

# EUROPEAN MINK INDUSTRY – SOCIO-ECONOMIC IMPACT ASSESSMENT

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The mink fur industry and its socio-economic impact assessment include more than just mink farms. The mink farms are in the initial stage of a well integrated industry. It means that mink farms create economic activity not only on the farms but also in a number of related industries.

Europe is the world leading region when it comes to mink skin production. Europe accounts for 80 per cent of the world production of mink skin excl. China's production and 60 per cent including China's production.

The European fur manufacturing industry, which is related and connected to the European mink skin production, does provide a significant socio-economic impact.

Fur retail industry is an important part of the fur value chain. It is estimated that at retail level, raw fur skins (with mink skins having a market share of around 85%) have generated a yearly retail value of approx. 6 billion Euro.

Europe and EU account for 70-80 per cent of all world export of raw mink skins.

European fur auction houses account for 75 per cent of all mink skins sold at auction houses.

Measured by export specialization it can be concluded that European mink industry has strong comparative advantages and international competitiveness.

The European mink industry has socio-economic impacts in several different ways, albeit a complete scientific estimation of the impact has not yet been presented. The impact of European fur industry on employment has been estimated to up to more than 100.000 persons (by upscaling national studies). However, a lower but significant number is more realistic.

European farmers produce around 40 million mink skins per year, and the value delivered from farms and sold at auction prices amounts to 1,2 billion Euro (2016). The production value peaked in 2013 (3 billion Euro).

Europe's export of mink skins has been increasing during the recent decade and amounts to 2,4 billion Euros (2015). Fur farming is unsubsidized and not supported by CAP.

Mink farming is a part of the agricultural industry, and mink farms are typically located in rural and agricultural areas. It means that mink farms and the mink skin industry have a significant role for the rural economic activity in several countries.

As the European mink industry and mink clusters in Europe do play a major role in several regions and countries, a potential de facto European ban on mink fur production would have severe socio-economic impacts. A de facto ban on mink fur production will make major disturbance on both national and international markets, as the European supply – in the short run, and ceteris paribus – will be significantly reduced and eliminated. The strongly reduced supply will result in increasing prices, which will influence the price settings in the entire value chain. Economic and welfare losses may be the result. Activities in the European mink clusters will be negatively influenced by elimination of local production. It is assumed that European auction houses will close or diminish significantly, and then efficient, transparent and well balanced market places will disappear.

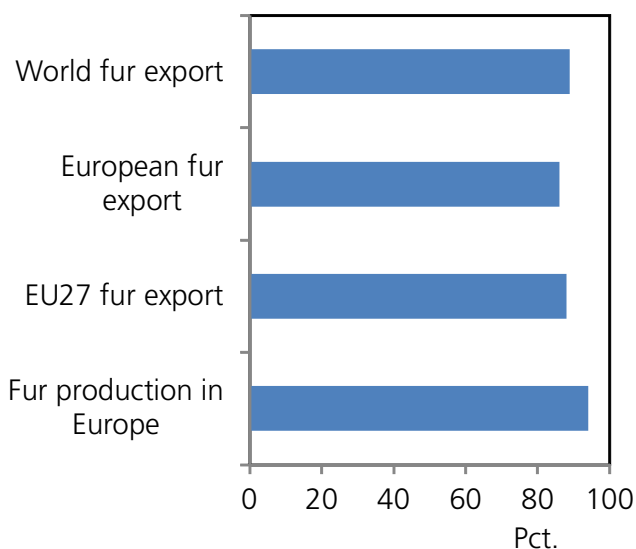
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## Introduction

Mink skins are the dominant skin type in both production and trade – at both European and international level: Mink skins account for more than 85 cent of all international trade of fur skins.

**Figure 1. Mink skins' share of total fur skins, 2015 (%)**



Source: Own calculations based UN (2017) and Hansen, H. O (2016)

World production of mink skins is to a high degree located in Europe, as 60-80 per cent of all production of raw mink skins in the World takes place in Europe.

Figure 1 shows that Europe is the main area of World mink production, and that the international competitiveness of European raw mink skin production is high.

Though a major part of the fur garment industry has moved to low cost countries mainly in Asia (China) during recent decades, there is still an important fur garment industry in Europe based on mink skins: Italy, Greece and France account for about 15 per cent of world export of fur garments. The European fur garment industry belongs to a well developed fur cluster, where fashion and design are important competitive parameters.

The European fur cluster is both locally and globally oriented: The connection between mink farmers and marketing through auction houses is very close, but international trade of both raw skins and fur garments with Asian countries is well developed. However, Europe and European mink farmers still have a very important role in the global mink industry.

## **The mink industry and mink cluster**

The mink fur industry and the mink fur socio-economic impact assessment include more than just mink farms. The mink farms are in the initial stage of a vertically and horizontally well integrated industry. The mink industry includes the entire value chain from farm inputs to the final consumer in the vertical integration. Other related industries, authorities, institutions and stakeholders belong to the fur cluster. Clusters are defined as groups of companies, research institutions and public authorities which collaborate successfully to increase competitiveness, growth and employment.

The mink cluster is composed of a number of different sectors, industries, institutions, etc. and networks, which connect the different elements through a flow of resources and information.

The vertical value chain is central to the mink cluster. The value chain starts with research and development and feed supply, capital, etc. The mink farms are the next link in the value chain. Subsequently, there is a number of links where the unprocessed pelts are sold, processed and transported to the final consumer.

In parallel with this vertical value chain there is a number of other sectors, industries and institutions, which have an interest in the cluster. They may, for example, be buyers, suppliers, competitors or public institutions which may support activities in the value chain.

The European mink cluster – value chain and major relations and stakeholders – is illustrated in Figure 2.

The figure shows the sectors, businesses and institutions involved in the mink cluster.

As seen from the figure, the cluster is both horizontally and vertically integrated. The vertical integration of the value chain from input industries to farms and to consumers is the central axis of the cluster, as this is the direction of the fur products in the marketing process.

The horizontal integration of the axis is in most countries nearly complete, as the concentration was almost entirely created through mergers and acquisitions decades ago. The horizontal integration outside the axis occurs through alliances, cooperation and normal market-based trade.

As it is normal for almost all agricultural commodity-based products, an increasing share of value added will take place further down the value chain (See Hansen, 2016). In the fur value chain an increasing part of the added value comes from fashion, design etc. based on skill and unique competence. For branded products and high end products the share of value added is even higher (Hansen, H. O. 2016).

