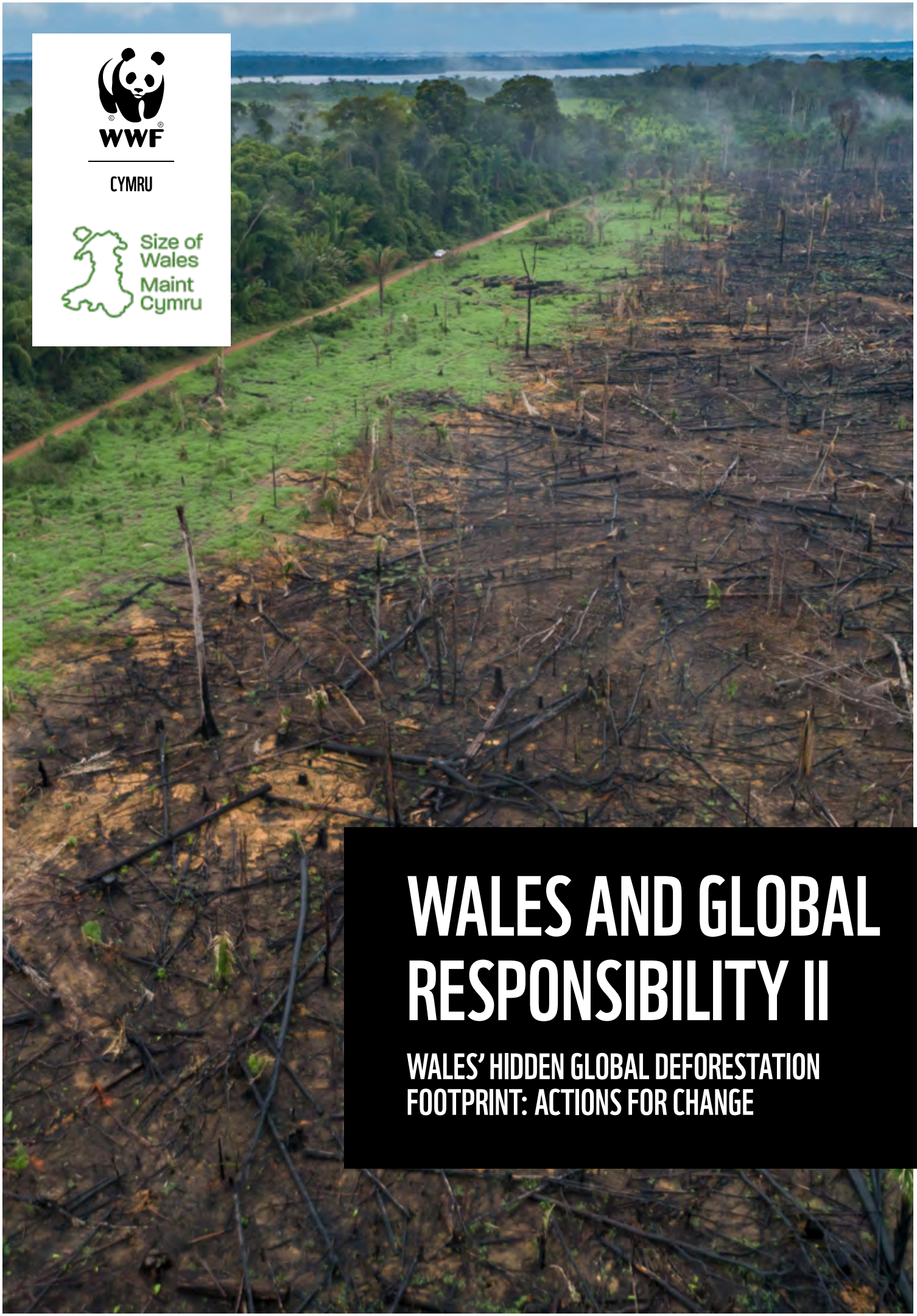


WALES AND GLOBAL RESPONSIBILITY II

WALES' HIDDEN GLOBAL DEFORESTATION FOOTPRINT: ACTIONS FOR CHANGE

AUTHORS

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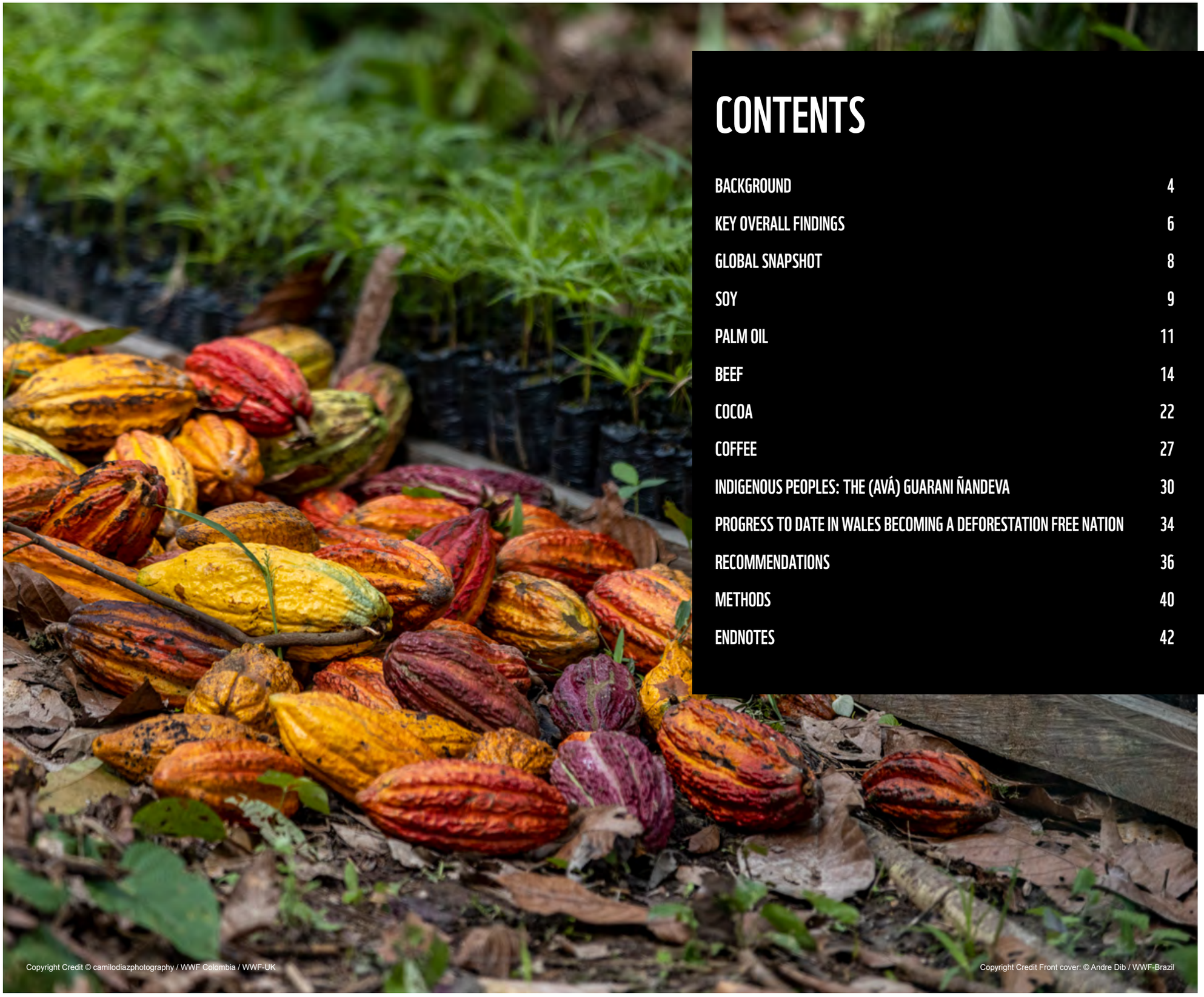
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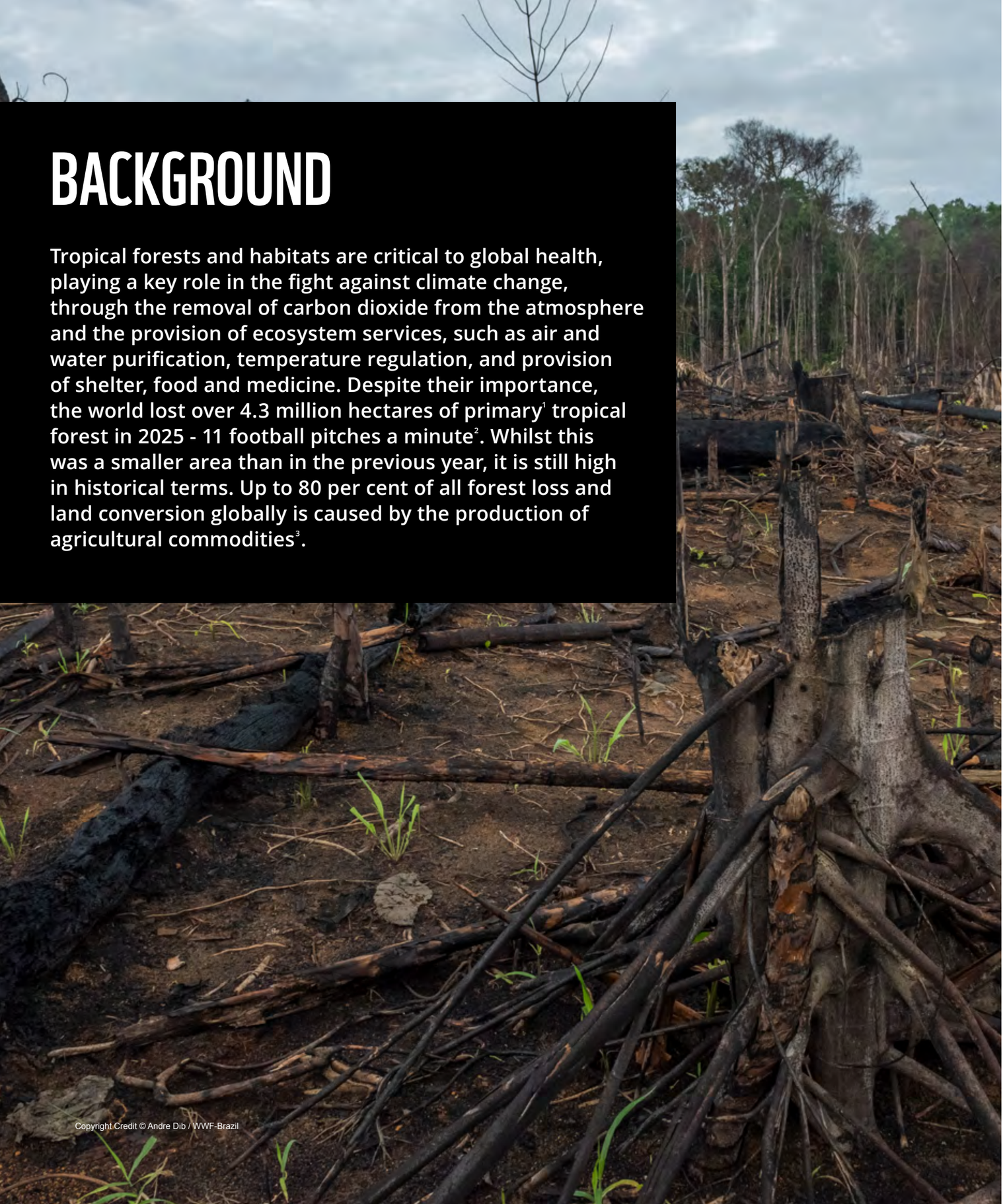
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BACKGROUND

Tropical forests and habitats are critical to global health, playing a key role in the fight against climate change, through the removal of carbon dioxide from the atmosphere and the provision of ecosystem services, such as air and water purification, temperature regulation, and provision of shelter, food and medicine. Despite their importance, the world lost over 4.3 million hectares of primary[1] tropical forest in 2025 - 11 football pitches a minute[2]. Whilst this was a smaller area than in the previous year, it is still high in historical terms. Up to 80 per cent of all forest loss and land conversion globally is caused by the production of agricultural commodities[3].



