

**GREENPEACE**

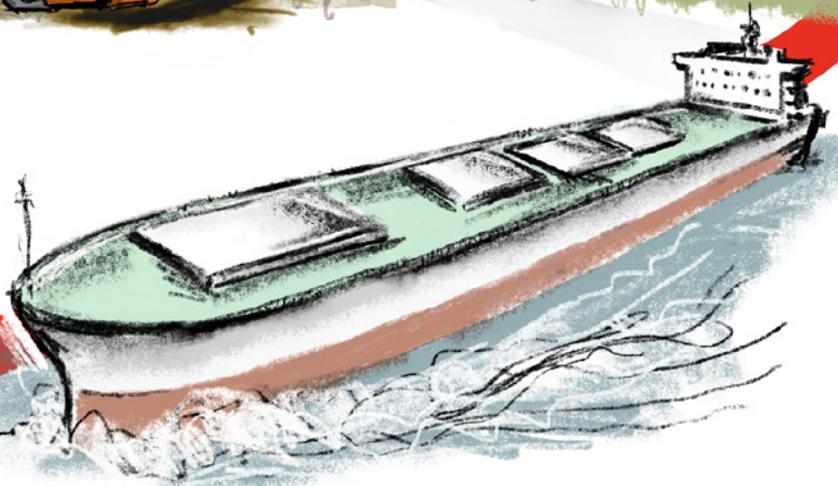
# **WINGING IT**

**HOW THE UK'S CHICKEN HABIT  
IS FUELLING THE CLIMATE AND  
NATURE EMERGENCY**





**FROM FORESTS  
TO OUR HIGH  
STREET: OUR  
BROKEN GLOBAL  
FOOD SYSTEM**



# MEAT: A GROWING THREAT TO CLIMATE AND NATURE

**“ DESPITE OUR COLLECTIVE EFFORTS, OUR INDUSTRY WILL FALL SHORT OF A 2020 GOAL TO ELIMINATE DEFORESTATION.**

Ruth Kimmelshue, Chief Sustainability Officer, Cargill <sup>1</sup>

The fires that raged through the Amazon in late 2019 – many started by farmers and cattle ranchers – have brought into stark relief the link between food production and the ongoing climate and nature emergency.

Some 80% of global deforestation is a result of agricultural production,<sup>2</sup> which is also the leading cause of habitat destruction.<sup>3</sup> Agriculture, forestry and other land uses are responsible for a quarter of global greenhouse gas (GHG) emissions.<sup>4</sup> Scientists warn that preventing climate breakdown and species extinction cannot be achieved without radical reforms to the way we produce, trade and consume food.<sup>5</sup>

Of all the things we eat, meat and dairy products have the most damaging effects on our environment. Animal agriculture – livestock and animal feed – is responsible for approximately 60% of food-related climate emissions<sup>6</sup> and is the most significant driver of deforestation.<sup>7</sup> Taking into account feed production, pasture and grazing land, livestock production uses 77% of agricultural land, despite providing only 17% of dietary energy and 33% of dietary protein.<sup>8</sup> What's more, this situation is unlikely to improve in the coming decades: meat consumption is forecast to rise 76% by 2050, including a doubling in the consumption of poultry, a 69% increase in beef and a 42% increase in pork.<sup>9</sup>

Most of the deforestation attributed to animal agriculture occurs in South America: in the Amazon, dry woodland biomes such as the Gran Chaco – South America's second-largest forest – and the Brazilian Cerrado.<sup>10</sup> Cattle ranching is a major driver of deforestation in these areas, but the overwhelming majority of Brazilian beef is consumed within Brazil<sup>11</sup> and the same is true for Argentina.<sup>12</sup> This makes soya – which is widely traded and used mainly for animal feed – a more significant component of many countries' deforestation footprint.<sup>13</sup> Even outside of deforestation-risk areas, industrial production of soya is

**90% OF SOYBEANS ARE USED IN ANIMAL FEED FOR MEAT AND DAIRY PRODUCTION.**

**“ SOYA USED IN ANIMAL FEED REPRESENTS 99% OF OUR TOTAL SOYA FOOTPRINT.**

Tesco, correspondence with Greenpeace, 24 September 2019

associated with a number of environmental impacts<sup>14</sup> such as biodiversity loss, decline in soil fertility and marine dead zones.<sup>15</sup>

An estimated 90% of soybeans produced globally are used as a protein source in animal feed for meat and dairy production.<sup>16</sup> Soya production has more than doubled since 1997,<sup>17</sup> driven by growing demand for animal feed to supply the factory farms that produce much of the meat and dairy sold by supermarkets and fast food chains – including within the UK.<sup>18</sup> Globally, just under half of all animal feed made from soybeans and other oilseed crops is consumed by chicken and other poultry.<sup>19</sup>



# TURNING FORESTS INTO CHICKEN FEED: THE UK'S DEFORESTATION FOOTPRINT

The UK imports roughly 3.2 million tonnes of soya each year, with a further 600,000 tonnes already embedded in imported meat and other products.<sup>20</sup> Data from the soya industry itself indicate that meeting the UK's annual demand for soya requires 1.4 million hectares (ha) of land<sup>21</sup> – an area larger than Northern Ireland. Approximately 68% of UK soya imports come from countries in South America, where soya is driving deforestation.<sup>22</sup>

**MEETING THE UK'S ANNUAL DEMAND FOR SOYA REQUIRES A LAND AREA LARGER THAN NORTHERN IRELAND.**

Like other European countries, the UK's consumption of soya for animal feed is a leading driver of its deforestation footprint<sup>23</sup> – the impact this country has on the world's forests. Data provided by the European Union (EU) in 2013 showed that soya imports represent 47% of Europe's deforestation footprint, compared to 14% for pasture expansion for livestock and 10% for palm oil.<sup>24</sup>

Chicken is by far the most popular meat in the UK<sup>25</sup> – and the biggest driver of our soya consumption.<sup>26</sup> The UK is the third largest producer of chicken in Europe,<sup>27</sup> slaughtering over one billion chickens annually.<sup>28</sup> 95% of these chickens are intensively farmed,<sup>29</sup> a model of production that relies upon industrial animal feed containing protein-rich crops such as soya.

