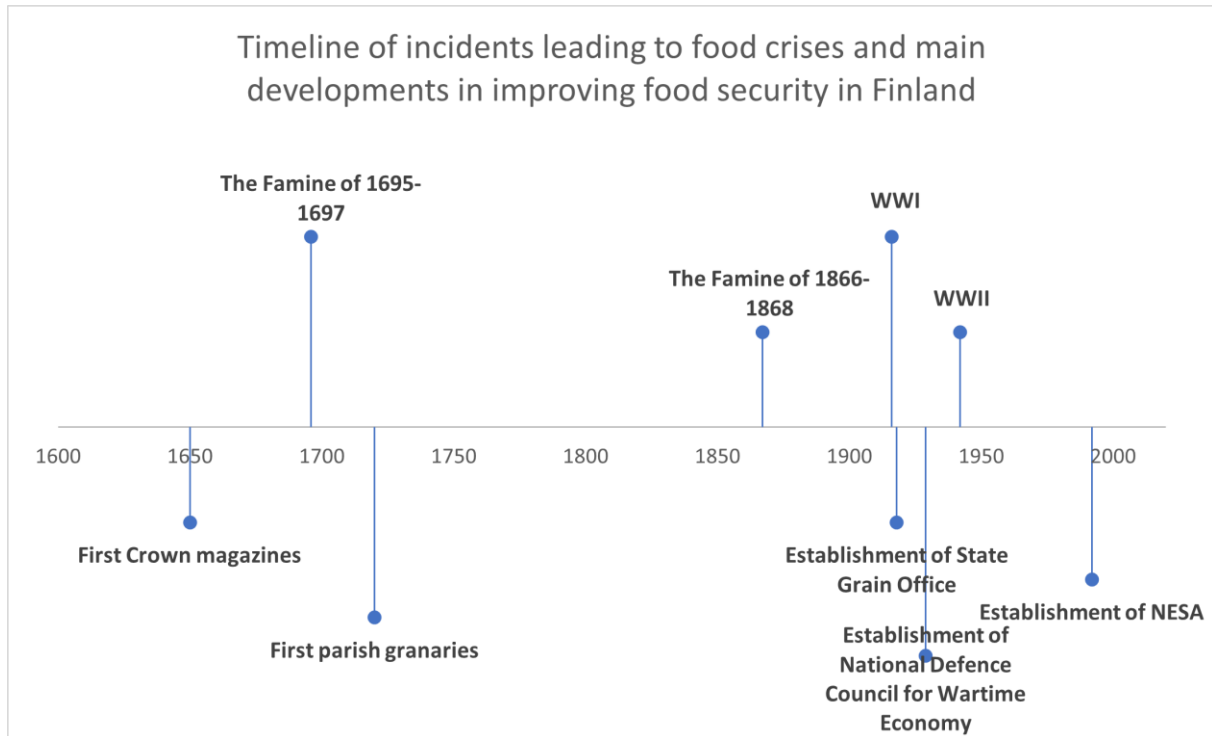
How has Finland managed to overcome the challenges to food security while being located at the most northern part of Europe and what experiences and policies have shaped its understanding of food security? The aim of this study is to review the history of food security as well as security of supply policies in Finland. It is not an exhaustive history of Finnish food security. Rather it charts the changing economic and political context within which Finland's understanding and experience of food security has developed to the present day. Because food security is such a basic aim in all times and places, a historical perspective can furnish several lessons for current debates. The scope of the study examines food security from the 1600s to present, but it places special focus on the era in the early 20th century after Finland's independence from Russia. This study was funded by the Academy of Finland (grant no: 339830) on crisis preparedness and security of supply in the project "Towards more resilient food system in the face of uncertainty (TREFORM)".

2. Food security in Finland before the First World war (1600-1914)

Finland¹ is located at the northern edges of Europe where farming has traditionally been sensitive to changes in the climate from the usual the weather patterns (Jutikkala 2003). Summer frosts have been especially detrimental and have infamously caused crop failures from time to time. From the 16th century until the end of the 19th century, crop failure was made worse by the fact that the weather in Finland was particularly cold due to the Little Ice Age. During this time, summer frosts were more common than usual which had severe negative consequences on crop yields. What made Finnish agriculture even more susceptible to food insecurity was that only a limited number of crops could be grown in short summers, namely barley and rye (Jutikkala 2003).

Rye was the prominent grain from the 16th century to the 1950s (Rasila 2004, p. 490). In order to minimise risks, agricultural production could not be diversified to a significant extent. According to Huhtamaa (2018), the harvest was lost or badly damaged twice per decade during the Little Ice Age, and thus society was constantly living on the edge of a subsistence crisis. Finland's remote geographical location also made it difficult to supplement domestic grain production with trade. In winter when the sea froze, Finland was cut-off from foreign trade with the Baltic Sea regions. Therefore, in case of crop failure, there was a very limited period in the fall when additional grains could be transported to Finland by sea to help people survive the cold winters. Furthermore, people did not prepare for bad harvests in the summer by hunting or fishing since they could not predict the size of the yield. In the fall and winter, people were too hungry and too tired to go and hunt for food (Jutikkala 2003). Due to the restrictions on trade, the share of imported grain from the total grain consumption in Finland was very small up until the 19th century and, for example in the 1700s, it was only 2% (Huhtamaa 2018).

¹ Finland was part of the Swedish Kingdom from the Middle Ages until 1809, when Sweden lost the Finnish War (1808–1809) to the Russian Empire. Thereafter, Finland became an autonomous part of the Russian Empire known as the Grand Duchy of Finland until independence in 1917. In this study, the geographical area that covers modern day Finland is referred to as "Finland" throughout the study period, although no such country existed before 1917. Finland was a part of Sweden proper under the Swedish rule, but Finland enjoyed a high degree of autonomy during the Russian rule.



2.1. Food security under Sweden and the Great Famine of 1695–1697

2.1.1. Crown magazines

The storing of grains has always been important in any society where grains have been a staple food (Teerijoki 2003, pp. 24–27). There were different kinds of grain storing institutions in the Swedish Kingdom, of which Finland was part of from the Middle Ages until the early 19th century. The granaries were established mainly for the purpose of storing grains that were collected as taxes for the Swedish Crown and the clergy (Teerijoki 2003, pp. 24–27). In the 1650s, the Swedish Crown started building Crown magazines to collect and store tax grains (Teerijoki 1993, Jalas 2007). While their primary use was not to ensure food security, the Crown had also given permission to regional authorities to sell grains from the Crown magazines to landowners during poor harvest years (Teerijoki 2003, p. 275). The Crown had a vested interest in helping landowners through tough times as it would help to maintain the livelihood of taxpayers. Since the Swedish Crown was mostly only interested in collecting taxes from its citizens, treatment between the Finnish and the Swedish side was equal in this sense, but since information travelled much slower between Finland and Stockholm, it was harder for Finland to get help from the Crown when it was needed. Since the landless did not pay taxes, the Crown did not care about their food supply (Jutikkala 2003). Crown magazines were also used for feeding the military during war and peace time operations (Hatakka 2019). In the absence of private storages and functioning markets in a region with low population density in Finland, it was necessary for the Swedish Crown itself to manage the food supply of its soldiers (Hatakka 2019). Thus, the history of security of supply in Finland started with the needs of the military to feed its soldiers. The placement of Crown magazines was determined strategically from a defence point of view, which meant that they were not placed, for example, in the northern parts of the country, where they would have been the most in need

from a food security point of view (Hatakka 2019). Nevertheless, Crown magazines were able to function at least to some extent as an emergency reserve for the regions surrounding close to them (Jalas 2007, pp. 17–23).

2.1.2. Famine of 1695–1696

There were several bad years of harvest in the first half of the 17th century which caused some level of hunger. However, the worst hunger was experienced during the Great Famine of 1695–1696 during the coldest period of the Little Ice Age (Jutikkala 2003). During the famine, there were severe shortages of grains and dire circumstances in the northern parts of Finland forced people on the move southwards to beg for food. The masses of beggars brought diseases with them. The combination of diseases and hunger proved to be deadly, and it was estimated that 28% of the population died within two years. The death rate was similar between the landless and landowners which is one of the indications that the main cause of death was not starvation but disease. The landowners should have had better access to food, but they might have been more exposed to disease as beggars would have targeted landowners' households in the hope that they would have food to share (Jutikkala 2003). The Swedish Crown was not able to ensure food security and there were not enough Crown magazines or institutions to supply sufficient emergency food for the whole population in Finland. Furthermore, the market was unable to function properly. In fact, at the time, the market economy was severely underdeveloped, and the market was unable to provide food supply even under normal circumstances (Hatakka 2019).

