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Firm-level knowledge dynamics of creating Bornholm food

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SECTION 1 – INTRODUCTION

1.1 The region

Peripherality

The island of Bornholm is situated in the Baltic Sea and lies relatively close to the Swedish shore and relatively far from the “mainland” of Denmark. Due to Bornholm’s geographically remote position, relatively small population (just less than 43,000 in 2007) and low degree of connectivity to the rest of Denmark in terms of transport and communication systems, it can be argued, that Bornholm is the only real peripheral part of Denmark. Bornholm’s remoteness and history has created a strong shared island identity, which forms an important platform for building cooperation on the island – potentially across the public-private divide and between economic sectors.

In a EURODITE perspective, Bornholm is the smallest region and the only peripheral region. In a knowledge perspective this means that Bornholm is highly dependent on knowledge institutions located in other regions of Denmark or internationally. The population on Bornholm is relatively under-educated and this challenge is stressed in that the education opportunities are particularly limited at the level of further educations, thus limiting the opportunities to build a knowledge-based economy in the region.



Figure 1. The location of Bornholm

Transport

Bornholm as a regional economy is influenced by its relative remoteness to the wider economical system it is a part of. Accessibility is a central challenge to Bornholm’s economy. The challenge refers not only to long transportation time, but also to lack of capacity and frequency, which seri-

ously impedes 'exporting' opportunities. Thus, manufacturing industries are not as weighty in the regional economy as in Denmark as a whole. The main transport services are:

- Ferry service Rønne–Ystad (South Sweden) with connection to train and bus services to the city centre of Copenhagen. Door-to-door travel time is about three hours.
- Night ferry service Rønne–Køge. Køge is situated 30 km south of Copenhagen. Travel time is about 6½ hours.
- Airline service Rønne–Copenhagen Airport. The flight takes 35 minutes.

The number of ferry departures varies depending on the time of the year – from just a few daily departures during winter to several connections during peak season. Both summer and winter there are several daily flight departures.

Administrative status

Following a national administrative reform, effective from January 2007, Denmark consists of five regions and 98 municipalities. In this structure Bornholm has a unique position in that the island is concomitantly a municipality and (in some respects) a region. Although it formally is part of the Copenhagen Capital Region, it has certain regional privileges and responsibilities delegated to Danish regions regarding forming its own 'Regional Growth Forum', responsible for instance for allocation of EU structural funding, and developing its own regional business development strategies.

Population

While the Danish population in general is showing an upward trend, the population of Bornholm is gradually declining – from 47,605 in 1979 to 43,245 on 1 January 2006. This is a reduction of some 4,360 people which is 10 per cent of the present population. According to the forecast produced by Statistics Denmark the population of Bornholm is expected to drop by 5 per cent each year and it is estimated that in 2020 the population of Bornholm will have declined to around 41,400. As in many other peripheral regions, the declining population is due to negative net immigration and an overrepresentation of elderly people.

The lack of job opportunities is the most significant barrier to turning net immigration in a positive direction. To many people Bornholm is attractive for settlement due to the relaxed and safe atmosphere and the natural surroundings. However, despite a radical drop in unemployment in recent years the small labour market and long distances to other labour markets create substantial barriers to settlement.

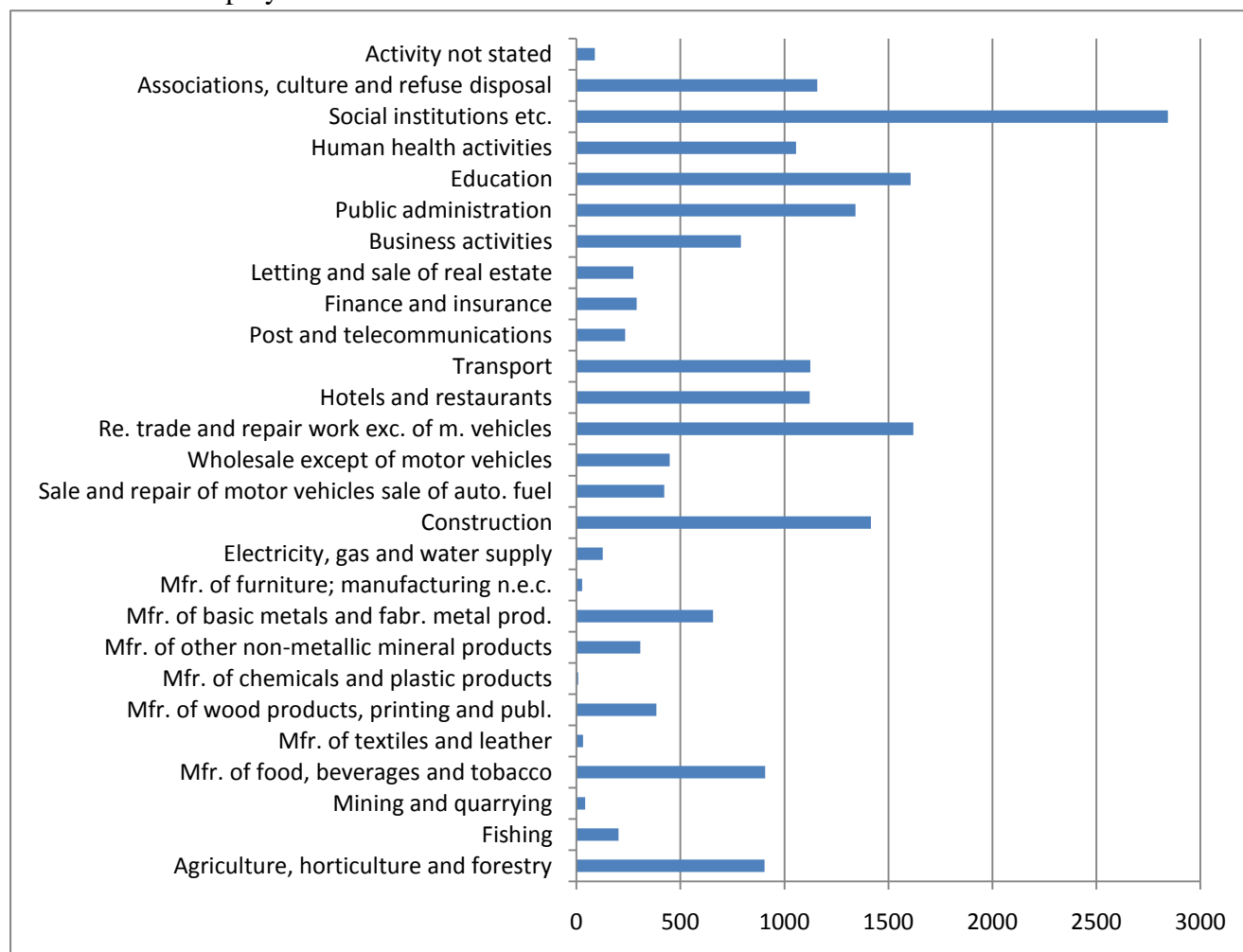
Employment and income level

The Danish economy has experienced an economic boom since the middle of the 1990s which has led to an ever dropping unemployment rate until the global finance crisis began autumn 2008. The development on Bornholm has not been as positive, however, the recent years the economic boom has reached Bornholm as well. From 1996 to 2008 unemployment on Bornholm dropped - from 11.5

to 5.2 per cent. The financial crisis has also reached Bornholm and the unemployment rate was 6.4 per cent marts 2009.¹

Main sectors

Table 1. Total employment Bornholm 2006



Source: Statistic Denmark 2008.

Like in Denmark as a whole, public sector activities play an important role in the Bornholm economy (cf. table 1). The nucleus of the private sector is formed by three sectors: 1. Fishing, agriculture and connected manufacturing industries of food and beverages, 2. Tourism and 3. Metallic industries. This business structure is typical of what is generally seen in peripheral areas. As described below, employment in the agro-food sectors is declining, but jobs have been created in new small businesses with niche food products. The emergence of these productions is in the focus of the Territorial Knowledge Dynamics case study. The tourism industry has been showing a growth potential in recent years.

¹Labour Market Region Capital & Sealand and Statistic Denmark, April 2009.

In the rest of Denmark business sectors such as financing, business services and public and personal services are showing an upward trend, but in general these sectors have not experienced the same level of growth on Bornholm. However, as is described in the firm level case studies in this report, a few consultancy firms within marketing, communication and business development have been established in recent years and have provided important knowledge inputs for the new artisanal food producers.

Another type of economic activity in which Bornholm has long-standing traditions and which also has formed and inspirational basis for some of the new artisanal food producers, is arts & crafts businesses such as small workshops with glass blowing, ceramic production, wood cutting, design and manufacturing of clothes, etc. (spread over several of the sectors shown in Table 1). There are about 100 arts & crafts businesses on the island, employing approximately 140 persons². Due to these traditions within arts & craft business there is a national Glass and Ceramics School on Bornholm - a further education institution with students from all of Denmark, providing practical training in the crafts of glass blowing and ceramic production as well as theoretical elements regarding industrial design, business organisation, marketing etc. This school has been involved in the knowledge biography studied in FKD2 in this report.

1.2 Regional benchmark from WP4 tool

Not relevant in this report.

1.3 The sector

The sector in focus for this report is the food and drinks industry. On Bornholm this sector traditionally was heavily dominated by large-scale industrial processing of local fishery and agricultural supplies into standardized, semi-fabricated products with relatively low value-added, that were exported out of the island for further processing elsewhere. This type of standardised food production still exists on Bornholm but has experienced a dramatic decline due to increased and continuous globalisation, mergers and concentration, productivity initiatives, technological change etc. Hence, the employment in the Bornholm food industry as a whole was diminished from more than 2000 jobs to about 900 in the period 1991-2007³. Also in agriculture and fishing there is steady employment decline and structural change towards fewer but bigger production units and firms.

However, alongside the dramatic employment decline in traditional industrial processing and conventional farming, about 40 new (small and micro) firms with small-scale productions of specialised

² Information from Arts & Crafts Association Bornholm (ACAB – <http://www.craftsbornholm.dk/index.php?Itemid=16>), one of two associations on Bornholm for arts & crafts businesses with 64 members (May 2009). The other association is Bornholmske Kunsthåndværkere (<http://www.borncraft.dk/>) with 19 members (May 2009).

³ Statistics Denmark.

‘quality’ food and beverage products and with about 200 employees have been established since the middle of the 1990s.

These overall contemporary trends in the agro-food economy, i.e. the continuous employment decline and concentration of ‘conventional’ food production systems and the simultaneous emergence and growth of ‘alternative’ specialised food productions are in accordance with the conclusions in the EURODITE sector report on the international food industry (Manniche 2007).

Table 1 presents basic statistical information about different sub-sectors of the agro-food economy on Bornholm. It should be noted that the figures are net results of decline in certain parts of the sub-sectors and growth in other parts that are not distinguishable in the statistical data set. Due to the heavy decline particularly in standardised manufacturing activities in the investigated period, the picture drawn of the development in these sectors does not give a precise indication about the emerging new productions of regional food.

Table 1. Basic characteristics of agro-food sectors on Bornholm

	Fishing	Agriculture	Manufacturing of fish products	Manufacturing of other food and drinks	Manufacturing of firms with less than 15 employees 1)
Number of workplaces 2005	118	457	12	39	43
Number of workplaces created 2000-05	-36	-128	-8	5	-1
Full-time jobs 2005	95	239	292	512	201
Number of jobs created 2000-05	-60	-54	-360	41	21
Turn-over 2005 (mil. DKK)	173	852	1.161	1.074	316
Growth in turn-over 2000-05 (%)	-18,4	12,2	-10,3	49,5	56,6

Source: Statistics Denmark.

1) The firms in this group, in which almost all the newly established regional food producers belongs, are included also among ‘Manufacturing of fish products’ or ‘Manufacturing of other food and drinks’.

SECTION 2 - THE CASE STUDIES

2.1. The Territorial Knowledge Dynamics (TKD) – Development and branding of Bornholm food.

The TKD concerns the last two decades of restructuring and change of the food production and governance systems of the Danish island of Bornholm. On the background of dramatic employment decline and structural rationalisation in farming, fishing and standardised industrial processing, regional entrepreneurs and politicians have been motivated into efforts of creating new types of firms and jobs that could turn the negative trends of conventional food production and contribute to diversification of the regional rural economy. Thus, as mentioned before, since 1995 about 40 new firms have been established by regional entrepreneurs all with productions of specialised food and beverage products. Despite big differences regarding products, technologies and business model, a common characteristic is the more or less direct use of the Bornholm origin of production as a factor causing or at least adding to the quality of the product. This marketing strategy builds on the already

well-established brand of Bornholm on the national scale created through the long regional tourism traditions.

This development has been pioneering in a Danish development context marked by lacking production traditions as well as articulated consumer demands for food with a regional identity. The products result from often long-lasting entrepreneurial processes that only very rarely involved targeted R&D activities and consist of varied specialty versions of generic categories of food such as cheese, oil, crackers, bread, beer, wine, chocolate, and ice cream. Hence, in a Danish food industrial context the novelty is not connected with the tangible products as such but with the marketing of these as 'regional'.

The new food productions, the majority of which are micro-firms with less than 5 employees, basically can be classified in two groups. One group of firms are 'classical' manufacturers who have followed in the footsteps of a handful of old well-established Bornholm producers of niche products and have succeeded in entering national consumer markets. This group uses more conventional industrial production equipment and distributes main parts of their specialised products via wholesalers and supermarket chains on national markets. A second group of firms to a large extent, sometimes exclusively, relies on direct sales, artisanal production methods and adding of value to the products by creation of experiences for the visiting customers, for instance by opening their production so that visitors (mainly tourists) can see how products are made.

From a historical point of departure in the middle of the 1990'ies with only a few niche food producers on Bornholm who operated on their own and did not specifically use the Bornholm origin in their marketing, regional networking among firms has started, and a sector-crossing cluster for Bornholm food and culinary heritage has emerged. Because of the peripheral conditions of Bornholm, this regional food cluster does not have the gravity of typical clusters in the Porterian sense but is a peripheral micro version, however with sufficient impetus to not only affect regional development but also export the concept of regional food to other regions in Denmark. At the core of the cluster are 19 food processing firms who are members of the Bornholm division of the European network association Regional Culinary Heritage that was established in 1995 and has been an important platform for regional as well as interregional networking regarding development and commercialisation of regional food (<http://www.culinary-heritage.com/>). These 19 firms have roughly 400 fulltime employees (2008). Among the totally 32 Bornholm members of Regional Culinary Heritage are also 9 restaurants, cafes and caterers, 2 delicatessen shops and 2 public actors. In 2005 some of the producers established another network association, Gourmet Bornholm (<http://www.gourmetbornholm.com/>), in order to start more formalised cooperation on marketing and business development.

Also private and public support functions have emerged and diversified. Different sorts of business consultancy firms primarily within marketing and communication as well as new wholesalers and distributors have been established supplying the food producers with services and expertise.

Furthermore, from a starting point with a few public sector consultants and politicians, personally engaged with the issue of rural development, important elements of a regional governance system for promotion of small-scale food productions has been built and integrated in regional policies and

institutions. Proactive, persistent and coordinated regional policy initiatives, mainly launched and financed via the EU program LEADER for rural development and focusing on common branding and networking rather than on product and technology development of individual firms, have been critical for the emergence of the new Bornholm food cluster and for the more recent integration of the branding of Bornholm food as part of a broader place-branding.

The TKD analyses the knowledge dynamics involved in the development and branding of Bornholm food and culinary heritage as well as in the formation of network, promotion, and governance frameworks around this process. This encompasses a bundle of related knowledge dynamics, crossing a variety of societal contexts and economic sectors, and involving elements of political and social discourse setting. Rather than science-driven creation of fundamentally new knowledge and technologies the TKD involves social dynamics of adopting and contextualising production and marketing knowledge originating from elsewhere. In the lack of rich, authentic regional culinary heritage to tap into by Bornholm food producers, important inspirational sources for commercialization have been culinary traditions and rural business forms from Southern Europe and other Nordic countries. Another inspirational source has been the abstract concept of ‘Experience Economy’, brought to the island and transferred to the food producers by a number of newly established private consultancy firms. However, contextualisation of the region-external knowledge to the specific geographic and market conditions and possibilities on Bornholm has been crucial.

The TKD also involves critical elements of regional interaction among the food producers as well as between the food sector and other sectors such as tourism, restaurants, and arts & crafts businesses. This interaction forms a central element in a concerted branding of Bornholm food as an integral part of a broader place-branding that has been staged by regional policy actors as well as by the regional tourism industry.

Among the numerous topics that have been involved in the territorial knowledge dynamics, the following have been particularly critical and thus, are analysed in detail in the TKD case study:

- Development of Bornholm food and drinks
- Territorial-level cooperation and Culinary Heritage
- Developing the experience economy in the food sector on Bornholm
- Place-branding of Bornholm food

The TKD case is not selected of reasons related to results in job creation and economic growth that are remarkable in a comparison with other sectors and regions. However, the case study offers a perspective on territorial knowledge dynamics related to economic renewal and innovation in a peripheral region. This means that the knowledge dynamics are affected by peripheral socioeconomic characteristics such as dominance of traditional low-tech economic sectors and micro-firms, weak institutional systems for research and education, a small population with low levels of education, etc., however by strong entrepreneurial motivations and new rural policy discourses as well.

Additionally, the TKD may provide insight in more universal trends in agro-food production and consumption systems in many Western countries regarding growth of ‘alternative’, ‘high-quality’

food in general (Goodman 2003; Renting et al 2003; Murdoch et al 2000; Watts et al 2005; Winter 2003; Manniche 2007) and growth in ‘regional’ and ‘local’ food in particular (Parrott et al. 2002; Testa & Massa 2008; Hinrichs 2000; Murdoch et al. 2000; Ilbery & Kneafsey 2000). Also the three firms studied in this FKD report are selected because their business models and innovation activities seem to be distinctive and typical for contemporary changes in international food and drinks markets, for instance towards ‘short supply chains’ (see for instance, Renting et al 2005; Kneafsey et al 2003; Ilbery et al 2005) and ‘sector boundary shifting’ (van der Ploeg & Renting 2004). The firm selected for the FKD1 study represents the above mentioned group of ‘classical’ niche producers and is about the development and marketing of rapeseed cooking oil, while the firm studied in FKD2 represents the mentioned group of new food producers based on direct sales and creation of experiences, and concerns the creation of a sector-crossing vineyard.

Due to the enhanced positioning of the Bornholm food brand on Danish consumer markets a third model for production of ‘Bornholm food’ recently was introduced. This model of ‘regional food’ is not like the two others small-scale and ‘alternative’ in nature. Rather it is the specialisation model of a conventional multinational meat processing company, Danish Crown, represented on Bornholm with a production unit. Led from headquarter in Jutland the company developed a specialised production of ‘Bornholm Pork’ as a diversification strategy regarding a part of its highly standardised product portfolio. This sort of product diversification strategy is in line with more general trends in the conventional food industry (CIAA 2006; EMCC 2006; Murdoch & Miele 1999) and the innovation process of developing Bornholm pork meat is in focus of FKD3.

