Forests on Fire

The role of Swedish banks in deforestation of the Amazon and Cerrado

FairFinanceGuide® Sverige

Swedish Society for Nature Conservation

WORLD ANIMAL PROTECTION

Image: Beef cattle, Mato Grosso, Brazil.
Credit: World Animal Protection.

Contents

Fair Finance Guide Sweden

Fair Finance Guide Sweden is a civil society initiative that conducts research and benchmarks Swedish banks on sustainability issues. The initiative is led by the Swedish Consumers' Association in collaboration with the Swedish Society for Nature Conservation, World Animal Protection, Amnesty, Diakonia and Fair Action. It is part of the Fair Finance International network with members in 14 countries. www.fairfinanceguide.se

The Swedish Society for Nature Conservation

The Swedish Society for Nature Conservation is the largest environmental organisation in Sweden and a popular movement having stood up for nature since 1909. We disseminate knowledge, shape public opinion and influence decision-makers – locally, nationally and globally. Climate, forests, agriculture, environmental pollutants, freshwater, oceans, marine ecosystems and sustainable consumption make up our key focus areas.

World Animal Protection Sweden

World Animal Protection is one of the leading international animal welfare organizations in the world. We are present on all continents and help animals at all levels, from direct efforts to long-term political influence and in cooperation with regional, national and international authorities, governments, organizations and companies. For 55 years, we've been moving the world to protect animals.

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Executive summary

The seven largest banks in Sweden have considerable financial interests in companies in the soy and beef value chains, which are the main drivers of deforestation in Brazil's Amazon and Cerrado regions. The banks are thereby exacerbating climate change, biodiversity loss, human rights abuses, public health risks and, often overlooked, global farm animal cruelty.

Deforestation in the Amazon and Cerrado is accelerating, bringing the region dangerously close to the tipping point beyond which the rainforest will flip into savannahs. This will have devastating consequences for global and regional climate change, indigenous and local communities, biodiversity, the welfare of wild animals and agricultural production across South America. Deforestation is commonly accompanied by land grabbing, violations of the rights of indigenous communities and other human rights abuses. Even before the pandemic, Brazil was one of the most dangerous countries for environmental defenders. The COVID-19 pandemic has worsened the situation. In addition, deforestation and the related intensification of livestock production is one of the biggest risk factors for zoonotic epidemics and pandemics.

The main drivers of deforestation in the Amazon and Cerrado are the production of beef and soy; the latter primarily used as animal feed for factory farming in Brazil, China and Europe. Currently, at least 17 percent of beef exports and 20 percent soy exports from the Amazon and Cerrado to the EU is associated with illegal deforestation. Combined with legal deforestation, these numbers are even higher. The production of monocrops of soy for animal feed, commonly genetically modified, is not only driving deforestation, but also uses large amounts of pesticides, adversely affecting ecosystems and communities dependent on them.

Cattle farming in the regions generates long distance transport of live animals on a massive scale, inflicting appalling animal cruelty. Long journeys – up to 60 hours along treacherous roads – are common.

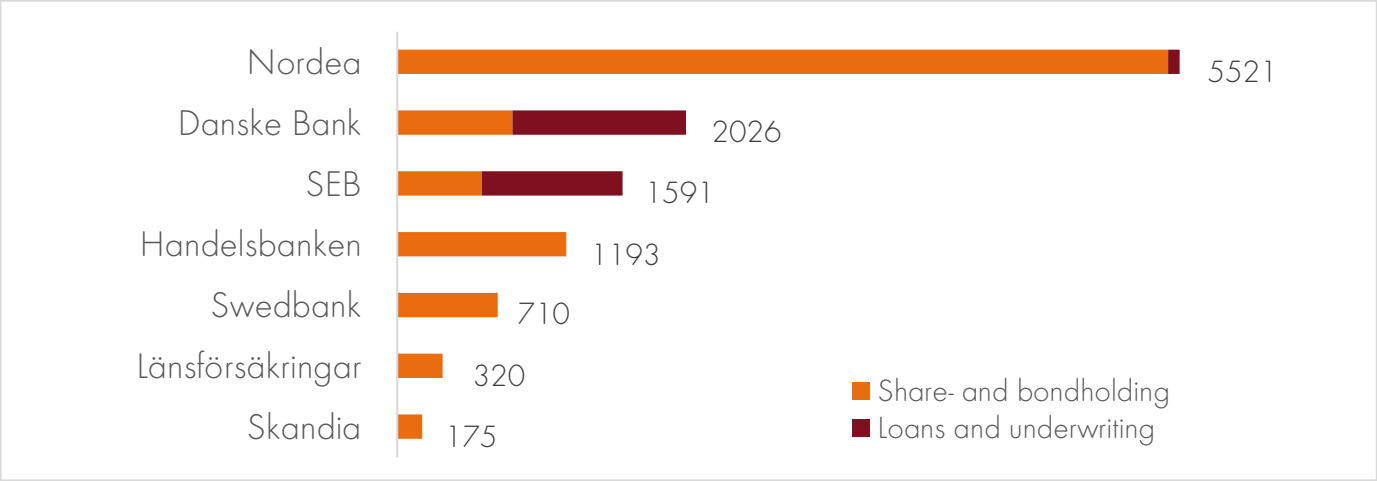
Factory farms often keep large numbers of animals in stressful, barren environments which have no access to outdoors or natural light. Animals are often caged and genetically selected for high yields. Due to its high-quality protein content, soy is an important feed ingredient to realize high yields within industrial livestock production. Large quantities of antibiotics are used to maintain production, which leads to antimicrobial resistance. Currently, antimicrobial resistance is killing globally approximately 700,000 people annually, a figure that is expected to rise sharply.

The situation for environmental defenders is worsening and the current rate of change of business activities is too slow and continues to infringe on indigenous people and local communities defending their land and territories. The increasing violence and human rights abuses clearly indicate that a mandatory human rights and environmental due diligence for companies and financial sector is needed.

Most commitments and initiatives to stop deforestation, including certification of soy, have fallen short so far. This is unsurprising since the root cause of the problem has largely been ignored: the excessive production and consumption of animal products. Ending deforestation and its associated adverse impacts requires a transformation of the global food system. In addition, new legislation to avoid conversion or degradation of natural forests and other ecosystems as well as human rights abuses, is necessary. The law should also cover commodities and products at risk of being linked to deforestation. Financial institutions should be required to comply with the same rules as their clients.

The seven largest banks in Sweden have financial links to 27 out of the 61 companies identified as having high risks of contributing to deforestation in the Amazon and Cerrado. In the beginning of 2021, the banks held SEK 9,2 billion in investments in these companies. In addition, three of the banks have provided loans and financing to the companies in the last five years, in total SEK 2,3 billion. These companies include Brazilian-based JBS, the largest meat processing company in the world, the American soy trading company Cargill and the French retailers Carrefour and Casino.

The seven banks' financial interests in the high-risk companies, in SEK million



Total shareholdings and bondholdings per first quarter 2021, and total financing through loans and underwriting in the last five years (2016-2020).

Our assessment of the banks' responsibility work showed that none of the banks could demonstrate a proper engagement process, including sufficient and time-bound targets, with any of the three sample companies that were examined (Blackstone, China Mengniu Dairy, Carrefour). Only Danske Bank and Nordea have excluded some of the 61 companies from their investments.

On a positive note, all the banks except Danske Bank, participate in initiatives together with other investors that addresses the issues to various extent. Some of these include engagement at a political level in Brazil. Handelsbanken and Nordea are active in most of the initiatives whereas Danske Bank and Swedbank only in a few.

Fair Finance Guide Sweden and its partners the Swedish Society for Nature Conservation and World Animal Protection Sweden urge financial institutions to have strict policies in place and take necessary actions to ensure they avoid deforestation and related issues, such as biodiversity loss, climate change, land rights abuses and animal welfare concerns. This should apply to all financial institutions that are financing or investing in companies active in the soy and beef sectors in the Amazon and Cerrado, or in the domestic and international soy and beef supply chains.

This leads to the following recommendations to the banks and other financial institutions:

1. **Commit to zero tolerance for deforestation in all financial relations:** Develop a vision on alternative development paths for a sustainable, circular agriculture system. Any involvement in deforestation-risk sectors such as the soy and beef sectors are problematic and needs to be reconsidered.
2. **Develop a robust policy on deforestation and sustainable food systems:** This policy should set clear and strict criteria based on the principles included in legislations and in international agreements and standards. It needs to be accompanied by Key Performance Indicators (KPIs). Without strong policies and KPIs, every strategy to change company behaviour is at risk of requiring too little from a company and could result in "greenwashing", by creating a false sense of "addressing the issue".
3. **Disclose and be transparent:** Make full transparency a condition for investment and financing and disclose all the names and relevant details of the deforestation-risk companies in financing and investment portfolios. Be transparent on deforestation-related policies, screening procedures, engagement processes, voting behaviour and collective initiatives, and the progress achieved against KPIs. Finally, be open and transparent on information requests on behalf of credible civil society initiatives.
4. **Communicate expectations and formalise requirements:** Clearly communicate sustainability expectations to new and existing clients and investee companies. When granting a loan, these expectations should be formalised by a clause in the loan contract.
5. **Screen all deforestation-risk companies:** Screen all deforestation-risk companies in financing and investment portfolios on a regular basis, not only new clients or investments. The information from companies themselves and from service providers needs to be triangulated with all relevant information obtained from NGOs, experts and knowledge institutes as well as meaningful engagement with local actual and potentially affected stakeholders, such as indigenous peoples and other affected communities.

6. **Exclude clear offenders publicly:** When the screening process clarifies that a company is systematically involved in deforestation and related harmful impacts on sustainability issues, such as biodiversity, climate change, land rights and animal welfare, and prospects for improvement are low, the decision should be taken to not invest in this company and to exclude the company from financings.
7. **Engage with companies:** Engagement with deforestation-risk companies which might not be meeting all principles and criteria included in the financial institution's policy, must lead to a clear understanding of the problem and an agreement on the steps needed to address the issue. This agreement needs to be summarised in a time-bound action plan to which the company commits, including a clear description of the consequences when the company breaches these commitments.
8. **Monitor and act:** Monitor the company's progress with implementing an action plan. If progress is insufficient after a reasonable time period, financial institutions must decide to divest or - in case of a loan - apply for dissolution of the loan contract because the company defaults on one of the clauses.
9. **Vote on deforestation shareholder resolutions:** Investors should use the voting rights on the shares of deforestation-risk companies they hold. Moreover, since such shareholder resolutions may not adequately address root causes of deforestation, investors should also take the initiative to file and recruit support for more transformational shareholder resolutions.
10. **Take collective initiative:** Collaborate with peers, with NGOs, national and local governments and other stakeholders to collectively call upon corporate actors in the soy and beef supply chains, as well as the Brazilian government, to prevent, cease and remediate deforestation and its effects. Further collective initiatives are needed to transform the current unsustainable food system into a sustainable food system.
11. **Ensure effective grievance mechanisms:** Effective grievance mechanisms should be in place for all relevant stakeholders, who could be affected by deforestation linked to companies that financial institutions are financing or investing in.

Image: Kayapo Indigenous Protest in Para, Brazil, claiming dialogue on a project for transporting grains to the port of Mirituba in the northern state.
Credit: Getty Images.

Image: Forest fires in the Amazon, Acre, Brazil.
Credit: World Animal Protection/Noelly Castro.

Image: Credit: Getty Images.

Introduction

Deforestation in the Amazon and within its lesser-known neighbour the Cerrado is rising rapidly again. Probably no region on this planet better illustrates the intertwined, self-inflicted and deepening crises we face: climate change, biodiversity loss, inequality, human rights abuses and public health risks. Often overlooked, animals face several crises too and at an extensive scale.

This report shines a light on the role the supply chains of the commodities for which the Amazon and Cerrado are destroyed play. It reveals how the support of financial institutions to the biggest companies in these supply chains, raises the risk of driving the Amazon and Cerrado deforestation crisis. And it exposes the harsh impact of their decisions and alliances on our environment, on people and upon animals globally.

Investors and banks keep the current system running.[1] They dominate the allocation of resources within the modern globalised economy and are bankrolling our current crises.[2] But they can also become part of the solution. They hold a crucial key as they can transform our global food system in ways that our planet and all its inhabitants so urgently need.

As individual investors, savers and borrowers, we also hold a powerful key. Money lent by banks or invested by insurance companies and pension funds is our money; its use must be traceable. If we don't want it used to obliterate the Amazon and Cerrado, to make animals suffer, to contribute to human rights abuses, to imperil our common future, we must tell our financial institutions to do better. Or we need to find better ones.

Animal welfare should be firmly entrenched in the risk strategies of businesses. So far, it has not been prioritised by bankers and investors. How companies view animal welfare should be part of the aspects for good management, as well as risk management.

An important part of this is shifting away from a heavy reliance on animal protein towards more plant-based foods. This is important to meet greenhouse gas emission reduction targets. It is also an important tool for mitigating biodiversity loss and health risks. Ultimately, the destruction of nature is not a sustainable business case.

Change is urgent. Time is running out to curb climate change. Many species are on the brink of extinction. Financial institutions must act and must act boldly. Improving business as usual is not nearly enough. By playing a crucial role in transforming the food system, they can reverse deforestation and promote the wellbeing of humans and animals alike. This report should be a trigger.

Image: Forest fires near Manaus, Brazil. Credit: World Animal Protection/Noelly Castro.

1. Facing desolation – the Amazon and Cerrado

The Amazon rainforest is our planet's most diverse and most extensive rainforest. At least 1 in 10 of every known plant and animal species is found in the Amazon. It is also home to many indigenous peoples and other local communities, who depend for their way of living on the forests and waterways and often act as nature's guardians.3 The Amazon Basin is a unique system of forests and waters, containing countless streams and several large rivers, centered around the Amazon River, the planet's largest river. It stretches over seven countries in South America: Bolivia, Brazil, Colombia, Ecuador, Peru and Venezuela. Brazil accounts for over two-thirds of the Amazon Basin's total area.[4] South of the Amazon is another vital, but lesser-known biome, the Cerrado. This is the world's most ancient and biodiverse forest savanna, representing 5 percent of the world's plant and animal species. Like the Amazon, the Cerrado is also important for storing carbon and for South America's water systems.[5] Both the Amazon and Cerrado are under threat – the threats of deforestation and degradation. The main driver of this threat? The production of meat.

Deforestation – devastating data

Brazil leads the world in rainforest loss. By far. The latest annual deforestation data from June 2020 shows that Brazil suffered the highest loss of primary forest: 1,361,000 ha. This is more than one third of the total loss of humid tropical primary forests worldwide. Brazil is followed by the Democratic Republic of Congo (DRC) with 475,000 ha and Indonesia with 324,000 ha.[6] And these are not the only countries badly affected, Bolivia experienced record-breaking tree cover loss. In 2019 Bolivia's tree cover loss was more than 80 percent higher than in 2018.[7]

Large-scale deforestation in the Amazon is relatively recent. In 1970, only 2 percent of the Brazilian Amazon had been deforested. Since then, almost 20 percent of the Brazil Amazon forest has been destroyed. This roughly corresponds to an area twice the size of Germany. In addition, an even larger part is considered degraded: an estimated 1,225,100 km2.[8]

Deforestation in the Cerrado is even more dramatic: half of it has been annihilated, a further 30 percent degraded, leaving only 21 percent intact. Only 8 percent of the Cerrado is legally protected, and less than 3 percent within fully protected conservation units. Unlike in the Amazon, much of the Cerrado land conversion is legal. The Brazilian Forest Code requires farmers to set aside only 20 percent of natural vegetation, in contrast to 80 percent in the Amazon.[9]

The situation has not always appeared so bleak. Between 2004 and 2012, deforestation in the Brazilian Amazon showed an encouraging downward trend.[10] Annual deforestation rates declined by more than 80 percent. Also in the Cerrado, deforestation rates went down. Brazil was known internationally as an environmental champion, a country that successfully managed to reduce deforestation. However, deforestation could not be halted. Neither region has achieved anything close to zero deforestation in any year during the 21st century. Even worse, since 2012 deforestation in the Brazilian Amazon has increased again.[11]

In 2019, the destruction reached almost 10,000 km2 – a 30 percent increase compared to 2018, and a doubling of annual deforestation compared with 2012. It means that every minute, about three football fields of rainforest are destroyed. Figures for 2020 are even worse. Fires in Brazil's Amazon increased 13 percent in the first nine months compared with 2019. In September 2020, satellites recorded a staggering 32,017 hotspots. This meant a 61 percent rise from the same month in 2019.[12]

Table 1: Fire alerts in major slaughterhouse sourcing regions

	Number of fire alerts in 2019				Number of fire alerts in 2020				Variance year over year			
Company	Jul'19	Aug'19	Sep'19	Jul-Sep'19	Jul'20	Aug'20	Sep'20	Jul-Sep'20	V% (Jul)	V% (Aug)	V% (Sep)	V% (Jul-Sep)
JBS	22,707	132,721	121,824	277,252	20,892	107,404	221,934	350,230	-8%	-19%	82%	26%
Marfrig Global Foods	7,005	34,292	47,014	88,311	8,065	40,602	95,449	144,116	15%	18%	103%	63%
Minerva	6,719	37,563	42,751	87.033	8,319	33,454	98,066	139,839	24%	-11%	129%	61%
Mercurio Alimentos	3,919	22,562	23,422	49,903	7,695	21,347	52,887	81,929	96%	-5%	126%	64%
Vale Grande Industria e Comercio de Alimentos	8,129	29,717	24,081	61,927	4,383	24,886	49,591	78,860	-46%	-16%	106%	27%
Amazonboi	7,166	39,012	16,008	62,186	9,176	37,329	25,003	71,508	28%	-4%	56%	15%
Masterboi	3,710	14,131	19,882	37,723	4,808	10,804	47,461	63,073	30%	-24%	139%	67%
Matoboi Alimentos	1,717	6,153	18,350	26,220	2,237	15,288	43,097	60,622	30%	148%	135%	131%
Frigol	2,011	15,312	15,474	32,797	2,718	13,780	40,880	57,378	35%	-10%	164%	75%
Irmaos Goncalves Comercio e Industria	2,571	27,319	14,089	43,979	1,244	12,650	16,833	30,727	-52%	-54%	19%	-30%
Total fire alerts in major slaughterhouse sourcing regions	**65,654**	**358,782**	**342,895**	**767,331**	**69,537**	**317,544**	**691,201**	**1,078,282**	6%	-11%	102%	41%

Source: Chain Reaction Research visual based on *NASA VIIRS data*

Driving deforestation

Beef is the key driver of the Brazilian Amazon's deforestation; converting land to cattle farms is responsible for 70-80 percent of the destruction.[13] Brazil is the world's biggest beef exporter – and the second largest leather producer. In the Amazon, cattle outnumber people three to one. Tellingly, the common expression for cattle grazing on illegally deforested land is 'pirate ox' ('boi pirate').

