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The Pork Value Chain in Denmark

- Structure and Industrial Relations

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Introduction

This report consists of three sub-reports, delivered as part of the international project *Meat Up Ffire project - Fairness, freedom and Industrial Relations across Europe: Up and Down the Meat Value Chain* under DG Employment. The overall aim of the project is to improve the expertise and knowledge of industrial relations through analysis and research in the specific field of the pork value chain. The five countries investigated are Belgium; Denmark; Germany; Italy; and Poland. The country reports as well as the final comparative reports from this project can be found on https://www.meatupffire.com.

This report is a combination of three reports on the Danish pork value chain: Part I describes the structural characteristics of the pork value chain in Denmark; part II describes the industrial relations along the pork value chain in Denmark; and part III vitalizes the findings in part I and II through qualitative case-studies on a farm, a slaughterhouse and a processing factory. The reports were first published separately in December 2018 (part I); in April 2019 (part II); and in November 2019 (part III).

Thanks a lot to the interviewees from different organisations in Denmark that have given valuable insights in the Danish pork value chain and its position internationally. Also thank you to the interviewees on the farm, in the slaughter house and in the processing factory – they give the insight on the pork value chain in Denmark flesh and blood, so to speak. Finally thank you very much to communication coordinator Mikkel Krogh from FAOS, who has been very helpful in finding important numbers and statistics for this report.

The lists of interviewees and informants as well as other sources are to be found under ‘Sources’ last in this report.

Part I

The Structural Characteristics of the Pork Value Chain in Denmark

The structure of the pork value chain in Denmark – an overview

The share of the pig business in terms of export of meat, piglets and pigs is about 30 billion Danish kroner or 4 billion euro, equaling about 5 per cent of the Danish export. About 0.5 per cent of the labour force – 13,000 people – are employed directly in the pork value chain, but including transport, logistics and retail, it amounts to 33-34,000 – according to the interest organization Landbrug & Fødevarer.

The structural development in Denmark moves towards fewer and larger companies. This development includes both pig farms and slaughterhouses, and today there are around 3,200 farms (down from 30,000 in 1990), and eight major slaughter houses (down from 54 in 1970).

In breeding, we see still fewer, but bigger farms. Smaller farms have problems maintaining the needed efficiency, while bigger farm are able to deliver this; however many farms have a heavy debt burden.

At the same time we find increased specialization. Only 16 percent of the conventional pig farms are breeding both sows, piglets and pigs for slaughter, while the remaining 84 percent is specialized in either piglets or pigs for slaughter. 1,1 percent is ecological.

The international trend seen in other countries (starting in the US and spreading to other countries, e.g. Poland) that on big 'integrator', one big enterprise controls the whole chain from breeding to consumer – very much controlled by the consumer – has still not struck the Danish breeding industry. The bulwark against this business model seems to be the tradition of the Danish Cooperative Movement (*Andelsbevægelsen).* Andelsbevægelsen is a means of economical organization under leadership of consumer- or producer-controlled corporations, where each individual member owns a part of the corporation. This type of organization was especially used in the farming industry and in consumer organizations in Denmark from the 1790's to the 1960's. The members of the coorporatives seek to share the economic stress of producing or buying goods, and yearly divide the eventual financial surplus amongst them. Within farming, the whole process – from breeding over slaughtering to refinement and sale – was controlled by stakeholders, i.e. members of the movement – not to be understood as shareholders. Importantly, there has been a long tradition of not regarding each other as competitors per se. This means that there has been a long tradition of knowledge sharing and even today, farmers are sharing new innovations with other farmers. This might be an important explanation why the Danish pork farmers are so efficient.

While this business model is disappearing, interviewees finds that the culture and understanding of the model still prevails and makes is difficult for other models to find foothold. The – without comparison – largest Danish slaughter house, Danish Crown, is a conglomerate of many small slaughterhouses within Andelsbevægelsen – a fusion process that lasted almost five decades due to resistance within the movement, but also a development that was deemed necessary due to international competition. Even today management in Danish Crown is heavily controlled by their suppliers – the farmers. This means that there is a strong opposition among some farmers against other business models, like the integrator model, though it is often discussed if it is necessary to move in that direction to get more control over the total process and to become stronger in processing.

Generally the consumption of red meat is declining in Denmark, which is also the case with pig meat. However, this is of less concern as the vast majority of pigs and pig meat are exported. According to trend analysis reports from Danish Agriculture & Food Council Danish, consumers are mostly concerned about price and whether the meat has been produced in Denmark. Danish meat is regarded as a guarantee of quality by consumers. When consumers choose which pig meat to buy, animal welfare is the third most important criteria – before criteria as general quality of the meat, ecology and freshness.

Most of the meat is are exported to Germany and the UK, while piglets and pigs are exported to different destinations – where Germany and Poland are the major importers.

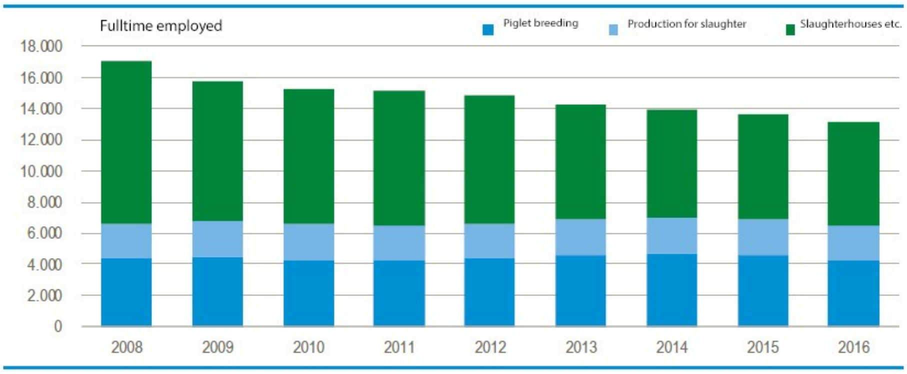
The breeding structure has changed over the years. From mainly production of pigs over 50 kilos to an even share of slaughter pigs (18 millions) and piglets (14 millions). This is mainly due to a 2002 change in German legislation (the Hartz-reforms), allowing low cost labour access to German slaughter houses. Furthermore, the space needed to breed piglets is only about 1/5 of the space needed to breed a slaughter pigs – and with scarce land resources, it has been a logical change in production.

This change in breeding pattern from pigs to piglets has had a significant impact on the profitability of Danish slaughter houses as well as consequences for the need of man power. The union for slaughters, NNF, had some 42,000 members in its heydays half a century ago – whilst the number today is 16,000. Of these, some 8,000 are involved in pig slaughtering and processing.

Generally, the labour process have been Taylorised since the beginning of the 20th century. An enhanced mechanization has taken place from 1960's onwards, and this trend is continuing with enhanced robotization. Furthermore, efficiency within breeding as well as slaughtering had improved markedly over the years, leading to a generally lower employment rate within the pork value chain.

The figure below shows that about 17,000 were employed directly in the pig value chain in 2008, while the number was 13,000 in 2016.

Figure 6 Employment by primary pig production and manufacturing of pig meat in Denmark



Kilde: Statistikbanken.dk/ERHV1. Branchekoder 014610 Avl af smågrise, 014620 Produktion af slagtesvin og 101110 Forarbejdning af svinekød.

However, while employment in breeding has been less hard hit, employment in slaughtering and processing has taken a bigger blow:

Employees in breeding of piglets:
6,470 in 2016 – down from 7,224 in 2008 (Statistics Denmark)

Employees in breeding of slaughter pigs
4,158 in 2016 – down from 4,935 in 2008

Employee in processing for pig meat
7,489 in 2016 – down from 10,033 in 2008

This out of a workforce of around 2.7 million, i.e. about half a per cent of the work force is directly employed in the pork value chain. However, according to the interest organisation Landbrug & Fødevarers internal calculations, up to 33-34,000 persons are in one way or another involved in pork production – this includes servicing, transport, retail etc.

An interesting side-product of the automatization of the slaughter houses is an increased interest for and production of Danish machinery and robots for slaughtering, which is now exported to other countries.

Furthermore, the general efficiency of the Danish pork industry entails that Denmark is selling turn-key slaughter houses to other countries, as Denmark is now branded as state-of-the-art in efficiency and hygiene. The same goes for the exported piglets, which have a reputation of very good genes.

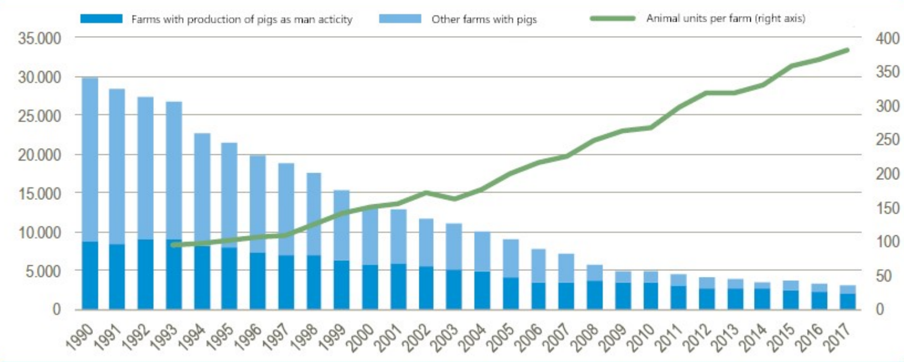
Generally the pig industry is riddled by considerable health and safety issues due to the hardship of the processes and the speed of the production, but it has very high attention among employers and trade unions alike.

Regarding the health of animals, there is ongoing discussions on the issue, with animal welfare groups making their voices heard.

Breeding

The number of farms has decreased drastically over the last two decades, while the number of pigs per farm has increased – as a rule of thumb, the number of pig farms are halved every seven years. The figure below shows the number of pig farms (blue columns) and the number of pigs per farm. However, behind these averages, we find a small number of big farms and quite a few minor farms. As of 2017, the amount of pig farms is 3,226, down from some 30,000 farms in 1990 and 10,000 farms in 2004

Figure 1 **Number of farms with pigs and the size of the farms**



Kilde: Landbrugs- og gartneritællingen, Statistikbanken.dk/HDYR1, Statistikbanken.dk/REGNSV1, Statistikbanken.dk/JORD2

The farms are quite specialized; only 16 percent of the conventional pig farms produces both sows, piglets and pigs for slaughter, while the remaining 84 percent is specialized in either piglets or pigs for slaughter. 1.1 percent is ecological.

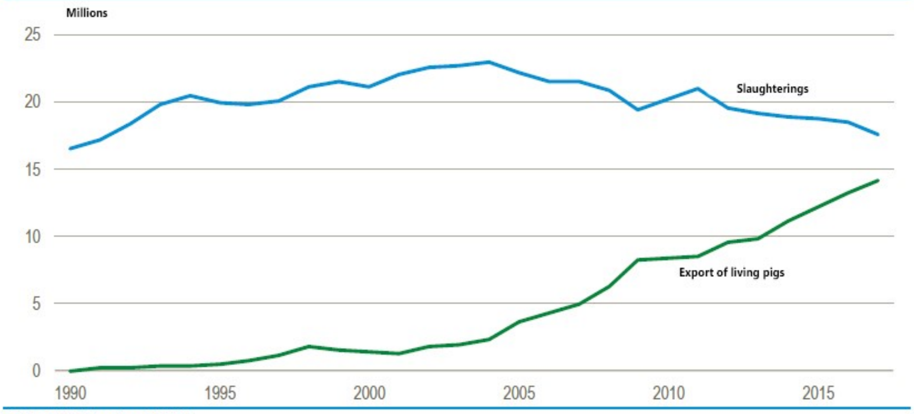
Denmark's export of living pigs – especially piglets – is growing. In 2017 Denmark exported 14.2 million piglets. In 2007 Denmark only exported 4.9 million piglets. The piglets are mainly exported to Germany and Poland. The export to Germany accounted for 44 percent and Poland for 42 percent of the total export of piglets in 2017.

This change towards production of piglets instead of pigs ready to slaughter is a result of several factors, of which two are deemed most important:

1) The Hartz-reforms from 2002 basically eliminated a minimum wage in the German pig slaughtering business – out-competing Danish slaughter houses
2) The environmental requirements entails that a piglet only need about 1/5 of the space compared to a full grown pig.

This has changed the Danish pork value chain – from production of pigs for slaughtering towards production of piglets for export. The figure below illustrates the change from slaughtering (blue line) toward production and export of live pigs and piglets (green line).