Branding and labelling are important at several stages in the value chain:

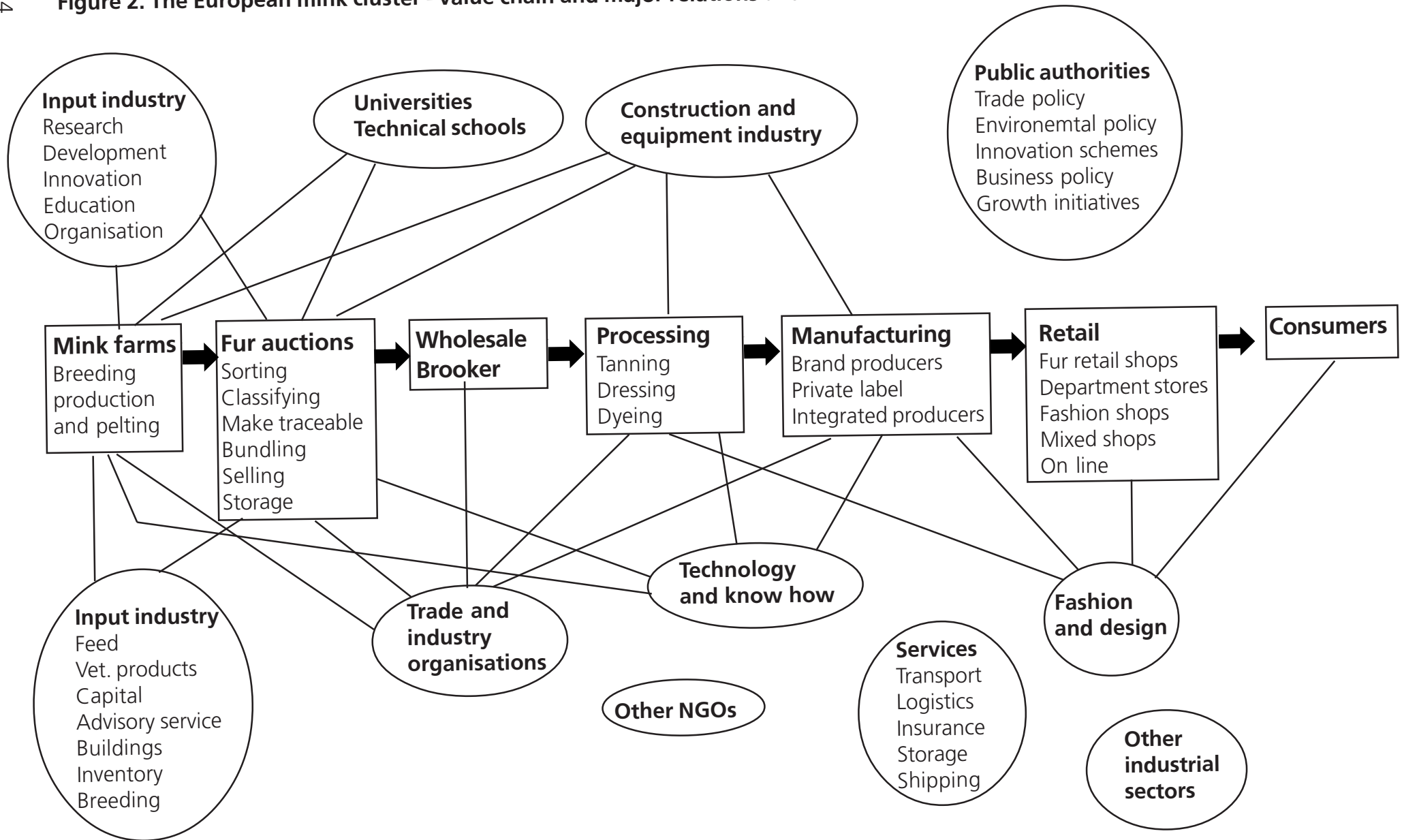
Firstly, branded goods are produced at the individual production companies in the value chain.

Secondly, also at auction level, branded goods are marketed.

Thirdly, at retail level brands (private labels) are produced.

Fourthly, at European level brands or labelling are used to develop and profile quality parameters, including animal welfare.

4 **Figure 2. The European mink cluster - value chain and major relations and stakeholders**



Source: Own presentation based on Hansen, H. O. (2016)

Brands and labelling are expected to play an even increasing role in the fur value chain in the future. Consumers, markets and the authorities are expected to increase their demands concerning animal welfare, product credibility, traceability etc., and these demands require brands and labelling.

As an example, the two major European auction houses, Copenhagen Fur and SAGA Furs, will from 2020 only receive and sell mink skins that are WelFur certified. WelFur is based on EU standards with scientifically substantiated animal welfare indicators. The WelFur certification of animal welfare standards is currently being implemented on 4.000 European fur farms and is initiated and financed by the European fur sector. This indicates, that the fur cluster has international dimensions.

Creating brands and labelling is generally a European comparative advantage and strength, and they are supported by collaboration in – and among – the different fur clusters in Europe.

Fashion, skill and design are important parts of the mink cluster, and these resources are deeply rooted in Europe and are European competitive strengths. Based on interviews with European fur companies it is assumed, that fashion, design and skill account for about 10 per cent of the value created in the fur cluster.

The degree of mink clustering in Europe differs from country to country. Denmark – giving home to the biggest mink skin production in Europe and the world's biggest

auction house for mink skins – has a very well developed fur cluster, and it has been singled out as 1 of 11 successful national clusters.

The European fur clusters have also international dimensions and international dependences: Mink farmers run mink farms abroad, fur auction houses sell foreign mink skins, international fur organizations have been developed, mink supply companies operate in several countries, scientists from different countries meet regularly etc.

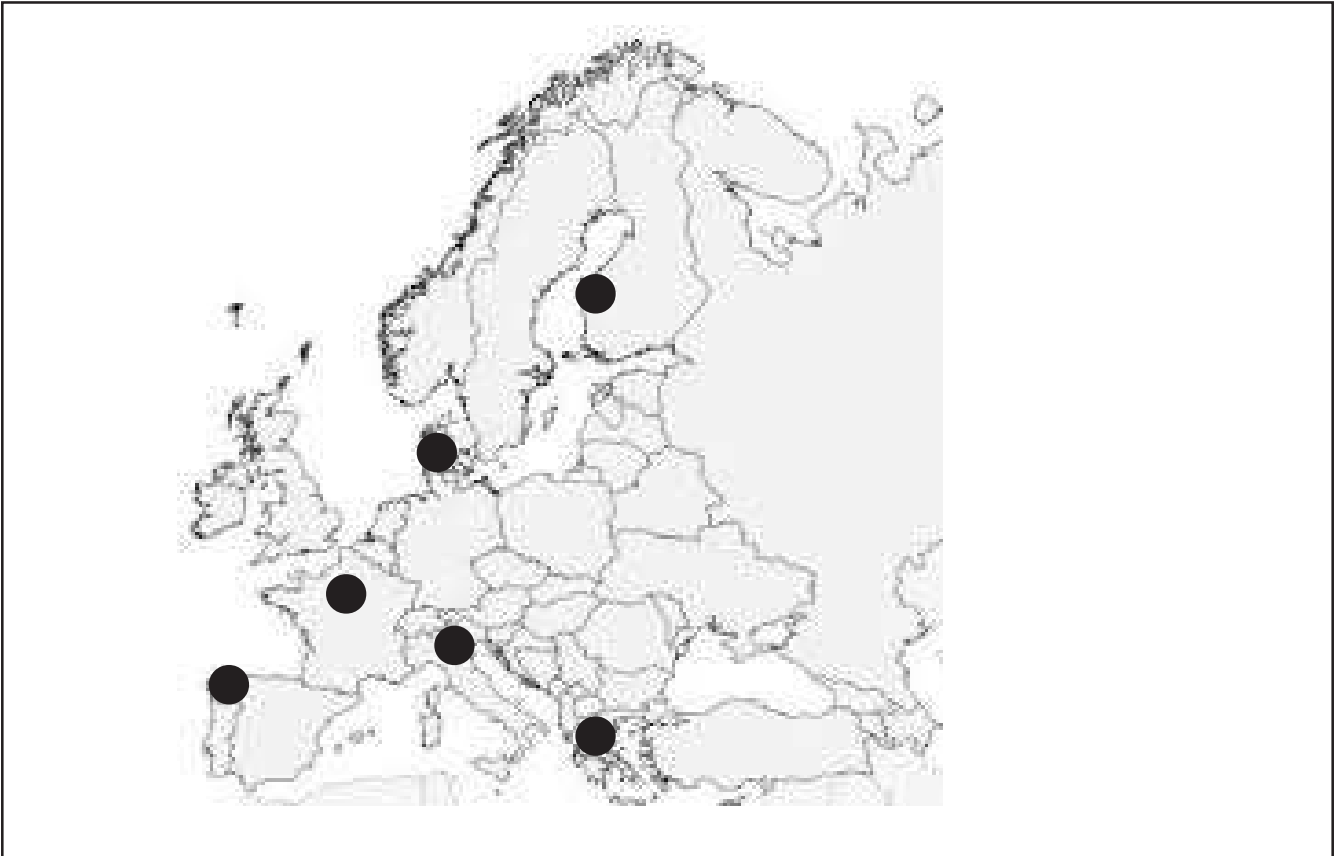
As the European mink industry is well horizontally and vertically integrated in a mink (or fur) cluster, there is a mutual interdependence and the different industries, institutions and stakeholders interact and benefit from the cooperation. It also means that mink farms create jobs not only on the farms but also in the related industries.