Since the late 20th century, the mechanised cultivation of genetically modified soybeans has also driven Amazonian deforestation and is tightly linked with meat production. This soy is mainly used for animal feed – in Brazil, and also in China and the EU – to feed chicken, pigs and cows.[14] By contrast, soy used for direct consumption by people is largely produced in countries other than Brazil and is not usually genetically modified.[15]

Deforestation in the Cerrado is largely driven by soy production, with beef playing a smaller role. But like in the Amazon, cropland is often created in a two-step process: forests are cut and burned to create pasture; then those grazing lands are, over time, converted to soy fields.[16]

In sum, the two biggest deforestation drivers in the Amazon and Cerrado are both meat production.

Logging and mining are other drivers of deforestation, but to a far lesser degree than beef production and soy.[17] However, logging is often linked with the expansion of agricultural land. Before forest is converted to graze cattle or grow soy, the valuable trees are taken out. Then the land is cleared: smaller trees are pulled down with a bulldozer or by using a metal chain between tractors. At the end of the dry season, around August-September – the area is burned. Although logging and mining cause significant destruction to the Amazon; their role is not covered in this report.

Deforestation for soy in the Amazon has decreased since 2005 – 2006 after international attention and pressure from NGOs led to the acclaimed Amazon Soy Moratorium. Notwithstanding its tremendous importance, its success has not been clear-cut. It has pushed soy to the Cerrado, and cattle farming from the Cerrado to the north into new forest areas.[18] The Moratorium has not fully stopped deforestation for soy and related infrastructure in the Amazon.[19] Soy producers clearing forests for purposes other than growing soy – to use as pasture or for other crops – are still compliant to the Soy Moratorium, even if they continue to profit from deforestation.[20]

Again, this continuing deforestation should not be unexpected. This is because the Amazon Soy Moratorium does not address the main root cause: expanding industrial meat production and consumption.

Creating soy infrastructure – causing deforestation

How road building enables deforestation is well-documented. In the Amazon nearly 95 percent of all deforestation has occurred within 5.5 km of roads or 1 km of rivers,[21] highlighting the clear links between building infrastructure, deforestation and negative impacts on biodiversity. Infrastructure for the production and trade in soy is an important case in point - and ignored by soy certification schemes which proudly claim green-no deforestation credentials. For example, construction of a soy port in Santarém, Brazil by US global food corporation Cargill, in the early 2000s involved much deforestation in the region around the port. It also led to conflicts with indigenous and local communities greatly concerned about the irreparable damage caused.[22]

Another soy infrastructural project – the Ferrogrão, a planned railroad of about 1,000 km from Mato Grosso to the Tapajós River – is currently threatening forests and the communities dependent on them. However, lack of investors may stop this highly controversial project.[23]

Figure 1

Brazil's role in beef production globally, 2019

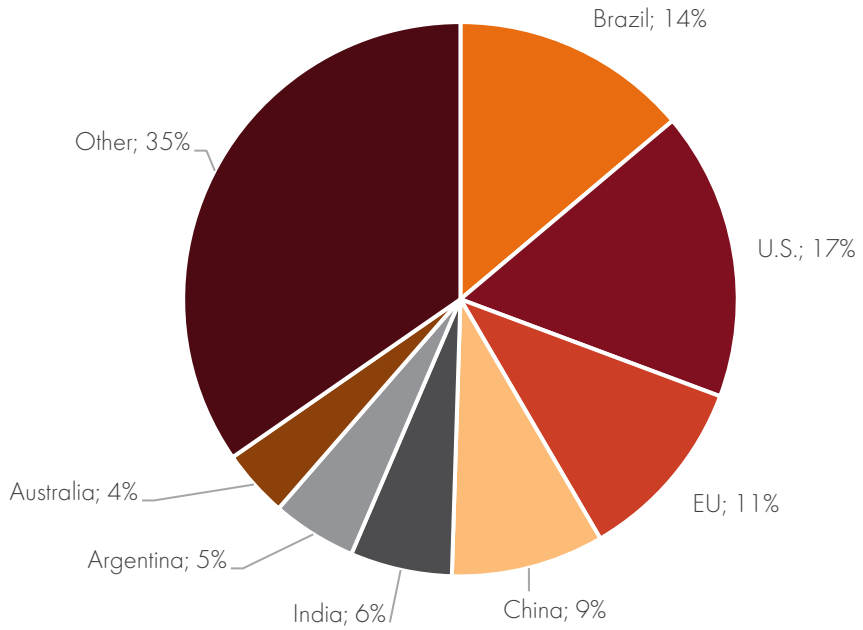
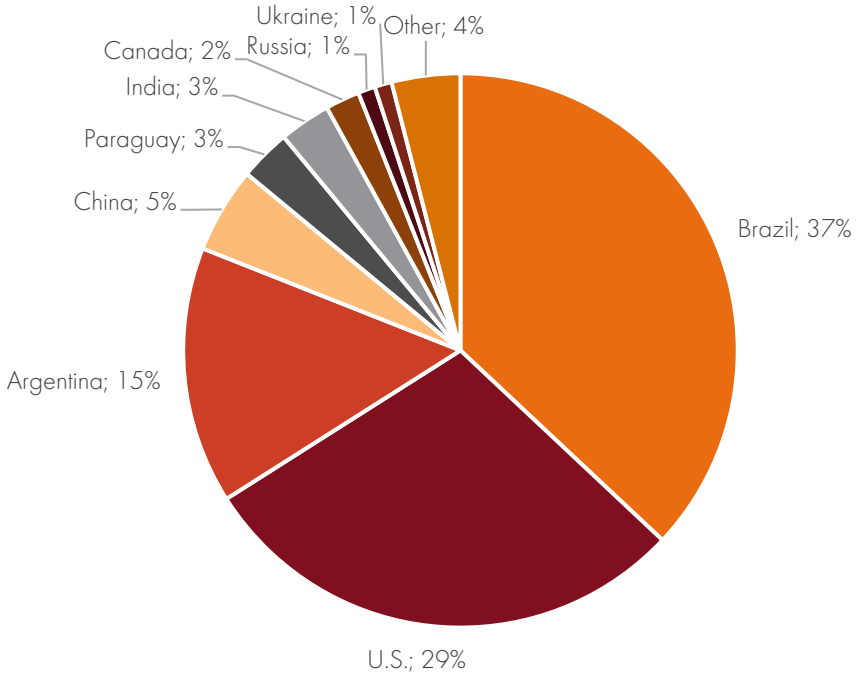


Figure 2

Brazil's role in soy production globally, 2019



Source: Fair Finance Guide Netherlands, "Funding destruction of the Amazon and Cerrado", August 2020.

Combining crises – linking the adverse impacts

Deforestation for cattle and soy production for animal feed causes immediate harm to the welfare of wild animals whose habitat is destroyed. But it also has much wider and multifaceted negative impacts for people, animals and the planet.

Climate change

The Amazon rainforest is considered one of nine global tipping points for climate change. Recent research found that in South America approximately 1.45m km2 of forest – located mainly in the northern Amazon – is at high risk of becoming savannah.[24] The risk of this happening is increased by deforestation.[25] Rainforests enhance rainfall patterns and act as buffers (protection) during droughts. Conversely, deforestation reduces rainfall and buffer capacity. This leads to less vegetation and more susceptibility to fire creating a negative cycle of environmental degradation.

Research shows that a 60 percent drop in rainfall during each wet season prompts a 4.5-fold increase of mortality rates among large trees after 3.2 years.[26] This indicates that the Amazonian rainforest might not survive 3-4 years of consecutive droughts.[27] Researchers believe that if just 20–25 percent of the rainforest were cut down, it could reach the tipping point at which eastern, southern and central Amazonia would flip to a savannah-like ecosystem.[28] Shockingly, deforestation in the Brazilian Amazon is already close to 20 percent.[29]

Reaching this tipping point would add billions of tonnes of carbon to the atmosphere. It would also affect the regional climate and rainfall patterns of South America, posing long-term risks for agriculture in most parts of the continent.[30]

Similarly, deforestation in the Cerrado contributes to global warming. Measured per hectare, it is even probable that deforestation in the Cerrado is responsible for greater emissions of greenhouse gases than deforestation in the Amazon.[31]

Animal production – the main driver for deforestation in the Amazon and Cerrado – is widely recognised as disproportionally contributing to climate change. A 2018 study calculated that while animal production provides just 18 percent of calories and 37 percent of protein, it uses 83 percent of farmland and produces 58 percent of agriculture's greenhouse gas emissions.[32] Other studies put livestock's contribution to all agriculture's greenhouse gas emissions even higher, at nearly 80 percent.[33] Without fast and largescale downward shifts in global meat consumption, agriculture will consume the entire world's carbon budget necessary for keeping global temperature rises under 2°C by 2050.

Globally, if health guidelines on eating less meat are followed, greenhouse gas emissions would be two-thirds lower by 2050 compared with current predictions.[34]

Image: The Amazon forest is being decimated by a record number of fires that threaten the rich biodiversity of the rain forest and release large amounts of carbon dioxide contributing to the greenhouse gases in the atmosphere. Credit: Victor Moriyama/Getty Images.

Image: Airplane spraying chemical product over soybean plantation in Mato Grosso, Brazil. Spraying by airplane increases the risk for chemicals to spread to surrounding areas. Credit: Getty Images.

Biodiversity loss

Industrial meat production requires disproportional land use, for both grazing and growing animal feed crops. The deforestation carried out to support it disrupts and destroys biodiversity, threatening unique and rare Amazonian plant and animal species that can only survive in specific areas. Infrastructural projects for soy transportation pose additional risks. Dams are built both for hydroelectricity and the opening up of waterways to allow soy shipments access to the Amazon River and the Atlantic. This can degrade habitat quality, altering water speeds and the quantity and distribution of aquatic plants.[35] Studies show that dams have fragmented dolphin populations, reduced their gene pool and limited their territories.[36]

When forests are replaced by fields for soy production, pollution starts. Pesticide use in Brazil has rapidly increased.[37] Since 2016, 1,270 pesticide products have been approved in the country[38] and of those around 193 contain active ingredients banned in the EU because of their toxicity. The devastation caused by such pesticides was highlighted by a 2019 case where 500 million honey bees in Brazil had died through suspected pesticide use.[39] Investigations by Brazil's prosecutor's office confirmed the deaths were caused by the insecticide fipronil (prohibited in the EU[40]), that had been used on soy plantations.[41]

Pesticides used in soybean production areas do not just negatively affect pollinators and the ecosystems that depend on them. They also encourage the pests to spread elsewhere to attack local crops in the surrounding areas. Farmers then feel forced to also use the pesticides too, to protect their vegetable crops and so a vicious cycle is created.[42] Pesticides associated with soy production also leak into waterways poisoning fish and other aquatic animals, including the Amazon's rare pink river dolphins.[43]

Industrial animal production, propped up by South American soy, affects biodiversity globally. Many of the problems are caused by the extra nitrogen and phosphorus industrial farming produces which end up in the water. Algae blooms then develop. Their decomposition process consumes oxygen and suffocate aquatic life, resulting in dead zones.[44] The extra nitrogen produced by industrial farming affects the land too – there is evidence of it threatening plant diversity in China and in temperate and northern parts of Europe.[45]

Image: The heavy use of pesticides, many of them forbidden in Europe because of their toxicity, has caused death among bees. This is particularly serious as the bees are invaluable as pollinators. Credit: Getty Images

Image: Pink river dolphin, Rio Negro, Brazil. Credit: World Animal Protection/Dirk-Jan Verdonk.

Zoonotic diseases and other public health threats

The COVID-19 pandemic has put the spotlight on the risks of habitat destruction, agricultural intensification and wildlife trade for the emergence of zoonotic epidemics and pandemics. Sixty percent of emerging infectious diseases are zoonotic. An estimated 1.7 million currently undiscovered viruses are thought to exist in mammal and avian hosts, of which 540,000-850,000 could have the ability to infect humans. As the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) noted, 'without preventative strategies, pandemics will emerge more often, spread more rapidly, kill more people, and affect the global economy with more devastating impact than ever before.'[46] Prevention is significantly more cost-effective than response, as the UN Environmental Programme has noted.[47]

The same global environmental changes that drive biodiversity loss and climate change, drive the emergence of pandemics: land-use change, agricultural expansion and intensification, and wildlife trade and consumption.[48]

Land-use change is widely recognised to influence the risk and emergence of zoonotic disease in people. Global changes in the mode and intensity of land use are creating expanding hazardous interfaces between people, livestock and wildlife reservoirs of zoonotic disease. A team of 25 international experts listed protecting 'areas with high biodiversity or important habitat features that are at risk from land-use change' as an important measure to prevent the risks of new pandemics.[49]

The main driver of deforestation, industrial meat production, also carries other significant zoonotic risks. The high numbers of densely packed animals with low genetic variation, enable rapid and massive amplification of viruses and other pathogens.[50] Especially pigs and poultry are considered to be important reservoirs of pathogens with pandemic potential, together with wild animals like bats, rodents and water birds.[51] Furthermore, the stress the animals endure increases pathogen shedding, especially during transport and at arrival at slaughterhouses. Industrial livestock production is recognised as one of the most likely epicenters of the next pandemic.[52]

Industrial meat production carries other serious public health risks too. The heavy use of antibiotics, which props up the system, is creating antimicrobial resistance. Already an estimated 700,000 people die annually through antimicrobial resistant infections. And this number is projected to further rise, costing the global economy US$60tn to $US100tn – or even up to US$310tn once wider costs are taken into account.[53]

Other effects on human health include poor air quality around production units and the health risks of meat consumption itself. This is associated with an increased incidence of a range of infections and non-communicable diseases, from salmonella, campylobacter to various types of cancer.[54] Industrial animal production also depends on using crops for animal feed. This continued, inefficient use of protein contributes to global food insecurity.[55]

Image: Environmental defender during a protest in defense of the Amazon rainforest and against deforestation and forest fires in Rio de Janeiro, Brazil. Credit: Bruna Prado/Getty Images.

Human rights violations

Deforestation in the Brazilian Amazon is mostly illegal and often accompanied by other law violations.[56] Logging and forest conversion or infrastructural projects often lead to disputes over land tenure, land grabbing, threats and violence.[57] Not surprisingly, the term 'conflict soy' is commonly used.