As described above, in a Danish food context characterised by large-scale standardised production and distribution systems, specialty food and drinks with a regional identity are relatively rare. Accordingly, establishing and marketing such productions is a pioneering task to be accomplished in an institutional environment, including research and innovation systems, organised primarily to satisfy the demands of large, often multinational companies and supply chains. In this respect the three firm cases are differently related to the TKD of developing networks, promotion and governance systems for Bornholm food and culinary heritage. As will be presented below, the two small firms studied in FKD1 and FKD2 have been deeply integrated in and have both gained from and contributed to the long regional process of developing alternative food production and distribution networks on Bornholm, starting in the beginning of the 1990’s. As opposed to this, the large firm studied in FKD3 is integrated in well-established national supply chains and innovation systems, and is not to be considered a part of the newly developed business ‘cluster’ of Bornholm food. The company only started exploiting the brand of Bornholm food when this brand already had achieved a position of the Danish consumer markets. On the other hand, the national distribution of the resulting Bornholm pork meat unquestionably contributes to the marketing and branding of other ‘Bornholm food’ products.

2.2. FKD1: Development and marketing of cold pressed rape seed kernel cooking oil from Lehnsgaard

2.2.1 Introduction

Lehnsgaard is the name of an old family-owned farm on Bornholm. Until 2004 the income of the farmer, Hans Hansen (HH), mainly depended on growing of rape. The seeds of the rape crop are traditionally used for industrial processing of a low-value oil (Canola), which is used mainly for heating and lighting houses and the remaining organic material for animal-fodder. Rape is globally the third most important oil crop after palm and soy and in the tempered climate belt the only one. In 2004 Lehnsgaard marketed a refined, cold-pressed rapeseed kernel oil and thus realized a radical change of business activities from agricultural production of bulk standard raw materials for anonymous, global markets to manufacturing of a high-profile, quality product for end-consumers of private households, restaurants and caterers.

The refined oil of Lehnsgaard and the technology by which to produce it are the result of R&D activities carried out on Bornholm by an inter-regional R&D organization (Bioraf) with links to the University of Copenhagen. Among other things, Bioraf developed methods and equipment for production of a rapeseed oil upholding the healthy assets of rape seeds but avoiding certain chemicals that give the oil a bad taste and that are the main reason for the traditional use of rapeseed oil for non-food purposes. Despite the competitive healthy assets of the product compared to other cooking oils on the market such as olive oil, commercialization was not straightforward but depended on, among other things, development of consumer markets, including a brand, and supply chains. HH purchased Bioraf's equipment and know-how for production of rapeseed cooking oil and succeeded in bringing the product the important step from technical development to nation-wide distribution and sales via supermarket mainly through branding and marketing initiatives emphasizing not only the tangible health-related assets of the product but also intangible qualities of 'Bornholm identity and authenticity'.

Yet, the success of Lehnsgaard is not remarkable in purely economic terms such as number of employees (6 in 2008, including the wife of HH) and turnover (which was 8 million DK in 2008). Lehnsgaard has received considerable media attention and public recognition. For instance, in 2004 a cook book distributed in 300.000 copies by the Danish NGO, The Heart Association, promoted the use of Lehnsgaard oil due to its documented health assets, and the Lehnsgaard rapeseed oil has been presented and well promoted also through the TV media. In July 2008 Lehnsgaard's cold pressed rape seed kernel oil won a blind-tasting test in a leading national newspaper.

Also Lehnsgaard is a well-renowned firm at the regional scale. HH is "the good example" which is often brought forward when one wants to promote regional Bornholm food: HH as a person is reliable, the quality of his product is unquestionable, it is based on local raw materials where HH is uncompromising; it is based on a proud, dedicated production line, again uncompromising concerning production standards. HH is a very visible promoter of not only his own product, but of quality food and drinks products of Bornholm and he is an avid participant in many of the joint marketing events that promote Bornholm food.

FKD1 analyses the knowledge dynamics involved in Lehnsgaard's process of commercializing the rapeseed oil product developed via public R&D, i.e. Lehnsgaard's process of developing a new business model and the needed value-adding production, supply, marketing and distribution systems allowing for commercialization of the product. However, since these firm-level dynamics can be considered a spin-off of technical R&D and only the final commercialization part of a larger knowledge biography, the preceding R&D phases are included and shortly described below although they did not directly involve Lehnsgaard.

2.2.2 The sequence of events and phases in the knowledge biography

The development of manufacturing activities on Lehnsgaard was a relatively long-termed process of transition, although the main changes were accomplished in a rather short period of time. In fact the process started back in 1995 when HH got the idea of pressing oil from his crop of rape seeds. In the eight following years HH were engaged in developing products, production methods and facilities, however not particular intensely and targeted and therefore without reaching the phase of commercializing. In 2003 HH got the opportunity of buying Bioraf's buildings, machines and methods for rapeseed production and the purchase October 2003 accelerated the commercialization process radically. In only six months HH prepared for market introduction which included completion of the production facilities as well as development of a new business concept and marketing strategy as well as initial efforts to identify customers for distribution and sales to end-consumers. The phase after market introduction in March 2004, mainly involved branding, marketing and distribution in order to develop the consumer markets. Hence, the following phases in the firm-level knowledge biography can be identified:

1. Development of product and provision of technology (1995 – October 2003)
2. Preparing for market introduction: Development of business concept, branding strategy and marketing materials (October 2003 – March 2004)
3. Marketing, distribution and branding events (March 2004 – July 2007)

2.2.3 Development of product and provision of technology (1995 – October 2003)

In the summer of 1995 HH was invited on a study trip to South-East Scandia, Sweden, the region of Sweden closest to Bornholm and with whom Bornholm has had interregional cooperation since the 1980's. The trip was organized by the coordinator of the Agricultural Development and Innovation Centre on Bornholm (LUIC), a now closed project organization under the umbrella of the local farmers' Agricultural Advisory Services, and was targeted experience exchange and mutual discussions about future interregional cooperation regarding promotion of small-scale production and sales of regional food. At that time HH was considering the options of increasing the value-added on his farm by replacing or supplementing his conventional farming activities with other types of production such as processing of crops. One of the options that HH discussed with the before-mentioned coordinator of LUIC was to press oil from his rape seeds and use it as an energy source to heat a local swimming pool. On the visit to Sweden, HH visited a farmer, who demonstrated how his in-

dustrial oil press machine worked and this pushed HH in his decision to invest in, what had so far been a loose idea. Two weeks later he bought an oil press from a farmer in Jutland, Denmark and installed it in an unused building on his farm.

HH had neither educational nor professional background for oil pressing nor for manufacturing, distribution and marketing in general. He has a vocational degree in farming and by working as farmer since 1984 (originally as a pig farmer, later growing of crops) he had got tacit knowledge and practical skills within a broad range of technical, machine-related areas. In addition to agricultural expertise in growing different sorts of rape crops, he had knowledge about and collegial relations to other local rapeseed farmers which in later phases were exploited in building a local supply basis.

HH exploited his practical technical skills in experiments on his oil press machine to produce rape seed oil. This was, however, for several years carried out more as a hobby than as a goal-oriented business development activity. A main obstacle in this phase for commercial use of the oil for food purposes was regulative demands concerning hygiene in the place of production. HH realized that it would be very expensive to change the shed or other parts of his farm in order to achieve the needed formal approval for food processing.

In this initial pre-commercialisation phase of maturing and concretizing his basic idea of starting some sort of small-scale manufacturing alongside or instead of his conventional farming activities, an important platform for inspiration and collegial exchange of information and experiences was the interregional European association Regional Culinary Heritage in which Lehnsgaard was member since it was established in 1995. This association was as a direct result of the before mentioned inter-regional cooperation between Bornholm and South-East Scandia but today has member regions in Denmark, Sweden, Germany, Lithuania, Latvia, Poland and Spain. It has the purpose of promoting culinary heritage and small-scale alternative production and distribution networks in the member regions through, for instance, sector-crossing cooperation between farmers, food producers, restaurants and caterers, specialty food retailers etc. According to interviews with HH, taking part in activities and discussions within a network of actors with similar ideas and motivations in the region as well as in other regions was important particularly in the initial phase, marked by vague ideas regarding concrete products, business model, markets, distribution forms, regulative demands etc.

Simultaneously and geographically very close to Lehnsgaard, R&D activities on ‘whole crop bio-refinery’ were carried out by the Bioraf Denmark Foundation, an internationally oriented non-profit R&D organization on Bornholm, which was established in 1988. Lehnsgaard delivered rape seeds for the R&D activities in the Bioraf project. Among the outcomes of the Bioraf research project was a refined cold pressed rape seed kernel oil and methods and equipment for processing it. The activities were financed via diverse EU research programs such as ÉCLAIR (<http://www.biomatnet.org/secure/Eclair/F169.htm>) and FAIR (<http://www.biomatnet.org/secure/Fair/S1137.htm>), national research funding, regional EU funding as well as co-financing by private partners. The R&D were carried out by an international project consortium with the Faculty of Life Sciences at the University of Copenhagen as the coordinating lead partner and involving, among others, the Danish pharmaceutical firm and producer of enzymes Novozymes A/S (part of Novo Nordisk A/S), the UK firm United Milling Systems, the German pro-

ducer of centrifugal equipment and Westphalia Separator AG, and universities and research institutes from Greece, Ireland, UK and Germany.

The purpose of the project was to develop sustainable and commercially feasible production systems – whole crop bio-refineries - based on renewable, local resources and separation and refining of diverse anatomical and chemical components of agricultural crops such as rape and wheat mainly for non-food purposes for instance within chemical industries. It was a special aim to aid commercialisation of research results regarding utilisation of agricultural crops for high-value products by breaking down some of the barriers related to lacking supply chains of farmers, processors and wholesalers/retailers and main efforts were focused on integrated production (growing) and processing of rape seed. According to Hilmer Sørensen, chemist at University of Copenhagen and involved in the chemical aspects of the R&D, the rape seed research was concretely motivated by the wish to develop cost-reducing methods for oil processing and for utilisation of the remaining ‘press-cake’ for isolation of diverse proteins and other chemicals with high market value.

During the initial research in 1991-92 high quality oil and protein were produced by enzymatic fractionation of rapeseed that allowed for the preservation of certain healthy assets of the oil and for avoiding those chemicals (glucosinolates) that give the oil a bad taste and are the reason for the traditional use of rape seed oil for non-food purposes. Rape seeds have a high content of the amino acids omega3 and omega6 that humans need, but only have few natural sources of. Additionally, compared to other types of vegetable oils such as olive oil, rape seed oil has a very low content of multi-unsaturated fats and generally an advantageous balance between proteins and amino acids. Thus, in terms of health, rape seed oil is a highly competitive fat product.

However, the chemical and process engineering experiments on extraction of the oil based on aqueous enzymatic processes failed in terms of production costs and commercial feasibility. Consequently, in order to decrease production costs, other processing methods (not involving use of enzymes but mechanical cold pressing of dry seeds) were developed by Bioraf during the 1990’s. In this work, one of the engineering challenges was to control the pressure on the seeds so that the right chemical qualities of the oil could be provided. Since the most refined type of oil, which also gives an advantageous taste, is the result of pressing seeds without peel, i.e. the kernel. Methods and milling equipment for a gentle peeling of seeds before pressing were developed and installed in the research centre. Lehnsgaard was one the local farmers supplied rape seeds of the needed quality.

In 1999 Bioraf’s large EU research projects was completed and among the concrete results was ready-made production equipment for peeling and pressing of rape seeds. Nevertheless, despite the winning results of the chemical and engineering research, the overall conclusion, mainly regarding the none-food potentials of rape seeds targeted by the R&D, was less optimistic:

“By focusing on added value products and including farmers’ cooperatives and industry in the development (innovation) chain, it has been possible to demonstrate added values of more than 100% over traditional refining for oilseed rape. Similar approaches have been applied to wheat bio-refining. However, the higher the added value due to further refining, the higher the processing costs. Although promising possibilities exist, a commercial breakthrough for increased non-

food use of farm crops is not imminent. This is due to the relatively low cost of raw materials based on fossil fuels and the well-developed and widespread use of production technology.”
(<http://www.biomatnet.org/secure/Fair/S1137.htm>)

In connection with the closing down of the Bioraf project, project management made several attempts to on the one hand, sustain the research capacities of the project as well as, on the other hand, to develop the research production facilities into a commercially feasible production. The period is a bit muddled, and we have not been able to uncover the exact temporal dimensions; let it here suffice to briefly describe the different attempts that were made to exploit the knowledge created by the Bioraf Project, commercially.

To this end, Bioraf had, toward the end of the 1990s, started cooperation with an entrepreneur on Bornholm regarding commercialization of the research results for food purposes. The Bioraf building and production facilities had the necessary hygiene authorization for industrial food processing, and the entrepreneur made a leasing agreement with Bioraf to use the buildings and equipment for production of cooking oil. The entrepreneur actually succeeded in introducing oil (named Allara), onto the market around the year 2000. The oil was distributed via specialized retailers as well as to a number of restaurants on Bornholm. However the product was not successful and the entrepreneur went bankrupt, leaving debts to both Bioraf for his leases - and to HH for rape seed supplies.

At this stage the project manager and a leading employee of Bioraf decided to attempt to commercialize project results themselves. They became formal business partners and contracted HH to deliver rape seeds. They contacted a large number of supermarket chains across the country and marketed the idea of cold pressed rape seed kernel oil. Through their contacts with supermarkets, they were given a distinct impression, that cold pressed rape seed oil was a product which had a growing demand. They did not, however, know anything about business and thus were unable to close any deals, and their ambitions soon dwindled.

Partly due to this unfortunate situation, Bioraf activities and equipment in 2003 was about to be relocated to a similar agro-engineering R&D centre in Lolland, Denmark, “The Green Centre” (<http://www.greencenter.dk>), to the regret of certain actors on Bornholm, such as the board of the local capital fund, “Bornholm’s Sparekassefond”, which owned the Bioraf building. The board of the fund knew about HH’s experiments with oil pressing on his farm, and contacted him for a discussion about his interest in taking over the production equipment.

In October 2003 HH purchased the Bioraf equipment and completed production facilities through investing in and installing a bottling and labelling apparatus. At the time that HH took over the production facilities, all former employees of the Bioraf project had left, and the apparatus had not been used for some time. Due to his agricultural background, HH had previous experience with mechanics and he was able to prepare the machinery for mass production himself. He hired the food consultancy firm, Danish Food Guide, to develop a self-regulation program for the company. This was done by a female consultant, Signe Folke, who originally had a bakery education and has since completed a degree within process technology and nutrition.

During this period of intense synthetic knowledge development, HH approached the local Business Support Centre (BEC, Bornholm's Erhvervscenter) and asked if they could help him: he needed consultancy concerning developing his business idea, one of which was to bottle his oil in clear glass rather than the usual dark-green glass, which is characteristic of many Danish cooking oils. The BEC could not help him directly, but referred him to a local company producing aquavit, which had its own bottling apparatus. The company in turn referred him to a packaging wholesale firm in Copenhagen, now named Boman Trading, who, without charge, passed on valuable information about bottle prices, qualities as well as consumer preferences concerning design. The agent spent a lot of time helping HH find a cheaper bottle with the right elegant design (the supplier of the chosen bottle is German). Today, the packaging wholesale firm is one of Lehnsgaard's three suppliers of cardboard packaging.

Compared to the first entrepreneur engaged in commercializing the Bioraf research, HH had important agricultural knowledge about growing and harvesting of rape crops with optimal qualities for oil production, and additionally, HH was able to exploit his collegial relations to other local rape crop farmers. HH has provided guidelines for his rape crop suppliers concerning how to provide the right crop qualities for instance connected with when to harvest and which rape sorts to use. This contact base was also useful in the first six months of HH taking over the production facilities, before he started getting his cooking oil on the market, because the farmers could buy up the oil he was producing and use it for animal fodder, whilst HH was getting his production facility to run smoothly.

2.2.4 Development of business concept, branding strategy and marketing materials (October - December 2003)

Despite the long phase of preparing a change of Lehnsgaard's activities and business model, HH did not have precise idea regarding who the customers might be and how he could reach them through marketing and distribution channels. In fact, not even the product category was finally decided. In addition to the obvious idea of selling the oil as cooking oil, HH, as mentioned above, considered using the rapeseed oil as a heating source. Another non-food product type, which was considered by HH, was that of using the refined oil as a major ingredient in a sun protection lotion. During the initial phase, HH had been in contact with a potential investor for realization of this idea on the German market. They were in contact with a pharmacist who specializes in non-perfumed, natural products in cosmetics, who were to develop a suntan lotion based on the rape seed kernel oil. This idea never fully matured, as will be explained below. Interestingly, Lehnsgaard rape seed oil is an important ingredient in a number of cosmetic products today. Production is, however, strictly limited to artisan "home" products made by local cosmetic producers and sold to tourists. Lehnsgaard does not utilize this aspect of his oil in his marketing.

In order to obtain advice about how to prepare the business for market introduction, especially in terms of marketing and distribution, HH contacted a local consultancy firm, Konnect Kommunikation, in October 2003. The firm was newly established on Bornholm and run by four individual consultants (three male partners and a female consultant), who had recently moved to the island from Copenhagen. The firm had competences within branding, communication and marketing and due to its deliberate business strategy on the Bornholm market to utilize professional knowledge on brand-

ing, communication and consumption trends on a mission to transform the Bornholm economy by introducing new business forms, Konnect Kommunikation has functioned as a central KIBS⁴ agent in the regional process of developing ‘new Bornholm food’ (see our TKD). The consulting requested by HH was partially funded through an interregional project on commercialization of small-scale food production in different peripheral regions in Denmark, financed via a number of Local Action Groups under the LEADER+ EU program, including the one on Bornholm⁵. The project did not fully fund the Lehnsgaard branding process, though, and HH invested some of his own initial capital in it.

Konnect Kommunikation led a dialogue and discussion with HH targeted elaboration of a branding strategy for Lehnsgaard in which the first step was identification of the product concept and the fundamental values to communicate through branding and marketing. By exploiting tacit professional knowledge about corporate branding as well as about overall trends in society and culture and by taking into account the entrepreneurial characteristics and personal views of HH underlying his thoughts and words about his business ideas, a managing consultant of Konnect Kommunikation (male) advised HH to choose the idea of producing cooking oil rather than sun protection crème. From a marketing and branding point of view, a story about a sun protection crème produced on a farm on Bornholm might not be consistent with consumer markets for high-profile products. According to the advice of the consultant a growing number of Danish consumers add new cultural, social and political dimensions to food and drink and are willing to pay premium-prices for products that embed such dimensions. To meet these demands it would be more reliable with a branding story emphasizing the entrepreneurial values of HH as a farmer, his old traditional family farm on Bornholm and the exclusive, healthy assets of the product. The goal of the branding strategy was to achieve market success by branding the product as a unique product on the market, whose qualities were unparalleled: the oil has documented health assets, a distinct geographical identity as well as exclusive aesthetic qualities related to colour and taste.

HH agreed on this strategy and a Konnect Kommunikation consultant (gender: female) in December 2003 presented a palette of marketing materials for Lehnsgaard including logo, bottle labels, product information letters, as well as diverse sorts of graphics for use on Lehnsgaard’s website, created by HH’s brother (<http://www.Lehnsgaard.dk/>).

At this point in time the consultancy services of Konnect Kommunikation did not satisfy HH’s expectations of a detailed business plan, including how to deal with the crucial issues of distribution and logistics. Today, after having experienced the effect of the provided marketing materials and having experienced that the ‘promised’ consumer demands actually were real and existed, HH evaluates the services of Konnect Kommunikation more positively and of greater value. Nonetheless, as a farmer without experience in marketing, HH had to reconsider his initial way of thinking that having provided good professional marketing materials automatically would sell the products. HH realized that larger practical marketing and branding efforts were needed, not only because cus-

⁴ KIBS stands for Knowledge Intensive Business Service.