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Wales imports significant quantities of agricultural and forest commodities, some of which are driving deforestation, habitat destruction and social impacts overseas. These commodities are both consumed in Wales and traded on to other countries. They are commonly found in our everyday lives, such as the "hidden" soymeal that is fed to the chicken and pork we eat, the palm oil used in soap or margarine, or the coffee we drink for our morning pick-me-up. Through rising greenhouse gas emissions (GHGs), impacts on water availability and local weather, and the destruction of ecosystems, deforestation undermines the resilience and security of the supply chains that Wales' citizens rely upon[4], driving up food prices and creating supply chain volatility.

In 2021, the COP26 Glasgow Leaders declaration committed 146 countries to "halt and reverse forest loss and land degradation by 2030 while delivering sustainable development and promoting an inclusive rural transformation." Despite this high-level commitment, and despite voluntary initiatives including ethical certification, corporate commitments and market incentives, the rate of commodity-driven land use change does not appear to be declining, and the negative impacts on local people, especially Indigenous Peoples and nature, continue. Meanwhile, there have been delays in passing the secondary legislation in Westminster that would bring the UK Forest Risk Commodities (FRC) Regulation into being, and implementation of the EU Deforestation Regulation (EUDR) has been delayed but is now expected to come into force on 30th December 2026 for large and medium operators and 30th June 2027 for small enterprises. At the time of writing, the UK government has confirmed that it will introduce secondary legislation to implement deforestation due diligence requirements under the UK's Environment Act 2021 with further details to be announced over the coming months.

In addition to tackling the climate and nature crisis and safeguarding current and future generations, 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 under the Well-being of Future Generations (Wales) Act, 2015[5]. Here, Wales has a statutory duty to consider how its practices impact global habitats, but we also have an opportunity to demonstrate global leadership towards driving sustainability across commodity supply chains around the world.

This report provides an analysis of Wales' demand for "forest-risk" commodities that are driving deforestation and habitat conversion in the countries in which they are produced, contributing to biodiversity loss, increasing GHG emissions and social issues. We focus on five agricultural commodities – cocoa, palm oil, beef, soy, and coffee. For each, we assess the provenance, land footprint, and risk of deforestation associated with Wales' imports. This is an update of the original Wales and Global Responsibility, published in 2021[6], this time omitting non-food commodities. As Wales' former Climate Change Minister, Julie James said at the time, "We absolutely have to do something to diminish and hopefully eliminate our footprint abroad as well as at home[7]." This update allows us to track what progress has been made and assess what now needs to be done.

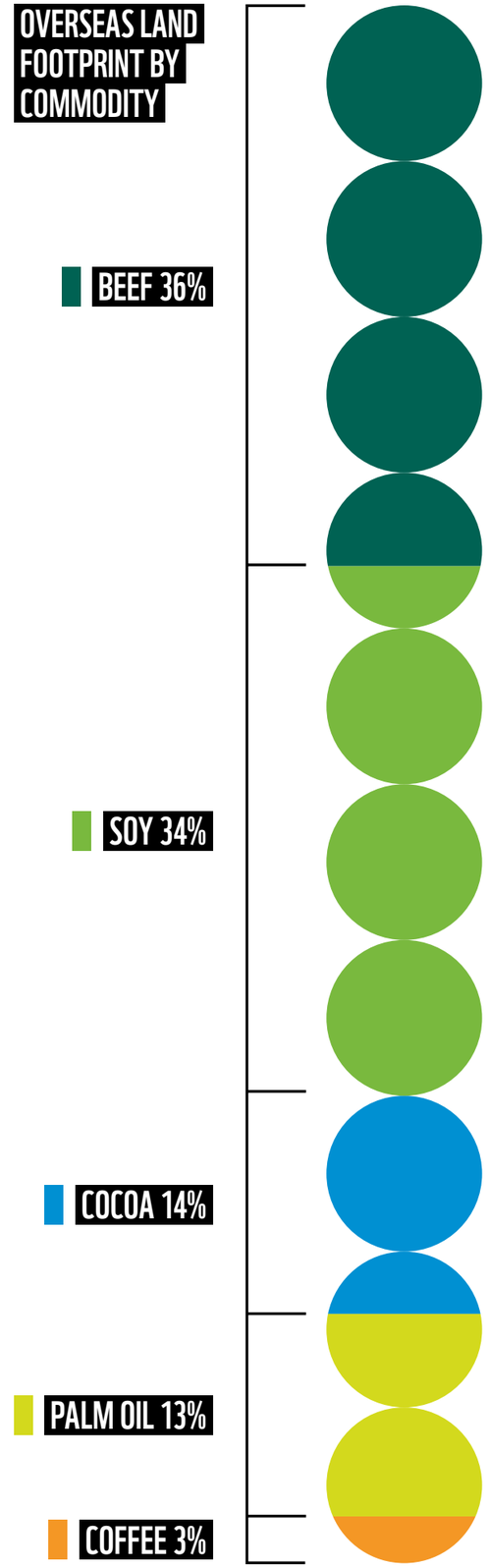

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KEY OVERALL FINDINGS

An area the size of Pembrokeshire and Ceredigion combined (338,977 hectares) was required to grow Welsh imports of just five commodities: soy, palm oil, cocoa, beef and coffee in an average year between 2011-25. This represents a slight decrease from an average of 352,000 hectares per year between 2011 and 2018, largely reflecting a reduction in beef imports, which have by far the largest land footprint of the five commodities.

SINCE THE ORIGINAL REPORT (WHICH COVERED 2011-18), THERE HAS BEEN A SIGNIFICANT DECREASE IN BEEF IMPORTS AND LAND FOOTPRINT, WITH SOY INCREASING SIGNIFICANTLY AND THE REMAINING COMMODITIES ESSENTIALLY UNCHANGED OVER THE PERIOD. THE INCREASE IN SOY IS DRIVEN IN PART BY THE LARGE INCREASE IN INTENSIVE POULTRY PRODUCTION IN WALES.

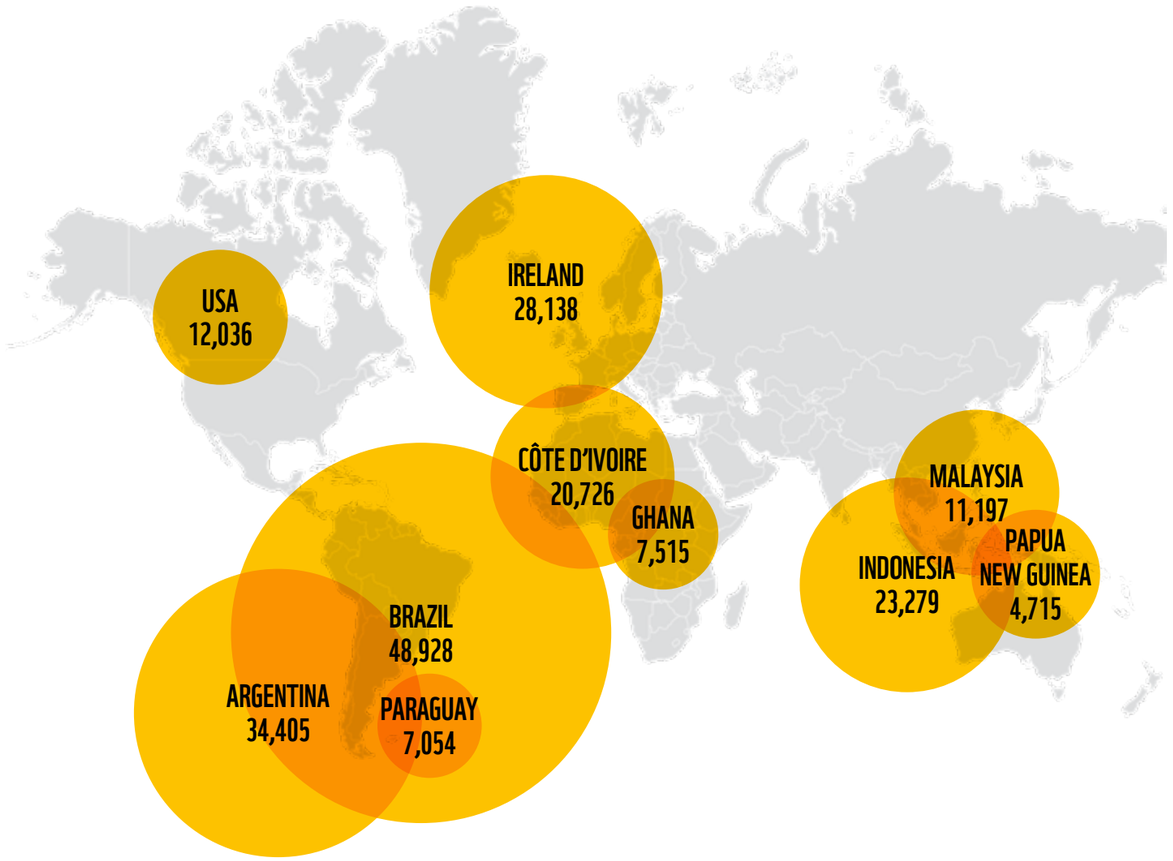
- The largest footprints are beef and soy, at an average of 121,000 hectares and 114,000 hectares per year respectively. Just these two agricultural commodities have a combined footprint that is equivalent to the area of Carmarthenshire.
- Nearly half of the area (47 per cent), an area the size of Pembrokeshire, is in countries that are categorised as high- or very-high risk for deforestation and serious social issues. This means that commodity supply chains supplying Wales in these countries risk deforestation, conversion of natural ecosystems, and/or social issues such as child and forced labour and the abuse of Indigenous Peoples' rights.
- Palm oil and coffee are the commodities that are most likely to come from high- or very-high-risk producer countries. At least 81 per cent and 76 per cent respectively of the land area used to grow these commodities are in countries that are considered high- or very-high risk. However, the overall area of high-risk production for soy (70,000 hectares, or 63 per cent of soy's total land footprint) is nearly twice that of palm oil.