Figure 8 **Number of pig slaughterings in Denmark and pig export**

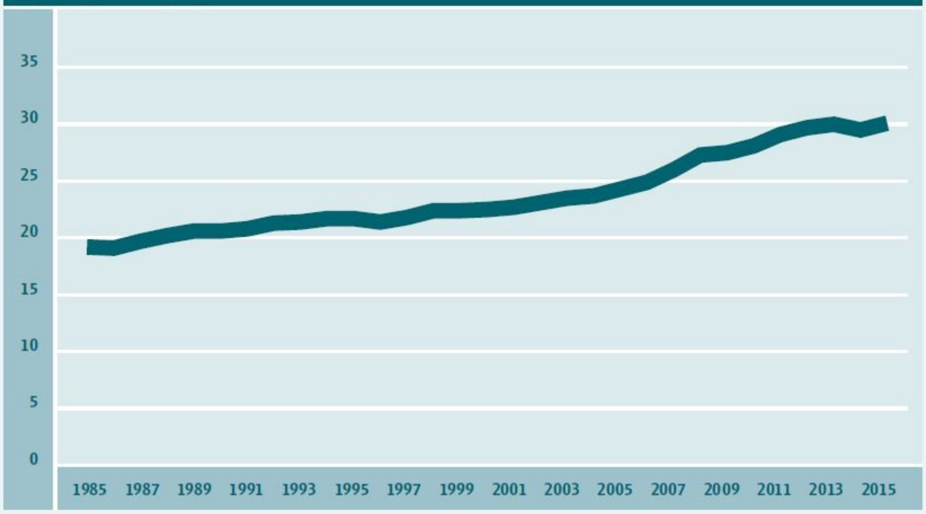


Kilde: Statistikbanken.dk/ANI5

As the figure below shows, the production of piglets per sow has increased significantly – from 19 piglets per sow in 1985 to 30 piglets per sow in 2015. The most effective farmers are able to produce up to 40 piglets per sow, and if farmers only produce 27-28 piglets per sow, they are basically not competitive.

Figure 9

Piglets per sow per year.



Source: SEGES.

The past decade there has been a great focus on animal welfare in Denmark as well as problems related to the use of antibiotics. Consumers are concerned with the general living conditions for pigs and the use of antibiotics. Furthermore there has been public debate concerning cutting the tales of piglets, which is widespread.

There has also been a major public debate regarding the spread of MRSA in the Danish pig industry. The debate about MRSA is not restricted to the media, but has also been a major discussion topic between scientists. Compared to neighbouring countries Denmark has a big problem with MRSA. The subject is greatly politicized and important because of Denmark's great export of pig meat. However, that is also considered an advantage that Denmark is not importing pigs, and at the same time health control in Denmark is regarded as very high in international comparison.

Another area of debate is the large number of deaths among piglets. According to a report from Aarhus University in 2010 the main explanation is the large number of born piglets per sow.

"The breeding towards larger litter size carried out since 1992 and until 2004 is probably a large part of the reason for the growing rates of both stillborn piglets and piglets that die after birth."

(Pattegrisdødligheden i DK, Udvalget for Fødevarer, Landbrug og Fiskeri, 2010)

The Danish pig production is concentrated in Jutland where most pig farms and slaughterhouses are situated. App. 10 mio. pigs in Jutland (Jylland), 1.2 mio. on Funen (Fyn), 1,4 on Zealand (Sjælland) and 0.3 on Bornholm. There are no apparent regional specialization. *(Source: Statistik Gris 2017 og DST 'Svineproduktion under forandring').*

Denmark imports almost no live pigs, while the majority of pigs and piglets produced in Denmark goes to export. Furthermore, 90 percent of the pig meat is exported – the majority to Germany and the UK.

Weight of the pork meat production out of total agricultural production and out of total meat production (as % of turnover)

Pork meat export out of total agricultural export:	19.2 percent
Pork meat export out of total animal export:	35.3 percent

Note: Animal export includes milk, butter etc.
Source: Statistik Gris 2017 – Landbrug og Fødevarer

Number of livestocks (distinguished for livestocks for fattening and for reproduction), companies involved in breeding, regional specializations

Production of pigs/sows 2017:	17.7 mio.
Production (export) of piglets 2017:	14.1 mio.
Total production of pigs 2017:	31.8 mio.
Number of farms with pig production:	3,226

Livestocks distinguished by stage of growth (pigs under or over 50 kg) or other descriptive data NICE

Number of pigs over 50 kg 1. Oct 2017:	4,155,000
Number of pigs/piglets under 50 kg 1. Oct 2017:	8,539,000
Total pigs/piglets 2017:	12,694,000

Note: Pigs over 50 kg is comprised of the following categories: Pregnant sows, boar (male pig), dry sows (goldsøer), gilts (gylt) and pigs for slaughtering.
Note: The number of pigs is derived from calculations of data from 2.500 selected farms.

Source: Statistik Gris 2017 LF

Import and export of live animals and carcasses

Export of live pigs 2017:	421,895 tons
Export of whole/half pigs 2017:	85,912 tons
Export of cuts/parts of the pig 2017:	1,007,134 tons
Export of biproducts 2017:	267,132 tons
Export of processed products 2017:	125,945 tons

Import of living pigs 2017:	0 tons
Import of whole/half pigs 2017:	155 tons
Import of cuts/parts of the pig 2017:	45,782 tons
Import of biproducts 2017:	68,338 tons
Import of processed products:	73,372 tons

Source: Statistik Gris 2017 LF

National prices for live animals if available distinguished for different weights

Average price for pigs in Denmark 2017: 1.57 euro/kg (11.69 DKK/kg)

Note: Price paid to farmer. It is hard to calculate the precise prices because this among other variables is depending on the quality of the meat. The average price above is including relevant charges and deductions. (afgifter og fradag) The price for ecological pig meat is significantly higher. The price for Antonius pigs are also higher than conventional pig meat.

In exports the prices also vary depending on the transport expenditures.

Export of pig meat

The figure below shows the export countries, Germany being the main importer of pig meat, closely followed by the UK. However, the Asian market is expending rapidly, and Danish meat has a very good reputation in Asia in terms of hygiene and quality.

Trend in Pigmeat Export

Main countries

Tonnes	1997	2007	2016	2017
Germany	321,344	503,709	561,495	553,455
Poland	19,210	122,378	274,396	301,441
UK	236,023	303,661	213,498	204,628
Italy	101,189	153,256	119,218	118,659
Sweden	42,382	68,792	38,164	35,273
Other EU-countries	229,600	188,215	135,247	157,059
Total EU	**949,749**	**1,340,011**	**1,342,019**	**1,370,516**
China/Hong Kong	2,674	48,955	312,279	244,078
Japan	156,724	159,831	127,488	119,179
Australia	163	32,924	56,827	44,535
USA	51,755	45,119	31,730	34,625
Other countries	221,775	246,036	92,317	95,084
Total 3rd countries	**433,091**	**532,864**	**620,640**	**537,500**
Total	**1,382,840**	**1,872,875**	**1,962,659**	**1,908,017**

1,000 DKK	1997	2007	2016	2017
Germany	5,019,537	5,554,593	6,786,825	7,774,279
UK	4,598,336	5,388,593	3,468,915	3,429,463
Poland	258,303	1,385,268	3,672,364	4,868,673
Italy	1,604,702	2,062,189	1,688,519	1,812,124
Sweden	784,645	1,347,273	769,520	751,761
Other EU-countries	3,618,121	2,405,780	2,166,789	2,746,263
Total EU	**15,883,643**	**18,143,696**	**18,552,931**	**21,382,563**
China/Hong Kong	21,656	284,368	3,829,797	2,854,754
Japan	4,475,171	3,786,371	3,920,904	3,695,071
USA	1,172,204	1,044,847	967,290	1,031,157
Australia	2,927	698,017	1,111,142	993,417
Other countries	3,092,609	3,178,873	1,990,825	2,053,241
Total 3rd countries	**8,764,568**	**8,992,476**	**11,819,958**	**10,627,642**
Total	**24,648,211**	**27,136,172**	**30,372,889**	**32,010,205**

Danish import of intermediate products:

Whole and half pigs	155 tons
Cuts/parts	45,782 tons
Bi-products	68,338 tons

Below, we see the development of the export of pig meat over time. We find that the bacon export and other processed pig meat has gone down, while the export of livestock went up from 66,367 tons in 1997 to 421,895 tons in 2017.

Trend in Pigmeat Export

Products

Tonnes	**1997**	**2007**	**2016**	**2017**
Bacon	130,115	94,884	53,975	42,719
By-products	169,316	263,709	298,164	267,132
Live pigs and sows	66,379	227,198	394,209	421,895
Sausages	58,002	33,429	35,710	34,139
Canned meat	118,204	65,636	51,691	49,087
Cuts	795,976	1,114,979	1,040,905	1,007,134
Carcasses pigs/sows	49,373	73,041	88,004	85,912
Total	**1,387,365**	**1,872,875**	**1,962,659**	**1,908,017**

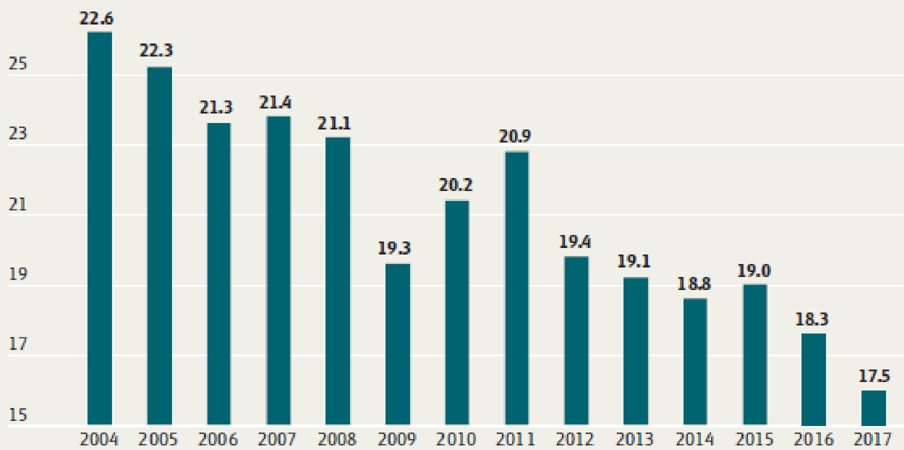
1,000 DKK	**1997**	**2007**	**2016**	**2017**
Bacon	2,985,272	2,071,692	1,066,640	888,269
By-products	1,151,070	1,707,513	3,038,969	2,645,605
Live pigs and sows	881,613	2,397,793	6,296,560	8,136,874
Sausages	1,162,076	766,658	965,693	961,899
Canned meat	2,543,240	1,435,288	1,321,912	1,312,283
Cuts	15,427,618	18,076,039	16,824,056	17,087,247
Carcasses pigs/sows	576,840	681,189	859,059	978,027
Total	**24,727,729**	**27,136,172**	**30,372,889**	**32,010,205**

As mentioned, the Danish value chain has changed from emphasis on pigs ready to slaughter to piglets. This has had major consequences for employment in the slaughterhouses.

Slaughtering and processing

The number of pigs slaughtered in Denmark has gone down from 22.6 million in 2004 to 17.5 million in 2017 – see figure below.

Development in slaughterings
M head

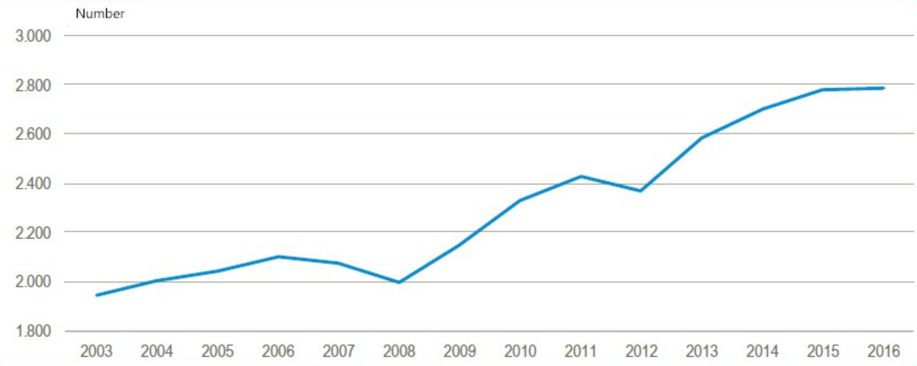


SThe slaughtering includes slaughtering of pigs at the cooperative slaughterhouses, private slaughterhouses, public slaughterhouses and private butchers in Denmark

The number of slaughterings has not decreased as much as the rise in export of piglets might suggest. This can be explained by the development in the breeding process where the pigs grow faster and the sows give birth to a larger number of piglets.

The number of employed within the sector has decreased quite considerably and the employment within the slaughtering business is the lowest to date. This development is mainly due to a continuously more effective way of organizing work. While the average number of pigs slaughtered per full time employee was less than 2,000 in 2003, the number had increased to 2,800 in 2016 – see figure below.

Figure 7 Number of pig slaughterings per fulltime employee on slaughterhouses



Kilde: Statistikbanken.dk/ANI5 og Statistikbanken.dk/ERHV1. Branchekode 101110 Forarbejdning af svinekød.