Based on Danish input-output tables it is estimated that each fur farmer creates one extra domestic job (Landbrug & Fødevarer, 2010). This significant derived employment is remarkable given that a large proportion of the downstream activities (fur garment industry etc.) are located abroad.

### **Identifying European mink clusters**

A number of European mink and fur clusters can be identified. The form of the clusters differ from country to country: Some clusters are based on fur farms and raw fur skins, and then they have forward integration. Other clusters are situated more down streams in the value chain and are based on fur processing, fur fashion etc.

**Figure 3. Fur clusters in Europe**



Source: Own presentation

In figure 3 some fur clusters in Europe are identified. The criterias for being identified as a fur clusters in the figure are: Groups of connected companies in the fur value chain creating socio-economic value in an industrial or a national perspective.

As the figure indicates, the fur clusters are scattered throughout Europe. The clusters are also interrelated, as the northern European clusters are based on raw fur skin production and trade, while the southern European clusters are mostly based on fur manufacturing and fashion. Trade among the clusters are therefore important.

The individual clusters are described on the next page.

**Cluster: Greece, Kastoria and Siatista**

- 102 fur animal breeding farms, producing 2,5 million mink skins
- 5 Dyeing and finishing units
- 100 big fur companies produce readymade fur garments,
- 1200 medium size fur factories.
- 1700 small family owned factories producing plates/fur pieces garments.
- The value generated by Hellenic fur production is estimated close to 800 million euro
- Amounts to 1,1% of the total value of Greek exports, (20th exporting good - 2012)

Source: The Hellenic Fur Federation

**Cluster: Finland, Ostrobothnia**

- 9 fur feed factories
- 35 000 tons of fish (herring and sprat) catch are used for fur feed
- 160 000 tons of beef, pork and poultry offal used for fur feed
- 931 farms in Finland (97% of which in Ostrobothnia)
- 57mio Euro paid in corporate tax
- 1,15% of total value of Finnish export in 2015

Source: Profur (2016)

**Cluster: Denmark**

- Identified as one out of 11 successful cluster by the Ministry of Industry and Business
- 3 mink research sites
- 6 feed factories
- 1.500 mink farms
- One auction house (> 50 per cent of world auction sales)
- Annual production of mink skins: 16,5 million
- Share of world export of mink skins: 36 pct. (2015)
- Annual export: 0,95 bn Euro

Source: Hansen, H. O. (2016)

**Cluster: Northern Italy**

Northern Italy is an important cluster of fur fashion - with focus on mink skin. Mink farms are located in Lombardia, Veneto and Emilia-Romagna. Major fur fashion and fur garment companies are located in Veneto.

**Cluster: Galicia**

In Spain, mink farming started at the end of the 1950s. Most of the farms now are concentrated in the region of Galicia

**Cluster: Paris**

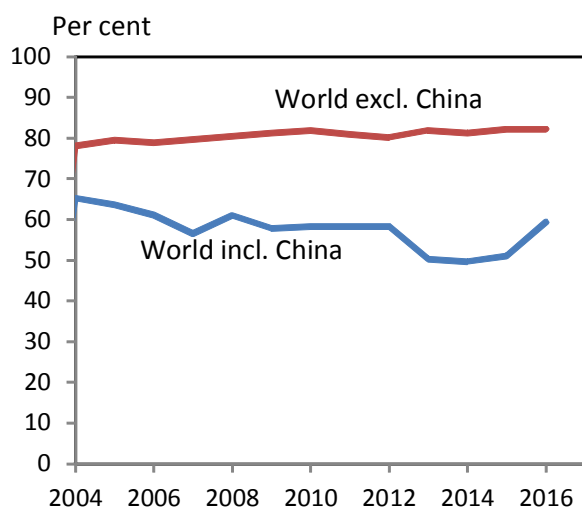
Fur fashion shops in Paris are historically clustered at a specific area in the city, making it easier to attract customers.



## European mink skin production

Europe is the world leading region when it comes to mink skin production. Europe accounts for 80 per cent of the world production of mink skin excl. China's production and 60 per cent including China's production – cf. figure 4.

**Figure 4. Europe's share of world total production of raw mink skins, 2004-2016**



Note: World including and excluding China, as Chinese production statistics are uncertain

Sources: Own calculations based on China Leather Industry Association & China Fur Breeders Commission (2016), Copenhagen Fur (2016 b + c) EFBA (2013), X Bin and GAO Ya-qin (2007), Yan, L. (2013), Sun, Guangeai (2010 +2013), Yan Hua; Zhang Wei and Liu Xin (2012), China Chamber of Commerce of Foodstuffs and Native Produce (2012), Chen, W. (2013a + b), Zhang Tong-gong (2006), Yang Xi Tao, Zhang Wei, Zhou Xue-hong (2011), USDA (2010), Zhang Shuhua (2005), Statistics Denmark (2016) and Copenhagen Fur (2016 b + c), Wojick, Szczepan (2014), Statistics Finland (several years), Statistics Sweden (several years), Statistics Norway (several years), Statistics Iceland (several years), CBS (2017), Boekhorst (2013), Vlachveti, Aspasia; Notta, Ourania and Demiri, Stamatia (2010), La Fourrure Française (2013), Associazione Italiana Pellicceria (2016), Fur Auctions (2013a+b), Department of Agriculture, Food and the Marine (2012), UN (2017a), German Fur Association of Wholesalers and Traders (2017), McGinness and Richards (2000), Ministry of Agriculture Republic of Latvia (2009), Tallat-Kelpsa, C. (2013), Balakirev and Tinaeva (2001),

Guangcai, Sun (2010), Titova (2003), Sojuzpushnina (2017), Fur Auctions (2013a), Fur Farms of Russia catalogue (2015, 2016 and 2017), Iemelianova (2015a+b), Statistics Canada (2016), USDA (several years) and Copenhagen Fur (2017).

