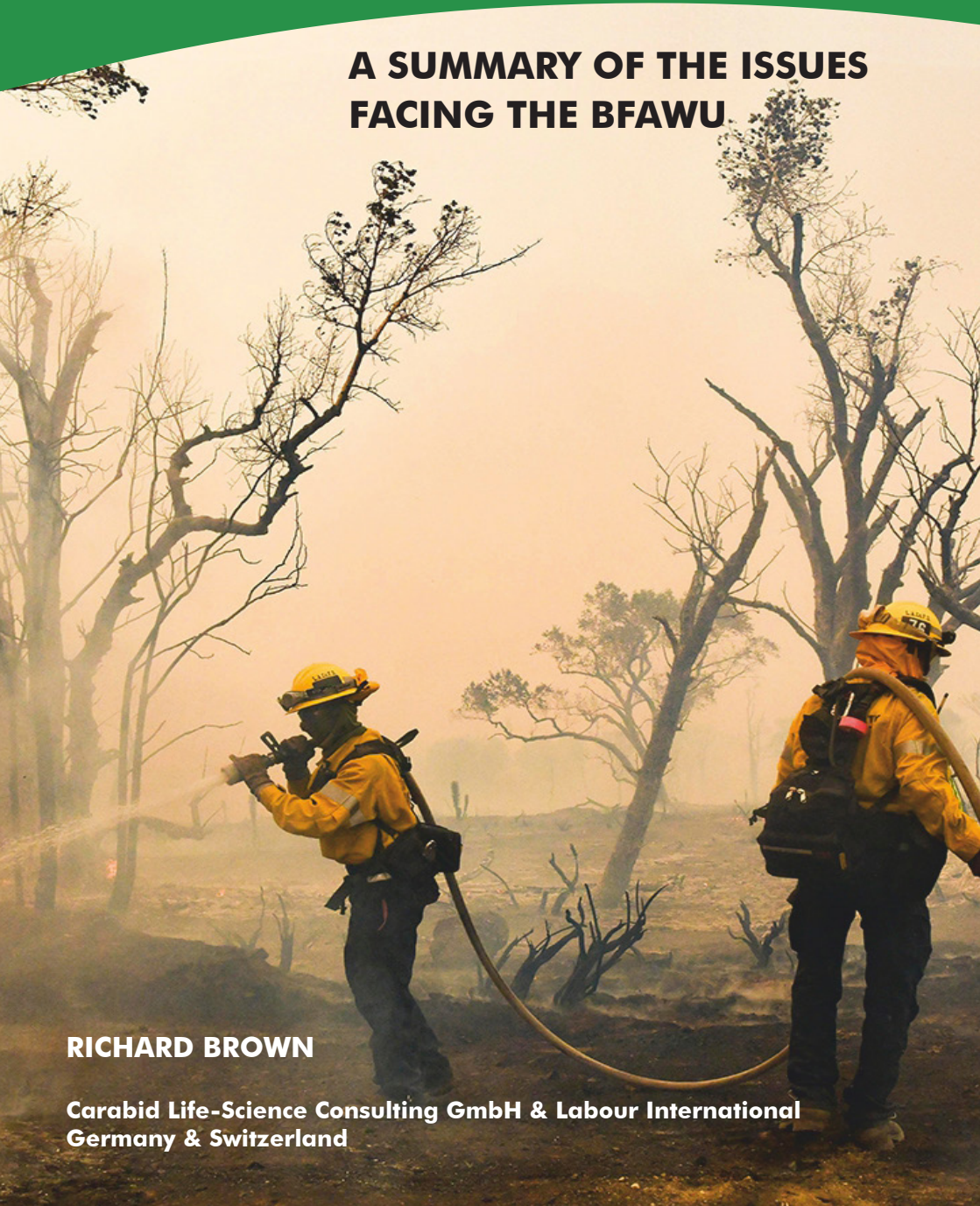
BAKERS FOOD AND ALLIED WORKERS UNION

BFAWU
STRENGTH IN UNITY

CLIMATE CHANGE AND SUSTAINABILITY OF FOOD COMMODITIES

A SUMMARY OF THE ISSUES FACING THE BFAWU



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The BFWAU-Commissioned Report on Climate Change and the Sustainability of Food Coomodities

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Structure of the Report:

The climate is changing due to man-made emissions of greenhouse gases: EXECUTIVE SUMMARY

Although now acknowledged by most governments, action has been very slow. The urgency has recently been highlighted by the publication of the **6th IPCC Report** and emphasised by an increased frequency of **extreme climate events**. The impacts of climate change are felt disproportionately by the poor and those in *low to middle income countries* (LMICs) where the production of commodities consumed in the developed world often takes place under exploitative conditions in LMICs. To achieve a sustainable future, we must address not only the environmental problems but also *the social and economic inequality* that underpins many of the climate issues.

Agriculture and food are responsible for **26% of all global greenhouse gas emissions**. Of this, 31% is due to *livestock and fisheries*, 27% to *crop production*, 24% to *conversion of forest into grazing and cropland* and 18% is due to *the supply chain*.

Amazon deforestation has been driven by agriculture (principally *beef production*). This is responsible for more than 80% of the Amazon deforestation (about 14% of the world's total annual deforestation) and has been associated with violent suppression of the indigenous forest people.

The priority is to resist the development of any imports of Brazilian **beef** from the Amazon Basin and to support measures to persuade the Brazilian government to *cease empowering deforestation* in the Amazon, to consider *alternative development strategies* and the *rewilding of some deforested areas*.

Brazil is the world's largest producer of **soybeans**. The majority comes from *the Cerrado*, a savannah forest area to the south and east of the Amazon. The Cerrado is *already* 44% deforested because of agricultural clearances and **the remaining forest needs protection.**

There *are* sustainability certification schemes but they're *ineffective* and *circumvented* by producers. **The priority is to ensure that all soybeans and soybean meal used in feed for pigs and chicken is from a *certified zero-deforestation source* and that the certification is doubly assured as *accurate*.**

Palm oil is a versatile and cost-effective vegetable oil used in **50% of all the products in UK supermarkets** where it is found in *baked goods, soap* and *personal care products*.

The acreage planted to oil palm has accounted for **39% of the deforestation** in *Indonesia* and *Malaysia* from 2000 to 2018.

At present, an area the size of New Zealand is planted to oil palm and the burning of the forest to enable its plantation accounts for 0.8% of all greenhouse gas emissions.

Palm oil production has a long history of exploitative labour practices as well as environmental destruction. The priority is to ensure that only certified palm oil is used and that certification is itself assured as being environmentally and socially sound. The search for a more sustainable alternative should be supported.

Cocoa is a labour-intensive crop that is mostly produced by 5–6 million smallholders, principally in West Africa.

The supply chain for developed country producers retains 94% of the value, with little trickling down to the producers.

Though there are numerous certification schemes, *child labour* and *illegal deforestation* are widespread and certification is often *ineffective*.

The imperative is to establish the policy that only **sustainable cocoa** is used and that the **sustainability accreditation system** is *double checked* to assure *zero-deforestation, no unfair labour practices* and *equitable payment of the small-holder producers*.

The UK imports 60% of its **Pork**, mostly from *Denmark*. Though pork production is only responsible for 18% of the greenhouse gas emissions deriving from beef production, the **manure management process** is locally responsible for *extensive nitrate* and *phosphate pollution* of surface and ground waters and the *emission of ammonium* and *sulphur dioxide* causes *local air pollution* and *acidification problems*.