AVERAGE ANNUAL GHG EMMISSIONS LINKED TO DEFORESTATION IMPORTS INCREASED TO 1.40 MILLION TONNES OF CO_2e

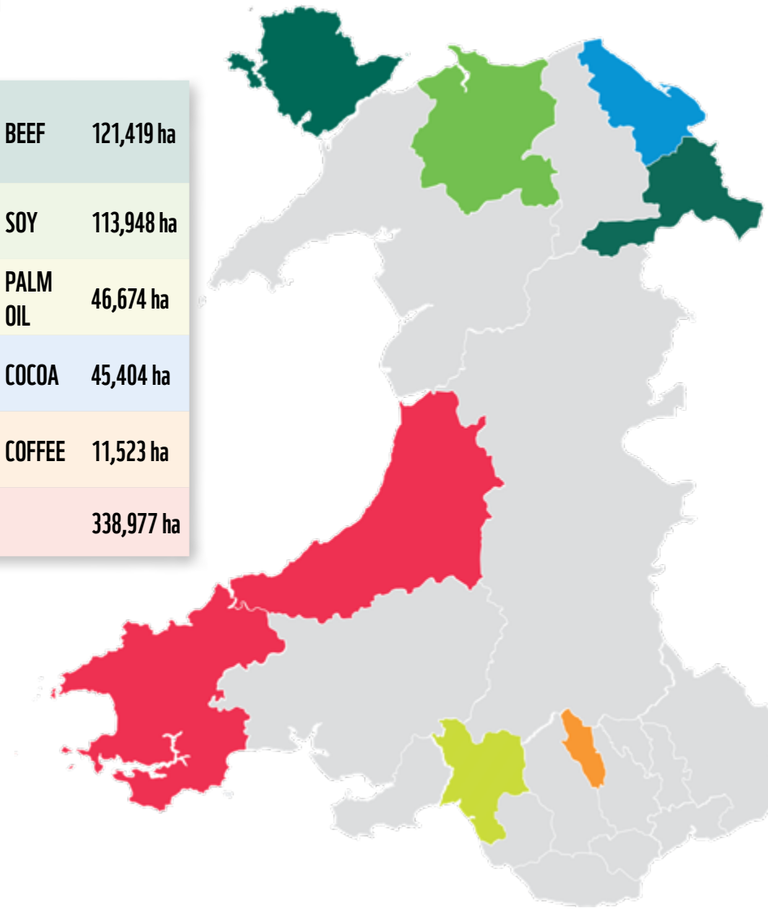
- Between 2019 and 2025, the annual greenhouse gas (GHG) emissions linked to the conversion of forests and other natural ecosystems to produce soy, coffee, cocoa and palm oil consumed in Wales averaged 1.40 million tonnes of CO2e. This is equivalent to approximately 25% of Wales's transport emissions in 2023[8]. The average has increased slightly from 1.37 million tonnes of CO2e[9] per year during the 2011–2018 period.
- The largest land footprint from Wales' imports is Brazil, with nearly 49,000 hectares. This is due to imports of soy, beef and coffee. Wales also has significant footprints in Argentina (soy), Ireland (beef), Indonesia (palm oil and coffee) and Côte d'Ivoire (cocoa).

WALES' LARGEST LAND FOOTPRINTS ABROAD TOP 10 COUNTRIES IN HECTARES



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

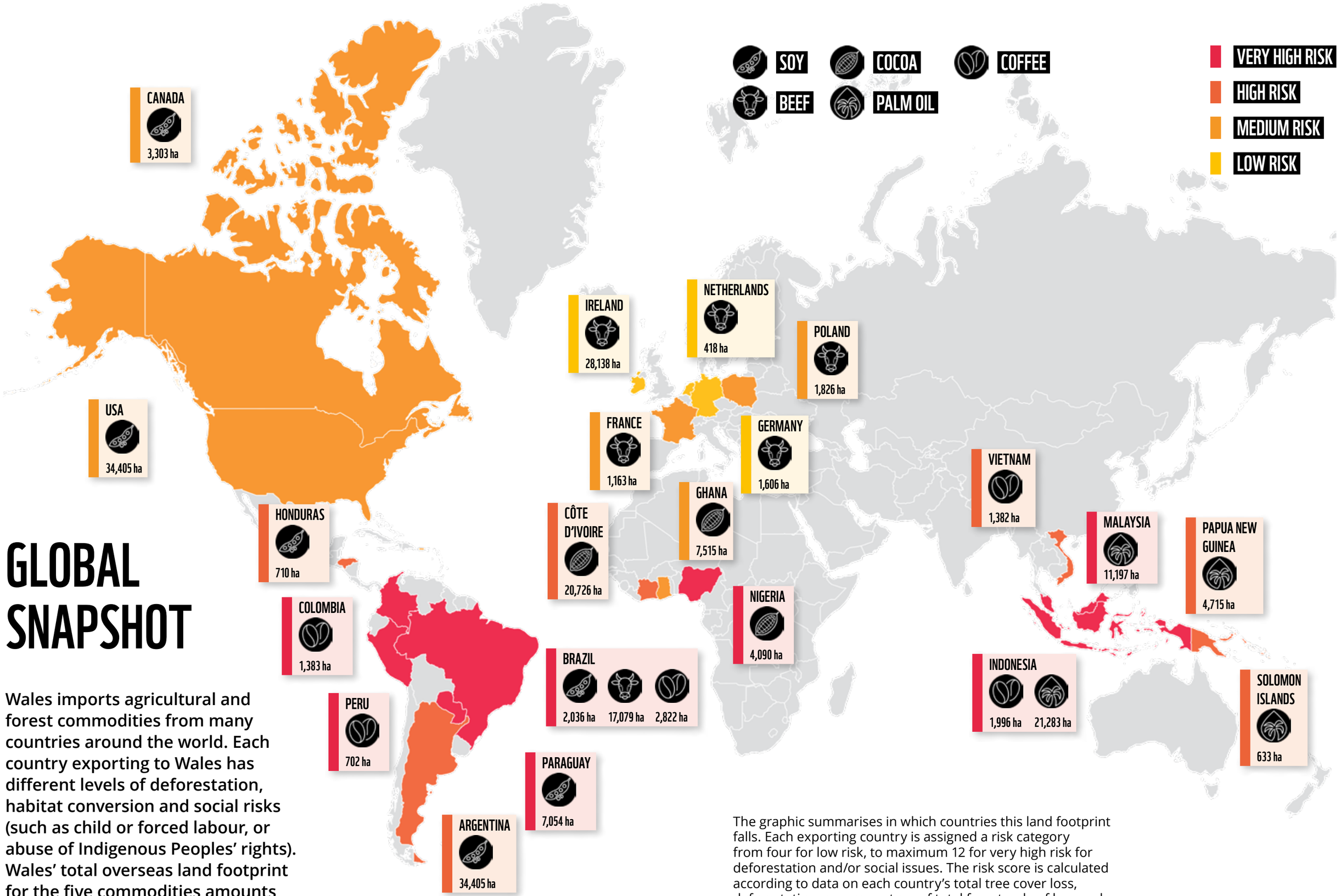
WREXHAM COUNTY PLUS THE ISLE OF ANGLESEY	BEEF	121,419 ha
CONWY	SOY	113,948 ha
NEATH PORT TALBOT	PALM OIL	46,674 ha
FLINTSHIRE	COCOA	45,404 ha
MERTHYR TYDFIL	COFFEE	11,523 ha
PEMBROKESHIRE PLUS CEREDIGION	TOTAL	338,977 ha





GLOBAL SNAPSHOT

Wales imports agricultural and forest commodities from many countries around the world. Each country exporting to Wales has different levels of deforestation, habitat conversion and social risks (such as child or forced labour, or abuse of Indigenous Peoples' rights). Wales' total overseas land footprint for the five commodities amounts to 338,977 hectares each year.



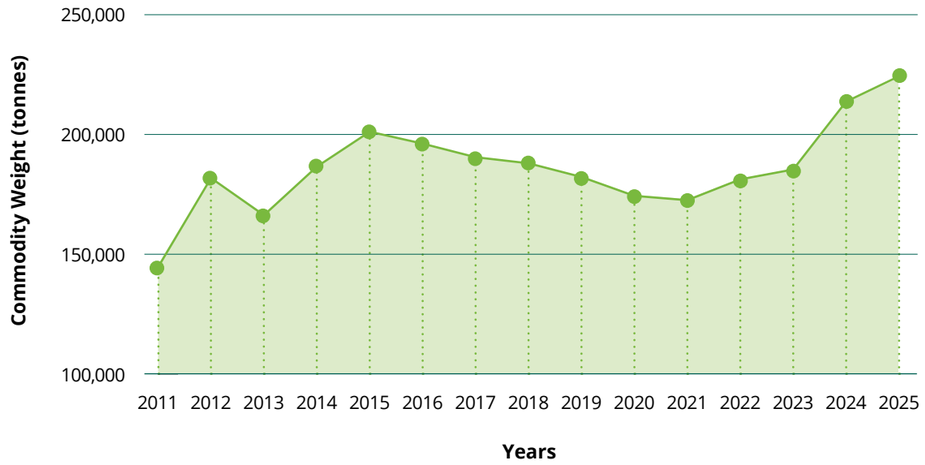
The graphic summarises in which countries this land footprint falls. Each exporting country is assigned a risk category from four for low risk, to maximum 12 for very high risk for deforestation and/or social issues. The risk score is calculated according to data on each country's total tree cover loss, deforestation as a percentage of total forest, rule of law, and labour standards - see the methods section for more detail.

SOY

- **Most imports are in the form of meal (69 per cent) and beans (22 per cent) for livestock feed.** Only around nine per cent of imports are in products that are directly consumed by humans, such as tofu, soy milk and embedded soy in imported animal products, e.g. chicken imported from Thailand.
- Soy imports have increased steadily since 2011, with an average year on year increase of over 2,000 tonnes. **This can be explained by Wales having an increased number of poultry housed in intensive poultry units (IPUs) - 8.1 million in 2011 to 12.1 million in 2025 - and indeed an increasing share of the UK's poultry production (up from 5 per cent to 6.6 per cent)[10].**

WALES IS RESPONSIBLE FOR IMPORTS OF 186,000[12] TONNES OF SOY A YEAR

FIGURE 2: CHANGE IN WALES' IMPORTS OF SOY 2011-25 THE INCREASE IS STATISTICALLY SIGNIFICANT



Copyright Credit © Size of Wales / Soy fields in Parana that now cover the Atlantic Forest

OVERALL, WALES' SHARE OF UK SOY IMPORTS IS AROUND SIX PER CENT, HIGHER THAN ITS SHARE OF BOTH THE UK'S GDP AND POPULATION AND EXPLAINED BY WALES' COMPARATIVELY LARGE LIVESTOCK SECTOR.

- The Welsh poultry industry is estimated to be responsible for consuming 52 per cent of Wales' imported soy feed for livestock, followed by dairy (27 per cent). Both of these sectors have increased their share (and overall quantity) since the previous report (where estimated consumption was 48% and 20% for poultry and dairy respectively).
- The majority of this land footprint – at least two thirds – falls in countries that are high or very high risk for deforestation and/or social issues including Paraguay, Brazil, and Argentina. The sourcing profile has barely changed over time, with the concentration of supply from high- and very-high risk countries.
- A recent estimate suggests that just 22 per cent of the UK's soy imports are verified deforestation and conversion free[11]. A further 46 per cent is related to sustainability standards but may not be physically certified itself; this does not ensure that the material actually imported is free from deforestation or serious social issues. (See Table 1 for a comparison of the soy supply chain models operated by RTRS). Similar proportions are likely to apply to Wales.
- GHG emissions from land use change, such as deforestation, for growing Welsh imports of soy total nearly 1.02 million tonnes of CO2e each year. This is nearly all from land use change in Latin America – Argentina, Brazil and Paraguay.