People in the UK eat more than twice as much chicken as beef or lamb<sup>30</sup> – some 28 kg per person per year.<sup>31</sup> Over the past 20 years, overall demand for beef, lamb and pork has fallen sharply, but this drop has been offset by a 20% increase in consumption of chicken<sup>32</sup> – partly as a result of a switch from red meat driven

by health and environmental concerns.<sup>33</sup> In 2017, chicken overtook pork to become the most ordered meat in UK restaurants.<sup>34</sup> This shift is in line with the recommendations of the Committee on Climate Change (CCC), which has called for a 20% decrease in beef and lamb consumption, to be replaced by an increase in chicken and pork<sup>35</sup> – a change that may help lower the direct agricultural emissions of the UK, but doesn't account for impacts on the world's forests and global emissions, which fall outside the CCC's remit.

The rise in poultry consumption is being fuelled by companies competing to sell the cheapest chicken. Industry reports indicate a strong correlation between marketing and special offers and increases in chicken sales.<sup>36</sup> According to sectoral analysis by Kantar Research:

**CHICKEN STANDS OUT AMONG THE PRIMARY MEAT AND POULTRY CATEGORIES... PROMOTIONS ARE FUELLING GROWTH HERE, WITH CHICKEN BREASTS SEEING A 46% INCREASE IN PROMOTIONS AS PRICE CUTS DOUBLE. PROMOTED SALES OF LEGS ARE UP 158% WITH PRICE CUTS TREBLED COMPARED WITH LAST YEAR.<sup>37</sup>**

Given the clear links between chicken, soya and deforestation, companies have a responsibility to prove that the chicken they are selling us is not destroying the world's forests.

**CHICKEN IS BY FAR THE BIGGEST DRIVER OF THE UK'S SOYA CONSUMPTION.**



25 March 2019, Barreiras, Bahia State, Brazil:  
Soya plantation and silos. © Victor Moriyama / Greenpeace



7 August 2017, UK: Fresh chickens in Tesco supermarket.  
© Islandstock / Alamy Stock Photo

# THE PECKING ORDER: COMPANIES' DEFORESTATION FOOTPRINTS

In September 2019, Greenpeace challenged 23 food sector companies to demonstrate that the soya used as animal feed in their meat and dairy supply chains was not driving deforestation. This included disclosing how much meat they produced or sold, how much soya was consumed as animal feed in their supply chains, which companies supplied it and the countries it originated from.

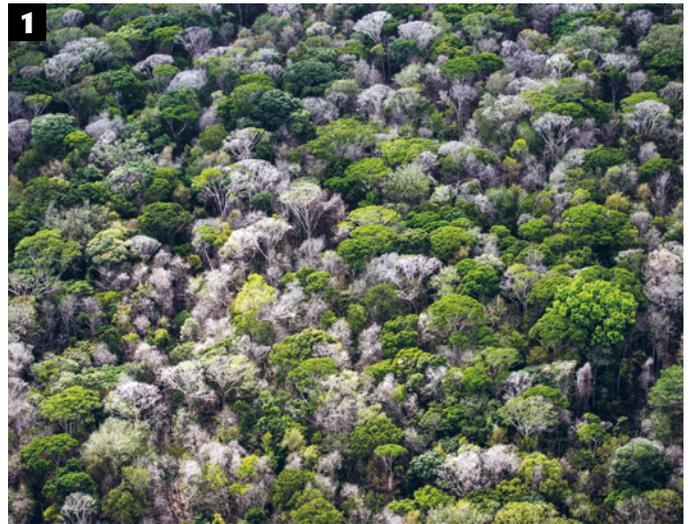
The list of companies contacted was comprised of 10 supermarkets (Aldi, Asda, Co-op, Iceland, Lidl, Marks & Spencer, Morrisons, Sainsbury's, Tesco and Waitrose), three fast food chains (Burger King, KFC and McDonald's), three poultry producers (2 Sisters, Avara Foods and Moy Park), food manufacturer Birds Eye and a selection of other high-street brands (Costa Coffee, Greggs, Nando's, Pret a Manger, Starbucks and Subway).

Only nine of these companies were prepared to make themselves accountable by disclosing the amount of meat they sold and the volume of soya consumed as animal feed in their supply chains: Aldi, Co-op, Costa Coffee, Iceland, Lidl, Marks & Spencer, Morrisons, Tesco and Waitrose. Asda, Nomad Foods (owners of Birds Eye) and Sainsbury's each provided a partial response.

Burger King, Greggs, KFC, McDonald's, Nando's, Pret a Manger, Starbucks, Subway and the chicken manufacturers 2 Sisters, Avara Foods and Moy Park were unwilling or unable to answer even the simplest questions regarding their meat sales and soya footprints.