2.1.3. Parish granaries

In the 17th century, mercantilist rationale dictated that imports should be minimised, and exports maximised as trade was seen as a zero-sum game. Dependency on imported food would have undermined this aim, and thus the Swedish Kingdom was motivated to remain self-sufficient in grain production (Teerijoki 1993, p. 21). Therefore, the need for self-sufficiency in food production was not to ensure food security among the population (Teerijoki 1993, p. 21). Instead, the concern was the need to import grains to Finland during years of poor harvest, and thus it was a priority for the Swedish Crown to stabilise the supply of grains during poor harvests. It was thought that granaries would be good way to store excess grains in good years to prevent the need for imports during bad years. In reality, granaries would not have been enough to ensure security of supply because the Kingdom was not producing sufficient amount of grains for the entire population (Teerijoki 1993). Nevertheless, large variations in annual yields had severe consequences beyond trade imbalances, and the matter was so important that the needs for storing grains were brought up multiple times during the 18th century. Since the price of grains was determined by yields and taxes were collected in grains, fluctuations in the supply of grains affected the whole economy. There were not enough Crown magazines to meet the grain storage needs of the whole Kingdom, and budget constraints prevented the Swedish Crown from expanding the magazine network (Teerijoki 2003, pp. 275–276). Furthermore, there was a general understanding in the society that common people were wasteful with their grains because during good years grains were used for distilling spirits.

Hence, in the early 18th century, it was suggested that all parishes should have a parish granary. The operating principle of the storehouses was that local landowners would set up the granaries with some start-up capital; and they would lend grains and charge interests on the

loans. In this way, the granaries should have accumulated large quantities in the long run so that in a very bad year or even consecutive bad years, there would have been enough grains for the people and to maintain a reasonable price level for the grains. The first parish granaries of the Kingdom were built in the 1720s in western Finland and more parish granaries were set up in 1750 after a good harvest year. The lack of start-up capital was a severe hindrance to the establishment of the granaries. However, setting up parish granaries was not made compulsory because the farmers thought that the state should not intervene in private matters. Nevertheless, in the 18th century, stockpiles in the granaries remained generally very small and the institutions were unsuccessful in ensuring food security for the entire country (Teerijoki 1993).

At the time, people thought that parish granaries failed due to managerial incompetence. In the north-western coastal areas, tar burning, fishing and ship building provided people with income, which allowed them to buy grains during bad harvest years. In the south-west, the developing market economy allowed excess grains to be sold to Stockholm during good years and grains to be bought from there when needed. Additionally, there was a large Crown magazine in Turku from which the locals could buy grains at reasonable prices. In the inlands of southern and eastern Finland, where slash-and-burn farming was used, yields were usually good that excess grains could be sold and even in bad years grains were sold to buy other commodities. Where other means of grains supply were absent, parish granaries were more common with larger stockpiles. There were usually enough grains to lend for one person to last for 6 months which would have sufficed in normal years of poor harvests (Teerijoki 1993). Thus, while parish granaries did not solve food security for the whole country, they were able to increase food security locally where there was a need for it.

2.2. The Autonomous Period

2.2.1. Agriculture before the famine and protectionist policies

As result of the Finnish war (1808–1809), Finland became a Grand Duchy of the Russian empire in 1809 and became increasingly autonomous during the 19th century. It was thought that Finland should be self-sufficient in food production, and domestic production was protected by tariffs on imported foodstuffs. In the early 19th century, the importation of most food staples such as grains, potato, meat, dairy and eggs were banned completely. As exceptions, low duties were set on rice, and there were no duties on wheat because it could not be grown in large quantities in Finland. However, during the crop failure years, Russia was exempted from the trade restrictions since Russian grain was significantly cheaper than domestically produced grains, which undermined the protectionist policies. In 1864, at the beginning of the famine, grain trade was opened completely, and grain started to be imported from the West as well (Vihola 2004a, p. 212)

2.2.2. Parish granaries in the 19th century

Under the Russian rule, Finland continued to maintain the Crown magazines and parish granaries and the importance of the latter grew during the autonomous era (Jalas 2007, pp. 17–23). Successful parish granaries were still the exception rather than the rule, and they were not operating under the principles of emergency storages but rather their operation was guided by profit-seeking behaviour (Teerijoki 2003, p. 280). Thus, a series of crop failures

within a few years would exhaust the reserves of parish granaries (Myllyntaus 2009). Parish granaries were not a successful way to solve food security in the 19th century but could be seen to have a minor role in alleviating the famine in the mid-19th century (Jutikkala 2003). Some granaries in rural areas played an important role as a financial institution to support important parish-level infrastructure such as schools (Teerijoki 2003). Furthermore, some parish granaries were used to relief the poor either by giving grain loans with generous conditions or even giving grains for free for those in need (Teerijoki 1993, p. 280).

2.2.3. Famine of 1866-1868

By the mid-19th century, farming was in crisis since Finnish farming methods were reaching their limits due to restrictions on available and cultivable land (Jutikkala 2003). Then came the Great Famine of 1867–68 or the hunger years due to widespread crop failure in consecutive years. The rye yield was less than half compared to previous years' yields and the barley yield was only a third compared to that of previous years. Based on available domestically produced and imported grains, people should have been able to get 1 900 kcal on average but in normal years it was 2 500 kcal. However, food was not distributed evenly and thus everyone did not have access to the average amount of food. People were encouraged to find food in the nature, but it turned out to be problematic as people did not have the required know-how to do so (Rautavirta 2010). Most commonly used foods found from the nature were mushrooms, bark bread, lichen, pea stalks, and straws (Jutikkala 2003). The similarities between the two famines in the 17th and the 19th century indicate the lack of significant development in the country between the two centuries. Once again, population groups started migrating from the northern parts to the south in hopes of finding food, and with them they brought diseases. Migration played an important role in spreading diseases, like the 17th century famine, the main cause of death was not due to hunger. Instead, it was the combination of diseases and malnutrition that turned out to be fatal (Jutikkala 2003).

The government recognised the dangers of mass migration and tried to reduce it by transporting grains to the northern parts, but the deliveries were too late and too small (Jutikkala 2003). While attitudes in the society had changed to be somewhat more lenient towards helping the poor, especially the clergy maintained that the poor should earn their food through work. In this spirit, the government organised relief work for people so that they could earn some money for food to feed themselves and their families (Jutikkala 2003). Relief work was common and was organised in nearly every parish and people would work, for example, by the railway tracks (Jutikkala 2003). At the same time, the government was also cautious not to attract too large of crowds to single areas to prevent the spread of diseases. Contemporary critics argue that demanding reciprocity exacerbated the food crisis as the poor were unable to meet the demand of reciprocity and the organisers lacked the ability, resources and will to fulfil their duty to provide food security (Voutilainen 2016). As a result, workhouses got overcrowded which meant that poor hygiene, and diseases spread more easily (Rautavirta 2010).

In fear of a riot, the Russian emperor sent a senator to observe the extent of the food crisis in northern Finland and demanded grains to be sent to Finland (Jutikkala 2003). Russia would have been willing to send more food aid to Finland, but Finnish authorities were reluctant to receive too much help from the Russian empire as Finland had very recently been able to widen its autonomy and it did not want to jeopardise the positive development (Häkkinen 2018). However, the Finnish Senate was also struggling to respond to the crisis due to the

political constraints placed by autonomy and the financial struggles caused by the newly founded domestic currency which value was inflated. High prices of grain in Europe and the frozen sea also further hindered Finland's ability to import additional grains (Jutikkala 2003). Some grains were imported from Germany with the help of a large government loan. Yet, the help was only marginal since the distribution of imported grains was ineffective. The government sold the grains to merchants who were hesitant to give the grains as loans in the fear of people being unable to repay their loans (Jutikkala 2003).

While the Russian emperor feared riots, the people did not attack the government during the famine (Häkkinen 2018). All illegal activity and violent attacks were directed towards private property (Häkkinen 2018). There was only one demonstration during the famine, and it was legally organised and remained peaceful (Jutikkala 2003). The people did not generally blame the government and viewed that the crisis was caused by the poor weather conditions or that it was God's way of punishing the sinning (Myllyntaus 2009). The people also did not expect the government to take actions as there was no precedent for such action, yet the weather conditions in northern Sweden and north-western Russia were similar but the mortality rate did not increase from normal times unlike in Finland (Myllyntaus 2009). Contemporaries find that the reasons for the severity of the famine were slow transportation of food due to undeveloped infrastructure and technology, lack of crisis preparedness (Jalas 2007, pp. 18–23), an underdeveloped market system and economy (Häkkinen 2018). There were also large regional differences in the severity of the famine as some local authorities showed competence and organized help successfully in the desperate conditions (Häkkinen 2018).

In 1868, the death toll was 90 000 higher than in normal years (Rasila 2004, p. 489), and every 12th Finn died of malnutrition, disease or related distress in the two years between 1866–1868 (Myllyntaus 2009). To give an idea on the distribution for the cause of death, there were 2 349 recorded deaths under starvation whereas 60 000 people died of typhoid (Jutikkala 2003). The areas with the highest mortality rates could be explained by the large share of landless population in Finland.