FIGURE 3: FIGURE: OVERSEAS LAND FOOTPRINT FOR SOY 2011-25

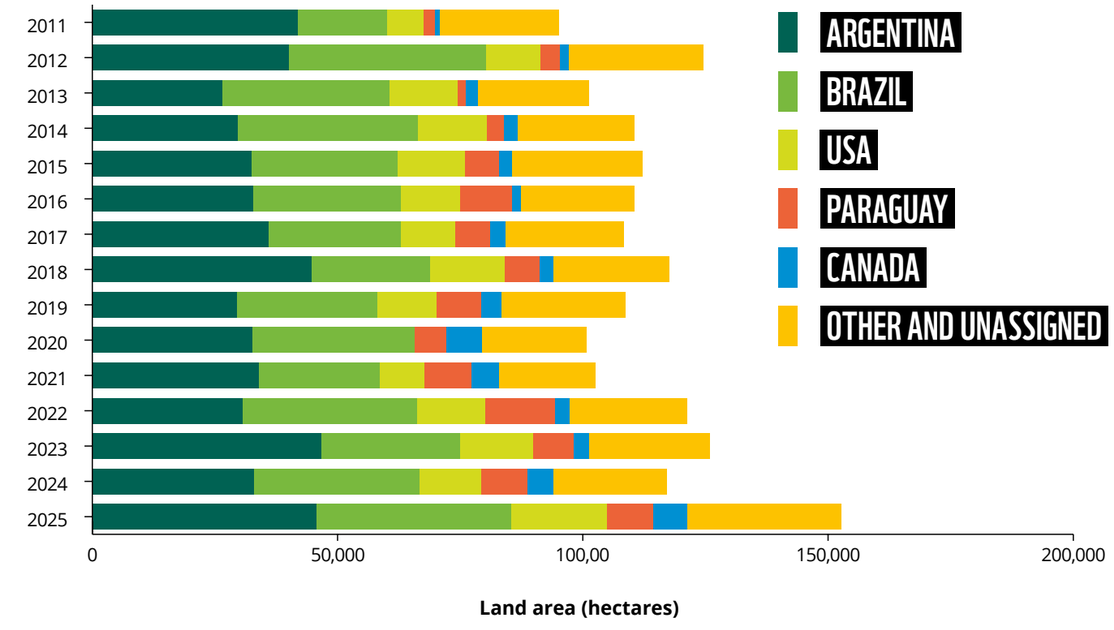


TABLE 1: SUPPLY CHAIN CERTIFICATION MODELS UNDER THE RTRS STANDARDS (ROUNDTABLE ON RESPONSIBLE SOY)[13]

RTRS Certification Model	What this means	Pros / Cons
Segregation Chain of Custody	Certified soy is kept separate from non-certified soy throughout the supply chain. Mixing with conventional soy is not allowed.	This means all soy in the final product is certified sustainable, though it may come from multiple sources. Strongest certification model. Supports traceability and reduces deforestation risk. More expensive than Mass Balance / Credits
Mass Balance Chain of Custody	Certified and non-certified soy can be physically mixed at any point.	Cheaper than Segregation. Inclusion of non-certified soy carries an increased risk of deforestation and habitat conversion.
RTRS Credits	Companies buy credits (or certificates) from certified producers to support sustainable production but may continue to source uncertified soy for use in their products. The credits system is separate from the physical supply chain.	Supports sustainable production as a first step. Cheapest option, but also the weakest. Does not support traceability. "Business as usual" model - does not contribute to companies changing their consumption of deforestation-risk soy.



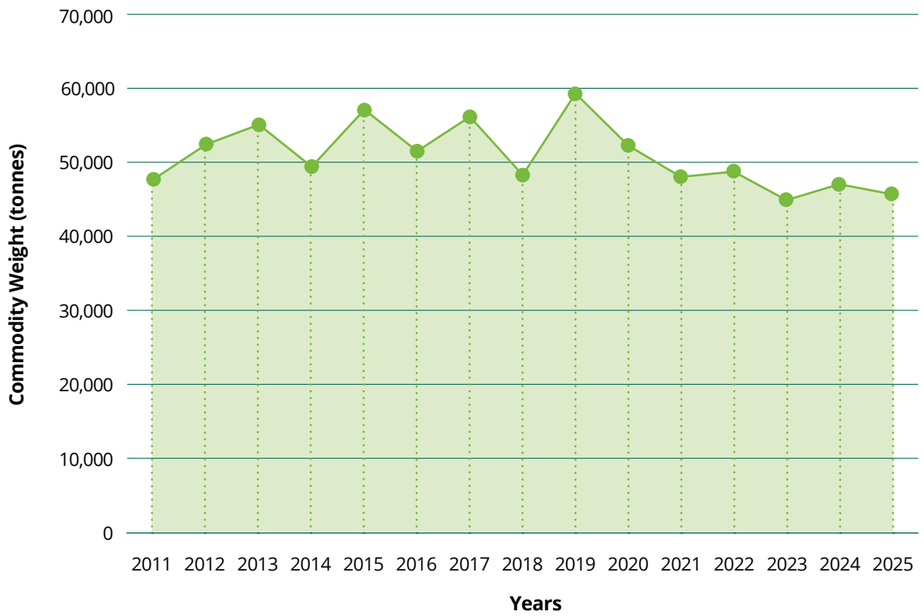
THE AVERAGE LAND AREA REQUIRED OVERSEAS EACH YEAR TO PRODUCE WELSH SOY IMPORTS IS 113,948 HECTARES. THIS IS EQUIVALENT TO AN AREA THE SIZE OF CONWY.

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PALM OIL

- Wales is responsible for imports of 51,000 tonnes of palm oil, palm kernel oil and palm kernel meal each year.
- Most imports are in the form of meal (38 per cent), which is used as animal feed, and palm oil (36 per cent) which has numerous uses in cooking, bakery, ready meals, chocolate, confectionery and personal hygiene products, such as soap.
- There has been no change in the quantity of imports since 2011.

FIGURE 4: WALES' ESTIMATED IMPORTS OF PALM OIL, PALM KERNEL OIL AND PALM KERNEL MEAL 2011-25

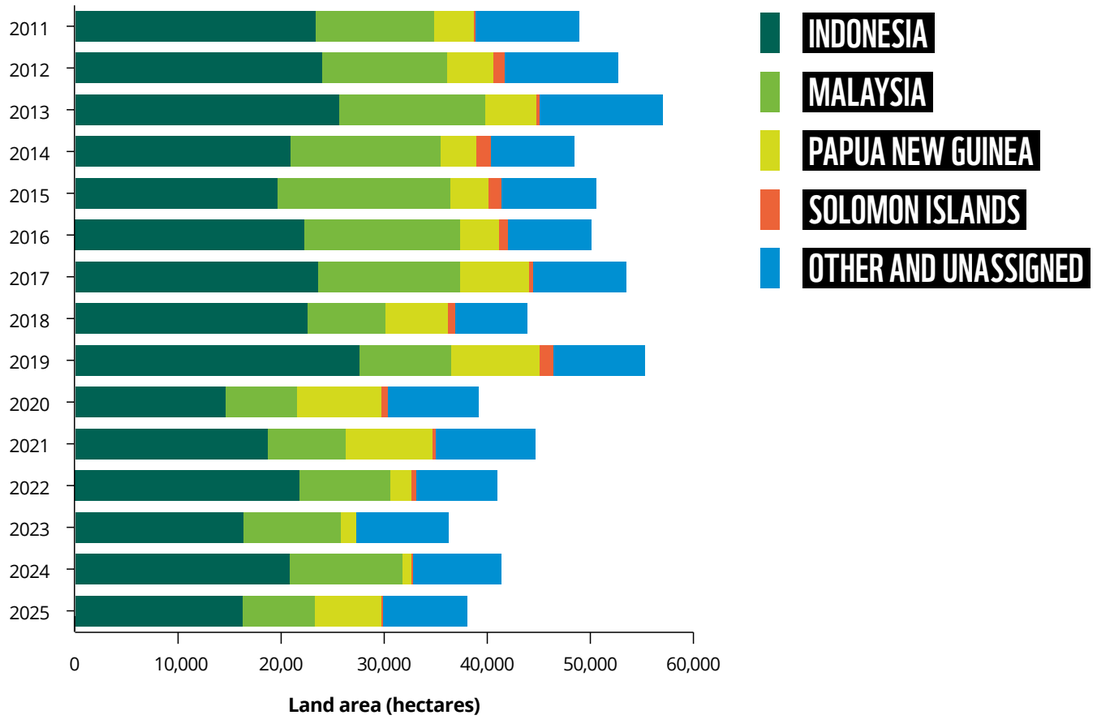


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- Over the whole time period, 81 per cent of this land footprint has been in countries with a high or very high risk for deforestation and/or social issues, including Indonesia, Malaysia, Papua New Guinea and the Solomon Islands. **This makes palm oil the highest risk commodity that Wales imports. The sourcing profile has barely changed over time, with the concentration of supply from high and very-high risk countries.**
- Around 58 per cent of imports of palm oil and palm kernel oil are certified by the Roundtable on Sustainable Palm Oil (RSPO) with a supply chain that ensures that the material traded is certified (i.e., segregated certified)[14]. RSPO certification provides some degree of assurance that deforestation, slave and child labour are not involved in palm oil production. However, these imports cover only 22 per cent of all palm oil imports, when embedded palm oil and palm kernel meal are taken into account[15].
- Some palm oil products are included within the proposed UK FRC regulation and also part of the EUDR. If these laws are brought into force/implemented respectively, this is likely to bring about a very significant reduction in the environmental impacts of the UK's imports of palm oil.

FIGURE 5: WALES' OVERSEAS LAND FOOTPRINT FOR PALM OIL, PALM KERNEL OIL AND PALM KERNEL MEAL



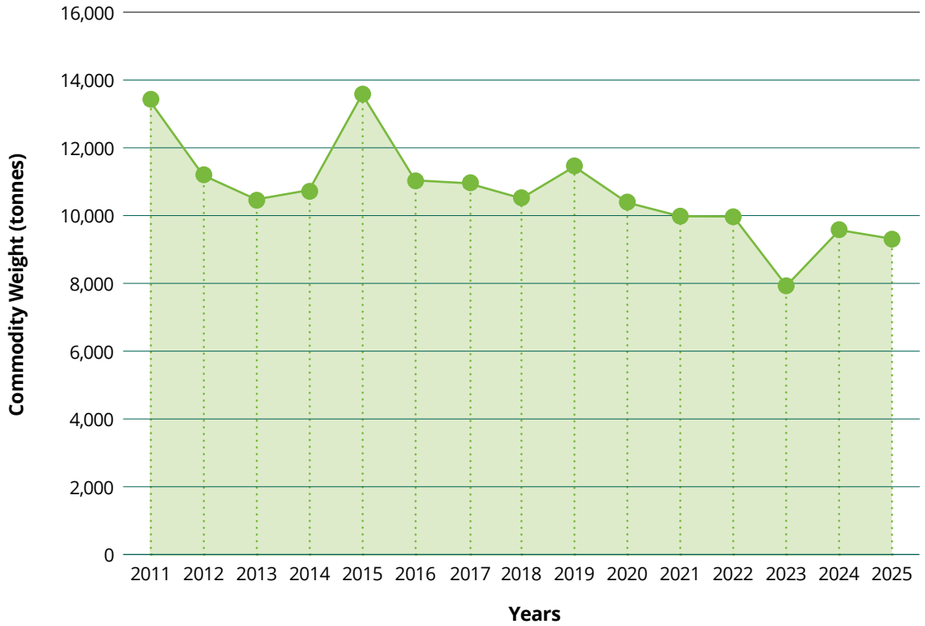


- GHG emissions from land use change, such as deforestation, for growing Wales' imports of palm oil, palm kernel oil and palm kernel meal average 180,000 tonnes of CO2e each year. This is the equivalent of the annual emissions from around 100,000 cars in Wales[16].
- Nearly two-thirds of these emissions (63 per cent) are from deforestation in Indonesia.

BEEF

- Wales' was responsible for imports of 10,700 tonnes of beef each year on average between 2011-2025. There has been a steady decline in imports since 2011, when imports were 13,400 tonnes compared with 9,300 in 2025.