All companies admitted lacking even the most basic oversight of their soya supply chains. Not a single company contacted by Greenpeace was able to demonstrate that it was tracking the full amount of soya consumed as animal feed in its supply chain. Instead, they were estimating some or all of their consumption of soya for animal feed based on industry averages – such as the calculator provided by the Round Table on Responsible Soy (RTS).<sup>38</sup>

No company could demonstrate it was taking any meaningful steps to ensure its supply of soya-based animal feed was not contributing to forest destruction. Nor had any company set a meat reduction target, despite the known links between meat production and deforestation and calls from doctors and scientists alike for a shift to a largely plant-based diet to tackle the climate and nature emergency.<sup>39</sup>



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- 1** 4 February 2017, Amapá, Brazil: Rainforest.  
© Daniel Beltrá / Greenpeace
- 2** 25 January 2018, Cuchuy, Salta, Argentina: Logging machinery operating illegally. © Nicolas Villalobos / Greenpeace
- 3** 24 November 2015: Cattle grazing in an embargoed area in the Amazon. © Bruno Kelly / Greenpeace
- 4** 28 November 2015, Mato Grosso, Brazil: Machine spraying pesticides on soybean crops. © Kelly / Greenpeace
- 5** 1 January 2004, Itacoatiara, Brazil: Soy production in Brazil. © Werner Rudhart / Greenpeace
- 6** 22 February 2006, Pará, Brazil. © Beltrá / Greenpeace
- 7** May 2019, Brazil. Soya loading for transport. © Greenpeace
- 8** 15 January 2015, North Germany: Chickens on a farm. © Greenpeace
- 9** 22 May 2019, London, UK: Fast food consumption in the UK. © Chris J Ratcliffe / Greenpeace



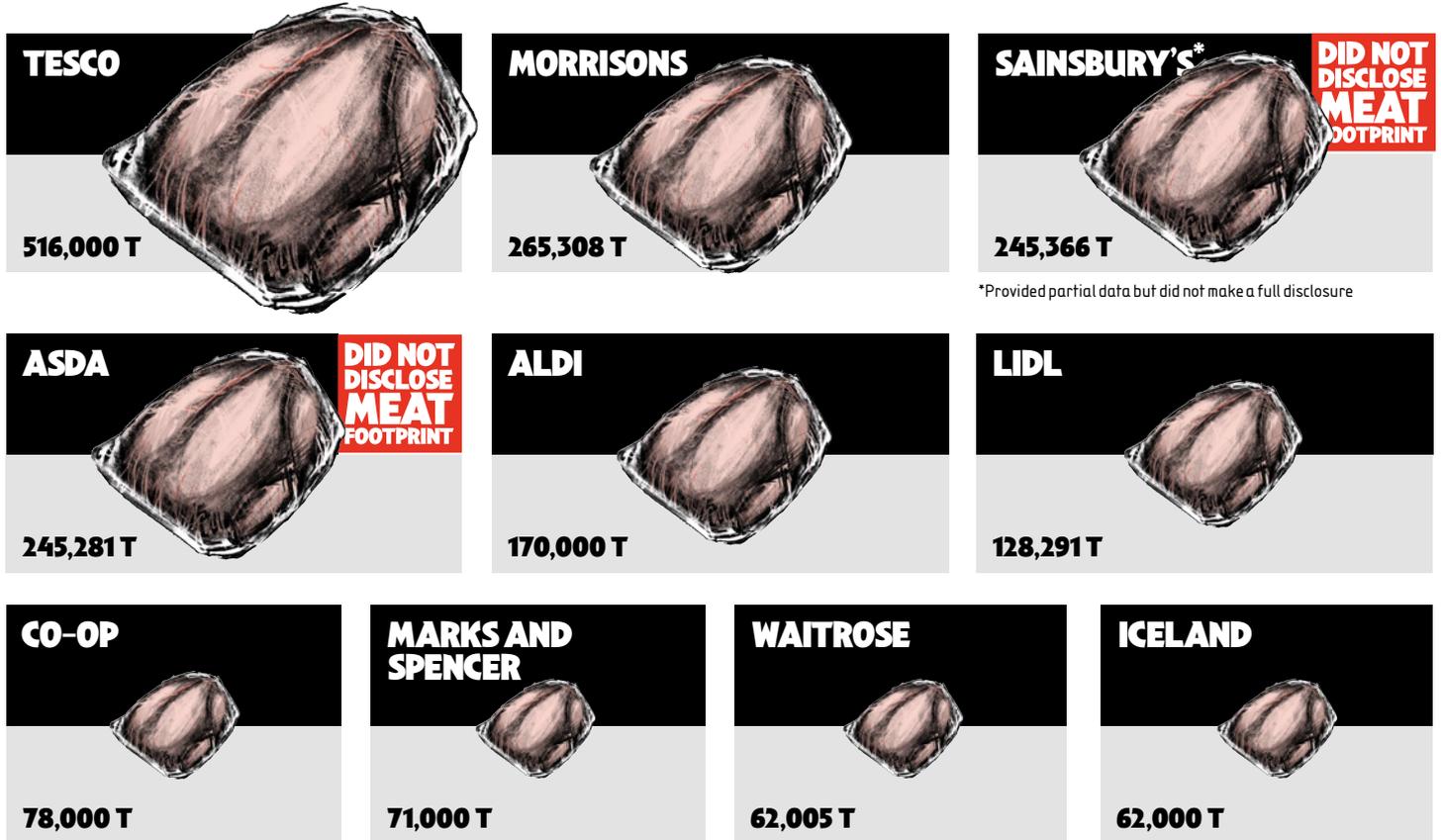


25 March 2019, Bahia State, Brazil: Soybeans.  
© Victor Moriyama / Greenpeace

# RETAILERS

**TESCO IS RESPONSIBLE FOR ONE-SIXTH OF THE UK'S TOTAL SOYA IMPORTS.**

## SUPERMARKETS' SOYA FOOTPRINT (TONNES PER YEAR)



Between them, the 10 supermarkets estimated their consumption of soya at 1.85 million tonnes in 2018 – almost two-thirds of the UK's annual imports.