New technologies – and robotization – has had a major impact, and being a high wage country, the incentive to work on different ways to streamline the production has been strong in Denmark.

An interesting side-effect is that Danish industrial companies now are exporting robots and advanced slaughtering technology. Furthermore, Denmark delivers turn-key slaughterhouses to other countries, including South-East Asia. Recently, Danish Crown made a deal with the Chinese internet company Alibaba to deliver a turn-key slaughterhouse with technology, work organization, hygiene control etc. Other countries have bought 'Danish designed' turn-key slaughterhouses too.

Export markets

The Danish pig export primarily consists of fresh and frozen parts (udskæringer). The front parts of the pig is primarily exported to Germany and Russia, the middle parts to Great Britain and Japan while hams are exported to France, Italy and Sweden and other countries. The cuts/parts are mainly used for further processing in the importing countries. *Source:* *https://www.lf.dk/viden-om/foedevareproduktion/slagtning/svineslagteri*

Fresh pig meat are mainly exported to other European countries. As mentioned, above, in 2017 Germany was the largest importer followed by UK, Poland and Italy. The frozen meat is mainly exported to countries outside Europe. In 2017 the largest importer of frozen meat was Japan followed by China, Autralia and USA. UK was the largest European importer of frozen meat.

Number and size of companies involved in slaughtering
There are eight main slaughterhouses in Denmark – down from 54 in 1970.

Development in number of slaughterhouses

End year:	1970	1980	1990	2000	2010	2016	2017
Cooperatives	50	18	5	3	2	1	1
*Private owned**	4	2	8	12	8	7	7
Total slaughterhouses	**54**	**20**	**13**	**15**	**10**	**8**	**8**

** Slaughterhouses with more than 10,000 pigs per year. No exact figures are available for private owned slaughterhouses in 1970 and 1980.*

Source: Statistic Gris, s.13.

Seven private and one large cooperative slaughterhouse company, which consists of seven smaller slaughterhouses on different locations.

- Danish Crown (cooperative slaughterhouse, seven different locations). Total app. 13.1 million slaughterings per year
- Danish Pork Meat (private, Danish, Glumsø) app. 0.1 million slaughterings per year
- Hvidebæk slagteri (private, Danish) app. 0.1 million million slaughterings per year
- SB Pork (bought by Tönnies Fleisch in 2005) app. 1.5 million slaughterings per year
- Danepork (private, Danish) app. 0.3 million slaughterings per year
- Moesgaard-Meat, (private, Danish) app. 0.1 million slaughterings per year
- Sevel slagteri (joint-stock company) app. 0.1 million slaughterings per year
- Tican slagteri, (bought by Tönnies Fleisch in 2016) app. 1.8 million slaughterings per year

Note: The number of slaughterings is based on the report 'Statistik Gris 2017'. The numbers may vary compared to the information on the companies' websites. For example Tican states on their website, that they produce 3.4 million pigs yearly, while the report 'Statistik Gris 2017' states that it has slaughtered 1.8 million pigs in 2017.
Note: Only slaughterhouses with more than 10.000 slaughtered pigs per year is mentioned. A few smaller local slaughterhouses exist too.

- **Danish Crown (cooperative slaughterhouse, seven different locations). Total app. 13.1 million slaughterings per year**
  Cooperative owners app. 7.150

Production: app. 21 million pigs and sows yearly (app. 13 million in Denmark)
Danish Crown has production in Denmark and a number of European countries as well as China. The company has market access to more than 130 countries worldwide. Danish Crown has a yearly turnover of app. 62 billion kroner/ 8 billion Euros and employs about 25.000 workers in Denmark and abroad. In the fiscal year 2016/17 the export value was 27 billion kroner/3.6 billion Euros. That is app.

- **Danish Pork Meat (private, Danish, Glumsø) App. 0.1 million slaughterings yearly**
  Employs 24 workers. Focus on pig meat products. Export is 70% of the total turnover.

- **Hvidebæk slagteri (privatejet, Dansk) App. 0.1 million slaughterings**
  Small family owned slaughterhouse.

- **SB Pork (bought by Tönnies Fleisch in 2005) App. 1.5 million slaughterings**
  SB Pork is an international food producing company with a focus on production and sale of fresh and frozen pig meat for retail and industry costumers. The company specialises in pig slaughtering, cutting and boning. It is the third largest slaughterhouse in Denmark.

- **Danepork (private, Danish) App. 0.3 million slaughterings**
  DanePork - former Slagtergården St. Lihme A/S – is a privately owned slaughterhouse in Jutland. DanePork employs app. 155 workers.

- **Moesgaard-Meat, (private, Danish) App. 0.1 million slaughterings**
  Moesgaard Meat is a modern company with a brand new production line. It has the capability to slaughter 120 pigs or 60 sows an hour. With complete cooling facility the company is able to slaughter 100.000 sows per year. This makes export and transport of living sows to Germany unnecessary. Moesgaard Meat does not do cutting and further processing of the meat, but exports whole and half carcasses to other European countries. Moesgaard Meat focuses on animal welfare and avoids the long transport of living animals to Germany.

- **Sevel slagteri (joint-stock company) App. 0.1 million slaughterings**
  Sevel Slagteri is a modern slaughterhouse which focuses on sows for export. In 2013 H & S Westergaard A/S bought Sevel Slagteri A/S. H & S Westergaard A/S employs 28 workers
  Note: Not clear if the 28 workers is solely the employed with H&S Westergaard or if they include the workers on Sevel slagteri.

- **Tican slagteri, (bought by Tönnies Fleisch in 2016) App. 1.8 million slaughterings**
  Tican employs around 1,100 workers. Tican international food producing company with a focus on production and sale of fresh and frozen pig meat for retail and industry costumers. Tican has a yearly production of 3.4 million pigs. This number deviates from the number of slaughterings in reports from the industry organisation LF.
  Note on Tönnies Fleisch: The company is headquartered in Rheda-Wiedenbrück. Tönnies employs approximately 8,000 people across seven German and one Danish production facility. The Tönnies group is active worldwide, and with 25 international offices, is always closely in touch with the market. Our exports account for about 50% of our production.

Sources: The number of slaughterings is derived from Statistik Gris 2017 by Danish Agriculture & Food Council. The information on each slaughterhouse is taken from the companies own websites. In some instances there are varations in the information. For example regarding the number of slaughterings.

Characteristics of the labour market in the pork value chain

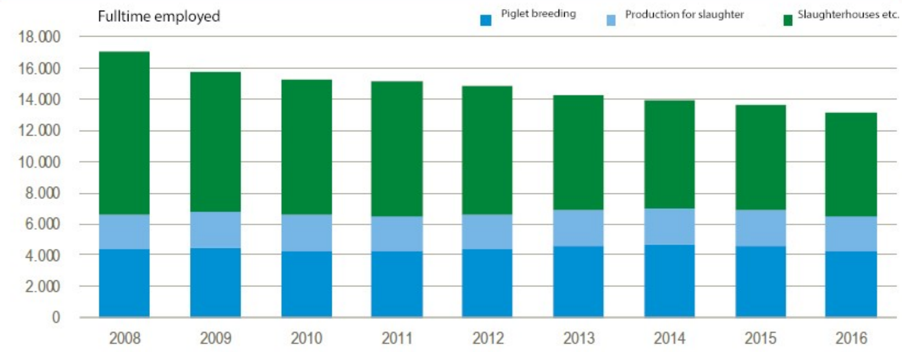
Generally, the breeding efficiency as well as slaughtering and processing efficiency has developed quite markedly over the years – as pointed out above. Compared to most other countries, the amount of pigs produced and slaughtered per employee is very high.

While the employment is relatively unchanged over the years, the farms are producing still more pigs, i.e. efficiency has improved markedly.

In slaughtering and processing, the labour process have been Taylorised since the beginning of the 20th century. Enhanced mechanization has taken place from 1960's onwards, and this trend is continuing with enhanced robotization.

The figure below shows that app. 17,000 were employed in the pig value chain in 2008, while there was 13,000 employed in 2016 – in the whole value chain of breeding, slaughtering and processing.

Figure 6 Employment by primary pig production and manufacturing of pig meat in Denmark



Kilde: Statistikbanken.dk/ERHV1. Branchekoder 014610 Avl af smågrise, 014620 Produktion af slagtesvin og 101110 Forarbejdning af svinekød.

However, while employment in breeding has been hit less hard, employment in slaughtering and processing has taken a bigger blow:
Employees in breeding of piglets: 6,470 in 2016 – down from 7,224 in 2008
Employees in breeding of slaughter pigs: 4,158 in 2016 – down from 4,935 in 2008
Employees in processing for pig meat 7,489 in 2016 – down from 10,033 in 2008
(Statistics Denmark)

The amount of foreigners employed in farming is quite high. About 35 % of the employed in breeding of piglets were foreign nationals in 2016. Romanians and Ukrainians dominate among the foreign workers.

Employed in breeding of piglets	Danish	Polish	Romanian	Lithuanian	Ukrainian	Employees from other countries	Total
2000	6371	27	14	65	24	190	6691
2001	5982	30	24	82	61	173	6352
2002	6049	39	26	95	123	186	6518
2003	5960	34	41	89	158	188	6470
2004	5929	44	50	106	229	180	6538
2005	5668	55	66	108	321	184	6402
2006	5600	99	112	117	526	227	6681
2007	8865	204	315	181	1246	392	11203
2008	8166	165	450	156	1566	362	10865
2009	7643	154	493	161	1549	398	10398
2010	7235	142	701	167	1316	418	9979
2011	7091	146	1008	209	1167	401	10022
2012	7027	177	1252	194	1073	393	10116
2013	6923	165	1360	187	1095	394	10124
2014	6736	178	1528	174	1204	411	10231

Employed in breeding of piglets	Danish	Polish	Romanian	Lithuanian	Ukrainian	Employees from other countries	Total
2015	6410	146	1666	146	1239	362	9969
2016	6220	158	1814	150	1258	352	9952

Source: Calculations made especially for this report by Jonas Felbo-Kolding, FAOS, based on register data from Statistics Denmark
The figures in the table deviate from the sector total shown in the figure above as the figures in the table cover the total number of employees in the sector regardless of their number of working hours, whereas the figure above displays the number of full-time employees recalculated based on the number of working hours of all employees.

In breeding of slaughter pigs, the amount of foreigners is about 23 % (2016), and again mostly Romanians and Ukrainians.

Employed in breeding of slaughter pigs	Danish	Polish	Romanian	Lithuanian	Ukrainian	Employees from other countries	Total
2000	6059	11	2	42	29	143	6286
2001	5504	11	4	53	61	155	5788
2002	5384	12	9	56	77	141	5679
2003	5068	12	12	36	82	141	5351
2004	5045	18	20	43	106	110	5342
2005	4927	25	41	35	158	104	5290
2006	4491	36	52	44	229	90	4942
2007	6299	72	135	91	550	160	7307
2008	5971	88	180	76	700	195	7210
2009	5631	99	198	65	690	228	6911
2010	5340	90	289	100	612	221	6652
2011	5157	76	440	129	524	231	6557
2012	4997	70	509	108	492	218	6394
2013	4956	73	582	112	475	221	6419
2014	4788	70	652	105	508	192	6315
2015	4665	85	665	96	577	184	6272
2016	4534	68	761	85	570	193	6211

Source: Calculations made especially for this report by Jonas Felbo-Kolding, FAOS, based on register data from Statistics Denmark
The figures in the table deviate from the sector total shown in the figure above as the figures in the table cover the total number of employees in the sector regardless of their number of working hours, whereas the figure above displays the number of full-time employees recalculated based on the number of working hours of all employees.

In slaughterhouses and processing, the share of foreigners is 25 % – which is in accordance to statements from interviews with HR-managers in the two dominant slaughter houses, who estimate a share of 20-30 % in the slaughter houses. The table below shows quite a lot of Polish workers, but lately also workers from Myanmar, Sri Lanka and Vietnam is more prevalent in this part of the value chain.

Employed in slaughtering and processing of pork meat	Danish	Polish	Romanian	Employees from other countries	I alt
2000	14916	16	3	848	15783
2001	15172	15	3	937	16127
2002	15702	17	5	503	16227
2003	13788	16	5	1058	14867
2004	13840	24	8	1044	14916
2005	13482	18	5	1138	14643
2006	13127	70	4	1519	14720
2007	12304	784	20	1738	14846
2008	11363	1167	32	1587	14149
2009	9390	1061	45	1271	11767
2010	8807	1252	59	1225	11343
2011	8548	1168	59	1190	10965
2012	8306	1231	66	1143	10746
2013	7943	1236	66	1099	10344
2014	7306	1338	48	1007	9699
2015	6968	1378	72	1035	9453
2016	6569	1538	68	1100	9275

Source: Calculations made especially for this report by Jonas Felbo-Kolding, FAOS, based on register data from Statistics Denmark

The figures in the table deviate from the sector total shown in the figure above as the figures in the table cover the total number of employees in the sector regardless of their number of working hours, whereas the figure above displays the number of full-time employees recalculated based on the number of working hours of all employees.