FIGURE 6: ESTIMATED IMPORTS OF BEEF THE DECLINE IN IMPORTS IS STATISTICALLY SIGNIFICANT



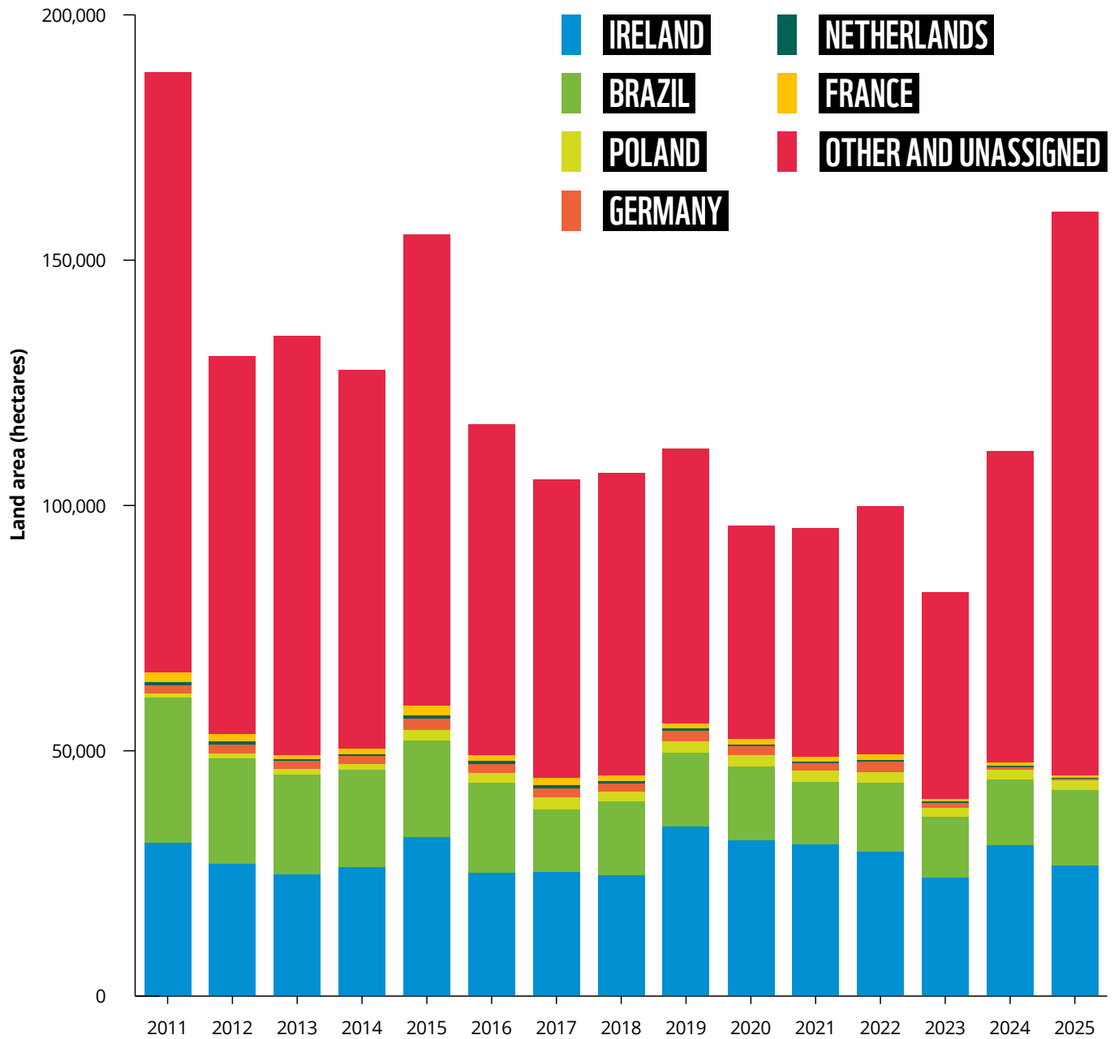
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- Just over half of the imports (52 per cent) are in the form of fresh or chilled beef. The rest is frozen or in processed meat products such as corned beef.
- There are no voluntary certification schemes for beef that work at any scale, meaning that options are limited for companies buying beef from high-risk countries.
- 14 per cent of beef imports are from Brazil, which has a high risk for deforestation and serious human rights issues. This is down from 26 per cent sourced from high-risk countries between 2011-18, reflecting that beef imports are not only decreasing, but they are also increasingly coming from lower risk countries within the EU.

HOWEVER, WALES STILL CONSUMES A DISPROPORTIONATE AMOUNT OF CORNED BEEF (8 PER CENT OF THE UK'S TOTAL IN 2025[17]) AND MORE THAN A THIRD OF CORNED BEEF IMPORTS (37 PER CENT) COME FROM BRAZIL, INDICATING THAT SPECIFIC POCKETS OF HIGH RISK REMAIN

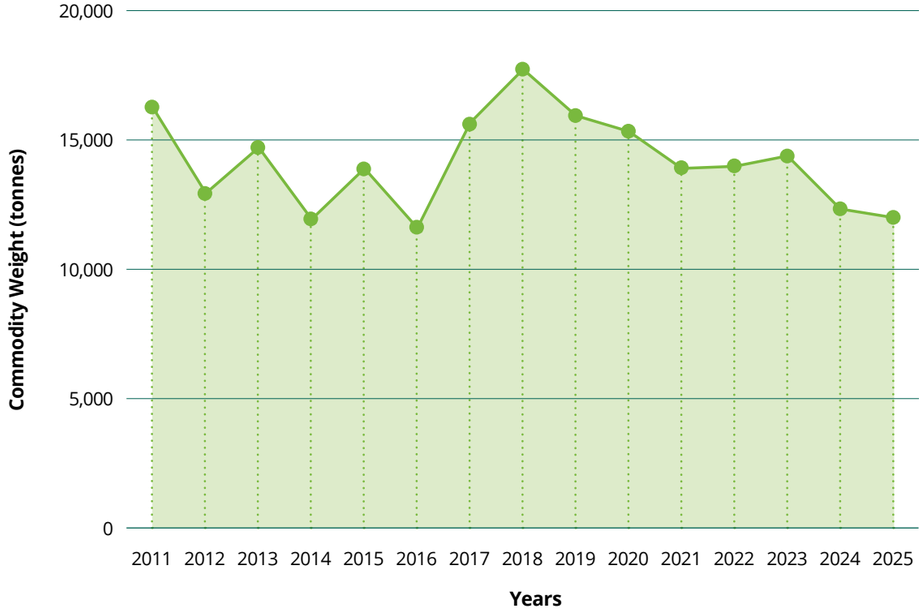
FIGURE 7: WALES' OVERSEAS LAND FOOTPRINT FOR BEEF



COCOA

- Welsh annual imports total 14,000 tonnes of cocoa. There has been no discernible change in the quantity imported between 2011-25.

FIGURE 8: WALES' ESTIMATED IMPORTS OF COCOA

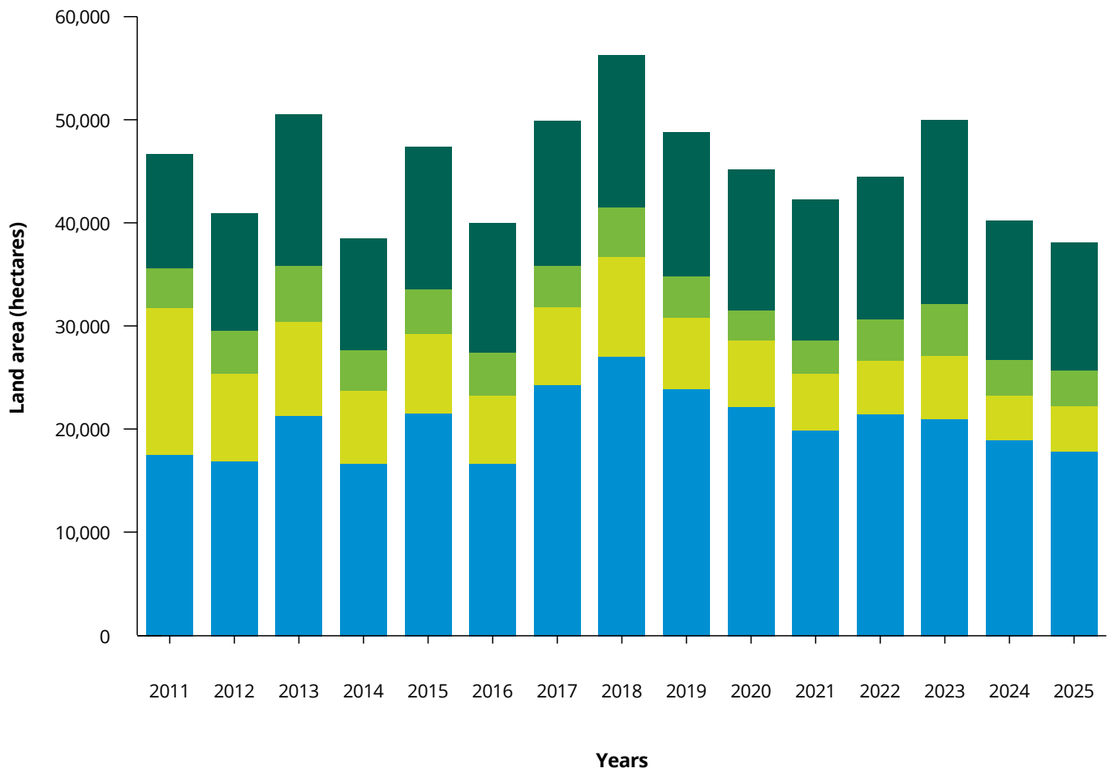


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- Wales' imports of cocoa come predominantly from West Africa, with 45 per cent arriving from Côte d'Ivoire alone.
- At least 54 per cent of the land area is in countries with high- or very-high risk of deforestation and serious social issues, in particular Côte d'Ivoire and Nigeria. Sadly, child labour and forced labour are frequently reported from the cocoa farms in these countries. The risk profile has worsened since 2011, with an increasing proportion of supply coming from Côte d'Ivoire and a decrease from Ghana, which is rated as medium risk.
- The major third-party certification schemes are Fairtrade, Rainforest Alliance and organic. Although UK-specific data is not available, as of 2019, 47.3 per cent of global production was certified under one or other of these schemes[18].
- Some cocoa products are included within the proposed UK FRC regulation and also part of the EUDR. If these laws are brought into force/implemented respectively, this is likely to bring about significant reductions in the environmental impacts of the UK's imports of cocoa.
- GHG emissions from land use change associated with the production of cocoa for Welsh imports total 164,000 tonnes CO2e each year. This is the equivalent of the annual emissions from around 96,000 average petrol cars in the UK.

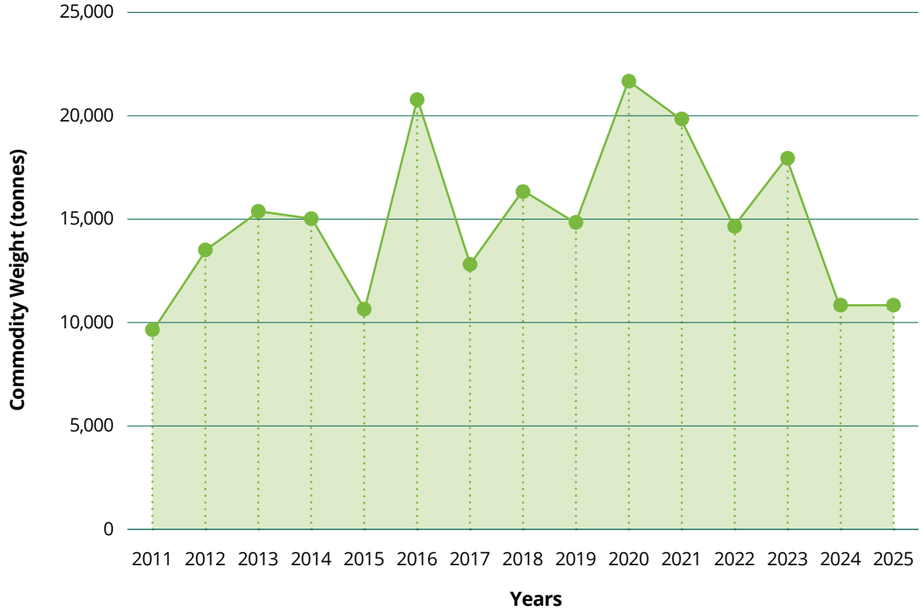
FIGURE 9: WALES' OVERSEAS LAND FOOTPRINT FOR COCOA



COFFEE

- Welsh annual imports total 14,990 tonnes of coffee. There has been no discernible change in the quantity imported over the period.