Tesco, the UK's largest supermarket, estimated its soya footprint at 516,000 tonnes – equivalent to one-sixth of the UK's total soya imports.<sup>41</sup>

Supermarkets also sell the lion's share of chicken eaten in the UK. Those that disclosed the amount of meat they sell admitted to selling over half a million tonnes of chicken in 2018. Producing this much chicken would require 440,000 tonnes of soya, which in turn would require 163,000 ha of land<sup>42</sup> – an area the size of Hertfordshire. One supermarket – Aldi – estimated that chicken was responsible for 58% of its soya footprint.

However, two of the supermarkets – Asda and Sainsbury's – did not disclose how much chicken they sold, and others, including Tesco, omitted chicken used as an ingredient in ready meals and/or sales of branded meat (such as Birds Eye Chicken Nuggets). The figures provided suggest the UK's supermarkets are selling far more chicken than they are prepared to admit.

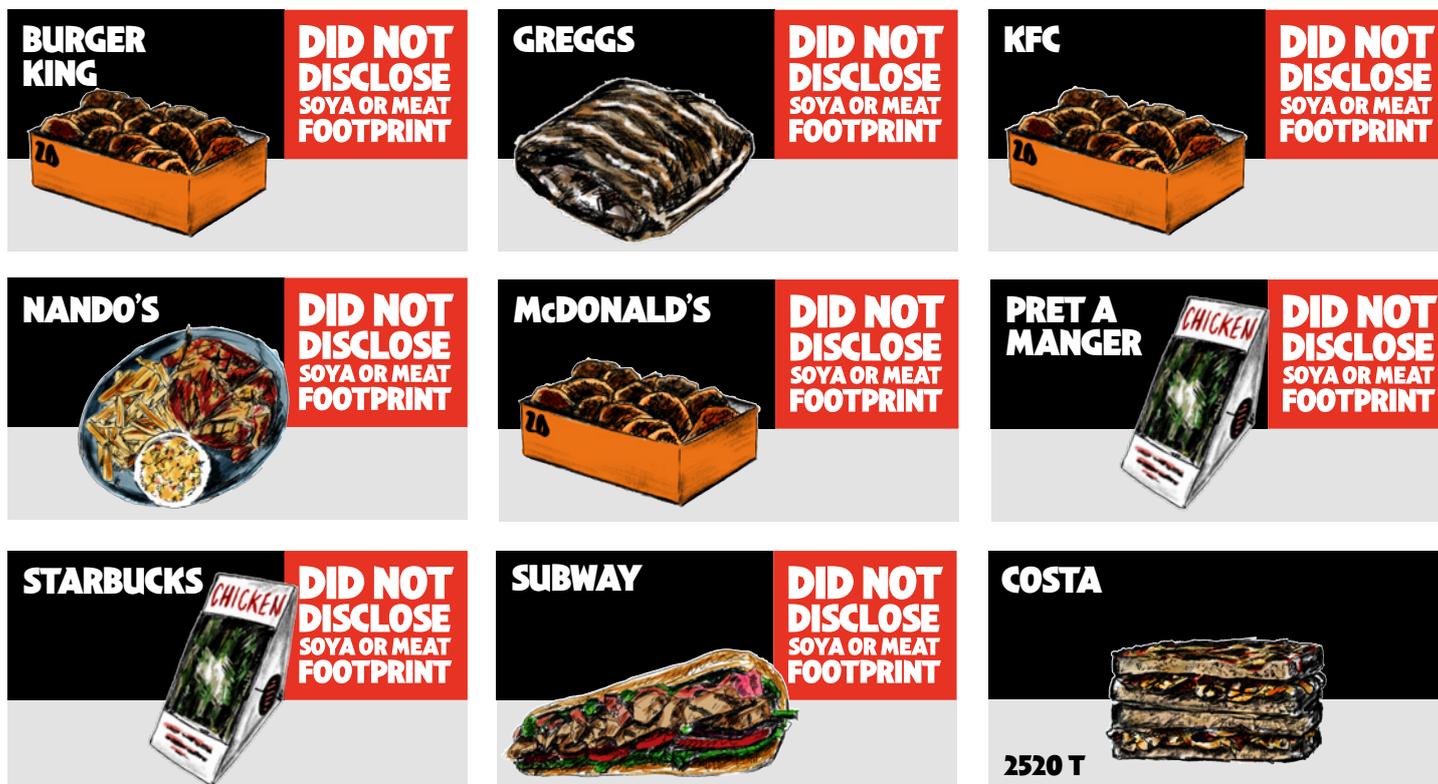
For example, despite the huge volume of soya Tesco uses, it only reported chicken sales of 128,000 tonnes. This is less than Morrisons, which reported sales of 140,000 tonnes of chicken despite reporting using half as much soya. Greenpeace analysis of the soya volumes reported by the supermarkets and industry supply chain data<sup>43</sup> suggests they actually sell over 850,000 tonnes of chicken per year – almost half of all the poultry meat produced in the UK.<sup>44</sup>

Greenpeace analysis of the soya footprints of Sainsbury's and Asda – which both declined to provide data on meat sales – suggests they are equal third in soya consumption and chicken sales.