Members of traditional communities are dependent on the forests and rivers where they live. Consequently, they tend to oppose deforestation which makes them targets for violence and murder. Such incidences have been regularly reported by the Amazon's indigenous council and the pastoral land commission (CPT)[58], and CPT also states that the invasion of Indigenous Territories increased by 135 percent in 2019.[59] These human rights violations are exacerbated by widespread corruption, fraud and a poor land registry system.[60]

The latter is exemplified by the CAR, the Rural Environmental Cadaster, required for every land user. Many CARs are registered in the names of large landholders, such as cattle and soy farmers. However, the CAR is only a land claim, not a land title or a document of land ownership.[61] CARs need validation by state agencies, since many overlapping CARs exist or unlawfully claim land in Indigenous Territories and Nature Conservation Units.[62] The Federal Prosecutor's Office (MPF) warned that the CAR should not be used to commit environmental crimes and grab indigenous land.[63]

But, according to research published in 2020, more than 11mha hectares of public land in the Brazilian Amazon was illegally registered as private land within the CAR system.[64] In total, 2.6 mha of this land was already illegally deforested by 2018. Still, companies (and financial institutions) often only require a CAR, and so land grabbing remains a risk within their supply chains.[65]

To make matters worse, there is little law enforcement.[66] Brazil's federal police and state and federal public prosecutor offices are known for their independence and low levels of corruption. However, the Amazon is simply too vast and the crimes committed too numerous to facilitate enforcement. For example, during the dry season, deforestation arson cases may occur in tens of thousands of different places throughout the Brazilian Amazon, an area larger than India.

Brazil is one of the most dangerous countries for environmental defenders and many are being threatened or even killed when defending their land and the Amazon.[67] Since 2019, the situation has worsened, and the COVID-19 pandemic has been used as an excuse for increased illegal logging and land grabbing in Indigenous territories.[68]

Brazil's history of legitimising illegal land occupation further compounds the problem of unlawful land ownership. The 2012 Forest Act included an amnesty for much of the illegal deforestation that took place before 2009. And because the agricultural lobby is the most powerful lobby in Brazilian politics, agribusinesses may have reason to believe laws will again change to serve their commercial interests. Current land grabbing may be pardoned and legalised in the future, much to the detriment of the planet and its current and future inhabitants.

Finally, violations of workers' rights are prevalent in the meat supply chain, especially in slaughterhouses, as the COVID-19 crisis again revealed.[69]

Image: Cattle grazing on deforested land in Acre, Brazil.
Credit: World Animal Protection/Noelly Castro.

2. Cattle transportation – deforestation and animal welfare concerns

Cattle raised on the pastures cleared from forests are caused severe stress and suffering during transports.

Transporting millions

Live cattle transport is very common in Brazil. And millions of animals are slaughtered closer to where they will be consumed (in cities) rather than near the rural areas where they are reared. Brazil's vastness means they endure long transport times exacerbated by poor roads that are even more treacherous during the rainy season.[70] In Pará and Mato Grosso states alone, 4.1 million heads of cattle were traded to slaughterhouses in 2017.[71] However, reliable estimates for unregistered livestock transports and those that may be reared on illegal deforested lands are hard to obtain.

Cattle transportation is strongly connected to the Amazon's deforestation. Since 2009, the leading meatpackers with activities in the Amazon are subject to legally binding cattle sustainability agreements. These agreements mean that all suppliers should not be involved in any practices that damage the environment. However, these pacts so far focus only on direct suppliers, leaving indirect suppliers largely out of sight. It is easy to manipulate the origin of cattle since animals can be moved. In such cases, cattle graze on land that was illegally forested, but before transport to a slaughterhouse, the animals are transported to a legal cattle ranch in order to 'prove' that the origin of the cattle arriving at the slaughterhouse is legitimate. This 'leakage' from illegal operations into supply chains regularly occurs.[72] An estimated 12 percent of cattle slaughtered in Pará and Mato Grosso are potentially directly contaminated by illegal deforestation and 48% indirectly.[73]

At least 17 percent of beef exports from the Amazon and Cerrado to the EU may be connected with illegal deforestation. And these estimates are conservative. If legal deforestation had been considered, percentages of beef linked with deforestation would be even higher.[74]

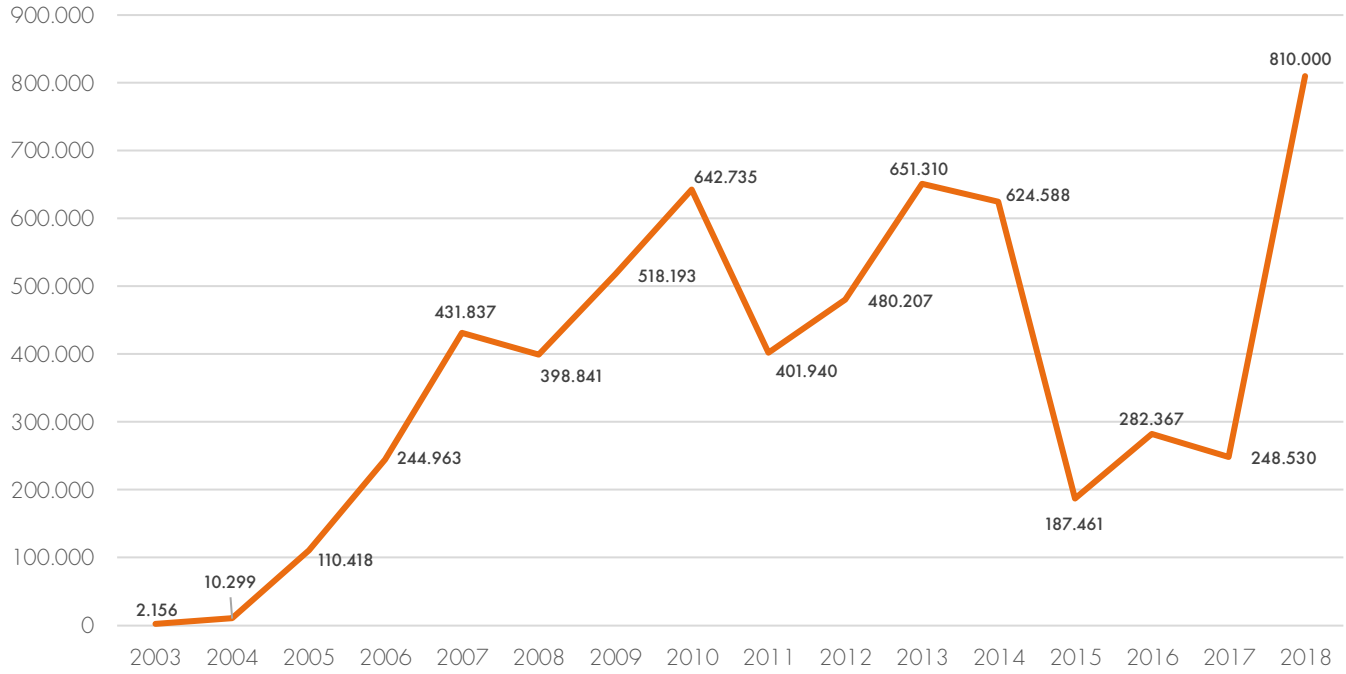
Exporting suffering

Brazil exports live cattle within South America – mainly shipments to Venezuela – and across the Atlantic to countries like Lebanon and Egypt. These live exports increased from a few thousand in the early 2000s to around half a million 10 years later (see Figure 3). But annual numbers vary substantially. Most cattle destined for live export originated from Pará State, one of the regions most prone to deforestation (Figure 4). For example, in 2009, 97 percent of all live exports went through Vila do Conde Port, located in Pará state's Barcarena municipality. Almost all these animals also originated from Pará, from 1,441 different farms in 80 different municipalities. In recent years, this percentage has gone down, but Pará remains the main provider of cattle for live export.

In 2018, researchers calculated cattle from farms in Pará were transported an average of 420km to reach the port near Barcarena. However, such averages contain wildly different transport distances ranging from 53km to a staggering 1,823 km. Transport times can also vary greatly depending on climate and road conditions. Journeys up to 60 hours have been observed.[75] Recent legislation aims to limit the last leg of the journey – from the Pre-Shipment Establishment to the port – to 8 hours, but this does little to limit overall transport times.[76] In turn, the journey across the Atlantic and Mediterranean can take three to four weeks; followed by land transport to slaughterhouses in the destination countries.

Figure 3

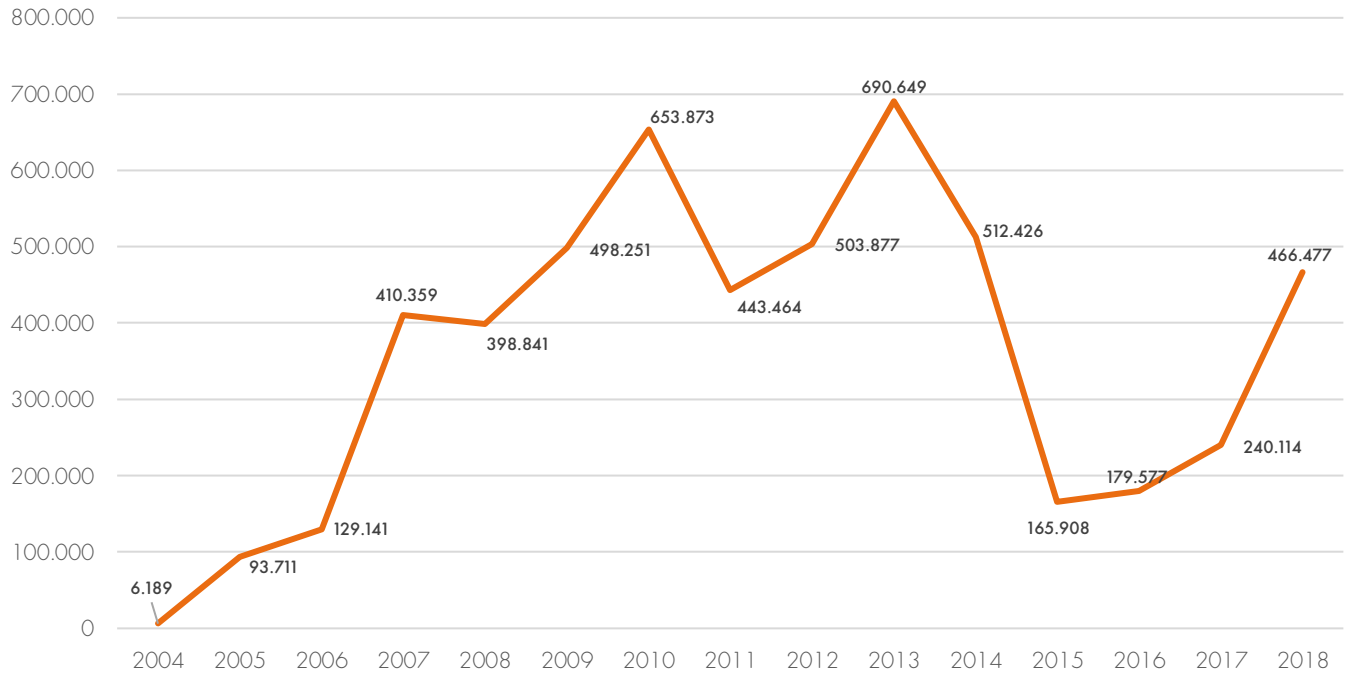
Exports of live bovine - Brazil - Number of animals - 2003 to 2018



Source: Ministry of Industry Foreign Trade and Services (MDIC) / Scot Consulting.

Figure 4

Exports of live bovine - Pará - Number of animals - 2004 to 2018



Source: VIGI-VDC / Vigiagro / MAPA.

Failing transported animals

Animal suffering during long distance transportation has been extensively documented. Live transportation also involves zoonotic risks: stressed animals are more likely to catch and spread disease. The main problems – 'stressors' – in long distance transport are: heat, cold, hunger, thirst, humidity, overcrowding, mixing with unfamiliar animals, fatigue, motion sickness, noise, vibration, and inadequate ventilation. Such stressors can affect an animal's ability to fight infections.[77] Cattle are usually kept on open, large pastures where they have little contact with people. The human contact involved in gathering and loading them for transport causes great stress.[78]

Sea journeys can cause even worse suffering; it is difficult to protect the animals' welfare during loading and handling[76] and separating and treating sick, injured or traumatised animals on a ship is extremely challenging. Keeping animals in healthy conditions for weeks is next to impossible.[79]

Transported cattle are always at high risks of accidents as they are vulnerable to bad road and weather conditions and long driving shifts. Accidents at sea happen less frequently, but their impact can be catastrophic. Recent examples include the Gulf Livestock 1 – sinking off the Japanese coast with 6,000 animals on board in September 2020 – and the Queen Hind capsizing in the Black Sea and drowning 15,000 sheep in November 2019. In 2015, 3,000 cattle died in a shipwreck in the Brazilian port of Barcarena.[80] An investigation conducted by The Guardian found that ships transporting live animals are twice as likely to be deemed total losses as a result of sinking or grounding[81] Such disasters also have major environmental impacts. In the Barcarena case, thousands of decaying carcasses disrupted the life of local communities for many years.[82]

Assessing animal welfare

The Five Domains model devised by renowned Australian academics Professor David Mellor and Dr Cam Reid is a respected, systematic and comprehensive method of assessing animal welfare.[83] The domains cover: 1) nutrition; 2) environment; 3) health; 4) behaviour and 5) an animal's mental state. Any change in one domain, has knock-on effects on the others. The Five Domains model can be used to understand and measure how cattle suffer during long distance transports.[84] (See Table 2).

Image: Cattle transport in Mato Grosso, Brazil. Road conditions are often poor, exacerbating animal welfare risks. Credit: AGB Photo Library.

Table 2

Stressors in cattle transportation

Stress	Stressor	Effect
Behavioral	Novelty, restraint, noise	Fear
	Mixing, overcrowding	Aggressive interaction
Nutritional	Fasting	Dehydration and hunger
Physical	Mixing, overcrowding, road conditions, driving technique, horns	Bruising and injury
	Weather extremes	Hyper / hypothermia
Infectious	Dust	Respiratory disease
	Exposure	

Companies behind the trade

Due to a wave of consolidation in the meat processing sector, only a few meatpackers dominate cattle processing. In the Amazon, three companies – JBS, Minerva, and Marfrig – control around 70 percent of the cattle slaughter capacity. They also dominate Brazilian beef exports, with a combined share of around 60 percent in 2017.

In 2019, about three quarters of Brazilian produced beef was used for domestic consumption; and supermarkets are the most important sales channels. Key beef retailers in Brazil include Casino, Carrefour Group, Grupo BIG (Advent International), Muffato and supermarkets owned by Cencosud (Bretas, Barbosa, Prezunic, Perini).

Twenty four percent of Brazilian beef is exported and these exports increase year-on-year. Beef from companies like Minerva, Mataboi and Marfrig is imported into the EU by a range of meat traders including Tulling Meat Import, Carnimex, Intervlees, Groenveld Vlees and FN Global Meat. In turn, they supply foodservice, wholesale, retail and industry. The three largest live cattle export companies Agroexport, Mercurio and Minerva are all part of the Brazilian Association of Live Cattle Exporters (ABEGS). Only Minerva has an animal welfare policy, but this is too general and weak.

Safeguarding animal welfare

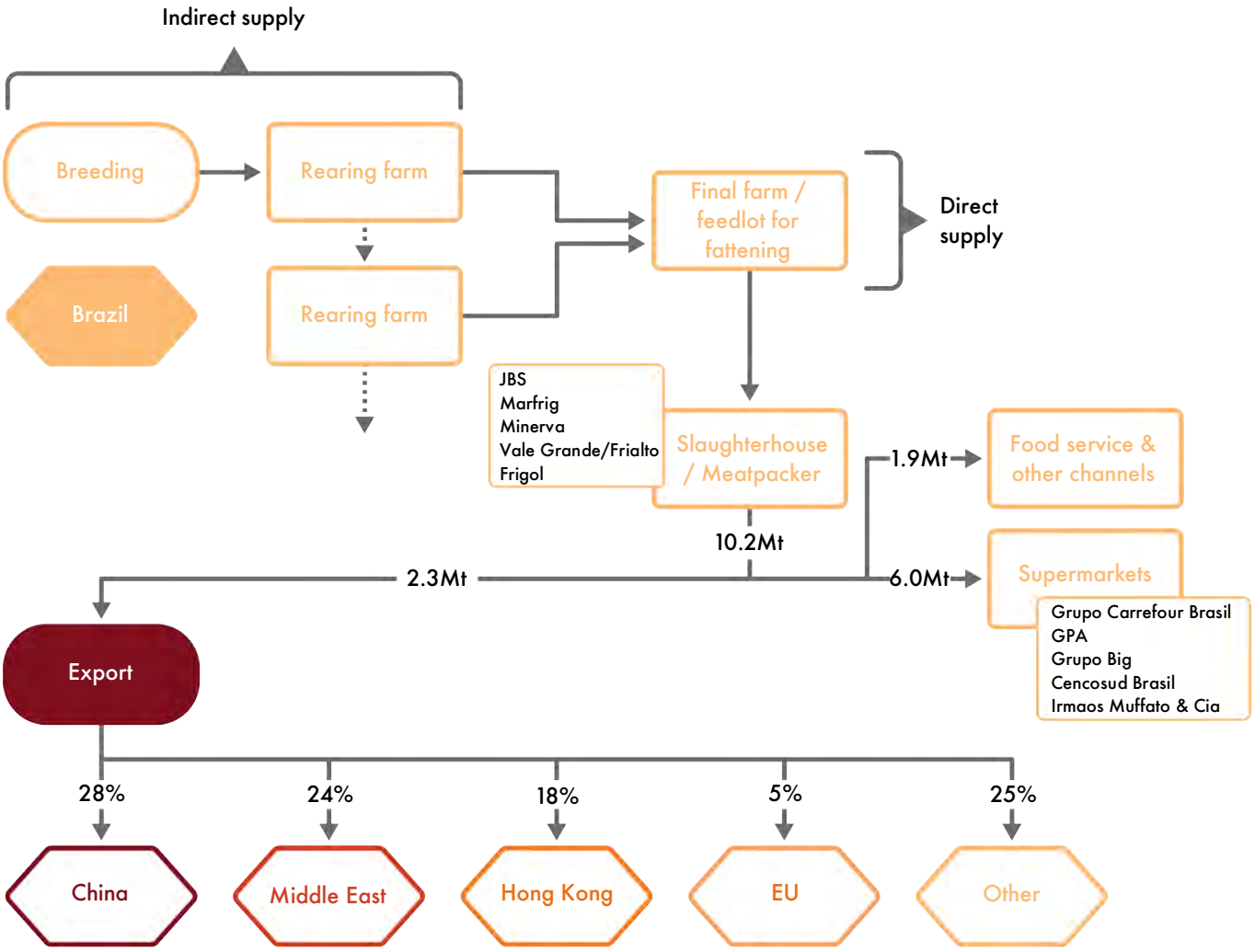
Long-distance transport of live animals has a negative impact on animals, people and the environment. Live exports do not fully benefit producing countries in economic gains or related employment, because slaughter and meat packing take place in destination countries.