The famine left lasting effects on the society and raised debates and concerns around food security among the public (Häkkinen 2018, Voutilainen 2016). The famine also marked a transition away from traditional agriculture (Rasila 2004, p. 497). Starting from the mid- 19th century, farming in Finland started to transition towards animal husbandry (Jutikkala 2003). This transition marked an increase in food security in the sense that as long as there is enough animal feed, animal husbandry is less weather sensitive compared to plant cultivation (Rasila 2004, p. 498). Between 1877 and 1910, the number of dairy cattle doubled, and overall milk production increased by 280% due to continuous productivity increases (Rasila 2004, p. 498). Earlier all arable land was used for cultivating bread grain but in 1910 less than a third of arable land was for bread grain and fallowing (Rasila 2004, p. 500). As a result, self-sufficiency in grain production decreased which would be proven by the events of the early 20th century to be a severe threat to food security.

Nevertheless, in the latter half of the 19th century, farmers also started gradually making improvements in farming practices. This was made possible by the spread of knowledge, and as a result, farming also started slowly moving away from subsistence farming towards commercial farming (Rasila 2004, p. 498). Railway roads made transporting grains easier to areas where help was needed in the years after the famine. Also, the end of the Little Ice Age and improvement in the climate helped to increase domestic food production (Jutikkala 2003).

2.2.4. Agriculture after the famine and removal of tariffs

To increase the supply of food in Finland, tariffs on grains were lifted in 1864 at the onset of the famine and open trade policies persisted until early 20th century (Vihola 2004a). There has been some disagreement among academics on what the effect of tariffs and import embargo of grains had on Finnish self-sufficiency. While some argue that the lack of protectionism caused Finland to transform its agricultural production away from cereals to animal husbandry, others such as Vihola (2004a) and Jalas (2007) argue that the removal of tariffs on Russian imports did not have a significant effect on Finnish self-sufficiency of grain production. They point out that Finnish grains output grew until the early 20th century and only reduced by 5% before World War 1 (WW1). At the same time, the population size doubled from 1860 to WWI. They also argue that Finland did not have the means to increase agricultural production to become self-sufficient due to limited land and undeveloped technology. Especially when coming towards the end of the century, the market economy was growing in Finland, and the size of the working population with wage started growing in the early stages of industrialisation. There was a pressure to supply the market with affordable food where the volumes of domestic produced grains sold on the market had always been marginal, thus the price of domestic grain was relatively high (Vihola 2004a). Previously, the vast majority of households were self-sufficient, therefore the relatively high price for domestic grain did not matter, but the increasing number of households were supported with affordable grains supplied by imported cheap Russian grains. Hence, dismantling tariffs and protectionism by importing grains could be viewed as a way of maintaining food security to provide stability in food supply as well as insurance for disruptions in food supply caused by weather changes. Since tariffs on grains would have also hindered the development of the animal husbandry, it would have been harmful for the overall development of the Finnish economy. Animal husbandry was the only competitive option for Finnish farm exports. Furthermore, improvement in infrastructure via the railway connections meant that Finland was not dependent on domestic production since grains could be easily imported from Russia (Vihola 2004).

3. Food security during wartime in Finland (1914–1950)

3.1. The First World War caused scarcity in food

3.1.1. Agriculture and self-sufficiency at the eve of WWI

At the eve of the First World War (WWI), food production in Finland had changed drastically. Finnish agriculture had moved away from grain cultivation by focusing more on animal husbandry (Rautavirta 2010). Selling dairy and meat products to St Petersburg was a vital source of income for the Finnish economy and in exchange Finland was importing 35–40% of its total grain consumption from Russia (Rantatupa 2004). Yet, the excess production in dairy and meat could not cover the calorie deficiency caused by the deficit in grains production to feed the population (Rantatupa 2004). When the WWI started in 1914, tariffs were reinstated to protect domestic agricultural production and support self-sufficiency in Finland (Vihola 2004). As Finland was still under Russian rule, it did not have plans for crisis management for its own population under exceptional circumstances like war and disturbances in trade (Seppinen 1996, Jalas, 2007).

In the first few years of WWI, the war increased the demand for Finnish industrial exports and the economy of the country improved (Rautavirta 2010). However, as the war progressed in Europe, Russia reduced the export of grains to Finland and food security was under threat in Finland. First in 1914, Finland started to set consumer price ceilings to prevent unreasonable price increases in food (Rantatupa 2004, pp. 273–275). Price regulation, first at regional and then nation-wide level, was based on the premise that food supply was insufficient (Rantatupa 2004). During 1916, Russia was experiencing scarcity of food and railways were used for military operations, and thus it was getting increasingly hard to import food from Russia to Finland (Rantatupa 2004). The Finnish Senate was slow to react to the increasing scarcity in food (Rantatupa 2004). Instead, local authorities like municipalities and city councils that were accustomed with the task to ensure food supply for the poor had imported food from Russia and other neighbouring countries to supply food to risk groups (Rautavirta 2010, Rantatupa 2004). However, it was thought that the well-off could always manage on their own, and thus the municipalities and cities were not gathering enough food for storage. In March 1917, the Senate was overthrown by a Finnish coalition and one of the main tasks of the coalition was to organise food supply for the population (Rantatupa 2004). Yet, the new government failed to recognise the severity of the issue and that increasing domestic production in a short time span was not possible (Seppinen 1996, p. 9). The situation was also highly politicised as those on the right thought that the working class was unwilling or too lazy to work in agriculture, and on the left, people thought that the greed of landlords and capitalists was to blame for the food crisis (Seppinen 1996, p. 9). Nevertheless, in June of 1917, the government passed a bill (so called “food law”) which allowed the government to confiscate food, set price ceilings on food, and regulate food supply through rations (Rautavirta 2010, Seppinen 1996, p. 9). The administrative department of agriculture (maatalousvaliokunta) would become the Ministry of Agriculture after Finland gained independence in December of 1917. One of the responsibilities of the administrative department was to increase domestic agricultural production to replace imports. However, it was an impossible task to

increase domestic production in a short period of time. The government mandated that all municipalities have a food committee and gave a lot of responsibility to the municipalities in managing food supply (Rantatupa 2004).

3.1.2. Rationing

Rationing of sugar, a good in which Finland was fully dependent on imports, started in December of 1916 when imports from Russia were almost halved from the usual level (Rantatupa 2004, p. 279). The domestic grain yield of 1917 was poor and imports had essentially seized from Russia due to scarcity of food in St Petersburg and from Germany imports seized due to the war and the political standing of Finland. Consequently, rationing of food started more widely in July of 1917 (Rautavirta 2010, Rantatupa 2004, Jalas 2007, pp. 25–26). Since there were no prior plans on how rationing should be organised or no precedent, rationing was generally poorly organised (Seppinen 1996). The main principle behind rationing was that households were divided between self-sufficient farmer households which would produce food for their own consumption and hand over the excess produce to the government to distribute through coupons to the rest of the population, to the so-called coupon households who got grains and other basic foodstuffs according to government set rations (Rautavirta 2010). The former group accounted for roughly 60% of the population and the latter for 40%, though the amount varied from one season to another and from one year to another. In practice, rationing was only in effect in urban areas where the scarcity of food was most severe (Rantatupa 2004).

Grains were the only food item that was rationed throughout the country and for everyone, other food items were rationed only in urban areas (Rautavirta 2010). Based on how physically demanding one's work was, grain rations varied between 150–300 g and the average rations amounted to 230 g which was roughly a third of normal consumption (Rantatupa 2004, Rautavirta 2010). Coupon households were able to purchase additional food legally and through the black market. Officially, self-sufficient households could keep 280 g of grain per person per day but in reality, it was hard to monitor how much food self-sufficient households kept. (Rantatupa 2004) Throughout the rationing period there was a conflict between producers and consumers due to the clear gap in consumption between the groups. It was hard to accurately measure and do an inventory of produced food which meant that none of the ruling governments of the time even attempted to distribute food evenly in fear of even more of the food disappearing into the black market and thus collapsing the whole rationing system (Rantatupa 2004). As a result, self-sufficient farming households were able to maintain almost pre-war levels of food consumption whereas the calorie consumption of rationed households decreased significantly. The situation was worse in bigger cities like Helsinki where, on average, only a quarter of daily energy needs were met (Rautavirta 2010). Other risk groups were landless rural people, people who were not able to buy food from the black market and people who were hospitalised for extended periods and depended on hospital food. The government highlighted the importance of supplying food to schools and hospitals and prioritised these in the distribution of food. Still, a notable risk group were hospitalised long-term patients who depended on rations and were unable to access food through the black market and patients have been reported to have died of hunger during WWI (Rautavirta 2010).

After Finland gained independence in December of 1917, the civil war started in January 1918. The inequality in food consumption and general scarcity in food exacerbated tensions

and can be attributed as one of the reasons behind the start of the civil war in January of 1918 (Rantatupa 2004). Food crisis cannot be said to be the main reason for the war though since overall food insecurity was not higher in the red or white areas compared to one another (Rantatupa 2004). The war between the whites and the reds lasted until May and during it the food supply was organised by the respective sides (Rantatupa 2004).