The intensive production of pigs leads to *poor animal welfare practices,* especially outside Europe and an environment prone to the development of sever infectious diseases, such as **African Swine Fever** (ASF), that caused the death of 50% of the Chinese pig herd in 2018.

Policy priorities are for the assurance of environmental and animal welfare standards in the pork that is used and a commitment to use *zero-deforestation feedstuffs*.

BFAWU can highlight issues of environmental sustainability in the commodities used in food manufacture and for solidarity with exploited workers and child labourers, used even in assured sustainable commodities that can go into baked goods and luxury foodstuffs.

The BFAWU requested these briefs on global sustainability issues involving food and agriculture commodities of concern that their members may need to deal with on a regular basis.

CLIMATE CHANGE

THE CLIMATE IS CHANGING due to man-made emissions of greenhouse gases, as has been strongly reaffirmed by the recent IPCC *Sixth Assessment* Report. By the 1980s, there was agreement among scientists that global warming *was* happening, something that was strongly opposed by vested interests. During 2001, the **International Panel on Climate Change** (IPCC) established a consensus on climate change that was widely accepted by governments. In December 2015, the **Paris Accord** was issued in which 196 countries confirmed the need to limit global warming to **well below 2°C** (preferably to 1.5°C), compared to pre-industrial levels. Since then, actual progress in mitigating the changes has been *minimal* and the way in which we are living is *unsustainable for the future*. Some are attracted to technological solutions to climate change, but the problem is not going to be resolved by just introducing new products and services, *everyone needs to make changes in their lifestyles and expectations and stakeholders need to be involved in the discussion and solutions*.

What are Greenhouse Gases?

The main greenhouse gases that help to retain heat in the atmosphere are **carbon dioxide, methane** and **nitrous oxide**. These gases are *natural*, but their emissions are much increased by burning fossil fuels and through agriculture. In addition to these naturally occurring gases, there are also man-made **fluorocarbons** which are used as *refrigerants, lubricants* and *fire retardants*. Carbon dioxide is by far the most common greenhouse gas and contributes the most to global warming. Although the other gases are found in much smaller amounts, their individual potential to create global warming is shown in Table 1.

Table 1. The greenhouse potential of gases relative to carbon dioxide

Gas	Greenhouse potential compared to carbon dioxide
Carbon dioxide	1
Methane	25 times
Nitrous oxide	298 times
Flourocarbons	Up to 23,000 times

What are the effects of greenhouse gases in the environment?

Greenhouse gases in the atmosphere retain heat that would otherwise be lost into space, making the land, water and air warmer than it would normally be. Warm air retains more water vapour, which also acts as insulation. The increased warmth causes snow and glaciers in polar and elevated areas to melt in the summer. Snow is reflective of the sun's energy and so as it disappears, the ground underneath warms up quickly which leads to the melting of permafrost in polar areas and the release of carbon dioxide from the reactivating soil and methane trapped in rock formations.

As the polar glaciers start to melt, large amounts of cool, fresh water is released into the oceans and this can affect the oceanic currents and circulation. For example, the current called *AMOC* of which the Gulf Stream is part, brings warm, salty water north from Florida and keeps northern Europe much warmer than would be expected. However, the warming of the arctic is causing the large amounts of the Greenland Ice Sheet to melt which adds cool, fresh water to the AMOC north of Iceland, which in turn causes the current to sink to the bottom and this weakens its impact on Western Europe. The AMOC is now at its weakest in 1'000 years.

Usually, the cold arctic enables a stable vortex of air to sit above it, however the summer warming of the arctic in recent years has weakened the polar vortex and it has become unstable, permitting the high-level air currents known as the Jet Stream to move around, bringing more intense and unexpected summer storms. As the land, water and air warms, dry areas become drier and more subject to wildfires, such as in the Western USA, Canada, Alaska, Siberia, the Mediterranean and Australia, while in the Sahel, deserts are extending away from their current borders. Other areas, such as Western Europe, Bangladesh and China are subjected to intense storms and flooding, made worse as sea levels rise. There are many interconnected events in the matrix of the environment that are happening because of global warming.

The disproportionate effects of climate change

The impacts of climate change are felt disproportionately by the poor and the Global South. Though the heat-bubble over Canada and the American west have attracted attention along with the catastrophic flooding in Germany, wealthy people are, for the large part, able to mitigate the effects. This option is not available to people in low-lying areas, in developing countries that are threatened by rising sea levels and increased storms, or by those in areas of increased desertification (such as in *sub-Saharan Africa*). For people here, migration is the only option. Even in the USA, the threat of flooding from the effects of climate and environmental change are borne disproportionately by the poor and people of colour from which the movement for climate and environmental justice has grown.

Creating a sustainable future

Living as we are today clearly unsustainable. Sustainability is not just environmental but has economic and social platforms as well. This was established in the 1987 United Nations **Brundtland Report** which showed that sustainable development required not only environmental protection but also social and economic equity. A sustainable future requires addressing the negative environmental effects of climate change and preventing the greater social and economic inequity which is being created. This is the basis of the **Climate Justice** movement.

Why is climate change a union issue?

Unless we all change the way in which we are working and living, there is not going to be a sustainable future. *These changes will affect jobs* and it is therefore vital that trade unions are informed of the issues and involved in discussions about these changes – in order to achieve a **just transition of work**. In recent years, structural changes in various industries have not seriously involved unions and local communities and have therefore only really met the interests of the *investors* at the discussion table. For example, restructuring the deep-water fishing industry after the Cod War in the 1970s, closing the coal mining industry in the 1980s and 90s, the consolidation and offshoring of the chemical production industry in the 1990s and the development of overseas labour sources for agriculture and meat processing in the 2000s. In addition to the immediate impacts on employment, there is also the issue of **solidarity** with workers upwards in the supply chain who may be exploited to enable low-cost production.

What are the issues for sustainability for the Bakers, Food and Allied Workers Union?

The union has already been in talks with some employers to look at working practices which reduce the need for power and to contribute to sustainability in the *'field to fork'* strategies. Clearly the union needs a seat at the table in any discussions concerning changes of employment because of decarbonisation of the industry, from manufacturing through distribution to retail.