FIGURE 10: ESTIMATED IMPORTS OF COFFEE.



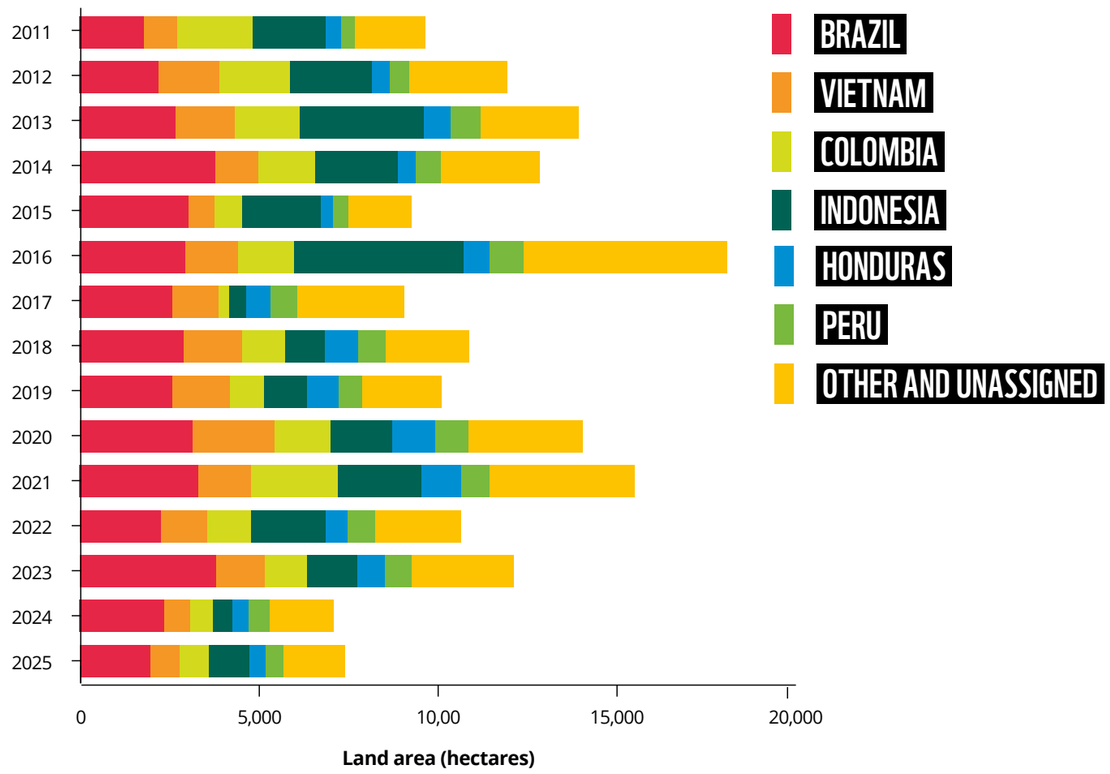
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- **At least three quarters (76 per cent) of the land area is in countries with high- or very-high risk** of deforestation and serious social issues, in particular Brazil, Vietnam, Indonesia, Colombia, Honduras and Peru. The risk profile has remained constant over the period.
- A number of Voluntary Sustainability Systems operate within the coffee sector, including Fairtrade, Rainforest Alliance, organic and a plethora of less well-known schemes. Although data for the UK is not available, an estimated 55% of global coffee supply was certified in 2022[19]. This figure is a theoretical maximum, as it does not exclude coffee certified by more than one scheme[20].
- Some coffee products are included within the EUDR. It is, at present, likely to be excluded from the UK FRC regulation, which is likely to prevent any significant reductions in the environmental impacts of the UK's imports of coffee.
- GHG emissions from land use change associated with the production of coffee for Welsh imports total 20,000 tonnes CO2e each year. This is the equivalent of the annual emissions from around 11,700 average cars in Wales.





FIGURE 11: WALES' OVERSEAS LAND FOOTPRINT FOR COFFEE



INDIGENOUS PEOPLES: THE (AVÁ) GUARANI ÑANDEVA

The Guarani Ñandeva are one of three main sub-groups of the Guarani people in Brazil and a Size of Wales partner since 2021. Numbering in the thousands, they are historically rooted in the southern Atlantic Forest region. Like many other Indigenous Peoples in Latin America, they have suffered historical persecution, displacement, decimation from imported diseases, forced conversion to Christianity and coerced integration into mainstream society.

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Their struggles continue to this day, with their ancestral lands threatened by the expansion of cattle ranching and soy cultivation to feed the insatiable demand of the global livestock industry. Whilst there is no way of knowing for sure whether soy and beef grown on Guarani land is entering Wales, we were able to establish that there is a realistic risk that this is happening.

Brazil's Instituto Socioambiental provides maps of all Indigenous People's lands in Brazil[21]. We included all of the Indigenous Territories that are associated with the Guarani Ñandeva, irrespective of whether they were officially demarcated or whether they were still going through the complex legal process towards demarcation. We then compared the municipalities of these Indigenous Territories with the municipalities from which soy and beef are shipped directly to the UK, using TRASE data[22].

We found that 34 municipalities that include Guarani Ñandeva land are supplying the UK with soy and/or beef directly. A proportion of this soy and beef is likely to be entering Wales, as Wales by and large does not have its own dedicated commodity supply chains, but instead receives material that is imported to the UK as a whole. The quantities are relatively small, at 7,480 tonnes of soy and 435 tonnes of beef but nonetheless require a significant land area to produce them: a combined area of over 7,000 hectares. And these imports are estimated to have caused 18.5 hectares of deforestation in 2022 alone.

There are two important caveats here. Firstly, production within a municipality that contains an Indigenous Territory does not mean that the production was from within the Territory or affected it. However, it does mean that there is a risk that it did, and at the moment there is no mechanism for Welsh companies to prove that their soy imports are not coming from municipalities in Indigenous Territories. Therefore, it is even more important that Welsh imports are better accounted for in the proposed UK FRC regulation. Secondly, the direct imports of soy from Brazil are just a small fraction (c. 20 per cent) of all of the Brazilian soy that comes to Wales or the UK, as the majority is imported from third party countries like the Netherlands, Germany or Ireland. This means that the quantities coming from municipalities that contain Indigenous Territories are likely to be much higher than we can identify from the available data, which also increases the risk that soy from Indigenous Territories is entering Wales.

STORIES FROM THE FRONTLINE OF DEFORESTATION: THE GUARANI PEOPLE, BRAZIL

The Guarani are one of the most populous Indigenous Peoples of Brazil, whose ancestral territory is in Brazil's Atlantic Forest[23]. The Atlantic Forest contains about 5 per cent of the world's biodiversity in plant and animal species and is considered a priority region for environmental conservation – one of the five global hotspots[24]. The forest's rivers and springs are responsible for the vast majority of Brazil's freshwater supply, serving 130 million people[25]. However, the Atlantic Forest and the Indigenous people who inhabit this biome are threatened by the expansion of agribusiness in the region, especially soy monoculture. Historically, the forest used to cover 1.2 million km2 – about a quarter the size of the Amazon. Today, as a consequence of multiple forms of colonisation, centuries of deforestation, land-use change and urban expansion, less than 10 per cent of this precious habitat remains in protected areas and patches of fragmented forest[26], often surrounded by mono-crop plantations.


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In Guarani culture, people's lives are intertwined and connected to the lives of all other beings in the forest. They don't see themselves as separate from nature. They feed, protect and respect the earth, plants, animals and insects, regarding their lives as equal and never seeking to gain power over nature, nor to exploit it.

> "TO MAINTAIN, OUR NHANDEREKO - OUR WAY OF LIFE - THE FORESTS AND ALL THEIR BEINGS MUST ALSO BE KEPT ALIVE."
> INDIGENOUS LEADER, FROM THE COMISSÃO GUARANI YVYRUPA

However, powerful economic forces are destroying and exploiting the forest for soy production. The Guarani fight to protect their lands and, as a result, they experience discrimination, abuse, threats and intimidation daily[27].

Many have been murdered, and if their villages are close to soy plantations, they are routinely sprayed with pesticides, seriously affecting the health of their children, plants and animals. Spiritual landmarks have been flooded and villages destroyed to grow crops such as soybeans, which are exported and used as animal feed.


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> "IN BRAZIL, THE INDIGENOUS PEOPLES, THE ORIGINAL PEOPLES OF THIS LAND, HAVE ALWAYS SUFFERED A LOT OF VIOLENCE. THEY LOST THEIR LANDS AND WERE MURDERED BECAUSE OF COLONIZATION. AND TODAY, OUR RIGHTS ARE STILL BEING ATTACKED. OUR LANDS AND OUR FORESTS CONTINUE TO BE DESTROYED. AND WE EVEN LOST OUR LIVES BECAUSE OF VERY POWERFUL ECONOMIC INTERESTS."
> INDIGENOUS LEADER, FROM THE COMISSÃO GUARANI YVYRUPA

To protect their culture, existence, and as such, their forests, the Guarani people need the global support of governments, NGOs, businesses and civil society. The Guarani people call on people worldwide to support their struggle to protect forests and restore their ancestral lands - to listen to the voices of those who have a unique knowledge of how to care for forests. For businesses this means respecting internationally recognised human rights frameworks, such as the United Nations Declaration on the Rights of Indigenous Peoples. It means ensuring that the products and commodities they buy, such as soy, do not infringe upon these rights. For example, requiring suppliers to have full traceability of their forest-risk supply chains or documentation of Free, Prior and Informed Consent for commodities grown on Indigenous lands. It means doing all they can within their operations and procurement practice to reduce tropical deforestation and land conversion to protect Indigenous communities and tackle the climate and nature crises.

These are real ways to strengthen the protection of the place where we all live - the forests, the rivers. This fight is not just for the Guarani people, but for everyone. It is a fight for the good life, a fight for the life of the Planet.

For more information about the impact of soy on the Avá Guarani People and how that soy can lead to environmental harm in Wales, read the "Food, Forest and Injustice: The Hidden Link Between Wales and Brazil"

PROGRESS TO DATE IN WALES BECOMING A DEFORESTATION FREE NATION

Wales has made progress in advancing deforestation free procurement and more sustainable supply chains, with leadership emerging across government, local authorities, schools, and businesses.

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The Welsh Government has incorporated deforestation and land conversion criteria into its Procurement Sustainability Risk Assessment tool and has strengthened global responsibility requirements through the inclusion of deforestation free criteria in the Statutory Guidance[28] of the Social Partnership and Procurement (Wales) Act. At the local level, councils such as Caerphilly County Borough Council and Monmouthshire County Council have taken significant action by embedding mandatory deforestation free standards into food procurement frameworks and school meal sourcing. These measures include reducing ultra-processed foods, promoting higher welfare and organic produce, requiring certified sustainable palm oil and seafood, increasing plant-based options, and improving transparency in supply chains. The Future Generations Commissioner has also recommended that the Welsh public sector becomes fully deforestation free by 2028, helping to establish a clearer national direction[29].

