

An investigation of the local food system on Bornholm: a case study on school meal procurement policies

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Date of submission: June 4th 2014

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This master thesis project report aims to investigate the local food system at Bornholm Through mixed methods, including but not limiting to a literature review, actor-mapping and interviews with identified key actors representing farm-to-fork chain the political and agricultural resource capacity will be investigated and analysed. Furthermore, a school meal procurement investigation will be conducted, which main function is to investigate how local food is being integrated in Bornholm

Report size: 45 ECTS

Total number of pages: 128 pages

Number of appendices: 13 (65 pages)

Number of reports printed: 2

Date of submission: June 4th 2014

I. Summary

A growing global population, climate changes, increasing food demands on especially animal produces and increasing greenhouse gas emissions are just some of the reasons attention towards local food systems is increasing – and needed. Climate changes are causing unpredictable crop yields all over the globe affecting food availability, food prices and human health. An adoption to a local food system is suggested to, among others, decrease greenhouse gas emissions, increase food availability, and improve local employment as well as local economy.

Through mixed methods including Situational Analysis, this master thesis project report is investigating the political and agricultural capacity in local food system on Bornholm. Through a case study investigating school meal procurement policies challenges and opportunities will be examined on integrating local food in Bornholm.

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1.0.0 INTRODUCTION

The afterlife of the global food crisis from 2007 is still causing global issues, such as loss of biodiversity, an increase in food prices and therefore higher pressure for farmers to meet the global food demands (Wittman, Desmarais & Wiebe). Combined with a growing, global population, unsustainable food supplies and climate changes are some of the major drivers affecting the food system.

Not only is the world population expected to increase to over 9 billion people by year 2050, but the money spent on food consumption per person is also expected to increase among groups undernourished. The latter is resulting in a nutritional transition including a diet consisting of more energy-rich foods, with meat products, sugar and vegetable oils, implicating two significant issues: 1) Increase in meat consumption affecting the climate by causing an increase in greenhouse emissions, and 2) like groups being subject to undernutrition, some regions are likely in risk suffering from overweight or obesity, linked to non-communicable diseases like diabetes (Godfray et al. 2010, p. 2770). Other challenges regarding food demands include overfishing and increasing urbanization, resulting in increased demands for non-foods like timber – taking up the space of potential food production. Additional environmental and geographical changes may also result, such as increases in sea levels, evaporation and lack of ground water.

It is not known yet which regions will be most affected from the climate changes by getting more or less rain, affecting the crop yields (Godfray et al. 2010, p. 2771). Furthermore, increasing import costs of fossil fuels may affect the food prices upward and combined with geopolitical discourses, such as the increase in wheat prices in Ukraine due to tensions, these are valid arguments that the global food system is fragile (source).

Evidence concerns the food security of especially developing countries, but as the global food system is affecting the entire planet, it is also therefore necessary to emphasize the importance of adapting to more sustainable agricultural production systems in developed countries. An example of this uses locally adapted food varieties, increases biodiversity food variability (UNCTAD 2013, p. 17).

These challenges have inarguable caused a growing focus on the paradigms of food security and food sovereignty, which are both being equally used as terms in the food production contexts of developed and developing countries. Their views are opposing each other, and the paradigm of food security is here understood as, linked to the productivity, having economy as its basic entity. This paradigm's main actors are those in the economic sector; private firms, including farmers, who trade internationally and are regulated by World Trade Organization (WTO), whom are assumed to be motivated by self-interest in the market (Lee 2007, p. 12).

In the Rome Declaration on World Food Security, the definition of food security reads a definition that recognizes food accessibility and availability, regardless of their dietary pattern:

"Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."

(FAO 1996)

The paradigm of food sovereignty believes in self-sufficiency within national or regional borders and is here understood as focusing on the complexities of food production, including interrelations between farmers and nature as well as using organic metaphors as agro-ecological food production, and is linked to the ecological discourse (Lee 2007, p. 12). However, sharing the same agricultural discourse as food security, Richard Lee (2007, p. 13) argues they complement each other.

Food sovereignty is by FAO defined as,

"... a right of countries and peoples to define their own agricultural, pastoral, fishery and food policies which are ecologically, socially, economically and culturally appropriate. Food sovereignty promotes the Right to Food for the entire population, through small and medium-sized production, respecting: the cultures, diversity of peasants, pastoralists, fisherfolk, Indigenous Peoples and their innovation systems, their ways and means of production, distribution and marketing and their management of rural areas and landscapes."

(FAO 2005, p. 108)

The terminologies of food security and sovereignty are open to interpretation. Given the top political context in which they are used, many various perceptions may alter the way these terms are perceived.

Evidence suggests that food sovereignty can promote nutritional security as well. Anthropometric measurements may be more appropriate than food security estimates when targeting policies and framework when improving children's health (Pinstrup-Andersen 2009). Yet, regulations and economy are some of the elements inhibiting self-sufficiency in form of food sovereignty.

Therefore, in order to investigate the potential of local food supply, this author has chosen to investigate the integration of local foods on the Danish island, Bornholm, located in the Baltic Sea with a main focus on childcare centers.

Bornholm has been chosen, as its geographical location makes it, to some extent, an isolated area also its demography is seen to reflect the multicultural development in Denmark. The Island is also faced with some of the most dominant health challenges in Denmark; overweight and obesity combined with an inactive lifestyle. Obesity levels in Bornholm have been documented to be twice those in the rest of Denmark (Buch-Andersen et al. 2013).

The food system in Bornholm has a central part in the '2013 Local Plan for Bornholm', where it influences directly or indirectly 13 out of 69 aims; covering areas from increasing organic conversion in public kitchens to increasing the local procurement and employment to civic involvement (Bornholms Regionskommune 2013a). Hereto it also mentions both reducing CO₂ emissions, increasing local employment and increasing organic food procurement in the public kitchens as goals, among others (Bornholms Regionskommune 2013a). In addition to this, Bornholm municipality and Vækstforum are in collaboration currently applying for financing a 40 % local food procurement project (Bornholms Regionskommune 2013b).

Great effort have already been invested in the SOL Bornholm (Sundhed og Lokalsamfund – Bornholm)¹ project, but now it is time to hand over the mission of the project to the local actors: citizen, politicians and employees. One of SOL Bornholm's aims has been focusing on public health nutrition and increasing vegetable and fruit consumption among children 3-9 years. As a combination of SOL Bornholm's work with food consumption and current unsustainable food systems, this thesis will investigate the integration of local food in the community of Bornholm through the public institutions as a means of improving the sustainability of the island's food system. An investigation of the political and agricultural resource capacity of the community of Bornholm and a food procurement analysis at Paradisbakkeskolen, Nexø in Bornholm, focusing on product place of origin will make the basis of the project. This will further investigate where the action is especially needed towards future food supply in regards of procuring locally.

1.1.0 Aims

1. To review existing evidence on local food systems.
2. To investigate the potential of integrating local food in the food procurement in public institutions at Bornholm.
3. To examine challenges and opportunities when integrating local food in public institutions targeting children aged 3-9 years of age.

¹ SOL Bornholm is a 4-year project aiming to improve health among families with children at Bornholm. This will be further explained in chapter 2.3.0. Presentation of SOL Bornholm.

² SKI-agreements are public procurement agreements for schools and municipalities in Denmark ensuring industrial kitchens a complete food supply from a contracted food

4. To investigate to school meals and compare them with public recommendations targeting children 7-10 years of age.

1.2.0 Research question

What characterizes the local food system in Bornholm and which potentials are seen in integrating local food on Bornholm?

In order to investigate the research question the following working questions have been used:

- Which potentials are seen in integrating local foods in Paradisbakkeskolen at Bornholm?
- How is local food being integrated in the meal program at Paradisbakkeskolen in Nexø?
- How are the fruit and vegetables allocated in terms of country of origin?

1.3.0 Delimitation

The themes in this report cover a broad field ranging from farmer to end-user, including but not limited to: *actor-network theory*, *public health nutrition*, and *food systems*. Due to space and time restraints, the author has chosen to delimit the following sub-themes:

- The agricultural primary sector covers many production methods and due to the findings in this thesis, the main focus will thus be on vegetable and fruit production. The agricultural sector will not undergo further investigations by interviewing farmers, although the researcher is aware they have a role to play in relation to food sovereignty.
- Animal food products are an important part of the agricultural industry on Bornholm, but due to discretion Statistikbanken.dk, which conducts all information regarding production, demography and economy in Denmark, not all agricultural productions, including animal agricultural productions were available.
- The political focus will mainly focus on Bornholm Municipal and the Capital Region, although the researcher is acknowledging the strong voice regarding affects of local policies, and local foods, and from over arching institutions such as the EU Commission and WTO.
- During the data collection it became clear that it was possible only to retrieve data to investigate the food origin prior Mikkel's food provision. Mikkel is purchasing most of his food from the local supermarket, Kvickly in Nexø, from which it has not been possible to retrieve any invoices.
- The researcher is well aware of the broad field this thesis is covering, including food policies, food productions and school meal investigations, however although it is not possible to go fully into detail with all of them, these are still valuable in terms of the integrating aspect.

1.4.0 Philosophy of Science

This thesis investigates the integration of local food in a local community through public institutions mainly targeting children aged 3-9 years on the island of Bornholm by analysing key actors including food producers, political actors and kitchen personnel and their interaction. In addition a food procurement analysis, through an interdisciplinary and holistic approach is expressed (Ziman 1996, p. 70).

The thesis combines both natural and social sciences and is mainly highlighted by critical theory and constructivism. The researcher has made investigations of the strict power chains and will be emphasizing the importance of the key stakeholders engagement in the future integration of local food on Bornholm (Lincoln, Guba 2000, p. 175).

Finally, the researcher is acknowledging that due to certain underlying political frameworks, the outcome of this report will be biased. Thus, it will be of a constructed character within a sphere where the socio-economical power is the final authority (Ziman 1996, p. 73).

2.0.0 Background

This chapter aims to provide the reader with basic knowledge within concepts of local food systems and, further, introduce the reader to background information about Bornholm demography as well as local policies.

2.1.0 Literature review of existing knowledge regarding local food systems in regards to public meal systems in schools and day care centres

This literature review aims to examine existing knowledge regarding local food systems in regards to public meal systems in schools and day care centres based on the research question:

What characterizes the local food system in Bornholm and which potentials are seen in integrating local food system in the community of Bornholm?

2.1.1 Design and method

The literature review will focus firstly on structures of local food systems and secondly it will be limited to concentrate on relations to public institutions especially schools and day care centres.

The literature review will express knowledge within agricultural productions and frameworks. Although the main focus will have a political aspect on local food system in regards to public meal system, the author is well aware that “local food systems” aspect of public health is an important factor within this area.

The key search terms, which have been used in the literature search, are *local food system* and *public institution meal system*. These have been chosen in order to open up for a broad spectrum of search possibilities in three chosen databases. Additionally, the thesaurus in each chosen database have been used, from which additional key words have been applied the search formula in order to get a more descriptive search.

The following databases are chosen based on academic content:

- SCOPUS – abstract and citation database of peer-reviewed literature
- ProQuest – political science
- EBSCO – academic search

In the following figure the search formula consisting of the terms relating to *local food systems* conducted from the thesaurus in the designated search databases are illustrated:

Search words for "local food system"	"Local food system*"
	AND
	Local*
	AND
	Food OR "food produc*" OR meal
	AND
	System* OR foodscape* OR suppl* OR chain* OR produc* OR distribut*

Likewise, the following figure illustrates the search formula consisting of the terms relating to "*public institution meal systems*" conducted from the thesaurus in the designated search databases are illustrated:

Search words for "public institution meal systems"	("Meal system* OR "food system*") AND (Public OR institution* OR school OR kindergarten* OR "day care cent*" OR "public school") AND <hr/> Meal* OR food OR nutrition OR dinner OR "food procur*" OR catering AND <hr/> System*
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The findings from the literature review illustrated a broad view on local food systems including short supply chains, governmental funding and business modelling. In the paragraphs below a definition on local food systems will be presented followed by presentations of present trends and challenges. A view on local food in the perspective of public procurement, food policy will follow and finally a potential on local food systems will finish this literature review.

2.1.2 Understanding the concepts of local foods and re-localized foods

The term local food has no definitive, legal agreement, and has by Tovey (2009, p. 21) been reported as a contested area, caused by opponent discourses reflected/deriving from by especially the field of capitalism. In her review on local foods in rural development, based on a study of Irish farmers, she describes how the agri-business is being dominated by the global food system, which makes it difficult for local farmers to produce locally and therefore compete. The farmers may find it challenging in distributing their produce locally, especially for small-scale farmers who are being challenged by the mass-producing farmers; and in addition the local citizens may have become too unfamiliar with using local food produce in their cooking and consumption (Tovey 2009, p. 24).

Local foods differ from global food, as it can be described as *food from somewhere* because the production processes are embedded in social, cultural and territorial context. In contrast, global food can be described as *food from nowhere*, as these production processes can be described as placeless, de-territorial and centred on the commodification of foods (Fonte 2010, p. 1). Additionally, local foods can be differentiated into two categories: Local food as a product of a specific territory with additional specific production process, which is targeting consumers outside its

territory and local food as a way of re-introducing, re-localizing, the local food to the specific area, hence targeting the local consumers (Fonte 2010, Tovey 2009).

2.1.3 Defining local food systems

As local food is recognised as a territorialized food product, Dahlberg states them as a part of a regenerative food system, which “*seek to understand how to reinstate and regenerate over the long term not only local cropping systems and farm families, but also rural communities, landscapes and, regions*” (Dahlberg 2005, p. 3). A regenerative food system resembles a sustainable food system, which focuses on three pillars: social, economy and environment, which can be argued to be generalizing and not necessarily include localness (Lang, Barling & Caraher 2009, p. 301). Dahlberg argues that a thorough understanding of a regenerative food system requires a broader perspective than solely production and consumption and although acknowledging the importance of economy he is mainly focusing on three guiding principles, when describing the regenerative food system: ecology, ethics and equity (DeLind 2011, p. 274). Aiming to enable researchers, scientists and the like to see the food system from many angles these dimensions refer to restoration of natural resources, recognition of kinship towards all life forms and finally a fair distribution of resources, voice and power. However, despite Dahlberg focuses, not specifically on *local* food systems, but on *regenerative* food systems, DeLind claims that it has several similarities to today’s notion of a local food system, which acknowledges the integration of the processes within the food chain as well as being place-based (DeLind 2011, p. 274)

According to Lehtinen there is no single definition on local food systems, yet she addresses that they are usually restricted to geographical areas, distances and personal relations within the supply chain (Lehtinen 2012, p. 1056). Author Lehtinen points out that local food systems frequently evolve within social, environmental and economic contexts. These contexts often relate to the traditional, cultural consumption patterns belonging to local or regional areas, which additionally often have short food-chain distances also known as “food miles”, which have become a popular term in relation to decreasing greenhouse gas emissions (Lehtinen 2012, p. 1057). Additionally, Lehtinen emphasizes the term has been criticised in a sustainable perspective, as the term does not specify which kind of transportation or which kind of fuel is being used (Lehtinen 2012, p. 1057)

Therefore, in this thesis a local food system is defined as:

A system, which is restricted by either local or regional areas and where civic and non-civic actors are participating in the food chain’s production processes from farm-to-fork, that be, but not limited to, either as producer, consumer or chef. Bornholm is an example on a local food system, as it is limited by waters and has both a civic and non-civic participation in the food chain.

2.1.4 Trends in local food systems targeting public institutions

Present trends in local food systems regarding public institutions include short supply chains, such as Food System Project (FSP), developed by the non-profit organization Center for Ecoliteracy, targeting schools in Berkeley, United States (U.S.), which have successfully been applied (Stone 2002, p. 38). Although its major success is in establishing edible schoolyards, which are also used for other purposes such as education of the pupils. FSP have also had success by including parents, thus civic actors, in the political decision-making regarding topics as recycling and menus as well as re-inventing food services, such as changing the meal to include more locally produced foods and less nutrient-dense foods (Stone 2002, p. 43). However, these trends differentiate from the definition of the local food system used in this review, as they are targeting public institutions and not private consumers. Yet, they resemble the features of a local food system, as the trends are including both civic and non-civic participation as well as including the food in the local community. Other similar successful trends in the U.S. include the widely applied governmental supported farm-to-school programs, which also stimulate the civic participation (Bloom, Hinrichs 2011, Allen, Guthman 2006, Vogt, Kaiser 2008).

In Europe, out-of-home food consumption is a still increasing phenomenon and many European schools have already adopted public food services (Løes, Nölting 2011). A comparative study of organic procurement in Sweden, Finland, Denmark, Germany and Norway showed that all countries had supporting programs and/or policies directly or indirectly supporting local food procurement, whereas especially Finland has a strong preference for local foods (Løes, Nölting 2011, p. 100).

