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Danish Risky Business: Land use, deforestation and corruption from soy, timber, pulp and paper imports.

The international trade in commodities such as soy, timber, pulp and paper provide a livelihood for millions of people, but they have also been associated with deforestation and negative social impacts, including land grabs and forced labour. This report provides an estimate of Denmark's overseas impact on land use, deforestation and social challenges. It focuses on three key commodities - soy, timber, pulp and paper – since this is likely where Denmark's greatest impact and risk lies. This understanding enables stakeholders – including companies, the government and citizens – to take action to reduce the impact that Denmark has overseas.

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Key findings




Denmark is a significant importer of commodities that have supply chains associated with deforestation and social exploitation. This report focuses on Denmark's imports of three commodities – soy, timber, pulp and paper – since this is likely where the greatest overseas land footprint and deforestation risks are.

Danish imports of these three commodities has a total land footprint of 3.56 million hectares, or 35,551 square kilometres, each year. This is equivalent to 84% of the total land area of Denmark. For timber, pulp and paper imports, this land footprint is mostly spread across nearby European countries, but for soy, the land footprint is predominantly in Latin America.

Timber has the largest footprint of these commodities, at 2 million hectares, equivalent to half the land area of Denmark. Nearly half of timber imports are fuelwood, which are increasingly used for energy generation in Denmark.

Soy has a smaller land footprint of 0.9 million hectares, but this is still equivalent to the combined land area of Zealand and Lolland. Soy imports pose the greatest risk – 65% of the land footprint is in countries that are high or very high risk for deforestation and social challenges.

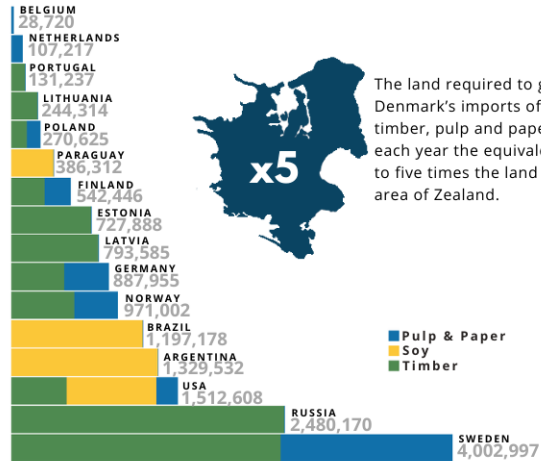
The pulp and paper land footprint was the smallest at 0.66 million hectares – twice the land area of Funen. This was the least risky commodity assessed, with no major importing countries being high risk for deforestation and social challenges.

	Top three countries of import, by land area	Quantity imported each year	Land footprint each year	Land footprint deforestation and social risk profile
Timber	1. Sweden 2. Russia 3. Latvia	8.46 million m ³ wood raw material equivalent	2 million hectares, or half the land area of Denmark	
Pulp and paper	1. Sweden 2. Germany 3. Norway	3.17 million m ³ wood raw material equivalent	0.66 million hectares, or twice the land area of Funen	
Soy	1. Argentina 2. Brazil 3. USA	1.8 million tonnes	0.9 million hectares or the combined land area of Zealand and Lolland	

Global Overview

From 2014 - 2018 the land required to grow Denmark's imports of soy, pulp and paper each year is 3.56 million hectares or 35,551.42 square kilometres. This is equivalent to 84% of the total land area of Denmark.

TOTAL FIVE YEAR LAND FOOTPRINT FROM 2014 - 2018 (ha)



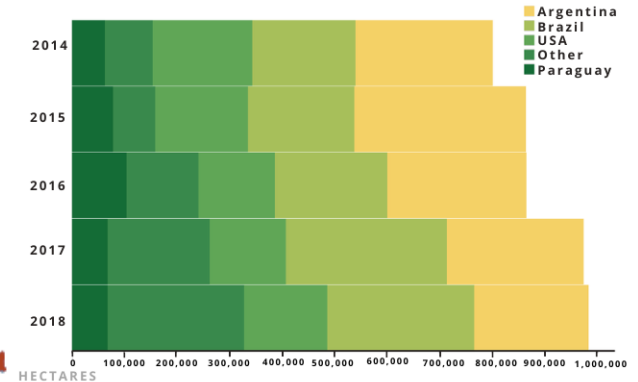
The land required to grow Denmark's imports of soy, timber, pulp and paper each year the equivalent to five times the land area of Zealand.