3.1.3. Institution supporting rationing of food

After the civil war, a temporary Ministry of Food was set up, and it was responsible for organising food supplies all the way until 1921 when rationing ended (Rantatupa 2004, Jalas 2007, p. 31). The foundations of one of the key organisations for the security of supply in Finland, the State Grain Office (SGO), was founded under the Ministry of Food (Jalas 2007, p. 301). SGO was to have a monopoly on importing grains, organise a stable supply of grains, and be responsible for the regulation of grains as well as for the collection of domestic grain production (Jalas 2007, p. 301). It was needed to ensure that grains would not end up on the black market, and grains were distributed more evenly throughout the country instead of municipalities acting in self-interest (Jalas 2007, pp. 31–33). After the war, SGO was dissolved, but it set a precedent for a similar authority for grain production, trade, and supply to be set up later (Jalas 2007).

3.1.4. Soup kitchens

In addition to rationing, there were also other ways the government and local authorities ensured sufficient food for the people. Soup kitchens were seen as an effective way to prevent food waste and supply food for the poor (Rautavirta 2010). Initially from their own initiative, a few larger cities started establishing soup kitchens where people were able to purchase cheap meals in 1918, and the government recommended that all cities and towns to set up soup kitchens (Rantatupa 2004). Generally, there was a belief that people were wasteful with their food, and thus the government organised cooking classes where the focus was on the preservation of food and how to avoid food waste (Rautavirta 2010). The State's Household Commission (Valtion kotitaloustoimikunta) was an example of a governmental body that was created in an attempt to create a bridge between the government and civil society to train households in matters related to food security. People were also encouraged to be resourceful when food was in short supply (Rautavirta 2010), and food authorities encouraged people to move away from the cities to the countryside where more food was available (Rautavirta 2010).

Scarcity of food also motivated the scientific community to research replacements and substitutes and to give recommendations on how the limited food supplies should be distributed in society (Rautavirta 2010). Carl Tigerstedt, who researched supplements for grains and their applicability for nutrition, published articles for the scientific community as well as for the general public to inform about matters relating to food in exceptional circumstances (Rautavirta 2010). Yet, according to his own accounts, state officials did not listen and support his policy recommendations (Rautavirta 2010). The state did not find Tigerstedt's research on grain substitutes interesting because they believed that rationing would be a sufficient measure (Rautavirta 2010). Yet, the use of grain substitutes was common and the share of bark instead of grains used in making bread during WWI was roughly the same as in the famine during the 1860s (Rantatupa 2004). Nevertheless, Tigerstedt's research findings were used by policy makers in the next food crisis during the Second World War.

3.1.5. End of Civil War and WWI

In the summer of 1918, Finland was able to import grains from Germany but at a very high price (Jalas 2007, p. 27). Additionally, aid came from Denmark and Sweden at the end of 1918, which was sponsored and organised by the US (Rantatupa 2004). However, scarcity of food was still considerable. In 1919, the trade embargo ended, and grain could be imported to Finland, scarcity of food was reduced significantly (Jalas 2007, p. 33). Only after Finland opened for trade again, SGO was able to supply all the municipalities in Finland with the necessary grains (Rantatupa 2004). By the beginning of 1920, rationing was no longer relevant because households did not bother to pick up their ration coupons anymore because they were able to purchase food without queueing up for the rations. A year later, the obligation of farmers to hand over their excess grains was removed, and finally in February of 1921 rationing officially ended. Rationing of grains continued until the spring of 1921, partially to protect the value of the currency, and once food and grain markets were operating normally, the Ministry of Food was dissolved in 1921 and SGO was dissolved in 1923 (Jalas 2007).

Since doctors did not have time to establish the cause of death, it was not known how many people died during WWI due to hunger and malnutrition or how many people died of other causes, such as the civil war (Rautavirta 2010). Officially only three regions reported deaths due to malnutrition (Rautavirta 2010), but the mortality increased by 50 000 people compared to normal times between 1917–1919. The worst hunger was experienced in the prison camps of the “red faction” of the civil war where an estimated 14 000 people died either as prisoners or soon after release (Rantatupa 2004).

During the food crisis under WWI, a somewhat surprising finding was that people resisted alternative sources of calories and nutrients compared to what they were used to eat. For example, Finnish people were not used to eating vegetables. This illustrates the importance of food culture even in an emergency, as well as the familiarity and effect of food on well-being (Rautavirta 2010). These elements are reflected in the contemporary Finnish plans for crisis preparedness, for example, the prioritisation of ice cream production even if there would be a state of emergency that threatened food security (Ahlström & Rautavirta 2012).

3.2. The Inter-war Period: improving self-sufficiency and preparing for crisis

3.2.1. Institutions preparing for war and increasing security of supply

The experiences from WWI motivated and shaped the way Finland started preparing for future wars and crises. The newly independent country also had to start building military capacity. It was in this context that the first laws and institutions for ensuring food security in Finland were established. During WWI, rationing had been implemented on the basis of the martial law from 1909 (Rantatupa 2004, p. 443). Therefore, it was seen as important for Finland to prepare a martial law for possible future conflicts, and this process was started during WWI in 1919 (Rantatupa 2004, p. 443). Since WWI had demonstrated the fragility of international agreements and the threat posed by conflict on the civilian population, preparations for a crisis were seen as a priority that needed immediate action (Rantatupa 2004, p. 445). Furthermore, by the mid-1920s, the Soviet Union was viewed as an imminent security threat to Finland (Rantatupa 2004, p. 445). Motivated by other countries’ experiences during WWI,

Finland started to prepare for the possibility of transitioning to a war economy in the 1920s (Jalas 2007, p. 43, Seppinen 1996, p. 12). A vital part of a war time economy was to manage the food supply under difficult circumstances. One of the first concrete actions was the founding of the national wartime economy committee in 1924, which was to give recommendation on how the economy should be organised under war time. According to the committee, the best way to ensure the supply of grain during war time was to be self-sufficient (Jalas 2007). Low self-sufficiency was seen as a major weakness in the country's defence ability and the committee recognised its role in the food crisis during WWI (Seppinen 1996, p. 20). Achieving self-sufficiency required a large increase in agricultural production and especially grain production since, for example, in 1923 a quarter of rye consumption was imported from Russian (Jalas 2007).

In 1929, the Ministry of Defence suggested to establish the National Defence Council for Wartime Economy (NCWE) (Seppinen 1996). NCWE provided the foundation for how security of supply was eventually organised during WWII (Rantatupa 2004, p. 446). Under the NCWE, the department of public nutrition eventually became the department of emergency supply in 1932 (Seppinen 1996). Despite having multiple departments, after 1931 due to the lack of resources, NCWE was only focusing on food production, distribution, and rationing as well as war time industry (Seppinen 1996). The operation of NCWE was severely limited by its parent organisation the National Defence Council (NDC) that took up most of the resources, but significant progress was still made (Seppinen 1996, p. 18). In 1930, the government approved a law on the responsibility of the relevant actors in the private sector and municipalities to assist in defence preparedness (Seppinen 1996, p. 18). In 1932, NDC made plans to base the food supply to be organised in a similar way during WWI; rationing would be centrally organised by the Ministry of Food, and the municipal food committees would act as the local authorities. The same year, the public nutrition department of the NCWE published the first report tracing Finnish self-sufficiency in food production and animal feed (Rautavirta 2010, Seppinen 1996, p. 18). In 1933, only one organisation was in charge of acquiring and supplying food to cover the needs of the civilian population as well as the army. This organisation was thought best to be independent and autocratic. The emergency supply organisation would manage the organisation of security of supply, rationing, increasing production, and advising farmers (Rantatupa 2004, pp. 446–448). NCWE had shrunk significantly by the mid-1930s, and it was finally dissolved in 1936 (Seppinen 1996, p. 20). Instead, the Office for Economic Mobilisation was established under the Ministry of Defence (Seppinen 1996, p. 21). The role of the Office was to prepare for times of scarcity during war to ensure the continuation of economic activities as well as for rationing and controlling food supply. When WWII started in 1939, the National Supply Ministry was founded to aid the suggestions and research done by NCWE (Seppinen 1996, p. 22).

In addition to the defence organisations, the government established a committee on public nutrition in 1936 (Rautavirta 2010). Its role was to also support research on how food security could be increased by increasing the level of self-sufficiency, and it also provided the foundations for actions during war times and other crisis (Rautavirta 2010).

3.2.2. Agricultural policy during the inter-war period

Before independence, Finland could rely on grain imports from Russia and thus there was a lack of incentive to increase self-sufficiency, especially since the building of railway connections to Russia had eased the transportation of grains to and within Finland (Jalas 2007, p.