Companies – and the financial institutions that back them – should stop live exports and minimise internal transport times to a maximum of eight hours. The conditions in which animals are transported must also improve, including safe handling and adequate climatic controls.

Ultimately, to protect millions of animals from suffering, actual meat products – rather than live animals – should be traded and sold. It is also critical that alternatives – plant-based protein products – are widely developed, promoted, traded and sold.

Figure 5

Domestic and international supply chain of Brazilian beef



Source: Fair Finance guide Netherlands report "Funding destruction of the Amazon and Cerrado".

Image: A group of Nelore cattle in transit in Brazil. Credit: Getty Images.

3. Soy's role in industrial farming

The link between Brazil's deforestation and the cruelty caused to cattle is clear. But the country's deforestation is also linked to the mass suffering of chickens, pigs, cows and fish in Brazil, Europe and Asia. This link is soy. It props up industrial farming and its associated animal welfare problems. In 2017, Europe imported 8 million tonnes of soy from the Cerrado and Amazon, mostly for livestock feed.[85]

Inflicting industrial suffering

Factory farming is responsible for several animal welfare problems that inflict pain, stress and suffering on at least 50 billion animals annually. They endure cruel, overcrowded confinement that does not accommodate their natural behaviours. Painful mutilations, early weaning, poor air quality, unnatural feeding regimes, rough handling, long distance transport and inhumane slaughter are the norm. Animals suffer from stress, boredom, injuries, ailments and social deprivation. Also, factory farms' safety measures to protect animals from calamities (failing ventilation systems, fires, extreme weather events) are inadequate or completely lacking.

Animals in intense, industrial livestock production are genetically selected to grow fast, have large litters, lay high numbers of eggs or produce a maximum amount of milk. Optimal nutrition – including high digestible protein in animal feed is crucial to achieve high yields. Soy is dubbed a 'virtual protein pill for concentrated livestock'.[86] For example, the soy content of fast-growing meat chicken feed is high, about 26 percent;[87] This means that for every kilogram of chicken meat, 665 grams of soy is used.

Fast-growing meat chickens

For decades, genetic selection of meat chickens has focused on improving feeding efficiency, weight gain, and breast muscle size. Today's broilers can reach their slaughter weight in just 35-42 days. This excessive fast growth has hugely compromised their welfare. Fast-growing birds often experience leg deformities, skeletal defects, skin problems, and reduced mobility. They are also susceptible to heat stress. Fast-growing chicken breeds have relatively high mortality rates and so never reach slaughter weight.[88]

In contrast, birds from slower growing chicken breeds have stronger bones, are more able to carry their body weight and suffer from fewer bone and skin problems. Because their bones are stronger they can be more active and perform their natural behaviours such as scratching, pecking, walking, running, and perching.[89] More movement also means they suffer less from hock burn, and food pad dermatitis. This painful condition on the bottoms and backs of chickens' feet can develop into painful open sores. It usually results from a combination of poor skin health and long periods of sitting in soiled litter because of reduced mobility.[90]

Slower growing chicken breeds do not require the same high protein feed to fulfill their 'potential' as their faster growing counterparts. Consequently, and crucially, they do not need much soy (if any).

Although slower growing breeds live longer and therefore require more feed during their lifespan, their feed can have a lower environmental footprint. Mortality rates of slower growing meat chickens are also generally lower, so less feed is lost by being fed to birds that do not make it to slaughter.[91]

Consequently, despite industry claims to the contrary, higher welfare chickens may also have less negative impact on climate change and biodiversity.[92]

Slower growing chickens are less affected by breast muscle diseases 'wooden breast' and 'white striping' – conditions that create meat which is usually rejected by consumers.[93] And because the birds are more robust, they do not need as many antibiotics to keep them healthy as faster growing breeds. This in turn decreases the risk of antimicrobial resistance.[94]

The biggest meat chicken producing countries are USA, China and Brazil. Together, they produce 44 percent of the total global production. In the EU, about 7 billion meat chickens are produced annually. Poland is the biggest producer, followed by Spain, France and Germany. The overwhelming majority of these chickens are fast growing and live in overcrowded, barren and underlit barns. Welfare problems in China are even worse and include the use of cages.[95]

High 'performing' dairy cows

Dairy cows are another example of animals genetically selected to produce at a high level, requiring large amounts of protein. This has profoundly negative impacts on their welfare.[96] According to the European Food Safety Authority (EFSA): "Long-term genetic selection for high milk yield is the major factor causing poor welfare, in particular health problems, in dairy cows. The genetic component underlying milk yield has also been found to be positively correlated with the incidence of lameness, mastitis, reproductive disorders and metabolic disorders."[97]

Due to this genetic selection, cows have difficulties getting enough nutrition and energy from grass.[98] They are literally at risk of being milked 'to starvation'.[99] To prevent this, these high yielding cows are given high protein concentrates in addition to grass and corn; soy is usually a main concentrate ingredient.[100] Dutch cows eat on average more than 5kg of soy per week. According to a Wageningen University report, Dutch dairy production uses 26g of soy per litre of milk.[101]

Cows from higher welfare breeds genetically selected for lower milk yield and higher meat quality – so-called 'double purpose animals' – can flourish on a diet of grass. They are fed very little if any corn, let alone soy. These lower milk yield breeds not only have lower risk of lameness and mastitis, but their diet is also not linked to deforestation and their manure contains less nitrogen.[102]

To aid sustainability, arable land should be used to grow food for people, not livestock. In addition, by-products, grass and waste streams unsuitable for human consumption could be converted by animals into food.[103] Such a transformation does not just provide environmental and food security benefits. It leads to better balanced diets, shifting people away from the excessive intake of animal proteins characterising Western diets in particular.[104] Finally, it offers important opportunities – and some risks - for improving animal welfare by utilizing the natural behaviours of animals such as grazing and using higher welfare breeds.[105]

Image: Aerial drone view of the Xingu Indigenous Park territory border and large soybean farms in the Amazon rainforest, Brazil. Credit: PARALAXIS/Shutterstock.

Figure 6

Brazilian soybean & soymeal exports 2019

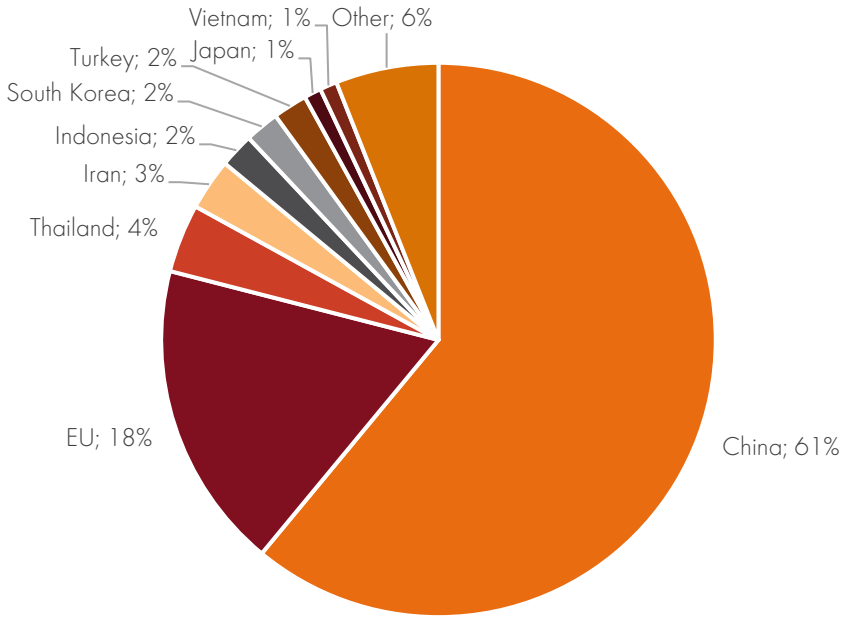
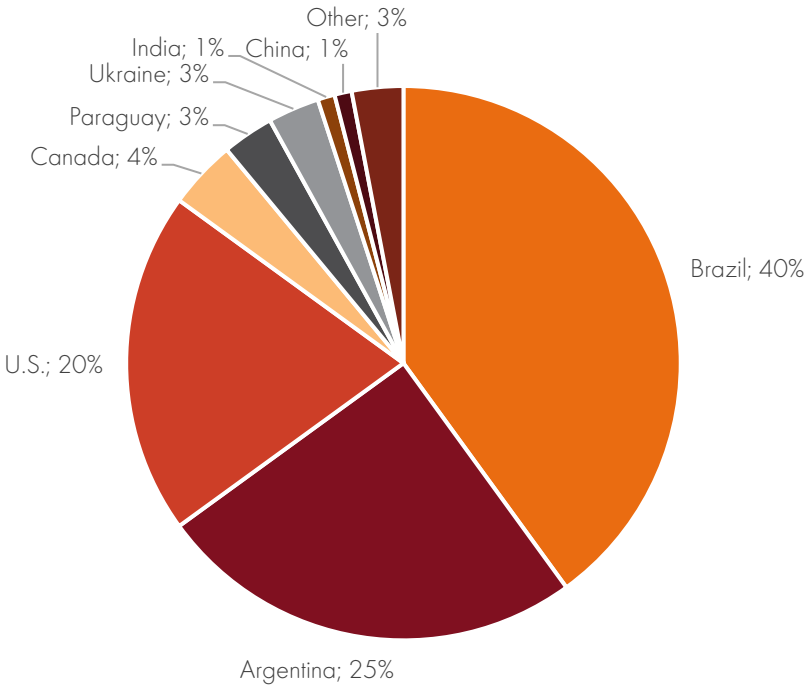


Figure 7

EU soybean & soymeal imports 2019



Source: Fair Finance Guide Netherlands, "Funding destruction of the Amazon and Cerrado", August 2020.

Image: Soy bean harvesting in the Cerrado, Mato Grosso, Brazil. Credit: Alf Ribeiro.

4. Driving deforestation – high-risk companies

The main drivers for deforestation in the Amazon and Cerrado are beef and soy for animal feed. So, companies in these supply chains run a high risk of contributing to deforestation and related adverse impacts. And they are failing to mitigate these risks adequately.

Lacking ambition, false claims and bribery

Large companies (and their banks and investors) usually attempt to mitigate these risks by trying to improve legislative compliance, participate in multi-stakeholder platforms, adopt sustainability policies and use certification or other tools indicating sustainability credentials. Many companies have signed up to the New York Declaration on Forests (NYDF) which is a voluntary and non-binding international declaration committed to halting global deforestation. It was first endorsed at the United Nations Climate Summit in September 2014. Although the signatory companies' responses go some way to prevent deforestation, they have not even come remotely close to stopping it. Tropical tree cover loss has actually increased since the launch of NYDF, including in Latin-America.[106]

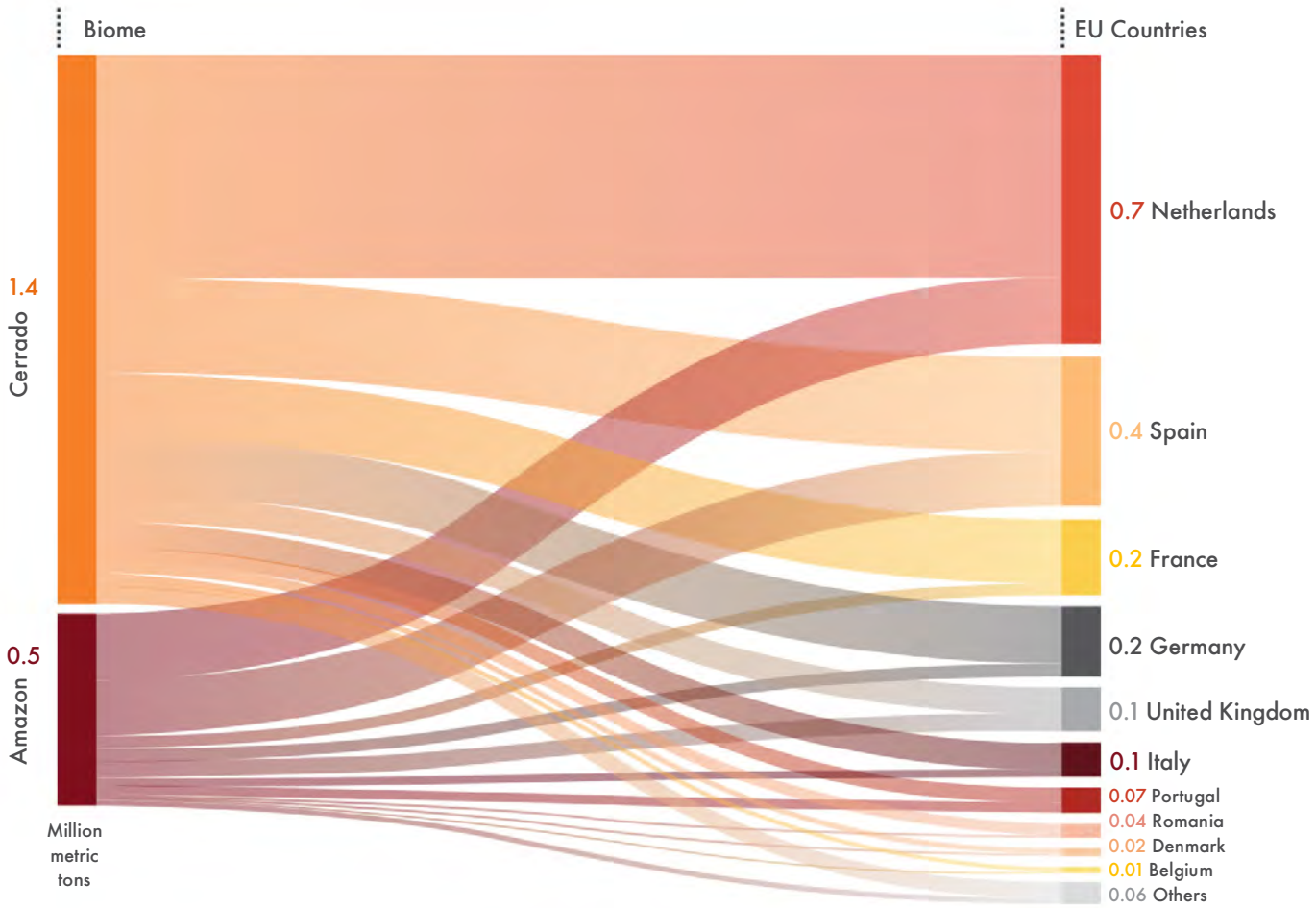
Responses from companies are typically inadequate. For example, US global food corporation Cargill has said it will only become deforestation-free by 2030, and it announced in 2019 that it will not support a soy moratorium in the Cerrado.[107] This means that all companies in Cargill's supply chain associated with feed from Brazil are currently at risk of failing to be deforestation free.[108] Similarly, the Brazilian meat processing company Marfrig has set a goal of only achieving full traceability for its beef in both direct and indirect supply chains by 2025 in the Amazon and by 2030 in the Cerrado.[109]

Brazilian meat producer JBS has also failed for many years to guarantee its beef is deforestation-free, which prevents its many buyers from complying with zero deforestation.[110] It is conservatively estimated that JBS' total deforestation footprint may be as high as 200,000ha in its direct supply chain and a staggering 1.5m ha in its indirect supply chain.[111] JBS' previous auditor DNV-GL called out the company for falsely claiming that its operations in Brazil's Amazon region are deforestation-free.[112] These revelations about false claims were unsurprising as JBS was in the middle of a large corruption case in 2017. It was also reportedly linked (with its competitor Marfrig) to the Colniza Massacre in the same year. This involved nine people being killed by gunmen in a land conflict related to illegal timber extraction and illegal cattle farming.[113]

JBS is not the only Brazilian meat company involved in corruption.[114] In 2019, BRF admitted bribing federal food inspectors with more than US$4.5m dollars in bank deposits and health benefits.[115]

Image: Cargill's soy terminal in the port of Santarém, Brazil, to facilitate soy exports to the EU. The construction of the port was a source of controversy, and stimulated deforestation and related conflicts in the area around the city. Credit: Matyas Rehak.