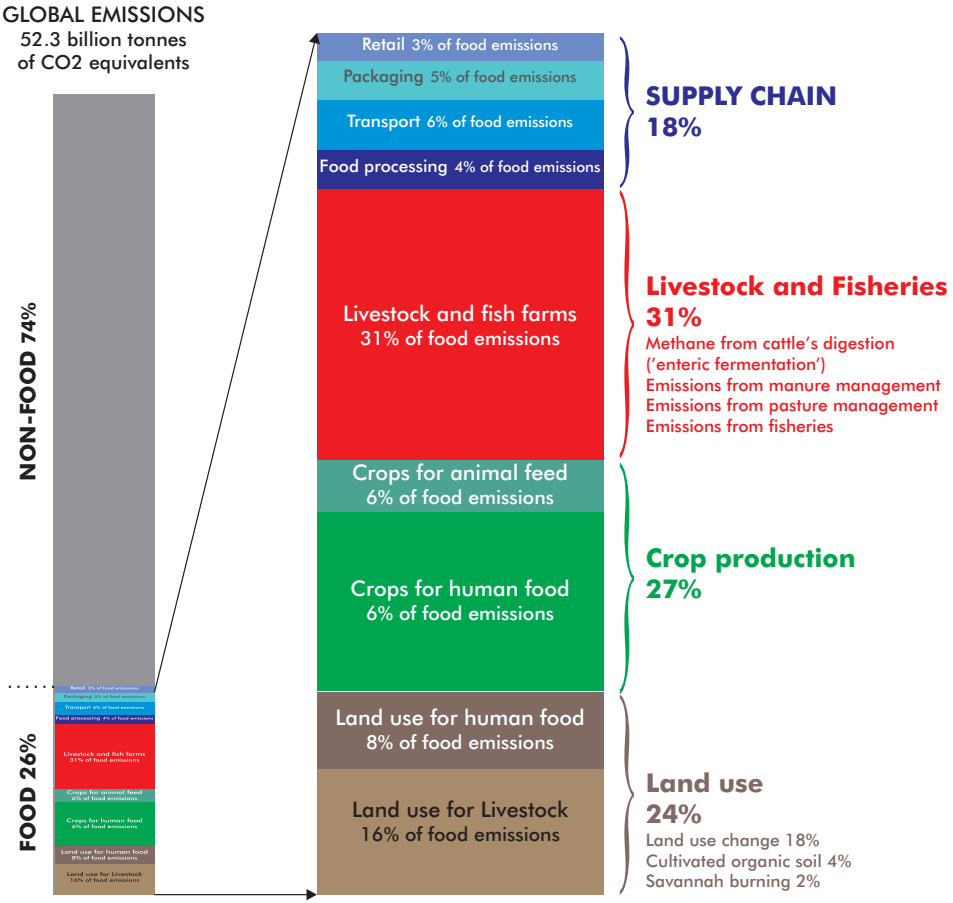
There are questions about the sustainability of several of the commodities used in baking and food manufacture and the overall question of deforestation to enable agricultural production.

There is a role for the BFAWU to highlight issues of environmental sustainability in the commodities used in food manufacture and for *solidarity with exploited workers* and *child labourers* that are used even in assured sustainable commodities that can go into baked goods and luxury foodstuffs.

AGRICULTURE AND CLIMATE CHANGE

Agriculture makes up 26% of all greenhouse gas emissions and of this, 31% comes from *livestock* and *fisheries*, 27% from *crop production*, 24% from *land use change* from natural habitats to cultivated areas and 18% from the *supply chain* (including food processing, distribution and retail as shown in figure 1). *Food processing* only accounts for 4% of total agricultural emissions and *transport* 6% – although 'food miles' seems an important idea, overall, it counts for less in terms of greenhouse emissions than the production of the food and the change of land use from natural habitat. **Livestock production** is the biggest single contributor and, of that, the emission of methane in ruminant animal burps is significant.

Figure 1. Global greenhouse gas emissions from food production



These figures support that the change away from meat to plant-based diets has the potential to make an impact on agricultural emissions. The continued conversion of natural habitat to land for animal and crop husbandry is a substantial contributor of greenhouse gases, 18% of all emissions from the sector.

Amazon Deforestation

The Amazon Basin contains over half the entire world's rainforest and covers 2.3 million square miles, 60% of it is in Brazil and the rest is in Peru, Colombia and 6 other countries. Cattle production in the Brazilian Amazon, incentivized by the international beef and leather trades has been responsible for more than 80% of the Amazon deforestation (about 14% of the world's total annual deforestation). By 1995, 70% of formerly forested land in the Amazon and 91% of land deforested since 1970 had been converted to cattle ranching and, according to the UN, most of this deforestation was subsidised *by the Brazilian government*.

Much of the remaining deforestation within the Amazon has resulted from farmers clearing land for small-scale, subsistence agriculture. In many cases, after a few years of ranching, NASA reports that the land is sold on to larger agribusiness concerns for the intensive production of **soybean**. Historically, the Amazon Basin has been one of the largest sinks of CO_2, absorbing 1/4 of terrestrial land captured carbon. However now the Amazon Basin is emitting *more* CO_2 than it absorbs because of the fires and deforestation.

Figure 2. A fire set to clear indigenous land in the Amazon in 2017.

More than one-third of the Amazon Forest belongs to over 4,466 formally acknowledged *Indigenous Territories*. Until 2015, only eight percent of Amazonian deforestation occurred in forests inhabited by indigenous people. In January 2019, the new president of Brazil, **Jair Bolsonaro**, made an executive order for the agriculture ministry to regulate the land that tribal members inhabit in the Amazon.

1 BEEF PRODUCTION

Summary

- **The Brazilian beef industry is the immediate cause of 80% of Amazon deforestation and 14% of the world's commodity-linked tropical deforestation**.
- The majority of this beef industry supplies the Brazilian domestic market but around 20% is exported, making Brazil the world's biggest beef exporter, largely to China, Russia and Halal markets in the Middle East.
- **This deforestation is encouraged by Brazilian government policy and is having a devastating effect on indigenous forest people.**
- The zero-deforestation commitments **TAC** and **G4** for beef exporters are *ineffective*
- Though the UK has a low deforestation risk with its Brazilian beef imports (largely processed beef), any changes in imports with post-Brexit trade deals run the risk of opening up the import of beef from the new production areas in the Amazon.
- The Brazilian government needs to stop the enablement of clearance of forest in the Amazon basin and focus community development in existing areas of population with a stretch goal of *re-wilding the forest*.
- **The priority for BFAWU could be to resist the development of any imports of Brazilian beef from the Amazon Basin and to support measures to persuade the Brazilian government to cease empowering deforestation in the Amazon, to consider alternative development strategies and the rewilding of some deforested areas.**

Brazil is the world's largest beef exporter, with about 20% of the production (about $5.4 billion per year) going for export. Brazilian beef production includes processed meats, e.g. *beef jerky* and *corned beef, beef carcasses, offal* and *live animals*. The Brazilian beef sector is responsible for 20% of all the commodity-driven deforestation across the global tropics. In the Amazon Basin and Cerrado, 2/3 of the deforestation is to enable *grazing*. The biomes involved in beef production in Brazil are shown in Figure 3.

The Amazon Basin is surrounded by higher ground, the Atlantic Forest, to the east and the Cerrado to the south. Water from the Andes or the surrounding higher ground that does not drain into the Amazon drains into the ***Pantanal,*** making this the world's largest wetland. The Pampas is more of a savannah area, like northern Argentina. Brazil has 2.5 million cattle ranchers, 87% of Brazilian beef comes from grazing and only 13% from feed lots. Though there are two no-deforestation agreements that exporters can sign up to, in reality, the supply chains are very complex and the verification is difficult. The details of the supply chains within Brazil involving 2,800 municipalities and 152 exporting slaughterhouses were independently mapped from 2015-2017.