35). Motivated by the experiences during WWI and the newly gained independence, complete self-sufficiency in food production was set as a goal for agricultural policy (Rantatupa 2004, Jalas 2007, p. 301, Vihola 2004b). In order to increase self-sufficiency, the government implemented policies to increase the area of cultivated land and placed import taxes on grains to protect domestic grain production from foreign competition (Jalas 2007, p. 35; Vihola 2004b). The land reforms were rather successful in reaching their goal since the area of cultivated land increased by 22% between 1910 and 1930 from 1,87 million hectares to 2,28 million hectares (Vihola 2004b). From 1932 onwards, to further increase demand for Finnish generally poor-quality grains, the government mandated that Finnish flour mills mix domestic grains with imported grains (Vihola 2004b, Jalas, 2007). The government-mandated ratio of domestic to foreign grain varied depending on availability of domestic grain but it could be up to 80% of domestic grain (Jalas 2007, p. 302). The reason that such high ratios could be demanded was not only due to government policies but also due to favourable weather conditions, especially in the 1930s. Output per hectare increased also due to significant increases in the use of artificial fertilisers and improved techniques in tillage. Previously, cow manure was the main source of fertilising but as the use of artificial fertiliser increased, Finland became increasingly dependent on foreign agricultural inputs. Increasing cultivation of wheat in this period was also due to a better selection of cultivable varieties of wheat. Land used to cultivate wheat increased from 15 000 hectares in 1930 to 130 000 hectares in 1940. Improvements were also made in animal husbandry through better education. Cattle remained the most important farming animal and butter along with wood were the most important exports. In the name of increasing self-sufficiency, the government also supported pork and egg exporters. Until the 1950s, horse was the most common source of power used to operate agricultural machinery, which meant that Finland was not dependent on foreign energy imports (Vihola 2004b).

While self-sufficiency increased significantly during the interwar period, authorities and experts were still not satisfied with the level of self-sufficiency in agriculture (Rantatupa 2004, p. 449). Undermining efficiency to be self-sufficient, farmers were producing a variety of products rather than specialising in the production of one or two products (Vihola 2004b). Some effort was put in to increase self-sufficiency in agricultural inputs, for example, by establishing the state-owned Sulfuric Acid and Superphosphate Plants Corporation, but its output was not able to meet domestic demand (Rasila 2004). Nevertheless, it was also recognised by the experts that the costs of complete self-sufficiency would be too high under normal circumstances (Seppinen 1996, p. 23).

3.2.3. Emergency Stockpiles

During the inter-war period, Finland took major strides forward in creating emergency stockpiles, mainly for grains. In 1922, SGO had 18 000 tonnes of bread grain stored from domestic grains (Jalas 2007, p. 37). Only five years after the SGO was dissolved, the Finnish State Granary (FSG) was founded, and it assumed many responsibilities of the SGO (Jalas 2007, pp. 301–303). In normal times, FSG oversaw the regulation of the grain market, importing and exporting of grains as well as storing of grain reserves (Jalas 2007, p. 31). FSG was operating under the Ministry of Agriculture and was thus a vital organisation in implementing the ministries agricultural policies, namely supporting self-sufficiency aims. It was also given the task to organise grain supply during crisis. In case of a war, FSG would have a special role in controlling all aspects of the grain trade, having monopoly on foreign trade, and being responsible for

the supply of seed grain (Jalas 2007). The motivation behind stockpiling grains was manifold: unpredictable weather, the threat of war, and to store food supplies for military use as well as other public institutions that benefitted from a centralised source of food supply (Jalas 2007, p. 302). FSG renovated the old Crown magazine in Turku for storing grains in 1929 (Jalas 2007, p. 79). FSG also organised grains to be stockpiled by private mills, grain traders, and farmers (Rantatupa 2004, p. 445). Stockpiling by farmers was found not to be successful as farmers tended to disregard their contractual responsibility. Instead, their reserves would fluctuate with the needs of the farm, thus defeating the purpose of emergency stockpiling (Rantatupa 2004, p. 445). Private actors did not have sufficient storage space for grains, and thus in the 1930s, FSG's operations was expanded, and silos were built in three places, all located in overproduction areas in Finland (Rantatupa 2004, p. 445, Jalas 2007, p. 303). The aim was to have enough grains in storage for the needs of the military and other public services (Jalas 2007). It was known that the reserves would not last for long, especially if they would be needed to feed the public, but there was not enough political will to increase the size of costly stockpiles (Jalas 2007). At least coffee and sugar were also stored since they were important foods that Finland was not able to produce domestically to meet the demand (Rautavirta 2010).

3.3. The 1930s world recession

The world recession in the 1930s did not have a drastic effect on Finnish food security (Vihola 2004b). The world recession dropped global grain prices drastically and to continue protecting domestic production, Finland increased tariffs so high that the price of imported grains in Finland was twice the price on global markets (Vihola 2004b). However, all of this did not affect the subsistence farmers, who represented half of the grain farmers in Finland and did not sell their produce or purchase food through the markets. The tariff policies only protected large commercial farms in the south of Finland. Due to the tariff policies in Finland, the price of grain remained quite stable (but high) throughout the global price fluctuations in the 1920s and 1930s (Vihola 2004b). There was however a wave of bankruptcies among farmers that had taken large loans for expanding their farmland (Rantatupa 2004). Among consumer households, the level of unemployment increased, and the government organised relief work similarly to the Great Famine of the 1860s (Rantatupa 2004).

3.4. The Second World War (WWII)

At the eve of WWII, agricultural technology in Finland had taken large strides forward and the food industry had developed as a result of urbanisation as well as more female participation in the industry (Rautavirta 2010). In agriculture, the cultivation of sugar had increased (Rautavirta 2010). Animal husbandry was still focused on dairy cattle, and Finland was self-sufficient in meat production to the extent that pork could even be exported (Rantatupa 2004, pp. 472–475). Grains remained a staple in the Finnish diet as grains accounted for 40% of calorie intake, and rye remained the most important grain. Another staple, milk was mostly coming from dairy factories rather than being self-made at farms as was the case in WWI. Nevertheless, some parts of the population still suffered from malnutrition due to poverty (Rautavirta 2010).

Crisis preparation in Finland was at a better level than it had been before the previous world war. However, Finland also had to take care of its own army's food supply. The war between

Finland and the Soviet Union caused an immediate threat to food security. During the war, 14–15% of the population were part of the army resulting in scarcity of labour at farms contributing to reduced agricultural output during the war. The war also interrupted international trade and thus resulting a significant reduction in the overall food supply in Finland (Rautavirta 2010).

When the war started in August of 1939, the Ministry of National Supply was established based on the plans of the NCWE (Rantatupa 2004, p. 449). Originally, the ministry consisted of four departments whereby one department was for food supply (Rantatupa 2004, pp. 452–464). The Ministry was set up to be a temporary body that oversaw rationing and monitoring of domestic agricultural production along with the right to confiscate food supplies and guide international trade. The ways to control food supply and security were much more wide reaching compared to the previous war. The ministry would also set standards for food substitutes, for example for coffee (Rautavirta 2010). The decision-making power on grain imports was moved from the Ministry of Agriculture to the Ministry of National Supply (Jalas 2007, p. 106). The Ministry of National Supply, with its wide variety of tasks which increased as the war continued, was one of the largest ministries in Finland (Rautavirta 2010).

Initially, Finland did not expect to participate in the war but rather the Ministry was worried that imports would be disrupted by the war in Central Europe, and thus at first mandated that mills would store additional grains (Seppinen 1996, p. 23). When the Soviet Union attacked Finland at the end of 1939, FSG started organising special operations around food security that went beyond organising just grain markets. For example, FSG evacuated potato and grains from the eastern border near Russia (Jala 2007, p. 99). FSG's grain storages became a very important source of grains during the war and none of the storages were significantly destroyed in military attacks, though some leakages occurred (Jalas 2007, p. 100). Some grain shipments got caught up in naval warfare and were lost at sea (Jalas 2007). Transportation of grain imports became difficult due to the naval warfare and the freezing of the Baltic Sea, and in the end the cost of even donated grains from Argentina became very high (Jalas 2007). Nevertheless, even if the acquisition of imported grains had become difficult, there was not an immediate need to start rationing foodstuffs. In the fall of 1940, FSG was given monopoly over the grain market and all grain trade would be to go through FSG. All grains sold by farmers was to be sold to FSG (Jalas 2007).

3.4.1. Rationing

There were storages for half a years' worth of consumption of coffee and sugar since the vulnerability of dependence on imported food had been recognised (Rautavirta 2010). These products were essentially rationed starting from the fall of 1939 (Rantatupa 2004, p. 466). For other goods, storages and domestic production sufficed until after the Winter War. Rationing for grains started in the spring of 1940 and for other foodstuffs in the fall of the same year (Rautavirta 2010). The experience of rationing from the previous world war helped the organisation and implementation of rationing. Once again, households were divided between self-sufficient households and ration/coupon households. The number of self-sufficient households was significantly lower compared to WWI because only a third of the population was registered as self-sufficient households in WWII (Rautavirta 2010, Jalas 2007, p. 107). The number of coupon households tended to increase in the late winter or spring when some farm households would run out of food in storage (Rautavirta 2010). The general trend in the size of storages followed a U-shaped pattern where the size of storages was at the highest in the beginning of rationing in spring of 1940 and then it decreased, reaching minimum levels

in the summer of 1940 (Rantatupa 2004, p. 499). The situation in urban areas during the autumn of 1941 was especially bad and could be described as a genuine food supply crisis (Seppinen 1996, p. 26).