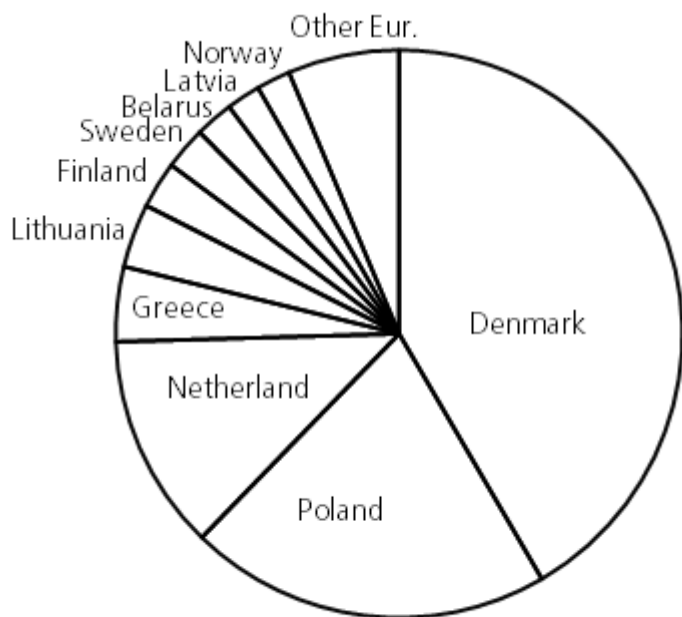
As the figure shows, Europe's share is rather constant during the period – in spite of a rather turbulent market situation. The world total production is calculated including and excluding China, as production statistics from China are uncertain and not very transparent.

Several sources (see Hansen, H. O., 2016) indicate, that Chinese mink skins have a significantly lower quality and price than Danish mink skins. The European market shares measured in value is then even higher.

At least 15 EU-countries and 20 European countries produce raw mink skins. Denmark, Poland and Netherlands are the major producers, cf. figure 5.



**Figure 5. Europe’s production of raw mink skins, 2016**



Note: 2016 or latest year with available data

Sources: See figure 4.

Denmark has been the most important production country in Europe for decades, while in recent years Poland and the Baltic countries have increased their production and their share of total European production. Capital and management from other countries – mainly the Netherlands and Denmark – have been major drivers behind the expansion in Poland and the Baltic countries.

As production of raw mink skins and mink farming require specific knowledge, the internationalization and the dispersion of the mink farms in Europe to new countries with less experience in mink farming has taken place through transfer of capital, management and organization from the established and traditional mink farming countries. This case is a good example of

industry and business development through international transfer of resources within Europe based on – and resulting in – increased international competitiveness.

EU28 accounts for 94 per cent of total European mink production.

## European fur skin manufacturing

The fur manufacturing industry is related to the mink skin production. Tanning and dressing in Europe is mainly based on raw mink skins produced in Europe.

Fur manufacturing is a step further downstreams in the fur value chain from fur farms and fur auctions and closer to the fur retail level and the final customers.

Statistics about production, employment, turnover, import, export etc. in the fur manufacturing industry in EU countries are published by Eurostat. However, these production statistics from Eurostat have limitations:

Firstly, not all countries report relevant data to Eurostat – or data are not updated or they are inadequate – so important data are not available.

Secondly, fur manufacturing statistics from Eurostat only cover companies with more than 20 people employed. The statistical data must then be multiplied with a factor dependent of the share that companies with more than 20 people employed cover. This correction factor is determined through interviews with fur business people in individual countries. However, an extra uncertainty is added in this way.

Through questionnaire to European fur organizations, correction factors have been collected. Table 1 shows that only a minor share of companies in the fur manufacturing industry has more than 20 people employed.

**Table 1. Percentage of fur manufacturing that comes from companies of less than 20 people**

	Per cent
Germany	90
Turkey	80
Italy	90
UK	100
Greece	45

Source: Questionnaire and answers from European fur organizations

Table 2 includes figures for the European fur manufacturing industry: Sold production value. 2015 or most recent year with available data.

Keeping in mind that the table only includes companies with more than 20 people employed, that only a minor share of companies in the fur manufacturing industry has more than 20 people employed, and that not all countries report relevant data to Eurostat, still the table shows, that the European fur manufacturing industry does provide a significant production sale.

Table 2 also shows the scale and importance of SMEs in the European fur manufacturing industry: An overwhelming part of the activity takes place in companies which can be characterized as small and medium sized.

As the table underlines the fur manufacturing industry mainly consists of small companies. The companies are mainly family owned small business. This confirms that major parts of the entire fur value chain are unconsolidated with many but small units often family managed.

**Table 2. Fur manufacturing industry: Sold production value. 2015 or most recent year with available data**

	15.111.050 Tanned or dressed furskins or skins (excluding rabbit, hare or lamb) Euro	14.201.030 Articles of apparel and clothing accessories (excluding hats and headgear) Euro	14.201.090 Articles of furskin (excluding apparel, clothing accessories, hats and headgear) Euro
France	6.270.000	6.747.227	124.615
Netherlands			
Germany			2.292.962
Italy	1.520.731.000	170.208.000	326.754.000
United Kingdom		1.016.753	1.122.153
Ireland	4.307.000		
Denmark	16.759	2.410.474	222.765
Greece	2.682.808	49.849.246	7.162.822
Portugal	9.575.576	1.761.597	131.619
Spain	5.162.375	4.076.943	
Belgium	971.437		
Luxemburg			
Iceland			
Norway			
Sweden	1.607.659		
Finland	317.098	2.107.347	420.584
Austria			
Malta			
Estonia	1.688.473	167.870	7.540
Latvia	213.536	1.014.007	
Lituania	1.385.583	828.911	35.975
Poland	1.337.093	146.149	687.329
Czech Republic		128.176	102.553
Slovakia		1.329.065	359.190
Hungary	919.593	25.710	86.640
Romania	1.404.369	1.742.277	164.886
Bulgaria	71.582	157.992	196.850
Slovenia			
Croatia		920	
For. JRep. Macedonia		456.880	
<b>EU27TOTALS</b>	<b>1.563.638.491</b>	<b>242.726.389</b>	<b>341.348.049</b>

Note: EU27TOTALS: For 2015 and not including data for alternative recent years.

Source: Eurostat (2017).

### European fur retail industry

Fur retail industry is an important part of the fur value chain. It connects the fur farmers, fur manufacturing companies and other upstream industries to the consumers - the end-users. Market signals are captured and adopted in the fur retail chain and are sent backwards in the value chain. A major part of the added value is also generated in the retail sector.

The retail industry is also a part of a very globalized and vertically integrated business of international sourcing and marketing.

While the upstream parts of the value chains (fur farms and fur skin production) are rather well described, information and statistics about the fur retail industry are much more scarce. The reasons are that consumption statistics are more difficult to collect than production statistics.

