



**FOR  
YOUR  
WORLD**



yn rhoi  
cartref i  
fyd natur

giving  
nature  
a home

Cymru



Size of  
Wales  
Maint  
Cymru

# WALES AND GLOBAL RESPONSIBILITY

ADDRESSING WALES' OVERSEAS LAND FOOTPRINT



## AUTHORS

This report was commissioned by WWF Cymru, RSPB Cymru and Size of Wales, and produced by 3Keel, and summarises key findings from the full technical report. Authors alphabetically:

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# BACKGROUND

Wales is at a critical crossroads in its history and needs to address multiple emergencies – COVID-19 recovery, the climate and nature emergency and ongoing inequalities in the nation. With Wales leading the way in declaring a climate and nature emergency, policies and action now need to reflect Wales’ commitments to this agenda and the driving factors of these emergencies.

One of the key factors driving the global climate and nature emergency is deforestation and habitat loss. The International Panel on Climate Change is clear that without our forests, we will fail to limit global warming to 1.5°C. Stopping the destruction of nature and protecting and restoring natural ecosystems is vital in securing wildlife habitats, addressing climate change and reducing the overall risk and frequency of future pandemics.

The COVID-19 pandemic has put our complex relationship with nature in the spotlight – including the role that converting and degrading ecosystems plays in increasing the risk of the emergence of zoonotic diseases. There are risks of sparking further pandemics, as wild animals are forced into closer contact with humans and livestock due to deforestation. The COVID-19 pandemic also exposed the fragility of our global supply chains, especially our food supply chains, with many supermarket shelves left empty, and the unsustainability of global food chains exposed. Welsh connectivity to global events has been brought into sharp relief by the Covid-19 crisis.

Wales needs to play its part by changing what it buys, consumes and invests in, since these choices can drive unethical practices and environmental degradation overseas. Ensuring supply chains are fair, ethical and sustainable is important for a number of reasons, including Wales’ obligation to establish itself as a Globally Responsible Nation in the Well-being of Future Generations Act for Wales. Wales has a responsibility to consider how its practices

impact global habitats, but Wales also has an opportunity to demonstrate global leadership towards driving sustainability across commodity supply chains around the world.

More than 50% of global forest loss and land conversion is attributable to the production of agricultural commodities and forestry products demanded by consumers. Despite increasing initiatives, including certification, corporate commitments and market incentives aimed at halting the loss of forest and habitats, the rate of commodity-driven land use change does not appear to be declining, and the negative impacts on local people and nature continue.<sup>1</sup>

Wales imports significant quantities of agricultural and forest commodities, some of which are driving deforestation and habitat destruction overseas. These commodities are both consumed in Wales and traded onto other countries. Whether that is commodities for the production of soymeal for livestock feed in Wales, palm oil used in everyday supermarket items such as soap or cosmetics, cocoa used in many Welsh treats and desserts, or even rubber used to produce latex or car tyres.

This report provides estimates of the quantities of agricultural commodities: cocoa, palm oil, beef, leather, natural rubber and soy, and estimates of the quantities of forest commodities: timber, pulp and paper, that are imported into Wales. It estimates their provenance, and the land footprint overseas associated with their production. This report provides an analysis of Wales’ demand for these agricultural and forest commodities that are driving deforestation and habitat conversion in the countries in which they are produced, contributing to biodiversity loss, greenhouse gas emissions and social issues. With increased understanding of Wales’ consumption of these commodities, and the impacts this has, we are more equipped to address Wales’ role in global and complex social and environmental issues, such as deforestation.

**MORE THAN 50% OF GLOBAL FOREST LOSS AND LAND CONVERSION IS ATTRIBUTABLE TO THE PRODUCTION OF AGRICULTURAL COMMODITIES AND FORESTRY PRODUCTS DEMANDED BY CONSUMERS.**