Schools and young people have been central to driving practical change. Over 30 schools have become Deforestation Free Champion Schools, where pupils have audited school menus, explored the environmental impact of ingredients, and developed more sustainable recipes using forest-friendly alternatives. These initiatives have helped place young people at the centre of decision-making while demonstrating how behaviour change and education can support wider system transformation. Alongside this, Welsh businesses supplying public contracts are auditing high-risk commodities and exploring more responsible sourcing practices.
Wales has also continued to demonstrate international leadership on climate justice through partnerships supporting tree growing in Uganda and Indigenous-led forest protection projects in the Peruvian Amazon.

Despite this progress, important challenges and gaps remain. The latest Sustainable Farming Scheme does not explicitly address the use of imported soy feed and growing local feed alternatives, meaning there is currently no clear requirement or incentive for farmers to reduce reliance on commodities linked to deforestation. While local initiatives have shown that reducing soy use is achievable, this has not yet been embedded into national agricultural policy. Significant concerns also remain around finance and investment, with research showing that a large proportion of Welsh public sector pension investments remain exposed to deforestation-linked industries - nearly £1 in every £10 of investments made by the eight pension funds are at a high risk of financing deforestation[30]. Although monitoring and reporting processes are improving and engagement with pension funds on sustainability issues is taking place, there has so far been limited action to shift investments away from high deforestation risk sectors.

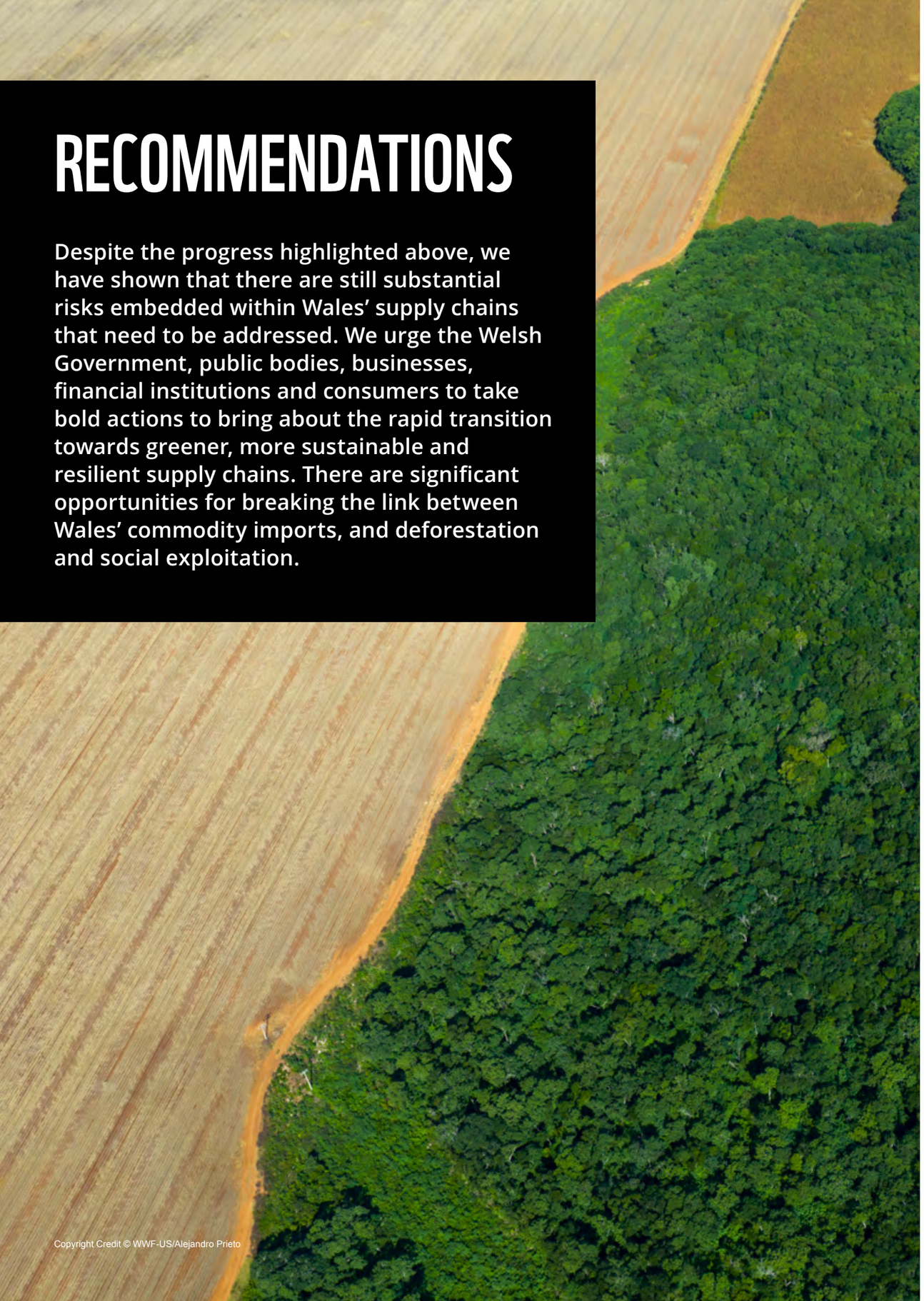
Overall, while Wales has established strong foundations and growing momentum, achieving a fully deforestation free approach will require stronger national targets, mandatory standards, greater action on sustainable agriculture, food and finance, and continued collaboration across the public and private sectors, as well as putting pressure on the UK Government to implement the UK Forest Risk Commodities regulation.





RECOMMENDATIONS

Despite the progress highlighted above, we have shown that there are still substantial risks embedded within Wales' supply chains that need to be addressed. We urge the Welsh Government, public bodies, 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.



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WELSH GOVERNMENT

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:

1. DEFORESTATION FREE PROCUREMENT AND ETHICAL SUPPLY CHAINS

Ensure strong adherence to the Statutory Guidance of the Social Partnership and Procurement (Wales) Act which includes deforestation free criteria. This is in line with the Future Generations Commissioner's 2025 report recommendation which states that the "Welsh public sector must become deforestation free by 2028, ensuring supply chains do not contribute to global deforestation, habitat loss or human rights violations, including child labour and the abuse of Indigenous Peoples' rights."

Increase the amount of responsibly sourced, deforestation free food and materials procured by public bodies, including certifications such as Fairtrade, RSPO Certified palm oil (i.e. Segregated or Identity Preserved), Organic and Pasture for Life. End the procurement of beef from high deforestation risk regions, such as South America.

Integrate imported deforestation and consumption emissions into Wales' carbon footprint and net zero targets.

2. DEVELOP A NATIONAL FOOD RESILIENCE PLAN WITH GLOBAL IMPACT

Create a cross-departmental food strategy that supports local, sustainable "farm to fork" supply chains and ethically sourced imports. This strategy should set targets for increasing local, regenerative and/or organic produce (including at least 20 per cent of Wales' farmland to be farmed organically by 2030), promoting less but better-quality meat and dairy, increasing plant based proteins, restricting ultra-processed foods (UPFs) and prioritising Fairtrade products.

Expand support for the Welsh Veg in Schools project to increase the use of organic fruit and vegetables produced in Wales in public sector catering - to reach 75 per cent of the Eatwell Guide's recommended fruit and vegetable consumption level by 2030.

3. SUSTAINABLE FARMING REFORM

Align the new Sustainable Farming Scheme (SFS) with deforestation free goals: support farmers to move away from imported soy and palm-based feeds that are driving deforestation and habitat loss overseas and promote local alternatives such as UK-grown legumes and grass-fed systems.

Promote agroecological practices such as agroforestry, regenerative and organic farming, and climate friendly systems that operate in harmony with the land and reduce the need for imported animal feed.

Better oversight of activities in river catchments by including all high input-high output livestock farming in Environmental Permitting Regulations (EPR), as well as reducing the threshold at which poultry units fall within EPR, and introducing effective requirements, including in the planning system, to prevent the cumulative effect of multiple livestock units. Support should also be offered to transition to lower impact production models. This will ultimately reduce the consumption of soy animal feed used in intensive poultry units (IPUs) and reduce Wales' global deforestation footprint.

4. TRANSFORM SCHOOL FOOD AND REDUCE ULTRA-PROCESSED FOODS (UPFS)

Update the Healthy Eating in Schools (Wales) Measure 2009 to include provisions for responsible sourcing of ingredients and restriction setting on UPFs.

Set targets to reduce UPFs in children's diets and boost fresh, local, and seasonal plant-based ingredients.

Engage students in school menu design and involve the whole school community, such as teachers, parents and carers, to increase uptake of free school meals, support wider behaviour change and help develop healthy eating habits.

5. EMBED GLOBAL CITIZENSHIP, CLIMATE AND FOOD EDUCATION

Fund climate education programmes that help young people learn about the importance of tropical forests and how best to protect them. For example, by supporting the Deforestation Free Champion Schools programme which teaches students about the impacts and solutions for forest-risk commodities and how we, in Wales and elsewhere, can reduce our impact on tropical forests, people and nature.

Embed practical food education across the curriculum, including food production from 'farm to fork', global food systems, food growing, preparation and cookery, to strengthen food literacy.

6. SHOW GLOBAL SOLIDARITY AND SUPPORT INDIGENOUS PEOPLES

Support international projects and initiatives aimed at preserving and restoring forests in the main commodity-producing countries that Wales relies upon.

Continue the vital work of the Wales and Africa programme to support local communities on the frontline of the climate and nature crisis, supporting resilience and climate adaptation through forest restoration and tree growing.

Support Indigenous Peoples through funding and recognition of their rights to protect tropical forests and biodiversity. This includes greater funding for their work, recognition of their rights, and opportunities to learn from their wisdom and knowledge which has led them to be the best guardians of Earth's forests. This builds on the UN Pact for the Future adopted in 2024 in New York.

7. UK LAW - ADVOCATE FOR MANDATORY DUE DILIGENCE

Put pressure on the UK Government to utilise legal powers gained from the passage of the Environment Act in 2021 to introduce secondary legislation that will allow the UK Forest Risk Commodities regulation to come into force to establish a due diligence system and remove deforestation from UK, and by extension, Welsh, supply chains.



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WELSH BUSINESSES AND ORGANISATIONS

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

Become a Deforestation Free Business Champion and take practical steps to reduce your exposure to deforestation risk, e.g., by using resources, such as Size of Wales' Deforestation Free Business toolkit.



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FINANCIAL INSTITUTIONS

We call on Welsh financial institutions including Welsh public sector pension funds, to identify how they are exposed to deforestation risks and impacts through their investments.

Set strong public policy, committing to eliminate deforestation, conversion, and associated human rights abuses within an ambitious timeframe, ideally no later than 2030.

Pension funds must engage with their asset managers and the clients/holdings they invest in to drive progress, by setting clear expectations for compliance and processes in place to redirect finance if sufficient progress is not made within a specific timeframe.

Pension funds can also transparently disclose their exposure to deforestation risk through their investment activities, as well as their progress towards eliminating these risks. This can also include reporting to pension fund members on the extent of deforestation risk in their pension, plan of action, timeframes and progress made. This should form part of their reporting duties under the Well-being of Future Generations (Wales) Act.

If progress is not made, and finance needs to be redirected, this redirected finance should align with the Well-being of Future Generations (Wales) Act, and be free from deforestation, conversion of natural ecosystems, and associated human rights abuses.

WELSH CITIZENS

WHAT CAN CITIZENS DO?

Eat less, but better-quality meat, dairy and eggs, e.g., products from nature-friendly farming, such as regenerative, organic or 100% pasture-fed systems.

Eat more plant proteins, such as beans, legumes and peas, supplementing a reduced intake of animal products with protein-rich plants.