SOY

Soy is mostly imported from Latin America, and it the riskiest of the three commodities.

65% Soy footprint is in high or very high risk countries for deforestation and social challenges.

LAND REQUIREMENT FOR DENMARK'S SOY IMPORTS BY COUNTRY

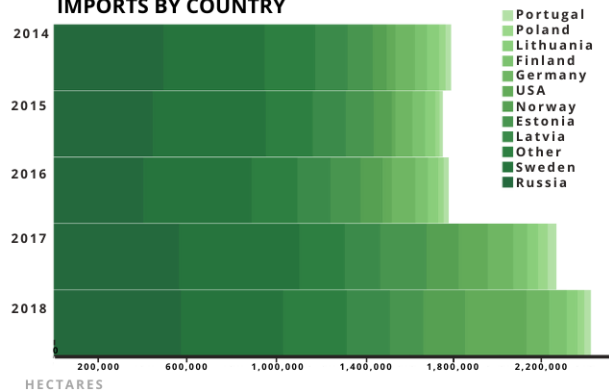


TIMBER

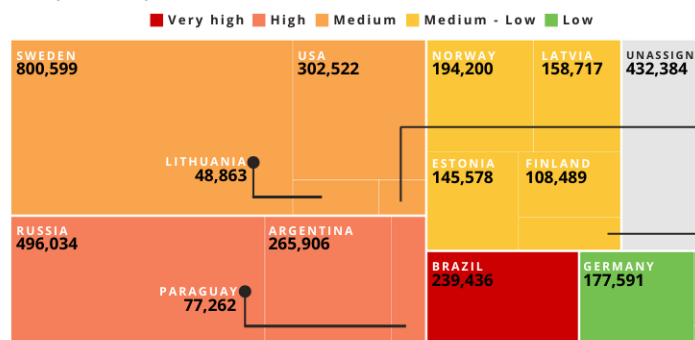
The volume and land footprint of Danish timber imports is rising, partly due to increased fuelwood imports.

45% Imported timber is in the form of fuelwood, which is used in energy generation.

LAND REQUIREMENT FOR DENMARK'S TIMBER IMPORTS BY COUNTRY



DANISH LAND FOOTPRINT AND COUNTRY RISK RATING FOR SOY, TIMBER, PULP AND PAPER IMPORTS (ha)



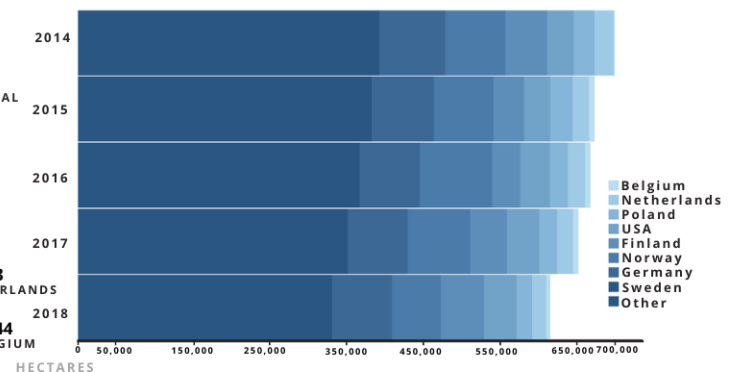
PULP & PAPER

Pulp and paper imports pose the least risk. No major country from which Denmark imports pulp and paper is high risk for deforestation and social challenges.

80% Imported pulp & paper is in form of paper & paperboard.

x2 Twice the land area of Funen is required each year to grow Danish pulp and paper imports.

LAND REQUIREMENT FOR DENMARK'S PULP & PAPER IMPORTS BY COUNTRY



Timber

KEY FACTS

- Denmark produces timber, but imports it in larger quantities, mostly from neighbouring European countries.
- Timber import are growing, partly due to increased fuelwood imports.
- Half the land area of Denmark is required each year to grow Danish timber imports – a quarter of this land use is in Russia.