WWF / Mark Edwards



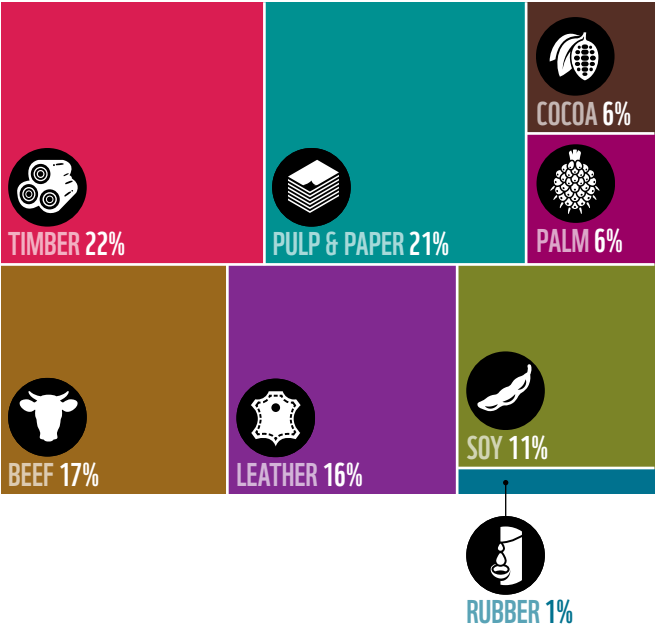
KEY OVERALL FINDINGS

# AN AREA NEARLY HALF THE SIZE OF WALES...

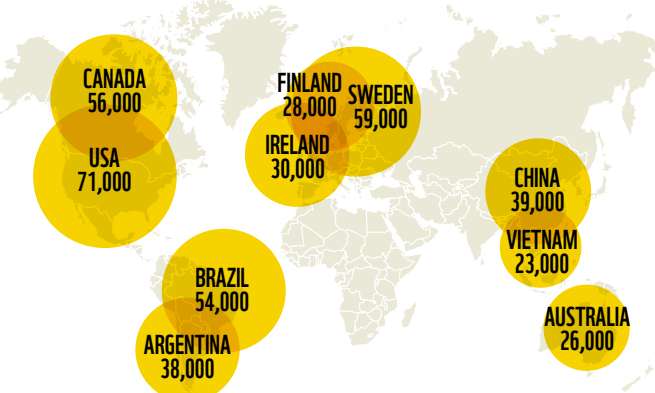
was required overseas to grow Welsh imports of cocoa, palm, beef, leather, natural rubber, soy, timber, pulp and paper in an average year between 2011-2018, causing deforestation, habitat conversion, greenhouse gas (GHG) emissions, and risking exploitative labour practices. This research estimates that:

- An area equivalent to 40% of the size of Wales (823,000 hectares) was required overseas to grow Welsh imports of cocoa, palm, beef, leather, natural rubber, soy, timber, pulp and paper in an average year between 2011-2018.
- 30% of the land used to grow Welsh imports of commodities is in countries categorised high or very high risk for social and deforestation issues. This means commodity supply chains supplying Wales in these countries risk deforestation, conversion of natural ecosystems and/or social issues, such as child or forced labour.
- Palm is the commodity most likely to come from high or very high-risk countries for deforestation and/or social issues, followed by soy. 84% and 73% of the land area used respectively to grow these commodities abroad for Welsh imports are in countries that are high risk or very high risk.