None of the supermarkets was able to state categorically how much soya was consumed as animal feed in its supply chain. Instead, each of the supermarkets is using its meat sales to estimate its soya consumption, although as discussed above they are not consistent in how they have arrived at these figures – at least, when it comes to the data disclosed to Greenpeace. This suggests that the UK's supermarkets may be underestimating their consumption of soya and therefore their impact on the world's forests.

# FAST FOOD AND HIGH STREET FOOD BRANDS

## ALL BUT ONE COMPANY DID NOT DISCLOSE THEIR FOOTPRINT



With the exception of Costa Coffee, not a single company in this category disclosed even the most basic data regarding its meat sales and soya consumption – let alone demonstrated taking any credible steps to eliminate deforestation from its soya supply chain.

Global fast food companies account for a considerable portion of the UK's chicken sales. In July 2019, KFC admitted to representing around 4% of the UK chicken market, with combined annual sales across the UK, Germany, the Netherlands, Belgium and Sweden equivalent to 72 million chickens.<sup>45</sup> In 2010, McDonald's reportedly sold the equivalent of 30 million chickens in the UK alone.<sup>46</sup> No figures are available for Burger King or Subway's meat or chicken sales; Burger King, the smallest of the four global fast

food giants in the UK, has over 500 stores<sup>47</sup> and Subway, the largest, has over 2,400.<sup>48</sup>

The fast food chains' responsibility for the climate and nature emergency goes far beyond their UK footprint. Burger King, KFC and McDonald's have a worldwide presence and are expanding aggressively, notably in countries with below-average meat consumption such as China and India. McDonald's is working to double the number of its restaurants in China to 4,500 by 2022.<sup>49</sup> KFC's parent company Yum! Brands claims to have opened eight new stores per day in 2018.<sup>50</sup> Burger King's parent company Restaurant Brands International plans to open 14,000 new branches over the next 8–10 years.<sup>51</sup> This business model, which centres around increasing sales of meat, is incompatible with preventing climate breakdown.

# MANUFACTURERS

The vast majority of the UK's chicken is produced by just three companies: 2 Sisters, Moy Park and Avara Foods (a joint venture between Cargill and Faccenda). None of these companies responded to the Greenpeace survey.

Industry analysis indicates that 2 Sisters, the largest chicken producer in the UK, slaughters over 300 million head of poultry a year.<sup>52</sup> Moy Park, which is ultimately owned by JBS,<sup>53</sup> the notorious Brazilian slaughterhouse with extensive links to deforestation for cattle in the Amazon,<sup>54</sup> slaughters 280 million per year.<sup>55</sup> Avara slaughters over 200 million; Cargill and Faccenda slaughter a further 140 million and 100 million respectively.<sup>56</sup>

Through their membership of the UK's Roundtable on Sustainable Soya,<sup>57</sup> 2 Sisters and Moy Park committed to having

published a timebound no deforestation plan by April 2019,<sup>58</sup> although at the time of writing there was no evidence of either having done so. Cargill, which recently admitted it would fail to meet its goal of eliminating deforestation from its supply chain by 2020,<sup>59</sup> has been roundly criticised for lowering its ambition by extending the deadline to 2030.<sup>60</sup> Neither Avara nor Faccenda has made any public commitment to end deforestation.<sup>61</sup>

Given these companies' dominance over the production of chicken in the UK, their failure to make themselves accountable or demonstrate taking any steps to eliminate deforestation from their supply chains is yet more evidence that nothing meaningful is being done to address the impact of the UK's chicken supply on the world's forests and other vital habitats.



30 November 2017: Packaged chicken wings.  
© Elsa Palifo / Greenpeace

# NO TRACEABILITY, NO CONTROL



**SOY IS A GLOBALLY TRADED COMMODITY. WE ARE CURRENTLY UNABLE TO PROVIDE FULL TRACEABILITY INFORMATION FOR THE SOY SUPPLY CHAIN.**

Marks & Spencer, correspondence with Greenpeace,  
27 September 2019



**SOY FROM MANY DIFFERENT FARMS IS TYPICALLY MIXED... THIS MAKES TRACEABILITY TO INDIVIDUAL FARM LEVEL EXTREMELY CHALLENGING AND NOT PRACTICAL.**

Tesco, correspondence with Greenpeace,  
24 September 2019



**SUPPLIERS MAY... SOURCE FROM MULTIPLE FARMS WHO PURCHASE THEIR FEED FROM VARIOUS FEED MILLS AS WELL AS MIXING THEIR OWN FEED ON FARM.**

Costa Coffee, correspondence with Greenpeace,  
17 September 2019



**COLLECTING SOYMEAL INFORMATION FROM OUR DIRECT AND INDIRECT SUPPLY CHAIN IS CHALLENGING GIVEN THE NATURE OF THE FOOD SYSTEM. THE SUPPLIERS WE DIRECTLY CONTRACT WITH ARE OFTEN NOT THOSE THAT ARE RESPONSIBLE FOR SOURCING OR HANDLING ANIMAL FEED, AND THEREFORE SOYMEAL.**

Asda, Co-op, Lidl, Marks & Spencer and Sainsbury's,  
correspondence with Greenpeace, 20, 16, 23, 27 and  
24 September, respectively



**UNFORTUNATELY WE DO NOT HAVE VISIBILITY OF ALL SUPPLY CHAINS THAT TRADERS AND PRODUCER GROUPS ARE INVOLVED IN, AND CANNOT DEMONSTRATE FULL COMPLIANCE IN THEIR OPERATIONS THAT WE ARE NOT SOURCING FROM.**