Furthermore, fur products are sold at retail levels in different types of outlets and in diversified types of products.

The value of fur retail sale in Europe has been estimated (as no official statistics include the sale, value added or employment of this industry) using different methods. Primarily, the fur retail value has been estimated using "mark-ups", which are factors or coefficients that measure the added value from raw fur skins to retail sale to the consumers.

Results of the mark-up-model show the value at retail level that raw fur skins have generated regardless of outlet, product etc.

The model uses mark-ups provided by market experts, store-checks etc., and mark-ups can be individual from country to country, and they are variable from year to year. The results from the model are supplemented and verified by statistical databases, by input from other market experts etc. See table 3.

**Table 3. Value of fur retail sale in Europe, 2010-2015. Euro bn.**

	2010	2011	2012	2013	2014	2015
Europe	5,1	5,0	5,8	6,0	5,5	6,3

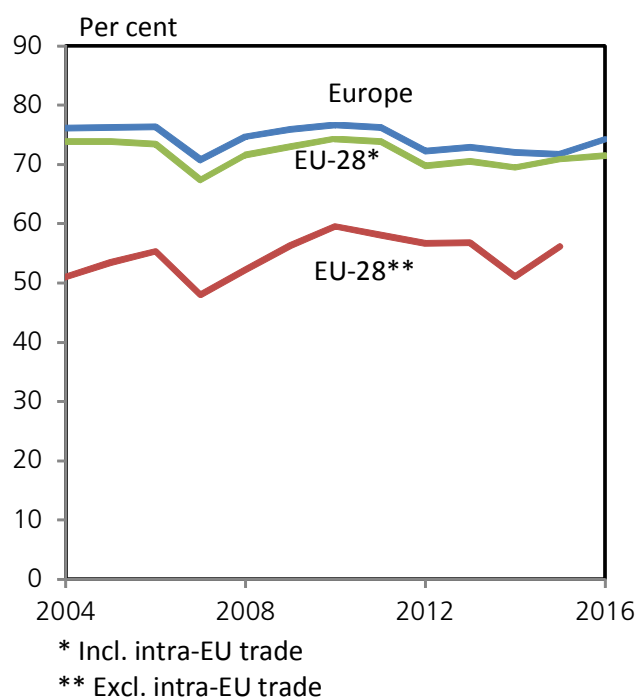
Source: Hansen, H. O. (2017)

The estimates based on mark-ups are supplemented and substantiated by country-case studies for selected European countries (Italy, U.K. and Germany) based on both official statistics and input from the fur industry. The annual fur retail sale from these countries amounted to 2,7 billion Euro.

## European international trade of raw mink skin

Europe and EU is a dominant player on the international market of raw mink skins. Europe and EU accounts for 70-80 per cent of all world export, and the share of the world market has been relatively constant for a longer period, cf. figure 6.

**Figure 6. Europe's share of world export of raw mink skin, 2004-2016**



Note: 2016: Preliminary

World export = Sum of all countries' export of raw mink skin excluding Hong Kong. Hong Kong's export is almost completely imported skin, which is re-exported to China Mainland and is in this case considered as transit.

Sources: Own calculations based on UN (2017a)

The figure underlines Europe's role on the international market for raw mink skins. World market shares of 70-80 per cent indicate a unique market position and a strong international competitiveness.

Within Europe, Denmark, Finland and Poland are major exporters of raw mink skin accounting for more than 80 per cent of total production in Europa.

In recent years eastern European countries have increased their share of total World export of mink skins. These countries have established new mink farms, and their mink skin production is now mostly sold at auction houses in Europe. Their share of World export has increased from 2 to 12 percent in 2006-16 (figure 7), and in some areas mink production is now an important and significant agricultural industry.

**Figure 7. Eastern European countries' share of world export of raw mink skin, 2004-2016**



Note: 2016: Preliminary

\* Eastern European countries: Poland, Baltic countries, Romania, Bulgaria and Czechia

World export = Sum of all countries' export of raw mink skin excluding Hong Kong. Hong Kong's export is almost completely imported skin, which is re-exported to China Mainland and is in this case considered as transit.

Sources: Own calculations based on UN (2017a)

Europe is also home to the two largest fur auction houses in the world, Copenhagen Fur and SAGA with an annual turnover of 850 and 335 mio. Euros, respectively.

At the international level, there are up to six major auction houses, which are located in Copenhagen, Helsinki, Toronto, Seattle, Ontario and Saint Petersburg. They account for the bulk of fur sales worldwide and compete with each other to get as many fur skins as possible to auction. See figure 8.

**Figure 8. Size of the largest fur auction houses measured by total number of traded fur skins**



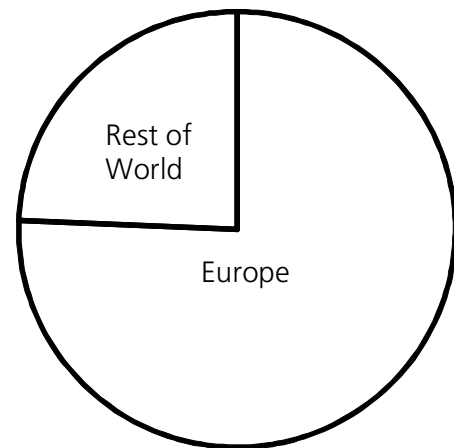
Note: 2015 or most recent year with available data.

Source: Author's presentation based on Copenhagen Fur (2016a), SAGA Furs (2016), NAFA (2016), ALC (2016), Sojuzpushnina (2017), Fur Harvesters' Auctions Inc. (2017)

Also collaboration among fur auction houses exists: In 2013, ALC (Seattle), Fur Harvesters Auction Ontario) and Saga Furs signed an agreement to hold joint actions at Saga Furs in Helsinki. In 2016, Copenhagen Fur, Saga Furs and NAFA agreed on only selling WelFur-certified European skins from 2020 onwards.

In 2015/16 Copenhagen Fur and SAGA Furs were auction houses for 33 million sold mink skins, which accounted to 75 per cent of all mink skin sold at auction houses – see figure 9.

**Figure 9. Mink skins sold at auction 2015/16**



Source: IB Fur Auctions (2017) and homepages of the auction houses.

When studying the two European fur auction houses it is the impression, that there are two well functioning and efficient auction houses in Europe. The market places are transparent, in principle open for all buyers and sellers, and the transaction costs are very low. When many relatively small mink farmers work together and sell their mink skins together (which is generally the case in European fur auction houses), then the market balance is improved, as the market power of both fur farmers and of much larger customers (brookers, retail chains etc.) is more balanced.

The number of individual mink farmers is relatively high, and their size is relatively low compared with the buyers at the auctions. Some buyers buy mink skins of more than 100 million Euro per year.

## The competitiveness of European mink industry

The strength and the long term competitiveness of an industry are important elements in an assessment of the performance and of the economic benefits of the industry. An industry with a high level of public support and protection and with small or decreasing export market shares has less economic value than an industry competing without subsidies and growing on the world markets.

The fur industry is in general a very unprotected sector in Europe. Unlike other agricultural sectors in the EU, there have never been special market support schemes or other support measures for fur farms in the EU. Markets have been the major driver behind fur farm business in EU and in Europe in general.