⁵ Lille Gadegaard, the focus of FKD2, also received assistance via this particular LEADER+ project, though via services from another consultancy firm.

tomers needed information about the new competitive qualities of his product, but also because vegetable oils are not integrated in the traditional food cultures of Denmark and other Northern European countries like they are in for instance Southern European countries.

Hence, HH used the marketing materials in personal visits to supermarkets, delicatessens, restaurants and wholesalers on Bornholm and a few in Copenhagen, informed about his product, gave bottles of prototype oil, and succeeded in getting an agreement with some of them about delivery and sale of the oil. Here HH to some extent profited from the efforts of the preceding entrepreneur that had marketed the oil Allara. However, compared to the Allara oil, the oil produced by Lehnsgaard had an advantage that was valuable in marketing: a 100% local supply basis. As the chef in a Bornholm restaurant said:

“We used the Allara oil in our restaurant because it had good cooking qualities, it had a wonderful colour and because it was produced by a Bornholm firm. We really have tried to support the development of regional food and to use regional raw materials in our cuisine and our guests often request information about the origin of their food. The Allara oil was a good product but it was not always made on the basis of Bornholm rape seeds. So from our perspective the Lehnsgaard oil is even better because Hans Hansen guarantees for his local supplies”. Claus Seest Dams, chef of Restaurant “Di 5 Ståuerna” (“The Five Lounges”), Hotel Fredensborg, interview April 8, 2009.

2.2.5 Marketing, distribution and branding events (March 04 – July 07)

In order to seriously develop and expand the Danish consumer markets for Lehnsgaard’s oil, more large-scaled branding and positioning efforts were needed than those performed by HH via personal visits to potential customers and distributors in the initial phase of preparing for market introduction. Among the reasons for the failure on the preceding entrepreneur on Bornholm (Allara), who carried out the first attempt to commercialize the cold pressed kernel oil developed by Bioraf, probably were lack of a professional marketing strategy and, perhaps even more importantly, wrong timing concerning market introduction. As described below, Lehnsgaard’s market introduction in March 2004 meant that the product, to some extent “accidentally” gained invaluable branding effects through a number of initiatives, which were led by firm-external actors, but which radically enhanced the visibility and acknowledgement of the product on consumer markets.

At a food fair in Copenhagen in the spring of 2004, organized by the farmer organization “Dansk Landbrug” (Danish Agriculture) HH had a stand, where he presented his new product, and was here contacted directly by a representative (gender: female) from “Hjerteforeningen” (The Danish Heart Association), a Danish NGO which focuses on promoting research and information about heart related diseases. The representative was project coordinator of a new project, “Danish Rape Seed Cooking oil”, the object of which was to launch a public information campaign in Denmark on the positive effects on human health of replacing animal fat products such as butter and margarine with mono-saturated fat products, such as rape seed cooking oil. The project was a partnership lead by the Danish Heart Association with The Fruit, Vegetables and Potatoes Research Association and Agrova Food. The Research Association is a branch organization of producers of non-animal food stuffs,

while Agrova Foods is the food division of the umbrella organization of The DLehnsgaard Group, the largest agricultural supplier in Denmark. The project ran from May 2004 until December 2005 and was funded through the national Innovation Policy. Due to the fact that Lehnsgaard was the only producer of cold pressed rape seed kernel oil (the others were less-refined oils) and because of his professionally elaborated marketing materials including the fact that he was the only cooking oil producer at the time who used clear glass bottles, the project coordinator invited Lehnsgaard to be a part of the project and to include the oil in a cooking booklet that was an element in the information campaign.

Hence, Lehnsgaard was presented in a series of information products (two booklets and a poster) in 2004, where his oil had a prominent position. However, maximum exposure to consumers was reached in May 2005 through the release of the first edition of a cooking booklet, which was printed in 200.000 copies and distributed nation-wide as a supplement to a popular women's magazine "Hjemmet" (The Home). Under the headline: "Rapeseed oil – the olive oil of the North" the recipe booklet promoted the use of rapeseed oil in Danish cooking. Lehnsgaard's oil had a prominent position in the booklet, which was so popular, that it was re-printed later in 2005. Together with Lehnsgaard's other and simultaneous marketing efforts, product information was readily available and marketed through several channels.

There are two other examples of branding initiatives with significant marketing effects for Lehnsgaard that were initiated and conducted by external actors in collaboration with and - at least to some extent - financially supported by Lehnsgaard, which are noteworthy. The first is the selection of Lehnsgaard rapeseed oil as one of six Bornholm food products used in the dinner menu at the royal wedding of the Danish Crown Prince in May 2004, a cultural event with maximum media coverage. The lobbying work, which paved the way for this national branding of Lehnsgaard oil and other Bornholm food products, was done by the so-called Food Ambassador, who was employed by the Local Action Group on Bornholm under the EU program LEADER+ to promote small-scale quality food⁶. Although selection for the wedding menu was conditioned by a 'gentlemen's agreement' that suppliers to the royal wedding could only use the event discretely in their marketing, (as opposed to the formal title of "supplier of the Royal Danish Court", the event has had a tremendously positive effect for the promotion of Bornholm regional food. However, Lehnsgaard was not content to be a supplier to the royal guests. He also was a co-sponsor of an event carried out by the before mentioned organisation Danish Agriculture, whereby 130 farmers made free breakfast for the crowds on the streets of Copenhagen, who were in town for the Royal Wedding. Thus, all fried eggs served at the "Peoples Breakfast" on the morning of the wedding had been fried in Lehnsgaard oil. Needless to say, such events contributed invaluablely to the branding of Lehnsgaard oil.

The last example concerns presentation of the Lehnsgaard's rapeseed oil via the TV media. In 2006, Claus Meyer, one of the leading Danish cooks and the key developer and advocate for the concept of 'New Scandinavian Cooking', supported by the Nordic Council of Ministers, prepared a series of six TV-programs with regional, specialty food and drinks from the Nordic countries. Meyer invited

⁶ See the TKD about Bornholm food for a more detailed description of the work of the Food Ambassador.

Bornholm to be the location for one of these programs and with the tourism development organisation, Destination Bornholm, as intermediating actor, the Lehnsgaard oil and other Bornholm food and drinks products (including the strawberry wine of Lille Gadegaard, see FKD2) were selected. However, the presented producers had to pay a substantial amount for participation. The program was shown on a nation-wide Danish TV-channel in Denmark in June 2007 for an audience of approximately 700.000 viewers, again in June 2008, and has also been distributed internationally and broadcasted in other countries. According to HH, the large-scale exposure through national TV broadcasting had immediate effects on the demands for the Lehnsgaard's oil and due to the public recognition of Lehnsgaard rapeseed oil, resulting from the TV presentation June 2007, this is chosen as the ending point of this knowledge biography. It should be noted, though, that Lehnsgaard has developed four special types of cold pressed rape seed kernel oil; an organic version; and three herbal varieties.

Lehnsgaard's participation in major branding events like the above described was obviously conditioned by qualities of the product as well as HH's competent marketing, managerial judgments, and well-developed entrepreneurial instinct for being in the right place at the right time. However, one of the main reasons for the commercialization success of Lehnsgaard rapeseed oil is the perfect timing of, on the one hand, the needs and resources of Lehnsgaard in different phases of the innovation process and, on the other hand, opportunities deriving from firm-external dynamics taking place in other knowledge contexts such as technical research of universities and science systems, trends in cultures and consumption patterns, changing debates in medias, and creation of new support functions provided by regional governance systems.

To further elaborate on the last of these firm-external dynamics, contributing to the commercial success of Lehnsgaard rapeseed oil, the market introduction of Lehnsgaard oil was perfectly timed with the employment of the above mentioned regional Food Ambassador in March 2004. Following the strategy directions of the employing board of the Bornholm LEADER+ Local Action Group, the Food Ambassador from start prioritized identification of a group of 'locomotives' among the many newly established food firms on Bornholm with special potentials and ambitions to build up markets outside the island. Lehnsgaard was among these firms that as a group represented a palette of varying food and drinks producers.

The Food Ambassador engaged in diverse forms of marketing and branding initiatives for the firms both individually and as a collective of firms. Lehnsgaard gained from these activities in a number of ways, for instance through the mentioned inclusion in the royal wedding dinner May 2004. The Food Ambassador also assisted Lehnsgaard in the making of a contract with a wholesaler, Nordlie, in Ringsted/Denmark summer 2004 regarding distribution of Lehnsgaard oil to large public caterers all over Denmark, and in the summer 2005 the Ambassador organized a trip to Lehnsgaard of purchasers representing two large Danish supermarket chains, Kvickly and SuperBrugsen, during which a contract for nation-wide distribution starting autumn 2005 was agreed upon. As a normal element in such contracts Lehnsgaard had to pay a substantial annual amount for access to the shelves and marketing campaigns of the supermarket chains.

Finally, Lehnsgaard gained from the work of the Food Ambassador through his initiative to establish formalized network cooperation between the selected locomotive firms, starting with a meeting on Lehnsgaard November 2004. This cooperation, mainly concerning common marketing, distribution and general management issues related to commercialization of small-scale regional food, quickly deepened and led into formation of a network association, Gourmet Bornholm, for common promotion of Bornholm food.

In summing up the knowledge biography of Lehnsgaard's rapeseed oil it is important to stress the interaction with firm-external actors and the gains from dynamics occurring in other development contexts. In an overall perspective, the commercialization of Lehnsgaard oil (as well as of many other new Bornholm food and drinks products) is a story about the fundamental embeddedness of economic activities in specific social, cultural and political conditions and thus, about the importance for business development of timing and alignment in relation to such conditions. However, the case study also illustrates the integration and complementarities of, on the one hand, knowledge dynamics of formal research systems related to development of products and technologies and, on the other hand, knowledge dynamics of firms related to commercializing and development of markets. The large knowledge biography in which Lehnsgaard plays the crucial, final role of commercialization is exemplary in terms of illustrating the integration and complementarities of analytical, synthetic and symbolic knowledge dynamics. The mainly symbolic knowledge dynamics of Lehnsgaard have their own eligibility, significance and value-adding role, independent from the initial scientific and engineering phases of developing the product and technology.

2.2.6 Gender issues

The innovative forces in FKD1 have primarily been driven by Lehnsgaard oil's male owner. Although his wife works in the firm, she is not a part of firm management and she is not a part of the brand of Lehnsgaard oil.

The primary dynamics which have shaped this case pertain to 1) the cumulative analytic and synthetic knowledge created by the BIORAF Project, an, as far as we have been informed, entirely male-dominated research process; and 2) symbolic knowledge processes which have been locally and personally created and adapted by a number of agents concerning branding, marketing and networking. A majority of the partners here are male (the Konnect Kommunikation management group and the Food Ambassador), while the Danish Heart Association project coordinator was female. One must be careful not to "over-conclude" based on the fairly limited number of actors involved in this case, but it is interesting to note, that while Konnect Kommunikation Management was made up of three male partners, the consultant who actually produced the branding material for Lehnsgaard is a female. Thus, there seems to be a division of labour in the consultancy firm, whereby the over-all strategy is drawn-up by male management with clients, and the more concrete marketing/branding material, is executed by female graphic designers.

The "Danish Rape Seed Cooking Oil Project", superficially at least, appears to be more gender-neutral. It was lead by the Danish Heart Association and was organized around a steering group con-

sisting of a two-person management team (one male, one female) from the Danish Heart Association, a two-person representation (one male, one female) from the Research Association on Fruits, Vegetables and Potatoes and a number of male rape seed oil producers. We have not been able to ascertain any profound gender-based divisions of labour in the project, as it no longer exists. However, it remains clear that Lehnsgaard's contact to the project primarily went through the female project coordinator, who seems to have managed the project on a day to day basis. All the recipes, which were developed using rape seed cooking oil, and introduced in the project, were developed by female cooks – and targeted a female consumer group.

2.3. FKD2: The creation of Lille Gadegaard vineyard

2.3.1 Introduction

Lille Gadegaard is the name of a traditional farm on Bornholm that today is operated as a vineyard. The owner is a farmer, Jesper Paulsen (JP) who in 1995 decided to change the activities on his farm from growing of strawberries to production of wine. Today Lille Gadegaard produces a diverse range of alcoholic drinks including wines from berries (strawberry, blackcurrants and redcurrants), red wine from grapes as well as distilled alcoholic products such as wine liquor and, from 2009, whiskey. The farm has 2.9 hectares with wine stocks from which about 18.000 bottles of red wine is produced annually. This probably makes the vineyard the largest of the total 23 wine producing firms in Denmark.

However, the crucial competitive factor of the business is not the physical products as such. Lille Gadegaard is neither a traditional farm nor a manufacturing firm but a vineyard of which an important part of value-added stems from experiences, storytelling and services attached to the products and provided for customers mainly on the farm in the opening season from May to October such as guided tours through the fields and winery. 90% of total sale of Lille Gadegaard wine products stems from direct sales on the vineyard; the remaining 10% is distributed via specialty shops on Bornholm and in the rest of Denmark, mainly in the Copenhagen area.

The FKD2 analyses the knowledge dynamics involved in the transition of the business model of Lille Gadegaard from the one of a strawberry farm employing only JP, to the one of a vineyard based on activities cut-crossing the sectors of agriculture, manufacturing and tourism services, and employing 6 persons including JP. The analysis specifically focuses on the knowledge dynamics involved in development of the tangible as well as intangible dimensions of products allowing for premium-prices while other aspects of the business transition process such as changes of administrative systems are only sporadically looked at. In other words, the FKD2 is about the creation of a new knowledge base for Lille Gadegaard regarding its productive, value-adding activities.

The development and commercialisation of the vineyard business model of Lille Gadegaard has involved a variety of interrelated knowledge dynamics regarding a number of different topics, involving different types of actors and interactions, and taking place throughout the whole period of 1995-

2008. The simultaneousness of knowledge dynamics related to different topics and firm functions complicates the task of dividing the knowledge biography into separate sequences and phases with only (or mainly) one topic in focus of activities. However, the FKD2 can be broken down into four main, temporally overlapping phases focusing on different topics (the what):

1995-2000: Development of the basic business idea

1995-2003: Development of wine products - berry wines (part 1) and grape wine (part 2)

2000-2003: Development of the value basis and business model of the vineyard.

2001-2008: Development and commercialisation of experiences and visitor facilities.

Below we will describe the differing topics, actors, and spatial dimensions of the knowledge dynamics through which the business model and value-adding activities of Lille Gadegaard vineyard were realised. A chronological structure of the presentation is intended but due to the complex nature of the FKD2 consisting of several interrelated and temporally overlapping firm-level knowledge dynamics this is not always possible. Before presenting the FKD2 we will shortly describe the competence and professional profile of the business owner JP since he plays a paramount role in all of phases.

JP has no formal education on any of the mentioned topics in focus for knowledge dynamics. He has a vocational agricultural education on farming (the Green Card). The first few years after graduating he was a pig farmer but in 1980 he changed his farm to strawberry production. Like in the earlier change from pig farming to strawberry growing, he accomplished the transformation to wine production applying his tacit, multifaceted knowledge and skills stemming from running a farm (growing crops, fertilisation of soil, climate, operation of agricultural machinery, maintenance of buildings, economic administration, etc.) However, he also is benefited (though maybe not activated before) with other personal competences and entrepreneurial characteristics such as creativity in getting ideas about new products and ways of using and organising his farm, openness to change, curiosity and an inquisitive approach in learning, interest in face-to-face contact and dialogue with customers, and skills in storytelling not least in giving technical agricultural and production matters a personal, relevant and lively dimension. It should be noted that the former strawberry farm was run partly on the basis of distribution via wholesale/retail and partly via a 'self picker' concept where household customers visited the farm and themselves picked strawberries for their private consume. Thus, JP already had practical experiences with a business model based on direct sales to visiting customers.

Nonetheless, JP obviously had to supplement his agricultural core skills and personal competences and talents with specific knowledge about the above mentioned topics and, as appears from below, this was done by applying a variety of different sources (local as well as distant) and learning methods (internet searches, learning-by-doing, use of consultancy services, employing expertise, etc.) by which external knowledge was adopted and internalised (contextualised) in a highly autodidact manner. According to interview with Torkild Boisen, Chairman of Regional Culinary Heritage Bornholm, and confirmed also by the FKD1, an autodidact, opportunistic, and practical approach to product and business development characterises many of the new food producers on Bornholm.

2.3.2 Development of business idea (1995-2000)

In 1995, due to tough conditions and negative trends in the strawberry markets on which JP operated, he realised that his strawberry farming activities were no longer profitable and had no future. Although he had other income sources, partly from other minor agricultural produces like honey, but mainly from his family's paid task of fostering kids taken away from their families by social authorities, he wanted to somehow change his farm-related business activities. Together with the head of the local primary school, who as a person like JP was highly engaged in the social and economic wellbeing of the rural community in which Lille Gadegaard is situated, JP discussed and developed the idea to use a local, closed-down dairy for production of strawberry wine, made on the basis of produce from Lille Gadegaard, and thereby creating a new local working place with a number of jobs of a kind that were new on Bornholm and that could contribute to social and economic renewal of the community.

This business idea of 'strawberry wine production with a local, social profile', however, was never realised due to many reasons such as the troubles and time demanded for developing appropriate wine products (the knowledge dynamics of which are described below), lack of finance to start up production in the closed dairy, and the decease of JP's partner, the head of the school, in 2000. After the decease of his partner in 2000, JP was left alone in realising the business idea and he decided to move the wine development activities from the former dairy and to a room on his farm, previously used for honey production and with the needed formal hygiene approval for food production. However, JP's initial motivation to change his business in directions contributing to social and economic revitalisation of the community and his point of departure for defining and creating 'local food' in certain social assets and networks of the community rather than in certain old culinary traditions of the region, is noticeable and a general characteristic of 'new Bornholm food'.

The initial phase of developing a new business concept resulted in the idea of operating Lille Gadegaard as a vineyard open for visiting customers and with direct sales through a farm shop. JP had diverse inspirational sources for this idea. One source was his holiday visits to wine producers in France, Germany and the Netherlands that provided him important inputs about how to commercialize products through the design of packaging, farm buildings etc. Another inspiration source that was implicitly known rather than explicitly searched for by JP, was the widespread regional traditions on Bornholm for business concepts depending on the big number of tourists that visit Bornholm during summers such as fish smokehouses and arts & crafts businesses within glass blowing, ceramics, textile design etc. These tourism dependent business forms are based on open workshop concepts where production and sales facilities are architecturally integrated and visitors personally can see how the production processes are carried out.