The unions do not ask their members about nationality, but their websites are accessible in Polish, German and English, and they translate the collective agreements as well.

While the union density in breeding is unknown as well as the wage conditions, there is – due to the concept of Andelsbevægelsen – a certain amount of social control; one farmer pretty much knows what another farmer is doing, and it is expected that working conditions and wages are pretty much the same across the industry. However, this will be explored further in WP3.

In slaughtering and processing, union density is 92.5 per cent (2016). Below are the membership base of NNF, according to gender and age.

Meat industry – w/o cattle

Members of NNF according to age and gender

Age groups	Female	Male	Total
15-25	36	74	110
26-35	63	179	242
36-45	119	252	371
46-55	226	374	600
56-65	168	283	451
66+	1	12	13
Total	613	1.174	1.787

Slaughtering – w/o cattle

Members of NNF according to age and gender

Age groups	Female	Male	Total
15-25	62	418	480
26-35	174	1.030	1.204
36-45	252	1.452	1.704
46-55	281	1.600	1.881
56-65	155	1.004	1.159
66+	1	27	28
Hovedtotal	925	5.531	6.456

Automatization is an ongoing process in slaughtering and processing. The approach from the slaughters' union, NNF, is that they embrace it; the idea is that it will entail redundancies, but it will be even worse – read outsourcing – if NNF and the employees do not cooperate. Hence, they cooperate with the major slaughterhouses on how to use and implement automatization (interviews).

The incentive to work on automatization and robotization in Danish slaughterhouses is high, due to the in international comparison relatively high wage level. This has had the interesting side-effect of an internationally acknowledged production of robots and other machinery for slaughtering and processing. It has not been possible to find data on the amount of workplaces created within this area.

Description of the main critical aspects in the pork value chain in Denmark

As pointed out the structural development in Denmark moves towards fewer and larger companies. This development includes both pig farms and slaughterhouses, and the number of farms is halved every seven years. At the same time we find increased specialization.

While the move from slaughter pigs to production of piglets could seem like a move down the value chain, it is not that simple. The piglets actually produce less slurry and pollution and take up less space, adding value to the farmers within a short time frame. Furthermore, the quality (health, hygiene and genes) of Danish piglets are internationally acknowledged, and due to almost no imports of live pigs, the general trust in high level of hygiene of Danish pigs and porkmeat is high.

While the number of employees working with production of pigs and piglets has been relatively constant the past ten years, the number of workers in slaughterhouses has fallen significantly and the international competition is tough. There are fewer slaughterings, but higher productivity and changes in end products has also contributed to the development. Higher productivity is partly caused by greater specialization and the introduction of robots in the slaughtering process. From 2003 to 2016 the number of slaughterings per full time worker has gone up from app. 1,950 to app. 2,800.

While it does lead to fewer work places, it also brings Denmark to the forefront in automatization and production of robot and machinery for slaughtering and processing – and Denmark is delivering turn-key slaughter houses around the world.

Two of the large slaughterhouses in Denmark has been bought by the German Tönnies Fleisch in 2005 and 2016, which makes Tönnies the second largest player in Denmark after the cooperative slaughterhouse Danish Crown. Danish Crown is owned by the cooperation movement (Andelsbevægelsen); while this entails a tradition of knowledge sharing and hence a fast dissemination of production enhancing measures in farming, it might also create inertia and resistance in order to implement necessary structural changes in Danish Crown.

90 percent of the pork production goes to export, making the Danish pork business highly dependent on export markets but rather unaffected by recent changes in Danish diet habits.

Strengths and weaknesses in the Danish pork value chain		
	Strengths	Weaknesses
Breeding	World famous genes High productivity No import → high hygiene	Very few farms, survival of the fittest
Slaughtering/ processing	Automatization Good brand abroad (clean meat, high quality) Strong brand internationally, big market High hygiene Strong cooperation movement (owns Danish Crown) → knowledge sharing, innovation	High labour costs and automatization→ Losing jobs by the day to new technology and competition The coop movement might inhibit necessary structural changes in the value chain
The Joker	Exporting a lot →Relatively independent on national diet habits *More jobs in robot manufacturing*	Exporting a lot of piglets and pigs → losing the value adding processing process Robots and machines → new niche in exports

Part II

Industrial Relations in the Pork Value Chain

The main critical aspects within the pork value chain

As pointed out in the report on structural characteristics of the pork value chain in Denmark, relatively few critical aspects present themselves, compared to what riddles the pork value chain in other countries. The relatively strong industrial relation institutions across the value chain entails a rather high level of unionisation and collective bargaining coverage – though much higher in slaughtering and processing than in breeding. Health and safety seems to be under control (see more details later in this report), though not without challenges - and it has not been possible to find any sign of illegal employment, tax evasion, fraud etc.

However, while the challenges might seem minor in international and comparative terms, some changes and challenges on the national level is worth mentioning.

The cooperation movement dissolving

A core issue in the Danish pork value chain has been the Cooperation Movement (Andelsbevægelsen). As slaughterhouses are owned by farmers via the cooperation, there has been a strong incentive to share knowledge among farmers. Furthermore, the physical proximity and interdependence meant that social control was considerable – i.e. it has been difficult to evade regulation, including taxes, moonlighting etc.

However, there is also challenges in this set-up. The slaughterhouses are still controlled by the cooperation movement which makes it difficult for slaughterhouse management to make major changes in strategies if it questions the fundamental values of the cooperation movement.

The tendency of still fewer and larger farms means fewer farmers, and combined with a generation change, the farmers seems less connected to the cooperation movement. Furthermore, the change in production from pigs for slaughtering to piglets weakens the direct link between the farmers and the slaughterhouse as most of the piglets are being exported. This might make it possible for slaughterhouses to change strategies. The question is if the fundamental culture of sharing knowledge and cooperating to make Danish pigs among the best in the world will get lost in the process.

Loss of work places in slaughtering and processing

Due to fierce competition from other countries, especially Germany, Danish slaughterhouses have lost a considerable share of jobs in slaughtering and processing. The absence of statutory minimum wages in Germany and the Hartz reforms has skewed the competition, and the major Danish slaughterhouses have outsourced the most labour intensive work to Germany and other countries (Wagner and Refslund, 2016). While the Danish trade unions have been able to maintain wages and working conditions, and as such have kept pretty much clear of a ‘race to the bottom’, the price has been a steady loss of jobs – which is also due to automatization (see below). This begs the question of the future of slaughterhouses in Denmark.

At the same time, employment within breeding has only changed marginally, while production has gone up.

Automatization – a threat and an opportunity

While the employment in slaughtering and processing are decreasing, the productivity is constantly going up. This is very much due to automatization. On one hand, automatization improves working conditions and health for the employees; on the other hand, enhanced efficiency due to automatization costs jobs.

In the greater scheme of things, the focus on reducing labour costs through automatization has led to the development of a robot production industry, targeting the meat sector and as such presents an opportunity in another branch.

Non-Danish labour in breeding, slaughtering and processing

While the share of non-Danish employees in breeding was 23 per cent in 2008, it was 35 per cent in 2016. In slaughtering and processing, the share was 5 per cent in 2000 and rose to 25 per cent in 2016. Generally, experiences from other branches show that non-Danish workers tend to a lesser degree to unionize, and the bigger the share of non-unionised workers, the more the power balance between management and employees tilts in favour of management. Hence, it could pose a challenge if a larger share of the non-Danish workers are not members of trade unions. We will look into if this is the case in the Danish pork value chain.

Industrial Relations in Denmark

The Danish labour market is primarily regulated through collective agreements signed by the social partners, while legislation plays a more discrete role in the area of wages and working conditions. The union density is high, and the industrial relations (IR) system is dominated by a high degree of voluntarism and cooperation; trade unions and employers negotiate solutions to various challenges through collective agreements.

The September Compromise 1899

In 1899, after 19 weeks of conflict, the employers' organisation DA and the confederation of unions LO laid down the fundament for future negotiations and conflict resolution in The September Compromise. Four ground principles was stipulated:

1. Management has the management prerogative, i.e. the right to organise, direct and divide work.

2. The peace obligation, i.e. the obligation for employees and union to secure no strikes while the collective agreement is running
3. The right to conflict, i.e. the right to strike or lock-out when a new collective agreement is negotiated.
4. The right to organise, i.e. the workers right to collectively organise in unions and the unions' right to negotiate on behalf of the workers.

The model ensured the social partners extensive influence over labour market legislation in particular and the development of the welfare state in general, and the model is to this day the fundament for the Danish labour market.
Furthermore, effective institutions for conflict resolution is in place, and the institutions are highly effective and respected by all parties in the labour market.

Collective bargaining

The regulation of salaries and working conditions takes place through recurring national bargaining rounds, typically every two or three years. The key area is the substantial part of the private labour market that is comprised by the organizations under the two largest central organizations, Danish Trade Unions Confederation (FH: Fagbevægelsens Hovedorganisation) and the Danish Employers' Confederation (DA: Dansk Arbejdsgiverforening).

These two large organisations make sectoral agreements and prescribe national standards. They furthermore prescribe procedural and economic guidelines for local negotiations on pay and working conditions. Indeed, wage-setting and regulation of working conditions are primarily left to social partners, although legislation also dominates in areas such as vacation time, health and safety (see later). As such, relations between the parties are based on the premise of mutual respect for their diverging interests and consensus on how to resolve conflicts (Due and Madsen, 2008: 517). The parties only have the right to engage in disputes at the time when a negotiation concerning the conclusion and renewal of agreements takes place (the conflict right). During the settlement period, there is no resort to industrial action (the peace obligation). This applies, even if company based bargaining typically takes place after the peace obligation has come into force (Due and Madsen, 2008: 518).

A precondition for the strength of an IR-model as the Danish is an extensive coverage of agreements, high union density and dense network of workplace representation (the right to organise in unions). Overall, 83 per cent of the Danish labour market was covered by collective agreements in 2015 – compared to 80 per cent in 2007 and 84 per cent in 1997 (Larsen et al, 2010; Navrbjerg and Ibsen, 2017). However, coverage varies between sectors, and while the collective agreement coverage is 100 per cent in the public sector it is 74 per cent in the private sector. Some sectors, like cleaning, has a way lower collective agreement coverage.

The trade union density has slightly declined since the mid 1990's, but has remained comparatively high with 67% of Danish employees being union members in 2015. However, an important trend behind these figures is the fact that ‘traditional unions’ have lost ground to ‘yellow’ or ‘alternative unions’.

The traditional trade unions are based on a social democratic philosophy and most importantly, they are able to achieve collective agreements. In contrast, ‘yellow unions’ or alternative unions are typically not part of the collective bargaining system. The main yellow union, Kristelig Fagforening, is based on a Christian ideology and do not acknowledge interest conflicts between employees and employers.

Table 1: Trade union density Denmark – in per cent	1995	2005	2015
Traditional unions	71.0	68.1	60.2
Alternative unions (yellow unions)	2.1	3.6	9.0
Total	73.1	71.7	67.2
Source: Ibsen, Due og Madsen (2015), Toubøl et al. 2015			

Furthermore, union densities vary considerably between sectors, with lower union density in the private sector compared to the public sector. (Navrbjerg and Ibsen, 2017; Larsen and Ilsøe, 2017; Toubøl et al. 2015). The workplace representation in terms of shop steward coverage was 52% in 2010 (Larsen et al. 2010; Ibsen et al. 2015).

53 per cent of the employers are member of an employer organisation. However, it should be kept in mind that the vast majority of Danish companies are relatively small; the average Danish enterprise has four employees and for many it might be less meaningful to be member of an employer organisation.

Table 2: Organised employers in Denmark – in percent	2004	2009	2015
Public sector	100	100	100
Private sector	53	58	53
Source: DA Arbejdsmarkedsrapport 2004, 2009 plus table from DA 2017. Including DA, FA og (i 2004 og 2009) SALA. These numbers do include employers organisations like Kristielig Arbejdsgiverforening, Dansk Håndværk, Arbejdsgiverne.			

Decentralisation of the bargaining competences

During the last decades, a decentralisation process has taken place within the Danish industrial relations systems. The framework for collective bargaining continues to be outlined by sector agreements, whilst local bargaining increasingly determines the implementation and interpretation of these agreements at company level. This development reflect the need for increased flexibility at work place level. During the times of a relatively centralized industrial relations system in the 1970’s and 1980’s, companies implemented new technologies, new work organisations and at the same time they were increasingly exposed to an ever more fierce international competition. In combination, these factors created demands from employers for increased flexibility within the collective agreements to accommodate the individual enterprises' for a more flexible work organisation to adjust to new technologies, economic fluctuations and a highly competitive market (Katz, 1993; Navrbjerg, 1999).