Despite this unprotected situation, the fur industry has managed to compete against both other agricultural production within Europe and against international fur production.

The performance and the international competitiveness, which are crucial indicators for any business, can be measured by

calculating the so-called export specialization (or revealed comparative advantage or Balassa index), which expresses the relative strength on international markets. The export specialization index is thus used to identify product groups, which may reflect underlying competence clusters in the form of especially competitive companies.

Export specialization expresses a product group's share of total exports in relation to the product group's share of the world's total exports. If the export specialisation for a product is 5, it means that the product's significance for the country's export is 5 times greater than the average for the whole world. If the export specialisation for a product is 1, it means that the product's significance for the country's exports is equal to the global average.

Export specialization therefore expresses the relative strength on international markets (see also box 1).

In general Europe's export specialization for mink products is considerably  $>1$ , indicating comparative advantage and international competitiveness, cf. figure 10.

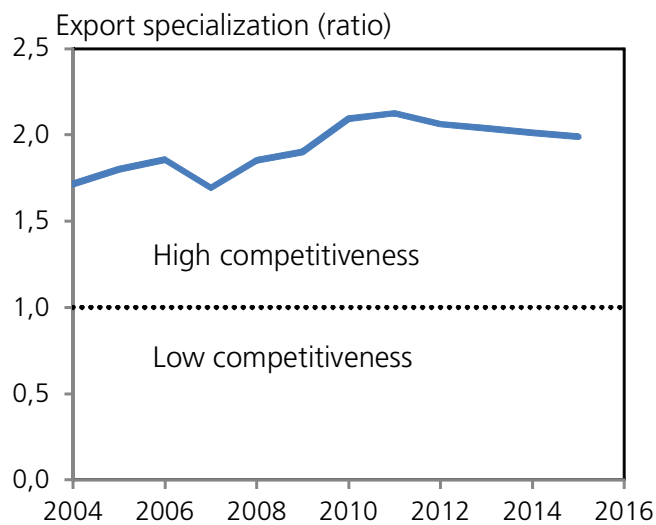
### Box 1. Measuring revealed comparative advantages (RCA)

$$RCA_{ij} = (x_{ij}/X_{it}) / (x_{wj}/X_{wt})$$

Where  $x_{ij}$  and  $x_{wj}$  are the values of country  $i$ 's exports of product  $j$  and world exports of product  $j$  and where  $X_{it}$  and  $X_{wt}$  refer to the country's total exports and world total exports. A value of less than unity implies that the country has a revealed comparative disadvantage in the product. Similarly, if the index exceeds unity, the country is said to have a revealed comparative advantage in the product.



**Figure 10. Export specialization for European mink skin**



Source: Own calculations based on UN (2017a)

Figure 2 stresses the relatively high and constant international competitiveness of the European mink industry: The export market shares of mink skins are twice as big as the average export market shares for all export.

Around 94 per cent of all European export of mink skins comes from countries with export specialization > 2.

Countries like Denmark, Finland, Poland and Lithuania have export specialization >7. For Denmark mink skin is the most competitive product measured by export specialization.

Export specialization in EU28 is very different from country to country and from product to product. It illustrates that the comparative advantages are different and that some countries have better opportunities and basis for producing certain products than other countries.

Considering EU28 as one group of countries, furskins belong to the products where export specialization is greatest. Figure 11 shows, that among almost 100 product groups, furskins have an export specialization in top-10 (no. 7 in 2015), which underlines the position of a very high international competitiveness.

Other product groups with high export specialization are also listed in the figure.

An export specialization of 1 (illustrated by the horizontal line) symbolizes the average, cf. figure 10 and 11.

The product group "Furskins" (or more precisely: "Furskins and artificial fur, manufactures thereof" includes other kinds of furskins like fox skins but also fur clothing. However, the subgroup "raw minkskins" has a rather high export specialization - see table 4.

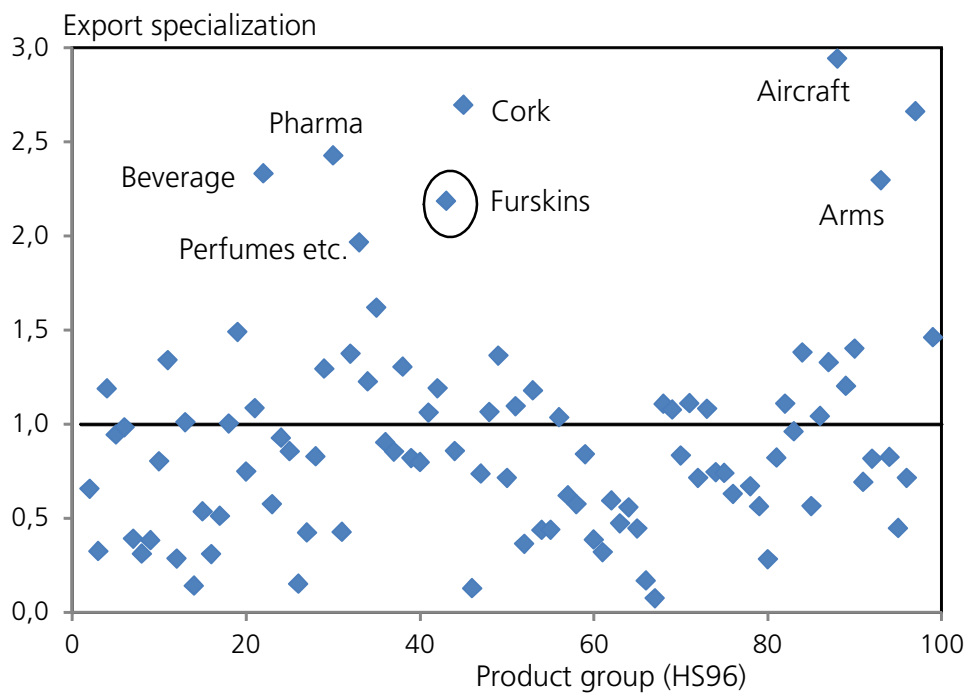
**Table 4. Export specialization for selected fur product groups in EU28 (2015)**

HS96	Product	Export specialization
43	Furskins, articles of furskins	2,19
4301	Raw furskins	3,82
430110	Raw minkskins	3,77
4302	Tanned, dressed furskins	0,78
4303	Clothing	0,91

Source: Own calculations based on UN (2017a)

There are several explanations of the comparative advantages and the international competitiveness of the European mink industry:

**Figure 11. Export specialization for all product groups in EU28 (2015)**



Note: For all 4-digit HS96-groups. EU28 includes only extra-EU28-export.

Names of products with high export specialization are listed.

Source: Own calculations based on UN (2017a)

- Climatic conditions
- Access to feed fresh of high quality in terms of by-products from the food industry
- Efficient value chain with low transaction costs
- Economies of scale at the auction level
- High degree of vertical integration and examples of strong clusters
- Horizontal interaction and collaboration among fur farmers, e.g. organised in cooperatives and producer organizations
- Balanced bargaining power in the value chain due to concentration and structural situation
- Infra structure is well developed
- Unprotected – or almost unprotected – industry has sharpened the international competitiveness
- Collaboration and knowledge sharing with researchers and authorities at national and international level.