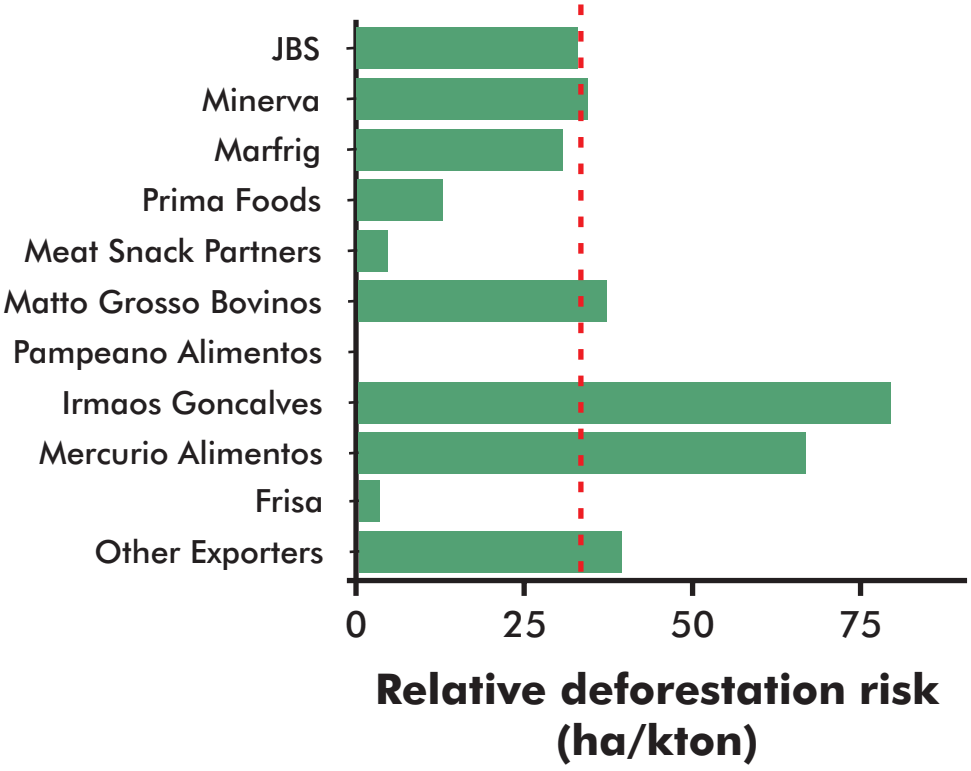
Figure 3. Brazilian Biomes

Overall, the study identified 75'000 hectares/year deforestation risk linked to cattle exports each year, out of a total of 520,000 hectares/year of cattle-associated deforestation risk.

Even though cattle exports were greatest from the Cerrado, the deforestation risk linked to cattle exports was higher in the Amazon due to the higher rate of deforestation, with 57% of the cattle export deforestation risk arising from the Amazon, 43% in the Cerrado and <1% in the Atlantic Forest.

Three companies, **JBS**, **Minerva** and **Manfrig** account for 71% of Brazilian beef exports, but as they source most of their beef from the Cerrado where there is less forest. The relative risk of deforestation is greatest for the meat packer **Irmãos Gonçalves** which operates a slaughterhouse in the Amazon state of Rondônia. As of July 2020, this company had not made any commitment to monitor their suppliers for deforestation, see Figure 4.

Figure 4. The relative deforestation risk for Brazilian beef suppliers, ranked top to bottom by overall exports.



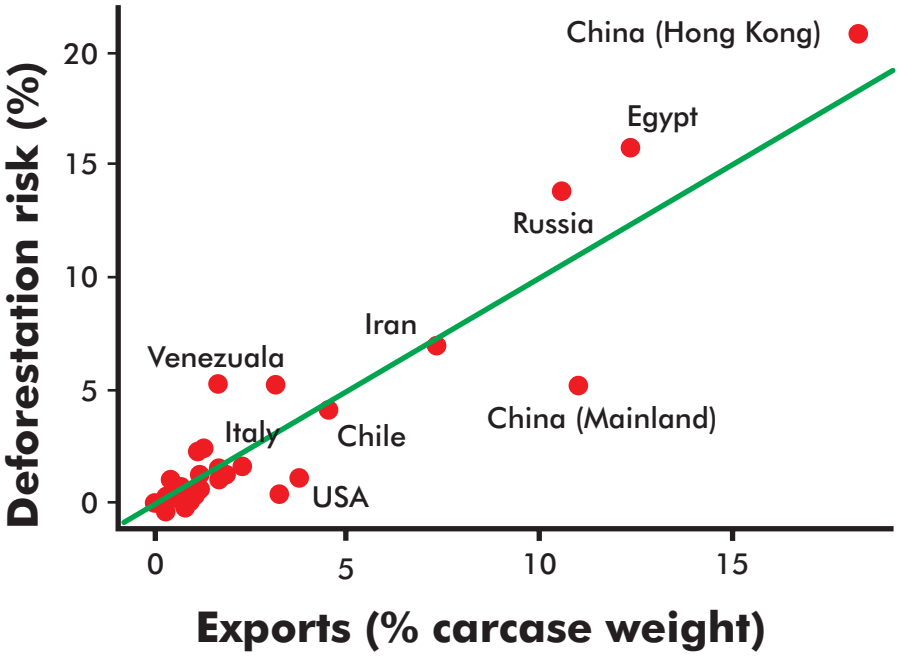
There are two Zero deforestation commitments for beef suppliers created in 2009 that mat suppliers can sign up to,

- **TAC**, ***Terms of Adjustment of Conduct***, a commitment not to purchase cattle from properties with illegal deforestation within the nine states making up the Amazon basin).
- **G4**, an agreement from the three largest meat packing companies, JBS, Minerva and Marfrig, to not purchase cattle from properties in the Amazon biome who cleared land post-2009.

Though 32% of the cattle exports are supposedly covered by TAC and 18% by G4, the detailed analysis shows more deforestation risk from exports than would be expected. This is due to the incomplete implementation of the zero deforestation commitments and that cattle raised in the Amazon may be shipped to feedlots in the Cerrado for finishing and thereby be categorized as Cerrado cattle, carrying a much lower deforestation risk.

The destination of the beef exports in relation to deforestation risk is shown in Figure 5.

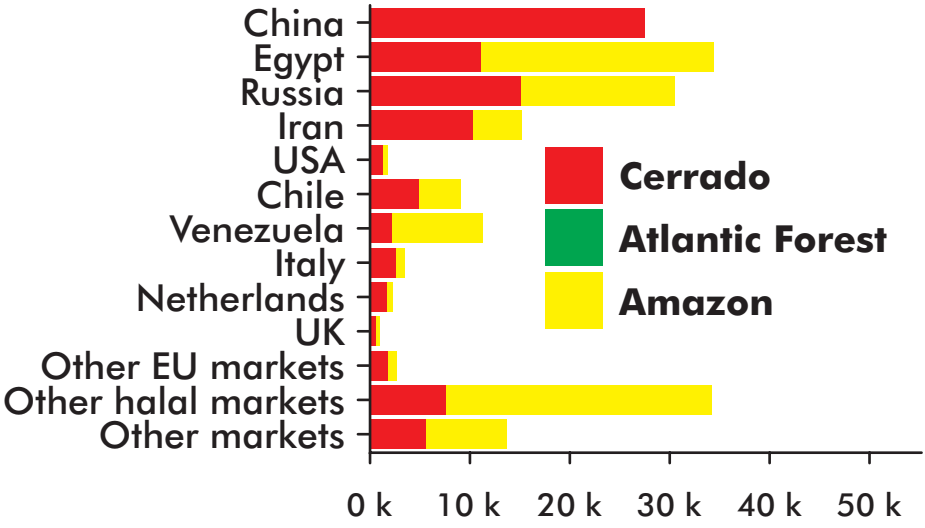
Figure 5. The destination of Brazilian beef exports in relation to the deforestation risk.



The greatest overall deforestation risk is for exports to **China** (Hong Kong), **Egypt, Russia** and **Iran**. The Egyptian and Iranian exports are largely of Halal beef that is sourced from slaughterhouses in the Amazon. The actual deforestation risk per hectare by Brazilian biome is shown in Figure 6. The greatest risk to the Amazon comes from exports of Halal beef and to Russia. The export of live cattle to Venezuela is also noteworthy, though this has declined considerably since this study due to the economic crisis in Venezuela.