This development has changed the depth and scope of collective bargaining in Denmark. As still more issues regarding wage and working conditions are up for negotiations – including issues that overlap welfare issues like pension and paternity leave – the scope has broadened. At the same time the depth has changed too – meaning that still more issues are up for negotiations locally at company level. This means that both employee representatives and management needs to have the right bargaining skills to fully make use of decentralisation – but also to ensure that employees are still protected.

The shop steward is a watch dog and a negotiator at company level. He or she assures the implementation and the fulfilment of the collective agreements at enterprise level and conclude local agreements that take local needs into account. It is the shop steward and management who have to agree on what measures from the central collective agreement that should to be implemented locally to ensure the needed flexibility – and under what circumstances. In many ways, the bargaining structure from the central level has to be reproduced on the local level between skilled partners – or else the centralized decentralization becomes disorganized decentralization (Due and Madsen 2006). Furthermore, it potentially enhances the shop stewards influence – because without local consensus, management cannot use the scope of possibilities in the collective agreement.

Channels for influence

Basically, there are three ways employees can obtain influence on working conditions in the Danish labour market model.

The Shop steward – part of collective bargaining

Obviously, the presence of a shop steward is vital for employees to get influence. Any work place with five or more employees is entitled to elect a shop steward among the employees. The conditions for the election of the shop steward are stipulated not in legislation but in the collective agreement and The Cooperation Agreement. As such, the shop steward is trade union affiliated and is the unions' representative at work place level.

However, the *shop steward coverage* is difficult to measure. Asking some 1600 managers from randomly selected workplaces according to size and sector, the result is that on average 52 per cent of Danish work places has a shop steward. Considerable differences exist between private (33 per cent) and public (91 per cent) sector. Size plays a major part here; the larger the work place, the higher probability that the enterprise has a shop steward. Among work places with 5-9 employees, some 35 per cent has a shop steward, while the share is 91 per cent in enterprises employing 100-249 employees (Larsen et al. 2010: 245-52).

However, it has to be kept in mind that the presence of a shop steward is closely linked to the presence of a collective agreement; if there is a shop steward, very often there is a collective agreement and vice versa.

Without the support of members, the collective agreements will have limited legitimacy. Hence, the *union coverage* is of importance. In 1995 73 per cent of employees on the Danish labour market were members of a union, a number that had declined to 69 per cent in 2014 (Ibsen, et al. (2015)[1]. While the decline is less pronounced compared to many other European countries, this recent trend does challenge the trade unions as well as the collective bargaining system. However, while the share of 'alternative unions' in 1995 was only 2 per cent, in 2014 it was 9 per cent. Alternative unions – or yellow unions – are generally not as conflict oriented as traditional unions and only one of them – The Christian Union Krifa – have made collective agreements. Never the less, the vast majority of employers and their organizations support the collective bargaining system with the traditional unions as institutions that secures industrial peace for two to four years at a time.

The Cooperation Agreement

The most important stipulations on employer–labor union information and consultation are to be found in cooperation agreements like the *Cooperation Agreement between DA and LO* (2006) (the first such agreement was entered in 1947) between the Danish Employers' Confederation (DA: Dansk Arbejdsgiverforening) and the Danish Confederation of Trade Unions (LO: Landsorganisationen i Danmark) (see the full agreement in English here: https://www.samarbejdsnaevnet.dk/fileadmin/user_upload/Pdf/SA_engelsk_pdf

The agreement is broadly formulated and generally emphasizes the importance of engaging in a high degree of information provision and consultation. Employers are obliged by the agreement to update the local Cooperation Committees on the financial position and prospects of the company and the firms staffing plans. In firms where there are no Cooperation Committees, employees are to be informed individually or/and in groups. Employers also have to provide information on any 'significant changes and developments with regard to any introduction of new technology in production and administration' as well on 'the employment situation' (Cooperation Agreement, 2006: 7–8). As such, the cooperation committee is pivotal for formal cooperation between management and employees. To establish a Cooperation Committee, the enterprise should to have 35 or more employees. Typically, the Cooperation Committee consists of an equal number of employee representatives and management representatives – and the shop stewards is almost always among the employee representatives. A similar coorperation agreement is to be found in farming (see https://www.gls-a.dk/wp-content/uploads/2015/05/Samarbejdsaftalen.pdf) and within many other sectors,

[1] Different accounts estimates the union coverage differently, but the differences are not considerable. See Due et al, 2010; DA 2009; Ibsen 2000; Scheuer 1996.

similar agreements exists, based on the main organisations FH's and DA's cooperation agreement.

If the enterprise is a stock-based corporation and has 35 employees or more in average over the latest three year, the employees have the right to seats in the board. The board has to consist of at least three members, and the employees have the right to elect at least two members for the board.

While Cooperation Committees and boards provide the employees a voice, it is still up to management to decide to what degree they will listen to their input; the management prerogative is intact and as such is only obliged to give information. Even the information given might be conditional as management can impose secrecy on some information if it can hurt the company, affect the stocks etc.

The Working Environment Act

Finally, according to the *Working Environment Act*, it is the responsibility of the management to assure a health and safety organization is in function at the work place. In enterprises with 1-9 employees, cooperation on health and safety are obtained through regular direct contact and dialogue between the employer, the employees and any supervisors. In enterprises with 10-34 employees, cooperation on health and safety are to be taken care of through a health and safety organisation composed of one or more supervisors and one or more elected health and safety representatives, with the employer or a representative of the employer as chairman. The health and safety organisation is responsible for both day-to-day and overall tasks relating to health and safety. Finally, in enterprises with 35 or more employees, cooperation shall be organised such that a health and safety organisation is established with two levels, one responsible for day-to-day tasks regarding health and safety while the other consists of one or more committees responsible for overall tasks related to health and safety. The chairman of a committee shall be the employer or a representative of the employer.

Basically, the employer is responsible for the physical and psychological working environment. While wages and working conditions (regulated through collective agreements), and cooperation (stipulated in the Cooperation Agreement) are very much regulated by the social partners, health and safety is regulated with legislation as the fundament. However, still more issues regarding health and safety is up for negotiation at company level as still more issues are part of the collective bargaining system and the cooperative system – but the Working Environment Law is still the fundament. However, while rules on the organisation of health and safety exists, the day-to-day cooperation is crucial.

Collective actions – strikes

A fundamental rule to secure peace at the labour market is the peace obligation, i.e. the obligation not to strike (or lock out) while the collective agreement is running. However, strikes are still occurring when workers are unsatisfied about working conditions or others issues, though these strikes are not in accordance with the collective agreements and as such are ‘illegal’. Especially within slaughtering and processing workers have been striking frequently over the years,, and often the issue has been outsourcing. As such, employees in slaughtering and processing have been considered among the more militant workers on the Danish labour market, though the frequency of strikes has diminished considerably over the last decade.

Industrial relations in the pork value chain

Industrial relations are highly regulated in slaughtering and processing, while breeding is less regulated. Comparted to other countries in Europe, working condition and wages are good, and despite a relatively high – and growing – number of non-Danish workers in all links in the pork value chain, there has not been a dualization of the labour market in neither breeding nor slaughtering – as has been the case in for example Germany (Refslund and Wagner).

The union density across the pig value chain differs considerably, as can be seen in the table below.

Table 3: Union density across the pig value chain – in per cent		
	2008	2016
Breeding piglets	17.60	25.3
Breeding pigs	16.8	22.6
Slaughtering & processing	96.2	92.5
Note: Based on register data from Statistics Denmark – tax deduction on union fees		

While union density in slaughtering and processing is almost total, one in four is member of a trade union in breeding.

The share of non-Danish citizens working in the pig value chain has grown considerably over the last 10-15 years – see table 2

Table 4: Share of Danish citizens employed in the pig value chain – in per cent		
	Year 2008	*Year 2016*
Breeding piglets	77.1	65.2
Breeding pigs	84.5	77.1
	Year 2000	*Year 2016*
Slaughtering & processing	94.5	74.6
Note: Based on register data from Statistics Denmark – tax deduction on union fees		

An ongoing dialogue between the sectors and health and safety authorities entails a constant focus on health and safety in breeding as well as slaughtering. However, while reporting of accidents is very high within slaughtering – due to hygiene requirements – accidents in slaughtering has to be reported and is under tight supervision.

Breeding

Industrial relations

The social actors signing the sector agreement within breeding is the union 3F (Fagligt Fælles Forbund – United Federation of Danish Workers) and the employers' organization GLS-A (Gartneri-, Land- og Skovbrugets Arbejdsgivere – Employers' Association for Agriculture, Forestry and Horticulture).

The structural development within pig breeding has been towards fewer and bigger farms and a still higher level of industrialization. This makes it easier for the trade unions to organize the employees in farming, and the strategy of the main trade union, 3F, is to convince the biggest farmers to sign a collective agreement. They generally seem interested in signing collective agreements, and this is also seen by the union as an avenue to organize employees. However, there are farmers who do not want to close a collective agreement, even though 3F have the right to demand collective agreements. In these few instances the union can (and do) employ conflict, typically in the form of sympathy conflict, i.e. unionized workers in transport can deny delivering feed or transport pigs and piglets. This typically forces the farmer to sign a collective agreement with the union.

Of the app. 3,300 pig farms, it is estimated by interviewees that 1,000 do not have any employees at all and as such have no reason to have a collective agreement. Of the remaining 2,300, it is estimated by interviewees that about ¾ has 2-5 employees and therefore have limited incentive to sign collective agreements. Of the remaining 5-600 farms, some 100 has a collective agreement. However, these are bigger farms, and it is estimated that some 50 per cent of employees in breeding are covered by collective agreements.

The union density in breeding of piglets is 25.8 per cent. However, as table 5 shows, quite a considerable share of employees join 'yellow' unions or alternative unions – that would be trade unions that most often do not conduct collective bargaining, hence do not sign collective agreements. Often, the union fee is lower than for the traditional 'red' unions.

In 2016, 35 per cent of the employed in breeding piglets were non-Danish – up from 23 per cent in 2008. With the enhanced share of non-Danish citizens in breeding and slaughtering, it is interesting to know if the 'new' employees tend to join trade unions. However, as table 5 show, non-Danish employee in breeding of piglets tend to organize almost as much Danish employees.

Table 5: Union density in breeding of piglets - 2016				
	Red union	Yellow union	Total	N
Danish citizens	17.0	11.2	28.8	4305
EU11 citizens	10.8	12.2	23.0	1357
EU15 citizens	17.9	12.8	30.7	39
3. countries	5.4	9.6	15.0	906
Total	14.1	11.2	25.3	6607
Note: Based on register data from Statistics Denmark – tax deduction on union fees				

Within breeding of pigs, union density was 22.6 per cent in 2016 – up from 16.8 per cent in 2008. Table 5 shows again that quite a few are members of 'yellow' or alternative unions.

Table 6: Union density in breeding of pigs - 2016				
	Red union	Yellow union	Total	N
Danish citizens	15.7	7.4	23.1	3386
EU11 citizens	10.6	13.7	24.3	593
EU15 citizens	4.0	16.0	20.0	25
3. countries	7.1	8.7	15.8	393
Total	14.2	8.4	22.6	4397
Note: Based on register data from Statistics Denmark – tax deduction on union fees				

While the share of non-Danish workers in breeding of pigs was 23 per cent in 2016 – up from 15.5 per cent in 2008 – they tend to join trade unions almost as much as Danes – except for citizens from 3. Countries outside the EU. However, it is worth noticing that yellow unions have a foothold especially among citizens from EU11 – the new member countries.

Across breeding, the majority of foreign workers are from Romania and Ukraine. Interviewees point out that especially Romanians are quite well educated, and that they are very popular among farmers because of high work ethics. The unions consider them relatively easy to organize and the Romanian embassy are cooperating with the unions regarding wages and working conditions. The trade unions are having meetings on these issues and furthermore advice regarding tax rules and tax reductions.

Interviewees point out that Romanians in Denmark are people with higher educations:

> *"Romania is darn far away… those who takes the initiative to move to Denmark… it is not people from the country side. They have a higher education and they have had serious consideration as to why they are here."*

Interviewees evaluate that the market for undeclared work and other tax evasions in breeding is very limited for several reasons: Firstly, the sheer size of the farms makes it rather difficult to evade taxes. Secondly, the Danish tax system makes it possible to write off quite a few things – provided, off course, that it is declared. Finally, due to the tradition within the cooperation movement (Andelsbevægelsen), knowledge sharing also entail social control – i.e. it could be difficult to evade taxes or hire illegal labour without other farmers' knowledge.