As public authorities are major consumers in Europe, the EU Commission has established a voluntary instrument Green Public Procurement (GPP), where the Member States has contributed to investigate how procurement can be done more environmentally friendly with same or less money than the conventional purchasing. Lessons learned are published, and the Member States can determine to what extent they wish to implement the tools. Several independent case studies have investigated transition in their food procurements to include more organic foods, whereas the outcome from a case study in Scotland showed that 30% of the food was organic and at least 70% of the food was locally sourced. Additionally, the study showed that for each £1 spend through this approach, £6 was returned to the local community through employment, health, social and environmental benefits (European Commission 2012).

Other similar studies from Malmö, Sweden and Badalona, Spain, also investigating transitional procurement to include more organic, and showed an indirect benefit through an increase in seasonal foods (European Commission 2014, GPP Example 4 and 11).

In the Nordic countries, a working group consisting of the Nordic Council of Ministers and multiple national collaborative partners has launched a programme *New Nordic Diet* in 2004, which aimed to strengthen the children's awareness towards Nordic food culture, encouraging local food in institutions.

In Denmark, the focus on the New Nordic Diet has accelerated attention towards implementing local foods, in this context targeting children, including national projects, as: OPUS's working package 1 School meal intervention, which partly have investigated children's dietary intake, and Copenhagen House of Foods, which is establishing courses focusing on Danish food ingredients (OPUS, Københavns Madhus). Therefore present trends regarding local food systems have been facilitated, and will likely continue to be implemented through policy efforts. The practice for implementing local food system in the public procurement may be both cheaper, facilitate education and include civic participation.

2.1.5 Present challenges

The recent food crisis has caused great concern within environmental, economic and climate challenges. These have resulted in changes in the food systems in regards to meeting new requirements, like investing in mass-production to secure enough, cheap food for the growing population, and the reason existing views on food system changes are recommended to be expanded (Hinrichs 2014, p. 143) as DeLind (2011) also suggests. One way of changing these views is to combine the existing, longstanding interdisciplinary interest in food and agriculture to enlarge our perspective and practice centred transition to sustainability, as suggested by Hinrichs (2014). The practiced centred transition towards sustainability requires changes and involves a multi-level perspective approach and a sociological approach, both including but not limiting to local civic and non-civic participation. The multi-level perspective approach examines sustainable innovative pathways in a vertical field of socio-technologies and socio-materials; and the sociologic approach embraces potential changes in everyday lives and routines (Hinrichs 2014, p. 150). Transitions toward sustainability include sustainable food practice perspective, which shows possibilities to cross-connect the vertical and horizontal fields, as sustainability is characterized to carry them both in an interdisciplinary approach. This could be expressed by supporting small-scale farmers, thus increasing biodiversity, food availability and local employment. However, Hinrichs acknowledges that the field of sustainable transition is diverse and depends partly of the actors involved, environment and discourses (Hinrichs 2014, p. 153). The new scholarship reflects actions from the practiced centred transition to sustainability and includes a greater focus on the food practices within the field of sustainability, which for now have been recorded as being less favoured compared to "hard" clean technology solution, as wind turbines and the like (Hinrichs 2014, p. 147). As food systems are influencing and influenced by a multitude of different actors from various areas of the food chain, so is the transition to sustainability. Key actors in this context are both food

producers and political actors; such as policymakers in Denmark establishing transition policies, as well as local government supporting projects. These can be argued to benefit both purchaser and producer (Hinrichs 2014, p. 145).

A way of addressing the increasing needs and demands for local food is to use Stevenson and Pirog's value chain model, originating from the business and supply chain field of study. It enters each process in the supply chain, and is therefore a useful tool when restructuring food systems (Bloom, Hinrichs 2011, p. 14). Bloom and Hinrichs refer to the value chain as "the business involved in each stage of the supply chain from field to table." (Bloom, Hinrichs 2011, p. 14). However, despite their research short supply chain between local food producers and private consumers, who are not subject to public regulations, as are the public kitchens in Bornholm, the concept may still be applicable. The key elements that characterize the value chain model, in regards to public institutions, are listed as following (Bloom, Hinrichs 2011, p. 14):

- ***Differentiation and value-added:*** Adding value to a product by differentiating it through strategies as processing or labelling are strategies, which have shown to affect consumer demands as well as price premium, hence benefitting the economic viability for the producers.
- ***Committing to the welfare of all participants:*** Here, the economic value generated from the differentiation should be fairly redistributed among its participants, as a matter of ensuring a social well-being.
- ***Creating partnerships:*** Market regulations, e.g. through demand and supply, and diverging needs of producers and consumers, tend to create tensions in the supply chain. Establishing partnerships between distributor and consumers may encourage problem solving, e.g. when it come to purchasing the cheapest foodstuff and selling local produce in stock.
- ***The role of trust and governance:*** Trust between organizations are important to balance the power in the food system, which tends to dis-advantage mid-size producers. Although the power may not be equal, this is still an important feature to strengthen the competition.

With the aftermath of the recent food crisis combined with the growing trends for local school food programs and food councils as well as civic and political support in both North America and Europe, it is interesting to examine if the trends could be applied to the community of Bornholm to support local food procurement.

2.1.6 Localization through public procurement

Finland has a long-standing tradition for providing free school meals. A case study of public catering in Finland finds that short supply chains are not sustainable per se, but do have long-term advantages (Lehtinen 2012).

Unlike the U.S. the member states of the European Union (EU) face regulatory challenges upon public procurement where on one side the criteria of free trade and competitiveness are dominant and on the other side the ideals of social and environmental sustainability (Lehtinen 2012, p. 1054).

In Finland the public food caterers are being identified as one of the main markets for local food producers due to their long-standing tradition for providing free school meals. However, because of EU procurement rules prohibiting specifications of “local” in the public procurement contracts, it undoubtedly inhibits the usage of local food in the public kitchens (Lehtinen 2012, p. 1054). To support local supply the Finnish law on public procurement has been enlarged, so public kitchens are now eligible to procure from suppliers without a contract as long as the acquisitions are under the national threshold of 15.000 € a year. Hereto, the law allows the purchaser to demand fulfilments of specific criteria based on environmental issues in favour of shortening the food supply chain and, additionally, demand requirements of packaging (Lehtinen 2012, p. 1059)

Despite the fact that local food producers may be more sustainable, Lehtinen (2012, p. 1067) states that the financial aspect has a significant influence on the competitions towards non-local food producers, who may sell cheaper food products, which are also being emphasized in a study conducted by Bloom and Hinrichs (2011).

Local food is also facing increasing support in Denmark, whereas a current PhD candidate is examining the integration of re-localization of sustainable food-chains in regards to local procurement (Ruge 2012).

In Northern America a *system approach* has been used in several communities by gathering a multitude of actors in order to confront the complex challenges following the food crisis. One of these outcomes is the establishment of several food councils. One of these communities is Ontario, Canada, who has attained a deep knowledge upon facing the needs created by the food crisis and the growing population (Anonymous2004). A cooperation has been established between the University of Toronto, who aims for more local procured food among the caterers, and the third party certifying organization Local Flavour Plus, who is having strong, trustworthy relations to sustainable farmers and are therefore a strong key actor in increasing local foods (Friedmann 2007). Additionally, the Ontario Government is supporting the amount of local food distributed public institutions through funding from Greenbelt Fund through the Broader Public Sector Investment Fund: Promoting Ontario Food (Anonymous2011b). The government has also established a 2020-vision where farm programs are supporting farms in order to sustain Ontario’s food system and institutions are encouraged to procure more regional food (Anonymous2011a).

2.1.7 Food policies and local planning

A Canadian case study of Waterloo Region has calculated that changing 10% of the existing farming production may benefit both the existing need in the growing population as well as financially in the agricultural sector. The methodology is applicable in other regions and may additionally be beneficial for policy planning (Desjardins, Macrae & Schumilas 2010). Many Canadians are not fulfilling the national dietary recommendations for vegetable and fruit intake, subsequently Desjardin, MacRae and Schumilas, (2010, p. 130) suggest that a change in agricultural production could support the intake due to increased accessibility and availability of more vegetables and fruit. In Europe, evidence from Finland shows that assisting farmers financially in the conversion period through agricultural intervention may lower the risk of initial low food sales (Desjardins, Macrae & Schumilas 2010, p. 138).

Both Bloom and Hinrichs (2011, p. 18) and Vogt and Kaiser (2008, p. 242), agree that local producers are struggling more than their competitors from bigger agri-productions, why in some coincidences a higher price seems fair, although it may strengthen the social inequity in regards to food. Yet, Bloom and Hinrichs (2011, p. 20) claim there is evidence for success for creating partnerships between actors in the supply chain; producer, distributor, purchaser, where the distributor is the middleman. Therefore, a purchaser from a school district in North America with a limited budget has had success, as he communicated with the distributor on when to buy a specific food item and how much to get the most affordable price.

Despite the overall benefits, such as local food systems supporting the local economies, Bloom and Hinrichs (2011) argue that it may be too expensive for larger buyers with a limited budget, therefore local distribution to schools may be inhibited due to finances.

In regards to procuring locally, an American study by Vogt and Kaiser (2008) on *regional institutional marketing* suggested that especially schools can benefit from this arrangement in relation to address childhood obesity; because it includes nutritious, wholesome foods as well as farm-to-institution is a comprehensive approach, which in regards to primary obesity prevention means it is focusing on institutional behavioural change rather than individual behavioural change.

Vogt and Kaiser (2008, p. 246) argue further that larger institutions, such as public schools, are needed as buyers of small-scale farms, however it does not address the food availability or accessibility of the designated needs or possibilities of the particular farm or institution. The study reveals that despite the food governance in the U.S. is different from the EU, they do yet appear to be facing the same obstacles: A contradictory policy, where regulations are prohibiting specifications of regional food produce during the bidding process although the customers are encouraged to purchase locally (Vogt, Kaiser 2008, p. 246).

Finally, Vogt and Kaiser find that institutional support is required in order to successfully accomplish the practice of farm-to-institution.

2.1.8 Potential of local food systems

A study conducted by Bellows and Hamm (2001, p. 281) argues that a local system cannot stand alone, as it unquestionably is a part of the global system. The authors emphasizes that a careful analysis must be completed in order to evaluate if a local food system can sustain itself, including sustainable development and local autonomy in regards to political capability to negotiate its food needs with local and non-local actors.

Despite facing multiple global challenges, where especially international regulations and finances are two strong influences, the role of local food system is found to have an overall positive impact on the societal, environmental and financial parameters within the local community. Here, food sovereignty could have a strong support in an isolated area as Bornholm as it is addressing the entire food system. From farmer to consumer within the geographical location, it is likely that the paradigm of food security may have a stronger stand to ensure a sufficient, nutritious food supply among the citizen, as the food produced and supply is insufficient, because of low food variability and the public procurement agreement (SKI-aftaler²). Therefore, the potential of local food system in Bornholm will be addressed in this thesis.

2.2.0 Agricultural production on Bornholm

Bornholm is 588,30 km² (Danmarks Statistik b) whereas 344,15 km² (34.415 acres) (Danmarks Statistik a) is cultivated agricultural area. From these are 0,65 km² (65 acres) used for growing vegetables and fruit for human consumption (See appendix XX "landbrugstal"). In the table below are the latest numbers for cultivated areas of fruits and vegetables on Bornholm, extracted from Statistikbanken.dk.

Regional area, Bornholm, 2013	Farms	Acres
Field-grown vegetables (not peas for canning)	11	21
Peas for canning	1	0
Flower bulbs and field-grown flowers	0	0
Apples	4	4
Pears	0	0
Strawberries	1	0
Sour cherries	0	0

² SKI-agreements are public procurement agreements for schools and municipalities in Denmark ensuring industrial kitchens a complete food supply from a contracted food supplier (SKI n.d.).

Sweet cherries	0	0
Cherries in total	0	0
Black currant	2	2
Other species of fruits and berries	6	7
Plant nursery area	0	0
Table potatoes	6	15
Potatoes	6	15
In total	36	64

Table 1. Extract from Statistikbanken.dk AFG07. Cultivated area after area, time, crops and unite (Danmarks Statistik a).

The table shows that field-grown vegetables and both table potatoes and potatoes³ are taking up notably most of the cultivated area.

In the table below is the production efficiency from year 2012 shown.

Regional area, Bornholm, 2012			
	Cultivated area, acres	Harvested area, acres	Production, tons
Cauliflower	0,1	0	0,1
Broccoli	0,1	0	0
White cabbage and spring cabbage	0,1	0,1	0,6
Red cabbage	0	0	0,2
Other cabbage	0,1	0,1	0,4
Leeks	0	0	0,1
Other lettuce, field-grown	0	0	0
Carrots	1,4	1,4	22,9
Onions	0,4	0,4	1,6
Celeriac	0	0	0,1
Jerusalem artichoke	0	0	0,1
Peas for consumption	0,3	0,3	0,7
Sweet corn	0,1	0	0
Apples	2,7
Pears	0,2
Strawberries	0,1	0,1	0,3
In total	5,6	2,4	27,1

Table 2. Extract from Statistikbanken.dk: Production of fruit and vegetables after area, time, crop and unite. (Danmarks Statistik d)

³ Table potatoes are potatoes used for human consumption, whereas potatoes are potatoes used for other purposes than human consumption, such as re-growth.

Table XX shows that the crop production on Bornholm is characterized by low fruit and vegetable production and low crop yields. In addition, Bornholm has too suffered from the economical crisis, which has reduced the overall employment by 10 % and has further experienced a decrease in both agricultural and food industry (Teknologisk Institut, CRT 2013, p. 9). In Table XX a comparison between Bornholm and Denmark show that the population density is higher in Bornholm than the rest of Denmark, both in terms of area in total and cultivated area.

Comparison on population density between Bornholm and Denmark		
	Denmark	Bornholm
Area in total, 2014	42921,6	588,3
Population	5627235	40215
Population density	0,007627476	0,01462887
Cultivated area	2625915	33916
Population	5627235	40215
Population density	0,46664392	0,843366903

Table 3. Extracts from Statistikbanken.dk: FOLK1, ARE207 and AFG07 (Danmarks Statistik a, Danmarks Statistik b, Danmarks Statistik c).

2.3.0 Presentation of SOL-Bornholm

This report have been executed in collaboration with the participatory action project “Health and Local community – Bornholm” (SOL-Bornholm), which started in the autumn of 2011 and is expected to end by July 2015 (SOL Bornholm).

The project period for SOL-Bornholm is four years and aims to develop healthy communities on Bornholm by focusing on the eating, physical exercise activity and shopping habits among the primary target group: families with children aged 3-9 years.

The overall objective of the project, which ran from September 2012 to April 2014, was to promote the health of the primary target group in respectively Allinge, Hasle and Nexø in Bornholm by influencing their eating, physical activity and shopping habits. The working areas in SOL-Bornholm covered a range of specific health promoting activities and were implemented in the designated communities; where, the families together with multiple stakeholders like institutions had a significant role in both execution and development of these. The activities in the working areas emerged from the following settings: supermarkets the media and childcare centres. Here, the most successful activities will be transferred and tested in the control group in Odsherred municipality from August 2014 to July 2015.

In this report the settings in the childcare centres, represented by Paradisbakkeskolen and Lille Myr, both located in Nexø, will be used as cases, when investigating the integration of local foods in Bornholm. This will be done by investigating the political an

agricultural resources capacity in relation to integrating local food, through the Actor Network-Theory, literature review, interview analysis as well as an analysis of the food product place of origin in the procurement of Paradisbakkeskolen.

However, it must be emphasized that the author's perception of a local community or community includes the entire Bornholm municipality and not just the cases of Paradisbakkeskolen or Lille Myr, unless otherwise specified.

2.4.0 Presentation of cases

As the thesis aims to investigate the integration of local food in the community of Bornholm two institutions have been selected to represent the target group of children 3-9 years of age. However, to meet the requirements for the school food investigations, the target group of children 7-10 years are closest to SOL Bornholm's target group and as they are most likely to eat at the school compared to the elder pupils.

The municipalities in Denmark govern their respective public institutions, including schools and day-care centres in the SOL project, yet each institution administrates their food policy internally through the Boards and Managements. The Municipalities in 2007 were handed over the responsibility of the health, the national dietary recommendations, available at altomkost.dk, are added to the overall considerations towards the criteria for the investigation (The Danish Veterinary and Food Agency n.d.). To this, The Danish Veterinary and Food Agency's *Rejseholdet*⁴ has experienced that the municipality has only very little knowledge of the food policies, as these have become decentralized.

2.4.1 Presentation of Lille Myr

Lille Myr is located in Nexø and has the capacity for 44 children between ½ to 6 years of age (Naturbørnehaven Lille Myr n.d.). They have had the meal plan for 4 years now and their supplier is BC Catering (Appendix 6 p. 1, l. 8).