Overall, the greatest risk of deforestation in Brazil comes from domestic beef consumption. The risk of deforestation is at 86% of cattle-related deforestation, slightly more than the consumption of beef, largely because the traditionally exports of beef products come from the Pampas and coastal regions. These older and well-established beef production areas are more developed in their sanitary controls than the new production areas in the Amazon and it is these controls for things such as *Foot and Mouth Disease* (FMD) that help to focus exports to the USA and EU on the traditional supply areas. However, as better FMD controls are introduced in the Amazon and new export markets open, such as that for Halal beef, the proportion of Amazon-produced beef going for export is increasing.

Figure 6. The actual deforestation risk in thousands of hectares per biome of Brazilian beef exports



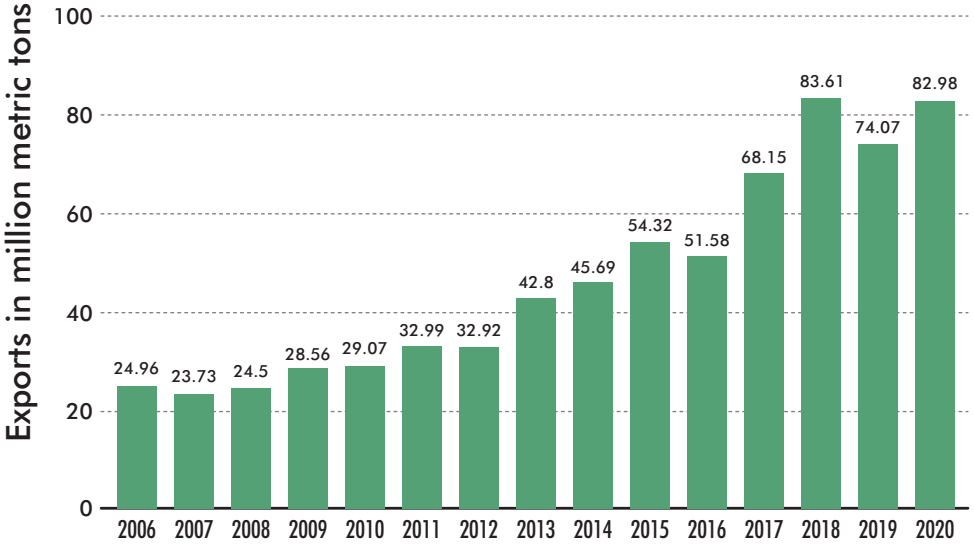
2 SOYBEANS

Summary

- **Brazil is the world's largest producer of soybeans with production growing by 65% since 2010.**,
- Two thirds of the production is exported, most of it (73%) to **China**.
- Around 75% of all soybeans are used as *animal feed*.
- In the Amazon, cleared forest is usually used for beef production but this may be followed by conversion to intensive soybean production after 5 or more years. However, the whole Amazon Basin only provides 13% of Brazilian soybeans, the main production is in the drier savannah area of the Cerrado, to the south of the Amazon Basin, which has already been heavily deforested and the remaining savannah forest is under threat.
- In the intensive soybean production areas, the extensive soybean monoculture has created serious pest and disease problems that require substantial inputs of pesticides and following the introduction of herbicide-resistant, *Roundup Ready* soybeans in 2003, there are increasing problems of weeds that are becoming resistant to **glyphosate** (*Roundup*).
- There are laws that seek to restrain the extent of deforestation, such as the Brazilian Forest Code. In addition, there is a voluntary zero-deforestation commitment, the Amazon Soy Moratorium. The Roundtable on Responsible Soy was created in 2006 but <2% is traded under its standards. Overall, these measures have only been partially effective due to the difficulties of monitoring and enforcing them, intimidation of officials and subversion of the rules by the supply chain.
- The 2019 Presidential Decree by Bolsanaro enabling enhanced forest destruction needs to be *rescinded*.
- **The BAFWU priority is to ensure that the supply chain is using zero-deforestation and sustainable soybeans and that the ability to track, trace, monitor and enforce these standards in Brazil is substantially improved.**

Brazil surpassed the USA in 2019 as the world's largest producer of soybeans, with 134 million metric tonnes worth $26 billion. Since 2010, Brazilian soybean production has increased by 65% and the increase in exports in shown in Figure 7. Nealy two thirds of Brazil's soyabean production is exported and of that China takes 73%. Around 75% of all soybeans are used for animal feed.

Figure 7. Brazilian soybean exports in million metric tonnes



Nearly 50% of Brazilian soybean is grown in the Cerrado, only 13% comes from the Amazon. The huge growth of the crop in Brazil has led to a near monoculture in many areas, which has brought with it a number of problems:

- In 2001 the disease **Asiatic soybean rust** was found, which can cause a 90% yield loss. To control this the soybeans are sprayed regularly with fungicide, sometimes up to 10–12 times.
- Heavy insecticide spray programs led to resistance in the **stink bug** which became the major insect pest. In the 2012-13 season, the **cotton bollworm** *(Helicoperva armigera*) moved over from cotton to become a major soybean pest.
- *GM Roundup Ready soybeans* were introduced into Brazil in 2003 as *'Maradona Soy'*. There are now 15 weed species resistant to glyphosate, the active ingredient of *Roundup*.

In 1965, Brazil created and passed its first **Forest Code**, a law requiring landowners in the Amazon to maintain 35 to 80 percent of their property under native vegetation. This has been extended to the Cerrado where farmers must preserve 20% of the forest on land that they legally convert. However, the implementation of the Forest Code has been difficult.

The Amazon Basin covers an area the size Mexico, Mongolia, Peru and Egypt combined and local governments had few resources to implement the plan. Farmers and loggers circumvented the legislation and in 2008 attacked (with guns) the environmental officials at Paragominas in the state of Pará, burned the offices down and reclaimed all the impounded illegal logging vehicles.

In 2009 Soy traders and companies were pressured by consumers and NGOs to sign a voluntary agreement called the **Amazon Soy Moratorium** (ASM) to stop sourcing soy from farms in the Amazon. In 2010, the government made it mandatory for all rural properties to be mapped and registered through a system known as **CAR** (*Cadastro Ambiental Rural*). Progress remains slow but improvements in traceability and remote sensing have increased the ability of government and auditors to assure the progress – that is until the Bolsanaro slashed the environmental budgets and increased the process of registering native lands and their subsequent destruction in his 2019 Presidential Decree.

Figure 8. Bolsanaro's 2019 Presidential Decree re-ignited the fires of forest destruction in the Amazon Basin

In addition to the certification schemes discussed above, in 2006 the **Round Table on Responsible Soy** (RTRS) was established. At its inception there were fierce engagements between various groups and though by 2010 there was an agreement to *standards version 1.0*, uptake of the standard has been low – with only around 1-2% of global production being classified as *sustainable*.

Soybean is less of a direct threat to Amazon deforestation than beef production. *Grazing* is the first agricultural enterprise after clearing. After about 5 years, the nutrients in the soil are used up and the pasture starts to degrade in productivity. Many small ranches are unable to maintain the productivity and may eventually sell to large agribusinesses who are able to invest in lime and the infrastructure to develop intensive farming. However, the main focus of soybean production is south of the Amazon Basin, in the Cerrado.

Here, **44% of the native savannah forest has already been extensively cleared** and so schemes to limit further deforestation are important from an ecological point of view. The Cerrado is seen as the *'water tank of Brazil'* and destruction of the forest is already impacting the water table. Since Bolsanaro's 2019 decree, 61,000 wildfires were set in the Cerrado in 2020 (compared to 39,000 in 2018).