- The GHG emissions associated with the conversion of natural ecosystems and changes in land cover for the production of Welsh imports of soy, cocoa, palm and natural rubber total 1.5 million tonnes CO<sub>2</sub>e each year.<sup>2</sup> This is equivalent to 4% of Wales’ total estimated domestic and imported goods carbon footprint, or 22% of the GHG emissions from transport in Wales.<sup>3</sup>
- In high and very high-risk countries from which Wales is importing commodities, there are 2,800 species threatened with extinction, including orangutan populations in Sumatra and wild cat populations in South America, such as the northern tiger.
- Wales’ largest land footprint is in the USA (71,000 hectares), where significant imports of soy, timber, pulp and paper originate. It also has a significant land footprint in Brazil (54,000 hectares), mainly from soy and beef imports.
- Timber imports are associated with the largest land footprint abroad but are generally grown in North American or European countries at lower risk of deforestation and/or social issues.

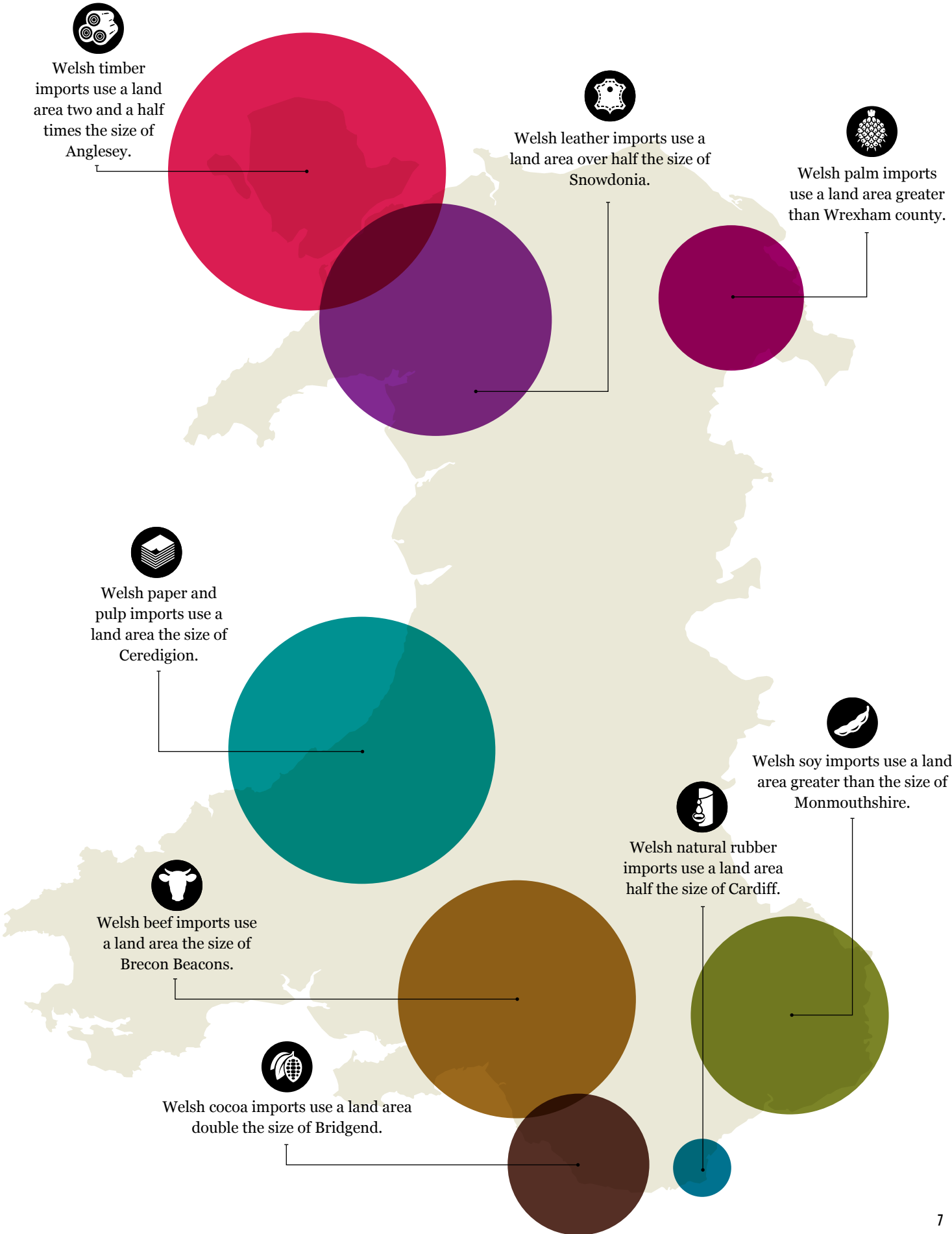
## OVERSEAS LAND FOOTPRINT, BY COMMODITY