The case of Lille Myr will primarily focus on local food procurement and investigate the institution's food policy, Jane's, their chef, perspective on how she is accomplishing her work in the kitchen. This will be done in order to investigate their challenges and opportunities

2.4.2 Presentation of Paradisbakkeskolen

Paradisbakkeskolen is a public school and is divided into two units located in respectively Svaneke (0th – 6th grade) and Nexø (0th – 9th grade) and has a total of 700-750 pupils (Bornholms Regionskommune n.d.). The division in Nexø will represent the case in this report.

⁴ Summary from meeting on school meal programs Paradisbakkeskolen primo 2014.

The school does not have kitchen facilities to provide its pupils with food; they are being supplied with ready-to-eat food from an external food provider. Previously DeVika and Ejendomsservice have, at different periods, been used as food providers. Primo 2014 Paradisbakkeskolen have made a contract with Mikkel, Nexø Hallen, located right next to the school, to be their new food provider.

The case of Paradisbakkeskolen will be used to investigate the integration of local food and on their food provider's (Mikkel, Nexø Hallen) perspective on the political development in relation to food procurement and management in relation to the use of local food.

Furthermore, the case of Paradisbakkeskolen will be used to make a procurement analysis and school meal analysis investigating the measurement of use of local food during the food provision from respectively DeVika and Mikkel, Nexø Hallen.

2.4.3 Food policy at Paradisbakkeskolen

The food policy at Paradisbakkeskolen is based on a local implementation settled by the municipality of Bornholm, directed by the above local plan, as well as a general, common objective. The School Board is the decision-taker of the policy. They have decided that the implementation is agreed on the individual divisions as well as that local variations are acceptable as long as they are pointing towards the common objective (Paradisbakkeskolen 2013).

The common objective for the three individual food policies in each division at Paradisbakkeskolen is described as following:

- Paradisbakkeskolen has a clear position on the importance of the diet for the child's learning and development in general, and also ensures that this position is communicated to and discussed among students, teachers, parents and partners.
- The schools physical, temporal and social environment invites the students to eat their food and that they experience the meal as a natural, valuable gathering.
- The school leads the way to make agreements on what the children may bring to school/SFO⁵ for personal use and for distribution.
- The school ensures a high level of quality of the food and beverage being sold.
- The school has a visible food policy.
- The food policy is specified in the individual division as local policies.

Table 4. The overall food policy for Paradisbakkeskolen (Paradisbakkeskolen 2011, p. 23).

Paradisbakkeskolen has one mutual, overall food policy, but as the school is divided into three divisions, one individual, local food policy is available in each division. As this

⁵ SFO (Skole Fritids Ordning) is a public institution, which offers children accommodation after school, usually until late afternoon.

report is solely focusing on the division in Nexø their implementation of the above presented common food policy will be presented below.

- Candy, chips and sodas do not belong in the school hours.
- The food committee urge for fruit schemes in all classes.
- We do not urge for cake arrangements.
- We urge that cafeterias do not sell unhealthy things at school sport events.
- Health is urged at school camps/excursions/cottage tours.
- Health is urged at birthdays.

Table 5. The local food policy for division Nexø, Skole Øst (Paradisbakkeskolen 2011, p. 24).

The food committee has on most bullet points used the term “urge”. This has been used to optimize the participation of teachers and parents. The food committee evaluates the food policy yearly where the student council will be involved (Paradisbakkeskolen 2011, p. 24).

3.0.0 Theoretical framework

As this project aims to investigate the integration of local food this research takes its departure primarily in the fields of social science, as it will describe key actors and their interaction as well as provide the reader with a general present view of the Bornholm society regarding local foods. Additionally, natural science will be presented during the analysis of the food data from Paradisbakkeskolen from the project of SOL Bornholm as well as through the investigation of the demography of Bornholm.

3.0.1 Theoretical approach: Grounded Theory

This thesis will take its theoretical departure in Grounded Theory, which belongs to the field of social science and aims to explore, develop and verify theory on behalf of empirical data collection (Glaser, Strauss 2009, p. 1). Grounded Theory acknowledges that the theory is a process where empirical data and theory are under constant development (Boolsen 2010).

Through the method of Grounded Theory the data and theory will be reviewed, as the collected empirical data will dictate the theory and, in return, the theory will dictate the data. This process is therefore undergoing a continuing development, which will continue until the researcher has nothing more to add to the theory, as data is producing new theory, which further is requesting further data collection. Hence, the accumulation of the knowledge conducted in this report will create the theory (Boolsen 2010, p. 207).

3.1.0 Theorizing the investigation of resource capacity

In order to investigate the integration of local foods mixed methods have been applied to support the findings and broaden the perspective. This includes an analysis of fruit

and vegetables purchased by Paradisbakkeskolen’s two independent food providers to investigate the availability and accessibility of local food produce. Additionally two meals have been investigated to examine how much local food they contain and to see if the meals fulfil recommendations set by the government.

To support the resource investigation, Adele Clarke’s Situational Analysis has been used to assist in the complex analysis of the intertwined world of foods. The specific methods used were interviews, actor-mapping and literature searches (Clarke 2003, p. 553).

To illustrate, identify and finally analyse the seamless, complex webs of discourses, actors and actants within the local foodscapes in Bornholm situational maps have been used (Clarke 2003, p. 554; table 6). This has been done in two phases, where the researcher at first did the situational mapping based on own knowledge. In the second phase, the existing mapping was expanded with the interviewed key actors’ responses identified during the first mappings from the conducted interviews. However, doing actor-mapping is a continuous process and is partly biased on the researchers foci and use of methods, but it is valuable in the sense of creating an overview of the network within local foods. Finally, interpreting the interactions among the identified entities in the networks, will construct the situational analysis (Clarke 2003, p. 554).

Situational maps

Human actors, non-human actants and discourses in with relation to the research of local foodscapes in Bornholm are being displayed to provoke analyses among them. This method captives three steps:

1. Messy maps; all thinkable and non-thinkable actors, actants and discourses in relation the research are being displayed in an unstructured map.
2. Ordered maps; the identified actors, actants and discourses are being ordered into their designated categories.
3. Relational maps; any given relation among the found actors, actants and discourses are being illustrated.

Table 6. Descriptions of the three maps used in actor-mapping.

The first step in situational mapping is the creation of an unstructured map, *messy map*, including all thinkable actors, actants and discourses, here relating to local foods of Bornholm. The next step is to order the identified entities in categories of *actors*, *actants* and *discourses*, which is done by color-coding, but as some entities may belong to two or all categories they can serve several purposes. The final map has the purpose of illustrating the relations among the identified entities. Depending on the researcher’s focus, the map can be illustrated in many ways, such as through a triangle illustrating they are interconnected. Also, the researcher may choose only selected entities in the map, depending on the entities purposes.

3.2.0 Actor Network Theory

To analyse the relations and interactions among the identified actors, actants and discourses identified in the in the *Situational Maps* the socio-philosophical approach Actor Network Theory (ANT) was used, as it brings human and material factors together in the same analytical perspective by recognising them as equal entities (Alcadipani and Hassard, 2010, p. 419). Referring to the relation among the identified entities it will not solely be of their individual connection within their constituted network, but also include investigation of translations, here especially regarding translation of identified discourses within the network of local foods in Bornholm.

Despite the choice of using ANT as an analytical tool to analyse the network of foods in Bornholm, the researcher of this thesis is aware of some of the main critiques highlighted by Alcadipani (2010, p. 420):

- Limitation of analysis of social structures
- Neglecting issues of political bias and morality
- Failing to conceptualize adequately the distinction between actors and actants
- Difficulties in examining how to track entities in the network analysis

Other critiques of the ANT approach, states that it is important to emphasize that interpretation of the maps are highly affected by the researchers own constituted, constructed world view, why another researcher may find other relations, actors, actants, discourses or the like. This author is aware of this critic and approached the data as objectively as possible however; it is likely bias through interpretation of results exists.

3.3.0 Semi-structured interview

A conversation is a fundamental way of human interaction and through questioning and answering people are getting a view into each other's worlds (Kvale, Brinkmann 2009, p. 15). In a similar, however more systematic way, the research interview aims to construct knowledge based on a common interest derived from the interaction between the interviewer and the respondent.

The method of semi-structured interviews is chosen to enable the researcher to gain a deeper understanding of chosen key actors perspectives on pre-selected themes related to the field of local food systems.

The interview analysis will be conducted in such a way that each predefined theme will be examined and each key actor's perspectives will be compared and additionally presented through citations. However, as the interviews and transcriptions are performed in Danish the cultural and written expression may change during the English translation (Marcus 1995, p. 101). To this, the analysis is mostly dependent on the

transcription, as this is the most precise recall of the moments of the conversation and atmosphere during the interview.

4.0.0 Methods

This paragraph aims to elaborate on how the theory was applied in the data collection through methods.

The methods described in this paragraph is representing primary data, collected by the researcher for specific research purposes on investigating integration of local food in Bornholm through schools and day care centres. These methods used for this purposes includes literature review, actor-mapping, semi-structured interviews and school meal evaluation. Additional secondary data have been used, whereas literature studies have been applied represented by primary, secondary and tertiary sources, which purpose is to support the primary data collection (University of Maryland 2014).

4.0.1 Research ethics

Interviews and food data were conducted for research purpose. Additional existing data from SOL may be applied and will follow prescriptions for ethics such as confidentiality, so that non-informants can be identified in the project, as long as it is clarified (re-write to create stronger opinion).

4.1.0 Methods of the resource capacity of Bornholm

To answer the research question different methods will be applied in order to increase the validity as well as the reliability.

To answer the working question "*Which potentials are seen in integrating local foods in Paradisbakkeskolen at Bornholm?*" an investigation of political and agricultural resource capacity on Bornholm has been done based on Grounded Theory. Different methods, such as secondary analysis, stakeholder analysis and interview analysis, have been utilized to support findings.

The framework of the thesis is illustrated below.

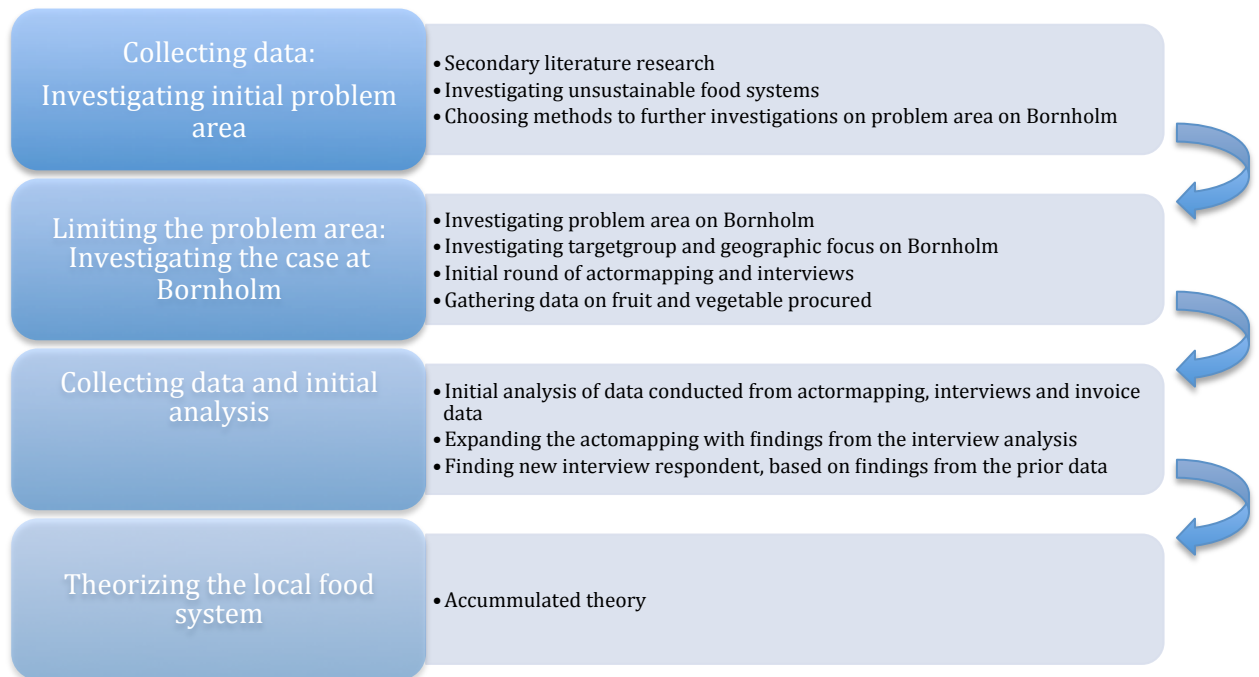


Figure 1. This figure shows how Grounded Theory was applied

The following data collection methods, which will support the resource investigation, are further explained in the following paragraphs,

- Actor-mapping through situational analysis
- Qualitative semi-structured interviews
- Procurement analysis from Paradisbakkeskolen

4.1.1 Mapping the local food system of Bornholm

The investigation of the resource capacity was initiated by conducting actor-mapping.

The first step in the mapping, *messy map* (Appendix 8) was conducted in such a way that the researcher wrote down all thinkable entities on yellow post-its. After this, the researcher conducted the literature review (see chapter 2.1.0: Literature review) and the interviews, which findings opened up for more entities and was thus added to the map on purple post-its.

The findings from the *messy map* were applied to the proceeding step in the actor-mapping, the *ordered map*, which distributed actors, actants and discourses. However, it should be emphasised that since actors, actants and discourses are viewed as equal entities this map is merely a snapshot of constantly moving entities, which may potentially serve multiple roles.

In order to illustrate the relations in the final map among identified entities, the researcher constructed a relational triangle characterized by three major groups of

identified entities (public institutions, food producers and politics) interacting with each other, as illustrated below in figure 2. The relational map represents parts of the local food system in Bornholm and is demonstrating how key actors, actants and discourses interrelate and interferes with the local foods on Bornholm. The connections are identified mainly via the interviews.

As the maps, as previously stated, are a continuously, on-going process the relations are being divided into three categories to illustrate each main actor-group's perspective.

The relational map has a triangular design to illustrate how the three identified key areas of respectively childcare institutions, food producers and politics are relating with each other. The closer an entity is towards one of the areas the more related is the designated entity towards the specific area. Yet, because of the designed triangle relational map the entity does also relate and interact to the other areas directly or indirectly.



Figure 2, Relational map illustrating how entities are all connected to public institutions, politics and food producers.

As previously stated the mapping characterizes a complex, seamless web. Therefore, the relational map is being limited to include identified key actors, actants and discourses, which the researcher identifies as the ones with most influence on the integration of local food in Bornholm (table 7)

On the map it can be seen that especially the relations around the *public institutions* show a more entity-dense space with interacting entities as oppose to *politics* and *food producers*. The discourses tend to have more influence on the areas in between. An example is the SKI agreements, which are highly affecting food accessibility and availability towards public institutional kitchens, which also means that food demands are being indirectly affected, thus affected the local farmers and food producers' food produce, it is also being affected by EU regulations.

Key actors	Key actants	Key discourses
Public institutions Day care centre boards Day care centre managements Kitchen personnel Children Politicians The Danish AgriFish Agency Regional Municipality of Bornholm (BRK) LAG BornholmsLandbrug Food producers Farmers Food suppliers Væksthus Vækst Forum	Public procurement policies Geography Distribution Food availability Food accessibility Local food Price Business development plan Financial supports Cluster development projects Soil	Food demands Local food perception SKI agreements Political interests for Danish agriculture Local sustainability Dialogue between actors Food diversity Sustainability

Table 7. Listed are the identified entities with highest influence on the integration of local foods in Bornholm based on the interview respondents' statements.

A great diversity of actors, actants and discourses have been identified, however it is important to acknowledge that this is not the final picture of existing entities. The main findings in the mappings are shown in table 7. The actors and actants tend to be more related to one or two areas, whereas the interactions of the discourses tend to affect the entire chain in a more complex manner than the actors and actants.

To get a deeper understanding of the identified key actors' interest in local foods, two political entities, one food producer and two chefs representing the public institutions targeting children aged 3-9 years of age have been interviewed.

4.1.2 Semi-structured qualitative interviews of key actors

This paragraph aims to explain the chosen method of the semi-structured interviews as well as the selected interview respondents. Semi-structured interviews have been chosen to better understand the perceptions and opinions of key actors in regards to local foods. Therefore, the working questions, "*Which potentials are seen in integrating local foods in Paradisbakkeskolen at Bornholm?*" and "*How is local food being integrated in the meal program at Paradisbakkeskolen in Nexø?*" will be answered.