Regarding the specific aspect of how producers in a rural development and market context can start-up and commercialize new types of small-scale productions of food and drinks, a main inspiration for Lille Gadegaard - like for Lehnsgaard described in the FKD1 - came through informal networking with other producers of 'regional food' on Bornholm as well as abroad, linked to the European network association Regional Culinary Heritage (<http://www.culinary-heritage.com/>). Specifically for the Bornholm members of the association, four study tours were organized to different rural areas of Sweden in the late 90'ies in which JP participated. According to Hans-Jörgen Jensen, secretary of

the Bornholm Local Action Group for EU rural development programs, who was involved in the organization of these trips and actively involved in the foundation of the association in 1995, the emergence and practical experiences of alternative small-scale food productions, farm shops, and distribution channels started some years before and were more advanced in rural Sweden than in Denmark. From the Swedish perspective, Bornholm's larger tourism and restaurant sectors were considered especially interesting for best-practice experience exchange. According to interview with JP he learned a lot from dialogue with colleagues in Sweden on his trips there regarding subjects of general relevance on how to evolve from product development to sale of small-scale food businesses in rural areas, for instance related to organization of farm shops and other visitor facilities, packaging, marketing, distribution, etc. Informal networking with other Regional Culinary Heritage members on Bornholm was also helpful in later business development phases. For instance, regional networking provided Lille Gadegaard an important contact to the firm Danish Food Guide on Bornholm in 2002, where owner Poul E. Larsson and, particularly, his partner Signe Folke, developed a mandatory self-control hygiene regulation system for Lille Gadegaard. While Signe Folke primarily was concerned with hygienic control systems, Paul E. Larsson focused on regulations pertaining to wine labeling.

However, despite the progresses in developing the business idea and the opening of a farm shop in 2001, the business concept had still not found its final form and content.

2.3.4 Development of wine products, part one - Berry wines (1995-2001)

In an initial and rather long phase of 5-6 years, in which JP made his main income from other activities, he mainly was engaged in developing a product basis for his new business: strawberry wine. These activities were purely firm-internal, involving only JP, and were trial-and-error and learning-by-doing types of activities carried out through a practical approach in which JP asked "does this work?", rather than "what is the best way to do?"

Nonetheless, he started with a text-book searching for recipes for strawberry wines but only found one in an old, Danish cooking book for household-use. For hygienic and durability reasons this recipe suggested boiling of the berries before adding of yeast cultures and fermentation. He engaged in explorative experiments with different sorts of strawberries, however, after 3 years of experimentation he had to conclude that the process was simply not applicable for commercial purposes since it resulted in brownish colour and bad taste of the wine. JP therefore engaged in more targeted internet searches at homepages of strawberry wine producers in France and Italy on which he looked for useful information about production methods and found that they did not use boiling of the berries but basically the same method as in grape wine production by use of adding of sulphur as well as yeast cultures, enabling the start and finalisation of fermentation in a chemical environment with sulphur. Accordingly, through new trial-and-error experiments he found the most appropriate berry sort and method. In finding the right strawberry sort he exploited his agricultural knowledge from strawberry growing, since, as in grape wine production, the most appropriate sorts need the right balance of acid and sugar.

He also in this phase engaged in development of wines from other sorts of berries such as sparkling wines of blackcurrants and redcurrants, using similar experimental trial-and-error methods and, in this initial product development phase, only his own preferences of taste to examine and evaluate the resulting quality. Indeed, his knowledge dynamics in this field of activity truly were about trial-and-error. The berry wine products were not fully developed and ready for sale until 2001 when JP opened a farm shop on Lille Gadegaard.

2.3.5 Development of wine products, part two - Grape wine (1998-2003)

During JP's phase of developing berry wines, the EU was about to prepare the formal recognition of Denmark and other former non-recognised countries for commercial production of grape wine. Inspired by a number of holiday visits to wine producers in France and Germany in the late part of the 1990's, JP got the idea of producing grape wine besides of berry wines.

If the goal of JP had been to produce grape wine of an internationally exquisite quality he might have followed another and more professionally grounded and targeted strategy in starting grape growing and wine production than the one applied – or perhaps he might have decided not to start at all. However, the goal was less ambitious to be among the first in Denmark with a red wine product that could be part of the product portfolio of Lille Gadegaard.

Anyway, considering the specific climatic conditions in Denmark, starting growing grapes for commercial wine production is not a straightforward task and certainly has been a pioneering development project in which knowledge and experiences from traditional wine producing countries, on the one hand, have been crucial and yet, on the other hand, needed adaptation to local conditions to be applicable. JP accomplished the provision of new basic knowledge about grape growing and wine production by a combination of two methods.

The one was repeated holiday visits to wine producers abroad including collegial talks and walks in the fields and wineries together with the wine producers through which JP mainly was provided practically useful and tacit knowledge but also made a lot of personal observations, facilitated by his generic agricultural knowledge (JP calls this “visual learning”) regarding growing and production methods, etc. The other method was searches for codified knowledge on growing of grapes and on wine production, mainly on Internet homepages of wine producers of which most were German as JP lacked skills in other foreign languages. Also in his internet searching he applied the method of ‘visual learning’ from pictures of production equipment, working processes, design and organisation of buildings, etc.

Mainly a study trip of two weeks on a vineyard in Geysenheim/Germany in 1999, his close collegial talks with the owner, provided JP crucial knowledge about growing of grapes and production of wine which for JP had a demystification effect regarding the task of producing wine. However, the study trip also gave him important inspiration regarding the business concept of a vineyard with value-adding experiences, services, packaging etc. Also a visit in 2000 to a newly started wine producer in Maastricht/the Netherlands, was important, mainly regarding knowledge on how to start wine

production in an area, not recognised by consumers as a wine district and thereby depending on good marketing and media attention. Furthermore, a wine producer close to Copenhagen who some years before had started wine production and who was chairman for the newly established Danish Association for Wine Producers, was contacted in 2000 and requested useful information and advices. However, according to JP, this consulting was made in an atmosphere of unwillingness to hand over practical lessons and experiences, the critical ‘secrets’ of producing wine under Danish conditions, to a potential competitor and thus, was not considered very useful by JP.

In 2000, when the EU recognition of Denmark as a wine producing country was launched⁷, JP planted the first stocks of red grapes on his farm. By colleagues and internet information JP was advised to use the sort Rondo since this is the most appropriate for the Danish climate. The planting of stocks marks the start of a process of examination knowledge dynamics based on learning-by-doing and trial-and-error to build up more tacit, practical knowledge. As JP lacked practical experiences in grape growing he made many mistakes and paid his lessons the hard way. For instance, in his initial process of searching for useful knowledge on the internet and at colleagues abroad he was not provided the crucial information that newly planted grape stocks have to be protected from frost during the germination period, and so he lost a big part of his stocks the first year. Typical for the serendipity, characterising JP’s learning processes, the information about this agricultural fact and a method on how to protect the stocks was provided by a former wine producer from Hungary who as a tourist on Bornholm occasionally visited his farm in 2001 and fell into conversation with JP.

JP harvested the first grapes in 2002 and started his first production of red wine. Also in this field his way of providing the required knowledge was internet searches and talks with colleagues abroad. As metal tanks or wooden barrels for wine production are expensive, JP invested in plastic tanks and used these for the first two years of grape harvest. By a similar incidental way of developing his wine production through inputs from visitors, as was described above, a wholesaler from Jutland/Denmark, trading with diverse sorts of production equipment, in 2003 visited Lille Gadegaard as a tourist and informed JP that he had a complete set of used tanks in stainless steel including cooling system, appropriate for wine production, for sale for a favourable price. JP bought the equipment and started the usage of it from 2004 and onwards. His first red wine was bottled and ready for sale in 2003.

To indicate the continuous efforts to develop new products and diversify the product portfolio that characterises Lille Gadegaard, JP opened a distillery in 2005 for production of diverse sort of aquavits, liqueurs and alcoholic products. In 2009 the first whiskey will be launched after three years of maturing on wooden barrels. The knowledge dynamics of realising this sort of production was basically the same as those involved in the above described product development activities. This included, firstly, search for codified knowledge on internet homepages of producers (for instance, a sort of ‘reverse engineering’ whereby pictures of production equipment were studied for direct replication of production processes) and secondly, personal firm-internal trial-and-error and learning-and-doing.

⁷ The allowance of producers to inform on the etiquette also year and place of production and type of grape and thereby the upgrading of Danish wine from table wine to wine with a regional origin, was not given until 2007.

2.3.6 Development of the value basis and business model of the vineyard (2000-2003)

In 2000, JP was contacted by a private consultant (HCH) who recently had moved to the local community from Copenhagen where he had worked as communication consultant for, mainly large, public as well as private organisations regarding ‘value-based business development’ with a focus on environmental planning, for instance about how to organise ‘green balance sheets’, how to implement a set of basic (normative) values in an organisation, and how to communicate these values to customers in order to improve their public profile. According to HCH, the pioneering activities in value-based business development within the environmental planning sector, starting in the early 1990’ies, in many respects were the direct inspirational ground for how businesses and cultural institutions later on in the 90’ies practically started promoting and realising the communicative principles of the emerging ‘experience economy’. HCH also had a professional record within this field, for instance via jobs for museums in Northern Jutland and as director in 1999 of Nature Bornholm (a nature museum).

HCH found the vineyard business concept of Lille Gadegaard highly interesting and started conversations with JP. These conversations soon developed into more targeted sessions of sparring, at this point in time (2000) of a purely private, voluntary character, and this, had a significant impact in moving the transformation process of Lille Gadegaard into a phase with a more strategic and professional approach in maturing a coherent vineyard business concept.

Due to his above described professional background as communication consultant, HCH had skills and experiences in assisting business managers in defining those fundamental set of values that they want to profile and communicate, and accordingly, should integrate in all parts of their organisation. HCH applied these skills in consulting talks with JP through which they identified some basic values on which the vineyard could be built and developed and not least, on which the storytelling about the products, productions and farm could be told⁸. In short, the resulting set of symbolic business values of Lille Gadegaard consisted in a combination of ‘the innovative and honest entrepreneur who left his conventional farming’, the ‘old, authentic Bornholm farm’, and the ‘original types of new Bornholm wine products’. An overall important value identified as one of the main pillar of Lille Gadegaard was constantly to innovate new products and services from one year to the next to create a curiosity among customers and urge them to return back and experience the news.

Besides working as a private consultant on Bornholm, HCH was part-time employed as a teacher at the Class and Ceramics School on Bornholm - a nationally recognised further education of 3 years with 90 students from all of Denmark providing practical training in the crafts of glass blowing and ceramics as well as theoretical elements regarding industrial design, business organisation, marketing etc. by which the 90 students (the vast majority female) are encouraged and trained to start-up their own business after graduation. As teacher within these business oriented topics of the school, which also included practical project work, HCH in 2003 organised an educational project for 20

⁸ The owner of Lehnsgaard in focus of FKD1, had similar professionally intermediated sessions defining his value-basis, carried out at more or less the same point in time of the business development process, after the initial product development and before the commercialisation phase.

students, aiming at making an analysis of the business concept of Lille Gadegaard and suggestions for a total plan of the design and organisation of its functions, experience dimensions and visitor facilities. HCH functioned as a tutor for the students during their project work. Among the results of the student project, which was free of charge for Lille Gadegaard, was a written design manual for an 'experience-based vineyard', including the use and design of the different farm buildings, as well as a physical model of the farm, made in carton and big enough to allow walking inside it along the paths between its buildings.

Only some of the concrete suggestions of the manual and physical model were followed by JP. However, it was a sort of a 'eureka-experience' for him seeing his farm in model perspective, and together with the written manual the model gave him a much better understanding of what his business concept actually was about and how it could be realised. According to JP, this output also resulted from the process of accomplishing and taking part in the student project and his many talks with the almost exclusively female students that he described this way:

"This kind of persons is so creative and so inspiring to talk with. Everything is thrown up in the air, and discussed and analysed and given new perspectives that I never myself would have thought of." (Interview, 24.02.09)

Summing up the effects of this student project, JP underlined its overall conclusion, on which the suggestions regarding further development of Lille Gadegaard were based, that JP as a person and entrepreneur was the critical and competitive element in the Lille Gadegaard business concept rather than its wine products as such. This conclusion made JP reconsider his whole approach in developing his business and made him realise that some of his personal characteristics such as his constant, multifaceted product development projects, his practical, non-academic and entrepreneurial approach of 'learning-by-doing', his singing Bornholm dialect and lively way of communicating and telling stories to customers, should be emphasised and exploited rather than hidden away as irrelevant and unprofessional aspects of the Lille Gadegaard vineyard.

This process of explicating and codifying of the symbolic value basis of Lille Gadegaard, carried out through dialogue and interaction with intermediating consultants and students, was crucial for the later communication, marketing and storytelling efforts of the firm as well as for the further development of the business as a whole. Though it did not result in any formal and detailed manual or script for organisation and performance of business functions such as PR, marketing and product development, it provided JP with a critical, professionally grounded, personalised and contextualised knowledge about the distinct competitive assets of his firm and products and prepared him for communicating a certain story to customers that increased their willingness to pay premium-prices for his wines. As we shall return to later, efforts were done in a final development phase to refine and give the storytelling and business concept of Lille Gadegaard a more coherent and consistently form.

Despite, or maybe due to the well-elaborated and professionally intermediated point of departure for storytelling and communication, the marketing efforts of Lille Gadegaard in terms of advertising are not big and mainly consist of traditional means such as

- An internet homepage (<http://www.a7.dk/>), launched in 2001, upgraded and provided with online purchasing facilities in 2003, and with payment facilities (Visa) in 2007 and MasterCard (2008). Mirroring the importance for the vineyard of JP as a person, he uses pictures of, among other things, himself and his young daughters.
- Advertisement spots on the TV information system on board the ferry to Bornholm.
- Advertisements in the weekly magazine of the Bornholm tourism industry, informing about the week's events.
- Inclusion on the website information systems of the European association Regional Culinary Heritage.

In the development of a customer basis, Lille Gadegaard has benefitted largely from the efforts of the regional tourism industry and the tourist development organisation, Destination Bornholm, of marketing the emerging new food sector on Bornholm as part of a larger place-branding, for instance by inviting journalists of national newspapers and magazines to visit Bornholm and producers of Bornholm food, including Lille Gadegaard. These efforts are further described in the WP5 report.

Another major step in creation of the customer base of Lille Gadegaard was a number of performances of JP in TV-programs on nation-wide Danish channels of which the main were:

- When the first red wine of Lille Gadegaard was ready for sale in 2003, JP made a note on his homepage that the wine would be launched for sale on 1st of August. Due to a growing attention in Danish medias on cuisine related topics and of specialty, regional and organic food products, this note had reached the attention of the hosts of a popular morning news program, God Morgen Danmark (Good morning Denmark), sent on a nation-wide Danish TV-channel. They invited JP in the studio for an interview about his products and business at the very day of launching the wine.
- In 2006, Claus Meyer, one of the leading Danish chefs and the key driver of launching and developing the concept of 'New Nordic Food', supported by the Nordic Council of Ministers, prepared and made a series of TV-programs with regional, specialty food and drinks from the Nordic countries. Meyer selected Bornholm as location for one of these programs and, among other Bornholm products, he was particularly interested in the strawberry wine of Lille Gadegaard. Also the Lehnsgaard oil, studied in FKD1, was part of this TV-program, which was shown on nation-wide TV-channels in Denmark 2007 and again 2008, and the programs have been distributed internationally and shown in other countries as well.

Such large-scale platform for branding and marketing of Lille Gadegaard, facilitated by crucial external knowledge inputs regarding value-based business models and communication, obviously has played a role for the establishment of Lille Gadegaard's customer basis.

2.3.7 Development and commercialization of experiences and visitor facilities (2001-08)

The opening of a farm shop in 2001 provoked the need to further develop and organize the value-adding experiences, services, and visitor facilities of the farm. The visiting customers often re-

quested to see the fields and winery facilities and stated many kinds of questions about the production and products, and JP realised that he needed to somehow organise his customer services. Hence, alongside JP's continuous work to develop his wines, targeted efforts were made in the years 2001-2005 to develop the experience and service aspects of the business. This, for instance, included:

- Introduction in 2003 of paid guided tours at two scheduled times at certain weekdays on which JP take visitors through his fields and winery, tells about his products and production, and ends with tasting and sales of wines in the shop.
- Also in 2003 the opening of a cafe serving his wines as well as coffee and cakes. In 2005 the kitchen facilities of the cafe was upgraded and three persons (a cook, a bartender and a waiter/dish-cleaner) were employed to run a restaurant, initially with á la carte menu. The cafe/restaurant concept, however, has been changed every year but now seems to have found a viable 'bodega-inspired' form with a tapas menu.
- Introduction of camping sites on a field on the farm, free to use for visitors.
- Introduction of barbecuing and outdoor tables for serving of food. Also the style and menu of the barbecuing has been changed in the course of time.

JP quickly found the basic concept of his guided tours in a form, emphasising humour and giving visitors a funny experience rather than a lot of technical details. According to JP's experiences, making visitors laugh enhances their purchasing in the shop and generally they are not interested to hear about technical aspects of his products. He uses the conclusion of the student project, pointing to the importance of his personality rather than technical and sensory aspects of his wines. As an example, in his field with wine stocks he has placed big election campaign posters of the female leader of a Danish right-wing political party and as part of telling about the main seasonal tasks and troubles of growing grapes he tells in a cheerful and kindly way that these 'scare crows' helps keeping away birds from his grapes when they stop on Bornholm in September on their way to the South for the winter. According to JP, his performances on his guided tours are praised by visitors when they give comments and feedback in his guest book. A local tourist operator (female), organizing bus tours to Lille Gadegaard (see later) gives the following evaluation of JP as a guide:

"JP is very clearly a crowd-puller and one of the main attractions on our visits to Lille Gadegaard. So it has not been needed to discuss with him how he might improve his storytelling or behave differently. On the contrary, other tourist guides working for us, are sent on courses to learn what JP already masters." (Interview 24.02.09, Eva Madvig, Bornholm Tours).

Interestingly, in productions like the one of Lille Gadegaard where value-added is connected with storytelling made in immediate conjunction with sale and consumption, there are opportunities for creation of value-added on the basis of types of products that traditional retail oriented wine producers maybe have to waste or at least decrease the sales price of. In the guided taste sessions JP also uses wine from years with less good harvest and tell his customers "Here you can taste how the wine becomes in years with bad weather".

The number of daily visitors rapidly increased after opening. Besides individual guests coming on their own initiative and with their own means of transportation like cars or bicycles (in 2008 the

daily number of this type of visitors was 3-500), an important segment of visitors is groups of bus tourists. This customer segment was developed due to a contract signed in 2004 with a local tourism operator, organising bus trips for tourists on Bornholm, mainly Norwegian and Swedes and very few Danes. On these bus tours to different attractions on Bornholm, a stop is made at Lille Gadegaard and the tourists get a guided tour and a visit in the wine shop. The number of busses increased year by year and in the summer 2008, Lille Gadegaard was visited by in total 90-100 busses with averagely 35 tourists. This customer segment almost exclusively consist of people of +60 years while other customer segments who visit the vineyard on their own initiative, though also mainly tourists, are more diversified. On average, the number of daily visitors in 2008 was 5-600.

By observing the purchasing patterns of the visitors, JP and his cafe/shop staff found that female customers, when together with their husband, very often were decisive for which products the couple bought and that they preferred the sweeter types of wines in his product portfolio. JP therefore organised a taste panel of women for testing the results of his product development activities and for giving inputs for further product development. The panel consisted of local residents who had no professional training or competences in wine tasting but were 'only' ordinary people living on Bornholm. According to JP this taste panel has been very important for further development and refinement of his wines.

Two additional consultancy projects were carried out in this phase of development and commercialisation of customer services. The first in 2004 was carried out by the above mentioned consultant, HCH, this time on paid terms, and was co-financed via a regional support scheme targeted development of micro-businesses, instigated by the Bornholm Business Centre as a project supported via the EU regional development fund⁹. The efforts in the consultancy project of HCH focused on two different issues: 1. identification of the customer segments of Lille Gadegaard and their specific preferences regarding products and services, and 2., improvements of administrative and managerial aspects and implementation of an IT-based economic administration system allowing for calculations of marginal costs and profits on diverse activity fields and more profitable setting of prices on products.