On a global level, the use of soybean as animal feed to fuel the increasing taste for meat is counter to the direction need to achieve sustainability. Meat (in particular beef) consumption needs to be replaced by *plant-based diets*. However, where soybeans are used, it is important that *certified zero-deforestation supplies* are used. There is a large amount of degraded pastureland already available in the Cerrado that could be used for soybean production in preference to the clearance of forest to start new cultivations. Rather than allowing an unregulated trade, many NGOs (eg. WWF) are pressing for increased levels of the enforcement of certification and its adoption by buyers. **Progress will be slow until the Brazilian government reverses Bolsanaro's policy of cutting environmental agency funding and the increased deforestation and destruction of indigenous people's land**.

Europe imports 16 million tonnes of soybean meal every year (43% comes from Brazil and 41% from Argentina). Europe also imports 15 million tonnes of raw soybeans annually, mostly from the USA and Brazil – meaning that animal feed may be a hidden source of forest destruction and greenhouse gas emission.

3 PALM OIL

Summary

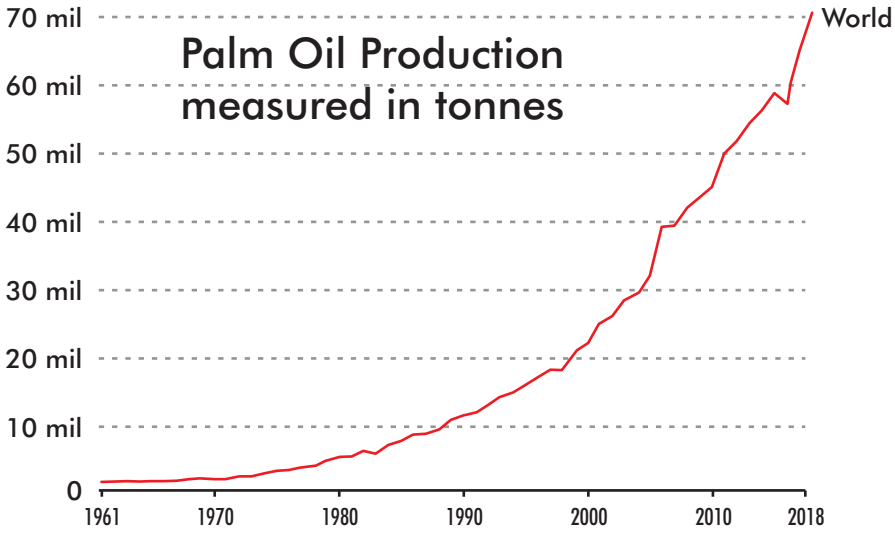
- Palm oil is a versatile and cost-effective oil for *frying, baked goods, ice cream* and as a *natural preservative*. It is also widely used in *shampoo, soaps* and *liquid detergents*. Almost half the items in UK supermarkets contain palm oil.
- Oil palm plantations now cover 27 million hectares, the size of New Zealand.
- 80% of palm oil is produced in Indonesia and Malaysia and 80% of that is exported to India and China.
- Oil palm plantations were responsible for 39% of the forest loss in Indonesia and Malaysia from 2000–2018.
- Greenhouse gas emissions from the hot conversion of forest in SE Asia account for 0.8% of all global greenhouse gas emissions (equivalent to almost half of the global aviation industry).
- Hot clearance of land led to the ignition of peatlands in Indonesia which produced dense smoke that may have caused 100,000 deaths in 2015.
- Forest clearance has brought conflict with indigenous people living in Malaysia and Indonesia and threatens many endangered species of macrofauna.
- The palm oil industry has a long history of poor labour practices – especially concerning the use of immigrant labourers from India.
- The **Roundtable on Sustainable Palm Oil** (RSPO) has finally agreed a set of principles that will protect the environment, human rights and local community prosperity if properly implemented.
- Around 20% of all palm oil is RSPO-certified but questions remain about the reliability of the certification. Some users, e.g. Unilever, have put their own certification system on top of the RSPO system.
- **The BFAWU priorities could be to insist only on the use of RSPO certified palm oil where there is no alternative, for solidarity with workers in the palm oil industry over employment conditions, to call for a zero-deforestation commitment for palm oil and for the development of viable alternatives for edible processing oils.**

Until a cost-effective alternative to palm oil is available, it will continue to be used in processed foods and personal care and cleaning products.

In recent years, there has been increasing awareness of the consequences that palm oil production can have on wildlife and the environment. Almost half the items sold in UK supermarkets today contain palm oil. While the use of sustainable palm oil is increasing, activists are building consumer pressure against it. Technically and economically, there are no obvious substitutes available for palm oil at present and until these are available standards for sustainability must be embraced by all stakeholders.

The oil palm grows in tropical climates and its fruit contains a versatile vegetable oil which can handle frying without spoiling and blends well with other oils. Its combination of different types of fats and its consistency after refining make it a popular ingredient in packaged baked goods, ice cream and as a natural preservative in processed foods. Palm oil provides the foaming agent in virtually every shampoo, liquid soap or detergent. Cosmetics manufacturers prefer it to animal tallow. It is increasingly used as a cheap raw material for biofuels, especially in the EU. Oil palm is the most land-efficient oil crop, with a much greater yield per hectare than other oils like sunflower, rapeseed, or soy. Palm oil has grown into a major global industry with the annual production doubling over the last 20 years to 70 million tonnes (Figure 9).

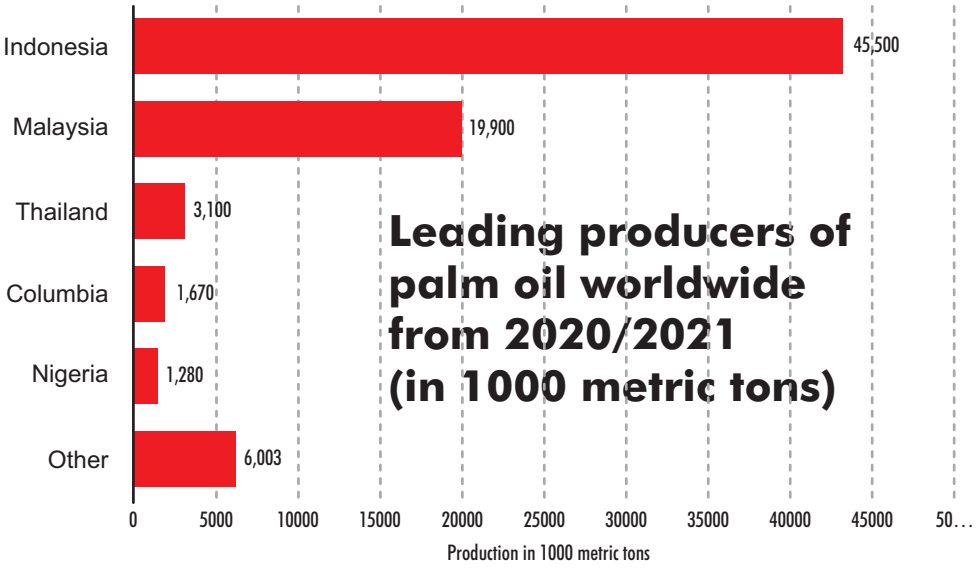
Figure 9. The growth of palm oil production



Oil palm plantations now cover an estimated 27 million hectares, an area bigger than New Zealand. The majority of palm oil is shipped from Indonesia and Malaysia to India and China – no more than 20% is exported to Europe. Emissions resulting from the conversion of palm oil plantations in south-east Asia accounts for up to 0.8% of total global greenhouse gas emissions. This is the equivalent of *almost half that of global aviation industry*.