To get a broad, cross-sectional view of the local food system on Bornholm, from farm to kitchen staff, five key actors were selected representing respectively the food production, political field and kitchen staff (Table 8; Appendices 3 to 7). They have been selected on behalf of the actor-mapping.

Presentation of the interview respondents

Hans Hansen and Jess Hoffmeyer Nielsen from Lehnsgaard, food producers

(Hans and Jess, Lehnsgaard)

Hans Hansen has been the owner of Lehnsgaard, located in Aakirkeby on Bornholm, since 2003. Together with Jess Hoffmeyer Nielsen they are today producing high quality rapeseed oil and mustard. In addition to running the production, they are both active players in the local food stage as they are both members of the Local Action Group Bornholm.

By representing the food production industry this interview will be contributing to increase a holistic view on the local food system on Bornholm.

Hans Jørgen Jensen from Local Action Group, Bornholm, political field

(Hans Jørgen, LAG Bornholm)

Hans Jørgen Jensen is the head secretary of the Local Action Group Bornholm (LAG). LAG is an association supported by the Ministry of Food and EU, which provides the group with 4,5 mill. DKK a year to support rural development and fisheries. The association aims to drive rural development and fisheries in collaboration with the local community and is open for everyone who wants to make a difference and accelerate the business, create new jobs and good living condition in the area.

By interviewing Hans Jørgen, LAG, a political perspective will be contributing the interview analysis.

Elisabeth Falk from Bornholms Landbrug

(Elisabeth, BL)

Elisabeth Falk is a rural area consultant from the organisation Bornholms Landbrug located in Aakirkeby, Bornholm. The organisation's aims tend to adhere to the interests of Bornholm farmers' including: financial, professional, social and cultural interests. Hereto, the organisation is a member of the Danish Agriculture and Food Council, which represents the overall Danish farming and food industry.

Elisabeth Falk's interview, will contribute by representing the political interest seen from the farmers' counselling interests.

Jane Poulsen from Lille Myr

Jane Poulsen is the chef at the private kindergarten Lille Myr located in Nexø, Bornholm. Lille Myr is rated to have 44 children aged ½-6 years. Despite being a private institution they are obliged to follow the public procurement agreements. Therefore they are mainly purchasing their foodstuff from BC Catering, but in a minor quantity they are also procuring from supermarkets.

Being a private institution, the interview with Jane Poulsen will contribute to get a deeper understanding of the local food's integration in the community of Bornholm through perspectives other than public institutions.

Mikkel from Nexø Hallen (Paradisbakkeskolen's present food provider)

Mikkel is providing meals for Paradisbakkeskolen starting primo 2014.

Besides working as a chef he is also integrated in Nexø community, sitting in the board of the local trading association. He is very enthusiastic when supporting the local community of Nexø, where he both lives and works. This means he purchases most of his groceries to Nexø Hallen from the local supermarket Kvickly in Nexø. During the interview it is revealed he is mostly focused on animal production when talking local, which is influenced by his procurement priorities (Kvickly over BC Catering). Despite existing public procurement policies, Mikkel is capable of procuring as he does, because he is running a private enterprise.

This interview will contribute to get a deeper understanding of challenges and opportunities when integrating local food in a public institution.

Table. 8. Presentation of interview respondents. (Bornholms Landbrug n.d., Lehnsgaard n.d., Bornholm.biz 2010, Naturbørnehaven Lille Myr n.d.).

Each interview was conducted individually with one or two interviewers and one respondent. In interviews with two interviewers the researcher had the role of guiding the interview and the other interviewer had the role of observing and adding follow-up questions in the end of the interview. Each interview setting was chosen based on the respective interview respondents needs in order to create a comfortable atmosphere in

which the interview respondent would feel safe to speak open and freely (Vallgård, Koch 2008, p. 72)

The semi-structured interviews aimed to:

- Provide a more clear understanding of the local food system's structures and position in the local community of Bornholm
- Examine challenges and opportunities within the local food system in Bornholm by observing the interaction and network between identified key actors.
- Provide a deeper understanding on how the local food system in Bornholm has been developing the past years.
- Identify potential and/or undiscovered actors in the local food system in Bornholm

Table 9. Interview aims.

Each interview guide (appendix 1-2) followed the same structure, which contained both thematic dimensions, to produce knowledge, and dynamic dimensions, to stimulate the natural conversation flow. These were used in order to open up topics related to local food systems in Bornholm. As the respondents covered different working fields, each interview guide was adjusted in terms of use of academic phrases and non-academic phrases, but followed the same theme.

Prior to the interviews, the interviewer briefed the interview respondents through mail with a short presentation of interview formalities, such as introducing the aim of the interview, permission to use a recorder as well as allowing the interview respondent to present any inquiries they may have. This procedure aimed at enabling the respondents some time to reflect upon the forthcoming interview without being overly pre-prepared, which could potentially prevent a natural flow in the semi-structured conversation, which the semi-structured interview aims to frame (Kvale, Brinkmann 2009, p. 149).

During each interview the interviewer aimed to listen actively, keeping an open mind and reflecting to the interview responses, as the first few minutes are evident for creating good contact with the interview respondent, thus creating a calm and safe atmosphere (Kvale, Brinkmann 2009, p. 148). In the end of each interview the interviewer debriefed the interview respondent by asking for clarifying questions and feedback from the interviewer and interview respondent, as well as elaborating on further details on the aim of the interview (Kvale, Brinkmann 2009, 149).

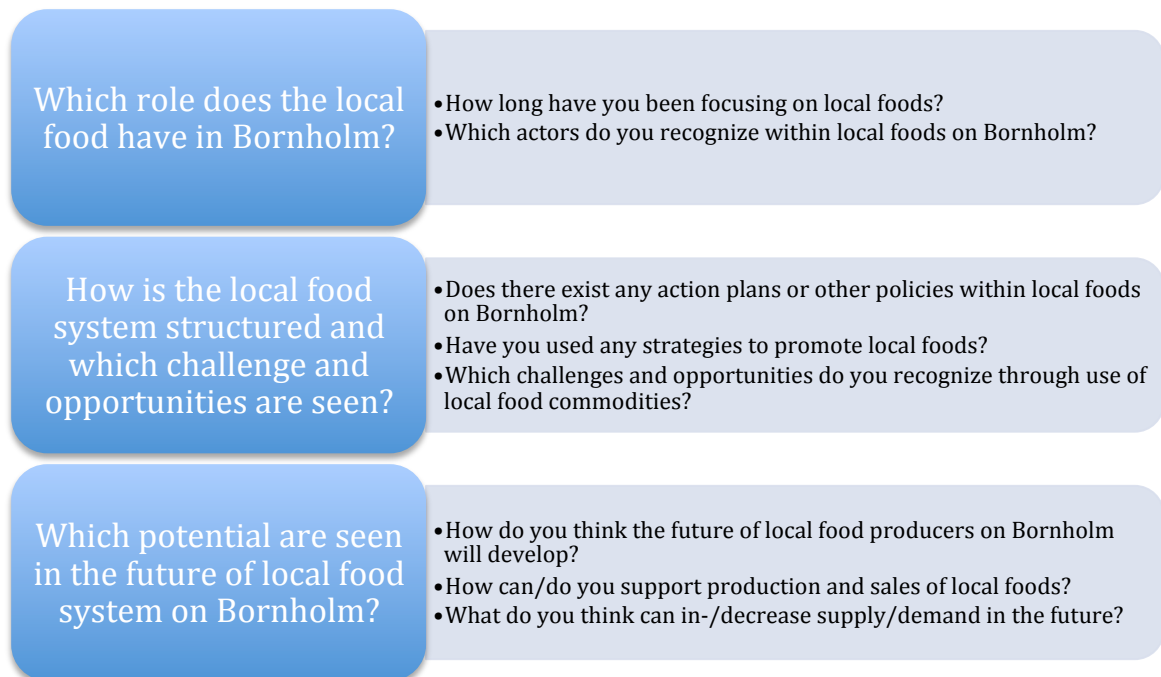


Figure 1. Extract from the translating research questions to interview questions (Kvale, Brinkmann 2009, p. 153)

All interviews were recorded on a mobile phone and afterwards transcribed (Appendix 3 to 7).

4.2.0 School food investigating at Paradisbakkeskolen

The quantitative investigation was conducted by investigating fruits and vegetables' country of origin as well as comparing two meals retrospectively, served at Paradisbakkeskolen.

The target group for this investigation is school children aged 7-10 years, and it was split up in two phases. Firstly, an evaluation on Paradisbakkeskolen's procurement was conducted by measuring the fruit and vegetables' product place of origin in terms of national and international status.

The second part of the investigation took its departure in a predetermined meal composition from the salad bar, prior to Mikkel's food provision, as well as a predetermined meal from Mikkel's food provision. Here the food content will be compared to present public school food recommendations provided by an external provider established by The Danish Veterinary and Food Agency (The Danish Veterinary and Food Agency n.d.).

Although newer requirements has recently been released by by the Nordic Council of Minister, the author has chosen to use the present national, public nutritional requirements for school meals provided by an external food provider (table 10).

Public recommendations	
Recommendations	Aim
Minimum 1/3 of the weight in each meal consists of vegetables and/or fruit (rinsed and uncooked)	Vary the supply of fruit and vegetables (colour, exotic/Danish colours and kinds)
Energy distribution on each meal must meet the recommendations: Carbohydrates and fibres: 50-60 E% Protein: 10-20 E% Fat: 25-35 E%, whereas saturated fat must not exceed 10 E%	One meal = minimum fruit/vegetables + bread/potatoes/rice/pasta + fish/meat/cheese The child must be able to be satiated of the meal
The energy requirements for the target group, children 7-10 years of age: 1800-2100 kJ/lunch	Make the entire meal in to portion sizes. It is acceptable if the child also drinks light drinks during the meal.

Table 10. This table shows the public recommendations on school meals provided by an external meal provider. The energy requirements are based on an average school child. Therefore, some children may experience a need for more energy, such as children with a high activity level in the upper level of the scale. It is important that these children have possibility to buy a healthy supplement to the meal in the form of lean dairy products, fruit, vegetables or bread with wholegrain (The Danish Veterinary and Food Agency n.d.).

The food commodities in the meal will be evaluated on their country of origin, as in the first part of the analysis, in which it is possible.

The aim of the food analysis is firstly to investigate the food product place of origin throughout the season during DeVika's and Ejendomsservice. Secondly a school meal analysis has been conducted aiming to investigate if the designated meals fulfil the national, public school meal recommendations. To this, the online meal analysis program MADLOG.dk has been applied. However, as the chosen meal analysis program cannot show sub-categories of carbohydrates and fat sources, this is causing a bias on accuracy on recommendation.

Hereto, the following working question has been applied.

- I. How is local food being integrated in the meal program at Paradisbakkeskolen in Nexø?

The data has been collected by first contacting Paradisbakkeskolen, which is one of the partners in the SOL project and get their permission to do so. Afterwards, Bent Egberg Mikkelsen, MENU AAU-CPH, have contacted Paradisbakkeskolen as well as the food suppliers and food providers, who are or have been supplying meals to Paradisbakkeskolen, to retrieve data on:

- Fruit and vegetables seasonal variety and their country of origin from respectively BC Catering and Cater Engros.
- Menu-plan on the salad bar served at Paradisbakkeskolen prior Mikkel's food provision and during Mikkel's food provision.

Previously, Paradisbakkeskolen was provided with meals from DeVika and Ejendomsservice, which have been contracted for ½ year each, and who have been using BC Catering and Catering Engros as food suppliers (see table 11).

Time period	First half year of 2012	Second half year of 2012	First half year of 2013	Second half year of 2013
Food provider (meals)	DeVika	Ejendomsservice	Devika	Ejendomsservice
Food suppliers (delivery)	BC Catering	Catering Engros	BC Catering	BC Catering

Table 11. Food suppliers and providers during 2012 and 2013.

Below is shown a flow chart with food supply and provision is shown below and its end-user Paradisbakkeskolen.

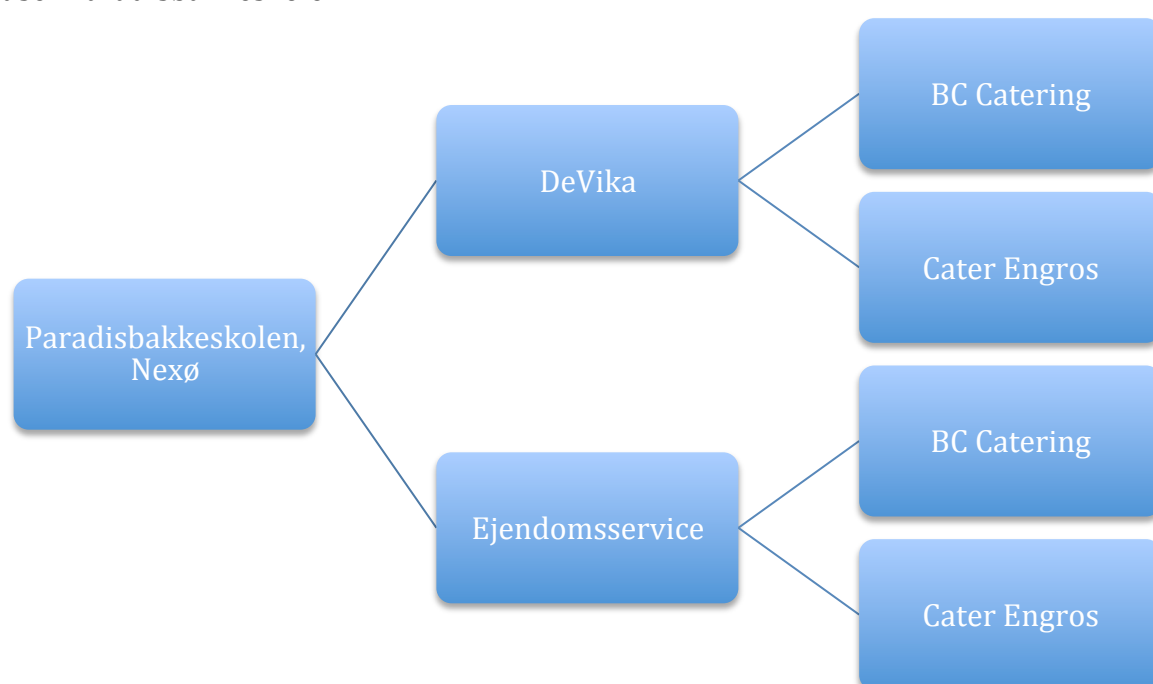


Figure 2. A flow chart illustrating the flow in the food supply. Note, DeVika and Ejendomsservice are having the same food suppliers, but that they have been active on different time sequences (see table 11). Additionally, both DeVika and Ejendomsservice are governed by the Municipality, thus being affected by the SKI agreements.

5.0.0 Investigating the resource capacity

In these sections data will be presented and analysed.

5.1.0 Interview analysis

This analysis presents the key findings from the five conducted qualitative interviews. All of the interviews were conducted following a similar interview guide, adjusted to each interview respondent.

The aim of the interview was to gain a deeper insight into the development of local foods on Bornholm as well as to investigate, which influence local foods have on the local community of Bornholm. As the interview form was semi-structured the following themes were pre-identified

- Local food
- Politics
- Actors
- Strategies

Supplementary the pre-identified themes a theme concerning budget, ranging from project investment to school food budget, was identified.

In the following paragraphs key findings from each theme are being presented. The key-findings from the four interviews conducted face to face are presented from transcriptions and observed body language, whereas the fifth telephone interview is solely presented from the transcription (Kvale, Brinkmann 2009, p. 214).

5.1.1. Local food

There is a general understanding among the interview respondents that the term *local food* from Bornholm is a product, which is produced on Bornholm by a farmer and may in addition be further processed as it occurs for instance at Lehnsgaard. Elisabeth Falk Agricultural Counsellor from Bornholm Agriculture explains it by:

“So either it may be foods like raw materials that simply has its origin on Bornholm. And/or it is foods, which in each case are processed on Bornholm (...)” (Appendix 4, p. 1, l. 3)

In addition to her definition on local foods, she states that the term has a blurry boundary:

“It is a little blurry in the boundaries, but I... There must at least be an anchor either

because of the raw materials have actually been made on Bornholm or the processing that is a part of the growth, or the growth, is located on Bornholm.” (Appendix 4, p. 1, l. 8)

She continues by using the Bornholm rapeseed oil producer Lehnsgaard as an example of a producer of local foods (Appendix 4, p. 1, l. 12).