Waitrose, correspondence with Greenpeace,  
16 September 2019



15 July 2019, Formosa do Rio Preto.  
Recent land clearance. ©Greenpeace

In order to prove that the soya consumed in their meat and dairy supply chains is not contributing to forest destruction, companies must be able to trace it back to the point of origin – i.e. to the specific farms where it was grown – and be using satellite images and maps of those farms to monitor for deforestation. To be comprehensive, monitoring must cover all of the farms owned or controlled by the suppliers, including those from which the end-user company is not sourcing.<sup>62</sup>

None of the companies surveyed by Greenpeace had any credible monitoring system in place. In fact, not a single company could demonstrate that it was even tracking the full amount of soya being consumed in its supply chain. Instead, the companies were estimating their consumption based on their sales of meat. Unsurprisingly, they lacked any meaningful traceability data and were unable to say where the soya consumed in their supply chains as animal feed was grown or who produced it.

Traceability, though vital, is just the first step towards eliminating deforestation from a company's supply chain. Given their failure to obtain this information, the companies are unable to demonstrate that their soya suppliers are not destroying forests.

Through global initiatives such as the New York Declaration on Forests<sup>63</sup> or as members of the Consumer Goods Forum<sup>64</sup> or Tropical Forest Alliance,<sup>65</sup> companies and governments have pledged to end deforestation for agricultural commodities such

## COMPANIES WERE UNABLE TO DEMONSTRATE THAT THEIR SOYA SUPPLIERS ARE NOT DESTROYING FORESTS.

as soya by 2020. Yet Tesco, which has repeatedly stressed its commitment to this goal,<sup>66</sup> stated in 2018 that it will not 'transition to sourcing [soya] from verified zero deforestation areas' until 2025<sup>67</sup> – a significant and unacceptable delay. Worse, the company has consistently failed to explain how this will be achieved. Responses from the other supermarkets suggest they have even less of a grasp on their soya supply chains and no credible plan to eliminate deforestation.

At best, the companies surveyed claimed that they or their meat and dairy suppliers were purchasing small volumes of certified soya or covering purchases with 'credits' via industry bodies such as the RTRS<sup>68</sup> or ProTerra.<sup>69</sup> Such schemes provide no guarantees that the soya consumed within a company's supply chain is not driving deforestation and are no substitute for a company tracing the soya in its supply chain to farms that can be independently verified as deforestation-free at the group level.

# FACTORY FARMS HERE, DEFORESTATION THERE

**THE UK'S DEPENDENCE  
ON INTENSIVELY FARMED  
MEAT LOCKS US INTO THE  
DECIMATION OF FORESTS.**



12 July 2017, Herefordshire, UK:  
Chickens on an industrial farm.  
© Rob Stothard

In addition to reporting on their sales of meat and their soya consumption, Greenpeace asked the 23 companies surveyed to disclose their soya suppliers – the commodities traders responsible for importing the soya in their supply chains into the UK.

Only a handful of companies were willing or able to disclose this information, but those that did admitted sourcing from Archer Daniels Midland (ADM), Bunge and Cargill, all of which have been trading with farms responsible for recent conversion of forests or other natural ecosystems in the Brazilian Cerrado.<sup>70</sup> Indeed, Bunge and Cargill were among the group of five traders fined by the Brazilian environmental enforcement agency IBAMA

in 2018 for trading soya from illegally deforested areas in Matopiba,<sup>71</sup> at the frontline of soya expansion in the Cerrado.<sup>72</sup>

Greenpeace Brazil recently investigated one soya-producing estate in Matopiba, Agronegócio Estrondo, which has a history of deforestation, land grabbing, use of slave labour and illegal land clearance.<sup>73</sup> Bunge and Cargill both operate silos within the estate's boundaries<sup>74</sup> and source soya directly from its plantations.<sup>75</sup> Tens of thousands of tonnes of soya from this estate or one of its main tenants have been traded to the UK and other European countries<sup>76</sup> – clear proof that the UK's overconsumption of meat, and especially chicken, is directly contributing to the global deforestation crisis.

# TIME FOR ACTION

Soya is a high-risk commodity, whose production is driving the destruction of forests and other natural ecosystems. Despite this, companies in the UK – which collectively source millions of tonnes of soya per year – have no oversight, no traceability and no control over their soya supply chains.

The UK's dependence on intensively farmed meat – especially chicken – locks the country into contributing to the decimation of the world's forests. Our food system is only able to meet the demand for the amount of meat we consume by importing huge volumes of soya for use as animal feed.

This problem cannot be addressed simply by switching to other feed crops. Soya is an efficient and protein-rich crop, and many of the alternatives, such as maize, might also be grown in areas at risk of deforestation.

Instead, the world's leading scientists are calling for a dramatic shift in our diets to tackle the climate emergency: specifically, a drastic reduction in consumption of meat and dairy<sup>77</sup> from the current global averages of 43 kg and 90 kg per capita per year.<sup>78</sup> The UK is already consuming substantially more than the global average.<sup>79</sup> This means that our per capita consumption of meat and dairy must fall by some 70% within the next 10 years if we are to halt and reverse the expansion of agricultural land into forests and other ecosystems, in order to help stave off climate breakdown.<sup>80</sup>

The public debate on how to address the climate impact of the food system places responsibility solely on individuals to change their diets. However, it is the supermarkets and global food giants that shape public attitudes and choice through advertising, pricing and availability. Given their role in creating the planetary crisis, food brands now have a responsibility to deliver the solution – both for the planet and for our health. This means replacing the vast majority of meat and dairy in their products with healthy, affordable and delicious plant-based foods, and ensuring that any remaining meat and dairy is demonstrably deforestation-free and adheres to ecological livestock standards.<sup>81</sup>

The greater a company's current meat and dairy footprint, the greater the cuts it will need to make. Fast food brands and other companies whose current business models are entirely dependent on meat and dairy will need to evolve beyond all recognition.