Health & safety

While health & safety is always of concern in breeding, the unions claim that the level of injuries is pretty low. According to the Danish Working Environment Authority (Arbejdstilsynet), the incidence of accidents within farming, forestry and fishing combined is 84 accidents per 10,000 employees; this is significantly lower than the average across all branches which is 122 per 10,000 employees. However, it should be noted that the branch in general is riddled by underreporting of accidents and health & safety issues. Some reports indicate that up to 85 per cent of accidents within farming are not being reported. While these estimations are only indicative, it is concluded by Arbejdstilsynet that underreporting within farming is 'considerably higher than on the labour market in general, especially for less serious accidents' (p.6, https://amid.dk/media/4402/arbejdsulykker-i-landbruget-2012-2016.pdf) (See also *Underanmeldelse for arbejdsulykker - beregning baseret på Danmarks Statistiks Arbejdskraftundersøgelse, 2. kvartal 2013*. Notat af 28. marts 2017, Arbejdstilsynet: https://amid.dk/media/3118/beregning-underanmeldelse-arbejdsulykker-ds2013.pdf and *Underrapportering af arbejdsulykker*. LO-rapport, version 2.0 – En ny vinkel på underrapportering. Øje på arbejdsmiljøet, april 2015. Udarbejdet af Odense Universitetshospital og Regionshospitalet Herning: https://fho.dk/wp-content/uploads/lo/2017/04/underrapporteing-arbejdsulykker.pdf).

Furthermore, the share of *serious* accidents within farming is higher than average; in 2016, the incidence was 141 serious accidents (defined as more than 3 weeks sick leave) within piglets production, and 84 within production of slaughter pigs. In absolute numbers 122 serious accidents occurred within pig farming in 2016. A detailed overview over accidents within different branches in farming is available at https://amid.dk/media/4402/arbejdsulykker-i-landbruget-2012-2016.pdf.

The health & safety authorities, the trade unions and the employers' organization are continuously running campaigns to inform about accidents and how to avoid them – in Danish and in English (see https://amid.dk/media/4781/faktaark_svineavlere_uk.pdf). This cooperation is by both parties considered positive and important.

Union surveys recurrently shows a high level of satisfaction among employees in breeding. This is partly due to the contact with animals and nature. However, another important issue is highly systematized and scheduled work; this is favorable for work life balance.

Slaughtering and processing

Industrial relations

The social actors signing collective agreements within slaughtering and processing are the union NNF (Food Worker's Union – NNF Denmark) under the umbrella organization, Danish Trade Union Confederation (FH - Fagbevægelsens Hovedorganisation, formerly LO), and the Employers' Association for Slaugtherhouses (Slagteriernes Arbejdsgiverforening, SA), under the umbrella organization Confederation of Danish Industry (DI - Dansk Industri). The collective agreement constitutes 131 pages and is to be found in Danish, English, German and Polish.

The trend within slaughtering and processing over the last 25 years has been a constant pressure for efficiency. In the beginning of the 21. Century, recurrent strikes broke out and generally the relations between labour and employers were rather adversarial. Furthermore, even when the parties were able to reach a compromise at sector level, the compromise were recurrently voted down by the workers at the following ballots.

In 2003 SA joined the umbrella employers' organization DI. That entailed a possibility of using the services of this major organization, and one interviewee estimate that it made it possible to put more force behind the employer's quest for industrial peace – combined with enhanced internationalisation.

In the 1990's and 2000's access to the market and market shares were governing the (re)location of pork production, while the main focus today is on cost reduction. This has led to a significant relocation of jobs from Denmark to the UK, Poland and, most importantly, Germany (Refslund and Wagner, 2016), where wages and working conditions are significantly lower. This also had a damping effect on the strike level; while the workers had a very strong bargaining position 20 years back, today their bargaining power has been weakened considerably due to internationalization of the pork value chain (Refslund, 2013). The quest for efficiency continues, and dialogue is considered quite positive. The trade unions are in constant dialogue with employers about efficiency processes, including automatization and digitalization.

Union density in slaughtering and processing was 92.6 per cent in 2016 – down from 96.2 per cent in 2008. In the major slaughterhouses the union rate is typically 100 per cent and the shop steward is typically professionalized, i.e. a full-time elected union representative. The local shop steward, together with management, are the main actor in the decentralized bargaining. Collective agreement coverage is estimated by unions and employers to close to 100 per cent – and for sure the biggest companies are covered by collective agreements.

Table 6 shows that EU15 citizens and 3. country citizens tends to join trade unions even to a higher degree than Danes and EU11 citizens – probably because they work in big slaughterhouses were unionization is almost 100 per cent and the social pressure to join the union is considerable (Wagner and Refslund, 2016). Yellow and alternative unions have a limited foothold in slaughtering and processing, and only in the small slaughterhouses.

Table 6: Trade union density in breeding of pigs - 2016

	Red union	Yellow union	Total	N
Danish citizens	89.6	3.1	92.7	5238
EU11 citizens	87.7	2.4	90.1	1355
EU15 citizens	96.6	0.6	97.2	322
3. countries	95.5	1.5	97.0	530
Total	89.8	2.8	92.6	7508

Note: Based on register data from Statistics Denmark – tax deduction on union fees

The share of non-Danish workers in Danish slaughterhouses and processing is 25 per cent, up from some 5 per cent in 2000. Quite a lot of these are from Poland, but lately also workers from Myanmar, Sri Lanka and Vietnam are more prevalent in this part of the value chain. However, it is important to emphasize that these workers are refugees or have travelled to Denmark by own will; they are not, as seen in many other countries, recruited specifically for the task.

The unions do not ask their members about nationality, but their websites are accessible in Polish, German and English, and they translate the collective agreements as well.

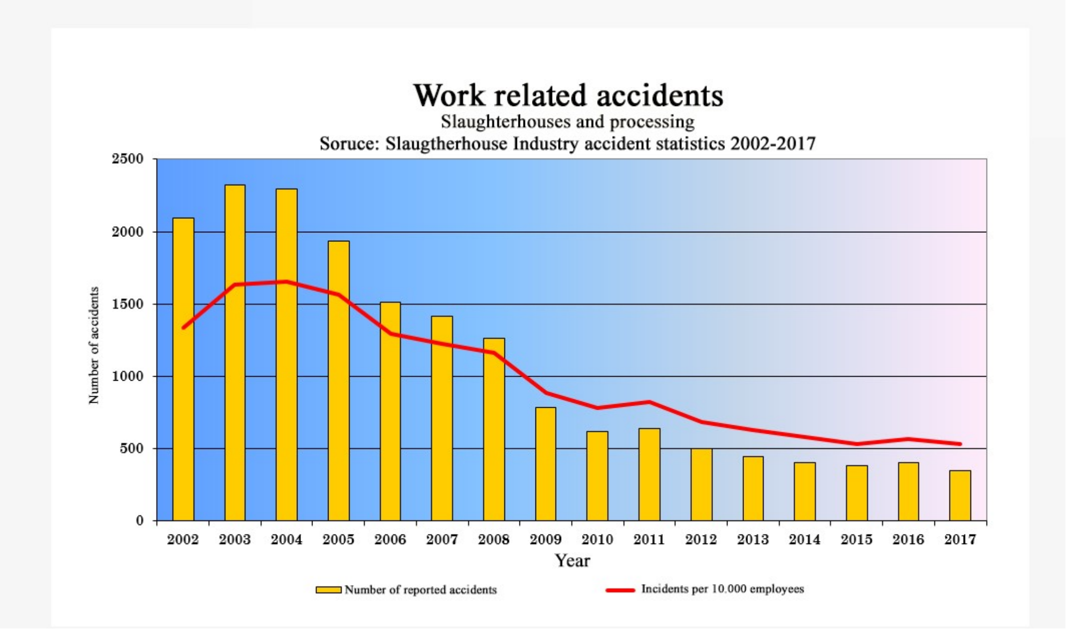
Over the years, the employers in the major slaughterhouses have tried to reduce the wage level, but to no avail. Hence, the threat of off-shoring is an important part of wage negotiations (Wagner and Refslund, 2016). However, sub-contracting of employees plays no role in slaughterhouses in Denmark, and there is no dualization of the work force as such.

Some 90 per cent of workers receive piece-rate payment. While the sectoral agreement sets a base-line for the piecework, local negotiations based on constant measurement on piece-work determines the actual pay. A constant pressure from management as well as employees to up the speed and hence the efficiency in the slaughterhouses entails a high level of stress and risk of injuries due to the high speed work organisations.

Health & safety

Slaughtering and processing has always been riddled by health and safety issues (Grelle and Knudsen (1995)). However, already in the 1990's, the employers association SA made it mandatory that any health and safety incident leading to more than one day sick leave should be reported. This rule means that the branch has a reporting rate of almost 100 per cent – compared to the majority of other branches where the reporting rate is closer to 50 per cent – and as mentioned above even lover in breeding.

The figure below shows the development in work related accidents in slaughterhouses and processing in Denmark.



As can be seen, the number of incidents has gone down from more than 2,000 in the beginning of 2000's some 350 in 2017 (yellow pillars). However, there are also fewer employed in slaughtering. The red line indicates incidents per 10,000 employees. Incidents per 10,000 employed is one third in 2017 compared to 2003 – a considerable improvement. In absolute numbers: Out of 6,646 employees in slaughterhouses and processing in 2017, only 352 accidents occurred.

The Danish Working Environment Authority (Arbejdstilsynet) reports, that slaughtering have the second highest number of incidents, compared to other branches. The incidence is 288 per 10,000 employees, of which 44 is serious incidents (https://bm.dk/media/7601/aarsopgoerelse-2012-2017-ulykker.pdf).

However, as mentioned above it should be kept in mind that slaughtering probably have a considerably higher reporting rate than other branches. One reason for that is high hygiene levels in Danish slaughter houses, entailing mandatory reporting of even minor cuts and bruises – see p. 16 in https://www.amr.dk/Files/Dokumenter%20og%20publikationer/Arbejdsulykker/Artikler%20i%20rapport%20om%20arbejdsulykker/Ulykkernes%20omfang%20og%20karakter%20-%20AMK%20Herning%20-%20Rapport%20om%20arbejdsulykker.pdf

The slaughter branch is also mentioned in reports by the The National Research Center for Work Environment (Nationale Forskningscenter for Arbejdsmiljø) as one of the branches that do most to report on and improve health & safety (https://amid.dk/media/3095/nfa_fakta_om_virksomhedernes_arbejdsmilj_indsats_2017_vai_2017_2018.pdf.)

As mentioned, a work organisation with emphasis on piece-meal work is a major health issue. However, as this has become the norm in slaughtering and processing, it is questionable to what degree stress issues connected to this work organisation is reported in the statistics.

General comments, perceptions and proposals of the target groups

The Danish pork value chain is not riddled with the same problems as many of the pork value chains in other countries. But this doesn't mean that there are no challenges in the Danish pork value chain. In the following, we will look into the strengths and challenges in the Danish pork value chain.

Strengths in the Danish pork value chain

The analyses has exposed a series of strengths.

Thoroughly regulated – at least in slaughtering

Within slaughtering and processing, nine out of ten workers are organised in trade unions and collective bargaining coverage is close to 100 per cent. Interestingly, the new-comers in the Danish slaughterhouses – the app. 30 per cent non-Danish workers – are organizing to the same degree as Danish citizens.

The same goes for the new-comers within breeding (accounting for 35 per cent in piglet breeding and 23 per cent in pig breeding), who are as prone to be members of trade unions as Danish workers.

Hence, despite the considerable share of non-Danish workers, there has been no tendency towards a dualizations of the labour market or a race to the bottom – as has been seen in Germany.

Within breeding, the unionization is considerably lower – app. 25 per cent – than seen in slaughtering. This is also lower than the national average, but in general unionization in farming is considerably lower than on average. As such, unionization in the pork value chain does not stand out from farming as such.

However, the social partners on both sides consider the level as reasonable since many small farms might not really need collective agreements. Unionization is considerable higher on the bigger farms.

Relatively high level of health & and safety – in slaughtering

The social partners in both breeding and slaughtering are concerned about health & safety. However, while the reported incidents in breeding is relatively low (compared to the national average), the number of incidents is considerably higher in slaughtering. However, traditions for reporting are very different. In slaughtering and processing, for more than two decades, reporting on health & safety has been mandatory, especially with regards to cuts, as this ensures a high level of hygiene – which is worth a lot at the international pork market. This means that while the number of accidents per 10,000 might seem high in slaughtering and processing, compared to national average and other sectors, in reality it is reflecting quite precisely the health & safety status in the sector – and most importantly, it has the attention of the social partners and authorities alike.

The cooperation movement – coherence and knowledge sharing

The Danish cooperation movement, established in the 19th century, is still very present along the pork value chain. Within breeding, this has entailed a tradition for knowledge sharing, resulting in a fast dissemination of innovative measures and hence high quality and efficiency in breeding of pigs and piglets. Furthermore, the slaughterhouses guarantees that the farmer can get rid of the pigs at the right time and to the right price. Within slaughtering, some of the slaughterhouses – most notable the absolute biggest, Danish Crown – are still controlled by farmers.