## WALES’ LARGEST LAND FOOTPRINTS ABROAD TOP 10 COUNTRIES IN HECTARES



## EQUIVALENT LAND AREA USED OVERSEAS FOR WELSH IMPORTS, BY COMMODITY EACH YEAR





# GLOBAL SNAPSHOT

**RISK SCORE**

- > 11 Very High Risk
- 9-10 High Risk
- 7-8 Medium Risk

Wales imports agricultural and forest commodities from many countries around the world. Each country exporting to Wales has different levels of deforestation and social risks (such as child or forced labour). Wales' total overseas land footprint amounts to 823,000 hectares. The below graphic summarises in which countries this land footprint falls. Each exporting country is assigned a risk category from 4 for low risk, to maximum 12 for very high risk for deforestation and/or social issues. The risk score is calculated according to data on each country's total tree cover loss, deforestation as a percentage of total forest, rule of law, and labour standards - see the methods section for more detail.

  
SOY

  
PALM

  
BEEF

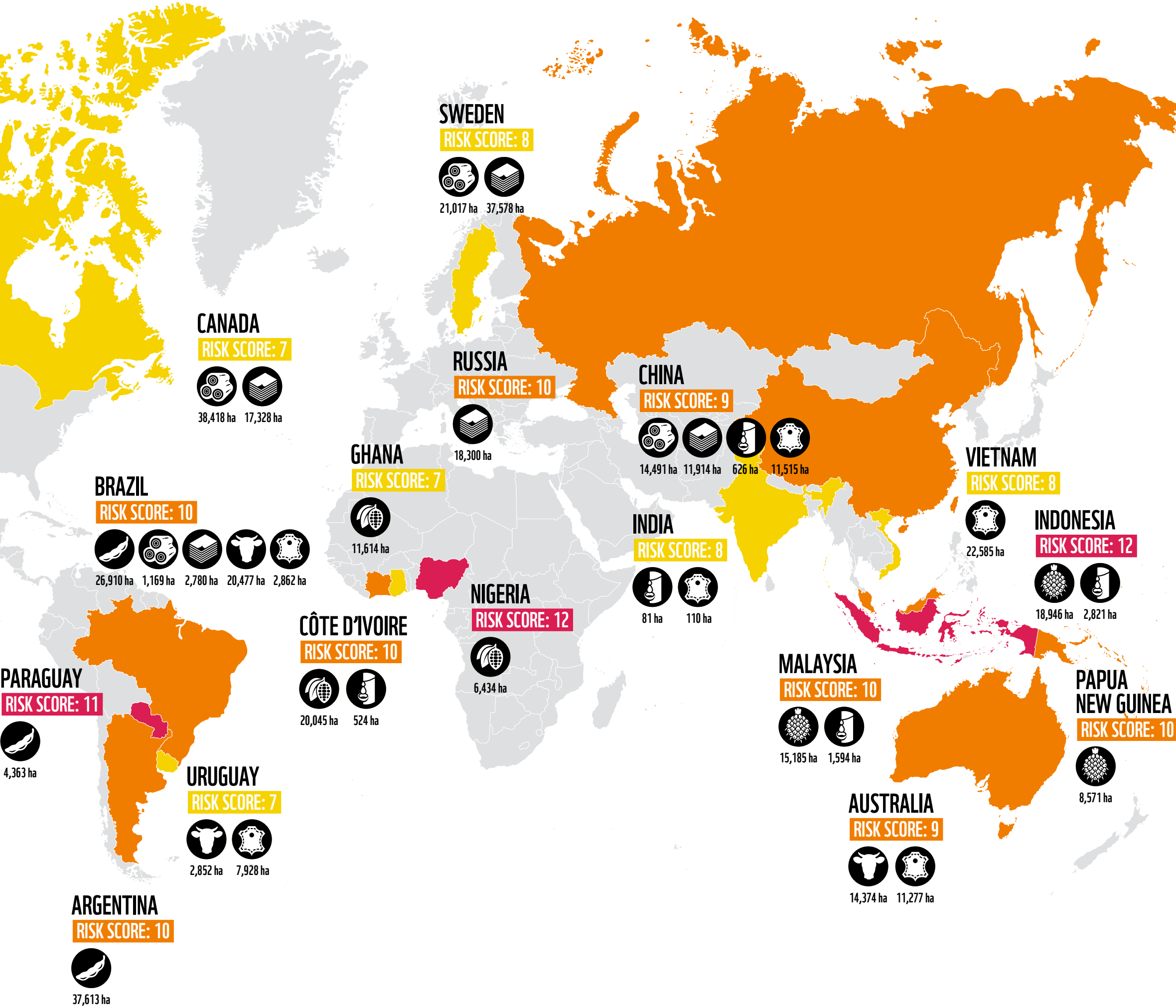
  
LEATHER

  
RUBBER

  
COCOA

  
TIMBER

  
PULP & PAPER



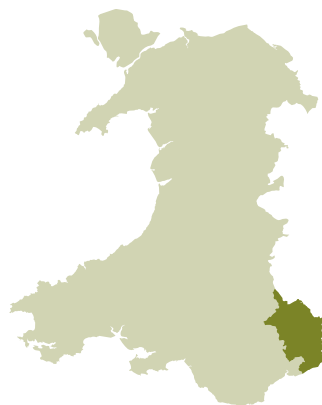




# SOY<sup>4</sup>

- Wales' imports 190,000 tonnes of soy a year. Soy imports increased from 2011 – 2018, peaking in 2015.
- Soy is mostly imported into Wales in the form of meal and beans for livestock feed – 59.1% and 20.2% of total Welsh soy imports.
- The Welsh poultry industry is estimated to be responsible for consuming 48% of Wales' imported soy feed for livestock, followed by dairy (20%) and sheep (19%).
- The average land area required overseas each year to produce Welsh soy imports is 94,600 hectares. This is equivalent to an area larger than Monmouthshire, or five times the size of Newport.
- Nearly three-quarters of the soy import land footprint falls in countries that are high or very high risk for deforestation and/or social issues, including Paraguay, Brazil, and Argentina<sup>5</sup>.
- GHG emissions from land use change, such as deforestation, for growing Welsh imports of soy total over 1.1 million tonnes of CO<sub>2</sub>e each year. This is nearly all from land use change in Latin America – Argentina, Brazil and Paraguay.
- Welsh imports of soy account for 6% of the UK's total soy imports. This is high considering Welsh share of UK GDP and population, and is explained by Wales' comparatively large livestock sector – particularly dairy, beef and lamb.

**THE AVERAGE LAND AREA REQUIRED OVERSEAS EACH YEAR TO PRODUCE WELSH SOY IMPORTS IS 94,600 HECTARES. THIS IS EQUIVALENT TO AN AREA LARGER THAN MONMOUTHSHIRE.**