## COMPANIES MUST:

**BE TRANSPARENT:  
DISCLOSE MEAT SALES  
AND SOYA CONSUMPTION  
PUBLICLY AND IN A  
STANDARDISED FORMAT**

**REDUCE DEMAND:  
SET YEAR-ON-YEAR  
TARGETS TO 2030 FOR  
REDUCING SALES OF MEAT  
AND DAIRY IN LINE WITH  
RECOMMENDATIONS  
BY SCIENTISTS AND  
REPLACING THEM WITH  
HEALTHY, AFFORDABLE  
PLANT-BASED FOODS**

**END DEFORESTATION:  
ONLY SOURCE SOYA AND  
OTHER COMMODITIES  
FROM SUPPLIERS THAT  
ARE DEMONSTRABLY  
DEFORESTATION-FREE**



12 July 2017, Herefordshire, UK:  
Industrial chicken farming.  
© Rob Stothard



16 April 2018, Thuringia, Germany:  
Sow with her piglets on a factory farm.  
© Greenpeace



1 April 2009, Tangará da Serra, Brazil:  
Marfrig slaughterhouse facilities.  
© Ricardo Funari / Lineair / Greenpeace

# APPENDIX

## COMPANY FOOTPRINTS

Table 1: Soya usage and meat sales as disclosed by companies (tonnes per calendar year)

	<b>Soya usage</b>	<b>Overall meat sales</b>	<b>Chicken</b>	<b>Pork</b>	<b>Beef</b>
<b>2 Sisters</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Aldi</b>	170,000	205,157	120,611	27,284	57,262
<b>Asda</b>	245,281	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Avara Foods</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Birds Eye (Nomad Foods)</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Burger King</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Co-op (2016)</b>	78,000	57,463	19,560	8,654	9,722
<b>Costa Coffee</b>	2,520	1,435	140	1,290	5
<b>Greggs</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Iceland</b>	62,000	74,756	43,195	18,472	13,089
<b>KFC</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Lidl</b>	128,000	114,933	67,081	16,201	29,233
<b>Marks &amp; Spencer</b>	71,000	96,000	43,000	28,000	19,000
<b>McDonald's</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Morrisons</b>	265,308	339,713	148,005	121,821	62,245
<b>Moy Park</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Nando's</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Pret a Manjer</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Sainsbury's</b>	245,366	234,000	Did not disclose	Did not disclose	Did not disclose
<b>Starbucks</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Subway</b>	Did not disclose	Did not disclose	Did not disclose	Did not disclose	Did not disclose
<b>Tesco</b>	516,000	362,486	128,757	122,093	73,386
<b>Waitrose</b>	62,005	78,248	30,593	20,725	15,762