The second consultancy project was carried out in 2005 by two graduated designers (both female) from the regional Glass and Ceramics school on Bornholm, now working as private consultants in Copenhagen, funded via the EU LEADER+ programme as part of an interregional Danish project. This project mainly resulted in suggestions to improvements of the aesthetical and architectural design of the farm, for instance regarding painting and decoration of the shop and cafe/restaurant, moving of a fold used for grassing cows to a place more visible for visitors, and improvement of the logistical structure and signs on the farm to better control the flow of visitors which especially is needed when tourist busses arrives.

In the last couples of years the main developing activities of Lille Gadegaard have consisted in a sort of 'weeding out' of the many services provided to visitors in order to identify a more coherent and consistent vineyard concept and storytelling, and to identify and focus on the most profitable and

⁹ The project is further described in paragraph 1.2 of the CRT WP5 report.

exclusive parts of the product portfolio. The issue of a coherent vineyard concept in which products, experiences and facilities are consistently developed and presented for customers, also at earlier occasions had been addressed by the assisting consultants. One of these told:

“Jesper is extremely innovative and full of ideas. The constant changes and the ever broadening product portfolio is a part of the business. It is important for the storytelling. It has to be dynamic and a bit chaotic to fit with Jesper as a person. But at the same time, he has a farmer’s aesthetic sense and taste and likes ugly plastic signs at the road, barbecuing event with lots of meats and sausages and so on. And he certainly not always keeps the agreed guidelines of the consults. He is totally uncontrollable. But the activities somehow has to fit together, there has to be a certain degree of consistency.” (H.C. Holmstrand, private consultant, interview August 29, 2008.)

The final activities of refining the concept are to a large extent inspired by yet another private consultant, Stig Westermann (SW), running the firm Bornappetit, with whom JP got in contact in 2004. SW mainly worked as distributor for some of the Bornholm food firms, and started consulting JP on voluntary private basis (like the initial contacts with HCH, described above). His consultancy services mainly regarded distribution of Lille Gadegaard wines to retailers and setting of prices. According to SW, price setting is extremely difficult for production-minded persons like JP, who usually set them too low to be profitable. Thus, SW assisted Lille Gadegaard in new and more profitable price-settings and in negotiating a contract with a local wholesaler on distribution of wines to specialty shops outside Bornholm.

However, the lacking consistency of some of the activities of Lille Gadegaard also sprung to the eyes of SW. For instance, SW advised JP to reduce or find another form for the service provided to visitors of free camping on the farm. According to interview with SW, campers asking for recharging of their mobile phones and walking on the farm in pyjamas do not go hand in hand with the storytelling of an exclusive vineyard. In the same line of identifying a more coherent concept, Lille Gadegaard in 2007 changed its cafe menu to Spanish-inspired tapas. In 2008, when SW was employed on Lille Gadegaard as manager of the cafe, the present and very successful menu was identified, consisting of food and drinks products mainly from other Bornholm producers.

2.3.8 Overall summery of the knowledge biography

The FKD2 concerns the transformation of a farm from strawberry growing to vineyard activities – types of activities that not before were performed on Bornholm and that only 23 firms in Denmark as a whole presently are engaged in. The owner of the firm is a central actor in all phases of the biography that started in 1995 and to some extent is still ongoing.

In an initial phase of 5-6 years the owner was engaged in developing strawberry wine on the basis of strawberries, grown on his farm. This was done through searches of codified synthetic production knowledge as well as by experimental trial-and-error and learning-by-doing. During this initial phase, he got the idea of making the farm into a vineyard based on direct sales to visiting customers. This was inspired by holiday visit to wine producers abroad, by the regional market potential con-

nected with the big number of tourists that visit Bornholm during summers as well as by networking activities related to the interregional European association, Regional Culinary Heritage. This networking related to other food producers and rural development actors on Bornholm as well as to similar types of actors in Sweden.

In the initial phase he also got the idea of being among the first in Denmark starting production of grape wines. He provided synthetic knowledge on this topic through the internet and from study trips to wine producers in countries with bigger traditions in this field, mainly a producer in Germany. He applied the provided knowledge in practical experiments on the farm similar to those applied in development of strawberry wine in order to adapt it to the region-specific conditions for wine production and to build up the tacit knowledge dimensions. The strawberry wine resulting from his experiments was ready for sale in 2001 when a farm shop was opened, and the first red wine was bottled and ready for sale in 2003.

Through a sequence of consultancy services and sparring sessions from 2000 to 2003, provided by regional KIBS and students from a Glass and Ceramics School, and supported by diverse regional policy schemes for business development, the symbolic value-basis and the business model of the vineyard was identified. Among the consultancy services was an analysis of and suggestions to the business concept of Lille Gadegaard including its symbolic value-basis and a plan for the design and organisation of its functions and experience dimensions. The analysis in 2003 concluded that personal characteristics of the owner formed the critical and competitive element in the vineyard concept rather than qualities of the wine products. This conclusion and the dialogue with private consultants and students at the Glass and Ceramics School helped the owner in getting a concrete and contextualised understanding of the concepts of 'Experience Economy', value-based business models and storytelling.

On the basis of this new insight, the development and commercialisation of the experience elements and the visitor facilities of the vineyard that already had started in 2001 with the opening of the farm shop, entered a more targeted and professionally grounded phase. This phase involved further assistance of a communication consultancy firm in Copenhagen in design of visitor facilities. It also involved marketing efforts primarily targeted the regional market of tourists and tourism defined channels of advertising and diffusion of information. These led to a contract with a Bornholm tourism operator regarding scheduled guided tours for bus tourists which boosted the customer basis. The owner also was engaged in communication and visibility events through national media. Here he exploited his storytelling competences and his insight in the value-profile of his business that was explicated through intermediating consultants. During the recent 2-3 years main efforts have been done to identify and implement a more coherent and consistent concept for the vineyard and its diverse functions. In these efforts the main knowledge actor has been a local private consultant who lastly was employed in the firm.

2.3.9 Gender issues

In an overall view, the FKD2 has been dominated by male participation and decision making. Inside the frame of the firm, the male business owner has been the highly dominating and almost lonely driving actor, and – with few important exceptions - women only marginally and indirectly have been involved in the FKD2. Among the changing staff in the café and the shop, women have been employed as waiters and sellers of wine products and due to these tasks they have been involved in firm-internal customer observations regarding shopping patterns. As described above, these observations concluded that female customers often decide the purchases of couples and families visiting the shop and thus, constitute a central segment to target in product development. In turn, this made the business owner organize a panel of women to taste the products and give inputs to product development. This indicates that women at the demand side have played a central role, pulling the knowledge dynamics of the firm in certain directions not only regarding development of wine products but maybe regarding development of the vineyard as an experience based business as well.

Also in the network of firm-external actors, related to the development of the Lille Gadegaard vineyard, such as consultants, technology suppliers, competitors of wine producers abroad, small-scale food producers on Bornholm, Sweden and other places, males have dominated. This reflects the fact that the employment in the food sector as a whole is dominated by males.

However, external female actors have given crucial knowledge inputs to the knowledge biography as well. The group of almost exclusively female students on the Glass and Ceramics School created the maybe central knowledge input to the identification of the value-basis of the vineyard and played an important role in visualization and concretization of the practical content of experience based business models. Also two female private consultants in Copenhagen gave important contributions to the elaboration of the aesthetic design and logistical design of the vineyard.

2.4 FKD 3: Bornholm pork meat of Danish Crown.

2.4.1 Introduction

Danish Crown (DC) is the largest meat (beef and pork) processing company in Europe and the second largest in the world. There are about 25.000 employees of which about 10.000 are in Denmark and annual turnover is about 7.3 billion Euro. DC is cooperatively owned by Danish pig and cow farmers, with headquarters in Randers, Denmark. DC is the world's largest exporter of meat. On Bornholm there is a production unit with 220 employees – a slaughterhouse for primarily pigs, which carries out initial cutting and sends it to other production units outside Bornholm for further processing. Accordingly, DC's links to Bornholm are different than those of the two other firms studied in FKD1 and FKD2 who are locally owned and have been directly involved in establishing the new brand of Bornholm food. Bornholm is of limited strategic interest for Danish Crown, as only a marginal share of total turnover is related to the island. Since the DC slaughterhouse on Bornholm is the only one on the island, it plays a crucial role for farming of pigs and cows as well, since transportation of living animals for slaughtering outside the island would be complicated and increase the

costs heavily. The short transportation time of maximum one hour between farmers and the slaughterhouse, contributes to better animal welfare and decreased levels of stress hormones in the meat, and is indeed another advantage of keeping the production unit on Bornholm.

In recent years the conventional meat industry in Denmark – and here DC is the absolute dominant player, performing 82% of slaughtering of pigs and 57% of cows - has gone through processes of mergers, acquisitions and geographical concentration on still bigger production units and thus a standardisation of product lines. The subject of closing or reducing the production unit on Bornholm has frequently been debated in the local press and among local farmers and politicians. However, the innovation project of developing and marketing a ‘Bornholm Pig’ suggests that DC is maintaining its priority and interest in Bornholm as a location for production rather than having plans of downsizing the Bornholm unit. This interest might have been enhanced due to the quickly achieved sales success of new Bornholm Pig products – all present production of ‘Bornholm pigs’ is sold and the originally targeted volume of production of 200 pigs per week was few months after launching of the products increased by 30% and with further 30% in October 2008. In August 2008 Bornholm pig products stood for about 10% of all pork meat sold via the nation-wide supermarket chain, Kvickly.

The difference in both internal resources and external, institutional resources characterising, on the one hand, a large conventional food company and, on the other hand, small alternative food producers, is striking. While FKD 1 and FKD 2 are supply-driven development processes of individual micro firms realised within a framework of virginal markets, distribution systems, and support and science institutions, the FKD 3 is a demand-driven innovation project occurring within a framework characterised by economically strong players, well-defined supply chains and customer relations, and large national science and consultancy institutions. FKD 3 is an innovation project integrating actors and activities all along a well-established supply chain of agriculture, agricultural consultancy, industrial processing, industrial research, distribution and retail. The innovation project of DC is selected for a case study because it is considered an exemplary illustration of how large conventional food processing companies respond to contemporary changes in consumer markets towards growing demands for specialised high-profile products by, among other strategies, engaging in innovation of food products with a ‘regional identity’.

The studied innovation process can be divided in the following phases:

1. June 2006 – February 2007: Development of the basic product idea
2. March – September 2007 : Specification of product and production concept
3. September 2007 – March 2008: Planning of production and market introduction

2.4.2 Development of basic idea (June 2006 – March 2007)

Alongside the dominating process of rationalisation and standardisation of low-market product lines, national and international customers (mainly supermarkets) are demanding high-market products, which in turn have forged DC’s development of specialisation strategies for such quality products. The story of the development of ‘Bornholm Pig’ is an example of a successful specialisation strat-

egy. In June 2006, DC was contacted by one of its biggest customers on the national market, the supermarket group COOP¹⁰, who requested a specialty pork meat product to be developed and distributed on a nation-wide scale. At the time, COOP's two main national competitors had had specialty pork products on the market for several years. These products both focused on animal welfare aspects of their product. COOP had previously launched 3-4 different types of specialty pork products without success and had therefore discontinued production.

COOPs request for a specialty pork product at this time, was the direct result of a firm-internal feedback mechanism, whereby front office workers (here: butchers who work in supermarket meat departments) annually participate in a training- and feed-back session organised by COOP head office. The objective is to inform and train staff in new products, production methods, regulative requirements, etc. but also to get feedback and new ideas regarding products and concepts from staff with a direct contact to consumers. In the spring of 2006, local butchers expressed the intuitive feeling that there might be sales potentials in a quality, high-profile pork product. COOP already had a series of quality meat products within other meat categories: beef, veal, lamb and poultry. At the same time, butchers made it clear that the demand for organic meat in general was bigger than they were able to supply, and that customer demands were growing. Thus the initial request was for DC to produce an organic pork meat product series. This was an obvious preference for COOP, which has a market strategy to be dominant regarding supplies of organic food with a strong organic profile encompassing approximately 500 organic products in their portfolio.

The idea of providing a specialty/organic pork product was discussed at COOP management level with the director of meat purchasing, Esben Meyer, responsible for 'upstream' contacts to suppliers (in this case DC) in charge. These initial internal discussions also involved the two meat portfolio managers of Kvickly (Jimmy Andersen) and SuperBrugsen (Per Hansen), two of the five supermarket chains belonging to the COOP group. What the precise product concept should be and what the market potentials might be were not defined nor investigated at this point of time, for instance through targeted consumer research. The idea was considered potentially important, not so much due to expectations of higher profits on specialty products than on standard products, as the need to satisfy growing consumer demands for a more diversified and varied supply of food products in general, for more exclusive, high-profile types of products in particular, as well as for providing shoppers with new products in order to enhance their shopping experiences as an activity in its own right (Jimmy Andersen, Meat Portfolio Manager, Kvickly).

Torben Pedersen, DC Sales Manager for pork meat, whose primary customer is the COOP Group, was from the onset – and throughout the entire process - responsible for product development. DC does have an "innovation group" that normally would have coordinated and lead new product development activities. However, as described in more detail below, the process of developing the Bornholm Pig was not 'business as usual' and did not follow the usual organizational procedures and departmental responsibilities. Throughout the process from product and concept development to mar-

¹⁰ Coop Denmark A/S is Denmark's leading consumer goods retailer. It operates the chains Kvickly, Kvickly xtra, SuperBrugsen, Dagli'Brugsen and LokalBrugsen as well as the subsidiaries Irma A/S and Fakta A/S. Coop Denmark has, together with the cooperatives, an annual turnover of approximately DKK 40 billion and 27,000 employees. Coop Denmark is owned by the cooperative FDB, which has 1,6 million members.

ket introduction, TP personally functioned as the key person coordinating the contacts between the persons, departments, companies and organizations involved. As is very often the case of employed in the food industry, even at management level, TP has no academic education, but a vocational education as butcher and a long professional career working in different parts of the meat supply chain, including employment in a butcher shop and sales representative for COOP.

DC quickly convinced COOP that the initial idea of developing an organic pork meat product was not feasible due to regulative demands, which meant that switching from conventional to organic pig production would be a two-year process.

Having excluded the organic option, DC and COOP needed to discuss which distinct quality/qualities should distinguish the product from DC's standard pork products. COOP did not have strong views on this, not was Bornholm as a defining element in the product of importance to them. DC and COOP discussed possible product concepts: The special quality targeted in the innovation process could be 'excellent taste', 'safe and healthy', 'animal friendly', 'regional identity' or other qualities of particular attraction for segments of Danish consumers. But the option of focusing on the taste aspect seemed particularly interesting for DC and COOP since the existing competing specialty pork products on the Danish market – (products that were supplied by DC to COOP's main supermarket competitors) - emphasized animal welfare, but were not distinguishable from standard products regarding taste.

In 2004, DC in cooperation with a number of pig farmers on Bornholm had been involved in a project to establish a specialized pork production based on the Antonius race of pigs. The object was to launch a pork product with a 'regional identity' on the Danish market. This project was never finalized, primarily due to insecurity about the consumer demands. This project, however, meant that DC already in 2004 had applied for and received the formal trademark registration of a 'Bornholm Pig'. This trademark registration was later exploited and a contract was signed with COOP that the two partners had exclusive rights to market products using the name of 'Bornholm Pig'.

TP had only recently been employed by DC, and had therefore not been involved in the previous Bornholm project, but when met by COOPs request for a specialty pork meat product, it was an obvious option to reintroduce this desk drawer project, whose working title had been 'Pigs on the rocks' (pointing to the - in Denmark - renowned rocky geology of Bornholm). By doing this DC could take advantage of the established, but not fully exploited, competences and production facilities on the involved Bornholm farms. Additionally, and perhaps more importantly, the brand of new Bornholm food and the many emerging small-scale producers of Bornholm food had, in the meantime, evolved and become more clearly profiled due to regional branding efforts (see the TKD report), and thus was an extra attraction for the two partners. Bornholm had other potential advantages for choosing it, as a distinct production area: As mentioned before, there were a number of farmers on Bornholm, who had already changed this convention pig farming facilities and had both the necessary capacity and competences to carry out a specialized production. This was also the case concerning the local agricultural consultant, Stig Andersen (SA) from Bornholm's Agricultural Advisory Services, who had also been involved in the previous activities. Finally, Bornholm as a geographically isolated region has the lowest level of Salmonella bacteria in pigs in Denmark. This fact

has not until now been used in the marketing of Bornholm pork products, but it might be crucial for DC's future possibilities of exporting special as well as standard Bornholm pork meat, as absence of Salmonella bacteria is a regulative precondition for exporting to several EU countries such as Sweden and Finland.

As a first step in the process, DC in February 2007 arranged a blind test of the taste of different types of pork meat. The purpose was to establish if the costumer, Coop, wanted to focus on taste as the primary quality, which defined the specialty product. The blind test took place at Coop headquarters in Copenhagen and involved 10 professionals from Coop and DC. Participants were asked to taste an Antonius Pig, an organically produced pig, a conventionally produced Danish pig and a conventionally produced German pig. The test confirmed participants' decision to focus on taste, as 9 out of 10 tasters agreed that the Antonius Pig by far had a distinctively better taste.

In the period leading up to the blind testing in February 2007, and before presentation of the idea of developing a 'Bornholm Pig' to top level managers of COOP and DC, TP had done a preliminary survey of factors, which specifically affect the taste of pork products. Firm-internally, TP contacted a 'breeding and meat quality consultant' (Birthe Pedersen, BP) and a 'special production consultant' (Martin Villadsen) in the farmer-service section of the Pork Division at Danish Crown in Randers, Denmark. Birthe Pedersen is knowledgeable regarding factors which influence the taste of pork meat as well as the economic consequences of applying such factors. BP has the responsibility of being updated with external research activities of relevance for the Pork Division of DC and to provide the organization with needed research based knowledge and expertise on specific issues. DC very rarely carries out formally organized, firm-internal research projects, since it has free access to qualified and multifaceted research carried out by the Danish Meat Research Institute (DMRI)¹¹.

Through DC's firm-internal channels to external research resources, TP was provided with information from numerous research projects pointing to several factors influencing taste, such as the race of pigs, fat percentage, intra-muscular fat, maturing, fodder, breeding methods, etc. but also to agro-economic calculations indicating that a priority on the taste factor of the meat would increase the production costs for farmers and decrease the efficiency in the processing link. Accordingly, higher sales prices should be expected. Still, since prices of pork meat in general are lower than prices of other types of meat, it was evaluated that it was possible to realize a competitive and profitable production. The knowledge about these factors and production processes was applied more directly later in the innovation process when the basic idea of focusing the innovation project on the taste aspect was agreed upon by top managers of COOP and DC.

¹¹ DMRI is a research organization in Roskilde close to Copenhagen, owned by the Danish Pig Farmers' Association via the Danish Bacon and Meat Council (the processing industry in which DC has a central role). It was established in 1954, and with a staff of 87 scientist, 27 technicians and 20 laboratory technicians (<http://danishmeat.eu/DMRI.aspx>). DMRI services to companies in the Danish meat industry also include development and maintenance of the data systems of the industry, a library function and patent surveillance. DC contributes to the research activities of DMRI via a special national regulative arrangement by which all farmers and food processing industries (i.e. not just meat) are charged production taxes as a support to research and information activities of common interest for the Danish agro-food sector as a whole (http://ferv.fvm.dk/Oversigt_over_fonde.aspx?ID=13747).