Over 80% of all palm oil is produced in Indonesia and Malaysia (Figure 10). The main palm oil production companies are headquartered in Malaysia or Singapore and own large estates of oil palm and the processing plants, as well as some biodiesel manufacturing in Europe. They will process their own crops and bring in the production of smallholders in the surrounding areas. The principal production companies are Singapore based Wilmar International, Malaysia-based **IOI** and **Sime Darby**.

Figure 10. The global distribution of palm oil production



This huge increase in the production of palm oil has been enabled by the clearance of rainforest in Indonesian and Malaysian Borneo, Peninsula Malaysia and Indonesian Sumatra and was responsible for at least 39% of forest loss on the biodiversity-rich island of Borneo between 2000 and 2018.

Some of the clearance is done by logging for pulpwood, but much is done through fire. This deforestation by burning has resulted in Indonesia becoming the third-biggest contributor of greenhouse gases after China and the USA, along with extensive disruption of biodiversity, including impacts on populations of orangutans, elephants, rhinos and tigers. The burning of some forest on peatland in Indonesia resulted in the huge and long-lasting fires in the peat itself which were estimated by Harvard University to have resulted in 100,000 additional deaths in the region in 2015 because of the heavy smoke.

In addition to these environmental problems, the palm oil industry has a long history of **exploitative labour practices**, principally in the use of *migrant labourers from India*. Furthermore, the expansion of palm oil plantations has brought conflict with indigenous people living in the forest and with previous settlers from the Indonesian transmigration program that had resettled landless people from the overcrowded urban areas on Java into the more remote parts of the country. The consequences of this in Indonesia for native forest people have been documented by Norman Jiwan of **Sawit Watch**.

Can palm oil be produced sustainably?

The Roundtable on Sustainable Palm Oil (RSPO) was formed in 2004, between *palm oil producers, financiers, palm oil buyers, processors, product retailers* and *civil society*. Its *principles and criteria* (P&C) were hotly debated for many years but as they are established, they do cover all aspects of sustainability, from the prosperity of local communities to ethical standards, labour rights, the rights of small holders and the environmental management with respect to biodiversity, conservation, forest conversion, pesticide use, water quality and greenhouse gas emissions. The 2018 P&C extend through the production and processing of palm oil and adherence to them is checked by certified auditors. The tracking and tracing of certified palm oil through the system is provided by **Green Palm** so that buyers can be assured that the palm oil that they are receiving is *sustainable*.

This is the basis of a sustainable system, however there is a big question over whether this is being delivered as claimed. In 2018, widespread labour abuses have been reported on estates producing certified sustainable palm oil and in 2019, **Greenpeace** challenged the RSPO and the brands using sustainable palm oil to confirm they were delivering on their promise.

In 2015, three-quarters of devastating fires in Indonesia were related to land owned by RSPO members. It was not until 2018 that forest conversion was prohibited, but it continues and 193 critically endangered species are currently threatened by the development of palm oil. The pressure from activists is being felt by processors and retailers in Europe and in response, **Unilever** (a founder member of RSPO) has introduced their own certification system on top of RSPO certification that is committed to ensuring that there is *no forest destruction associated with their supply chain by 2023* and there are further assurances delivered by producers, NGOs and governments concerning the sustainability of their supply.

The bottom line is that palm oil continues as an important ingredient in food processing. Although alternatives are presented, at the moment they are not as effective, affordable or even necessarily more environmentally friendly.

Currently, the RSPO is not delivering a sustainable product that buyers can have confidence in, due to the reluctance of producers to truly adhere to the principles.

It will be possible have some confidence in the additional certification provided, such as that by Unilever, but truly sustainable palm oil will probably only be a small part of the supply. The majority of Malaysian and Indonesian palm oil is exported to India and China and as long as they do not require a higher level of sustainability, the overall situation is unlikely to change. The WWF sees certified palm oil as the only way forward but calls on companies, governments and financiers to do more to pressure the producers to conform to the standards.

Until such a time as a viable alternative is available, the best option for the BFAWU is to support the WWF drive for wider engagement in the support of *certification* and to bring pressure on governments, financiers and palm oil buyers to stop enabling the forest destruction.

4 COCOA AND CHOCOLATE PRODUCTION

Summary

- The global chocolate industry is worth over $50 billion of which only 6% is retained by the growers.
- The commodity is supplied by 5-6 million small farms, mostly in West Africa
- Forest destruction is a serious and growing problem in Ghana and Côte d'Ivoire where much of the cocoa comes from.
- Child labour practices are widespread
- Schemes such as Fair Trade and UTZ are often found to be certifying unsustainable environmental and labour practices.
- Premiums for sustainable cocoa are regularly absorbed by the supply chain and do not trickle down to the growers, who are among some of the poorest people in the world.
- **The BFAWU priorities could be to insist not only that certified sustainable chocolate is used but that there is further assurance as to zero deforestation, unfair labour practices and equitable payment of producers.**

The global chocolate industry is worth over $50 billion. The basic ingredient is cocoa which comes from the beans of the cocoa tree *Theobroma cacao* which originated in Central America but is now grown around the world, in a zone up to 15 to 20 degrees north or south of the Equator, as shown in Table 2.

Table 2. The worldwide production of cocoa

Region	Countries	Typical yield Kg beans/ha	% Global Production
Africa	*Côte d'Ivoire, Ghana, Nigeria, Cameroon*	300–400	68
Asia	*Indonesia, Malaysia, PNG*	500	17
South America	*Brazil, Ecuador, Colombia*	600	15

Around 80 to 90% of cocoa comes from come from 5 to 6 million small farms, the average size of which is less than 4 ha, many less than 2 ha. The work is very labour intensive and involves picking the cocoa pods, fermenting and sun-drying of the beans. These smallholders sell to local traders through cooperatives and the local traders to the *Processors and Grinders* who supply the manufacturers and then the retailers.

Some of the major players are shown in Table 3. The biggest single country for processing and grinding is the **Netherlands**, which handles 13% of the world market.

Table 3. The Major players in the cocoa value chain

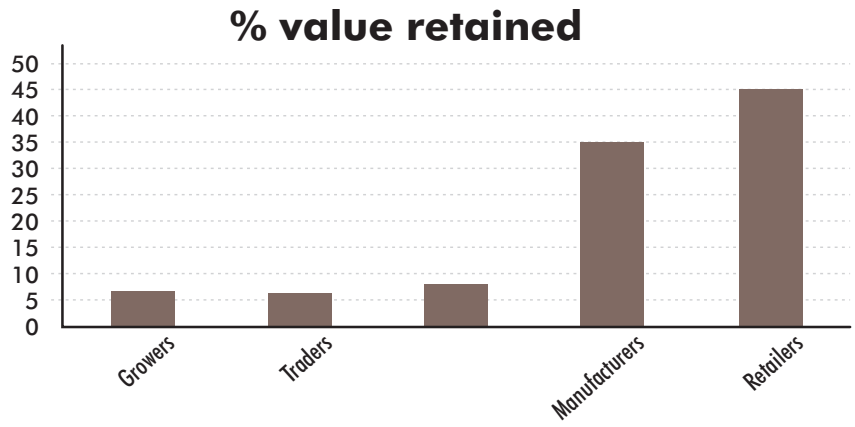
Value chain member	Example
Growers	90% produced by 5–6 million smallholders
Local traders	Thousands
Processors and Grinders	Through consolidation, 75% of the market is owned by *ADM, Cargill, Olam, Ecom, Touton, Blommer & Continaf*
Manufacturers	*Mondelēz, Nestlé, Mars, Hershey's, Ferrero, Lindt-Sprüngli* and hundreds of smaller, nîche players.
Retailers	*Walmart, Tesco, Rewe, Carefour, Lidl, Aldi, etc*. and many smaller operations.