## The impact of European mink industry

The European mink industry has a socio-economic impact which can be illustrated in several different ways, e.g.

- employment
- production value
- added value
- regional activities

The total impact is difficult - or even impossible - to determine and to document in details, for several reasons:

- \* The statistical description of the mink sector is rather scarce.
- \* The direct and indirect (derived) impact is very complex to describe and to calculate, as several industries, sectors and institutions interfere.
- \* The potential alternative use of resources in the short and long run is difficult to estimate. The mink industry does benefit the socio-economic welfare, but the impacts and the benefits must be compared with the cost and resources being used.
- As many resources (farms, skills, input industries, processing etc.) are very specific and fixed, the dynamics, adaption rate and alternative value in other industries are rather low. To move resources from the mink industry will be possible, but it will be a rather difficult and costly process.

### Employment

Mink skin production creates employment in several places in and around the mink cluster.

Hansen, H. O. (2016) – based on interviews with key stakeholders in the fur value chain – calculates, that each skin creates

approximately 5 hours employment in connection with sewing, tanning, fashion, design, retail, etc. Depending on the length of the working day etc., this fact alone means that European mink skin production provides employment for approximately 100.000 people. On one hand, this figure does not include employment in agriculture, the supply sector, wholesale etc. On the other hand, a major part of the employment created is located outside Europe.

Direct employment on mink farms in Denmark amounts to about 3.700 people (Hansen, H. O, 2016). Upscaling this number to a European level and taken different structures in different countries etc. into account, around 15.000 people are full time employed on mink farms in Europe. Additionally, employment in several input, service and processing industries is dependent on the fur skins produced on fur farms.

In Finland, which has a significant share of the world's fur production, the direct and indirect employment effect in the fur sector has been estimated (See MTT, 2004) (MTT – the Research Centre for Agriculture and Food Economics). It is concluded, that the total employment effect – within Finland - of Finnish fur industry is 17.350 people. 3.300 people are employed on the fur farms, and industries like feed factories, transport, sales, construction and finance also depend on fur skin production and a part of their employment is derived from fur skin production. Finland accounts for about 6 per cent of total fur skin production in Europe, so direct upscaling of the Finnish impact to a European level gives an employment impact of around 275.000

people in the European mink industry (excluding non-mink fur products)

Also Norwegian research reports (NILF, 2011 and Oslo Economics, 2012) estimate the labour impact of fur industry, but only direct impacts are included.

The OECD and UN provide statistical data for fur processing and manufacturing in selected countries. The data include all fur skins (also fox, sable, chinchilla etc.), but only the employment in a part of the value chain is included - see table 5.

**Table 5. Employment (persons) in some European countries in 1) Dressing & dyeing of fur; processing of fur and 2) Manufacture of articles of fur**

	1)	2)
Austria		103
Belgium	228	35
Bulgaria	284	124
Czechia	352	208
Denmark	59	61
Estonia		27
Finland	223	84
France	468	295
Germany		714
Greece	3.050	3.231
Hungary	136	111
Ireland	33	
Italy	2.509	2.049
Latvia	50	22
Lithuania	391	191
Norway	86	24
Poland	1.615	704
Portugal	328	60
Romania	638	299
Slovakia	152	95
Spain	1.438	404
Sweden	54	34
Ukraine	1.064	
UK		24
Total	13.158	8.800

Sources: UN (2017b) og OECD (2017)

It should be emphasized that the figures in the table show only a small part of the total employment created by the European production of raw furskins.

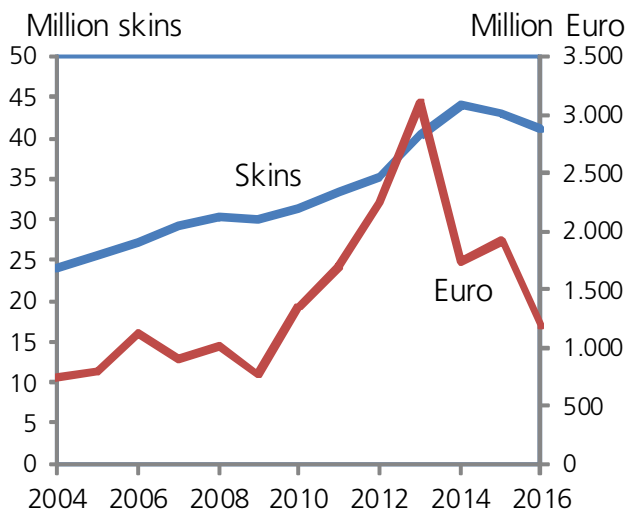
The table shows that the direct employment impact is biggest low cost countries, which have a widespread tradition for fur processing. There is also a clear connection between the countries' export of fur products and employment in the preparation and dyeing of fur as well as the manufacture of fur products.

#### Production and production value

European farmers produce around 40 million mink skins per year, and the value delivered from farms and sold at auction prices amounts to 1,2 billion Euro (2016). The production value peaked in 2013 (3 billion Euro), but has fallen in recent years due to lower market prices and to some extent also due to a decrease in the number of produced mink skins.

The trend in the number of produced mink skins and the value of produced mink skins are shown in figure 12.

**Figure 12. European production of mink skins, 2004-16: Number and value**



Sources: See figure 4.

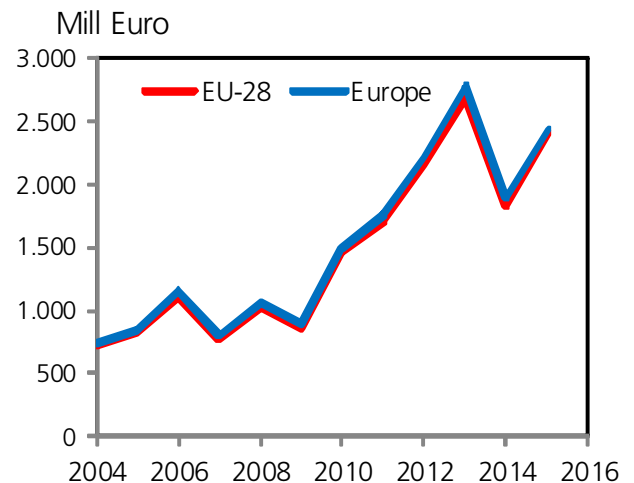
The production value and the relative importance of mink production in the European agriculture and the European economy varies widely over time and from country to country. In some countries mink production accounted for more than 10 per cent of total agricultural production. In other countries mink production does not exist at all.

### Export

Raw mink skin and mink skin products are in general very internationally traded products. Raw mink skins are predominantly produced in Europe, while a major part of the manufacturing and final processing takes place in Asia.

Europe's export of mink skins has developed in parallel with both production and price trends, but in general there has been an increasing trend during the recent decade - see figure 13.

**Figure 13. Export of raw mink skins from Europe and EU-28, 2004-2015**



Note: The export statistics in figure 13 include intra-EU and intra-Europe trade. Europe's net export of mink skin (export minus import) in 2016 was 1,4 bn. Euro

Sources: See figure 4.

The increasing value of export from Europe and EU-28 is due to both increasing number of mink skins exported and increasing export prices.