TP presented his description of the basic product concept at a meeting held at the Coop headquarters in conjunction with the blind tasting test in February 2007. Only optional ideas and abstract concepts were presented including the need of basing the product on a substantial, genuine quality and not only the marketing slogan of 'Pigs grown up on Bornholm'. However, in his presentation TP integrated the knowledge achieved via his initial investigations regarding central aspects of the innovation idea such as the main factors of importance for creation of taste, possible cost dimensions, and advantages and disadvantages of Bornholm as location for production in terms of farming, consultancy, suppliers, slaughtering and processing, logistics, branding and marketing.

COOP and DC agreed upon the idea of working toward a quality-based pork product, where taste elements were the defining factor, and where welfare elements, had some importance (working thesis: 75 % taste, 25 % welfare). It was also decided to explore and concretize the idea of producing it on Bornholm.

Accordingly, the over-all physical qualities and symbolic values to embed in the product and to brand in the marketing were identified by combining, on the one hand, tacit symbolic knowledge on trends in consumer preferences and, on the other hand, codified analytical research based knowledge on pig production methods and agro-economy – and the actual concept development phase could start.

2.4.3 Specification of product and production concept (March 2007 – October November 2007)

As the first step of investigating and specifying a possible Bornholm pig concept, TP organized a two-day trip to Bornholm in May 2007. DC was represented by himself and Martin Villadsen, while Coop was represented by Esben Mayer and the two Meat Portfolio Managers from SuperBrugsen and Kvickly (Jimmy Andersen, JA). Both companies also had representatives from their marketing departments with them.

In order to prepare the meeting TP had asked the agricultural consultant on Bornholm, Stig Andersen (SA), to organize a number of meetings and visits to local farmers, food producers, and the fodder supplier on Bornholm. SA has an academic education in agronomy and is employed as consultant and specialist in pig farming in a nation-wide but decentralized system of agricultural consultancy, Danish Agricultural Advisory Service, employing totally 3.500 professional consultants, run on private conditions by the individual local associations of farmers in Denmark. This decentralized agricultural consultancy system dates back to 1875 and has historically played a crucial role in transferring the newest knowledge and technologies to Danish farmers (predominantly characterized by high-technology, standardized, large-scale oriented production methods), developed through public university and sector research as well as private research of farmer and industry associations such as the Danish Meat Research Institute. As usual for all services provided by Danish Agricultural Advisory Service, SA was paid by DC for his services in the Bornholm Pig innovation project, and in general, DC solely paid the costs connected to the development of the new product.

SA functioned as an intermediating actor between DC and Bornholm actors, i.e. the fodder supplier and the five farmers, who had been involved in the previous specialist pork production activities in order to identify their professional interest in participation in this new project, how far along a specialization strategy they were willing to change their farming, and what potential difficulties there might be in meeting special demands regarding local origin of the fodder. As already said, the discussions of the product and production concept generally had a very open character at this point in time. The discussions focused on product qualities such as better taste, more animal friendly breeding methods, and local supplies of fodder but the weight of these issues were not clarified. For TP it was a priority to involve farmers that were motivated not only by expectations of higher profits but also were professionally competent and shared the ideas of specialized pig farming, animal welfare, meat with good taste and local origin, etc.

At the meeting in May on Bornholm, DC and Coop representatives visited three of the above farmers, who were interested in joining the production project. They also visited the local slaughterhouse and viewed the production facilities here. Moreover they visited Lehnsgaard, a small-scale producer of a cold-pressed rape seed kernel oil, described in FKD1, and the grain miller firm Bornholms Valsemölle. The purpose of these visits was to give first-hand impressions of the branding and storytelling potentials of small-scale productions of quality food on Bornholm. According to TP, The visitors found the meeting with the entrepreneur, Hans Hansen (HH), especially rewarding. HH represented, what at the time was a relatively new trend on the Danish food markets, regional food, and was highly inspiring in terms of clarifying the critical need for certain product qualities, which supersede the geographical origin of production, i.e. that viable business ideas regarding food products should be based on substantial product qualities such as rich taste experiences and not only a smart marketing slogan about Bornholm. This reassured DC as well as Coop about the market potentials of a Bornholm Pig product concept based on the parameters of, firstly, eating experience and taste, and secondly, however weighted less important, animal welfare.

Another part of the two-day visit was a meeting with the former 'Food Ambassador', who in 2004-2006, had been responsible for the promotion of small-scale Bornholm food products, and although he no longer held the post, was still heavily engaged in the promotion of regional food of Bornholm. According to our interview with Jimmy Andersen (JA), Fresh Meat Portfolio Manager Kvickly, the dialogue with the Food Ambassador was marked by his general scepticism (supposedly expressed on behalf of Bornholm firms and inhabitants) about the good intentions of large economic players like DC and Coop, representing conventional agro-food systems. With some relevance, the Food Ambassador pointed to the risks of damaging the regional efforts of establishing the brand of Bornholm food based on small-scale local producers. Since these views, according to JA, were stated in an, for them, entirely unanticipated attitude of mistrust, COOP and DC after the meeting agreed not to involve any Bornholm actors who were not directed involved in the supply chain of the product, in future discussions about the product concept.

Among the specific questions discussed at the meeting was the volume of production. These discussions in which JA and other involved marketing staff gave important input, ended in agreeing on starting at a rather modest level and then increasing the volume according to the demands of consumers. An argument for this was that 'all sold' creates its own demand but also that it was impor-

tant not to overload the meat departments in individual supermarkets with unsellable meat and thereby erode the motivation of the staff, evaluated as crucial for the sale. Thus, it was agreed to start with a production of 200 pigs a week, meaning that 5-7 farmers had to be involved.

The trip also confirmed TP's opinion that Bornholm would be a suitable place of production due to the presence of several important conditions:

- a number of potentially interested farmers;
- a qualified agricultural consultancy system, including an established relation to a competent consultant;
- a DC processing unit with (after a few, inexpensive changes) the needed capacity, equipment and competences for processing, cooling, process controlling, administration, logistics, etc.;
- and finally, a well-established and generally positive image of Bornholm in general and of Bornholm specialty food in particular in the Danish population due to the island's position as main tourism destination and the recently emerging business sector of Bornholm food.

The meeting on Bornholm concluded with decisions on naming the new product 'Bornholm Pig' and using Bornholm as the place for production, which in practical terms also meant that a majority of the fodder would be of local origin. It was also agreed that the targeted product qualities, except for the place branding embedded in the name of the product, should be 'a difference in taste' and, though of less importance 'better animal welfare', even if this meant higher production costs and sales prices than those of the competing specialty pork products on the market.

The visit to Bornholm May 2007 was followed by a period of time which lasted until September 2007, wherein DC and COOP, in close dialogue, specified the content of the product and production concept.

DC has a set standard of internal approval and coordination practices when it comes to development of new products. This insures that all aspects, economic consequences, strategic potentials, possible problems regarding supply chains, etc have been considered. In the case of product development of Bornholm Pork, however, DC changed some of these procedures. The project idea did go through the initial internal project calculation procedures mentioned above. For example it was investigated whether there were plans of downsizing or closing the Bornholm production unit. But, rather than placing the project in the hands of the innovation team, Torben Petersen as responsible for the COOP account became project manager and was given a free hand to include personnel from other sections of DC. Due to the close customer relationship between TP and especially the Fresh Meats Portfolio Manager at Kvickly, Jimmy Andersen, TP involved marketing personnel directly in the project process and they were paired with marketing personnel from COOP. According to our interview with TP, there was no doubt however, that COOP played the primary role of deciding all central elements in the production concept and that DC's role was primarily focussed on meeting the requests and decisions of COOP.

At the COOP end, decisions and management of initiatives regarding nation-wide introduction of new products in the five supermarket chains under the COOP group, are normally organised at cen-

tral management level. However, COOP and Kvikly soon decided that a regionally branded specialized pork product could be marketed as more exclusive, if it at least initially were only sold through the Kvikly chain. The Kvikly chain has a higher number of premium-priced, specialized products, than do the other chains. COOP therefore decided to solely involve staff representing the supermarket chain Kvikly, and from this period in time (May 2007) the project was carried out by DC and the Kvikly Fresh Meat Portfolio Manager as well as quality control and marketing divisions from COOP.

In the period following the May meeting on Bornholm, Danish Crown focused on providing economically feasible as well as practical solutions to product demands made by COOP. Key knowledge inputs to specification of the product and production concept came from the meat research institute DMRI as well as from the agricultural consultant on Bornholm, SA. As mentioned earlier, TP had already collected DMRI research knowledge via the DC consultant on meat quality, for instance, concerning which races of pigs to provide a good taste connected to the specified production processes. According to the existing research, however, the most important factor for producing a good taste of pig meat is related to the amount of intramuscular fat in the meat and since this - until a certain limit - increases by the age and weight of the pigs, meaning longer breeding periods. The increased weight compared to conventional pigs, not only increases production costs during breeding, but also during slaughtering, as a higher proportion has a too high fat percentage and thus, has to be rejected as Bornholm pigs. Furthermore, another cost-increasing factor connected with production of heavier pigs, is EU animal welfare directives that demand more space for animals above a certain weight. Production of heavier pigs therefore emphasizes the need for farmers to 'super-optimize' utilization of space by mixing heavy (fast growing) animals with less heavy (slow growing) animals in the individual boxes in order to comply with the regulative demands of a certain average area of space per kilo of animals. These economically important issues obviously had to be considered and taken account when DC made contracts with pig farmers.

Throughout the phase of specifying the production concept, research based knowledge from DMRI was exploited by DC staff mainly in translating of specific wishes of COOP and DC regarding possible aspects of the product concept into economic production figures. This could be cost and efficiency consequences related to questions such as how much space the pigs should have, what weight they should have when slaughtered, and what the transportation costs of different farming and processing methods might be. Accordingly, the exploited DMRI research knowledge primarily concerned optimization of efficiency aspects of production, processing and distribution. Due to the easily accessible, highly codified and detailed character of existing meat industry research knowledge these sorts of calculations were relatively straightforward.

In all of these practically oriented processes, the Bornholm agricultural consultant SA played a crucial role as in intermediating actor between the farmers and DC/COOP. This was also the case concerning finding practically and economically feasible solutions concerning pens and housing systems for pigs. Again animal welfare compared to costs, were considered. The critical priority of DC and COOP regarding housing systems was that they were in compliance with existing Danish and EU regulative demands as well as with coming legislation. SA exploited his knowledge about local farmers and existing pig housing systems on Bornholm in selecting the farmers to involve in produc-

tion of Bornholm Pigs. Five of the seven farmers who in the end signed a contract had been involved in the previously attempt to start production of Antonius pigs and all had modern housing systems complying with regulative demands.

Another specific question which was discussed as part of the production concept was which feeding strategy to choose. Also in this area, important inputs were provided by the agricultural consultant SA. Choice of feeding strategy involved considerations regarding different types of local fodder and their availability in the required quantities (living up to requirements concerning 70 % of the fodder being produced on Bornholm), vis-à-vis actual fodder access (living up to requirements concerning intramuscular fat in the pork). Interestingly, a possible local source of fodder that was discussed at length by DC and SA is the rape seed cakes that are the residual of the production of rape seed kernel cooking oil produced by Lehnsgaard (see FKD1). This option, however, has not yet been exploited, but is an especially attractive perspective in enhancing the local profile of the Bornholm Pig product in future.

In August 2007, COOP sent employees (1 male, 1 female) from its quality control department to a number of the Bornholm farmers to see and hear whether the targeted production methods and specifications, not least in terms of animal welfare, fitted into the image, reputation and policies of COOP. The concluding remark from this quality control was that the present specifications were too close to conventional pig farming to call it 'animal friendly' and more substantial differences were needed. They also felt that other factors than that the pigs were grown and slaughtered on Bornholm needed to be identified and emphasized if using the name of Bornholm Pig. Such factors could be Bornholm's position as the region in Denmark with the lowest level of salmonella bacteria, as well as the relatively low transportation time on Bornholm of maximum one hour from farms to the slaughterhouse, thus producing lower levels of stress hormones which affect the quality of the meat. These specific advantages of Bornholm could have market importance, since health risks related to salmonella bacteria infections and animal welfare problems related to long transportation time for living animals at that time were hot issues in Danish media due to several TV documentaries. Apart from these comments, the outlined concept was approved by the COOP quality control.

The discussions and wishes of COOP and DC about possible elements to integrate in the production concept, involving feedback from a close and practically oriented dialogue between SA and the Bornholm farmers, ended in a number of specific demands that were written into a finally agreed production concept in October 2007, including regulation on pen and housing systems, Bornholm origin of fodder, increased space demands compared to conventional pork, use of straw and rubber on pen floors, race specifications, slaughtering weight, meat/fat proportions, quality control at slaughter and further processing.

On the basis of these specifications, the total expected production costs for farmers were calculated, the payments to farmers from DC for delivery of Bornholm Pigs, taking into account the additional costs compared to conventional pig farming, were negotiated and contracts with farmers were signed. Furthermore, SA elaborated a specific quality manual with information about the precise requirements of the concept the involved farmers.

2.4.4 Preparing farmers, processing and marketing (September 2007 – March 2008)

In this phase efforts were made to implement the specified production concept on the seven contracted farms as well as in the DC processing unit on Bornholm. Focus was, however, on developing the needed material for marketing and advertising as well as internal promotion and information sessions targeting on the one hand, DC farmers, and on the other, front line staff in Kvickly supermarkets. DC was responsible for the up-stream contacts, i.e. the farmers, while DC and Kvickly marketing worked closely together concerning marketing and internal information processes in Kvickly. Product launch was the 12th week of 2008 (March).

On the basis of the elaborated production quality manual, SA had individual consulting sessions with the farmers regarding how to implement and satisfy the requested demands. No formal education was needed as the farmers already had the basic knowledge and skills to fulfill the conceptual demands but for COOP and DC it was important that farmers achieved a common understanding of the overall concept and followed the same routines and procedures. The implementation process was relatively straightforward due to the involvement of the farmers and the agricultural advisor SA since the beginning of the process.

Preparation of the DC slaughtering unit on Bornholm for the new processing of 200 Bornholm pigs weekly, was also without major complications. The main issue was to prepare a new process line having exactly the same steps as the conventional lines, (which process approximately 8000 pigs weekly), i.e. slaughter, quality control, cutting into main parts, and final transport to DC's processing unit in Ringsted, Denmark where the meat is fine-cut before delivery to the customers, in this case the main logistical center of COOP. However, the workers cutting the meat in the Bornholm unit only needed instructions and guidelines about a few small differences of the cuttings as compared to those used in conventional processing, provided by central DC training staff on a single training visit to Bornholm.

The capacities of the quality control systems in the Bornholm unit were critical for establishing the new product. The quality control systems are electronic and use advanced forms of probes, sensors and scanners to measure a variety of parameters of the meat before and after slaughtering. The needed adjustments to the electronic control programs and stamps for the Bornholm Pig production were made by the Danish Meat Research Institute. If a piece of meat from a Bornholm pig gets remarks at the end-control, all parts of that particular pig are discarded and used as conventional meat. The discard rate of Bornholm pigs is relatively high at 20-25%, the main reason being a too high fat percentage due to the animals' unrestricted access to fodder.

The marketing staff of COOP, Kvickly and DC was involved in the process already in the concept development phase but from November 2007 the work of preparing the marketing efforts and elaborating the material used in a launching campaign took a more practical form. Coordinating persons were Kvickly Meat Portfolio Manager JA and DC Sales Manager TP but generally it involved the marketing departments of Kvickly, COOP and DC as well as other persons. Taking into considera-

tion the overall male dominance of the agro-food sector, expressed by several interview persons, the representation of females was relatively high regarding staff involved in marketing functions.

The question of identifying the name of the new product has already been discussed in the first steps of the development process. The option of naming the new product Bornholm Pig was a natural consequence of the following argumentation:

”The Bornholm brand clearly played a role. We prioritize niche productions in many of our high-profile products such as beer from micro breweries. When the option of Bornholm pork meat was suggested by Danish Crown, I thought it was obvious to try. Consumers generally relate Bornholm to something positive. We had a clear idea that this could turn into a success; there is awareness of the place, knowledge about the island on which to create a good story, with values, that people recognize.” Interview Jimmy Andersen, Meat Portfolio Manager, Kvickly, August 21st, 2008.

A main issue for the marketing departments was to define the overall identity of the new product and on this basis, the design of marketing materials. A point of departure for a dialogue between the marketing departments of Kvickly and DC was the layout used in for Kvickly’s high-profile Premium beef. Kvickly wanted to exploit consumers’ recognition of the design and logo used for Premium beef and their general acknowledgement of the high quality of this particular meat product by marketing the new pork products with a comparable and recognizable layout. Kvickly therefore provided DC’s marketing department with sketches of designs close to the ones used for the Premium beef, for instance regarding forms and colors, and requested DC to elaborate on more final designs. After many proposals, discussions and working hours DC and Kvickly agreed on the design of a series of marketing and information material. Additionally, a (female) cook, who works freelance for COOP developed a number of recipes using the Bornholm pork meat as the primary ingredient. These recipes were part of a special section about the new Bornholm Pork product, which was included in Kvickly’s weekly advertising leaflet, distributed to all Danish households just before product launch in March 2008.

An internal education and information campaign for staff in the meat departments of Kvickly supermarkets was considered crucially important. Experience had shown Kvickly, that the motivation and marketing efforts of the staff with face-to-face contacts to consumers in supermarkets were decisive for the success of new product introductions. Accordingly, in the months before market introduction, Kvickly organized three sessions in different locations in Denmark targeted butchers and other employees in the meat departments and explained the ideas and content of the new product concept to them in order to stimulate their professional interests and knowledge.

This very well might have been one of the factors for the relatively quickly achieved nation-wide sales success of Bornholm Pork, despite its premium-prices at 10-15% more than conventional pork meat prices. The average market share of Bornholm pork meat was in August 2007, five months after launch and after a 30% increase of the initial production volume, averaging at 9.2% of total pork meat sold via Kvickly supermarkets. The share is highest in Kvickly supermarkets where staff seems to have given the products the best welcome such as on Bornholm (with 30% of sales), in

Copenhagen and in a number of places in Jutland, but the distributed meat has sold easily almost everywhere. By October 2007 yet another 30% increase of production volume was decided and the distribution adjusted to local differences in demands also regarding specific parts of the pigs.

It is important to stress the extremely structured and detailed scheduling and planning principles and routines that characterise large economic actors in the conventional agro-food sector such as DC and COOP. Kvikly's marketing department has a set schedule, whereby they commence production of marketing materials 20 weeks in advance of product market introduction. This in turn locks the preparation process of the new products, i.e. in the case of Bornholm Pork, all the reorganisation of the first generation had to be in place. This way of scheduling and accomplishing innovations obviously stresses the need for structured planning and formal procedures but also indicates the fundamentally efficiency-oriented framework in which the process of developing a Bornholm Pig took place.