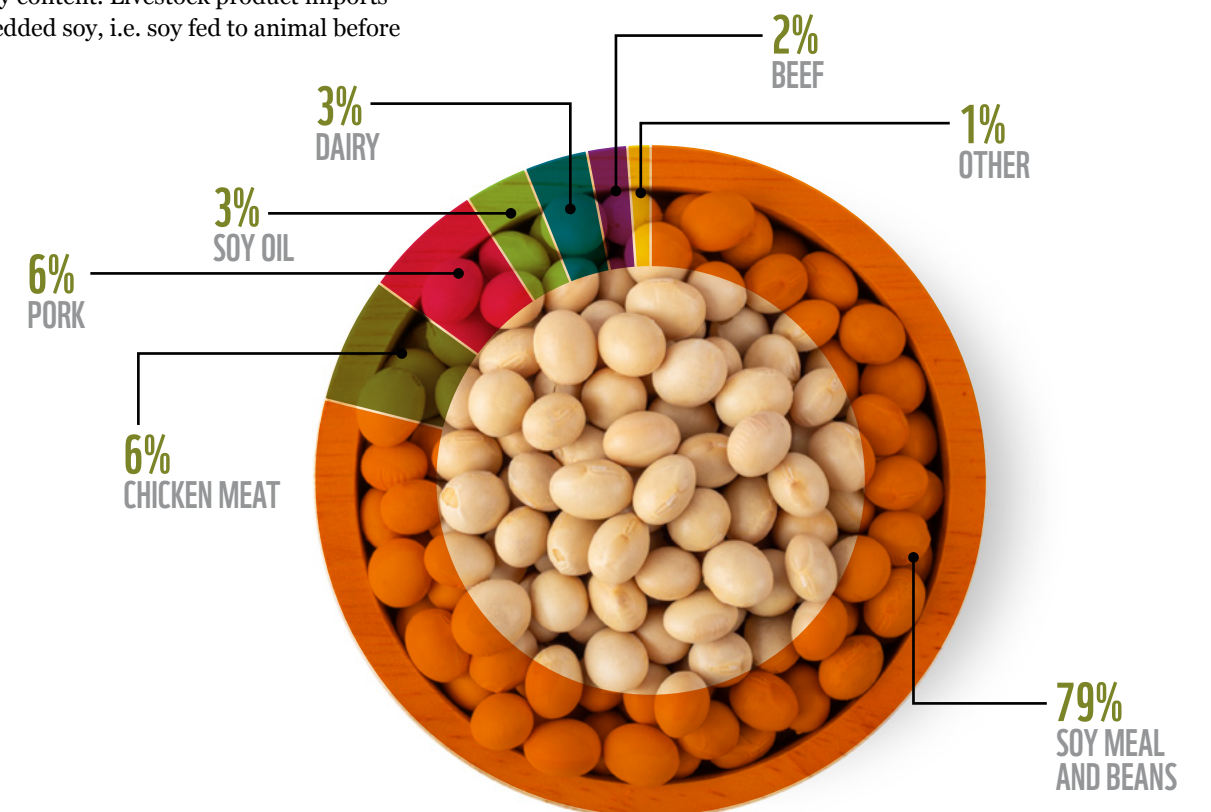
WWF-Sweden / Rich Carey



WWF-UK / Ana Paula Rabelo

## WELSH SOY IMPORTS BY PRODUCT TYPE

Adjusted for soy content. Livestock product imports represent embedded soy, i.e. soy fed to animal before slaughter.







# PALM

- Palm is mostly imported into Wales in the form of palm kernel expeller and oilcake (53% of total), which is an ingredient in livestock feed. A further 27% of imports are palm oil, which is used in many processed foods, such as biscuits, cakes and confectionary, and personal hygiene products (e.g., soap). Welsh palm imports total 51,000 tonnes a year
- The average land area required each year to produce Welsh demand for palm is 50,600 hectares. This is equivalent to an area greater than Wrexham County.
- 37% of the palm Wales imports is grown in Indonesia, where land use change associated with its production totals 168,500 tonnes of Co<sub>2</sub>e each year.
- 85% of the palm import land footprint falls in countries that are high or very high risk for deforestation and/or social issues, including Indonesia, Malaysia, and Papua New Guinea. This makes palm the highest risk commodity that Wales imports.



**85%**  
OF WALES' LAND FOOTPRINT FOR PALM IMPORTS  
FALLS IN HIGH OR VERY HIGH RISK COUNTRIES -  
MAKING PALM THE HIGHEST RISK COMMODITY  
THAT WALES IMPORTS.



WWF-UK / Chris J Ratcliffe





# BEEF

- Most beef imported into Wales is fresh or chilled (53%). The rest is frozen or in processed meat products such as corned beef. Welsh imports total 12,000 tonnes of beef equivalent each year.
- The average land area required each year to produce Welsh import demand for beef is 136,300 hectares. This is equivalent to the land area of the Brecon Beacons. This decreased by 54% from 2011 to 2018.
- 26% of the beef import land footprint falls in countries that are high risk for deforestation and/or social issues, including Brazil and Australia. No significant Welsh imports are from the few countries this study designates very high-risk with a risk score of 11 or above – see scoring methods.
- Welsh imports of beef account for 5% of the UK's total beef imports, which is comparatively high considering Welsh share of UK GDP and population.
- Wales has a higher proportion of its beef land footprint in Brazil compared to the rest of the UK (15% of total versus 12%). This is due to higher levels of corned beef consumption in Wales, which nearly always comes from Brazil.



**OF WALES' BEEF LAND FOOTPRINT ABROAD IS IN BRAZIL, WHICH IS HIGH RISK FOR DEFORESTATION.**



# LEATHER

- Welsh leather imports total 6,000 tonnes of carcass weight equivalent each year.
- Leather is mostly imported into Wales in the form of vehicle seats (35% of total), followed by raw hides (27%) and footwear (17%).
- The average land area required each year to produce Welsh demand for leather is 128,800 hectares. This is equivalent to over half the size of Snowdonia.
- 20% of the leather import land footprint falls in countries that are high risk for deforestation and/or social issues, including Brazil, China and Australia. No significant Welsh imports are from the few countries this study designates very high-risk with a risk score of 11 or above – see scoring methods.