The importance of mink skin exports varies greatly from country to country, reflecting the different natural and competitive conditions in the region. In some countries export of mink skins is insignificant or non-existent, while in other countries export of mink skin is a major part of agricultural or animal export – see table 6.

**Table 6. Export of raw mink skin: Share (%) of total agricultural export and of total animal export (2013)**

	Total Agricultural export	Total animal export
Belarus	0,9	1,3
Belgium	0,0	0,1
Bulgaria	0,0	0,6
Denmark	11,3	27,9
Estonia	0,7	2,4
Finland	17,5	62,6
France	0,0	0,1
Germany	0,0	0,1
Greece	0,7	6,9
Iceland	15,8	56,4
Ireland	0,1	0,2
Latvia	0,7	4,1
Lithuania	1,2	5,5
Netherlands	0,2	1,1
Norway	5,2	34,9
Poland	1,1	3,6
Spain	0,1	0,4
Sweden	0,8	5,9
Total of above	0,85	3,6
Baltic countries	0,96	4,6
Nordic countries	9,6	29,3

Note: Total animal export = Meat and meat preparations + dairy products + eggs.

2013 = latest year with data from FAOSTAT

Only countries with a reported export and/or net export of mink skins are included.

Source: Own calculations based on FAO (2017) and UN (2017a)

In 2015 European countries accounted for more than 18 per cent of all world export of fur garments – fur garments, where mink skins are expected to be the major skin resource.

In addition to the export of fur clothing, there is also a domestic sale on the European market, and there is a retail turnover of approx. 6 billion Euro. Thus, there is also a significant import substitution.

### Regional and rural importance

Mink farming is considered an agricultural industry, and mink farms are typically located in rural and agricultural areas. It means that mink farms and the mink skin industry have a significant role for the rural economic activity in several countries.

As unemployment often is more severe in areas far away from the bigger cities, mink business has a relatively big impact on employment.

Important fur clusters in Greece, Italy and Spain, and the increasing export of mink skin in several eastern European countries emphasize that the mink industry also has a positive impact on the regional development in a broader EU perspective.

### Industrial structure

A major part of the economic activity created by the mink industry comes from SMEs. Fur farms, fur manufacturing companies, fur clothing companies, fur fashion companies, fur retail companies etc. are mostly small or medium sized units (See also page 10). This is important from a business development point of view, and SMEs often have a special role and a unique priority in the business policy.

## **Potential impact of a de facto European ban on mink fur production**

As the European mink industry and mink clusters in Europe do play a major role in several regions and countries, a potential de facto European ban on mink fur production would have major socio-economic impacts. A number of reasons underline these negative impacts:

A major part of the European investments and resources in the mink industry are so specific, that their alternative value is negligible. Competencies in mink farming, mink skin dressing, sorting of mink skins and investments in mink farms, research and development are to a high degree specific and fixed to the mink industry.

A new mink farm requires investments in building, cages, machines, feeding factories, other inventories etc. Based on market prices of these inputs, a price of about 670 euro per mink female for new mink farms can be estimated. Assuming 8 million female minks in Europe, assuming present average value equals 50 per cent of new value, the present value of all mink farms in Europe including feed factories can be estimated to 2,7 bn. Euro. This number does not include investments in input industries and other value chain investments. Investments in neither farmers' skills, infrastructure nor organization are included, and these specific resources have very low or zero value in other industries.

Also auction houses, infrastructure and advisory service, veterinarians, feed factories, storage facilities have a very low alternative value and will be almost worthless without a European mink skin produc-

tion. A major part of the mink feed is based on offal from the meat and fish industry, and the value of this offal for alternative use may be very low or even negative.

Nordea Bank is probably among the banks giving most loans to mink farms in the World, and the bank confirms, that assets in the mink farm sector are very specific and fixed, and that the alternative value is normally zero (Nordea, 2017). This underlines the fact, that transforming mink industry resources into other industries can be costly and slow.

As many resources in the mink industry are more or less fixed, and because investments and resources have a long life and because the depreciation period is long, even an uncertainty about the future of the mink business will affect future investments. The attractiveness of the mink industry will decrease.

In case of no European mink production, many resources will be worthless, and other resources will move to new industries to find alternative use. However, it will almost be impossible to move to other industries with better comparative advantages than in the mink industry.

Furthermore, a major part of the labour resources in the mink industry (fur farmers, employed at fur farms, pelting etc.) are located in rural areas, where unemployment is more important, and where alternative jobs are not easily available

A ban on mink fur production will make major disturbance on both national and international markets, as the European sup-



ply - in the short run, and ceteri paribus - will be significantly reduced and eliminated:

- \* 85 per cent of all mink skin production in the World (excl. China) will disappear. 60 per cent of all mink skin production in the World (incl. China) will disappear.

- \* 75 per cent of all international trade of mink fur skins will disappear.

- \* A major part of the present employment in the European mink industry is connected with - and depended on - European mink farms and European mink skin production. Employment on mink farms will disappear, and employment in related industries and in the fur clusters will be negatively influenced.

- \* The strongly reduced supply will result in increasing prices, which will influence the price settings in the entire value chain. Economic and welfare losses may be the result.

- \* Activities in the European mink clusters will be negatively influenced by elimination of local production.

- \* Fur auction houses in Europe accounting for 75 per cent of all auction sale of raw mink skins will be influenced. Copenhagen Fur is owned by Danish fur farmers, and the company will probably not exist without their present owners. Also SAGA Furs is closely connected to Finnish fur farmers, and SAGA Furs' role will diminish significantly – without mink skins produced in Europe.

- \* The European mink fur manufacturing industry is connected to the European mink skin production. In the short run the fur manufacturing industry will suffer from no access to the present and local production, and their importance will be reduced.

- \* An industry with significant comparative advantages will disappear. Measured by export specialization, the European mink industry has competitive advantages. Furthermore, assets in the mink industry are specific and fixed, so it cannot be assumed, that the assets will move to more competitive industries.

These figures are static and ceteris paribus impacts of banning and stopping European mink skin production. In the long run production and markets will adopt to a new market situation. However,

- \* This change will take time, and resources will be wasted in this period

- \* Present assets and competences will be more or less worthless, as their alternative value is limited.

- \* Alternative use of the released resources may probably not generate the same profit, as they leave an industry with strong comparative advantages.

It is assumed that demand for mink garments will remain unchanged. This means that also demand for raw mink skins will remain unchanged. The result will be increasing prices of raw mink skins (as global supply is reduced significantly in the short run). With increasing prices, fur farmers outside EU will increase – or start –

production of mink skins. Mink skin production will then move from Europe to probably mostly China. This assumption is based on historical cases, where China has increased their production substantially during periods with high prices of raw mink skin (Hansen, H. O., 2016).

A potential de facto European ban on mink fur production is then expected not to impact or reduce European (or World) demand for fur garments.

The markets for mink skin products are driven by both supply and demand. A de facto ban on mink production in Europe will stop production in Europe, but production will move to other countries, as the demand for mink products will remain unaffected.

The experience from UK underlines this: After the de facto ban of fur production, import of fur clothing into UK increased. UK is now a major importer of fur clothing (number 9 in the World).

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