Hans, Lehnsgaard defines local food as,

“(…) When produced all the way from the soil or in the stables where it simply is being produced from scratch. That’s what I’d call local foods.” (Appendix 3, p. 2, l. 82)

However, Hans Jørgen, LAG Bornholm, who also is cooperating with Regional Culinary Heritage Bornholm, starts by defining local food much broader from a business perspective:

“In regards to Regional Culinary Heritage, we did chose a very broad approach which regarded everyone who worked or made some food product relating to… There was a little more out of the ordinary that went out to the local community or local area you might say.” (Appendix 5, p. 1, l. 18)

He continues by defining his own personal definition, as

“But my own inner perception of what it is, then first of all, if we’re talking about products, it is products, which are being produced on the place it is (…) the geographical location as it relates to. So Bornholm foods are products made on Bornholm.” (Appendix 5, p. 1, l. 24)

When asked to give an example on local foods he mentions herring:

“But just to take a product that we all associate with Bornholm: The smoked herring. So, local in its cultural tradition, but in commodity correlation unfortunately is no longer local, but in the moment it is or if it could be again, well then it would of course just be even more local, so to speak…” (Appendix 5, p. 2, l. 61)

Mikkel, Nexø Hallen, mentions three food groups when asked about defining local foods:

“It depends in relation to what. Of course, we use our oil from Lehnsgaard in the cooking (…) When we’re thinking of chickens and poultry, then we, of course, also thinks of our Bornholmerhane” (Appendix 7, p. 1, l. 4)

Finally, Jane, Lille Myr, defines local foods as,

"(...) Something that is produced on Bornholm. Manufactured over here. Rapeseed oil and such." (Appendix 6, p. 1, l. 39)

The interview respondents' definitions on local food indicate that they agree that local food is either locally produced or locally processed raw materials on Bornholm. This shows there is a tendency to argue that the general attitude towards local foods among the interviewed key actors is the significance of a regional, hence geographical, location.

5.1.2. Staging the political arena on local food in Bornholm

When interviewing the respondents on their perspectives on politics and local food it was mainly the producers from Lehnsgaard, Elisabeth, BL, and Hans Jørgen, LAG Bornholm, who had a say, as both Mikkel's, Nexø Hallen, and Jane's, Lille Myr, position as chefs are more practical than technical.

Both Hans and Jess, Lehnsgaard, are actively involved in the political arena by being involved in several networks and both having a Board position in LAG Bornholm. On the question on visibility on local foods in local action plans or other politics, Hans responds that,

"... [Local foods] are being mentioned, but I think we, in the food industry, have not been good enough to follow up on it (...) It is probably because we haven't stood enough together as an industry." (Appendix 3, p. 6, l. 321)

Where to he elaborates that a change is happening as several local, presently divided, food clusters are about to be united in order to stand stronger:

"(...) a food cluster that unites everyone, one might say. Clusters are the word, which should be used today. But to get a bit more assembly, so you talk a little, so you cover them all both small and big.. Restaurants and all, so it will be united." (Appendix 3, p. 7, 337)

To this, Hans Jørgen, LAG Bornholm, elaborates in his interview that the food cluster project are being financed by Vækstforum, which aims to gather all the food networks, just like Lehnsgaard referred to. In addition to this, LAG Bornholm is currently working to establish Denmark's first Regional Food Culture House with location on Melstedgård, an old, traditional farm, which currently functions as a museum. This aims to create a bigger synergy (Appendix 5, p. 6, l. 266).

"And this Food Culture House can then just pick and create great synergy in the field between all these different initiatives. Physically, there must be a house where you could meet and create (...) product development" (Appendix 5, p. 6, l. 266)

Hans Jørgen, LAG Bornholm, mentions that two new projects within food policy are being established at this moment:

“One of them is called ecological restructuring of the public institutions. Here the municipal council agreed that they before year 2015 would focus on having 60 % organic food in the public kitchens on Bornholm. Then they have, in extension of this (...) temporarily set a goal that says that 40% of the food must be local food.” (Appendix 5, p. 5, l. 247)

Elisabeth, BL, supports this citation, by stating that,

“The Municipal of Bornholm are doing something about organic and local” (Appendix 4, p. 3, l. 120)

These projects are established as a corporation and coordination between KBH House of Foods, which is in charge of the organic food project, and the Bornholm municipality, which is in charge of the local food project. The local food project application is still being processed (Bornholms Regionskommune 2013b).

Hans Jørgen, LAG Bornholm, continues on elaborating more specifically on the food politics in the public institutions,

“Public institutions have the challenge called SKI and procurement agreements. And EU and public procurement regulations.” (Appendix 5, p. 5, l. 244)

Both Hans and Jess, Lehnsgaard, agree on the challenges regarding SKI-agreements and Jess explains that SKI agreements are made to support food security for food procurements, which mean they are supporting big producers and not minor producers:

“(...) [when] you make [contracts] in relation to security of supply, because then it is [with] a producer which is big. Whereas, if you look locally, a small producer can easily manage the supply to the municipality and meet the demand. And maybe also get it cheaper, because the load is not going to [be transported to] the other side of the water and so on.” (Appendix 3, p. 7, l. 377)

Jess, Lehnsgaard, states this creates a skew and does not believe the island can support these upcoming changes nor does he believe it is supporting local sustainability.

“And it's a skewing I would say. Now they are out and make a new organic approach (...), but they do not have the copyright or materials or resources on the island to supply the municipality.” (Appendix 3, p. 7, l. 355)

These SKI-agreements may influence the food policy of Lille Myr, because when asked about the use of local food in the food policy of Lille Myr, Jane says “*[The food policy] says the food is, where it is possible, organic and / or Danish.*” (Appendix 6, p. 2, l. 88). She continues by saying that the policy does not express how much local food she actually use, thus referring that she is using more than what is written.

However, Jane Lille Myr, recognizes no action plans nor does she mention any other governmental or municipal related policies, which may or may not have a negative influence on the food policy in Lille Myr. Yet, she does mention the lack of local food accessibility, which indirectly may be influenced by the SKI agreements.

“I’d like the meat to be more local and easier to get hold of (...) fruit and vegetables – if it could be made more accessible.” (Appendix 6, p. 4, l. 189)

Mikkel, Nexø Hallen, on the other hand, does not state directly any political influences, but suggests the pupils as the ones with the greatest influence on using local foods. Additional, he mentions the financial limitations, when it comes to providing school meals based on local foods:

“For instance, if we got this school food on the Finance Bill, and we have already a high focus on health, also politically, and there are made calculations that if we get [health] into the public schools then you could perhaps have a higher focus on [local foods] (...) So if we got more children in the school meal program then the quantity would of course be bigger, but the bigger quantity is, the more we could focus on local foods, because the price will chance.” (Appendix 7 p. 2, l. 58)

Elisabeth, BL, believes that both top-down and bottom-up are occurring, but are most determined that top-down as having the most powerful influence due to the economical aspect. The top-down approach is here seen in relation to municipal politics. When asked about influence on the political decisions in public institutions she states, that,

“I don’t think [local plans] will get executed if there is no top-down, because there is some budget...” (Appendix 4, p. 3, l. 135)

And continues on bottom-up approach,

“[Producers tell us that] you can make small agreements. An institution can have [some sort of] (...) kitchen table-agreement to get local potatoes.” (Appendix 4, p. 3, l. 138)

This shows that the political attention towards food exists in both the private sector and the public sector. The respondents, first and foremost representing the private sector,

suggest the attention toward local food should be increased. To raise the locals voice in the political stage, Vækstforum are about to join the many existing food clusters under one united food cluster. This future food cluster may additionally be a way to increase political synergies between the private sector and the public sector, which Hans Jørgen, LAG Bornholm, in the interview addresses as being existing. However, despite the potential of the future united food cluster, it is yet important to be aware that, according to Elisabeth, the top-down decisions are the strongest. The food cluster may therefore be identified as a way of strengthens the private voice, but possible not a way of equalize the public/private power-balance.

Hereto, the structures of the SKI-agreements are being mentioned as a challenge towards improving the procurement on local foods, although Mikkel, Nexø Hallen nor Jane, Lille Myr, mention this. This may be biased due to Mikkel, Nexø Hallen, is supplying from Kvikly, which may have a bigger selection in local foods than BC Catering, and Jane, Lille Myr, is employed in a private institution, where the latter is including extraordinary agreements regarding parent-supported food, thus possibly not making her notice this challenge.

5.1.3 Identifying actors in regards to local food on Bornholm

All respondents have a general mutual agreement when it comes to actors regarding local foods in Bornholm that basically everyone is seen as actors. Hereto, Hans Jørgen, LAG Bornholm, Hans and Jess, Lehnsgaard and Elisabeth, BL, all mentioned directly or indirectly the Municipal as an actor with great influence.

Elisabeth, BL, states, *"I think the Municipality is a big actor"* (Appendix 4, p. 3, l. 152), to which Hans, Lehnsgaard, elaborates:

"(...) a player like the Regional Municipality, which is a major factor when we talk about politics regarding procurement of local produce and here they've been miserable (...) They've made SKI-agreements on behalf of their products and I think it is only 20% they may purchase locally – the rest must be purchased on the other side of the water. And that means you do not support local sustainability in relation to all senior citizens on Bornholm, for instance, who eat Bornholm commodities, because they're simply too expensive" (Appendix 3, Lehn, p. 7, l. 348)

Hans Jørgen, LAG Bornholm, adds to this by stating that,

"In relation to public institutions that I mentioned earlier, there's these SKI agreements, which are a part of this public procurement / procurement system which you are subject to when you put the procurement in the contract. And there is something in relation to that it is limited in what institutions may use, that is purchasing outside these contracts." (Appendix 5, LAG, p. 8, l. 383)

Hans, Lehnsgaard, identified further distributors and chefs,

"[...] There is everything, which is relating to distribution of products, there are all our chefs, who helps put focus on it [...] You can take everything from 'Sol over Gudhjem'⁶, Mikkel Marshal [...]" (Appendix 3, p. 8, l 441)

Hereto, he elaborated that not only are the prominent actors, who he call *spearheads* that people react on important, but it is just as important to include the chefs preparing food for the many, i.e. chefs at public institutions as well as food suppliers (Appendix 3, p. 8, l. 445).

"But we need the spearheads to which people responds to. And then we need the undergrowth and the food suppliers (...) We need those who make large amounts of food too" (Appendix 3, p. 8, 445)

To actors, Hans, Lehnsgaard, also mentioned food fractions on Bornholm, which purpose is to support each designated food interest. He said they are divided, which is making it difficult to create a united voice, but that they are in the process of establishing a united voice (Appendix 3, p. 6, l. 337).

"(...) a food cluster that unites everyone, one might call it. Clusters are the words to use today. But to get a little more assembly, so you talk a little, so you cover them all, both small and big.. Restaurants and all of them (...)" (Appendix 3, p. 7, l. 337)

Hans Jørgen, LAG Bornholm, answered to the questions *"Which actors within local foods on Bornholm do you see?"* that the more actors they discover the more synergy they experience.

"Basically everyone. Because the more we work with [local food] the more we discover that the thing with the synergy can be used in almost any context (...) Understood as in any context you meet, you need food." (Appendix 5, p. 6, l. 296)

On actors with most positive influence on local foods he mentions producers and restaurant owners and continues. On actors with negative influence, he mentions transportation as a challenge due to distances and the water, which increases the expense, and continues on elaborating on Danish Crown, which he believes is trying to

⁶ Literally "Sun Over Gudhjem", which is both a local dish from Bornholm as well as the name of a chef competition on Bornholm.

outcompete them. Danish Crown owns the concept Bornholmergrisen⁷. (Appendix 5, p. 7, l. 339)

To this, Jane, Lille Myr, is procuring all her food supplies from primarily BC Catering. They are good in meeting her demands, such as bringing her organic, local milk, which she among others has specifically asked for (Appendix 6, p. 3, l. 104). However, the rather low food availability in Bornholm also implies that she is dependent on food supplies from over seas. This she argues she is not very happy for, but nonetheless accepts it, as she is not able to do much about it herself (Appendix 6, p. 4, l. 176).

Due to time restraints, she is mainly procuring the food through BC Catering, however sometimes she does find time to shop for groceries in the local supermarket (Appendix 6, p. 3, l. 128). Parents are an important actor, when it comes to saving money on the food budget and, especially, when it concerns education of the children, as local food and the use of local food, including both raw materials and processed foods, are parts of the children's food literacy:

"Well, the possibilities are that I can vary my menu and that I can tell the children that this they have in their own garden and now in our raised beds, where they can harvest the yields themselves and so on. These are the possibilities there are that they can help and that means a lot." (Appendix 6, p. 4, l. 145)

When the children know it is their food, Jane, Lille Myr, says they find it much more interesting. In the institution they have two raised beds in which they grow food (Appendix 6, p. 1, l. 30) and a decomposer (Appendix 6, p. 6, l. 254), which show the food is an important part of the children's everyday lives, and is both being supported by employees and the parents.

Mikkel, Nexø Hallen, does not mention any in particular actors, but states that the financial politics have the top priority when it comes to use local food, and health, but even though health is being included in the policies, the most important is that the children like the food and, potentially, spread the message (Appendix 7 p. 3, l. 95).

5.1.4 Actors' influence on local foods

As Hans Jørgen, LAG Bornholm Elisabeth, BL, says she sees basically everyone as actors regarding local food on Bornholm (Appendix 4, p. 6, l. 150). As the biggest actors in this particular area she mentions the public sector as well as the agricultural sector, thus also them being the actors with most influence. When being asked about an actor with a

⁷ The concept pig, Bornholmergrisen, is a product that is being marketed to have a high quality based on having more space, being bigger and being slaughtered on Bornholm (Danish Crown A/S n.d.).

negative influence, she mentions price ratio in relation to consumer choices as well as procurement policies. This also relates to what the other respondents replied. Especially Hans, Lehnsgaard, who referred to organic regulations outside Denmark versus produce of Danish local foods:

“But how big is the safety on organic regulations in South America; are they as constricted as in Denmark? For instance. So you might get a product that does not live up to anything. They could get the product produced in Denmark a cross the same rules, then it might be better to look in the community.” (Appendix 3, p 8, l. 402)

Hereto, Hans Jørgen, LAG Bornholm, pointed out restaurant owners and producers as the ones having the most positive influence. In addition, he replied that the ones with potentially the most negative influence would be those who used *storytelling* incorrect, thus putting Bornholm in a bad light

“(...) if you make storytelling that does not last (...) you would could get some bad stories, which are not that exciting, so to speak” (Appendix 5, p. 7, 311)

The interview respondents’ views on actors with negative and positive influence are shown in the table below.

Interview respondents views on actors with positive influence towards local foods	Interview respondents views on actors with negative influence towards local foods
Han and Jess, Lehnsgaard Distribution chain (increasing accessibility and availability)	Hans and Jess, Lehnsgaard Food journalists
Jane, Lille Myr Jane Poulsen (herself) in collaboration with the board, management and parents (<i>in regards to their food policy</i>)	Jane, Lille Myr <i>None mentioned</i>
Elisabeth, BL Public sector Agricultural sector	Elisabeth, BL Price ratio Legislation on procurement
Hans Jørgen, LAG Bornholm Restaurant owners working with local food in collaboration Producers	Hans Jørgen, LAG Bornholm Those who are dishonest when using storytelling for branding purpose Transportation = costs Location (island) Bulk ware – hereto Danish Crown, who are a strong competitor towards minor agricultural

	productions.
Mikkel, Nexø Hallen Children	Mikkel, Nexø Hallen Politicians (Finance Bill)

Table 13. Overview on negative and positive influences identified among the interview respondents.

Despite the fact that the interviews included three different main actors, *producers, politically active persons and two childcare centre chefs*, covering a broad range of the chain of the local foodscape on Bornholm, the identified actors, non-actants and discourses in between are interestingly closely alike. This illustrates how close the relationship in the local community of Bornholm is.

As identified in the theme of politics, especially politicians, local producers and budget have a high voice. The politicians, both local and international, have a strong voice, when it comes to dividing the food supplies – local, national or international. Yet, the local producers must also take responsibility in order to help maintain or increase the food availability and accessibility such as increasing the biodiversity and be politically active. Therefore, the existence of local foods in the community of Bornholm must be supported from the entire local foodscape chain, i.e. from farm to fork.

5.1.5 Local food strategies on Bornholm – do they exist?

Jane's workplace at the kindergarten Lille Myr and how she manages her job may be classified as utopia, as she is experiencing great support from her co-workers, the management, the parents and the children as well.

They have a food policy, which prefers organic and local food in the highest amount, which is accessible and available. The budget is the greatest challenge, however, parents often bring homegrown food, which Jane's uses in the cooking. During the summer she is fully provided with fruits, like apple and pears, from the parents (Appendix 6, p. 1, l. 13). To the question how often she get foodstuff delivered from the parents she replies,

"It happens really often. I asked for courgette and I got a lot of courgettes (...) Sometimes they just come and say "Hey, we got some beets" and some have a little cabbage (...) They are really good at bringing it" (Appendix 6, p. 1, l. 22)

Jane, Lille Myr, does not feel conflicted by local plans, which can be related to the fact that she is so supported well by the parents. This positive support from the parents could be interesting to investigate further in a future research. Especially if the 40 % local food objective will be realized, but also in a minor scale, such as in a potential fruit and vegetable scheme solution.