Timber is produced from felling natural forests or wood plantations. Unsustainable timber harvesting drives deforestation, and causes a variety of environmental and social issues, such as habitat loss, soil erosion and land rights abuses.

Trees are a renewable resource, and there are alternatives to unsustainable and illegal timber. FSC™ is the most established timber certification scheme for responsible timber sourcing and forest management.

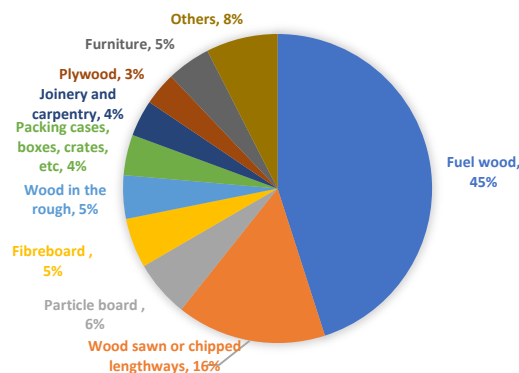
Denmark produces timber – 14% of its land area is covered by forests - but it is also a significant importer. Timber is imported mostly for fuelwood - 45% of imports.

Denmark's consumption rate of timber production and imports is 80%, leaving 20% that is exported. Danish timber exports comprise of mainly furniture (32% of exports) and fuelwood (19%).

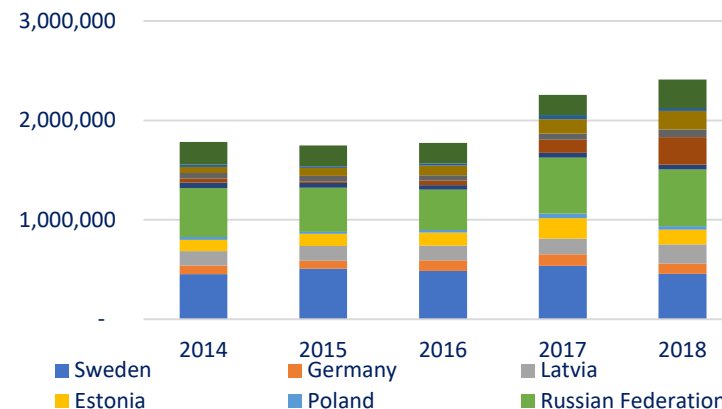
The forested land required to grow Denmark's timber imports 1,995,000 hectares, which is just under half the total land area of Denmark. Denmark mostly imports timber grown in neighbouring European countries, including Sweden (25% of Denmark's timber import land footprint), Russia (25%) and Latvia (8%).

Most timber imports are covered by the European timber regulation, which acts to prevent illegally forested timber from entering Europe. But 4% of timber product imports are not covered, included wooden seats and charcoal.

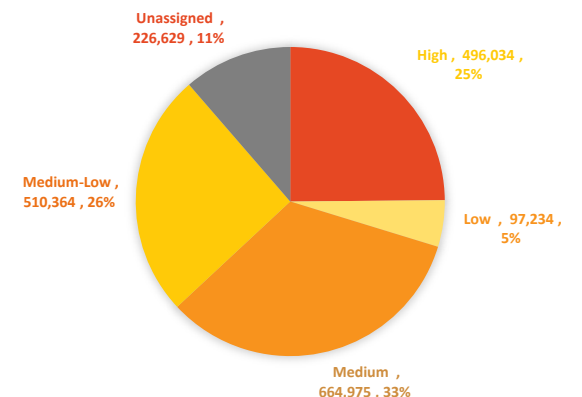
TYPE OF IMPORTS (m³)



COUNTRY LANDFOOTPRINTS (ha)



LAND FOOTPRINT DEFORESTATION AND SOCIAL RISK (ha)



Pulp and paper

KEY FACTS

- Denmark imports mostly finished paper and paperboard products, rather than pulp.
- Twice the land area of Funen is required each year to grow Denmark's pulp and paper imports.
- No major country from which Denmark imports pulp and paper is high risk for deforestation and social challenges.