Source and country destinations of soy potentially contaminated with potentially illegal deforestation. Estimated annual average between 2009 and 2017 from TRASE



Source: Raoni Rājao, "The rotten apples of Brazil's agribusiness", July 2020

Zero-deforestation commitments – few achievements

Even when companies have made zero deforestation commitments by 2020, they seldom stand up to closer scrutiny. A 2019 assessment of corporate zero deforestation commitments by NYDF Assessment Partners concluded that most commitments lack ambition and do not cover all supply chains and operations. Furthermore, companies have been slow to implement commitments and report on actions taken; progress made toward achieving these commitments remains inadequate.[116]

French retail multinational Carrefour is one example. It has committed to eliminating deforestation from its products by 2020, however, the scope and implementation of Carrefour's deforestation and beef policy is limited to unprocessed beef products. The policy does not apply to processed or frozen beef products. Moreover, Carrefour does not publish progress reports or a list of its beef suppliers.

In 2019, research revealed that 35 percent (168 products) of Carrefour's beef products sampled originated from slaughterhouses located within the Amazon. Eleven products (2.3 percent) were linked to high-risk (linked with deforestation) slaughterhouses operated by JBS, Marfrig Global Foods and Mercúrio Alimentos.[117] Moreover, Carrefour's recent acquisition of 30 stores in Brazil from retailer Makro Atacadista increases risks of deforestation-linked beef entering its supply chain.[118]

Another example is Casino, owner of GPA, the second largest retailer in Brazil. GPA states in its policy that beef suppliers must be free from deforestation and land conversion of native vegetation for cattle.[119] Moreover, it uses a traceability system to monitor its beef suppliers but relies on the suppliers themselves to monitor the rest of the supply chain. The company acknowledges that tracing the origin of beef and monitoring indirect farms are 'still complex challenges for meatpacking plants, considering that there is a vast number of potential indirect farms in Brazil'.[120] These challenges are compounded by the difficulty tracking illegal practices such as livestock laundering and leakage. The company recognises 'the importance for our suppliers to improve and reinforce all means of controlling Indirect farms as soon as possible, implementing sectorial processes and solutions.'

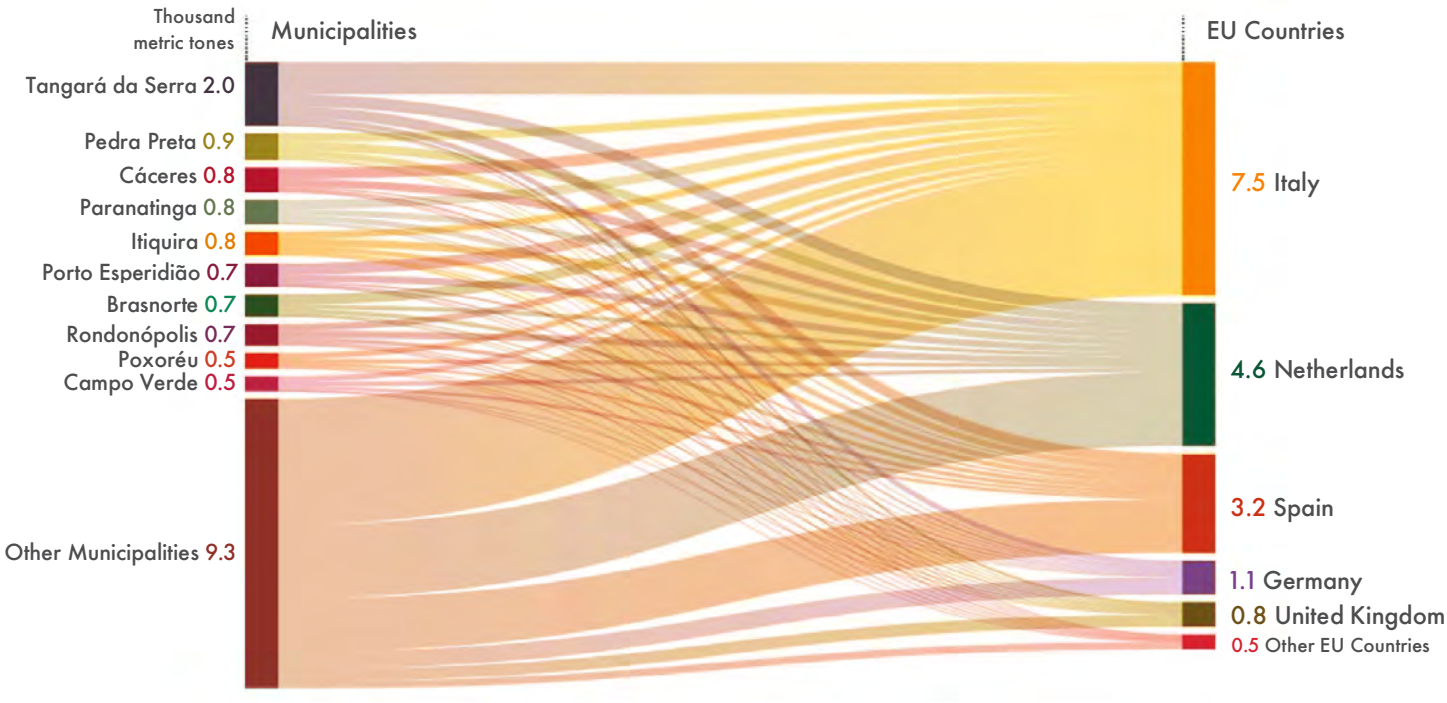
However, GPA does not state when control and compliance will be achieved. Nor has it published regular and detailed updates on the implementation of its 2016 beef sourcing policy. Meanwhile, recent research found that GPA sourced meat from farms involved in deforestation and encroachment on indigenous communities. Meat sold in GPA stores could be traced back to four farms that saw approximately 4,500ha of forest cleared for cattle ranching.[121] Casino and GPA now may face a risk of legal action due to allegations of noncompliance with French law.

Similarly, a 2019 Federal Prosecutor's Office audit report showed gaps in legal documentation within the supply chain of Minerva Foods (one of Brazil's big beef producers), followed by the identification by NGOs in 2020 of multiple cases of alleged 'cattle laundering'.

Unfortunately, these companies and their practices are not the exception, but the rule. The 2019 corporate zero deforestation assessment commitment concluded that none of the 350 most influential companies, with forest-relevant operations are on track. They will not achieve their supply-chain commitments regarding the elimination of deforestation from the production of agricultural commodities by 2020.[122]

Moreover, most companies choose to remain largely blind to the wider negative impacts these supply chains create.[123] Animal welfare commitments, policies and compliance remain especially weak.[124] Most companies do not or inadequately address root causes. Their policies and actions fail to catalyse the system change that is required.

Exports of beef potentially contaminated with illegal deforestation from municipalities of Mato Grosso and Pará state to the European Union in 2017. Total of 17.7±1.2 thousand metric tons



Source: Raoni Rãjao, "The rotten apples of Brazil's agribusiness", July 2020

Claiming 'responsible' soy in animal feed

Many companies – and the financial institutions to which they are linked – claim they use soy as an animal feed ingredient which is 'deforestation-free', 'responsible' and or 'sustainable'. These claims are often exaggerated if not downright false. Very few of the companies further down the supply chains of animal feed containing soy from the Amazon and Cerrado can guarantee their soy is deforestation-free.[125] Conservative estimates show that 20 percent of the EU's imported soy from the Amazon and Cerrado may be linked with illegal deforestation.[126] If legal deforestation is considered, this number would be even higher.

The European Feed Manufacturers' Federation (FEFAC) represents the European compound feed industry at European Institutions level. It issued Soy Sourcing Guidelines (SSG), which comprise recommendations to evaluate the many existing and newly developed schemes for 'responsible' soy. But compliance with the FEFAC SSG does **not** require zero deforestation, so unsurprisingly, most soy traded in compliance with the FEFAC SSG cannot be considered deforestation free.[127]

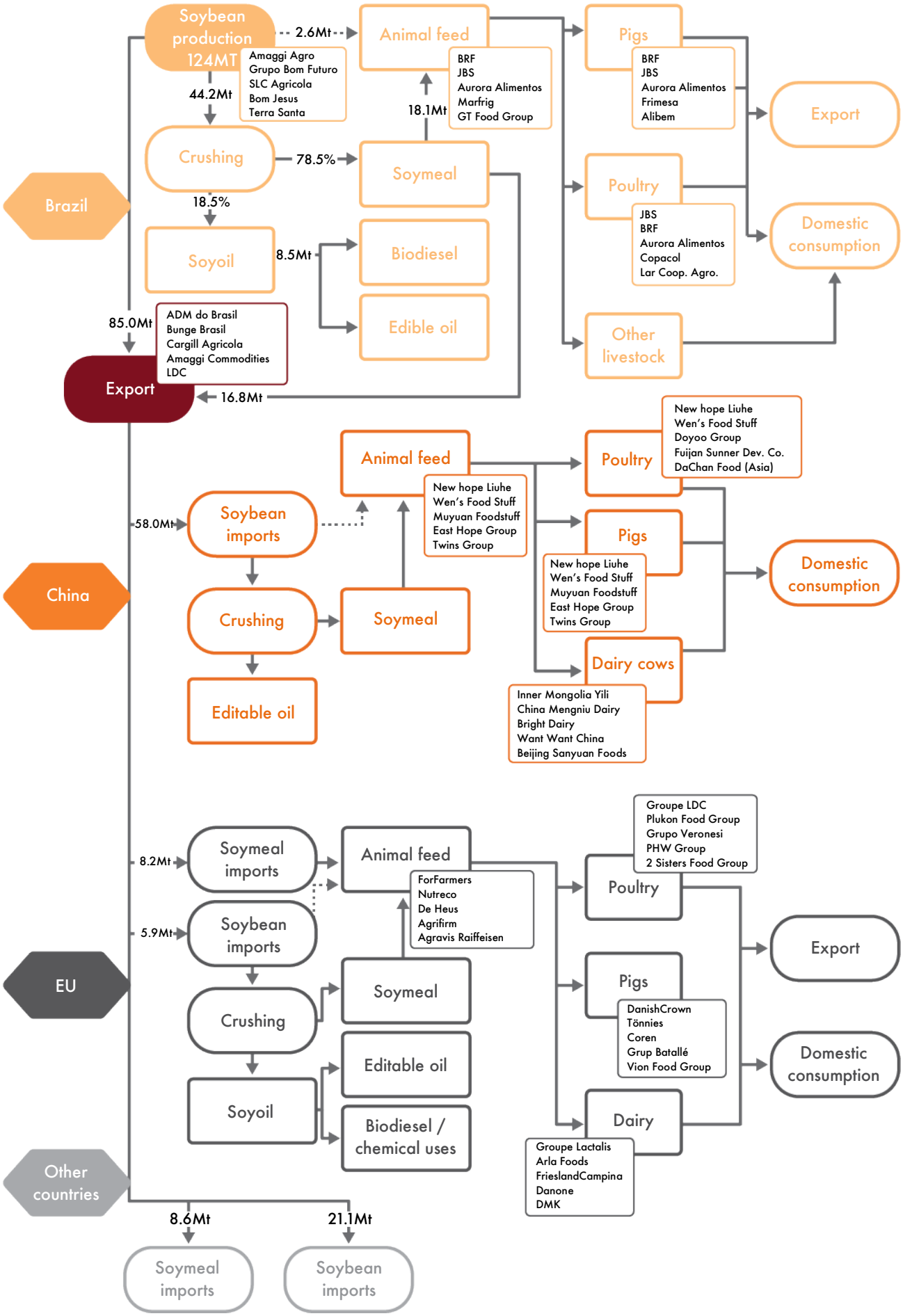
Even so, several SSG compliant schemes do contain zero deforestation requirements. The most prominent example is soy certified by the Roundtable on Responsible Soy (RTRS). But unfortunately, the RTRS zero deforestation requirements are largely rendered immaterial by the scheme's set up and a complicated 'credit' system where soy can be purchased from non-certified producers (see appendix I). This includes the use of soy produced on legally and illegally deforested land.[128] Although RTRS credits do encourage better production methods – which is clearly important - claims about using only 'deforestation-free soy' unconditionally based on RTRS credits are misleading at best.

Sustainability claims should always be treated with caution. A 2015 study by The Hague Centre for Strategic Studies found that in Brazil, 'sustainability' is primarily used in an economic sense. The researchers note that Brazil's agricultural production model is 'based on economically sustainable schemes rather than on environmentally sustainable schemes'. Agrochemicals are one example; RTRS allows the use of a range of controversial pesticides, including those banned in the EU. Even more importantly, 'sustainability' cannot be viewed in isolation. No matter how carefully certification criteria are obeyed, soy used for animal feed is part of a destructive system, risking people's health and contributing to mass suffering of animals.

RTRS is a soy trade platform, and not a forest protection system.[129] But even as a trade platform, RTRS has not lived up to its promise. RTRS was set up in 2006, but only 3.3 percent of Brazilian soy is currently RTRS certified.[130] Moreover, RTRS supply is (substantially) higher than demand. This suggests that adherence is driven by farmers willing to work (or already working) according to relatively good agricultural practices, rather than by companies purchasing RTRS credits. The European Soy Monitor explains, RTRS certification 'hasn't delivered the financial incentive to producers that would stimulate further investment.'[131]

Image: Protest by the Rainforest Action Network against ADM, Bunge and Cargill. Credit: Wesha. CC BY-SA 3.0.

Domestic and international supply chain of Brazilian soy



Source: Fair Finance Guide Netherlands, "Funding destruction of the Amazon and Cerrado", August 2020.

Image: Fires in the Amazon. Credit: World Animal Protection/Noelly Castro.

5. Focusing on financial links – the powerful keys

Banks and investors are central to the allocation of resources in our modern, globalised economy. They keep the current system running and current crises deepening. But the financial sector also holds one of the most important keys to stop deforestation and the negative impacts to which it is linked. It can powerfully catalyse the transformation of the global food system so urgently needed.

Grey money, weak policies

Financial institutions should redirect mainstream finance and investment (so called 'grey' finance/investments) toward activities with positive outcomes ('green' finance/investments). Currently, green finance and investments are regrettably only a fraction of the grey – mainstream financial and investment flows – towards countries with high levels of deforestation.[132] This is because of the lack of ambitious and positive policies from financial institutions – and/or because of gaps between policies and actual implementation. It creates exposure to businesses with a heightened reputational risk resulting from products or activities linked to deforestation and related adverse impacts.[133]

Financial institutions are also particularly weak on animal welfare and on protein diversification which would aid the transition to more plant-based foods (the protein transition). This is particularly surprising for financial institutions in Sweden as Swedish citizens generally view animal welfare as an important issue. According to Eurobarometer, in principle all Swedish citizens believe it is important to protect the welfare of farmed animals (99 percent), and 83 percent of the Swedes believe farmed animal welfare should be better protected than it is currently.[134]

The Organisation for Economic Co-operation and Development (OECD) notes that as investments in the agricultural sector have grown, 'so too has the awareness that they need to be responsible'.[135] Hence, the OECD's Guidance for Responsible Agricultural Supply Chains is not only aimed at enterprises directly working within agricultural production, but also at other stakeholders involved through business relationships. These include investment funds and banks. This guidance, developed with the Food and Agriculture Organisation of the United Nations (FAO) to facilitate responsible business conduct, marks animal welfare as a key issue for responsible business due diligence.

Awareness within the finance and investment community of animal welfare as an Environmental, Social and Governance (ESG) issue worthy of consideration regarding risks and opportunities is increasing. There is understanding that analysing animal welfare practices improves risk management, unlocks investment opportunities and guides active ownership.[136]

The 2019 UN Principles for Responsible Banking guidance document and the 2020 UN ESG Guide for the Global Insurance Industry identifies the FARMS initiative as a key resource for managing farm animal welfare.[137] And the OECD notes: 'failing to consider long term investment value drivers, which include environmental, social and governance issues, in investment practice is seen to be a failure of fiduciary duty.'[138] This point also applies to animal welfare and protein transition, especially given their potential contributions in mitigating climate, biodiversity and public health risks, all of which have enormous economic consequences.[139]

To assess to what extent the Swedish banks are part of this context and how they manage potential risks, we examined their investments in the 61 high-risk companies, as well as their financing of these companies, that operate in the supply chains of Brazilian beef and soy (see the full list of companies in appendix C). Thereafter, we assessed their responsibility measures through a survey asking about their participation in relevant sector specific initiatives and their possible engagement with three sample companies: Blackstone, Carrefour and China Mengniu Diary. These companies were selected due to the reason that all banks have, or until recently have had, financial links to them. See appendix A for more information about the selection process and methodology used.