DC considers Bornholm Pork to be a product, which can continue its development. DC constantly follows up on new research on enhancing the taste of pork and is engaged in internal discussions regarding different elements that might contribute to a better taste or better eating experiences for consumers, for instance using of new sorts of fodder or new methods of maturing the meat. However, for a company the scale and scope of DC, such efforts and considerations are integrated in an overall framework emphasising efficiency and price factors.

To sum up, the customer-driven innovation project of developing Bornholm pork meat products followed three basic phases. The first was to meet the request from the customer of a specialty pork product by formulating a basic product idea, i.e. the qualities distinguishing the product from other pork products on the Danish market. In the second phase the precise product and production concept was specified including the economic consequences for the involved actors, i.e. farmers, the meat processing industry and supermarkets. In the final and third phase the involved actors prepared for and implemented the needed changes in their organizations including the marketing systems. The innovation project was given direction mainly via a close dialogue between the two actors of DC and COOP but crucial knowledge inputs were provided by actors all along the supply chain of farmers, farm suppliers, agricultural consultants, processing industries, industry research institutions, and retail. In an overall perspective the case study has illustrated the high degree of vertical and horizontal integration characterizing the conventional Danish agro-food system and the efficiency in terms of examining, spreading and exploiting different types of knowledge between actors inside this system, providing economic and institutional frameworks for accomplishment of successful, large-scale innovation of products and technologies within a relatively short time limit.

2.4.5 Gender issues

As the description above emphasizes, this is another case dominated by males in the central innovative processes, but aided by females, who at different stages directly or indirectly feed the process. Knowledge types which are produced by females are primarily analytical (research) and symbolic (marketing).

2.5 Findings and conclusions from the FKDs

In this paragraph we will sum up the findings of the three FKDs by relating them to the matrix of three knowledge categories, analytical, synthetic and symbolic knowledge, and three phases, exploration, examination and exploitation. However, before we relate our empirical findings to the conceptual framework we will explain how we define the concepts and discuss the problems we have perceived in using them.

The three knowledge categories and the three knowledge phases are defined only with brief and not very detailed formulations in EURODITE working reports and documents such as the Appendix 5 to the EURODITE WP6 reporting template. This might lead to different interpretations and use of the knowledge types by the individual EURODITE research teams in their analyses which in turn might complicate a comprehensive synthetic analysis across the diverse case studies. We understand the three knowledge categories as epistemologically defined, i.e. defined not by what the knowledge concerns but by how and for what purpose the knowledge is developed. In the words of Asheim et al. (2007):

“The analytical knowledge base comprises (predominantly scientific) knowledge that is geared to understand features of the (natural) world. The synthetic knowledge base refers to the (predominantly engineering) knowledge involved in the design and construction of solutions to human problems which is often instrumental, context specific and practice related. The symbolic knowledge base deals with the creation of cultural meaning through transmission in an affecting sensuous medium.”

There is good reasoning in distinguishing between these three types of knowledge and knowledge dynamics. In particular, the inclusion of the symbolic type of knowledge alongside the more traditional types of analytical (scientific) and synthetic (engineering) knowledge seems highly relevant as it allows for analyses of phenomena and dynamics that are often neglected in economic and social research such as the significance of design, brands, and normative values of products and productions. However, despite the intellectually attractive categorical differences between the three types of knowledge, real-world knowledge and knowledge dynamics often seem to cross the categories and extremely difficult to place in one of the three types. For instance, our case studies indicate that symbolic knowledge dynamics often encompass elements that indeed are not formal research but have many of the ‘analytical’ characteristics of research such as systematic methods for collection information and codifying knowledge. This is in particular the case when professional ‘symbolic experts’ such as marketing consultants are involved. As the Food Ambassador, employed by the Local Action Group on Bornholm to brand and enhance the visibility of Bornholm food producers outside the island said¹²:

“If you want to market and brand something, to make visibility events, feed the media with good stories and so on, you need to know exactly what you are dealing with. What is the product? Who are the customers? What are the market conditions? Which communication channel will be best?”

¹² The work of the Food Ambassador is described in detail in the TKD report on Bornholm food.

So before I made any efforts to market Bornholm food I started collecting facts in a highly analytical and systematic manner, for instance reading research analyses. And all the way through my work I many times went back and looked at these analyses in order to find the right direction of my ideas.” (Georg Julin, Bornholm Food Ambassador, interview March 4, 2008).

A similar integration of analytical and symbolic knowledge dynamics characterizes the knowledge inputs of marketing and branding consultants in our three FKDs. The ‘meanings’ they created was made by combining analytical knowledge and symbolic/artistic/creative knowledge. A part of this problem of categorizing can be solved if you are able to break down the process into its small individual steps, but firstly, this violate a central characteristic of the knowledge dynamic, and secondly, it does not help in the requested overall categorizing of the knowledge in one of the three types.

In our categorization, shown below, we have chosen the ‘easy way’ of categorizing all knowledge dynamics targeted creation of ‘cultural meaning’, i.e. knowledge that cannot be fully judged on the basis of “is it true?” or “does it work?”, as symbolic knowledge although they often encompass analytical, investigative elements and/or elements of synthetic problem solving. This includes, for instance, the knowledge inputs of design students and communication consultants to FKD2. It also includes the knowledge dynamics of the owners of the two small firms in FKD1 and FKD2 related to identification and maturing of their new business ideas. In practical terms these dynamics primarily involved provision of (for the business owners) new synthetic knowledge, however, the structuring target for knowledge development was the identification of “a meaning for me”.

We also have experienced problems in categorizing the studied knowledge dynamics regarding the three phases of exploration, examination and exploitation - as well as the alternatively suggested phases of creation, absorption, diffusion and application. The main problem in using these phase concepts is that they – as far as we can see - are useful mainly for studies of isolated sequences of knowledge dynamics of individual firms and persons through which a certain piece of knowledge is provided, transformed and used, and not for studies of the full biographies of knowledge, i.e. the total historical path of several sequences of firms’ knowledge dynamics. The fundamental linearity, starting in generation of new knowledge that is examined (or diffused and absorbed) and then finally used that is built into the conceptualizations, further enlarge this problem. The conceptualizations are not very appropriate for analyses on how isolated sequences of exploration-examination-exploitation are related to subsequent or previous knowledge dynamics in the firm or to knowledge dynamics of other actors. In other words, they are not very useful for studying loop, feedback and integrative mechanisms neither at firm level nor at the level of the larger knowledge system in which the firm is part. This is a problem because the goal of the FKD case studies is biographies of knowledge and not just studies of isolated sequences of knowledge transformation.

When filling in the matrices we have dealt with this problem by numbering the individual - more or less - subsequent steps in the biographies, sometimes steps made by firm-external actors, to indicate how the biographies progress via ‘jumps’ horizontally between different knowledge types, vertically between different knowledge phases, and to some degree organizationally between different actors.

FKD 1: Lehnsgaard Rapeseed Cooking Oil

	Analytical	Synthetic	Symbolic
Exploration (Search and research)	1. <i>Chemistry of biorefinery processes</i>	2. <i>Development of production technology for rapeseed oil</i>	7. Identification of firm brand values
Examination (Trialling, testing, standard setting, benchmarking)		3. <i>Testing/adaptation of production technology for rapeseed oil</i>	
Exploitation (Commercialising)		4. <i>Commercialization efforts of Bioraf & others</i> 5. Appropriating and implementing technology (learning-by-doing) 6. Establishing local supplier network 9. Establishing marketing and distribution channels 11. Developing marketing networks	8. Elaboration of marketing materials and designs 10. Branding on national scale (media/events)

1. EU research/Activities of Bioraf & other firms

2. Activities of Lehnsgaard

FKD 2: Lille Gadegaard Vineyard

	Analytical	Synthetic	Symbolic
Exploration (Search and research)		2. Search for product/technology knowledge	1. Maturing of idea for new business 5. Identification of value-basis of business 6. Consultancy analyses on visitor experiences, aesthetic/architectural designs etc.
Examination (Trialling, testing, standard setting, benchmarking)		3. Development of products by trial-and-error, learning-by-doing & taste panel	
Exploitation (Commercialising)		4. Development of production and sale (commercialisation)	7. Development of vineyard experiences and facilities (commercialization) 8. Communication/ branding in national medias 9. Enhancing coherence of business concept

FKD 3: Danish Crown Bornholm Pork Meat

	Analytical	Synthetic	Symbolic
Exploration (Search and research)			1. Customer's identification of consumer demand 2. Naming of product idea/defining targeted product qualities (branding values)
Examination (Trialling, testing, standard setting, benchmarking)		4. Trialling and testing by farmers & consultant of practical/economic implications of requested production preferences 5. Elaboration of production concept	6. Marketing quality control of production concept (customer) 7. Blind tasting of product prototype
Exploitation (Commercialising)	3 (but related to 4, 5, 9 & 10). Use of existing meat industry research results (pig races, taste, economy, logistics)	9. Elaboration of production manual 10. Preparation of production systems	8. Development of marketing material 11. Preparing sales staff for product launching

A few concluding comments to the matrices should be made:

The matrices document how the knowledge biographies shift from phases with exploration, examination and exploitation dynamics, however not necessarily in the mentioned linear direction. In an overall view exploitation (commercialization) dynamics dominate. This reflects the specific market conditions prevailing in a traditional mature sector like the food industry. Phases of examination seem highly important in the FKD3 biography about the innovation activities of a large company while the concept seems less relevant for the micro-firms studied in FKD1 and FKD2. The limited relevance of examination dynamics especially in the FKD1 biography to some extent mirrors our choice of categorisation as well as the above described problems of categorising individual sequences of the total knowledge biography. For instance, Lehnsgaard's implementation of the technology for cooking oil production was not just a straightforward push-the-button exploitation but involved learning-by-doing. This however, does not change the fact that it basically was a process of exploiting knowledge, embedded in technological equipment.

Absorption and contextualization seem more appropriate than examination in describing the dynamics through which external knowledge is transformed and adapted to local conditions and markets in the two micro-firms, especially regarding symbolic knowledge. Indeed, these firms do not just jump from provision/exploration of external knowledge - for instance about the 'Experience Economy' - directly into an imitative kind of exploitation. However they do not as an isolated activity after provision/generation of knowledge and before commercial use of knowledge perform a process of examination. Rather the processes of providing, absorbing, adapting, and using of knowledge seem to be deeply integrated and best captured by the concept of contextualisation. Already the initial search

process for ‘new’ knowledge is done in a perspective of contextualisation, influenced by specific entrepreneurial motivations, needs and conditions.

In terms of knowledge types, synthetic engineering knowledge and symbolic design and branding knowledge dominate the biographies. The significance of synthetic engineering knowledge reflects that the cases occur in industries with manufacturing activities. The significance of symbolic knowledge might be connected with the fact that the three FKDs concern development of specialised productions of high-profile products dedicated to certain consumer segments. This underlines the need for more targeted and more professional marketing as well as more dedicated efforts to embed certain ‘cultural meanings’ in products.

Nevertheless, also analytical research-based knowledge plays an important role in both FKD1 and FKD3, although the research activities in FKD1 are not carried out by the firm in focus but by other actors in pre-commercial development phases and although the research activities in the FKD3 are not exploration but exploitation dynamics. The significance of formal research activities is atypical for the knowledge dynamics characterising the emergence of a regional platform for ‘Bornholm food’ in which the three FKDs are elements. Also the third firm case study, FKD2, is heavily influenced by sorts of knowledge inputs provided by use of analytical approaches, however not in the form of formal research activities but in the form of consultancy services related to symbolic knowledge.

The FKD1 on the development and marketing of rapeseed cooking oil is an example of successful integration of, on the one hand, analytical exploration and examination knowledge dynamics of formal R&D systems related to development of products and technologies, and on the other hand, exploitation knowledge dynamics of firms related to commercializing and market development. The larger knowledge biography in which Lehnsgaard plays only the final role of commercialization and contextualizing of mobile, technical knowledge is exemplary in terms of illustrating the integration, complementarities and independent contribution of analytical (chemical university science), synthetic (process engineering R&D) and symbolic (marketing and storytelling) knowledge dynamics. The symbolic knowledge dynamics of Lehnsgaard have their own eligibility, significance and value-adding role, independent from the initial scientific and engineering phases of developing the product and technology.

SECTION 3 CONCLUSIONS AND COMPARISONS

3.1 Conclusions about micro-level knowledge dynamics

The three firms chosen for firm-level studies were deliberately selected because they represent three different business models and business strategies employed in and contributing to the recent years’ efforts of developing and commercialising ‘Bornholm food’. The territorial knowledge dynamics related to these efforts are analysed in detail in the TKD study. In an international perspective, the

three business strategies seem to be typical contemporary responses on changes in food and drinks markets, following diverse strategies of specialisation and dedication in meeting growing demands for high-profile products with a clear identity such as a regional or local origin (Hinrichs 2000; Ilbery & Maye 2006; Kneafsey 2003; Testa & Massa 2008).

The FKD1 represents a small-scale manufacturing model of niche production of specialised products, distributed on national markets via wholesale and retailers, and using the regional origin of production in marketing. In this business model, knowledge dynamics focus on differentiation of the product from competing products through marketing and branding of the product and place of production in cooperation with other regional producers of Bornholm food (since the firm cannot define 'regional food' by itself). Other important knowledge dynamics are related to establishment of distribution channels via wholesalers and retailers who set very tough demands on delivery conditions and thus on production planning and logistics.

The FKD2 represents a sector-crossing business model based on direct sale to visiting customers on the site of production and adding of value to the physical products by creating customer experiences, and thus on activities marketed as a sort of regional tourism attraction. In this business model crucial knowledge dynamics are about identifying an appropriate physical, aesthetic, and narrative presentation of the firm for the visitors in the form of products, architecture, stories, experiences, services etc. In the FKD2 biography this to a large extent has involved contextualisation of the concept of 'experience economy' to the regional (tourism) market conditions.

The FKD3 represents quite a different model of 'regional food', not like the two others small-scale in nature and not driven by Bornholm actors. The FKD3 concerns the innovation of a specialised regional food product as part of the highly standardised product portfolio of a large multinational company. In this business model, the range for specialisation is strictly limited by efficiency and price factors. Knowledge dynamics are tuned to identify solutions that balance the wish for marketing and branding effects of high-profile products with a systemic need for cost efficiency.

Another reason for selecting exactly these firms for FKD case studies was to be able to investigate knowledge dynamics in the 'alternative food model' respectively the 'conventional food model' as these are opposed in numerous research analyses (Watts et al. 2005; Renting et al. 2003; Parrott et al. 2002; Fonte 2002; Marsden et al. 2000; Morgan & Murdoch 2000; Manniche 2007). The firms in focus of FKD1 and FKD2 are small locally owned firms, representing the alternative model and heavily integrated in the process of developing a Bornholm food platform, while the multinational firm studied in FKD3, Europe's largest meat processing company with 25.000 employees, represents the conventional model and does not define itself as part of a Bornholm food production and marketing platform.

The empirical studies have documented big differences in the micro-level knowledge dynamics between the models of 'alternative food' and 'conventional food'. FKD1 and FKD2 are illustrative example of innovation processes of 'alternative' micro firms driven by entrepreneurial motivations of realising personal, including private family and quality of life-oriented goals, rather than purely profit-oriented and corporate strategic objectives, and accomplished in ways that, compared to inno-

vations of large companies, are characterised by serendipity and little planning. Although both small firms have used professional consultancy services in their development efforts, these efforts were performed through practical approaches of asking “does this work?” rather than theoretical approaches of asking “what might be the best to do?” In the case of Lille Gadegaard (FKD2) this personal characteristic of the entrepreneur is not only an important (maybe disadvantageous) factor for the way the innovation process is organised. As is the case also in the FKD1 about Lehnsgaard, in businesses that add value to their products through storytelling, the personal characteristic of the owner, even the very person in flesh and blood, is a crucial part of the ‘story’ that is told and sold. To a certain limit and of course not applicable for larger companies, an unstructured and inefficient behaviour of an entrepreneur might be a competitive advantage rather than a disadvantage if these characteristics are properly integrated in the storytelling about the business. This element was a main part of the FKD2.

Oppositely, the FKD3 mirrors the efficiency of the Danish conventional agro-food system in terms of accomplishing large-scale projects of innovating new products and technologies within relatively short time horizons. The strong institutional frameworks of this system, characterized by a high degree of vertical and horizontal integration of supply chains from soil to table as well as well-established national institutions for research, counseling and knowledge diffusion, reassure an efficient development, diffusion and exploitation of generic standardization knowledge among its actors. Strikingly, with very few exceptions the FKD3 involves only actors belonging to the already established national supply chain of well-known trusted partners, sharing similar efficiency oriented goals for production.

However, the efficiency, price and scale factors characterizing this system are not very helpful for business entrepreneurs with more radical wishes regarding specialized product qualities. This is one of the reasons as to why small-scale, quality oriented ambitions of agricultural and industrial entrepreneurs in Denmark have been phrased ‘alternative’. Instead of gaining from strong, historically rooted, national institutions and knowledge chains, the firms behind FKD1 and FKD2 have gained from being linked to emerging regional networks and rural policy actors, sharing of mutual ‘alternative’, small-scale values.

3.2 Conclusions in relation to the WP5 main parameters

3.2.1 Generation/use

As already touched upon in paragraph 2.1.4, use of existing knowledge for commercialisation purposes is more important than generation of new knowledge. This reflects the maturity of product cycles and technological systems in the studied sector which in turn is mirrored in a limited importance of further educations. Only very few among the persons in the firms who initiated, organized and participated in the studied knowledge dynamics have an academic degree. Most have some sort of vocational education and a professional background marked by manual or sales related working tasks. On the other hand, the external consultants and firm-internal staff, giving knowledge inputs to

the innovation processes on demand, are characterised by higher levels of education and specialised professional competences.

As documented in the FKD3 about Danish Crown, the large-scale innovation of a new specialised production, involving the whole supply chain from farmers to supermarkets, was carried out without launching of R&D activities specifically targeted generation of new knowledge needed to accomplish the innovation. The demanded pieces of knowledge existed already in a codified form in the attached research system and just had to be collected and diffused to the relevant actors. Neither the FKD2 about Lille Gadegaard did involve generation of fundamentally new knowledge but was dominated by use of knowledge.

The exception from this picture is the EU funded research activities on biorefinery chemistry and whole crop refraction technologies, carried out by a network of European universities and large companies and resulting in the cooking oil product and technology that was commercialised by Lehnsgaard (FKD1). But these activities did not involve Lehnsgaard and only incidentally became part of the regional process of establishing new productions of Bornholm food (the TKD).

Having said this it should be stressed that a distinction between generation and use of knowledge does not fully capture the types of knowledge and kinds of learning processes that characterise the studied firms, and mainly the two small Bornholm firms. To capture the essence of the observed knowledge and learning dynamics of these particular firms, which in this respect are highly typical for way new productions of Bornholm food have been established, we need something in between generation and use of knowledge. And as said before contextualisation seems to be a more precise notion than examination. The dynamics of providing, absorbing, adapting, and using of knowledge seem to be deeply integrated and best captured by the concept of contextualisation. Already the initial search process for 'new' knowledge is done in a perspective of contextualisation, influenced by specific entrepreneurial motivations, needs and conditions.

3.2.2 Mobility and anchoring

The three knowledge biographies exemplify the significance of mobile knowledge as well as of contextualisation and anchoring of this knowledge in an increasingly global economy. The case studies have revealed two dimensions of knowledge mobility: a dimension of knowledge linkages and knowledge flows in geographical space, and a dimension of interaction between sectors that were not before related to the same degree. The emerging experience economy seems to be illustrative for both dimensions as well as for the three FKDs.