Similar to timber, pulp and paper comes from either natural forests or plantations. Cellulose fibres are derived from logs, wood chips and recycled paper. Pulp and paper production has very similar sustainability challenges and certifications schemes as timber – see previous page.

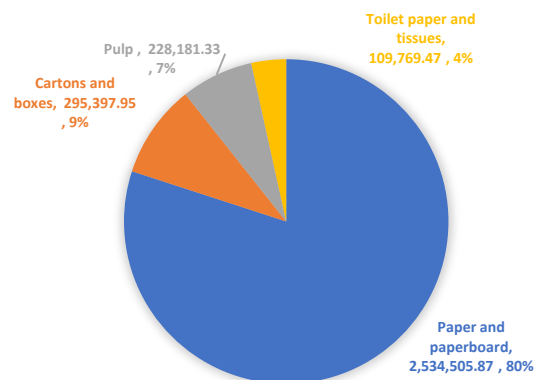
Denmark produces 1.35 million Wood Raw Material Equivalent m³ of paper and pulp each year, but imports around double this amount – 3.17 million . It imports mostly finished paper and paperboard products (80% of total imports) rather than pulp to process into paper (only 7% of imports).

As with timber, Danish pulp and paper imports are grown mainly in nearby European countries. Over half the import land area is in Sweden and Germany- 31% and 28% respectively. Danish imports and domestic production of pulp and paper products decreased over the five years assessed. Two-thirds of imports and production are consumed domestically, with the rest being exported.

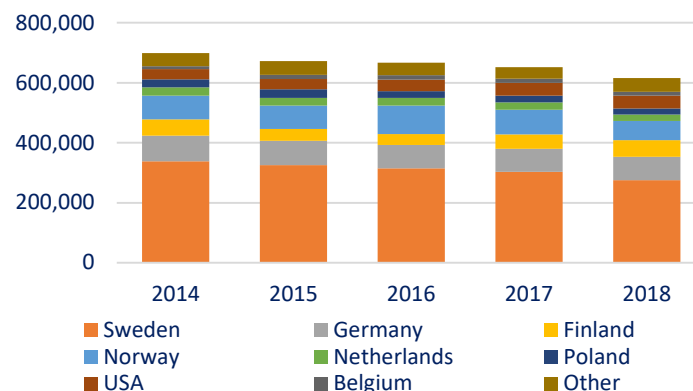
A forested land area of 662,000 hectares is needed each year to grow Danish pulp and paper imports – this is equivalent to twice the land area of Funen.

Pulp and paper is the least risky of the commodities assessed - no major importing countries flagged as high risk.

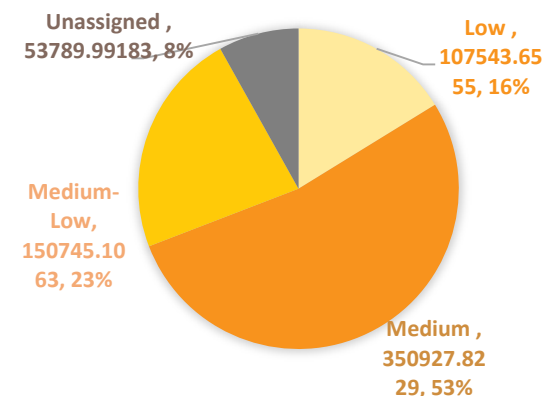
TYPE OF IMPORTS (m³)



COUNTRY LANDFOOTPRINTS (ha)



LAND FOOTPRINT DEFORESTATION AND SOCIAL RISK (ha)



Soy

KEY FACTS

- Denmark imports soy mostly in the form of soymeal to feed livestock.
- Around two-thirds of Danish imported soy is grown in countries that are high or very high risk for deforestation and social challenges.
- An area greater than the combined land area of Zealand and Lolland is required each year to grow Danish soy imports.

Soy is a leguminous crop grown for its edible soybeans predominantly in North and South America, as well as Asia.

Increasing soy production in South America has driven deforestation and habitat destruction, as well as causing land rights issues. Many certification systems exist within the soy sector, such as RTRS, but none have achieved significant market penetration.