6. Swedish financial links and responsibility measures

Swedish banks are among the international financial institutions that finance and invest in companies, including many of the high-risk companies in this report. This chapter presents a mapping of the Swedish financial relationships and an assessment of the banks' sustainability policies and practical measures to address the issues. Are the Swedish banks acting responsibly and do they fulfil their own policy commitments?

The banks' investment and lending to the high-risk companies

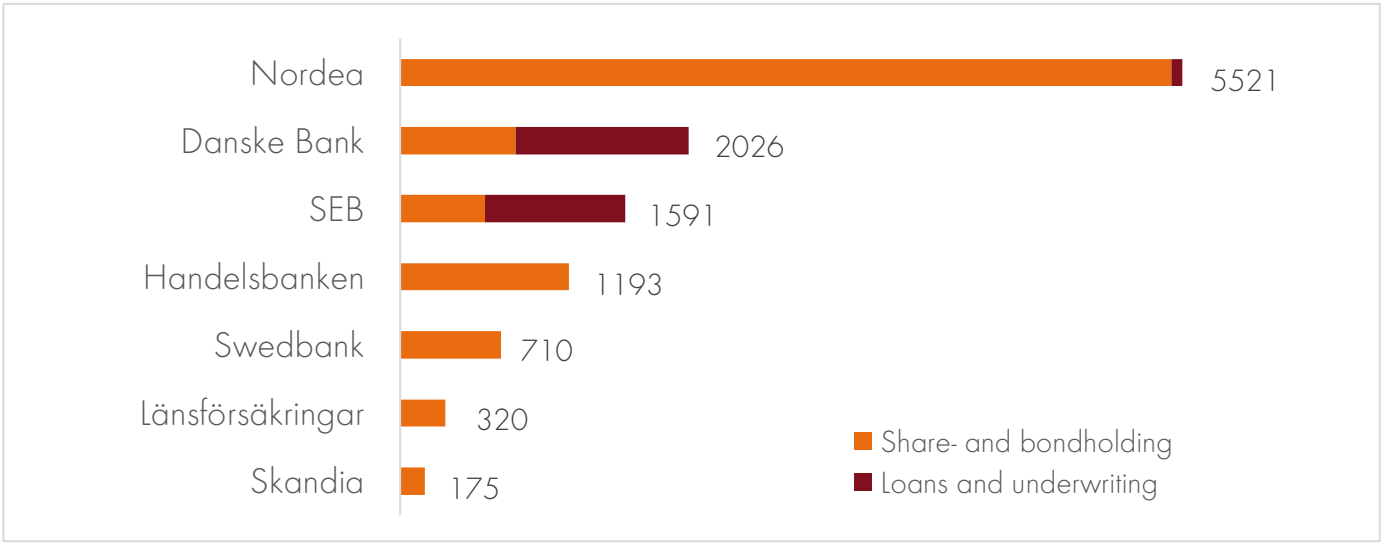
Our research found that the seven largest banks in Sweden have financial links to 27 of the 61 high-risk companies (see appendix C) included in this report. The banks have invested and financed these companies with a total amount of SEK 11,5 billion in shareholdings, bondholdings, loans and underwriting services (see figure 8).

Nordea accounts for almost half the banks' total amount, with over SEK 5,5 billion invested in the high-risk companies. In terms of number of investments, Nordea has relatively few, but the amounts are much larger per company compared to the other banks. Shareholdings in the global soy trader Archer Daniel Midlands and the French dairy company Danone account for the largest part of Nordea's investments.

Regarding financing, Danske Bank and SEB stand out as the only banks with major loans and underwriting to a handful of the high-risk companies. The two banks took part in the 2018 bond issuance for the meat company Danish Crown, which amounted to approximately SEK 600 million each. In 2017 and 2018, SEB provided two loans to the global soy trader Cargill, in total approximately SEK 350 million. Danske Bank has also provided a loan to the Dutch animal feed producer Nutreco of around SEK 500 million.

Figure 8

The seven banks' financial interests in the high-risk companies, in SEK million



The banks' total investments through shareholdings and bondholdings in the high-risk companies per the first quarter 2021, and their total financing of the companies through loans and underwriting in the last five years (2016-2020).

Danske Bank has financial links to a majority of the high-risk companies, 27 in total, whereas Skandia invests in only six. The companies appear more often in the banks' index funds than in their actively managed funds.

All banks except Danske Bank are investing in the global soy companies Archer Daniels Midland and Bunge. Länsförsäkringar is the only Swedish bank still investing in the controversial Brazilian meat company JBS, alleged for links to Amazon deforestation, although it is a small investment through one of their index funds. Swedish investments were also found in BRF, another of the controversial Brazilian giant meat companies, exceptions are Danske Bank, Nordea and Skandia. See the detailed list of the banks' financial links to the companies in Appendix C.

Some of the selected companies, such as Blackstone, Archer Daniel Midlands and Bunge, were also found in sustainability funds at Danske Bank, Handelsbanken, Länsförsäkringar, SEB[140] and Swedbank (see the full list of sustainability funds in appendix B). Almost all the sustainability funds are so-called index funds, which means that the banks make fewer active decisions regarding which companies to invest in. Notable is that the sustainability funds at Skandia and Nordea had no investments in any of the selected 61 companies.

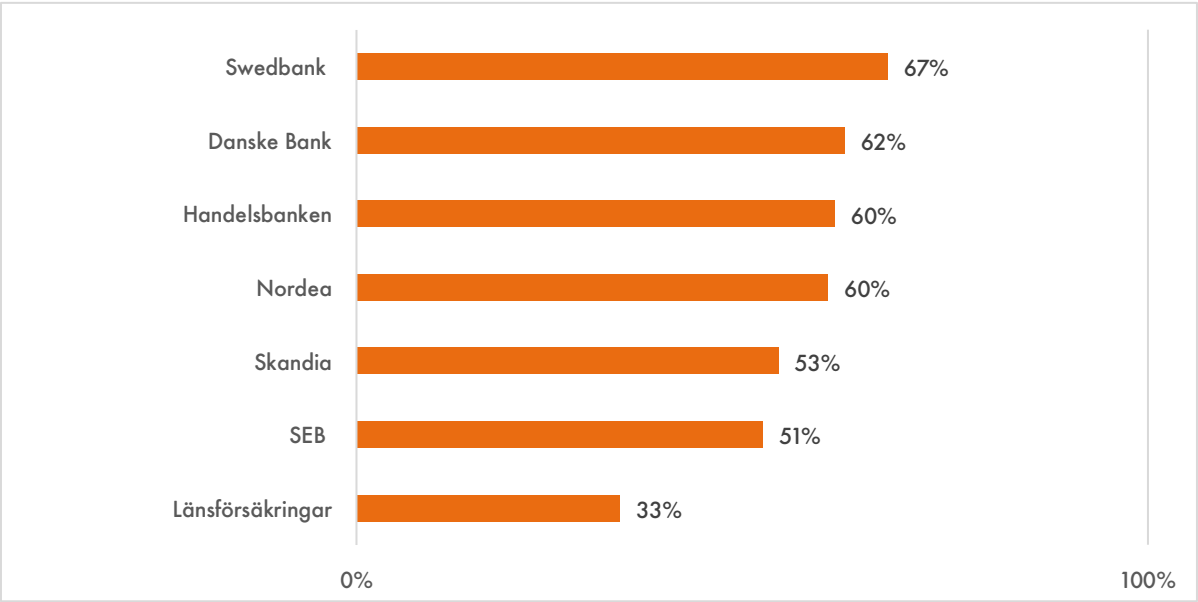
The banks' responsibility work

Policies related to the soy and beef value chains

Fair Finance Guide in Sweden annually assesses the sustainability policies of the seven largest banks in Sweden and how they apply to their investment and financing activities. The latest assessment published in December 2020 (figure 9), showed that the banks still lack several essential policies related to high risks in the soy and beef value chains. On average the seven largest banks only commit to 55 per cent of the most important sustainability principles related to these two sectors (see the full list of selected principles in appendix A). When scoring, according to the selected principles, Swedbank has the best policies and Länsförsäkringar the weakest.

Figure 9

The banks' policy scores in Fair Finance Guide's assessment of selected sustainability criteria, December 2020



All seven banks require that companies shall prevent negative impacts on High Conservation Value (HCV) areas. The policy applies to all financial activities, except at Nordea and Swedbank where the policy does not apply to their lending activities. Danske Bank's policy is rather vague. All banks except SEB, require companies to engage in meaningful consultations with impacted local communities, and specifically recognise indigenous people and their internationally agreed right to obtain free, prior and informed consent (FPIC). Only one bank, Swedbank, requires FPIC in relation to people with customary tenure rights; land and resources governed by communities by a set of rules and norms of how to access, use and transfer these resources.

All seven banks also require companies in the food sector to integrate environmental and social criteria in their procurement policies. Nordea goes further and their policy states that companies also should include clauses on compliance with these criteria in their contracts with suppliers.

Regarding animal welfare the banks have very weak commitments. On average they commit to only 11 percent of internationally declared animal welfare criteria. For example, none of the banks require companies to regulate the time limit of animal transports to a maximum of eight hours. Nordea has slightly better policies than the other banks, committing to 36 percent of the animal welfare criteria.

Sector and dialogue initiatives

The alarming situation in Brazil and especially in the Amazon, has led to a number of sector initiatives to alert relevant stakeholders to take action against deforestation and other severe consequences of the soy and beef sectors. The financial sector too, has engaged in several initiatives which is a quite recent and seemingly effectual way of acting. All seven banks, except Danske Bank, have participated in several initiatives concerning deforestation and violations of human rights in the Amazon. Nordea and Handelsbanken are the most active and participate in four initiatives (see table 3). In terms of open letters from financial institutions to halt deforestation, Skandia and Handelsbanken have signed the largest number, four each (see table 4).

Table 3

The banks' participation in sector initiatives

	The Investors Policy Dialogue on Deforestation	PRI-Ceres Investor Initiative for Sustainable Forests	FAIRR Global Investor Engagement on Meat Sourcing	FAIRR Building Sustainable Protein Supply Chains	SISD working group on SDG 15
Danske Bank	No	No	No	No	N/A
Handelsbanken	No	Yes	Yes	Yes	Yes
Länsförsäkringar	No	Yes	Yes	Yes	No
Nordea	Yes	Yes	No	Yes	Yes
SEB	Yes	No	No	Yes	Yes
Skandia	No	No	Yes	Yes	Yes
Swedbank	No	Yes	No	No	No

In May 2020, a group of investors, including Nordea, SEB and Handelsbanken, sent letters to the Brazilian embassies in their respective countries to express concern about the situation in the Amazon and in particular a legislative proposal that would undermine the protection of the forest as well as affect indigenous people and their territories.[141] The group eventually got invited to a meeting with the Vice President of Brazil, Hamilton Mourao, in which Nordea and SEB participated. As an outcome of that meeting, the Brazilian government announced a three-month fire ban.[142] The group later founded the *Investors Policy Dialogue on Deforestation* (IPDD)[143] that engages with regulators in Brazil and industry associations to coordinate a public policy dialogue on halting deforestation.

Handelsbanken, Länsförsäkringar, Nordea and Swedbank participate in the *PRI-Ceres Investor initiative for Sustainable Forests,*[144] which is an initiative to coordinate collaborative investor engagement with companies that have a direct or indirect indication of commodity-driven deforestation in the soy and cattle sectors. Much focus is on the deforestation in Brazil and the group has published two letters on responsible cattle and soy.[145] Länsförsäkringar and Handelsbanken are the only banks just signing one of the letters.

Skandia and Swedbank have signed two letters from the *Retail Soy Group*, one in 2020 and another in 2021,[147] letters addressed to politicians in the Brazilian National Congress. The purpose of these letters was to express concerns about legislative proposals that would weaken the protection of the Amazon as well as threatening indigenous people and traditional communities. The first legislative proposal was ultimately cancelled, and the second was recently postponed. The banks claimed their criticism contributed to the outcome.

Handelsbanken, Nordea, SEB and Skandia are also part of a working group on biodiversity coordinated by Sida's initiative *Swedish Investors for Sustainable Development* (SISD).[148] The Amazon is one of the focus areas according to Skandia.

Table 4

The banks' support of relevant open letters

	Retail Soy Group, Amazon Letter, 2020 and 2021	FAIRR, Cerrado Manifesto, 2021	Investor letter to Brazilian embassies, 202	PRI-Ceres, deforestation in soybean supply chain, 2019	FAIRR, Amazon soy moratorium, 2019	PRI, Amazon letter, 2019	PRI-Ceres deforestation in cattle supply chains, 2018
Danske Bank	No	No	No	No	No	No	No
Handelsbanken	No	Yes	Yes	Yes	No	Yes	No
Länsförsäkringar	No	Yes	No	No	No	Yes	Yes
Nordea	No	No	Yes	No	No	Yes	No
SEB	No	No	Yes	No	No	Yes	No
Skandia	Yes	Yes	No	No	Yes	Yes	No
Swedbank	Yes	No	No	No	Yes	Yes	No

All banks, except Swedbank and Danske Bank, participate in initiatives initiated by *Farm Animal Investment Risk and Return Initiative* (FAIRR), an investor network focusing on environmental, social and governance (ESG) risks in the global food sector. Handelsbanken, Länsförsäkringar and Skandia participate in FAIRR's specific engagement with the six largest fast-food companies with the aim to address ESG risks in their supply chains.[149] These three banks have also signed FAIRR's Cerrado Manifesto, which calls for a halt of deforestation in the Cerrado region.[150] Skandia and Swedbank have also signed FAIRR's letter supporting the protection of the Amazon Soy Moratorium.[151]

Several banks participate in FAIRR's *Global Investor Engagement on Sustainable Proteins*, which evaluates and engages with 25 of the largest food companies globally to reduce their use of animal proteins.[152] Swedbank is not part of this initiative and states that the bank does not believe soy-based proteins to be less-at-risk than animal proteins in relation to deforestation in and around the Amazon and the Cerrado. Together with more than 250 other investors, with US $17.7 trillion in assets, all banks except Danske Bank have signed the 2019 PRI letter against deforestation and fires in the Amazon.[153]

Direct company engagement

A key measure to take responsibility as a financial institution is to directly engage with specific investee companies that are linked to severe sustainability issues. To assess how the Swedish banks have acted regarding the high-risk companies in this report they were asked in a survey to describe their engagement with three selected companies; Blackstone, Carrefour and China Mengniu Dairy (see Fact Box X). All banks have investments in these companies, except Swedbank which now has sold its stake in Blackstone.

Image: Deforestation – an increasingly normal scene in the Amazon, as financial gains take precedence over environmental and human concerns. Credit: Getty Images

The survey of the banks' engagement showed disappointing results. In more than half of the cases the banks have no ongoing engagement regarding the companies' high-risk activities. This is particularly the case with Blackstone where none of the banks had ongoing engagement with the company at the time of the survey. Only three of the seven banks are in dialogue with China Mengniu Dairy, but they all lack clear and time-bound demands. Five of the banks engage with Carrefour through joint-initiatives, but in most cases they do not present clear and time-bound demands and none of them have raised animal welfare issues. An overview of the banks' engagement is presented in Table 5.

Table 5

Overview of the banks' engagement with the three sample companies

	Carrefour Group	China Mengniu Dairy	Blackstone
Danske Bank	Engagement initiated in 2021 including on biodiversity issues in the supply chain. No clear and time-bound objectives. Animal transports is not addressed.	No engagement	No engagement
Länsförsäkringar	Engagement through FAIRR's sustainable proteins program. States also that only a small part of the company's products are linked to high-risk suppliers and is not close enough to the negative impacts to be consdidered to violate the Global Compact principles. Animal transports is not addressed. An external manager has been in contact with the company about environmental impact issues.	Engagement through an external manager who states that only a small part of the animal feed is soy from South America and that the company is working to improve traceability and disclosures. States that the company is committed to aminal welfare exemplifies with measures taken through the company's animal welfare program. Also engagement through an external service provider which recommends the company to improve management of supply chain risks, focusing on climate and water. No clear time-bound objectives.	One contact in 2020. Claims that they have been unable to verify a ink between the company and deforestation in the Amazon. Believes that the company has responded sufficiently. States that they will review the case again.
Handelsbanken	No engagement	No engagement	No engagement
Nordea	Engagement through the PRI-Ceres initiaitve which includes clear demands and a few time-bound objectives. Also included in FAIRR's sustainable protein engagement. Animal transports is not addressed.	No previous engagement. Has initiated new dialogue with the company.	No previous engagement. Has now initiated engagement due to the new report from INESC.
SEB	Engagement regarding protein diversification, both through an external service provider and through FAIRR's sustainable proteins engagement. Animal transports is not addressed.	Engagement through an external service provider on several topics including biodiversity and deforestation. No clear time-bound objectives. Animal welfare is not addressed.	Has engaged with the company and is pleased with the response. Has shared the *new* report from INESC.
Skandia	Engagement through FAIRR's sustainable proteins program. Animal transports is not addressed. Direct engagement is not prioritized because of the small passive holding.	Engagement through an external manager who states that only a small part of the animal feed is soy from South America and that the company is working to improve traceability and disclosures. No clear time-bound objectives. States that the company is committed to aminel welfare exemplifies with measures taken through the company's animal welfare program.	No engagement. Is receiving the report from INESC.
Swedbank	No engagement	No engagement	Has researched the allegations and engaged with the company, and is pleased with the response. Has divested the company for financial reasons.