The size of individual rations was based on age, gender, and how one's job was physically demanding (Rautavirta 2010, Rantatupa 2004, p. 467). Additionally, forestry workers were given extra rations to ensure the continuation of the vital industry and vulnerable groups such as large families and the sick were given priority (Rautavirta 2010). Despite the extra rations, a person doing heavy manual labour was entitled to 1950kcal, but this was only 70% of their required daily calorie need (Rantatupa 2004, p. 499). Furthermore, some hospitals recorded deaths due to hunger among long-term patients (Rautavirta 2010). Nevertheless, generally rations during WWII were significantly larger compared to the rations in WWI (Rautavirta 2010). Coupon households could also acquire additional food such as potatoes, fish or buy food from the black market (Rantatupa 2004, p. 499). A significant proportion of food supplies were used to feed roughly half a million military personnel as well as prisoners of war (Rantatupa 2004, pp. 483–485). Even though only 13–16% of the population was in the military during the war, a third of meat and grain consumption of the country was taken up by the military.

Among the civilian population, self-sufficient households were better-off compared to coupon households. Generally, confiscation of agricultural produce was more organised and consistent compared to the previous war. However, the government still struggled to ensure that farm households would give the necessary amounts of food under the state-issued confiscation of agricultural produce, instead of keeping food beyond household needs or selling produce to the black market (Rantatupa 2004, Rautavirta 2010). Milk consumption can be used as an example to show the disparity between self-sufficient and coupon households. Self-sufficient households maintained a normal level of milk consumption but among coupon households, milk consumption decreased to a third or even to a quarter of pre-war levels. Small milk rations can partially be explained by the fact that it was harder to prevent it from being sold through the black market compared to grains since milk could be transported in smaller batches which made it harder for authorities to spot (Rantatupa, 2004, p. 478). To combat this issue, everyone with substantial storages needed to report the size of their storages to authorities (Rantatupa 2004, p. 470). Furthermore, farmers were obligated to hand over their produce based on the size of their land for which there would be official records from before the war. This prevented farmers from understating the size of their land (Rantatupa 2004, p. 481). Nevertheless, confiscation of agricultural produce was not the only challenge since grain yields were reduced by 77% from pre-war levels due to bad weather, lack of fertiliser, lack of human resources and 10% loss of land as a result of the Moscow Peace Treaty of 1940 (Rantatupa 2004, p. 470, Rautavirta 2010). The shortage of grains did not reach the WWI level, and the use of grain substitutes was not necessary compared to previous food crisis. The government acknowledged the possibility to use grain substitutes, and a committee was set-up in 1945 to investigate the possibilities for substitutes (Rautavirta 2010). Substitutes for coffee and sugar were widely used (Rantatupa 2004, pp. 466–469). Rationing ended in 1949 for all food items apart from coffee, which was rationed until 1954 (Rautavirta 2010). Overall, rationing was harsher, more wide-spread, and consistent compared to the previous time, but food shortages were less severe (Rantatupa 2004, Rautavirta 2010). The black market was also investigated from time to time and investigations found that 20–35% of grains and fats were purchased from the black market instead of going through the official rationed markets (Rautavirta 2010).

3.4.2. Other ways of securing food than rationing

Proper nutrition of the public was ensured through the war years. For the first time in Finland, nutrients were added in common food products such as flour (calcium) and margarine (A and D vitamin) (Rautavirta 2010). To improve the general nutrition of the people, cheap meals were offered through municipal soup kitchens. People had a generally positive view on soup kitchens as people were familiar with them from the Great Famine of the 1860s and from the Great Depression, which enabled soup kitchens to be an effective way of organising the food supply (Rautavirta 2010). Continuing from WWI, civil society organisations and especially female-lead and female-centred organisations played an important role in supporting households (Rautavirta 2010). In the end, households were also strongly encouraged to be resourceful and even the urban population was encouraged to cultivate their own food in small plots as supplements to the rations. People also hunted more during the war legally and illegally (Rautavirta 2010, Rautavirta 2010).

3.4.3. Evaluation of WWII period

Food supply was much more stable in WWII compared to WWI (Rantatupa 2004, p. 499). The government's efforts before and during the war bore fruit since its ability to import grains and distribute grains evenly was very good, and generally civilians did not die due to the shortage of bread (Jalas 2007, p. 303). Self-sufficient households had enough for their consumption needs (Rautavirta 2010). However, based on the data on food consumption of the overall population, the average calorie intake decreased during WWII (Rautavirta 2010). Experience from WWI helped in the successful supply of food (Rautavirta 2010). Other important aspects were the guidance given on improving individual initiative and resourcefulness, food preparation as well as diversifying the diet (Rautavirta 2010).

The war also provided the foundations for future cooperation around food security between the state and different actors in the food system, such as the food industry and farmers (Granberg 2004, pp. 101–105). Also, important decisions regarding food policy were made during the war years to ensure decent wages for farmers without placing burden on consumers. This kind solution, where the cost was supported by taxpayers, would characterise agricultural policy in the future and thus determine the way food security was viewed in normal times (Granberg 2004, pp. 101–105).

4. Food security after the Second World War

4.1. Security of supply and planning in pre-EU time

4.1.1. Security of supply institutions

After WWII, various crisis preparedness and food security institutions were set up which made planning for future emergencies more systematic and coherent (Aaltola et al. 2016). Initially, the experiences from the wars and especially the circumstances surrounding the trade embargoes shaped thinking, planning and preparations for crises (Aaltola et al. 2016). The most significant institution for Finnish crisis preparedness and security of supply in the immediate post-WWII period was the founding of the National Board of Economic Defence (NBED) in 1955 (Aaltola et al. 2016, Seppinen 1996). NBED took example from its predecessor, the NCWE. The four categories of threats that NBED was preparing for were: war, threat of war, an international state of disturbance, and a national state of disturbance (Seppinen 1996, p. 32). The main tasks of NBED in the beginning were to investigate material preparedness and acquire stockpiles as well as to strengthen the legal basis of the institution (Seppinen 1996, p. 39). This proved to be difficult because it required decades of work by the NBED and a favourable political climate was needed to accomplish the visions of NBED (Seppinen 1996).

The first decade of NBED involved significant debate about its role and responsibilities. First, there were discussions about whether NBED would remain solely a planning agency or NBED would also be given authority over the economy during a crisis (Seppinen 1996, pp. 53–54). In 1959, it was decided that NBED would be based on a system of ten National Emergency Commanders, which would be responsible for their respective area in a crisis (Seppinen 1996, p. 54). For food security, the most relevant commanders were the commander on agricultural output and the commander of foreign trade (Seppinen 1996, p. 55). For almost two decades, this provided the basis for planning in NBED. The second big debate was about whether NBED should be placed under the Ministry of Defence or the Ministry of Trade and Industry, of which the latter was chosen (Seppinen 1996, pp. 50–54). However, all the way until the 1990s, there was debate on whether NBED should be dissolved by placing its tasks under the Ministry of Defence or whether its role should be strengthened, and all tasks relating to security of supply should be centralised in one place (Seppinen 1996, p. 109). While NBED was placed under the Ministry of Trade, it was not given all the tasks related to security of supply. For example, after the government had made the decision in 1958 to gather stockpiles, the Emergency Stockpiling Fund was overlooked directly by the Ministry of Trade instead of NBED (Seppinen 1996, p. 47). In the background, NBED had made the plans on how to gather stockpiles of critical goods that were imported and decided that stockpiles should correspond to one year's needs (Seppinen 1996). This meant also that the responsibility over food security in the latter half of the 20th century was scattered between multiple different actors. Under NBED, there was the department for security of supply and the department for agriculture, under the Ministry of Trade there was the Stockpile Fund, and under the Ministry of Agriculture was the Finnish State Granary which took care of storing grains (Seppinen 1996, pp. 55–57). Yet, the department for agriculture under NBED did not have significant power over storing or planning agricultural production because these responsibilities were under the jurisdiction of the Ministry of Agriculture (Seppinen 1996, p. 102). Thus, working groups in 1987

and 1994 found that planning and managing food security had been incoherent and partially overlapping responsibilities (Seppinen 1996, p. 113).

Despite the different views on NBED's authority, the legislative basis for NBED started taking form in 1960 through the Act on the National Board of Economic Defence which had taken inspiration from Switzerland's legal framework on crisis preparedness (Uusikylä et al. 2021, Seppinen 1996, p. 50). Including NBED in the law was import for the institution to properly take root and for it to gain the necessary jurisdiction to collect information on production, employees, energy use, and critical goods and services (Kananen 2015, p. 45). NBED also took steps toward strengthening the participation of the private sector in crisis preparedness in the same decade. In the mid-1940s, there had been disagreement within NBED about the role of the private sector in crisis preparedness, and there was a worry that firms would pursue their own interest if included in planning crisis preparedness (Seppinen 1996, p. 34). Yet, in the 1960s the atmosphere to include private firms was more positive with NBED started the establishment of industry pools (Seppinen 1996). Brought together and coordinated by NBED, the industry pools (one of which was for the food industry) were and continue to be a place where the leaders of the respective industries cooperate, educate, and run drills on a voluntary basis on crisis preparedness (Aaltola et al. 2016). The industry pools would also be a place for the private sector to express their opinions to NBED as well as to gather information to support decision-making involving security of supply (Kananen 2015, p. 49). The role of the industry pools was solidified as part of crisis preparedness through contracts between organisations from different sectors and the Ministry of Trade in the late 1960s (Aaltola et al. 2016). The establishment of the industry pools has played a significant role in the way public-private partnership in crisis preparedness has taken shape in Finland (Kananen 2015, p. 48).