Soy is mostly used as livestock feed – especially pigs and chicken – but is also used for direct human consumption and biodiesel production.

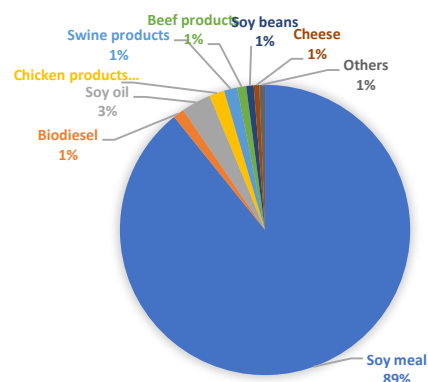
Denmark produces no soy, so all of the soy it consumes and exports is imported. Soy is imported mainly in the form of soymeal (89% of total imports), while soy embedded in livestock products make up just 5% of imports, and biodiesel 1%.

It total, 69% of the soy imported into Denmark is consumed domestically, while the remainder is exported, mostly in the form of swine meat (52%).

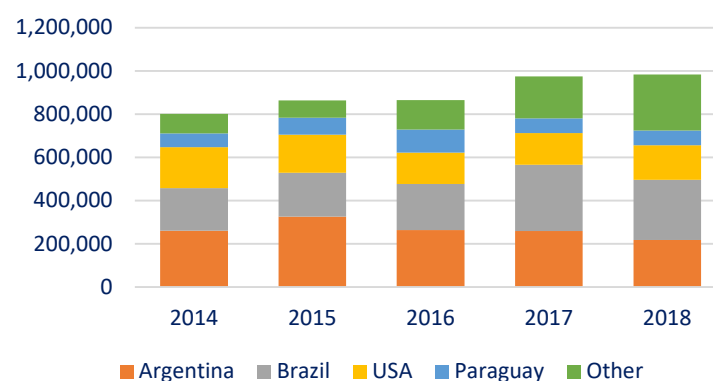
The majority of Denmark's imported soy comes from Latin America – Argentina makes up 31.4% of the Danish soy import land footprint, Brazil 29.1% and Paraguay 6.6%. Denmark also has a significant soy imports from the USA (22.3% of the land footprint). The total land footprint of Danish soy imports is 898,000 hectares each year, which is greater than the combined land area of Zealand and Lolland.

Soy is a high risk commodity import – 65% of the land used to grow Danish soy imports is in countries that are high or very high risk for social and deforestation risks.

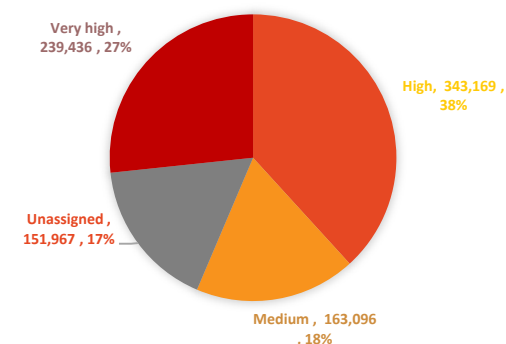
TYPE OF IMPORTS (tonnes)



COUNTRY LANDFOOTPRINTS (ha)



LAND FOOTPRINT DEFORESTATION AND SOCIAL RISK (ha)



Recommendations

This report identifies a number of high risk hot spots within Danish imports of soy, timber, pulp and paper. These include soy imports from Latin America, particularly Brazil, and fuelwood imports from Russia. With these hotspots in mind, we are calling to action:

Governments

- Recognise the social and environmental impacts of Danish imports of key commodities, work with business to design an appropriate policy framework to manage such impacts.
- Ensure that key policy measures are analysed for deforestation risk – e.g. renewable energy incentives.
- Conduct sustainability impact assessments and incorporate the highest environmental and social safeguards into any new trade agreements.
- Champion the implementation of the Action Agenda of the New York Declaration on Forests, to realise the shared ambition to halve natural forest loss globally by 2020 and end it by 2030.
- Work with co-signatories of the Amsterdam Declaration on sustainable commodity supply chains to accelerate action to fulfil the commitments.
- Recognise that whilst some Danish companies are undertaking voluntary action to address the risks, policy action will be required to accelerate progress across all Danish imports.
- Encourage companies to adopt high environmental and social standards in multi-stakeholder certification schemes and convene roundtables to drive progress where such approaches have gained little or no uptake, such as soy.