Scoring

Ongoing engagement – 1p

Discloses time-bound objectives – 1p

Has raised animal welfare issues – 1p

Legend

0 points	1 point	2 points	3 points

A common explanation of the banks to justify their inaction is that their external sustainability research providers have deemed that companies are not involved in any verified breaches of international environmental or human rights norms. Skandia responded that their engagement resources are prioritized for companies in which Skandia has larger and more strategic ownership. Skandia's investments in Carrefour and Blackstone are relatively small and through passively managed funds.

Blackstone is one of the largest investment companies in the world and accused of contributing to deforestation through its investments in the Brazilian logistic company Hidrovias do Brasil. All banks except Swedbank, have investments in the company, in total SEK 499 million. Länsförsäkringar, SEB and Swedbank have previously engaged with Blackstone regarding these allegations but decided to end the engagement for different reasons; either because they accepted the company's rejection of the allegations or that the banks could not "verify" a link between Hidrovias and deforestation (see table 5). Notably Swebank states that Hidrovias "has high environmental sustainability standards". After a new report by the Institute for Socioeconomic Studies (INESC) in 2021. "As Soy Moves Forward: Impacts of Hidrovias Do Brasil in Itaituiba, Pará.",[154] which includes new allegations against Hidrovias for violations of indigenous peoples' rights, Länsförsäkringar, Nordea, SEB and Skandia have responded that they are looking into the case again.

As a contrast, increasing attention has been paid to Carrefour SA, a multinational food retailer and the largest in Brazil. The company is highly relevant to highlight due to its deforestation-linked beef sourcing in Brazil. Carrefour is one of the target companies in FAIRR's sustainable proteins engagement in which Länsförsäkringar, Nordea, SEB and Skandia participate. Danske Bank too has recently initiated an engagement with Carrefour, including supply chain risks, but has no clear time bound objectives. Swedbank has no direct engagement with Carrefour. In total the banks have invested SEK 245 million in the company.

Embedded deforestation in animal feed due to soy contain is yet another aspect of deforestation risks. China Mengniu Dairy is one of the biggest manufacturers and distributors of dairy products in China. China in its turn, is the largest importer of Brazilian soy. Our research found that all the seven banks invest in China Mengniu Dairy, investments equivalent to SEK 335 million. Three of the banks have engaged with the company through external parties. Länsförsäkringar and Skandia use the same external asset manager who has been in a dialogue with the company for years regarding sustainability issues. The conclusions are that the progress of China Mengniu Dairy is satisfying, and the company is ahead of many of its peers. Their external manager also states in a written response that it is pleased with the company's animal welfare program. SEB too has engaged with China Mengniu Dairy through its external service provider. The focus is on corporate governance issues, but biodiversity and deforestation are also mentioned as topics being raised.

Most of the banks point out that they have engagement dialogue with a number of other companies among the 61 in the report. These companies are sometimes mentioned by name and to a large extent are companies further down in the value chain, which means closer to the activities causing deforestation and human rights violations.

Exclusion as a method

Exclusion of certain companies by not investing in them due to sustainability concerns, is a way for banks to increase pressure on those that do not respond sufficiently to the demands raised during the engagement dialogue. Among the seven banks, in particular Danske Bank has actively excluded several of the companies, namely Archer Daniels Midland, BRF, Bunge, Cargill, JBS, Minerva and SLC Agricola. According to the bank it is mainly due to their severe biodiversity and climate impacts. Nordea on its turn, has excluded JBS. Both banks made their exclusions public and their actions have been covered in the media, leading to increased pressure on the targeted companies.[155] None of the other banks have excluded any of the companies mentioned in this report. For more details, see Appendix C.

Fact box – the three sample companies

Blackstone

Blackstone is one of the largest investment companies in the world. The company is linked to deforestation and human rights violations in Brazil through its investments in the infrastructure and logistics company Hidrovias do Brasil. International reporting about the company was published by the investigative newspaper The Intercept in 2019[156] and in 2021 a new report, "As soy moves forward",[157] was published by the Institute for Socioeconomic Studies (INESC). These reports reveal how Hidrovias' infrastructure activities play an instrumental role in the continued exploitation of the Amazon and Cerrado. Hidrovias promotes the soy trade by developing and operating ports along the Amazon River and its tributary rivers, which facilitate and lower the costs for exporting grains from remote areas. The company is also accused of violating indigenous peoples' rights in communities adjacent to the construction site of the port in Itaituba. In addition, Hidrovias has lobbied for other infrastructure projects that will facilitate the shipping of grains from the Amazon, including the improvement of the BR-163 highway and the construction of the Ferrogrão railway.[158] In 2020 and 2021 Blackstone reduced its direct and indirect investments in Hidrovias but Blackstone is still the largest institutional shareholder of Patria Investments, the largest owner of Hidrovias.[159]

Carrefour

Carrefour is a multinational food retailer and the largest in Brazil. The company is a major buyer of beef and therefore faces a high risk of contributing to deforestation and human rights violations in the Amazon and Cerrado. In 2019, research revealed that 35 percent (168 products) of Carrefour's sampled beef products originated from slaughterhouses located within the Amazon. Eleven products (2.3 percent) were linked to high-risk (linked with deforestation) slaughterhouses operated by JBS, Marfrig Global Foods and Mercúrio Alimentos.[160] Moreover, Carrefour's recent acquisition of 30 stores in Brazil from retailer Makro Atacadista, increases the risk of deforestation-linked beef entering its supply chain.[161] The company is also at risk of having links to animal welfare issues due to long-distance livestock transports. No legislation exists in Brazil that limits the overall transport times and livestock transports up to 60 hours have been observed. Carrefour scores only 44 percent in the Forest 500 ranking of how companies manage their deforestation risks.[162]

China Mengniu Dairy

China Mengniu Dairy (Mengniu) is one of the biggest manufacturers and distributors of dairy products in China. The company has a high risk of contributing to deforestation and human rights violations in the Amazon and the Cerrado, due to using soy in its supply chain. China is the largest destination of Brazilian soy exports, mainly used as animal feed, and accounted for 61 percent of the soy exports in 2019.[163] The company scores only 11 percent in the Forest 500 ranking of how companies manage their deforestation risks, and zero regarding sustainability risks in soy.[164]

Concluding analysis

The research shows that the seven largest banks in Sweden have considerable financial interests in companies in the soy and beef value chains. Therefor they have a higher risk of contributing to deforestation, human rights violations and long-distance animal transports in Brazil. In total the banks invested SEK 9,2 billion and have provided SEK 2,3 billion in loans and financing to 27 of the 61 high-risk companies included in this report.

Most of these companies were found in the banks' index funds, but some of the larger holdings were found in their actively managed funds. Some of the companies were also found in the banks' sustainability funds, including the soy traders Archer Daniels Midland and Bunge as well as Blackstone. Almost all of these sustainability funds are index funds. The banks' financing of the companies is significantly smaller than their investments, in part because only a few of the companies are based in any of the Nordic countries. During the last five years, it is mainly Danske Bank and SEB that have provided loans and financing to the companies. For example, both banks have financed the meat company Danish Crown and SEB has provided loans to the American soy trader Cargill.

Failing sustainability commitments

Despite the banks' commitments to key sustainability principles, they have not acted responsibly in relation to some companies they invest in. This is particularly the case with companies higher up in the value chains. None of the banks could demonstrate a proper engagement process, including time-bound objectives, with any of the three selected companies. In particular Handelsbanken, Danske Bank and Swedbank, showed poor performance. This is very unfortunate as companies higher up in the value chains play a key role to transform the sectors, as buyers and users of soy and beef. Worth noting in this context, is the systematic breach of the sustainability principles in the soy and beef value chains, which in its turn undermines the value of banks' commitment.

It is particularly striking that none of the banks have identified any sustainability problems at Hidrovias, despite the serious criticism against the company. Previously, the banks accepted Blackstone's rejection of the criticism without further critical analysis. Now, after the new report "As soy moves forward" from INES (2021), shared with them during the research of this report, a few of the banks are reconsidering the case. However, this also shows that the banks have gaps in their own monitoring and due-diligence process if they do not discover and act on such reports on their own.

The research also confirms that animal welfare is still not seriously dealt with by the Swedish banks. This is also reflected in the banks' financial policies; they commit to very few animal welfare principles. None of the banks have committed to the principle of reducing animal transports to a maximum of eight hours.

Although Nordea has the largest investment in high-risk companies, the bank invests in relatively few of the companies. This gives Nordea a better possibility to keep track of the companies and engage where needed. In contrast, this is more challenging for banks like Danske Bank, Länsförsäkringar, Handelsbanken and SEB which invest in more than 15 of the companies. The fact that the banks have small or passive holdings, cannot be an excuse of inaction, as all financial stakes in a company are relatively small so every investor in a certain company has a responsibility.

Progress in the last year

On the positive note, the banks have increased their efforts to address the deforestation in Brazil since Fair Finance Guide's previous report in 2020.[165] Danske Bank and Nordea have publicly excluded several of the soy and meat producing companies, due to their unwillingness to address these issues properly. In addition, several banks have also joined new sector-initiatives. Today all banks, except Danske Bank, are active in several industry initiatives and have signed joint letters urging companies in these sectors to act. In addition, a number of these initiatives address politicians in Brazil, to promote enforced regulation and supervision. The political engagement is particularly welcomed since the protection of the Amazon and the people living there is to a large extent a political, regulatory and enforcement issue. When financial institutions express their concern, it sends a strong signal to politicians.

Legal measures needed

Voluntary initiatives such as the described sector initiatives, are welcomed but not enough to tackle high biodiversity loss, climate change and human rights abuses linked to the production and trade with high-risk commodities. The situation requires quite a bit more and mandatory regulations of companies and financial institutions are needed. Until recently, legal developments have put an emphasis on promoting transparency, but now is growing momentum worldwide to require companies to undertake human rights and environmental due diligence. Proposed EU legislation offers an opportunity to begin to deal with the root causes of human rights abuses and environmental damage, caused by companies, and for these matters to be addressed in a coherent and consistent manner.

The UN guiding principles on business and human rights (UNGPs) as well as the OECD guidelines for multinational enterprises are the main international guidelines regarding business and human rights. However, none of these guidelines are mandatory for businesses, nor are they legally binding. While there are companies making serious efforts on this matter, still too many are failing to meet their responsibility to respect human rights and the environment. It is evident that voluntary guidelines are not enough to prevent human rights abuses and environmental damages associated with business activities. An EU law on sustainable corporate governance is being drafted by the EU Commission. To be effective it needs to be a mandatory human rights and environmental due diligence (HREDD), that could provide for legal certainty, coherence and consistency for companies as well as for financial institutions. Such a law should imply that companies and financial institutions are being regulated by law and possible to hold accountable for human rights abuses and environmental damage in their entire value chain. Victims shall also have the right to remedy. Similar laws already exist in various countries such as France and the Netherlands, several more to follow.[166]

One of the objectives of the EU Green Deal is to cut the ties between EU consumption and deforestation. Zero-deforestation commitments have not always delivered a real impact and international goals to tackle and halt deforestation, such as the Sustainable Development Goal to halt deforestation by 2020, have not succeeded. The EU was responsible for 16% of tropical deforestation associated with international trade in 2017.[167] Deforestation is embedded in a wide range of products. A sixth of all emissions resulting from the typical diet of an EU citizen can be directly linked to deforestation of tropical forests.[168] To avoid that the EU trade results in further deforestation and human rights abuses, legislation with binding measures is needed. Instead of voluntary initiatives it must be mandatory due diligence for European companies to ensure they are not placing commodities on the EU market that have caused direct or indirect deforestation, other ecosystem degradation or human rights abuses. A law should also entail rights for third parties to seek redress before EU courts if they are harmed by any adverse impacts addressed by the proposal or by non-compliance with its requirements. It is necessary to apply due diligence obligations to financial institutions as well, to ensure that no financing goes to business activities that do not meet the sustainability requirements for Forest and Ecosystem Risk Commodities (FERCs) or products derived from or containing them (so called *Relevant Products*).

The role of trade

Trade in agricultural forest risk commodities from South America could further increase due to the pending trade agreement between the EU and Mercosur. Mercosur is the economic and political collaboration between Argentina, Brazil, Paraguay and Uruguay and is the biggest trade treaty ever negotiated. The EU-Mercosur trade agreement negotiations started in 2000 and has over the years experienced different phases. In May 2016, the EU and Mercosur relaunched the negotiation process and the EU concluded a trade agreement with the four founding members of Mercosur and an agreement was signed in 2019. The closing of the EU-Mercosur agreement is under threat due to concerns of deforestation and forest fires in the Amazon. It has been criticised by EU governments, NGOs, civil society and questioned by researchers and the ratification of the trade agreement has been postponed.[169] The trade agreement will increase trade in agriculture risk commodities and most likely worsen the already alarming situation in Brazil. The deal will preserve the status quo and might even increases unsustainable and illegal trade. To work properly, the trade agreement should meet high environmental and social standards and create a precedent for future trade deals and must include specific enforceable provisions to stop it from driving deforestation and human rights abuses.[170] In addition, it is impossible to separate the impact this trade deal will have in Brazil from the laws, policies, environmental standards and governance approach in the country. To ensure international trade does not damage forests and people, solid forest governance frameworks must be in place as well, as this will determine the role a trade agreement will play.

7. Transforming the food system – facing the future

Urgent action is needed to stop and reverse deforestation. Focusing only on tree cover loss is not enough. Deforestation is to a large extent one of the symptoms of an unsustainable global food system. The wider negative impacts of the drivers of deforestation must be considered, which requires addressing root causes.

Moving from improving 'business as usual' to transformational change

Many initiatives over the past decades have attempted to halt deforestation in the Amazon and Cerrado, largely focusing on improving current practices of beef and soy production. But improving elements of the current industrial model, predominantly based on the production of farmed animal protein, is not enough.

Developing a pathway to a sustainable future requires focusing on the following:

- Sustainable, circular agriculture. Loops of agricultural inputs and outputs should be closed and shortened as much as possible at local and regional level. This includes phasing out the use of monocrops like soy as feed for chickens, pigs and cows. It also includes a profound reduction in the use of pesticides. Finally, it would make long distance transport of animals a thing of the past.
- Predominantly plant-based diets. The current excessive consumption of animal-derived foods in many countries needs urgent rebalancing. Replacing animal protein with plant protein could reduce greenhouse gas emissions up to 90 percent and land used for food by up to 76 percent.[171] Increasing the use of agroforestry systems could in a sustainable way, increase productivity and improve carbon storage in agricultural land. Agroforestry could also be part of sustainable intensification practices for farmed land and thereby avoid expansion of agricultural land and forest-encroachment. Meat production should contribute to environmental benefits, i.e., like grass-fed animals contribute to biodiversity. Crucial is also to phase out highly hazardous pesticides in agriculture.
- High animal welfare. Safeguarding animal welfare should be central to livestock farming, utilizing animals' natural behaviours such as grazing, rooting and foraging.[172] It also includes the use of robust, slower growing breeds, that adapt well to local circumstances. High animal welfare also means no cages or painful procedures, and fewer antibiotics being used.

Image: Aerial view of the Amazon Rainforest. Credit: Lucia Barreiros. CC BY-SA 2.0, source: www.flickr.com/photos/lubasi/4909683043/

8. Recommendations

Based on the outcomes of this research, the Fair Finance Guide in Sweden and its partners the Swedish Society for Nature Conservation and World Animal Protection make the following recommendations.

To the banks and other financial institutions:

1. **Commit to zero tolerance for deforestation in all financial relations:** A transformation of global food systems is necessary to reduce the impact of the global agriculture and food sectors on deforestation and related sustainability issues, such as biodiversity, climate change, land rights and animal welfare. Therefore, financial institutions need to develop a vision on alternative development paths for a sustainable, circular agriculture system based on a 1,5 degrees scenario aligned with the Paris Climate Agreement. Any involvement in deforestation-risk sectors such as the soy and beef sectors are problematic and needs to be reconsidered. Involvement in these sectors will likely if not inevitably contribute to further deforestation and related risks to biodiversity, climate change, land rights and animal welfare.