Mikkel, Nexø Hallen, stated that he is providing food for different target groups with different need and financial requirements. As he has made a made procurement

agreement with Kvickly, he gets quantity discounts, which affects the local food usages in the school food provision.

" (...) we use it for instance if we have companies, especially in relation to meat, then we can make a chicken salad or pita bread with chicken or the like afterwards." (Appendix 7, p. 1, l. 20)

At Lehnsgaard, Hans and Jess have not always been using any strategies themselves, as they perceive themselves as a small-scale business, which, in their perception, do not need any strict strategies. Jess elaborates,

"I would say the last 12 months, seen from Lehnsgaard's view, we have begun to make a strategy in relation to that we need new products, we need to take advantage of the mustard we are making in the house and the oil we are making in the house for a new series, which ends up as opposed to creating synergy. And then we also [gather] new local raw materials to create new products." (Appendix 3, p. 11, l. 580)

Yet, during the past 12 months they have started to develop a strategy in relation to develop new oils and mustards as well as increase more synergy. The latter, especially by collaborating with chefs from Bornholm by creating new products with Lehnsgaard's products and local food products in focus. Hereto, they also express the importance of using chefs from Bornholm when branding their products, as they are helping in communicating their products to potential customers (Appendix 3, p. 12, l. 632). Another way they are branding their products is by providing "Food Schools" with oil even though the amount of oil used is limited (Appendix 3, p. 12, l. 617).

They are feeling challenged by policies from the municipality, which are further regulated by EU. As mentioned previously, one of these challenges is the recent act towards increasing organic food in the public kitchens to 60%, which seems unlikely to be met locally in regards availability and accessibility.

Elisabeth, BL, states that,

"Bornholm Agriculture has no written strategies, but I think if you ask our board, they will .. They see a purpose in promoting local food compared to keep some growth and growth of Bornholm and promote local employment." (Appendix 4, p. 4, l. 204)

And continues on mentioning the different food fractions, such LAG and *Vækstforum*.

Hans Jørgen, LAG Bornholm, explains that each region in Denmark has its own *Vækstforum*, where the objective is to improve the business regionally. Because Bornholm has unique resources, they have therefore gotten their own *Vækstforum*.

“And in this Vækstforum, you have also sanctioned this food strategy once. And you support various food projects from Vækstforum. And it also has its (...) business development strategy, where foods, and that is enlightenment of food is an integral part of the business strategy.” (Appendix 5, p. 5, l. 210)

This illustrates that each respondent's individual view on strategies is partly representing their positions and views in, which additionally are influenced by the political stage.

5.1.6 Barriers in integrating local food on Bornholm

Different perspectives on barriers on the integration of local food were discovered during the interview.

On promoting local foods to local buyers Hans Jørgen, LAG Bornholm identified first and foremost dialogue as partly a barrier and a potential,

“But dialogue is a difficult thing, and dialogue is a huge barrier, but then at the same time it is also where you have the greatest potential (...) I think we have a really good dialogue between, all of the networks (...)” (Appendix 5, p. 10, l. 510)

Where to he mentions a lack in the dialogue with retailers, who he states are taking advantage on local produce by selling it with extra costs

“So there are such barriers in relation to marketing and development (...) because of this lack of dialogue between the supermarket industry and small producers, for instance” (Appendix 5, p. 10, l. 462).

Another barrier Hans Jørgen, LAG Bornholm, is mentioning is the public governmental funding. LAG Bornholm is administering different projects, whereas he mentions that especially food projects are experiencing a lack in financial support from the government.

“The Regional Municipality have such wide in the regional development plan and then they have left, you could say, the business development, to which they say food development is business. (...) When you do business support as we do in [LAG], then we have some development funds (...), which come from EU and the Danish government and are distributed in the various development projects. Here, we have unfortunately experienced one rejection after another (...)” (Appendix 5, LAG, p. 5, l. 201; p. 10, l. 470)

He is finding the above-mentioned rejections troubling, as they may prevent a growth in the local business, thus including a decrease in the local economy.

Elisabeth, BL, mentions the lack of local produce as a barrier and elaborates that there is a challenge in making the professional farmers enter the production of local produce.

"There is a lack in the volume in regards to vegetables. We're talking vegetables, but there are hardly any grown vegetables. And I think it's hard for.. So, if we are going to have some volume in the kitchens, there we need to have someone to be interested in doing." (Appendix 4, p. 6, l. 304)

Whereto she states that especially the economy has a huge influence on why it may prevent the farmers to change directions. On the lack of volume she also addresses the huge produce of blue cheese,

" (...) sometimes there is almost food scarcity, no. Because it is rooted in the fact that we have a dairy that produces such good blue cheese, so they use all the milk in it (...) " (Appendix 4, p. 7, l. 359)

And explains that the dairy, which is owned by 33 dairy farmers, is facing two major challenges: On one side is the financial aspect, as they need to make money to its farmers who are struggling with the milk price index worldwide, and on the other side are the local customers who are loyal to the local produce (Appendix 4, p. 7, l. 372).

Hans and Jess, Lehnsgaard, sees the legislation as the biggest barrier, and Hans elaborates:

"It's the legislation. If you are entering the big kitchens, then it is the legislation, which is.. There it is EU destined.. That is what their excuse is, after all (...)" (Appendix 3, p. 13, l. 689)

To this, Jess continues,

"So, as soon as it becomes a larger volume, then everyone in the EU are allowed to bid even if it is completely unrealistic much of it (...) So it is the law (...) And I also want to say any hospital can be a (...) huge customer or Regional Municipality can be a huge customer, whereas for us, then it's nothing. It will just be a small flap in relation to the volume we have, because it is nationwide, so it really depends on where you are in relation to your raw material situation." (Appendix 3, p. 13, l. 691)

Jess states further that a challenge is that small businesses may not have the willpower to enter the local political stage, as it requires time, which is being taken from their own business. (Appendix 3, p. 16, l. 876)

On barriers in the kitchens, Jane, Lille Myr, mentioned the lack of food availability and accessibility,

" (...) the barriers there are, are the ones making [local foods] hard to get. Such as seasonal fruit, for example, it is really difficult for me to use. Because I'll have to drive up and get it, or else they'll bring something once a week. And I cannot use that, as I use a lot of fruits and vegetables." (Appendix 6, p. 3, l. 140)

To this, Mikkel, Nexø Hallen, sees the finances as the greatest, and only, barrier,

" (...) in relation to school food then it is the finances. You can say that it is a barrier that I can't make my cost match at all" (Appendix 7, p. 1, l. 34)

A wide diversity of barriers was revealed, although especially the lack of local food produced in terms of diversity seems to be the biggest factor. All respondents mentioned it directly, besides Hans Jørgen, LAG Bornholm, who indirectly mentioned it by stating the lack of support to food projects, and Mikkel, Nexø Hallen, who was mainly focusing on the economic aspect of the school food budget.

5.1.7 The interview respondents' views on future of local foods on Bornholm

Agriculture, fish-industry and tourism are areas, which have been or still are big pillars in regards to the economy of Bornholm, but Hans and Jess, Lehnsgaard, estimate these to be either status quo or decreasing. However, they are both positive on the future field of foods,

"But the food industry is like where you are entering now and get some things hyped and further refined. And there you see that you have the resources to get it further developed. Also in relation to export and so on (...)" (Appendix 3, p. 14, l. 763)

To which they elaborate that it may help increase demand and supply, thus increasing the number of food producers and food commodities. Yet, Hans explains how the consumers' behaviour also has an influence on the demand and supply. He states that one thing is what the food producers want to sell another thing is what the consumers want to buy – and eat (Appendix 3, p. 15, l. 799).

In regards to the future food politics, they are both agreeing that uniting the food clusters will strengthen the field of food especially seen from the producers' point of view (Appendix 3, 16, l. 857).

Han Jørgen, LAG Bornholm, is also optimistic on the future food producers on Bornholm and elaborates,

" (...) especially if they can work together, and especially if we can convince the parties and politicians that this is something we should focus on in Denmark." (Appendix 5, p. 11, l. 509)

And continues by explaining how other Nordic countries are supporting minor farms and farm shops as well as knowledge-sharing in the production of food products like cheese,

"I think it will come in Denmark too, but we see it a little slower here, because in Denmark after all, we still have a food policy, an agricultural policy, which to a degree still favours the big industrial world power oriented agriculture." (Appendix 5, p. 11, l. 525)

This future perspective also enlightens on present barriers. Hans Jørgen, LAG Bornholm, refers additionally to the agricultural design movie "Re-Dane" as an example on how future foods could be developed (Dalsgaard 2013). The short film exemplifies how pig production in Denmark could grow by differentiating Danish quality from Chinese quantity production methods. Re-Dane is created in collaboration with two designers, Dominic Balmforth and Charles Bessard, and suggests a future framework to, in addition, increase biodiversity and support small-scale farmers. Re-Dane uses the manager of Vasagården, a farm aiming to create a natural habitat for the pigs as well as growing its own fodder. Yet, this food project was one of the food projects, which did not get the necessary financial and governmental.

Elisabeth, BL, believes too that local food availability and accessibility as well as local marketing will increase,

"There will be more Bornholm food in the local pots, in general (...) but it depends on many things (...) I think that is the tendency that more products and producers will appear." (Appendix 4, p. 5, l. 263)

Whereto she elaborates on how a change in focus towards other parameters may increase the local employment as well as demand and supply, which right now is more focused on a narrower food selection and most is being exported,

"The mind-set that says that we also need to look at the bio-economy, in the sense that there is some CO2 and there is some local employment and there is some local growth (...)

And the more we can keep on Bornholm the more we actually benefit ourselves.” (Appendix 4, p. 5, l. 272; p. 6, l. 288)

Jane, Lille Myr, too believes her food purchases will increase both in terms of local but also organic food commodities.

“It will become bigger. As much as we can. Also because we want to expand our raised beds, meaning that we will try to get as much as possible.” (Appendix 6, p. 7, l. 233)

Mikkel, Nexø Hallen, imagines that an increase in the school food budget might be realistic in a few years (Appendix 7, p. 2, l. 58), but is in general not that optimistic,

“[health is on the headlines] and obesity too in relation to that there are too many overweight people that costs the society a lot of money, so it is a bit interesting that you already from school age are focusing on if the children there are being served healthy food (...)” (Appendix 7, p. 3, l. 118)

This shows there is a general tendency towards a local food oriented future including increased food accessibility and availability caused by more local food producers, local growth and intensified network collaboration among local entrepreneurs.

5.1.8 Local economy and the food system

During the interviews each of the interview respondents had room for opening up on topics, which they found relevant in regards to their respective fields. The topic, which was brought forth often, was local food in regards local economy.

Hans, Lehnsgaard, stated that a trend in food tourism has appeared during the previous 10-15 years and with this trend, food craftsmen have appeared as well, thus supporting the local economy.

“A trend for, what would you call it, local foods. And several craftsmen has emerged (...) like myself in the food industry (...)” (Appendix 3, p. 5, l. 247)

When asked about traditions within the food heritage on Bornholm he replied,

“ [The] cooperative movement is actually to blame that the diversities has been taken away from the food industries. Everything must be standardized, because it must be made on large dairies and slaughterhouses (...) There is no room to stand out and make the things different.” (Appendix 3, p. 5, l. 223)

This shows that there is a concern from the primary production site on competition. Hans Hansen is a supporter of small businesses. He states that both retailers are beginning to support small businesses by investing in their grocery selection and that he also sees an increased interest from the younger segment in the retail.

Hans Jørgen, LAG Bornholm, agrees on the barriers which industrialization and mass-production are causing and explains by exemplifying the pig producers,

"It is so sad, because [the industry] is already an industry that is deeply indebted in the Danish agricultural industry and they are stuck in a certain structure where it is all about rationality and becoming bigger and bigger. And those who can't make it, they are being bought by others. Therefore we would like to see other alternatives, which can compete with that pattern." (Appendix 5, p. 10, l. 488)

He continues and uses the pig producer from the ReDane short film as an example and how to strengthen the competition, thus the local economy

"And the farmer that is mentioned is a fantastic example of someone who tries to break the pattern, but who perhaps can experience this barrier in the form of some administrative – or some in the central administration who places obstacles." (Appendix 5, p. 10, l. 492)

Elisabeth, BL, suggests that the competition is tough and other parameters must be taken into use to promote local foods locally,

"[It is really difficult to compete with organic apples from Southern Tirol], because they can make it cheaper. So there must be used other parameters than the price alone (...) The more we can keep on Bornholm the more we benefit ourselves really" (Appendix 4, p. 6, l. 276)

Jane, Lille Myr, found it difficult to procure foodstuff locally, but, as stated previously, she was able to make an agreement with the food supplier BC Catering to get the milk products procured from Bornholm. The parents in the kindergarten were also supporting her budget by delivering free food in the form of vegetables and fruits.

Mikkel, Nexø Hallen mentioned that he was supporting the local business sector by having a procurement agreement with the local supermarket Kvikly, as he was not positive on supporting BC Catering. He stated that,

"(...) if we can get it local, then we will purchase it local. Then there is no reason to get it from the other side of the water" (Appendix 7, p. 4, l. 186)

5.1.9 Interview findings

The interview analysis findings showed a general common concern in the barriers international EU regulations generates, in terms of selling and purchasing food locally on Bornholm, accompanied with the mass-production that decreases the competition on the free market and food diversity too.

The interview analysis also revealed potential within the local food system in terms of the food cluster being established, promoting local food projects. In the kindergarten of Lille Myr a relatively large amount of homegrown food provision was supported by the parents – a model with potential to be applied elsewhere, but which requires further investigation.

The choice of interview respondents aimed to represent key actors involved in the food chain. As the interview guide had a broad reach, it could be assumed that interviewing more actors both representing the political field, but also producers of food commodities, such as milk producers, or food suppliers like BC Catering could have strengthened the interview analysis.

5.2.0 Investigation on school food at Paradisbakkeskolen

This paragraph aims to investigate the food origin and the outcome of two typical served meals at Paradisbakkeskolen by making a comparison of a typical school meal served at Paradisbakkeskolen during respectively DeVika's and Mikkel's, Nexø Hallen, food provision.

First, the analysis will investigate the food product place origin, with focus on fruit and vegetables, purchased from two different food suppliers, namely BC Catering and Cater Engros. These data are only valid for procurement prior Mikkel's employment, as Mikkel is procuring his food items from primarily from Kvickly, Nexø, from which it was not possible to retrieve any invoices. Secondly, an examination of a selected school meal serving, served during DeVika's food provision will be conducted. It will investigate the macro nutrient content to see if it complies with the public school food recommendations provided by an external food provider established by the Danish Veterinary and Food Agency (The Danish Veterinary and Food Agency n.d.). An analysis of a specific meal during the food provision from Mikkel, Nexø Hallen will likewise be conducted and compared with the public recommendations and finally will these two meal investigations be compared to see any differences or similarities.

5.2.1 Investigation of the food product place of origin from Paradisbakkeskolen from year 2012-2013

In this paragraph the product place of origins of fruit and vegetable purchased from respectively BC Catering and Cater Engros will be investigated. The purpose of this is to investigate yearly distribution and the allocation in the meals.

As mentioned previously, Paradisbakkeskolen has, during the period of year 2012-2013, been using two independent food suppliers and two different food providers for supplying the meals (Appendix 10-11).

Today Paradisbakkeskolen is getting their meals provided from an external food provider, Mikkel, Nexø Hallen, and during 2012-2013 they used respectively DeVika and Ejendomsservice as food providers. However, as it has not been possible to access any procurement data from Mikkel, Nexø Hallen this investigation is solely based on the period prior the food provision from Mikkel, Nexø Hallen. Below is a flow chart describing the process from food supplier to Paradisbakkeskolen.