**THE AVERAGE LAND AREA REQUIRED ABROAD EACH YEAR TO PRODUCE WELSH DEMAND FOR LEATHER IMPORTS IS EQUIVALENT TO OVER HALF THE SIZE OF SNOWDONIA.**







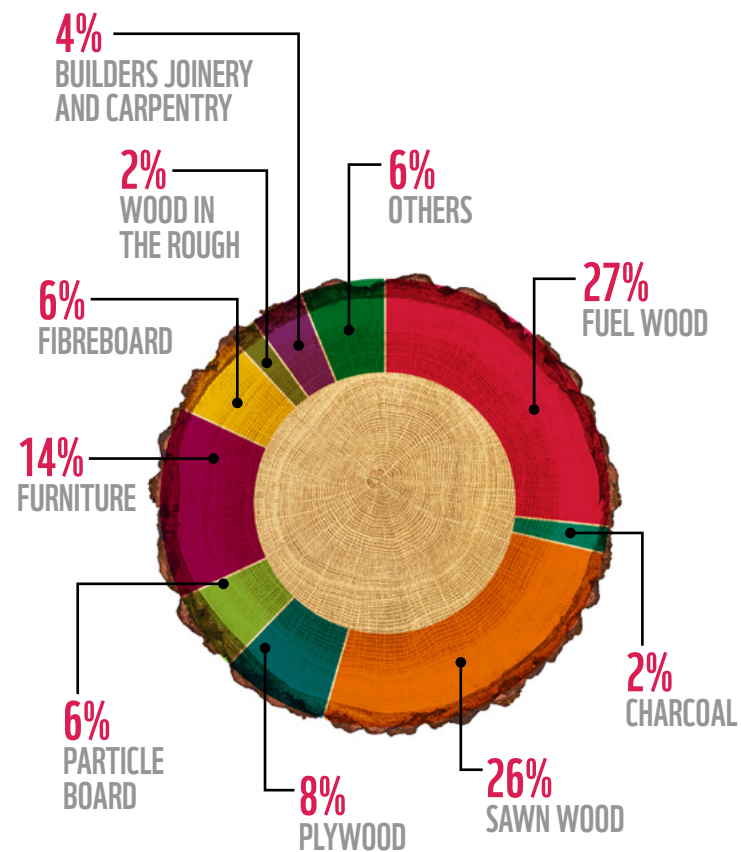
# TIMBER

• Timber is mostly imported into Wales in the form of fuel wood (27%). A much smaller proportion of imports are finished timber products – furniture accounts for just 14% of timber imports.

• Welsh imports of timber doubled from 2011-2018, driven mainly by an increase in fuel wood imports. In an average year, imports total 768,000 m3 of wood raw material equivalent.

• Timber accounts for the largest land footprint of Welsh commodity imports investigated. The average land area required each year to produce Welsh demand for timber is 184,400 hectares. This is an area of land equivalent to two and a half times the size of Anglesey.

• Timber is a comparatively low risk commodity due to it being sourced mainly from North America and Europe. Nevertheless, 18% of the timber import land footprint falls in countries that are high risk for deforestation and/or social issues, including Brazil, Russia and China. Wales does not source any significant volumes of timber from the few countries this study designates very high-risk with a risk score of 11 or above – see scoring methods.



stock.adobe.com / Richard Carey



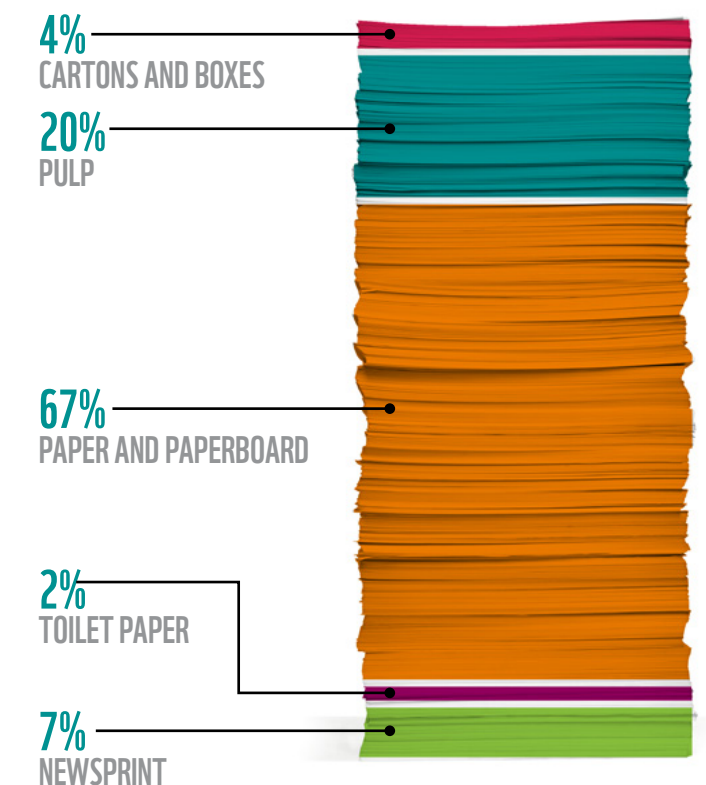
# PULP & PAPER

• Paper and pulp are mostly imported into Wales in the form of paper and paperboard products (52%), whereas pulp products make up 20% of the total. In an average year, Welsh imports total 810,000 m3 of wood raw material equivalent.

• The average land area required each year to produce Welsh demand for paper and pulp is 172,000 hectares. This is equivalent to the land area of Ceredigion.

• Pulp and paper products are mostly imported from nearby European countries, so present very low risks for social issues, but some risk for deforestation. For example in Sweden, which grows 15% of Welsh imports, and ranks medium risk overall due to strong social performance, but weak deforestation scores.