Only 6.6% of the value in the chain remains with the growers, the overall distribution is shown in Figure 11. The main commodity trading markets for cocoa are in London and New York, the current price is around £1600 a tonne.

In 2018, Ghana saw a 60 per cent increase in forest loss compared to 2017, *the largest annual increase in the world*. Côte d'Ivoire was second at 26 per cent. Cocoa production has been associated with *extensive illegal deforestation*. The big producers are sensitive to their image and so there are several different schemes supposed to certify *equitable standards of production, human rights* and *trade* in the sector – although these are often ineffective at the local level where independent investigations have found *child labour* and *illegal deforestation practices* in certified sustainable cocoa.

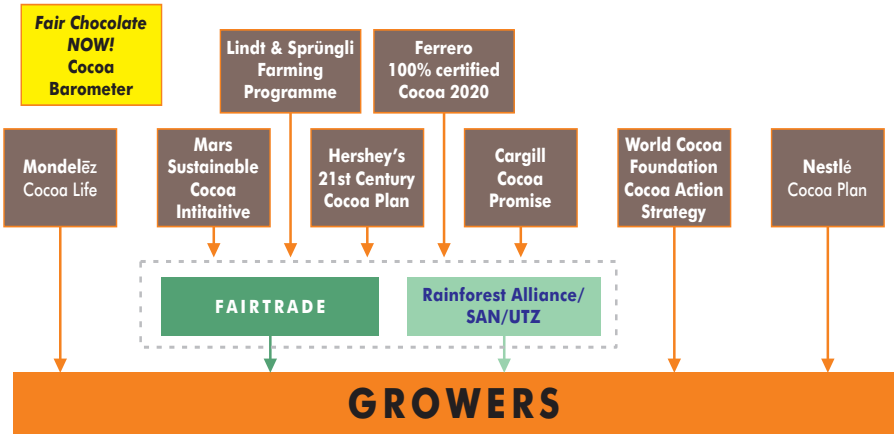
Fair-trade premiums are often absorbed by the supply chain and *do not trickle down to the growers*.

Figure 11. The percentage retained in the cocoa value chain



There are numerous schemes to assure the sustainability of cocoa production (Figure 12) but the end result is that growers may need double or triple certification and corruption or inattention of the auditors means that many unsustainable practices continue. Growers are also dissatisfied that the premiums are absorbed by the supply chain and they do not see them.

Figure 12. Cocoa sustainability map



The challenge is to establish verifiable sustainable supply chains that genuinely reward the 6 million small farmers producing this crop.

5 PORK

Summary

- The UK imports 60% of all the pork that it consumes, mostly from **Denmark**
- Pork production contributes only 18% of the greenhouse gas emission of beef production.
- Intensive pig production results in local threats of *nitrogen* and *phosphorous pollution* of surface and ground waters and air from *sulphur dioxide* and *ammonium pollution*.
- intensive production is also a threat to animal welfare standards and promotes the development of *disease*.
- The importation of **soybeans** and **soybean meal** as feed may carry additional *deforestation* and *greenhouse gas emission* penalties.
- **The BFAWU priorities could be for the assurance of environmental and animal welfare standards in the pork that is used and a commitment to use *zero-deforestation feedstuffs*.**

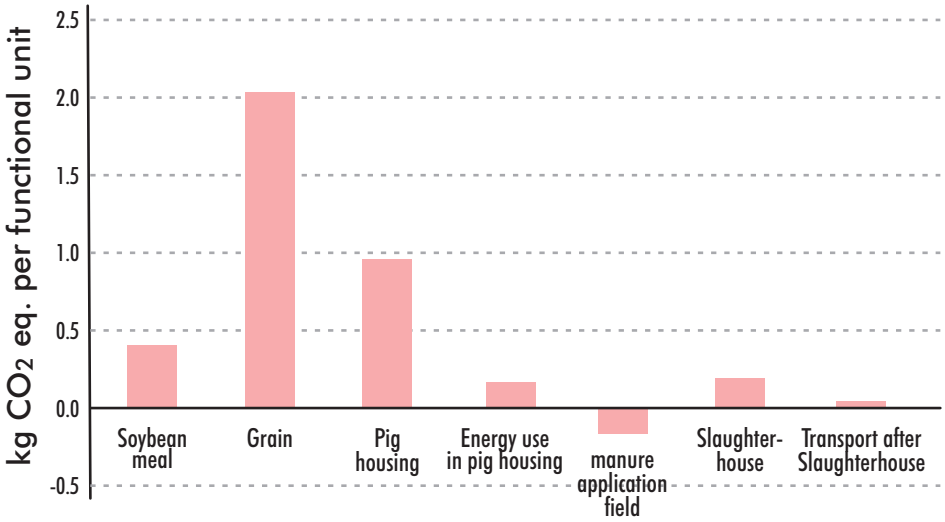
The UK is a net importer of pig meat, currently importing around 60 per cent of all the pork it consumes. The volume of these imports stood at 968,000 tonnes in 2015. Import levels have fluctuated slightly over recent years – since falling back in 2012, they have been increasing steadily year on year. Denmark is the dominant supplier, accounting for over a quarter of all UK pork imports. Together with Germany and the Netherlands, they account for 60 per cent of imports. The supply chain of pork in Europe is very complex, with the demand for different cuts varying between countries and imported meat often being re-exported. EU supplies virtually all the pork imported into the UK, but this may change as a result of post-Brexit trade deals.

Livestock are responsible for 14.5% of all greenhouse gas emissions and cattle are responsible for 2/3 of that. Pigs produce only 18% of the amount of methane that cattle do and chickens 12%.

Intensive pork production creates problems of manure management which leads to local nitrogen and phosphorous pollution of surface and ground waters , this problem is at its greatest in Belgium, Czech Republic, Denmark and Netherlands.

In addition, local air pollution with ammonium is associated with intensive production units. Overall, 80% of all ammonium emissions are from livestock. In addition, the release of sulphur dioxide contributes to acidification of rain and surface waters. Overall, the relative contribution to global warming are shown in Figure 13, though in this assessment, the implication of the source of soybeans is not calculated.

Figure 13. The relative contribution of different parts of the pork production cycle to greenhouse gas emissions.



Pork production has expanded most rapidly in China, USA, Poland and Korea. The franchise system of hog farms in the USA has driven low standards of animal husbandry as well as local environmental issues. The huge size of intensive pig production units creates a risk of disease, such as **Asian Swine Fever** (ASF) which caused a 50% loss in Chinese pig herd in 2018. ASF is currently on the rise again with 20% loss of the northern Chinese pig breeding stock of pigs and outbreaks detected in detected in Poland, Belgium and Bulgaria leading to restrictions on the movement of meat and live animals.

Though pork production produces 5–6 times less greenhouse gas emission than beef production, it does present local threats to the *eutrophication of water* and *acidification* and *local air pollution*. The intensive nature of the production continues to raise challenges to animal husbandry standards and to the development and spread of disease – things take on a greater focus *post Brexit*.

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