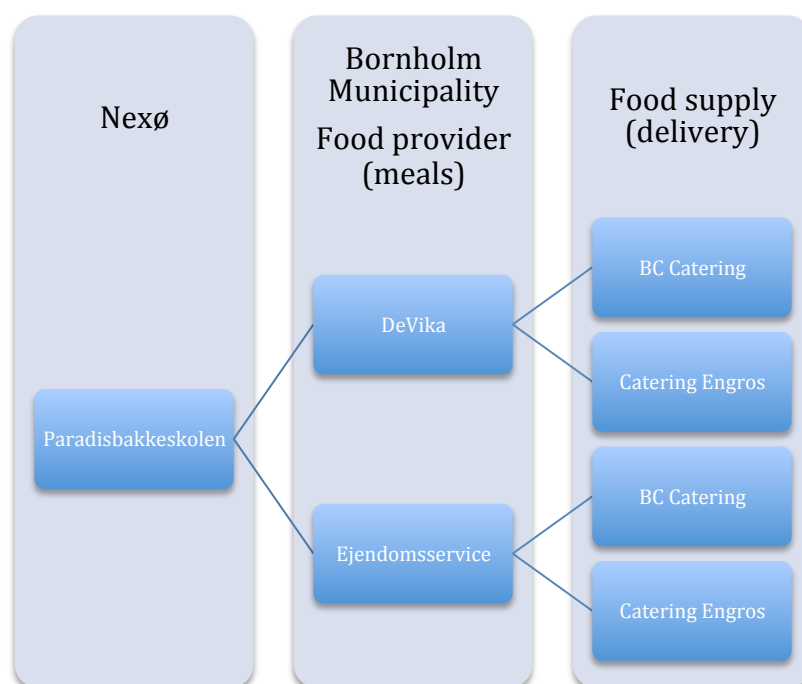


Figure 5. The distribution chain from food supply to food provider to Paradisbakkeskolen in year 2012-2013 during food provision from respectively DeVika and Ejendomsservice.

Table 14 below shows the general supply of fruit and vegetables' place of origin, which was included in the salad bar at Paradisbakkeskolen, from BC Catering throughout the year.

Product place of origin on fruit and vegetable supplied from BC Catering

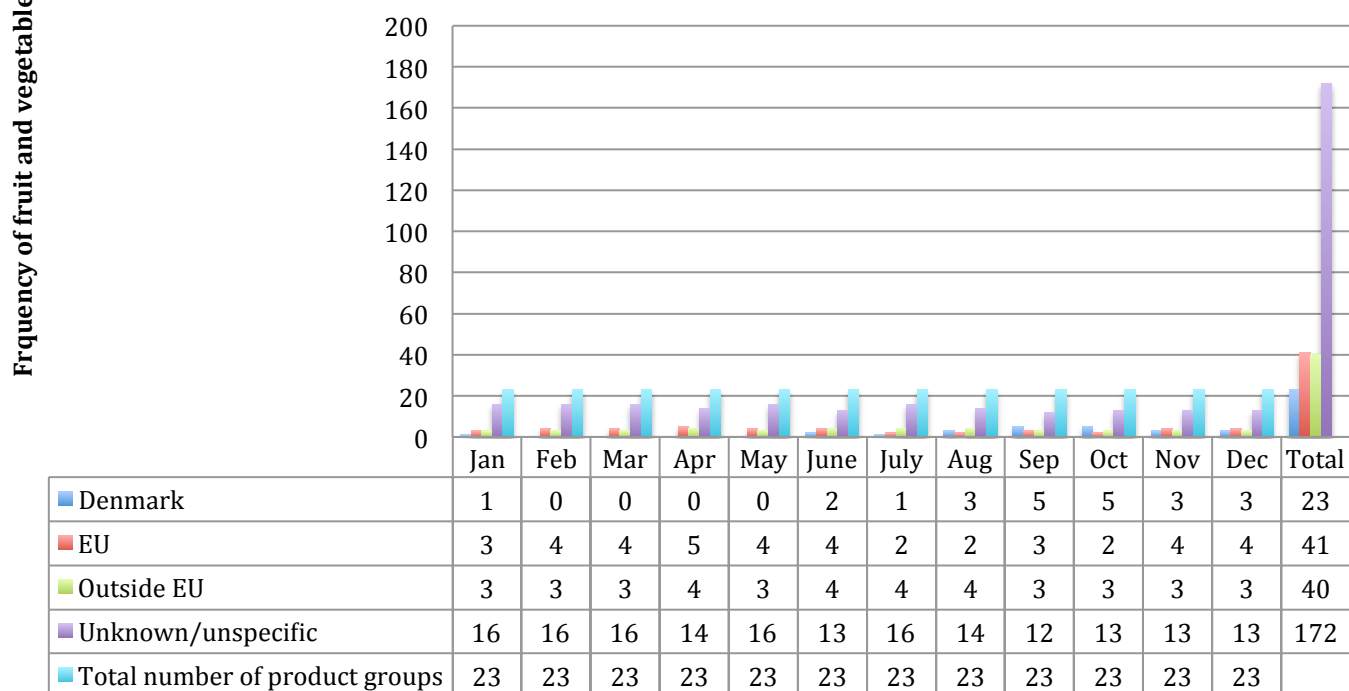


Table 14. Overview of BC Catering's general supply of fruit and vegetables' place of origin throughout the year (Appendix 10).

The table shows food with Danish origin peaked in August, September and October, but overall it had the lowest presence throughout the year in comparison to the other regions. The food from Denmark did not represent Bornholm. However, in table 14 it appears that the food items which origin were unknown had the highest incidence, during the food supply from BC Catering were either of unknown origin or unspecific origin in terms of different possible places of origins depending on the season and availability.

Below the product place of origin of the fruits and vegetables procured through Catering Engros are presented.

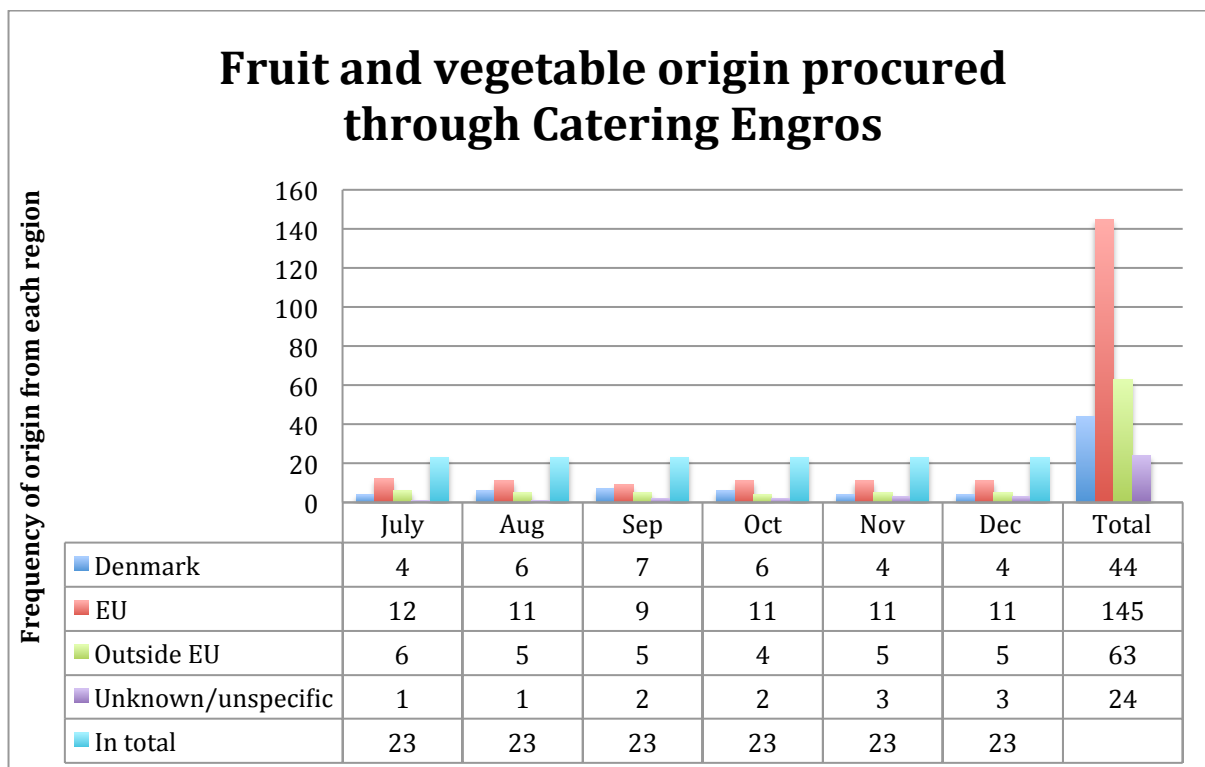


Table 15. Overview of Catering Engro's general supply of fruits and vegetables' place of origin during the second half year of 2012.

Table 15 shows that Danish foods peaked in August, September and October. The food produce, which was purchased from Denmark, did not represent Bornholm as place of origin according to e-mail correspondences with the food supplier. The table shows further that food produce purchased within EU was the highest represented and those commodities with either unknown or unspecific place of origin had the lowest frequency.

During the investigation of the food product place of origin it came clear that none of the food items from the salad bar were produce of Bornholm. However, certain unregistered kitchen table agreements for specific local foodstuff were revealed through communications with the food suppliers, but due to unofficial announcements, the author is aware of this causing bias for accuracy.

This shows that the produce purchased for the salad bar from Denmark, in both cases, had a low incidence. Furthermore communications with both BC Catering and Catering Engros revealed that none of the fruit or vegetables originated from Bornholm.

5.2.2 Food investigation of two school meals at Paradisbakkeskolen

This paragraph aims to investigate and compare two designated school meals with the public recommendations from the Danish Veterinary and Food Agency on school meal provided by an external food provider. In addition, the food product place of origin from

the meals will also be evaluated. The target group for this investigation has been chosen to be children aged 7-10 years, as they are closer to SOL’s target group of children aged 3-9 years of age and that they are more eating more on the school ground.

Previously Paradisbakkeskolen’s lunch meals, provided by DeVika, included a salad bar with different meal components varying from Monday to Friday, thus containing five different salad bars (Appendix 12). After Mikkel, Nexø Hallen has become their present food provider the meals have changed from having similar menus to have a greater variety as the provided meals are changing daily and weekly.

The selected meal from the salad bar investigated in this analysis is representing an estimated portion size planned by the food provider DeVika and its content is described below in table XX. However, as the procedure includes self-service on the non-meat products there is a chance that the actual nutrient distribution may have differed. Additionally, potential waste is not included in the estimation, which also could cause bias in terms of nutrient intake.

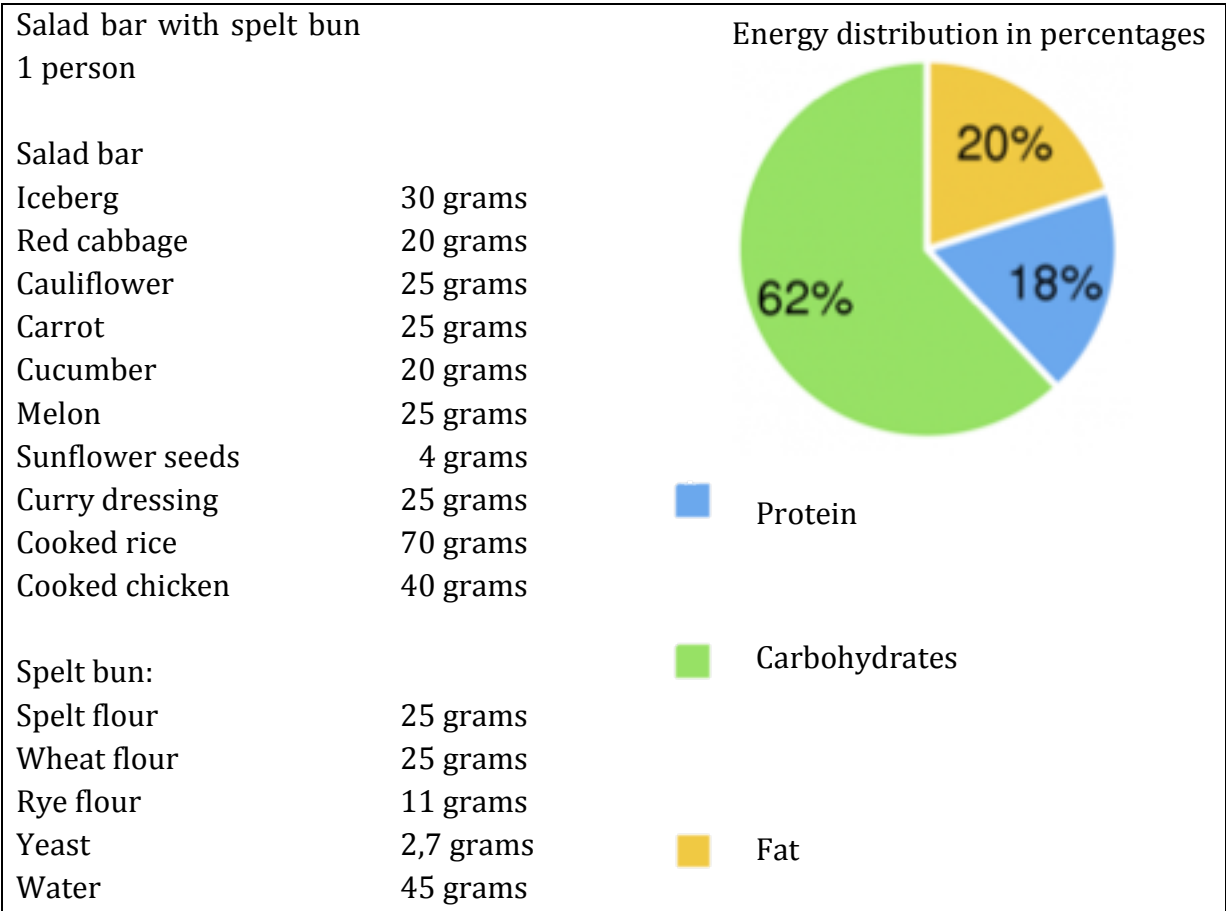


Table 16. DeVika. Salad bar with a spelt bun, Monday.

The current food provider, Mikkel, Nexø Hallen, varies his menu planning daily and weekly and the menu for week 18 can be seen in appendix 13.

The chosen menu for investigation in this analysis is described in table 17 below. However, it must be emphasized that Mikkel, Nexø Hallen does not use any specific measurement, as it was the case for the salad bar, therefore the following calculations are solely based on the researcher’s own observation. Hereto, it has not been possible to register any potential food waste.

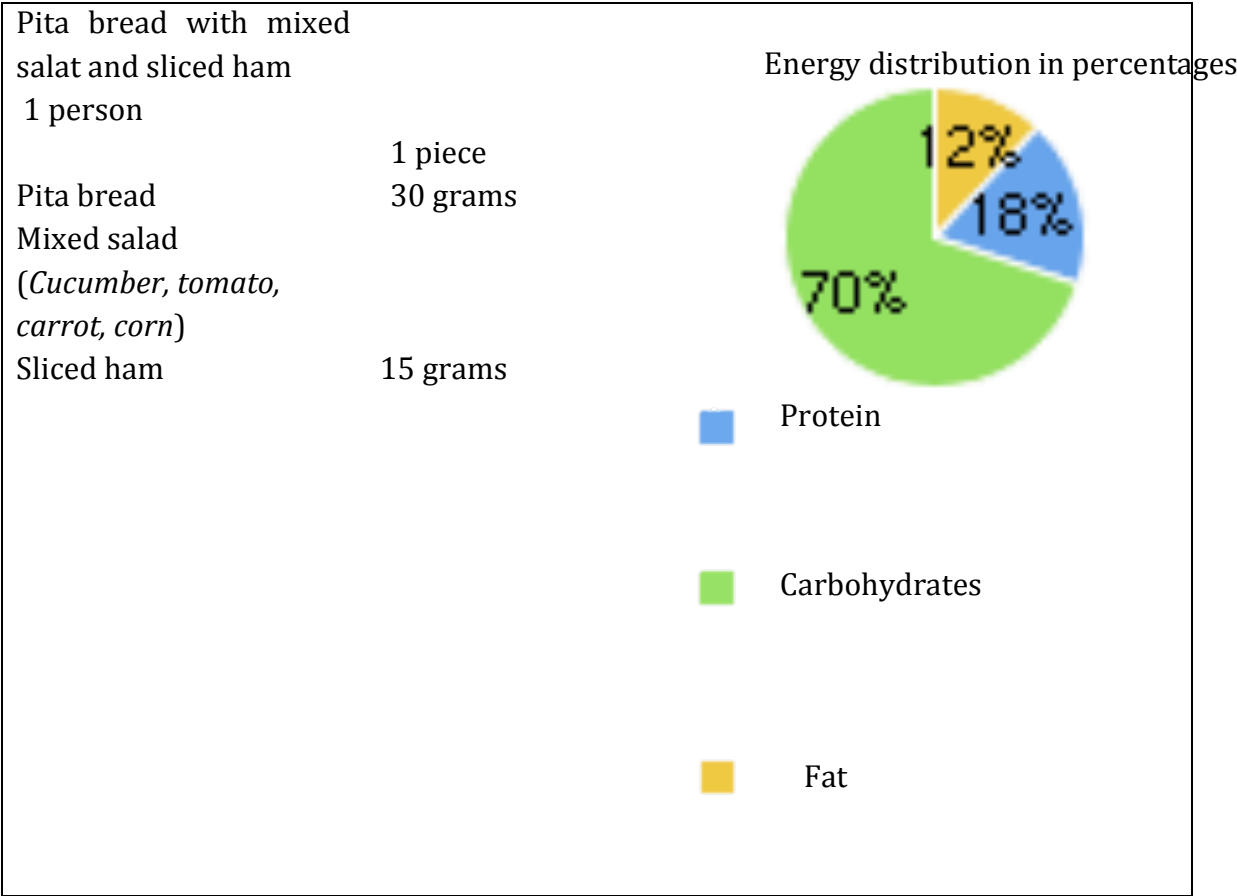


Table 17. Pita bread with mixed salad and sliced ham, provided by Mikkel, Nexø Hallen.