The cooperation movement has ensured coherence and stability along the pork value chain. Farmers work under pretty much the same conditions as everybody knows what each farmer does – also in terms of working conditions, wages etc.

But at the same time, the farmers' control over the slaughter houses might inhibit the managements' latitude to change business models, even if deemed necessary by management.

Challenges for the Danish pork value chain

The Danish pork value chain is also faced with quite a few challenges.

Loss of jobs – especially in slaughtering

The main challenge along the Danish pork value chain is the loss of jobs. Especially within slaughtering and processing a considerably amount of jobs has been lost over the past 10-15 years.

The reasons are manifold, but two main reasons are considered of importance: Firstly, the price of labour in competing neighboring countries is a very decisive factor. Especially the lack of minimum wages and next-to-no regulation of the labour market in slaughterhouses in Germany has been a crucial reason why much of the work in Danish slaughterhouses has been outsourced. As mentioned, the Danish unions are strongly organised and have chosen not to engage in concession bargaining. Hence, the trade-off the unions have chosen is fewer jobs – but jobs with fair wages and working conditions. This trade-off is of course only possible because of a very high level of unionization and collective bargaining coverage, which again have had the consequence that dualization of the labour force has not been possible.

The other reason for the loss of jobs it automatization, which has led to a considerable loss of jobs (Refslund, 2012). While unions are now cooperating on this issue, it is never the less a major issue in slaughtering.

Limited unionization in breeding

The situation is quite different in breeding. Here jobs are also lost, but to a much lesser extent than seen in slaughtering and processing. After all, it is difficult to export a farm per se. About one in four employees in breeding are unionized, and while this is way lower than the national level of 67 per cent, unionization has gone up in breeding over the last decade. A very likely reason for that is the still bigger farms – the number of farms is halved every 7 years, while production is rising. This indicates still bigger farms with more employees, which again makes collective bargaining relevant for employees as well as employers. With 75 per cent of the labour force in breeding still not unionized and only half the labour force covered by collective agreement, the pork breeding business is an outlier in Danish industrial relations, while in international comparison it might look rather well regulated.

Underreporting of health & and safety incidents – in breeding

While reporting of health & safety incidents in slaughtering and processing is rather accurate, in breeding the tradition for reporting is rather casual. Research as well as the social partners' estimates that accidents are underreported by a solid margin in breeding – up to 85 per cent of accidents are not reported – and hear-say examples exist of employees being treated for serious accidents without health & safety authorities have been informed. While the social partners makes a concerted effort to enhance the attention on health & safety in breeding, there is a considerable room for improvement.

Stress-related health & safety issues in slaughtering

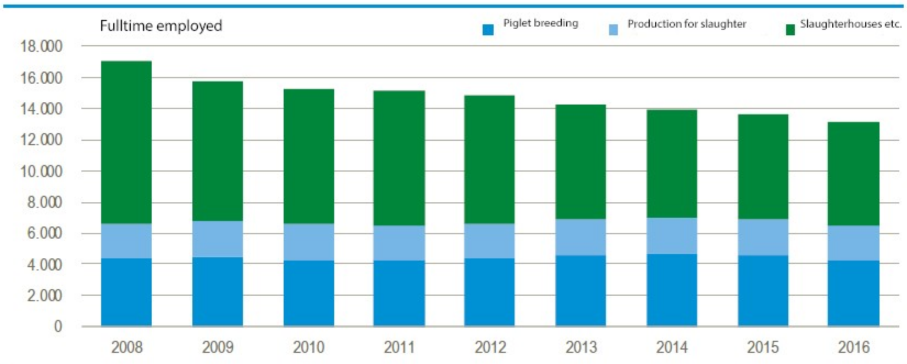
While reporting on physical issues is very high in slaughtering, it is a big question to what degree stress and health issues related to a high speed work organisation is reported. As piece-meal measures are initiated by management as well as employees, there are not major incentives to report the health & safety issues related to the work organisation per se. Hence, a underreporting within this area is a possibility.

Appendix: Employment in the pork value chain

Generally, the breeding efficiency as well as slaughtering and processing efficiency has developed quite markedly over the years (see report WP2 Denmark), and compared to most other countries, the amount of pigs produced and slaughtered per employee is very high. While the employment in breeding is relatively unchanged over the years, the farms are producing still more pigs, i.e. efficiency has improved significantly.

The figure below shows that app. 17,000 were employed in the pig value chain in 2008, while there was 13,000 employed in 2016 – covering the whole value chain of breeding, slaughtering and processing.

Figure 6 Employment by primary pig production and manufacturing of pig meat in Denmark



Kilde: Statistikbanken.dk/ERHV1. Branchekoder 014610 Avl af smågrise, 014620 Produktion af slagtesvin og 101110 Forarbejdning af svinekød.

The unions do not ask their members about nationality, but their websites are accessible in Polish, German and English, and they translate the collective agreements as well.

Part III

Case-studies along the Pork Value Chain in Denmark

Case-studies on the pork value chain

This part of the report consists of two case studies in the Danish pork value chain. The two cases chosen is a major pork farm and the biggest slaughter house along the pork value chain in Denmark, Danish Crown.

The cases are chosen with the purpose of investigating how actors along the value chain perceive conditions in the business as well as how industrial relations are at work place level. Part I and part II showed that – compared to many other countries – industrial relations along the pork value chain in Denmark are highly institutionalized rather orderly, with a union density of 90 per cent in processing and app. 25 per cent in farming. Interestingly, foreign labour is unionized to the same degree as national labour which is unusual compared to other countries. Furthermore, working conditions in general are considered good (again in international comparison).

Thanks a lot to the interviewees from the farm and Danish Crown. Without their time and valuable inputs, it would not be possible to investigate and analyze the challenges and possibilities along the pork value chain.

The list of interviewees is to be found under ‘Sources’ in end of report.

Case 1: A major pork farm

Background

Denmark has approximately 3,200 pig farms as of 2019. The farms are getting still bigger, and the half-life is 7 years. In 2025 the number of farms will be approximately 1,600 farms and the remaining farms will be bigger.

The farm production in Denmark is very effective – in 1985 a sow in average produced 19 piglets, in 2015 it produced 32. Furthermore, the production pattern has changed and Denmark is today producing a substantial number of piglets for export (see WP 2 for further information).

The case farm – a holding company

The farm visited is among the bigger farms and as such represents the future of Danish pig farms. The farm has been in the family for generations and the present owner took over from his father in 1991.

The farm is actually also a holding company with a surplus of 1.125 million euro and equity of 6.7 million euros. The farm has a website, where a profile of the company is presented as well as the business strategy and the employees.

Production and structure

When the company was established in 1991 it consisted of 50 hectares. Since then, they have invested constantly and basically ‘geared’ their investments as much as the banks allowed. Today, the farm has 550 hectares of land and lease another 500 hectares. Crops from the land makes an important contribution to fodder for the animals. The production takes place on six farms. The herd is a so-called ‘full-line’ as it consists of all three segments along the first part of the pig value chain:

- 1,800 sows
- 55,000 piglets
- 54,000 slaughter pigs.

This is a bit unusual as most farms concentrate on one segment. However, the owner consider this a risky business:

> *“Most famers chose to have piglets and sows OR slaughter pigs. Due to the competition [on wages in slaughter houses], half the piglets in Denmark are going abroad. Most farmers are having either-or. I have another philosophy – I like to have as much of the value chain as possible.”*

Furthermore, half the fodder is produced ‘in-house’ on the fields owned and leased. However, the farmer wants to enhance the production of fodder, so as much as possible is produced on his own land. The motivation is to a large degree the drought in 2018, where farmers in general were hit hard; while the prices on fodder rose due to the drought, prices on pig meat stayed stable.

> *“I would like to control as much as possible in the feed – to minimize risks. We had a really bad harvest last year [2018]. Fodder went up, meat did not – and we got caught in between.”*

In 2018 the bottom line was zero – as oppose to the budgeted surplus of 1 million euros – all due to the drought and the high prices on fodder.

The farmer has started a 2.4 million Euros renovation project, where he is merging two farms.

The farm has 20 employees – 10 Danish and 10 foreigners. There are three team leaders – one for sow and piglets; one for slaughter pigs; and one for the fields. They move around between the different farms and are responsible for the fodder and growth of the animals.

CSR and full control along the value chain

This farmer will not engage in export of piglets for feeding in other countries. One thing is the risk of African swine pest – but more importantly, he is alert about the ‘politics of pig production’:

> *“It is a political risk – there is a political focus on the export of piglets. Nobody understands why we produce piglets in Denmark, only to drive them to Poland, Romania, Italy. Even I think this is strange.”*

He does acknowledge that it more expensive to slaughter in Denmark – but as a member of the Cooperation Movement (he is in the board of Danish Crown), he finds it vital that he and the movement controls as much as possible in the value chain.

> *“I might earn a bit less, but I have a solid business. I am part of the Cooperation Movement, I want to get parts of the value addition in as many links as possible along the value chain.”*

But the international competition makes it especially difficult to keep slaughtering and processing in Denmark.

> *"I work hard to have a competitive production in Denmark because I believe that we have to have the whole value chain here – breeding, growth and slaughtering. But it is damn difficult when they have so different working conditions in countries around us."*

His consideration is that processing can go abroad – because locals have special requirements. However, even though the unprocessed meat goes abroad, Danish Crown still has influence; recently, Danish Crown invested 40 million Euros in a processing facility in Shanghai.

Industrial Relations at the farm

The farm has 20 employees – about half are from abroad, mainly Romania and Slovenia, while the remaining are Danish nationals. All employees are organized in a trade union and the farm has a collective agreement. The monthly wage is 23-24,000 DKK (3,200 Euro) per month plus pension. Generally, the farmer appreciate that the collective agreement stipulates the wage level and working conditions, and he also appreciate that the employers' organisation can handle problems related to working conditions. However, there are also challenges.

The farmer is cooperating with two unions. 3F (Fagligt Fælles Forbund – United Federation of Danish Workers) is the main trade union which most of the organized employees in farming are members of, and it is the trade union that his employers' organisation has a collective agreement with. In the farmer's capacity as member of the board in Danish Crown and chairman of the interest organisation Danish Slaughterhouses, he also has experience on NNF (Food Worker's Union – NNF Denmark). While cooperation with 3F has sometimes been problematic, as they use pretty hard means to obtain collective agreements with farmers, the perception of NNF is quite different:

> *"NNF understands the situation. We actually have common interest to work to make any company strong and profitable.(…) In the slaughter houses, we have really been able to cooperate with the union and obtain good results. They understand that we have to have a competitive business along the value chain. NNF understands that. (…) We have a very open dialogue."*

Labour shortage → foreign labour

The farmer already startet recruiting foreign labour back in the 1990's. A major local factory was expanding and sucked up pretty much all labour in the area, and that motivated the farmer to look for labour abroad. Today, it is generally difficult to get young people to work within farming. The farmer tries to get young people to work after school and some are continuing, but generally it is difficult to get young Danes to work in the sector. Hence, the recruitment of foreign labour, who are also considered more mature than young Danish workers.

Half the employees are foreigners, mostly from Romania and Slovenia. While in general Ukrainians are popular in Denmark, this farm prefers workers from an EU-country as the paper-work is easier. The employees are seldom educated in farming, but they are highly motivated to work abroad, and that is crucial for the employer. After three months it is clear if they are cut out for the work and they get a 2 year education.

Many of the employees from these countries are members of the trade union 3F, but the employer does not discuss union membership with them. Their wage is exactly the same as for the Danish workers as they follow the collective agreement.

The culture between the different nationalities is quite significant, and even employees from one country can be very different. This farmer has hired quite a few from the poorest part of Romania (East) – de facto Romas – and consider them very good labour.

> *"This is super labour. They only have problems understanding why they are getting wage when they are sick. They don't understand why they cannot work more per week so they can get home to the family."*

Both the employer and the employees find the system too rigid:

> *"This is one of the stupid elements in the Danish system: I can only employ them for 160 hours per months four weeks, otherwise we have to pay overtime. The collective agreement is not flexible enough here."*

Ideally, both parties would prefer a system where the foreign employees would work for example 60 hours per week for four weeks, and then have two weeks off. But the collective agreement does not allow this. The farmer cannot afford to pay overtime if he wants to stay competitive.

The farm has a brand new house where foreign labour can live – temporary or more permanent – for up to seven people. Currently, only three is living there while quite a few have bought houses and brought their family to Denmark. Due to the risk of contamination, the employees are not allowed to bring food from their home country. The farm is providing full board for employees at the price of 105 Euros per month (800 DKK), and those who decides to live at the farm pays for the accomodation.