Despite NBED's existence, it did not automatically mean that the institution had significant political power to further improve legislation regarding security of supply or to place political pressure in order to gather all of the necessary stockpiles (Kananen 2015). This meant that NBED had to focus on the areas where it could have an influence. For example, the defence forces were interested in the work of NBED, and thus NBED was doing a lot of cooperation with them (Seppinen 1996). Furthermore, NBED started operation exercises in the early 1960s, which would become an important role for NBED and its successor (Seppinen 1996, p. 65). Operation exercises were important for identifying what still needed to be done. An important lesson learned in the operation exercises during the late 1960s was that the government would need to acquire more power quickly during a crisis situation. Therefore, NBED wrote a proposal for the Rationing Powers Act which was passed quickly under several international political tensions of the time such as the Berlin Blockade and the Warsaw Pact invasion of Czechoslovakia as well as Finland's political tension with the Soviet Union (Kananen 2015, p. 55). The law was valid at all times to enable quick action from the government even in situations where Finland was not actively in war (Seppinen 1996, pp. 70–1). Whereas planning up until 1970 had focused solely on preparing for a war situation, NBED started increasingly to prepare for non-war crisis situations from the 1970s onwards (Seppinen 1996, pp. 70–1). This also meant that the National Emergency Commander framework was given up in 1973 because the framework did not fit well with the direction that NBED was heading (Seppinen 1996, p. 77). Instead, NBED started to operate under the principle that the actors that were responsible under normal circumstances would also be in charge during emergencies. This would allow quicker response to crises (Seppinen 1996).

There was also talk for the first time of home emergency supply kits (kotivara), and people were encouraged to prepare on their own and home preparedness training was provided (Rautavirta 2010, Rautavirta 2010). The Finnish organisation for civil protection even prepared and printed pamphlets on household crisis preparedness, but the government did not allow them to be distributed since they were thought to incite panic and fear of war (Seppinen 1996, p. 60). Nevertheless, the first published guide for households came out later in the 1970s (Rautavirta 2010). The Scientific Advisory Board for Defence also investigated how civilians and the military could utilise food found in nature for improving food security in exceptional circumstances (Rautavirta 2010). In later decades, there was also research on how households could improve their own food security through cultivating their own patches of land (Rautavirta 2010).

During the 1980s, the terms “supply level”, “basic supply level” and “security of supply” were starting to be used by NBED, though they would only gain general traction in the 1990s (Seppinen 1996, p. 90). Nevertheless, these terms allowed NBED to conceptualise and express their recommendations for the level of stockpiles that should be acquired and maintained in a new way. In 1980, NBED recommended that there should be large enough stockpiles that half a year’s basic supply level would be able to be maintained without imports (Kananen 2015, p. 105). Though the government was not yet ready to invest enough to meet this target (Kananen 2015, p. 106), two years later the government did pass the Act on Compulsory Emergency Stocks of Imported Fuels, motivated by the energy crisis in the previous decade. This also had a positive effect on food security since by the 1980s, for example, farms were heavily dependent on using machinery that required imported fuels to function. Furthermore, during the late 1980s and the early 1990s, when the government was seriously concerned about the Cold War, stockpiling initiatives started to make significant progress and reaching the target levels for food and some other critical goods as well as exceeded the target for energy stockpiles (Seppinen 1996, pp. 114–115). In the early 1980s, also the idea emerged that some critical infrastructures should be protected to ensure continuous functioning (Uusikylä et al. 2021). This kind of thinking was introduced through the basic supply system framework which identified necessary end products that were needed for sustenance, such as grains or milk, and then tracked the supply chain that would need to be protected to maintain the basic supply levels (Kananen 2015, pp. 81–3). The basic supply level of food was determined in the 1980s to be at 2 800 kcal, where the level of other essential nutrients in the diet would also be considered (Rautavirta 2010). This meant that in a crisis, the plan was not to maintain the same diet but rather a minimum requirement diet that could be accessed. For example, research noted that eating habits had changed in the past decades so that people were consuming more animal products, and during a crisis, people could return to more plant-based sources of calories since this would be a more efficient way to meet daily calorie needs (Kettunen 1986). The post-crisis resilience of food production was also being considered since it was suggested that the production of milk production should be prioritised ahead of pork and eggs because it would take a much longer time to increase milk production after a crisis (Kettunen 1986).

4.1.2. Food security policies before joining the EU

After the Second World War, Finnish agricultural policy was influenced by food security politics and self-sufficiency goals, and thus resulted in protectionist policies (Aaltola et al. 2016, p. 28, Granberg 2004, pp. 99–101). Agricultural policies were also based on ensuring that

farmers were part of the economic growth that occurred in the post-war decades with the help of subsidies and minimum prices (Niemi et al. 2013). After having self-sufficiency as a goal in agriculture since the 1950s (Rautavirta 2010), self-sufficiency in grains was reached in the mid-1960s (Jalas 2007, p. 177). Larger harvests were achieved due to increased productivity as well as increased in farmland and demand for grains (Jalas 2007, pp. 177–182). Kettunen (1986) also found that self-sufficiency in animal products was high and above 100% for milk and meat between 1970–1983. Output of animal husbandry was also less prone to fluctuations, whereas there were large fluctuations in annual grain yields which meant that while self-sufficiency in grains was on average above 100% between the 1970s and the early 1980s, in years of bad harvest, self-sufficiency of wheat was as low as 20% (Kettunen 1986).

Among other things, stockpiling of grains was motivated by high yield fluctuations. After the war, the target levels for emergency grain stockpiles increased significantly from the targets in the inter-war period. When the target in the 1920s and the 1930s had fluctuated between 40 000–100 000 tonnes, FSG's stockpiles had already grown to 180 000 tonnes by 1958, and the goal was to have 260 000 tonnes by the mid-1960s. The increased size of the stockpiles was motivated by the decreasing amount of farming households as well as later in the decades more specialised farming which decreased the number of self-sufficient households (Jalas 2007, p. 135). In order to increase the size of stockpiles, more storage place was needed, and a defence point of view was taken into consideration when deciding the placement of the granaries with the threat of the Cold War looming over (Jalas 2007, p. 164). Acquiring grain stockpiles was successful in the first decades after the war and by 1966, stockpiles would have lasted for 10 months and in 1972, wheat reserves corresponded to 14 months of usual consumption. In the early 1980s, FSG together with NBED calculated stockpiles to be at 900 000 tonnes (written into law) based on one year's consumption all grains (including bread, seed, and animal feed). Yet, the law allowed the stockpiles to be smaller in peace times, and the stockpiles never reached the full target levels (Jalas 2007, p. 214). Earlier, the responsibility of maintaining stockpiles was distributed between private and FSG storages. Private mills were able to store grains and circulate their stockpiles from oldest to newest, while always maintaining the same level of stockpiles (Jalas 2007, pp. 215–216). However, in the late 1970s and the early 1980s, FSG expanded its storage space by over 400 000 tonnes and became the largest storer of grains as private storages started decreasing. The private sector was moving towards faster inventory turnover and lean manufacturing methods which meant smaller stockpiles (Jalas 2007, pp. 218–221).

Previous crisis had demonstrated the importance of grain stockpiles and since the FSG had fulfilled its responsibilities during the war, many of the responsibilities that FSG had gained during the war, such as storing seed grain and managing foreign trade of grains, were kept within FSG after the war (Jalas 2007, pp. 168, 139). The quota policy that mandated mills to use a certain ratio of domestic grain in flours was continued to support domestic production of grains, and FSG maintained the responsibility of implementing the policy by determining appropriate quota levels (Jalas 2007, p. 64). In good years, FSG would also buy domestic excess grain to control domestic price levels, and thus the state granaries also played an important role in domestic agricultural policy in normal times (Jalas 2007, p. 214). However, in very good years during the 1980s, even FSG's storage capacity was not sufficient, and the rest would need to be exported with the help of export subsidies (Jalas 2007, pp. 225–226). This made the government realise that it was not economically viable to increase cultivable land and production after poor harvest years because this would create large over-production

when weather conditions would eventually turn for the better (Jalas 2007, p. 250). Over-production in grains in good years was very expensive for the government, which was forced to financially support exporters to sell grains to the world market with lower prices (Laurila 2004, Jalas 2007). For example, in the 1980s, producer prices in Finland were double compared to the average prices in the European Community (Laurila 2004, pp. 349–351) and four times larger than the global market prices (Jalas 2007, p. 254). Without protectionism, plant cultivation was still not competitive on its own due to the relatively small size of farms and less favourable weather conditions (Laurila 2004). Nevertheless, Finland had some of the highest self-sufficiency targets, and the OECD found the targets to be too high (Jalas 2007, p. 254). Especially as the Cold War was ending, it was becoming increasingly difficult to justify the high levels of protectionism for agriculture in Finland (Jalas 2007, p. 305). Thus, over-production in the late 1980s became such a large burden on the government budget that efforts were put into decreasing grain cultivation (Laurila 2004, pp. 352–353). Consequently, security of supply needed to be based increasingly on stockpiles instead (Jalas 2007, p. 250).