Companies

- Make a clear commitment, with time-bound targets for change, to eliminate illegal and unsustainable sources of agricultural and forest commodities.
- Report publicly in simple and open terms on progress on an annual basis, using clear metrics or existing tools such as CDP forest footprint disclosure.
- Help customers understand choices and pricing, to create a more equitable global market, reduce wasteful consumption, and promote investment in sustainable production.
- Invest in initiatives to develop sustainable supply chains, including through support to smallholder producers and jurisdictional approaches.
- Collaborate with other companies to drive impact at scale through increased market demand for sustainable production, e.g. policy advocacy, preferential sourcing approaches.

Citizens

- Reduce the number of products that you buy that have environmentally damaging ingredients and prevent waste by only buying what you need.
- Look for products that are certified to credible environmental and social standards, such as FSC™ for wood products.
- Ask companies what they are doing to manage their deforestation footprint.
- Buy from brands and companies that have committed to addressing deforestation and governance risks, and who openly report on progress.
- Eat healthily while reducing your consumption footprint, using advice in the [WWF Livewell report](#).

Methods

The methodology used in WWF Denmark Risky Business was developed for WWF UK and RSPB in the [WWF UK Risky Business report](#). This is a five-stage method:

- 1 Quantifying imports**

UN Comtrade data was used to estimate Danish imports of soy, timber, pulp and paper. We estimate total volume (including commodities used as an ingredient or embedded within the production of imported products), country of export and value. Many commodities are used in thousands of different products, and so the data captured was confined to those product categories that are cited in the literature as being major uses of the commodity.
- 2 Estimate country of production**

Many countries from which Denmark imports soy, timber, pulp and paper may not be where the commodities were grown. For example, the Netherlands exports soy meal to Denmark, but does not grow any soy itself, instead buying from producer countries and trading to Denmark. A provenance reassignment was carried out to determine the countries where Danish imports originate.
- 3 Calculate land footprint**

The area of land that would have been needed within each country to produce the quantity of each commodity that Denmark imports was estimated. For soy, this was done using yield data, and for timber, pulp and paper, it was done using Net Annual Increment (NAI) figures to determine the amount of forested land that would be needed to produce the volumes of wood in imports each year.
- 4 Estimate consumption**

Denmark is an importer, exporter, consumer and in some cases a producer of the commodities investigated. We provide an estimate of the quantity of each commodity consumed within Denmark to allow separation of Denmark's role as a consumer from its role as a trader. This was done using the below formula:

$$(\text{Danish production} + \text{Danish imports}) - \text{Danish exports} = \text{Danish consumption}$$
- 5 Country risk assessment**

Countries from which Denmark imports a greater than 2% share of its total imports for soy, timber, pulp and paper were assigned deforestation and social risk rating from very high to low. This risk rating was calculated using four indicators:

 - Tree cover loss** - Global Forest Watch data was used to determine total deforestation in producer countries.
 - Deforestation rate** – FAO FLUDE data was used to determine deforestation as a proportion of total country land area.
 - Corruption** – Transparency International's Corruption Perception Index is used as a proxy for the likelihood of the range of social and governance issues within an exporting country.
 - Labour standards** - The International Trade Union Confederation (ITUC) Labour score was used to capture the likelihood of serious workers' rights violations, including forced labour, violence, and the denial of the right to free association.

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Data limitations

This report provides a useful guide on the overall need for action, relative levels of risk for commodities coming from different countries, and an indication of where the Danish government, businesses and civil society might target their efforts on reducing the deforestation and social challenge in Denmark's overseas commodity footprint. Due to the complexities in commodity supply chains and relevant data, this analysis focuses on capturing the majority of the trade in the selected commodities, not the whole, and makes conservative assumptions throughout. If anything, the results are likely to be underestimates.

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