30 January 2020, Chaco Province, Argentina: Deforestation in Argentina's Gran Chaco forest. © Martin Katz / Greenpeace



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# ENDNOTES

- 1 Stauffer C (2019)
- 2 Kissinger G, Herold M & De Sy V (2012) p11
- 3 'For terrestrial and freshwater ecosystems, land-use change has had the largest relative negative impact on nature since 1970, followed by the direct exploitation, in particular overexploitation, of animals, plants and other organisms mainly via harvesting, logging, hunting and fishing. ... Agricultural expansion is the most widespread form of land-use change, with over one third of the terrestrial land surface being used for cropping or animal husbandry. This expansion, alongside a doubling of urban area since 1992 and an unprecedented expansion of infrastructure linked to growing population and consumption, has come mostly at the expense of forests (largely old-growth tropical forests), wetlands and grasslands.' Source: Diaz S et al (2019) p4.
- 4 IPCC (2014) p820 Figure 11.2
- 5 IPCC (2018) and IPCC (2019)
- 6 IPCC (2014) p824. Total direct agricultural emissions amount to ~5.8 GtCO<sub>2</sub>e/yr. Of this, animal products (all livestock emissions) account for:
  - 2.1 GtCO<sub>2</sub>e/yr from enteric fermentation of animals
  - 0.99 GtCO<sub>2</sub>e/yr from manure
  - 0.34 GtCO<sub>2</sub>e/yr from fertiliser emissions (of total 0.68; at least 50% are directly for feed)Total direct emissions from livestock (industrial or otherwise) therefore amount to 3.43 GtCO<sub>2</sub>e/yr, which is 59% of total direct agricultural emissions.
- 7 See Henders S, Persson UM & Kastner T (2015), Kissinger G, Herold M & De Sy V (2012) and De Sy V et al (2015).
- 8 UN Environment (2019) p202
- 9 Compared with 2012 levels. Source: Godfray HCJ et al (2018), reporting on Alexandratos N & Bruinsma J (2012).
- 10 See Fearnside P (2017) and Henders S, Persson UM & Kastner T (2015).
- 11 Silva JF (2018)
- 12 Joseph K (2018)
- 13 European Commission (2013) pp23–24
- 14 See Greenpeace (2019a).
- 15 Areas of low oxygen levels in estuaries and seas that suffocate and ultimately kill fish and much marine animal life.
- 16 Sharma S, IATP & Schlesinger S (2017) p25
- 17 144 million tonnes of soybeans were produced globally in 1997 and 353 million tonnes in 2017 (the most recent year for which data are currently available). Source: FAOSTAT website 'Crops'.
- 18 According to Eurostat data, almost three-quarters of the livestock units (72.2%) in the EU-28 were reared on very large farms in 2013. Source: Eurostat (2018).
- 19 Mottef A et al (2017) p5 Table 2. Analysis based on area used for growing oilseed crop/cake in million hectares (ha): poultry (60.3), pigs (39), cattle (30.9), small ruminants (1.1), for a total of 131.3 million ha.
- 20 Efeca (2019) p3
- 21 Calculated using the RTRS's 'Soy print calculator', available at <http://www.responsiblesoy.org/contribute-to-change/know-your-soy-print/?lang=en>
- 22 Specifically Argentina, Brazil and Paraguay. Source: Efeca (2019) p14.
- 23 See WWF & RSPB (2017).
- 24 Analysis by Greenpeace of data in European Commission (2013)
- 25 UK Department for Environment, Food and Rural Affairs (2019a)
- 26 WWF (2017)
- 27 1.8 million tonnes, behind Poland (3.1 million tonnes) and France (1.9 million tonnes). Source: AVEC (2019) p22.
- 28 Between November 2018 and October 2019, an average of 20.2 million chickens were slaughtered in the UK each week – a total of 1.05 billion birds. Source: UK Department for Environment, Food and Rural Affairs (2019b) p5.
- 29 Wasley A et al (2017) citing Richard Griffiths, chief executive of the British Poultry Council
- 30 UK Department for Environment, Food and Rural Affairs (2019a)
- 31 AVEC (2019) p27
- 32 Analysis based on average per capita consumption of carcass meat. Source: UK Department for Environment, Food and Rural Affairs (2019a):
- 33 Lee L & Simpson I (2016) p9
- 34 Ryan C (2018)
- 35 Committee on Climate Change (2018) p32
- 36 Osborne R (2018)
- 37 Kantar Research (2019)
- 38 The RTRS's 'Soy print calculator' is available at <http://www.responsiblesoy.org/contribute-to-change/know-your-soy-print/?lang=en>.
- 39 See eg European Public Health Association (2017), EAT-Lancet Commission (2019) and IPCC (2019).
- 40 Aldi disclosed only poultry figures, which sector data suggest consists largely of chicken sales
- 41 17%, according to the company's own calculations. See Tesco (2019) p8
- 42 Calculated using the RTRS's 'Soy print calculator', available at <http://www.responsiblesoy.org/contribute-to-change/know-your-soy-print/?lang=en>.
- 43 IDH & KPMG (2017)
- 44 The UK produced 1.8 million tonnes of poultry meat in 2017. Source: AVEC (2019) p22.
- 45 KFC (2019)
- 46 White V (2015)
- 47 Witts S (2019)
- 48 Luty J (2019)
- 49 Feng E (2017)
- 50 Creed G (2019)
- 51 RBI (2019)
- 52 WATTAgn website 'The world's leading broiler, turkey and egg producers'
- 53 Moy Park website 'Company history'
- 54 See eg Phillips D et al (2019).
- 55 Moy Park website 'About'
- 56 WATTAgn website 'The world's leading broiler, turkey and egg producers'
- 57 Efeca (nd) 'UK Roundtable on Sustainable Soya: Signatories'
- 58 Efeca website 'The UK Roundtable on Sustainable Soya'
- 59 Stauffer C (2019)
- 60 Johnson N (2015)
- 61 Avara's website includes an 'Environmental policy statement' (Avara (2018)) that lacks any specific timebound commitments and makes no reference to deforestation or the environmental impact of its soya consumption.
- 62 For further details, see Greenpeace (2017), Greenpeace (2018a) and Greenpeace (2019a).
- 63 See New York Declaration on Forests website 'About'
- 64 See Consumer Goods Forum (2017)
- 65 See Tropical Forest Alliance website 'Home'
- 66 See eg Tesco website 'Forests'
- 67 Salter D (2018)
- 68 RTRS website 'RTRS Regional credits'
- 69 ProTerra Foundation website 'Home'
- 70 See eg Chain Reaction Research (2018a,b), Chain Reaction Research (2019) and Trase (2018).
- 71 Spring J (2018)
- 72 Spring J (2018)
- 73 Greenpeace (2019b)
- 74 Greenpeace Brazil investigation; see Greenpeace (2019b)
- 75 See Greenpeace (2019b); documentation held by Greenpeace.
- 76 See Greenpeace (2019b) p39. Documentation held by Greenpeace.
- 77 EAT-Lancet Commission (2019) and IPCC (2019)
- 78 Based on FAOSTAT data from 2013, the most recent year for which figures are available (source: FAOSTAT website 'Food supply - livestock and fish primary equivalent'). See Greenpeace (2018b) p39. Greenpeace's vision of an ecological food system involves a 50% reduction in global consumption of meat and dairy by 2050, to a per capita average of 16 kg and 33 kg per year, respectively. The interim goal for 2030 is 24 kg of meat and 57 kg of dairy per person per year (see Greenpeace (2018b) p14).
- 79 In Western Europe, the average person consumes 85 kg of meat and 260 kg of dairy each year. Source: Greenpeace (2018b) p39, based on FAOSTAT data from 2013.
- 80 See Greenpeace (2018b).
- 81 Greenpeace (2012)



In this report, mentions of 'Greenpeace' should be read as references to Greenpeace UK unless otherwise indicated.

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Printed on recycled paper

Front cover photos.

Above:  
11 June 2017, Matopiba, Brazil:  
Deforestation in the Cerrado.  
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Below:  
12 July 2017, Herefordshire, UK:  
Chickens on an industrial farm.  
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