Starting with the sector dimension of mobility, the relevance of the concept experience economy is not restricted to the classical experience based service sectors like tourism and entertainment but is increasingly applied in a variety of sectors including food. In a Southern European context, vineyards, agro-tourism and other small-scale rural food businesses based on direct sale and on tourists as customers are relatively old fields of activities with long historic traditions. This is not the case in a Danish context. The two small firms studied in FKD1 and FKD2 have been among the pioneers in

the creation of Bornholm culinary heritage that crosses the borders of tourism and food and that builds on interaction with regional traditions for arts & crafts businesses and knowledge as well. For instance, the experiences and business model of Lille Gadegaard vineyard (FKD2) were developed through crucial knowledge inputs from arts & crafts students and consultants. And both of the small firms gain from and contribute to the marketing and branding of gastronomic tourism performed by the regional tourism industry.

Similarly clear sector-crossing elements are not involved in the FKD3, and yet, the innovation project was carried out through close interaction between actors all along the food supply chain from farmers to supermarkets. Particularly for the two central actors, the producer and the customer, the innovation project involved new types of cooperation and cross-organisation structures, facilitating knowledge flows between the processing industry and the retail sector. And while the innovation activities of the two small firms basically were supply-driven and only in its later phases related to the concept of ‘experience economy’, the innovation of the large company was demand-driven and at least to some extent had a point of departure in an acknowledgement by the retail sector of the growing importance of experiences for consumers’ shopping.

Regarding the spatial dimension of increased knowledge mobility, the FKD1 and FKD2 studies illustrate the transfer and practical contextualisation of the abstract experience economy concept, invented and developed by social science researchers and international consultancy firms in metropolitan areas. Through the intermediating roles of regional KIBSs and through regional interaction of related experience based sectors, an understanding of the concept of experience economy and its practical implications for diverse business functions has anchored in the two small firms – as well as in other regional firms and among regional governance actors, as described in the TKD study.

A high degree of spatial mobility of knowledge also characterizes the fundamental initial inspiration of the small Bornholm food producers in culinary heritage traditions and food production and consumption cultures in other countries. Due to lack of authentic regional food traditions the Bornholm firms have eclectically tapped into international gastronomic traditions of Southern European countries, entrepreneurial activities in rural areas of Nordic counties as well as in the gastronomic style of ‘New Nordic Food’, recently launched and promoted by the Nordic Council of Ministers (<http://www.norden.org/>). For instance, both of the studied small firms were included in a TV-production targeted presentation of regional food and drinks from the Nordic countries, and explicitly promoting the concept of New Nordic Food.

3.2.3 Proximity vs. distance knowledge interactions

The firm-level case studies have indicated that proximity is crucial for development of tacit knowledge and less important for codified knowledge dynamics. As most clearly documented in the FKD2 about Lille Gadegaard vineyard, geographical distance seems not to constitute an inaccessible barrier for exchange and transfer of codified synthetic type of knowledge on products and production technologies. Without major problems this sort of knowledge can be provided via geographically wide-ranging professional sources and networks, for instance the internet, competitors, suppliers, and in-

dustry organisations, or, as indicated by the FKD1 about Lehngaard cooking oil, synthetic engineering knowledge can be embodied in technological equipment the use of which does not depend on proximity to the developer/supplier. However, as documented in the cases of the vineyard and the Danish Crown pork meat, if more profound, specialised and tacit types of synthetic product and technology expertise are needed, face-to-face meetings and hands-on experiences are needed.

The picture is similar when it comes to symbolic design, marketing, communication, and branding knowledge of crucial importance for creation of value-adding experiences and storytelling dimensions of products. In this field certain elementary, codified stocks of knowledge, for instance regarding generic marketing and communication principles or certain elements of culinary heritage, indeed can be transferred in space. But diffusion and development of tacit symbolic knowledge elements, for instance the crucially important part of adapting and contextualising the concept of ‘Experience Economy’ to local conditions, depend on spatial proximity between actors in a localised system - although this system may be open for distant interaction and learning as well. The Bornholm ‘innovation system’ for symbolic knowledge is sector-crossing and involves not only food producers but also actors of related sectors such as tourism, restaurants, and arts & crafts, who commonly market and brand their products with a ‘regional identity’. Furthermore, the symbolic knowledge milieu encompasses a public knowledge institution in the form of the Glass and Ceramics School¹³ as well as two trade associations for about 100 arts & crafts firms and a number of consultancy firms with expertise in graphical design, communication, experience economy businesses, etc.

3.3 Conclusions in relation to WP6 hypotheses

Most of the 14 listed EURODITE hypotheses seem relevant and in line with the empirical findings from our case studies. However, considering the given space of a few pages they are too many, too diversified and too complex to be commented as a whole. Thus, we shall only put forward some few overall comments.

As emphasized in hypothesis 1, firms combine knowledge from intra- and extra-regional sources. In all FKD case studies both intra-regional and extra-regional sources and dynamics of knowledge have been important. The case studies indicate that the three firms have provided important inputs from region-specific sources (governance systems, interaction with related sectors), sector-specific sources (specialized product/technology networks) as well as time-specific sources related to overall development trends in the sector (knowledge on value-based business models and experiences).

Due to the differences of food categories and the peripheral development conditions of Bornholm food producers, sector-specific knowledge (products/technologies) only to a limited degree are present in the region. However basic, *codified* knowledge elements without major problems are insourced from distant actors and networks while the regional scale primarily plays a role for development of *tacit* knowledge, e.g. contextualization of mobile symbolic knowledge. This confirms the hypothesis 5 saying that inter-firm interactions involving a high level of tacit knowledge tend to be localised while long range interactions involve more formal knowledge.

¹³ The Glass and Ceramics School played a direct role for the knowledge dynamics in FKD2.

According to hypothesis 3, firms select knowledge for its relevance to perceived strategic goals. However, for micro-firms in which the owner plays a central role, the strategic goal for the business is not always the explicit and structuring principle for knowledge provision. Often in-sourcing of knowledge relates to immediate, acute needs, follows unplanned paths and depends on external actors and sources that incidentally appear. This is indeed the case of the small firm studied in FKD1 and for the initial development phases in the firm studied in FKD2 before the business idea was given its final form. The firm studies also show that KIBSs can play a crucial role by assisting small firms in identifying their strategic objective and targeting their knowledge development efforts to reach the objectives. The two case studies on small firms show the often decisive intermediating role of KIBS and confirm the hypothesis 4 that KIBSs act as important network spanners, here mainly regarding downstream networks in the direction of customers.

Governance and policy including financial incentives heavily influence the three FKDs (hypothesis 8). The two small firms have gained (financially as well as in broader discursive ways) from being part of broader regional efforts to develop small-scale food productions and culinary heritage that were initiated, coordinated and financially promoted by regional rural development actors, not least the so-called Local Action Group for EU rural development programs. The large meat processing company as well as the pig farmers in FKD3 gains from considerable subsidies via the EU agricultural policies. In general, these financial incentives favor the conventional large-scale agro-food model due to their orientation towards production volumes and efficiency factors.

The growing knowledge of consumers is an increasingly important factor in the development of new products (hypothesis 13). The three FKDs are embedded in and driven by overall contemporary trends in societies and cultures such as changes of family structures and working conditions, aging of populations, individualization of identity formation, increased standard of living, etc. These trends are articulated on consumer markets for food and drinks in the form of growing demands for products with a clear identity such as a specific place of production. Media play a critical, intermediating role here. A strong and ever increasing media focus on food, cooking, eating, health and food safety issues during the last decade or so has certainly been crucial for creating and enhancing a general awareness and knowledge among Danish consumers about new food categories (like foreign exotic sorts of fruits), new food qualities (like 'local', 'organic' and 'fair-trade' food) as well as about actual products and brands representing such distinct qualities. Without the media's role as discursive trendsetter and practical knowledge communicator, the demands for 'regional food' from Bornholm probably would not have been expressed on the markets to the same degree.

3.4 Conclusions about abstract categories of knowledge

See paragraph 2.4.

3.5 Policy conclusions related to regional knowledge dynamics

As mentioned above policy and governance systems have affected all three FKDs, though in different ways. Danish Crown and the pig farmers involved in FKD3 does not consider themselves as

parts of the newly developed business cluster for alternative Bornholm food (see the TKD), however they have benefitted from general EU policies via agricultural subsidies as well as from being parts of national vertically and horizontally integrated supply chains, knowledge systems and governance institutions for ‘conventional’ food production.

On the other side, the two small Bornholm firms have been deeply rooted in policy discourses regarding ‘alternative’ food production models and rural diversification, set and persistently kept on the agenda by regional policy actors in order to meet a number of problems related to the development of conventional agro-food activities such as declining employment in rural areas and village communities. One of the platforms for this discourse is the European network association Regional Culinary Heritage which both the small firms are members of.

Another platform for the discourse of alternative food and rural diversification, accompanied with financial means, is rural policies of EU, not least the so-called LEADER program. The issue of rural economic diversification has attained increasing centrality in EU agricultural and rural policies since the beginning of the 1990’ies. Lately, from the budget period 2007-13 one of the three pillars in the Common Agricultural Policies (CAP) has been provided an overall territorial dimension as well local bottom-up governance principles, developed via the LEADER program and based on Local Action Groups (LAGs). This development at the EU level has been reinforced by policies at Bornholm level, including administration of EU structural funds in which promotion of regional small-scale productions of food and drinks has become a central priority. For instance, co-financing of the food promotion activities of the Bornholm LAG has been integrated in municipality budgeting. The strategies and initiatives of the Bornholm LAG have successfully encouraged sector-crossing cooperation between food and arts & crafts businesses and have focused on collective networking and place-branding activities rather than on support to individual firms and technological issues (cf. the TKD report). As documented in the FKD1 and FKD2, both Lehnsgaard and Lille Gadegaard have benefitted from regional networking, marketing and branding initiatives of the Bornholm LAG and of the association Regional Culinary Heritage.

As documented in the FKD3 study, the attempts of a large region-external company to gain from the brand of quality food and culinary heritage from Bornholm, established through long and hard entrepreneurial and policy promotion efforts, was not welcomed by all regional actors. Although in this particular case of Bornholm pork meat of Danish Crown regional actors might have exaggerated the potential risks and overlooked the potential gains, the risk of damages of the Bornholm food brand is real, however difficult to avoid. Certification is one of ways of dealing with such problems (Parrott et al. 2002; Ilbery et al. 2005; Ilbery & Kneafsey 2000). The newly established association for the retail oriented producers, Gourmet Bornholm, of which Lehnsgaard studied in FKD1 is member, considers setting up a certification scheme for its members. However, due to the differences in products, the deficient regional supply basis of some producers and the lack of authentic recipes and traditions to use as an exclusive list of recognition, this will be a difficult task without juridical guarantee for keeping actors with dubious motivations out of the markets. Yet, as part of efforts to secure certain standards and to continuously develop the qualities of their products, a certification scheme and a common marketing logo is a reasonable strategy for the Gourmet Bornholm firms.

As documented by the firm case studies as well as numerous research analyses (to mention only a few, Watts et al. 2005; Renting et al. 2003; Parrott et al. 2002; Fonte 2002; Marsden et al. 2000; Morgan & Murdoch 2000; Green & Foster 2005; Goodman 2002), the differences in knowledge dynamics, institutional frameworks, policy systems, basic set of values and development objectives, characterizing on the one hand 'conventional' agro-food systems and on the other hand 'alternative' food production networks are striking and seem to belong to – in the terminology of Storper & Salais 1997 - two different 'Worlds of Production', difficult to integrate and promote simultaneously in policy schemes.

Nonetheless, a question in focus of increasing research interest is to what extent and in which ways alternative food networks actually are alternative and not just complementary to conventional food networks (see for instance Sonnino & Marsden 2006; Watts et al. 2005; Goodman 2002). The empirical data has provided insight that might have a say in this debate. The FKDs indicate that representatives of the two food models indeed differ in many respects however, they do not constitute two totally separate systems. For instance, the supply basis of Lehnsgaard (and of many other 'alternative' Bornholm producers) is basically 'conventionally' grown produces, and 'alternative' niche products such as the rapeseed oil of Lehnsgaard are increasingly distributed and marketed via conventional retailers (supermarkets).

A similar picture can be drawn regarding the knowledge networks and the knowledge dynamics in which producers take part. Conventional producers such as Danish Crown heavily rely on cumulative product-specific knowledge dynamics while alternative producers such as Lehnsgaard and Lille Gadegaard rely on composite cross-sector knowledge dynamics, and the type of actors, networks and milieus contributing to these knowledge dynamics indeed are varying. However, the case studies have revealed interfaces for knowledge flows between the models. One example is Danish Crown's active interest in learning from small alternative producers as part of its innovation project. Another example is that knowledge on marketing, storytelling and branding basically is common, generic and applicable in both models, though obviously contextualised and exploited very differently¹⁴. The existence of such interfaces for knowledge flows might indicate openings for a higher degree of interaction and integration of the two 'camps' in common policy initiatives that could be beneficial for actors in both 'camps'.

SECTION 4 GENERAL CONCLUSIONS

4.1 Conclusions of knowledge case studies (FKDs) based on the empirical findings

The innovations in focus for the three FKDs - efforts to define and commercially exploit 'regional' food - are not exclusively Bornholm phenomena but are typical examples of contemporary trends in the food sector in many countries. However, unlike in countries with stronger local food cultures the Bornholm attempts do not tap back into old, regional food traditions by replicating certain authentic

¹⁴ More of the interviewed private marketing consultants with professional experiences related to marketing have confirmed this, including Frank Eriksen, consultant for Lehnsgaard, and Stig Westermann, consultant for Lehnsgaard.

local products or recipes. Rather they connect to the concept of the emerging 'experience economy' and to new international cooking concepts of 'fusion cuisine', they eclectically select categories of products the origin of which are not necessarily regional and provide them a territorial dimension and interpretation by framing them into a new, contemporary context of the region or the place of production. This implies a transfer of region-external, mobile knowledge which, however, has to be combined with local/regional agricultural, manufacturing and consumer market knowledge. Such composite, anchoring and contextualising knowledge dynamics, the interplay between interregional and intraregional firm level knowledge dynamics are central for the two small producers.

Opposed to this is the large multinational company's way of defining and exploiting regional food. This innovation project is characterised by cumulative knowledge dynamics, well-established product-specific supply chains from farmers to supermarket chains, vertically and horizontally integrated national institutions including industry research and advisory systems that codify, store, and diffuse knowledge to relevant users in the supply chain. There are obvious limitations for how long such an efficiency and standardisation oriented agro-economic system can go towards specialisation. Nonetheless, the customer request for a specialised product provoked the need also in this innovation process for certain composite knowledge dynamics. For instance, the knowledge dynamics involved search for knowledge among small-scale 'alternative' producers outside the usual supply chain as well as for new ways of organising innovation and external relations with customer and suppliers.

Another common characteristic of the three FKDs is the importance of symbolic type of knowledge. Not primarily the artistic/creative type of knowledge about aesthetic and design dimensions of products, emphasized in EURODITE conceptual papers but knowledge on communication in broader terms, the ability to identify normative values as a fundament for branding, to embed these values in products and production and express them to customers and stakeholders through a coherent set of communication channels. The FKD1 and FKD2 interestingly indicate that in small firms a part of this symbolic knowledge can involve the owner's awareness and deliberate use of characteristics related to his/her personality, such as the voice and way of speaking, the look and appearance in general.

Finally, a central characteristic of the firm case studies is the multi-contextual character of knowledge dynamics. The cases illustrate the interaction and complementarities of dynamics occurring in different development contexts. The commercialization dynamics of the firms is timely embedded in and gains from dynamics in the contexts of Society/Culture (contemporary social and cultural trends intermediated by medias and articulated on consumer markets), Science/Education (research on 'experience economy', R&D on technology for cooking oil), Governance (new policy discourses and support schemes including regionally coordinated branding), and Market/Network (interaction with KIBS and networking with other food producers on Bornholm).

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Andersen, Jimmy: Head of Fresh Meats Section, Kvickly, Albertslund. Albertslund: 21.07.08. Bornholm: 25.08.08.

Andersen, Stig: Consultant, Bornholm's Agricultural Advisory Services. Bornholm: 28.08.08.

Arnt, Lars: Purchaser in the leading wholesales company, Inco in Copenhagen. Interviewed 19.08.08.

Boisen, Thorkild: Owner of Boisen is (ice cream), Chairman of the board Regional Culinary Heritage. Bornholm: 15.03.2006 and 06.02.2009

Eriksen, Frank: former partner in Konnect Kommunikation Aps, a communication consultancy firm. Bornholm: 20.08.08.

Hammer, Jørgen: Chairman of the board of the Local Action group on Bornholm and Chairman for the Association of Village Citizens' Society on Bornholm ("Sammenslutningen af Borgerforeninger på Bornholm"). Bornholm: 24.03.09.

Hansen, Hans: owner: Lehnsgaard Rape Seed Oil. Bornholm: 09.05.06, 17.06.08, 12.03.09, 01.05.09

Hansson, Jan: European coordinator, Regional Culinary Heritage. Interviewed 15.03.2008.

Henriksen, Poul, Production Manager, Danish Crown Slaughterhouse, Rønne. Bornholm: 30.01.09

Holmstrand, H.C: owner: Holmstrand Consulting, Bornholm: 29.08.08.

Ingen Bro, Bolette van: Director, Food Development Information Centre, Holstebro, Denmark: 21.08.08.

Jensen, Hans Jørgen: Coordinator, Local Action Group Bornholm; secretary for Regional Culinary Heritage network. Bornholm: 21.02.08.

Jensen, Mikkel: Development Manager of Destination Bornholm, Bornholm: 11.09.08.

Julin, Georg: Food Ambassador on Bornholm 2004-2005, 04.03.08.

Larsson, Paul E.: owner of consultancy firm Danish Food Guide, Bornholm. 13.08.08

Madvig; Eva: Tour manager, Team Bornholm. Bornholm: 24.02.09

Molin, Anne-Lise: Politician. Member of Regional Municipal Council; member of the board of Local Action Group Bornholm, former mayor of Nexoe Municipality. Bornholm, 24.03.2009

Munk, Rita: Project Manager, Danish Danish Food Industry Agency/Ministry of Food, Agriculture and Fisheries: Copenhagen: 29.08.08

Paulsen, Jesper: owner of Lille Gadegaard Vineyard. Bornholm: 15.03.06., 18.06.08, 24.02.09, 26.02.09.

Pedersen, Torben: Head of Sales in the pork division. Danish Crown, Randers. Copenhagen: 16.06.08. Bornholm: 25.08.08

Seest Dams, Claus: chef of Restaurant “Di 5 Ståuerna” (The Five Lounges”), Hotel Fredensborg, Bornholm: 08.04.09

Skovgård, Anne: freelance food journalist, Copenhagen: 01.09.08

Stender, Tim: Owner of Svaneke Øl (brewery) in Svaneke, Bornholm: 28.08.08.

Sørensen, Hilmer: researcher, Faculty of Life Sciences/Copenhagen University, Copenhagen. 03.09.08

Thinggård, Jens Ole: Bornholm pork producer. Bornholm: 25.08.08

Westermann, Stig: owner of the company Bornappetit, former chairman of the board of Bornholm Regional Culinary Heritage, Bornholm: 20.08.08.