• Just 9% of the pulp and paper land footprint falls in countries that are high risk for deforestation and/or social issues, including China and Brazil. Wales does not source any significant volumes of pulp and paper from the few countries this study designates very high-risk with a risk score of 11 or above – see scoring methods.







WWF-Brazil / Juvenal Pereira



# NATURAL RUBBER

- Natural rubber is most commonly imported into Wales in the form of tyres (29%). Latex also makes up for a significant quantity of imports (17%). Welsh imports of natural rubber total 10,000 tonnes each year.
- The average land area required each year to produce Welsh demand for natural rubber is 8,500 hectares. This is equivalent to just over half the land area of Cardiff.
- 26% of natural rubber imported into Wales is from Indonesia, where GHG emissions from land use change associated with its production totals 17,300 tonnes CO<sub>2</sub>e each year.
- Natural rubber imports present significant risk. 65% of the natural rubber land footprint falls in countries that are high or very high risk for deforestation and/or social issues, including China, Côte d'Ivoire, Indonesia and Malaysia.



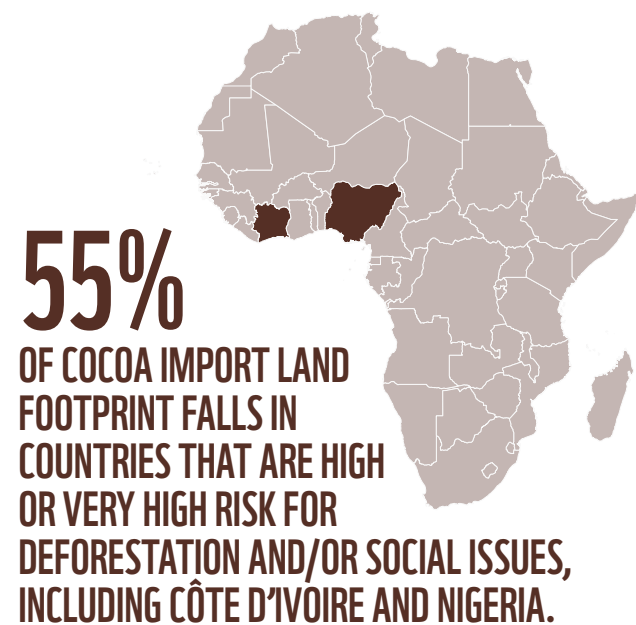
**OF WELSH NATURAL RUBBER IMPORTS  
ARE IN THE FORM OF TYRES.**





# COCOA

- Cocoa is more commonly imported into Wales in the form of chocolate (38%) as opposed to raw cocoa beans (31%). Welsh annual imports total 15,000 tonnes.
- The average land area required each year to produce Welsh demand for cocoa is 48,200 hectares. This is equivalent to an area the size of Wrexham county, or double the land area of Bridgend.
- GHG emissions from land use change associated with the production of cocoa for Welsh imports total 68,800 tonnes CO<sub>2</sub>e each year<sup>6</sup>.
- Wales imports the majority of its cocoa from West African countries, where there are risks of deforestation and social issues, such as child labour. In total, 55% of cocoa import land footprint falls in countries that are high or very high risk for deforestation and/or social issues, including Côte d'Ivoire and Nigeria.
- Welsh imports of cocoa are 5% of the UK total cocoa imports, and Welsh consumption of cocoa products is slightly higher per capita than the rest of the UK<sup>7</sup>.





## RECOMMENDATIONS

# WE CALL ON THE WELSH GOVERNMENT TO ACT URGENTLY TO DO EVERYTHING WITHIN ITS DECISION-MAKING ABILITY AND POWER TO HELP ELIMINATE DEFORESTATION, HABITAT LOSS AND ASSOCIATED SOCIAL IMPACTS FROM ITS SUPPLY CHAINS THROUGH THE FOLLOWING ACTIONS:

- Account for and report on the significant greenhouse gas emissions caused by Wales overseas as a result of the deforestation and habitat loss associated with Welsh imports of commodities.
- Strengthen the Welsh Government Economic Contract - which develops a relationship with business around responsible growth and practices – to require signatories to commit to supply chains that are free from deforestation, conversion and social exploitation.
- Introduce, in Welsh procurement policies, a requirement for supply chains to be free from deforestation, conversion and social exploitation, as part of the transition to utilising locally produced and sustainable goods.
- Support Welsh farmers to eliminate imported livestock feed that is linked to deforestation and habitat conversion overseas, and design the Sustainable Farming Scheme so that it incentivises farmers to adopt nature and climate friendly farming methods, such as organic, agroecological or agroforestry systems.
- Design the imminent Community Food Strategy so that it both drives and rewards local sustainable Farm & Fishing to Fork supply chains and prioritises only sustainable goods from overseas to support livelihoods at home and abroad.
- Support international projects and initiatives aimed at preserving and restoring forests in the main commodity-producing countries.
- Work with the UK Government to ensure that new trade agreements will guarantee high environmental and social standards, particularly around deforestation, accompanied by strict enforcement measures.