The ooperation movement

Knowledge sharing is quite widespread. If you have a problem on a farm, you discuss it with the neighbor.

> *"The knowledge sharing in Danish farming is awesome! If I have a problem, I talk to the neighbor and he gives me an advice. And I trust him*

> *– I trust he is giving me a good advice and will help me. You will not experience any other place in the world where you have such an open attitude. (...) We believe that 2+2=5 if you share knowledge.”*

Not only the farmer, but also the three team leaders are part of ERFA-groups (Peer-to-Peer Groups), where they formally meet every six months –in the summer time every 2 weeks to discuss contemporary problems. A team-leader explains:

> *“We develop our genetics by sharing knowledge. That means that our piglets have the best genetics in the world. We share – it is not like in other countries where you keep new ideas to yourself.”*

In Denmark there is an ongoing discussion on the integrator-model seen in the USA and in Spain – i.e. a system where all links along the pork value chain from fodder over breeding to final product is owned and controlled by one enterprise. The farmer consider the model smart with regards to control over the value chain, but efficiency wise it is not impressive.

> *“They have a staff turn-over of 75 % per year and they produce 25 piglets per sow while we are able to deliver up to 40 piglets per sow.”*

Strengths of the Danish pig production

The farmer list up three elements where Danish pig production is state of the art: 1) Genetics, 2) Feeding efficiency 3), Environment.

He especially emphasizes the environment:

> *“Environment is very important as part of the discussion of sustainability. If you calculate the total CO2 produced per pig, then I am world champion! (...) We believe that we will be able to deliver positively to the agenda on sustainability.”*

Danish Crown has promised to half the CO2 print before 2030.
While genetics is a strength in Danish pig production, Danish farmers also sell out of the genetics. However, this farmer is not worried:

> *“You might have the right genetics – but part of it is management; if you cannot handle the genetics in the right way, you are not able to get full dividend of the genetics.”*

Furthermore, when genetics are exported, a royalty is payed and delivered to Danish farmers.

Epilog: A typical farmer…?

The farm in this case study is among the 50 biggest pig farms in Denmark – out of 3,200 pig farms. The owner is vice-chairman of the interest organization Danish Agriculture & Food Council (Landbrug & Fødevarer), he is chairing the so-called 'Company Board' in the same organization and is member of the board in Danish Crown. He is without any doubt a quite powerful farmer in the Danish pig value chain.

Therefore he might not be the average Danish pig farmer. However, we know that the number of pig farms are decreasing and farms are becoming still bigger. In other words he might actually be an example of where Danish pig farming is heading – and an example of the professionalism in the Danish pig business.

Case 2: Danish Crown slaughtering and processing

Background

The slaughterhouses in Denmark has undergone a drastic change over the last two decades. Employment in slaughtering and processing of pork has gone down from 10,000 employees in 2008 to approximately 7,500 in 2016 – equaling 6,000 full-time employees. While the slaughter houses a decade ago was ridden by recurrent industrial conflicts, today the industrial relations along the value chain is relatively stable.

The case company – the biggest player in Denmark

Danish Crown food processing company is dealing primarily with meat processing of pork and beef. It is Europe's biggest pork producer as well as Europe's largest pork processing company. Danish Crown was originally formed in the 1990's as a merger between several slaughterhouses. Tulip is part of Danish Crown and is the food-processing part of the company. From 1990 and onwards Danish Crown took over pretty much every major slaughterhouse in Denmark and the pork division now consists of seven slaughterhouses in Denmark.

Danish Crown has the Cooperative Movement as a central part of its DNA. In 2010 the members of the Cooperation Movement voted to change Danish Crown from a cooperative to a joint stock company. However, the owners are still farmers – though now through a cooperative, *Leverandørselskabet Danish Crown Amba*.

Danish Crown has production in Denmark, a number of European countries as well as China. The company has market access to more than 130 countries worldwide. Danish Crown has a turnover of app. 13.5 billion Euros and export accounts for some 3.3 billion Euros. This is 22 per cent of the Danish overall food export and accounts for approximately 4 per cent of the total Danish export. 26,000 people worldwide are employed in Danish Crown.

The empirical focus for this case-study is a slaughter house and a processing factory under Danish Crown. The slaughterhouse employs some 1,100 – the majority are men. The processing company employs app. 250 employees – about 205 of these are on the production line.

Industrial Relations in slaughter and processing

Generally, the industrial relations within slaughtering and processing has changed from conflictual to rather cooperative over the last decade. While strikes were quite prevalent in the 20th century and the in the beginning of the 21th century, the last decade has been more cooperative on company level. The reason for this is a realization within the sector that international competition is getting still fiercer and robotization is inevitable. Hence, the union NNF seems to have embraced the development and wants to have a say in the development. This is confirmed by a shop steward in a slaughter house:

> *"I'm not that intimidated by the new technologies. We have to take it – otherwise we will be left behind."*
>
> *Shop Stewards, slaughter house*

All workers on the shop floor in the slaughter house are members of NNF. It is different in processing where 142 out of 205 employees on the shop floor are members of NNF. The remaining are either members of an alternative union (like the Christian Union) or not organized at all. The shop stewards attitude is quite clear regarding these. The moment, a person is getting a job, the message is clear:

> *"You are now working here and you have free choice of union. We in NNF have the collective agreement. If you are not member, you cannot ask me about anything but the size of your work clothes and your shoes. I will always say hi to you and be nice to you and smile. But if you need help regarding further training, the competence fund etc., I cannot help you."*
>
> *Shop Steward, Processing*

He furthermore explains to all employees how the union and the employers' organization are solving problems at an early stage – before it develops into a conflict.

The tendency is that elder employees are members – while many younger employees refrain from trade union membership:

> *"The old ones are almost all members of the union: 'That is how it was - that is how it is – that is how it is best', they say. But most of the young people – they don't want to be members."*
>
> *Shop Steward, processing*

Management does not actively encourage membership of a trade union, but appreciates that negotiations are institutionalized.

Constant information about the development along the value chain

In the slaughterhouse the employees are wearing earmuffs as protection against noise. However, the muffs also has a radio and several times a week the shop steward informs the employees about the general development along the pork value chain. The shop steward considers this an important reason why there is less industrial conflict.

> ***Some 10 years ago, slaughter houses were known for strikes and industrial conflict. We don't see that much more…***
> *"I don't know if you paid attention to this, but all employees has a radio on their ears. I can talk to all employees. We inform them about what is happening in world; about swine pest, the prices of pork on the world market. They get all the news about what is happening in this area. That has helped a lot. Before we did that… Often a strike started based on a misunderstanding, they did were not informed. (…) They know now what it means for the pork business when Trump makes an embargo against China."*
>
> *Shop Steward, slaughter house*

This is one expression of a change in the relations between management and employees.

Another issue was distance between top management and floor. Management has over the last 3-4 years made an extra effort to connect to employees and especially shop stewards, and likewise shop stewards are trying to inform before potential conflicts – all in all leading to a more cooperative culture.

All in all, more information and dialogue seems to have changed a conflictual relations to a more cooperative relation.

Labour shortage → foreign labour

Lack of labour has been a problem, but due to proximity (the slaughter house is close to the German border) it has been possible to recruit from Germany. While it has been flawless due to the fact that most employees (and shop stewards) speak German, it has been more problematic to integrate Polish workers as there is a major language barrier.

> *"Most Polish speaks Polish – and nothing else. They are good colleagues. But the language, it is frustrating. To explain them about piece work – they think management want to cheat them. It is difficult to understand even for a Dane. So NNF has hired a Polish as translator – but it is also difficult for him to understand the system."*
>
> *Shop Steward, slaughter house*

It has also been possible with some success to integrate Syrians and other refugees – with support from the Danish state. However, the shop stewards points out that there also are Danish labour that need a helping hand to get a foot-hold on the labour market.

Approximately one third of the employees are foreigners – that goes for both the slaughter houses and processing. In general, management's impression is that the foreign labour is very loyal and stable. Employees from other countries are willing to work under a certain hardship in a slaughter house, and especially refugees are highly motivated.

As pointed out in WP3, the foreign labour in slaughter houses are organized to the same degree as Danish labour – that also goes for the employees in this slaughterhouse. Furthermore, the shop stewards in both processing and slaughtering are very active in integrating foreigners in workplace. They help out in many regards including courses in Danish and explaining the collective agreement. During our interview and visit in the slaughter house, several employees contacted the shop steward for questions and help; half of them were non-Danish. On the processing plant, they have courses in cooking where the employees use written recipes as a tool to learn Danish.

Health & safety: When the good will has negative consequences…

Obviously the slaughter business is very hard health wise, and not least the piece work system is putting pressure on the workers.

Some years ago, the labour inspectorate changed the demands for piece work. The inspectorate made a maximum of 220 % (!) in piece work in boning as they considered it the limit a person could do. However, at the time each worker had several tasks and as such a variation in the work. As management in the slaughter houses could not optimize the piece meal further, they changed the work organization from being based on work stations to being based on assembly line. The result is more health and safety problems due do repetitive work.

> *"The line is very fast – same movement all the time. That was a huge mistake! A huge mistake. Management could not use that for anything, we could not produce. It was a 'victory' for the Labour Inspectorate, but it really did not work in the real world, in the slaughter house."*
>
> *Shop Steward, slaughter house*

Epilog: Typical shop stewards…?

Neither the shop steward in the slaughter house nor the shop steward in processing might be the average shop stewards. The shop steward in the slaughter house is member of the board op Danish Crown, he is member of the negotiation committee in NNF – the committee negotiating the collective agreement for the slaughter workers and he is chair of all shop stewards in Danish Crown.

Likewise, the shop steward in the processing company is member of the board in Tulip (the food processing division of Danish Crown), he is member of the Danish Crowns main works council (koncernsamarbejdsudvalg) as well as Danish Crown education council (uddannelsesudvalg) and is vice president in the European Works Council with members from UK, Poland and other countries.

Discussion

Overall, the interviewees are quite proud of the Danish production along the pork value chain. There is an ongoing awareness about quality, and Danish pork meat is considered among the best in the world – both in quality and measured in carbon foot-print, which is also an important issue when branding the pig value chain.

However, all along the pork value chain – from politicians in interest organizations, farmers, shop steward in the slaughter house to management in processing and slaughtering – there is a detectable concern about how actors along the Danish pork value chain is treating our treasures. Genes and the DNA of Danish pigs are sold abroad and so is machinery and robots as well as turn-key slaughterhouses. This as a source of major concern amongst actors along the pork value chain in Denmark

Another issue is the coherence of the Cooperation Movement. Sometimes, when farmers are unsatisfied with the price they get for their pig they send it to Germany for slaughtering – 'to teach Danish Crown'! Again, parties from all links in the value chain – except a few farmers – consider it a problem that farmer sometimes do not quite understand how intertwined the value chain is in Denmark. As a shop steward expresses it:

> *"They are sawing of the branch they're sitting on. They own the slaughter house, but send their own pigs to be slaughtered abroad!"*

Shop Steward, processing

Sources

Sources - part I

This report is build several sources, including, literature, reports from interest groups, websites, newspaper articles and researchers. Sources are mentioned in the text, but main sources have been the following

Statistics and numbers

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Interviews

- Steen Karlsen, forbundskonsulent, NNF (2 interviews)
- Jim Jensen, forbundsnæstformand, NNF
- Bjarne Thomsen, chefkonsulent, NNF
- Karsten Flemin, markedsanalytiker, SEGES, Landbrug & Fødevarer
- Finn Udesen, chefkonsulent, SEGES, Landbrug & Fødevarer
- Andreas Friis, Vice President, Group HR, Danish Crown
- Birgit Frederiksen, HR chef, Tican

Sources – part II

This report is build several sources, including literature, reports from interest groups, websites, newspaper articles and researchers. Sources are mentioned in the text, but main sources have been the following:

Statistics and numbers

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- Morten Fischer-Nielsen, 3F (Fagligt Fælles Forbund – United Federation of Danish Workers)
- Jesper Zanchetta Kock, Employers' Confederation of Danish Industry (DI - Dansk Industri) representin .Association for Slaugtherhouses (Slagteriernes Arbejdsgiverforening, SA)
- Jens Bjørn Poulsen, GLS-A (Gartneri-, Land- og Skovbrugets Arbejdsgivere – Employers' Association for Agriculture, Forestry and Horticulture).
- Bjarke Refslund, Aalborg University

Sources – part III

The data for the case studies are based on five interview – three in Danish Crown and two on the farm. Furthermore, information on the farm and Danish Crown was trawled on the internet and via research on the companies' markets situation and economic position in the pork value chain.

The interviewees were

- The owner of the farm
- A team leader on the farm
- The HR-manager of Danish Crown
- A shop steward in a slaughter house in Danish Crown
- A shop steward at Tulip (processing under Danish Crown)

The interviewees were found through unions and employers' organisations.

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