Eat fewer ultra-processed foods (UPFs). UPFs often contain forest-risk palm oil and/or palm derivatives, such as preservatives and emulsifiers. Reducing consumption of UPFs is kinder to your gut and the planet.

If it is difficult to avoid palm oil, e.g. in products such as shampoo, soap, bread and margarine, look for products containing only RSPO fully certified palm oil (i.e. from Identity Preserved or Segregated supply chains, not Mass Balance nor RSPO credits). RSPO-Certified means the palm oil is fully traceable back to the original mill and has been produced under the RSPO growing standards.

Buy FSC-certified or recycled timber, paper and pulp products, e.g., furniture, paper and clothing made from viscose and rayon (made from wood pulp).

If buying farmed seafood, look for ASC-certified products. ASC certification requires farms to source feed from ASC-certified feedmills which have strict conditions around the provenance of soy-based feed, including obligations to remove deforestation and land conversion risk from their supply chains.

Encourage your school or council to become a Deforestation Free Champion.

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.

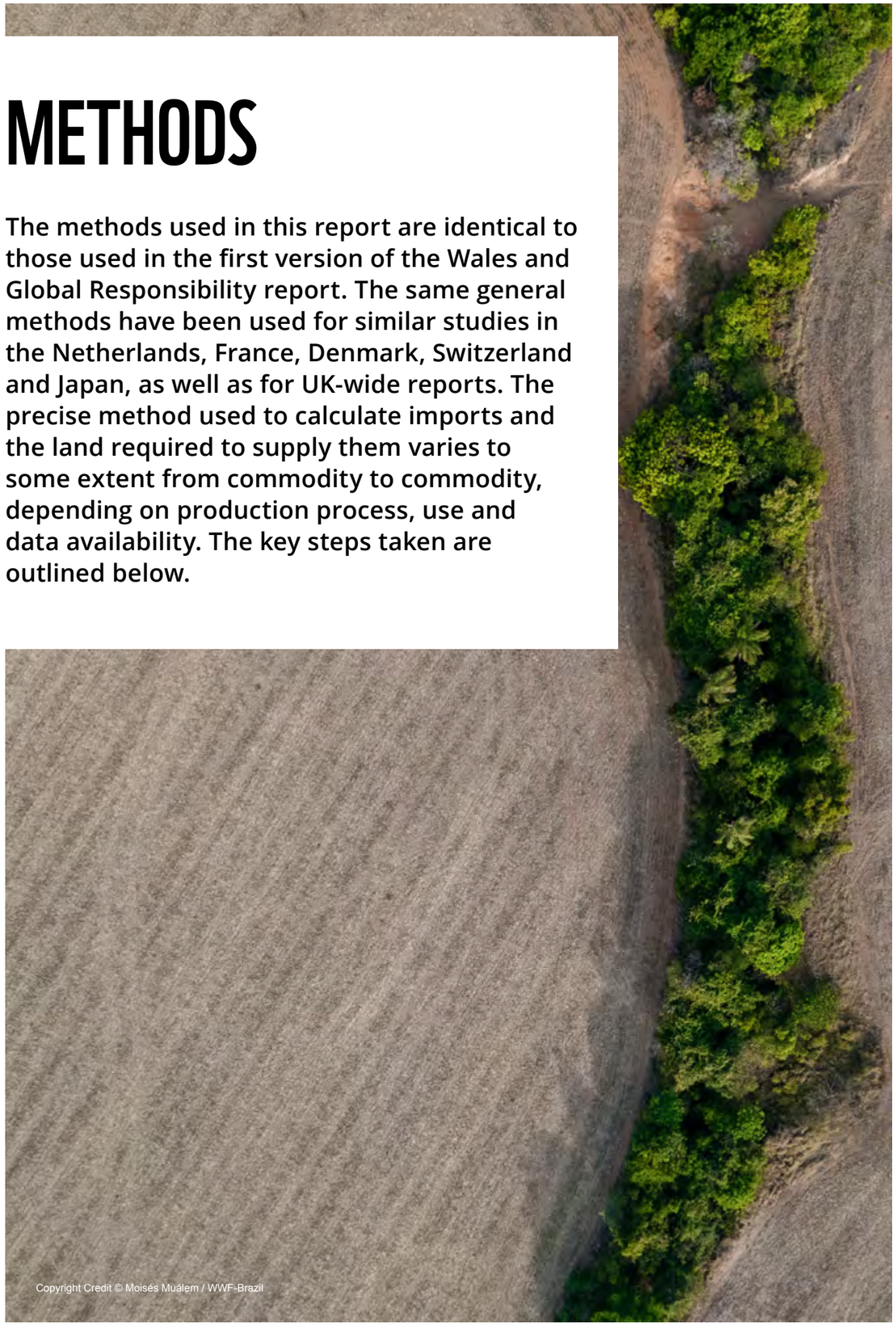
Demand greater transparency and action from your supermarket and favourite brands to ensure that the products you buy are not associated with deforestation, and/or social issues such as child and forced labour and abuse of Indigenous Peoples' rights.



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METHODS

The methods used in this report are identical to those used in the first version of the Wales and Global Responsibility report. The same general methods have been used for similar studies in the Netherlands, France, Denmark, Switzerland and Japan, as well as for UK-wide reports. 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. The key steps taken are outlined below.



Since there is no import and export data available that is specific to Wales, this report builds on the UK Risky Business[31] and Riskier Business[32] reports, and Wales and Global Responsibility[33], 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. The results are therefore specific to Wales.

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 the 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 of the palm oil that is imported by the UK from the Netherlands.

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.

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) and livestock numbers (since some commodity imports, such as soybean meal and palm kernel meal are used as livestock feed). Depending on the commodity and year, 4-6 per cent of UK imports have been allocated to Wales, with the highest allocated being coffee (6.4 per cent, due to high reported consumption in the Family Food Survey) and soy (5.4 per cent, largely driven by 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).

A note on comparability with the 2021 Wales and Global Responsibility report. There are small variances in the reported volumes of commodities imported between the two reports for the years in common (2011-18), generally in the region of ±3 per cent. Given that exactly the same products have been evaluated and exactly the same conversion factors used to estimate the proportion of commodity embedded manufactured goods or in livestock products, this indicates that the official trade statistics have been updated. Larger variances are found in the land footprint and risk profiles between the two reports. This is because of changed sourcing patterns.

ENDNOTES

1 Primary forest is forest that has never been logged and which has developed following natural disturbances and under natural processes, with high ecological and structural integrity.

2 Goldman, E., Sims, M., Carter, S. & Popatov, P. (April 29 2026). Tropical Rainforest Loss Slowed in 2025, but Fire is a Growing Threat to Forests Worldwide. World Resources Institute. https://gfr.wri.org/latest-analysis-deforestation-trends

3 WWF (2021). Farming with Biodiversity. Towards nature-positive production at scale. WWF International, Gland, Switzerland.

4 HM Government (2026). Global biodiversity loss, ecosystem collapse and national security. A national security assessment. https://assets.publishing.service.gov.uk/media/696e0eae719d837d69afc7de/National_security_assessment_-_global_biodiversity_loss__ecosystem_collapse_and_national_security.pdf

5 https://futuregenerations.wales/discover/about-future-generations-commissioner/future-generations-act-2015/

6 WWF Cymru, RSPB Cymru and Size of Wales (2021). Wales and Global Responsibility. https://www.wwf.org.uk/sites/default/files/2021-11/wwf_risky_b_wales.pdf

7 Messenger, S. (08 November 2021). Climate change: Wales imports 'cause deforestation'. https://www.bbc.co.uk/news/uk-wales-59199514

8 https://research.senedd.wales/research-articles/cars-cows-and-coal-welsh-emissions-from-1990-to-2023/

9 The data used to estimate GHG emissions does not include beef. See Methods section for further details.

10 UK Government Department of Environment, Food and Rural Affairs (2025). Livestock populations in the United Kingdom at June 1.

11 Efeca (2024). UK Roundtable on Sustainable Soya: Annual Progress Report 2023. https://www.efeca.com/wp-content/uploads/2023/12/UK-Soya-Annual-Progress-Report-2023-.pdf

12 The revised average from the original period in the Wales and Global Responsibility l (2011-18) is 182,000 tonnes per year. The average from 2019-25 is 191,000 tonnes per year. Therefore, the average for the whole period (2011-2025) is 186,000 tonnes. The rate of increase in soy is almost 2,500 tonnes per year for the whole period. There are small variances in the reported volumes of commodities imported between the two reports (2021 and 2026) for the years in common (2011-18), generally in the region of ±3 per cent. Given that exactly the same products have been evaluated and exactly the same conversion factors used to estimate the proportion of commodity embedded manufactured goods or in livestock products, this indicates that the official trade statistics have been updated.

13 https://responsiblesoy.org/material-rtrs?lang=en

14 Efeca (2022). Annual Progress Report UK Roundtable on Sourcing Sustainable Palm Oil. https://www.efeca.com/wp-content/uploads/2022/11/UK-RTSSPO-2022-Annual-Progress-Report-FINAL.pdf . See also the previous section for description of the different supply chain models used by certification systems.

15 Embedded refers to ingredients present in finished imported goods, rather than as raw ingredients.

16 An average petrol car in the UK registered in 2024 emitted 1.397 grammes CO2e per kilometre (UK Government VEH0156) and travelled on average 7,585 miles (https://www.racfoundation.org/media-centre/at-least-one-in-twenty-car-miles-driven-is-now-zero-emission), giving emissions of 1.71 tonnes per year. Note that this comparison is conservative, as older cars will typically have higher emissions.

17 Estimated from DEFRA Family Food Survey Data

18 Bermudez, S., Voora, V. Larrea, C. & Luna, E. (2022). Global Market Report: Cocoa prices and sustainability. Sustainable Commodities Marketplace Series. IISD.

19 https://coffeebarometer.org/documents_resources/coffee_barometer_2023.pdf

20 Sjoerd Panhuysen & Frederik de Vries (2023). Coffee Barometer 2023. https://coffeebarometer.org/documents_resources/coffee_barometer_2023.pdf. The cited figure is complex to interpret in that it is a theoretical maximum, as it does not exclude coffee certified by more than one scheme.

21 https://ti.socioambiental.org/#pesquisa

22 https://trase.earth/ Note that the most recent year for which data for both soy and beef from Brazil are available is 2022.

23 https://super.abril.com.br/mundo-estranho/quais-sao-os-povos-indigenas-mais-numerosos-do-brasil/

24 https://www.sciencedirect.com/science/article/pii/S2530064418301317

25 https://phys.org/news/2020-03-destruction-atlantic-forest-fragment-local.html

26 https://worldrainforests.com/mata-atlantica/

27 https://www.survivalinternational.org/news/11886

28 https://www.gov.wales/sites/default/files/publications/2026-03/social-partnership-and-public-procurement-wales-act-statutory-guidance-socially-responsible-procurement-srp.pdf

29 https://futuregenerations.wales/discover/about-future-generations-commissioner/future-generations-report-2025/

30 https://sizeofwales.org.uk/wp-content/uploads/2024/05/Saving-for-the-future-Size-of-Wales-public-pension-report.pdf

31 Risky Business (WWF, 2017) https://www.wwf.org.uk/sites/default/files/2017-10/WWF%20and%20RSPB%20-%20Risky%20Business%20Report%20-%20October%202017.pdf

32 Riskier Business (WWF, 2020) https://www.wwf.org.uk/sites/default/files/2020-07/RiskierBusiness_July2020_V7_0.pdf

33 Wales and Global Responsibility (WWF Cymru, RSPB Cymru and Size of Wales 2021) https://www.wwf.org.uk/sites/default/files/2021-11/wwf_risky_b_wales.pdf





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