The Welsh Government, businesses, and consumers have already acted upon some of the issues highlighted in this report. This includes the government passing the Well-being of Future Generations (Wales) Act, which requires Wales to establish itself as a globally responsible nation, businesses setting commitments to tackle deforestation and habitat loss in supply chains, and consumers increasingly demanding certified sustainable commodities. But despite this progress, there are still substantial risks embedded within Wales' supply chains that need to be addressed.

We urge the Welsh Government, businesses, financial institutions and consumers to take bold actions to bring about the rapid transition towards greener, more sustainable and resilient supply chains. There are significant opportunities for breaking the link between Wales' commodity imports, and deforestation and social exploitation.

## WE CALL ON COMPANIES...

to develop concrete, time-bound and ambitious action plans and policies to commit to supply chains that are free from deforestation, conversion and social exploitation.

## WE CALL ON FINANCIAL INSTITUTIONS...

including Welsh public sector pension funds, to develop concrete, time-bound and ambitious action plans and policies that commit to ensuring any lending or investments are free from deforestation, conversion and social exploitation.

## WHAT CAN CITIZENS DO?

- Check labels and buy certified products where possible. For example, FSC-certified wood, furniture and paper, RSPO certified products containing palm, such as soap or bread, and Fairtrade or Rainforest Alliance chocolate and products containing cocoa, and organic or Pasture for Life certified 100% grass-fed beef, poultry, lamb and dairy products.
- Write to your local Member of the Senedd asking them to support our calls for Wales' supply chains and commodity imports to be deforestation-free.
- Demand greater transparency and action from your supermarket and favourite brands to ensure that the products you enjoy are not associated with deforestation, and/or social issues such as child or forced labour.





METHODS

The method used in this report was developed by consultancy 3Keel, using publicly available data sources. It is intended to be replicable to allow the data to be compared year by year, and across different commodities and countries. The precise method used to calculate imports and the land required to supply them varies to some extent from commodity to commodity, depending on production process, use and data availability. Since there is no import and export data available that is specific to Wales, this report builds on the UK Risky Business and Riskier Business reports, and allocates commodity quantities and land footprints to Wales depending on how Welsh consumption, livestock populations, and GDP differ to the rest of the UK. Key steps taken are outlined below.

STEP 1

Quantify UK imports of each commodity, using the UN COMTRADE database. This includes imports where the commodity is an ingredient (such as palm in soap products) and embedded (such as soy in chicken meat).

STEP 2

Estimate provenance of UK imports by going further down the supply chain and analysing trade data for those countries re-exporting a commodity to the UK. For example, where UK is importing a commodity from a country known not to be a producer (such as palm from the Netherlands), examining Dutch imports of palm to establish true provenance.

STEP 3

Estimate land required to supply UK imports of commodities. For agricultural commodities, this involves sourcing crop yield data for each year, country, and commodity which Wales imports, and assigning a land footprint accordingly. For timber, pulp and paper, which is harvested intermittently, net annual increment data is used, which is the increase in the volume of timber in a forest per hectare per year, and which in effect accounts for the area of forest needed to produce a given amount of timber in a year.

STEP 4

Calculate GHG emissions from commodity-driven land use change. This report uses the Direct Land Use Change Assessment Tool, developed by Blonk Consultants, to estimate the commodity specific per-hectare Co2e emissions factor.

STEP 5

Allocate Welsh share of UK imports by comparing how Welsh demand for commodities imports differs from the rest of the UK. This is done by analysing Welsh and UK data on consumption (such as DEFRA Family Food Survey data), livestock numbers (since some commodity imports are used as livestock feed), and GDP (which is used where there is no other reliable and complete dataset for allocating imports). Depending on the commodity and year, 3-6% of UK imports have been allocated to Wales, with the highest allocated being soy, partly due to Wales’ large livestock sector.

STEP 6

Assign each country from which Wales imports commodities a risk rating for deforestation and/or social risks. A country risk rating is a combined score from a countries score in four indices:

- 1. Extent of tree cover loss (from Global Forest Watch data)
- 2. Deforestation rate (from UN FAO)
- 3. Labour rights (from ITUC)
- 4. Rule of Law (from World Bank)

The lowest possible score is 4 (very low), and highest is 12 (very high risk).

REFERENCES

1. <https://science.sciencemag.org/content/361/6407/1108>

2 This figure is an underestimate due to missing GHG emission from land use change data from some key sourcing countries.

3 <https://gov.wales/sites/default/files/publications/2019-04/ecological-and-carbon-footprint-of-wales-report.pdf>

4. This study uses UK-wide livestock soy consumption and farm management data to estimate the Welsh share of UK soy imports, due to limited data specific to the Welsh context. This means soy figures do not take into account any potential differences in farm management systems in Wales compared to the rest of the UK, such as a higher proportion of grass fed cattle.

5. Soy for direct human consumption, such as soy oil, make up a very small proportion of soy imports and generally come from much lower risk areas compared to soy for livestock feed. This is due to a requirement in European markets for direct human consumption soy to be non-GMO, which is generally grown in lower risk countries.

6 This estimate does not include emissions from Côte D'Ivoire, for which there was not sufficient data.

7 DEFRA Family Food Survey Data





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