First, the focus in improving food security was to ensure the availability of food through the production of food and stockpiles, but later attention was also paid to food supply chains and distribution (Rautavirta 2010). Based on the experiences of the world wars, it was also well known that self-sufficiency in food production would be irrelevant in a crisis if necessary inputs, such as fuel, need to be imported. Thus, with the initiative from the National Board of Agriculture, it was becoming common for farms to have fuel emergency reserves and already in 1966, there were significant amounts of them: 20 000 containers (Seppinen 1996, pp. 60–64). The energy crisis in the 1970s further provoked worry over dependency of imported inputs. NBED estimated in 1972 that Finland was very vulnerable because energy and raw materials were imported in increasing amounts due to increased trade (Jalas 2007, p. 192). Therefore, stockpiles were needed to ensure security of supply in case Finland would be partially or fully unable to import certain goods (Jalas 2007, p. 211, Niemi et al. 2013). Furthermore, the food system was becoming more vulnerable to disruptions because grocery stores were dependent on electricity for cold storage, cash registers, and lighting since the mid-1970s. Hence, stockpiles were not enough anymore, and security of supply needed to be ensured more thoroughly across different sectors (Seppinen 1996, p. 89).

4.2. Food security policies after EU membership

4.2.1. NESA is founded

In the early 1990s, the Rationing Power Act from 1970 was replaced by the Provision for Emergency Act. In 1992, the Act on Safeguarding Security of Supply was passed and the Decree on the National Emergency Supply Agency (NESA: Huoltovarmuuskeskus) was issued. These laws started a new era in Finnish crisis preparedness as it provided the basis for the founding of NESA which became the central agency for organising, planning, and coordinating security of supply in Finland (Seppinen 1996, p. 114). NESA was founded by joining together different institutions for crisis preparedness like the NBED's planning agency, the Emergency Stockpiling Fund, and other stockpiling tasks from the Ministry of Trade (Aaltola et al. 2016, p. 31). NESA's tasks are to improve cooperation between the private and the public sector (Seppinen 1996, p. 121), and its operation is based on reconciling market-based and regulatory preparedness (Aaltola et al. 2016). The food sector was recognised as one of the seven critical sectors for security of supply in NESA. The food department is divided into

primary production, food industry as well as the distribution and trade (Aaltola et al. 2016, NESAs, 2021). The most severe crisis for NESAs is preparing for an external threat that would critically decrease Finland's ability to import goods (Aaltola et al. 2016).

One of the reasons that a complete trade embargo was not seen as a probable scenario anymore was the fact that Finland had joined the EU in 1995 after the end of the Cold War. The only direct consequence of Finland joining the EU for NESAs was that FSG was forced to be dissolved since Finland could not continue its protectionist agricultural policies anymore (Jalas 2007, p. 306). Consequently, FSG's grain stockpiles were sold to NESAs, and all emergency stockpiles are managed by NESAs including fertilisers, seed grain, and pesticides (Uusikylä et al. 2021, Seppinen 1996, p. 124, Kananen 2015, p. 118). After joining the EU, the price of wheat decreased by half overnight (Niemi et al. 2013). One of the main clashes between EU and Finnish agricultural policy targets was that the EU aims to be self-sufficient in food production as a whole EU region, while Finland is trying to be self-sufficient at the country level (Laurila 2004, pp. 355–359). The EU also did not have any organisations dedicated to the security of supply (Niemi et al. 2013). In addition, instead of using target prices, EU used subsidies for farmers to support agricultural production (Niemi et al. 2013). To account for the unfavourable weather conditions, Finland is allowed to give additional subsidies to its farmers in central and northern parts of the country, though Finland had originally wished that the whole country would have been considered as having unfavourable farming conditions, thus eligible for additional subsidies (Laurila 2004, pp. 355–359). EU agricultural policy also presented a new approach to ensure food security by giving subsidies to farmers based on the acreage of the farm and not on production volumes. Hectare based subsidies continue to be an important measure to support food production and the ability to continue food production even in a crisis (Niemi et al. 2013).

4.2.2. New challenges in the 21st century

Finland has continued to invest in food security through sustainable agriculture and environmental conservation by promoting organic farming and sustainable fishing practices as well as aligning with global efforts to address food security and environmental sustainability. Today, Finland enjoys a relatively high level of food security, with a diverse and modern food production system. Finland has a strong emphasis on sustainability, health, and food safety in its food policies. However, challenges such as climate change, global trade dynamics, geopolitics, and evolving dietary preferences continue to shape the country's approach to food security in the 21st century.

The Russian invasion of Ukraine and the COVID-19 pandemic have had significant impacts on the debate on food self-sufficiency in Europe, including Finland along with various countries and regions in the world. The war in Ukraine has disrupted agricultural production in the region, which was often referred to as the "breadbasket of Europe." Ukraine was a major exporter of wheat, corn, and other grains. The war led to uncertainty in global grain markets, as Ukraine's agricultural output was affected, impacting food supplies in many countries. The disruption in food supply chains due to the conflict raised concerns about national security and the dependence on food imports. Many European countries reconsidered their food security strategies and discussed the need to reduce reliance on external suppliers for key food commodities. The war in Ukraine prompted a reassessment of resilience in the food supply chain (Hellegers 2022). Countries, including Finland, began exploring ways to strengthen their

domestic agricultural sectors, investing in infrastructure, and adopting policies to enhance their ability to withstand disruptions.

The COVID-19 pandemic also exposed vulnerabilities in global supply chains, including those related to food (Savary et al. 2020). Lockdowns, restrictions, and border closures disrupted the movement of food products, leading to concerns about food availability. There is increased interest in local and regional food production. The pandemic encouraged many communities to support local and regional food production. The pandemic underscored the importance of food security and the ability to ensure access to essential food items during emergencies. Food security policies and emergency stockpiles are evaluated to ensure resilience in the food supply chains. The pandemic accelerated the adoption of digital technologies in agriculture and food distribution. This shift allowed for more efficient and resilient supply chains.

Both the Russian invasion of Ukraine and the COVID-19 pandemic highlighted the importance of food self-sufficiency and the need to strike a balance between international trade and domestic production. Countries are now more focused on diversifying sources of supply, investing in their agricultural sectors, and enhancing resilience to ensure food security, especially during times of crisis. These events have influenced policy discussions, trade agreements, and investments in agriculture and food infrastructure to minimize the risk of food shortages in the future.

5. Conclusions

The Finnish society's understanding of food security and attitudes towards the state's role in ensuring food security has changed. In the Great Famine of the 1860s, people still did not expect the state to act which is evident from the fact that the famine caused attacks on private property, but there were essentially no attacks on the government. Furthermore, the government and the church believed that people should work to earn their bread even in a crisis such as a famine or during the Depression of the 1930s. As Finland developed quickly after WWII and with the rise of the Nordic welfare state, people believed that the government should always take care of its population's basic needs. Charitable food aid institutions became normalised since they were established in the 1990s. The establishment of food aid institutions has raised concerns on how the contemporary Finnish society is able to provide food security to its most vulnerable population in everyday circumstances.

Due to general economic development and political stability in addition to conscious policy efforts, food security in Finland has improved massively in the post-war period and overall Finland is in a good position to supply food for its population even in the face of a disruption. This can even be reflected in the rankings of 113 countries in the Global Food Security Index, where Finland has been placed within the top 20 countries every year since the ranking started in 2012 (EIU 2022). In 2022, Finland ranked first when food security was measured along four main categories: affordability, availability, quality and safety as well as sustainability and resilience. Through legislation, policy efforts, and the work of NESAs and its predecessors, Finland is constantly improving its crisis preparedness through planning, stockpiling, and running drills as well as cooperation and coordination of crisis preparedness together with the private sector.

Economic development over the years has contributed to various aspects of societal well-being, including food security. Economic growth typically correlates with improvements in income levels, infrastructure, and social welfare, all of which can positively impact a country's ability to ensure food security for its citizens. A key factor that contributed to improved food security in Finland is increased purchasing power. Economic growth often leads to higher incomes for individuals and households. This increased purchasing power allows people to afford a diverse and nutritious diet, thus reducing the risk of food insecurity. In Finland, the food expenditure share has decreased to around 12% of the total household expenditure after 2010. However, back in the 1960s, food accounted for more than 30 percent of household spending in Finland. The food expenditure share reveals how households can cope with large fluctuations in food prices and is used as an indicator to measure households' economic vulnerability during crisis.

Economic development has also expanded investments in the agricultural sector. Modernisation of farming practices, improved infrastructure, and the use of advanced technologies have enhanced the productivity and efficiency of the agricultural sector, contributing to greater food availability. Economic prosperity has enabled Finland to invest in social welfare programs that specifically target food security via subsidies, welfare payments, assistance programs, and initiatives aimed at addressing food inequality. Furthermore, economic well-being and improved quality of life can contribute to better awareness of nutrition and food choices, leading to improved food security at the individual and community levels as well as at the national level.

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