The calculation below in table 18 shows that the energy distribution in meal from the salad bar is calculated to contain 1990 kJ and is therefore equivalent to the recommendations established by the Danish Veterinary and Food Agency⁸. Hereto, 62 E% derived from carbohydrates and fibres and are therefore a 2 E% too high compared to the recommendations on maximum energy from carbohydrates. Fat energy provides 18 E% to the meal and is 2 E% lower than minimum recommendation on fat. Protein is

⁸ Note that the bread is solely calculated on raw materials, which further means that the measured weight is 108,7 g although the food provider at that time suggested it to be 70 g (Appendix 12). Although the meal is adequate to the recommendation, this could still have an impact.

the only macro nutrient source fulfilling the recommendations. However, it has been identified by previous investigations that the children was not feeling satiated after eating their lunch.

Finally, the salad bar consisted of several different food items: more than 1/3 of the meal was fruit and vegetable sources, which none originated from Denmark.

Public recommendations		Meal from DeVika	Meal from Mikkel, Nexø Hallen
Recommendations	Aim	Meal content	Meal content
Minimum 1/3 of the weight in each meal consists of vegetables and/or fruit (rinsed and uncooked)	Vary the supply of fruit and vegetables (coarse/fine, seasonal, exotic/Danish colours and kinds)	36,9 % of the weight is from fruit and vegetables	53,33 % of the weight is from fruit and vegetables
Energy distribution on each meal must meet the recommendations: Carbohydrates and fibres: 50-60 E% Protein: 10-20 E% Fat: 25-35 E%, whereas saturated fat must not exceed 10 E%	One meal = minimum fruit/vegetables + bread/potatoes/rice/pasta + fish/meat/cheese. The child must be able to be satiated of the meal	Carbohydrates and fibres: 62 E% Protein: 18 E% Fat: 20 E%	Carbohydrates and fibres: 70 E% Protein: 18 E% Fat: 12 E%
The energy requirements for the target group, children 7-10 years of age: 1800-2100 kJ/lunch	Make the entire meal in to portion sizes. It is acceptable if the child also drinks light milk or water with the meal	1990 kJ/lunch	895 kJ/lunch

Table 18. This table compares public recommendations established by The Danish Veterinary and Food Agency and energy requirement for school children 7-10 years of age with the two served meals at Paradisbakkeskolen. The Danish online nutritional calculator, MADLOG.dk has been used to do the nutritional calculations and is also visible in respectively appendix 14 and 15. (MADLOG ApS 2014, The Danish Veterinary and Food Agency n.d.)

The pita bread meal is calculated to contain 895 kJ and was too low, not matching the reference value for energy requirement for the target group of children 7-10 years of

age and did therefore not meet the public recommendations. It contained 70 E% deriving from carbohydrates and fibres and was thus 10 E% above the maximum recommendation; the energy content from the fat sources was 13 E% too low according to the minimum recommendations. Protein was calculated to contain 18 E% and fulfilled the recommendations, as the only macronutrient. It has not been possible to register if the pupils felt satiated from the meal. Finally, the meal consisted of different food items: more than 1/3 of the meal weight was fruit and vegetable sources, whereas none were registered as having Danish origin. However, since Mikkel, Nexø Hallen is purchasing most of his fruit and vegetable commodities from Kvickly in Nexø he could buy local food without his knowledge.

5.3.0 Findings from the school meal investigation

The two meals above showed that the chosen meal from DeVika's salad bar was fulfilling the public requirements on energy requirements and distribution among macro nutrients, whereas the pita bread meal provided by Mikkel, Nexø Hallen was too low in both energy content and fat content and too high in carbohydrates.

Calculations showed that both meals fulfilled the recommendation on 1/3 of the weight should come from fruit or vegetables and that the pita bread meal from Mikkel, Nexø Hallen, had a higher content than the DeVika's meal content from the selected salad bar.

Additionally, Mikkel, Nexø Hallen does not use any local fruit or vegetables, whereas the meal from the salad bar had carrots as its only food commodity potentially arriving from Denmark.

Despite findings shows that the selected meal from the salad bar provided by DeVika did fulfil the recommendation on energy intake and was closer to fulfil macro nutrient recommendations, unlike the pita bread meal provided by Mikkel, Nexø Hallen, Mikkel does have more variation than the DeVika's salad bar. Hereto, he is adjusting his meal daily and weekly and since he is still in the start-up phase future meals may adjust to fulfil the requirements as well as potential feedback from pupils could assume to change the meal content, in case of lack of satiation after meal consumption.

6.0. General findings: Staging the arena of the local food system of Bornholm

During the interviews and actor-mapping it was revealed that the political activity has a great influence on the implementation on local foods. Jess, Lehnsgaard addressed thus the public procurement agreements,

"(...) an actor as the Municipality, which is of great importance when we talk policies in regards to purchasing local commodities (...) They have made SKI agreements on behalf of

their products and I think it is only 20 % that can be purchased locally – the rest must be purchased from the other side of the water” (Appendix 3 p. 7, l. 351)

Additionally, Mikkel, Nexø Hallen, addresses the complications on using local food commodities because of a limited school meal budget,

“If we got this school food on the Finance Act.. And we have a lot of focus on health, which you also have politically today and there have been calculation made that if you get this [implemented] in the schools then you might have some more attention [on implementing local food]” (Appendix 7, p. 2, l. 58)

As a chef he was more concerned with keeping the budget than investing in local food commodities. However, as a private entrepreneur he has the possibility to shop elsewhere, and has therefore made a procurement agreement with the local supermarket Kquickly. To this, he is also involved in a local group supporting the local business industry in Nexø, and therefore may affect his interest in supporting the local cooperative supermarket like Kquickly rather than BC Catering.

Jane, Lille Myr is also subject to a budget, but as a private institution she may have a more flexible budget. She is supporting local food through being provided with free fruit and vegetables from parents of the school and has made a procurement agreement with the food supplier BC Catering to obtain milk from Bornholm and not Sweden. She expressed it was difficult to purchase local food commodities in general.

During the interviews with the two chefs it was revealed that Jane, Lille Myr was mostly concerned with purchasing local milk, vegetables and fruit, while Mikkel, Nexø Hallen was more interested in purchasing local animal products.

During the interviews and actor-mapping several key actors/stakeholders, with interest in the local food system on Bornholm were identified. In order to provide an overview of the identified key stakeholders a list has been compiled in table 19 that displays identified actors’ roles and contribution to the local food system on Bornholm.

Overview on identified stakeholders		
Stakeholder	Primary role/ contribution	How to take into account
BRK	Implementing food policy Food supply agreements	Top-down approach Strong governance
Public institutions	Developing their	Must follow national

	respective food policies in collaboration with management and boards (parents, institutional)	recommendations, otherwise independent
Kitchen personnel	Purchasing food stuff, cooking and serving	Must follow food policy, high influential when purchasing food
Bornholms Landbrug	Supporting farmers both as counselling (e.g. subsidies) and financial (investment)	Highly influential on the farmers agricultural development in terms of investment
The Danish AgriFish Agency	Financial supporters of food projects	They are key investors when it comes to supporting food projects, such as organic conversion.
Farmers	Producing raw materials and making food available.	Regulated by the government. Dependent on governmental support. Restricted by geographical location (soil, cost-benefit and the like). Practically the first step in the food chain. Also important for increasing employments.
LAG Bornholm	Representing the food industry and raises the voices of private food businesses on Bornholm	They are directly communicating with the politicians.
Food producers	Processing raw materials into foodstuff and making food available.	Regulated by the government. Making food available, increasing employments.
Food suppliers	Making raw materials and processed food available and accessible for the public	Regulated by the government.

	institutions.	
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Table 19. This table shows identified key actors roles/contributions to the local food system and how it should be taken into account in regards to the local food system.

Although both children and parents have a central place as respective end-consumers their authority and them as an entity have consciously been excluded by this researcher.

6.1.1 Discussion of the stakeholders affect on the food system

The interview analysis showed that farmers have a significant role when it comes to food supply, but are influenced partly by legislative authorities, the business owners and cultural food tradition.

In the interview analysis Hans Jørgen, LAG Bornholm, stated that he believed restaurant owners and similar actors, were using positive storytelling to promote the local products, to have a greater influence on the promotion of local foods, thus is why they are important stakeholders when it comes to promoting the local produce to the general customer. Yet, as the local food suppliers and chefs must procure the food locally to call their products “local foods”, the farmers and local producers are therefore also important stakeholders.

As previously stated, since raw materials have no borders and can therefore be purchased from all around the world, a country is highly challenged when it comes to being dependent on its own resources (Regulation EC/178/2002). On Bornholm there is not adequate food to feed the population. This is not due to the size of the population or crop yields, but because of the SKI agreements, which in this present moment do not support local food supply on Bornholm adequately (SKI n.d.); as identified in the interview analysis BC Catering is the current food supplier in Bornholm and is not supporting local food produce.

The fact that Jane was successful in making an agreement with BC Catering to procure local milk instead of Swedish milk suggests that the customers, here understood as public kitchen chefs, in accordance to Freeman (1984, p. 19) is able to raise voice on the demand for local food produce and affect the availability and accessibility of local food produce. Yet, due to generally low, local food accessibility, the request for local food should be addressed and supported by several actors, including food producers. The multi-level governmental food policy is already being addressed through the project application towards 40 % local food produce in the public kitchens applied by Bornholm municipality and Vækstforum, but in order to increase local food in the public procurement policy, the farmers must also support this request.

To be able to integrate local food in the community of Bornholm through the day-care centres, the author found two out of three major entities were relevant: Both the private

and public sector are most important when it comes to integrating local food, and the civic sector have less to say. The private sector includes the food producers, who are making the food available, whereas the public sector has a say when it comes to accessibility, such as in the form of the SKI agreements. Hereto, support to the local food supply and the farmers food networks on Bornholm, mainly consisting of actors from the private sector, are also important to raise their voices e.g. on support to food projects.

To understand the interactions among the stakeholders in the local food system in Bornholm this author has chosen to address the local food system as one entity or one organization through Freeman's perspective on stakeholder approach (Freeman 1984).

Freeman states that a change in the business model structure within an organization has occurred from once being linear (production view; characterized by a business only need is to worry about satisfying suppliers and customers) to now more intertwined (managerial view), where suppliers, employees, customers etc. are being recognized. Freeman argues this change has required a conceptual shift, including the adoption of new concepts and ideas as well as dealing "*with owners and employees as a matter of everyday occurrence rather than as an expectance*" (Freeman 1984, p. 6).

According to Freeman internal and external changes are affecting the organization's management (Freeman 1984, p. 6). He views an organization from a private perspective, a parallel view could be applied to the food system in Bornholm, as one entity, when addressing the interaction among the stakeholders in the local food network in Bornholm.

"Internal change requires us to constantly reassess current objectives and policies in the light of new demands by groups that we are used to dealing with such as customers, employees and their unions, stockholders and suppliers." (Freeman 1984, p. 8)

Internal change in Bornholm could be affected by the public sector, represented by the municipality, public institutions and ministries; the private sector, as farmers and food suppliers; and the civic sector, as children families.

On external change Freeman states that,

"External change is the emergence of new groups, events and issues which cannot be readily understood within the framework of an existing model or theory (...) External change produces uncertainty. It makes us uncomfortable because it cannot be readily assimilated to the relatively more comfortable relationships with suppliers, owners, customers and employees." (Freeman 1984, p. 11)

External change could therefore be private business owners, hence producers, LAG (food network) and Bornholm Agriculture, where the latter represents agricultural advisors; mediators between producers and the municipal/government as they are responsible for dividing and advising the public funds. Yet, as Freeman sees owners and employees as an internal part of the company this model cannot be fully translated to the local food system in Bornholm if seeing the public sector of Bornholm as a part of the corporation. If so, the owners of the corporation could be argued to be the citizens who are paying taxes. Scholl, who is critical towards Freeman, justifies this:

“The ruling paradigm of corporate governance holds that those who invest their capital into whatever kind of business (...) have an entitlement (and obligation to) govern the business they have invested into.” (Scholl 2001, p. 5)

6.2.0 Discussion on choice of methods

This section will discuss the challenges, which presented themselves with this choice of methods.

Based on the use of Grounded Theory, a new theory is thought to emerge during a process where empirical data collection and theory continue to affect each other, until no more new knowledge comes forth. The method have been partly useful, as accumulated knowledge made the researcher aware on the broad, complex world of intertwined relations in the food system. Hereto, the findings further made the researcher aware that further research should be conducted in terms of investigating the local farmers perception of supporting the local food system, e.g. in terms of investigating the potential of farm-to-school supply. Likewise investigation could be aimed at food suppliers and their view on local food. However, as this thesis has attempted to focus on the local food system on Bornholm and how the local food is being integrated through schools and kindergartens, it has revealed that an investigation of such a narrow area is rather complex. The chosen methods reflect a complex world in which an interdisciplinary approach, reflecting social science, natural and humanity has been used. This was thought to assist in achieving a holistic perspective.

Grounded Theory is characterized by including both an inductive and deductive philosophy. The inductive philosophy has been expressed, by generalizing Bornholm and comparing it to other states, like U.S., where other cultural and political legacies exist. Deductive philosophy has been expressed, through the literature review, in which large parts of the world have been generalized to regard Bornholm, although this may not be the case due to different cultural or political arenas.

The literature review illustrated a broad view on local food systems with different perspectives ranging from farm-to-school approaches in U.S. to European political activity to children's health. As the Grounded Theory under goes a continuous process and the literature review was conducted in the beginning of this process the aim could have been narrowed further. The generated knowledge revealed a more precise view on

where the focus should have been, however, the literature also helped the researcher to open up for a more specific problem area with potential solutions.

Additionally, the interviews also characterized few representative key actors, including more key actors, covering the food chain such as farmers as well as industrial kitchen chefs may have been more representative. Other interview representatives could have been private actors, like supermarkets or parents to analyse their view on the potential of integrating local food in the society. Presumably including a larger diversity of actors would help recognize problem areas, such as key actors from either the Capital Region, affecting the Public Institutions of Bornholm, as well as similar regions; this could be Finnish schools or Swedish schools, which both have long lasting school meal programmes, whereas the latter have had a school contributing with research on sustainable food procurement.

The outcome of the interview analysis could have been done more specifically by gathering the key actors from the same fields in the same paragraph to investigate differences and similarities more closely. Yet the researcher chose a simple model to get a general overview by gathering all the key actors perspectives.

8.0.0 Conclusion

In conclusion, the local food system in Bornholm is characterized by having geographical limitations, isolated by water, having a low agricultural production diversity and is therefore relying on getting the majority of their procurement delivered from overseas by ferry and trucks. The purchased food commodities in Bornholm's food system are therefore characterized as having many food miles.

The analysis showed that national public, private and civic actors are supporting the integration of local foods, but that EU legislations and the national Finance Act are inhibiting this.

Multi-level political authorities, like the EU Commission, have a large impact on the availability and accessibility of food commodities in Bornholm by governing the food supply. This is being expressed through the public procurement agreements, SKI-agreements, which aim to ensure a complete supply of food from a contracted food supplier, such as BC Catering, supplying the entire municipal. Hereto several parameters like the free market regulations, demands from the customers and season, affect the food supplier's food variety and do challenge the local food variety.

The agricultural sector and food sector is being challenged by low employment, but the local food system has generally a large support among local politicians, food producers and chefs, being expressed through various activities and local food networks, represented by private actors, as well as public organizations and authorities. Parts of the latter are presently working on a project aiming for include 40 % local food in the public food procurement. Additional this could too support local business and employment.

In order to meet the multi-levelled challenges supporting the agricultural capacity and researching the potential on alternative business model to support small scale farmers, increase biodiversity and food availability and, finally, to support local employment.

9.0.0 Acknowledgement

Thank you everyone, who in one way or another have supported me in this process. Professors and colleagues who have inspired me in my research and friends, family and moral supporters who have stood by me. I am sincerely grateful.

10.0.0 Literature

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