2. **Develop a robust policy on deforestation and sustainable food systems:** This policy should set clear and strict criteria for investments and/or financings regarding deforestation and food systems, also covering related sustainability issues such as biodiversity, climate change, land rights and animal welfare. The policy should be based on the principles included in legislations and in international agreements and standards such as the UN Declaration on the Rights of Indigenous Peoples, the Paris Climate Agreement, the UN Guiding Principles on Business and Human Rights, ILO Conventions, FAO Voluntary Guidelines on Responsible Governance of Tenure, the New York Declaration on Forests and the Five Freedoms for animal welfare (as operationalized in the FARMS initiative). This policy should cover all deforestation-risk commodities and deforestation-risk regions (such as the Amazon and the Cerrado) and should not rely exclusively on certification systems. In developing such a policy, financial institutions can make use of the Fair Finance Guide Methodology.

   The policy needs to be accompanied by Key Performance Indicators (KPIs) that are Specific, Measurable, Ambitious, Realistic and Timebound (SMART) on how and when all financings and investments will be brought in line with the policy criteria. A strong policy and SMART KPIs are crucial to tackle deforestation and related sustainability issues and should be the driver of screening, engagement, voting and divestment. Without strong policies and KPIs, every strategy to change company behaviour is at risk of requiring too little from a company to actually stop deforestation and prevent or mitigate negative impacts on humans, animals and the planet. If the criteria are unclear, there may be numerous engagements which may be successful by their own standards, but the overall goals (halting deforestation and preventing or limiting impacts on biodiversity, climate change, land rights and animal welfare) will not be reached. Such engagement may even be counterproductive as it could result in "greenwashing", by creating a false sense of "addressing the issue".

3. **Disclose and be transparent:** Make full transparency a condition for investment and financing. Disclose all the names and relevant details of the deforestation-risk companies in financing and investment portfolios. Banks need to make new corporate lending and project finance contingent on clients consenting to the disclosure of key details. Once client consent is factored into standard loan agreements, banks should publish a regularly updated database of project and corporate loans. Transparency to stakeholders - including NGO's, clients and consumers/pension fund participants - is required on deforestation-related policies, screening procedures, engagement processes, voting behaviour and collective initiatives, and the progress achieved against the SMART KPI's formulated alongside the policy. This transparency needs to be enhanced by adding relevant details, for instance on what is agreed in the engagement with companies, which results are reached, and in which cases the financial institution needed to divest. Finally, be open and transparent on information requests on behalf of credible civil society initiatives.

4. **Communicate expectations and formalise requirements:** Clearly communicate sustainability expectations to new and existing clients and investee companies. When granting a loan, these expectations should be formalised by a clause in the loan contract. The latter do not need to be limited to new contracts: banks can also seek ways to amend their current contracts based on a mutual acknowledgement of the need to address deforestation and related sustainability risks. If an existing client refuses, this should be an alarm for the banks and can prompt a process of evaluation of that financial relationship.

5. **Screen all deforestation-risk companies:** Screening should be done in financing and investment portfolios on a regular basis, not only new clients or investments. Screening should aim to identify if the company and - when relevant - its suppliers meet the principles and criteria included in the financial institution's policy. Systematic market and supply chain research is needed to identify the deforestation-risk companies in the portfolio of the financial institution. In particular, understanding the possible involvement of midstream and downstream companies in agricultural and livestock supply chains - such as traders, slaughterhouses, meat and dairy companies, animal feed producers, agrochemical and seed suppliers - might require further research. Company involvement in deforestation may also well pertain to lobby activities aimed to weaken legislation and enforcement to protect forests, human rights and biodiversity – or prevent these to be strengthened.

   To do this screening properly, the information from companies themselves and from service providers needs to be triangulated with all relevant information obtained from NGOs, experts and knowledge institutes as well as meaningful engagement with local actual and potentially affected stakeholders, such as indigenous peoples and other affected communities. In other words, do not rely solely on one or two ethical rating agencies, but use specialized information sources such as Trase, SPOTT, Forest500 and Chain Reaction Research. Build contacts with international and national NGOs focussing on deforestation and food supply chain issues, as well as with (organisations of) local communities. The engagement with the local stakeholders should be done in a culturally and gender sensitive way, in which respect is paid to the local context in which these communities live. In case of doubt, commission independent research to verify facts and repeat this screening process regularly.

6. **Exclude clear offenders publicly:** When the screening process clarifies that a company is systematically involved in deforestation and related harmful impacts on sustainability issues, such as biodiversity, climate change, land rights and animal welfare, and prospects for improvement are low, the decision should be taken to not invest in this company and to exclude the company from financing. It is important that the reason for exclusion is made public and communicated to the company, in order to leverage the pressure on both the company and on other financial institutions that continue to financially support it.

7. **Engage with companies:** When screening suggests that one of the deforestation-risk companies in the portfolio might not be meeting all principles and criteria included in the financial institution's policy, follow-up in a consistent way. Each deviation found in the screening process should trigger a follow-up action, either direct divestment or a dialogue with the company. For such a dialogue to be meaningful, other stakeholders (such as local communities, NGOs, trade unions or local governments) need to be consulted as well. Engagement with a company must lead to a clear understanding of the problem and an agreement on the steps needed to address the issue. This agreement needs to be summarised in a time-bound action plan to which the company commits, including a clear description of the consequences when the company breaches these commitments. For loans, this commitment should be formalized by a clause in a loan contract. Determining what amounts to a "reasonable time period" should be primarily based on the salience of the issue at hand.

8. **Monitor and act:** Monitor the company's progress with implementing an action plan and meeting criteria on deforestation and related sustainability issues, such as biodiversity, climate change, land rights and animal welfare. If progress is insufficient after a reasonable time period, financial institutions must decide to divest or - in case of a loan - apply for dissolution of the loan contract because the company defaults on one of the clauses. Expanding the sustainability department of the financial institution will be necessary to have sufficient capacity for these systematic engagement processes with all deforestation-risk companies in the portfolio.

9. **Vote on deforestation shareholder resolutions:** Investors should use the voting rights on the shares of deforestation-risk companies they hold. At various deforestation-risk companies, shareholders resolutions are being filed to demand the company to take meaningful action to ensure that it will not be involved in deforestation and related sustainability issues such as biodiversity, climate change, land rights and animal welfare. At the very least, investors should vote in favour of these and similar shareholder resolutions. Moreover, since such shareholder resolutions may not adequately address root causes of deforestation, investors should also take the initiative - in collaboration with other investors - to file and recruit support for more transformational shareholder resolutions.

10. **Take collective initiative:** Financial institutions should increase their leverage towards their clients and investees by collaborating with peers (within the boundaries of competition legislation), with NGOs, national and local governments and other stakeholders to collectively call upon corporate actors in the soy and beef supply chains, as well as the Brazilian government, to prevent, cease and remediate deforestation and its effects, including impacts on biodiversity, climate change, land rights and animal welfare. Further collective initiatives are needed to transform the current unsustainable food system into a sustainable food system.

11. **Ensure effective grievance mechanisms:** Effective grievance mechanisms should be in place for all relevant stakeholders, who could be affected by deforestation linked to companies financial institutions are financing or investing in. Financial institutions should provide (and/or collaborate with others) for appropriate remediation if and when for example local communities have been affected by deforestation by companies they finance or invest in.

To the Swedish government

Financial institutions cannot bring on the required changes alone, especially governments need to show strong leadership. We urge the Swedish government to:

1. Adopt mandatory due diligence legislation for all companies, including financial institutions, to ensure full compliance with the OECD Guidelines and UNGPs.
2. Strongly support legislation at the EU level regulating the market access of commodities of which the extraction, harvesting or production has, or risks having, a detrimental impact on forests, other ecosystems and related human rights. This legislation should also contain due diligence rules for financial institutions, among others, to ensure that the European financial and banking sector does not contribute directly or indirectly to deforestation, degradation of forests, conversion or degradation of other natural ecosystems or human rights abuses.
3. Develop and implement coherent policies to transition to sustainable, circular agriculture and sustainable food systems. This should include, inter alia:
   - 3.1. policies ensuring a phase out of soy imports to feed livestock. Such a phase-out is also needed for imports of other forest-risk-crops;
   - 3.2. favour extensive animal production with grass-fed animals in policies and support systems and promote Swedish meat and dairy from natural pastures and organic production;
   - 3.3. improving animal welfare standards safeguarding high welfare for farmed animals.

Image: Rio Negro, Brazil. Credit: World Animal Protection/Dirk-Jan Verdonk.

9. Tools and further reading

FAIRR

The FAIRR Initiative (Farm Animal Investment Risk and Return Initiative) is a collaborative investor network that raises awareness of the environmental, social and governance (ESG) risks and opportunities caused by intensive animal production. FAIRR helps investors to identify and prioritise these factors through cutting-edge research, which investors can integrate into their decision-making and active stewardship processes.

www.fairr.org

Chain Reaction Research

Chain Reaction Research conducts free sustainability risk analysis for financial analysts, credit analysts, commercial bankers, institutional investors, corporations, and other stakeholders. Its special focus is demonstrating that deforestation is material financial risk. Chain Reaction Research focusses on tropical deforestation-related commodities including soy and cattle, palm oil, coffee, cacao and timber pulp and paper.

www.chainreactionresearch.com

Fair Finance Guide International

Fair Finance International (FFI) is an international civil society network of 70 CSOs, initiated by Oxfam, that seeks to strengthen the commitment of banks and other financial institutions to social, environmental and human rights standards. By benchmarking the investment policies and practices of financial institutions in critical areas such as human rights and climate impact, we enable consumers and policy holders to demand more socially responsible, fair, and sustainable investments. FFI is currently active in 14 countries: Belgium, Brazil, Cambodia, Germany, India, Indonesia, Japan, Netherlands, Norway, Pakistan, Sweden, Thailand, The Philippines, and Vietnam.

www.fairfinanceguide.org

Global Canopy

Global Canopy is an environmental organisation focussing on the production, trade and financing of the key commodities responsible for agricultural expansion into tropical forests. The organisation provides data, tools and guidance for companies, investors and governments. Examples include Trase (and Trase Finance), an independent, research-based supply chain transparency initiative and the Forest 500, a ranking of the most influential companies, financial institutions, and governments on forest risks.

www.globalcanopy.org - trase.earth - forest500.org

Appendix A – research methodology and selection process

Selection of high-risk companies

The most important companies in the beef and soy sectors were identified based on the following two criteria:

- Which companies are most prominent (in terms of turnover and market share) in the two most important deforestation-risk sectors (the soy and beef sectors) and in the different stages of their (international) supply chains?
- Which companies are most likely to attract financing or investments from financial institutions active on the European market? This criterion translates into a relative preference for companies which are European-owned and/or stock exchange listed.

Beef sector

Most cattle are slaughtered domestically and most beef is consumed domestically, so supermarkets are the key sales channel to consumers. Based on this and the two selection criteria mentioned above, the following selection of companies includes:

- the top-5 Brazilian beef slaughterhouses
- the top-5 Brazilian supermarket chains.

Soy sector

The continuous expansion of soy farming is key to deforestation processes in the Amazon and Cerrado regions. Around 80 percent of soy is exported; China and the European Union are the main export markets. In export markets, the soy is processed into animal feed for the livestock and dairy sectors. Additionally, part of the soy is consumed as animal feed by the Brazilian livestock sector (specifically poultry and pork). Based on this and the two selection criteria mentioned above, the following selection of companies includes:

- the top-5 soy farmers in Brazil
- the top-5 Brazilian poultry and pork slaughterhouses
- the top-5 soy traders exporting from the Amazon and Cerrado regions
- the top-5 animal feed producers in China
- the top-5 livestock slaughterhouses in China
- the top-5 dairy companies in China
- the top-5 animal feed producers in Europe
- the top-5 livestock slaughterhouses in Europe
- the top-5 dairy companies in Europe.

Sources used for this selection process included market studies and publications of research initiatives, NGOs and media. Given the overlap in beef and soy companies, DLG Group (Denmark) could be added to the list. Blackstone, one of the largest investment companies globally, has also been included in the study due to its investments in the Brazilian logistics company Hidrovias do Brasil. Hidrovias plays an instrumental role in the soy trade from the Amazon and Cerrado (see fact box on page 43) and it is a case that Fair Finance Guide has raised before and want to follow-up on.

Financial research

The following types of financial relationships were researched:

- loans signed in the last five years, provided they are still (partially) outstanding
- underwriting of share and bond issuances in the past five years
- investments in shares and bonds managed at the last available reporting date.

This financial research resulted in a database presenting key details. These are: type of finance, date and original value for loans and underwritings; and reporting date, number of shares/bonds and outstanding value for investments. Sources used for this database include the Bloomberg, Thomson EIKON (part of Refinitiv), Orbis, IJGlobal and TradeFinanceAnalytics databases; annual reports and stock exchange filings of companies; company registers and media sources.

Appendix B – policy commitments

	Policy principles regarding the companies a bank finances or invests in	Länsförsäkringar	SEB	Skandia	Nordea	Handelsbanken	Danske Bank	Swedbank
	Nature							
1	Companies prevent negative impacts on High Conservation Value (HCV) areas within their business operations and the areas they manage.	YES	YES	YES	Partly	YES	Partly	Partly
2	Companies prevent negative impacts on protected areas that fall under the categories I-IV of the International Union for Conservation of Nature (IUCN) within their business operations and the areas they manage.	NO	YES	YES	Partly	YES	YES	Partly
4	Companies prevent negative impacts on protected areas that fall under the Ramsar Convention on Wetlands within their business operations and the areas they manage.	YES	YES	NO	Partly	YES	YES	Partly
5	Companies prevent negative impacts for the populations or the number of animal species that are on the IUCN Red List of Threatened Species.	NO	YES	YES	Partly	YES	Partly	Partly
11	Companies conduct water scarcity impact assessments in water scarce regions.	NO	YES	YES	Partly	Partly	Partly	YES
12	Companies have comprehensive mitigation measures in place to address community and ecosystem water requirements in areas where environmental impact assessments identify that significant impacts to water resources are likely.	NO	Partly	NO	Partly	NO	Partly	YES
13	Companies make an environmental impact assessment on the total consequences of a large scale project on biodiversity, at least according to GRI 304: Biodiversity 2016 or other relevant standards (mentioned in section 2.8.2).	NO	Partly	Partly	Partly	Partly	Partly	Partly
14	Companies integrate criteria on nature into their procurement and operational policies.	YES	Partly	Partly	Partly	YES	YES	YES
15	Companies include clauses on the compliance with criteria on nature in their contracts with subcontractors and suppliers.	NO	NO	NO	Partly	NO	NO	NO

	Policy principles regarding the companies a bank finances or invests in	Länsförsäkringar	SEB	Skandia	Nordea	Handelsbanken	Danske Bank	Swedbank
	Animal welfare							
7	Companies shift from intensive livestock farming to animal friendly production.	NO	NO	NO	NO	NO	NO	NO
8	Livestock farming companies are certified according to the criteria of certification schemes that include animal welfare requirements (mentioned in section 2.1.2).	NO	NO	NO	NO	NO	NO	NO
11	Companies reduce the time limit of animal transport to a maximum of 8 hours.	NO	NO	NO	NO	NO	NO	NO

	Policy principles regarding the companies a bank finances or invests in	Länsförsäkringar	SEB	Skandia	Nordea	Handelsbanken	Danske Bank	Swedbank
	Food							
3	Companies prevent conflicts over land rights and acquire natural resources only by engaging in meaningful consultation with local communities and obtaining free, prior and informed consent (FPIC) when it concerns indigenous peoples.	YES	NO	YES	Partly	YES	YES	YES
4	Companies prevent conflict over land rights and acquire natural resources only with free, prior and informed consent (FPIC) of peoples with customary tenure rights.	NO	NO	NO	NO	NO	Partly	YES
5	Companies prevent negative impacts on protected areas that fall under the categories I-IV of the International Union for Conservation of Nature (IUCN) within their business operations and the areas they manage.	NO	YES	YES	YES	YES	YES	NO
7	Companies prevent negative impacts on protected areas that fall under the Ramsar Convention on Wetlands within their business operations and the areas they manage.	YES	YES	NO	YES	YES	YES	YES
8	Activities in the field of genetic materials and genetic engineering only take place if they meet the permission and processing requirements described in the UN Convention on Biological Diversity and the related Bonn Guidelines or Nagoya Protocol.	NO	NO	YES	NO	YES	YES	YES
14	Companies reduce their direct and indirect greenhouse gas emissions.	YES	YES	YES	YES	YES	YES	YES
15	Companies reduce their direct and indirect emissions of harmful substances, such as particulate matter, nitrogen oxide and ammonia.	NO	Partly	YES	YES	YES	YES	YES
16	Conversion of peatland and high-carbon stocks for agricultural development is unacceptable.	NO	NO	NO	NO	Partly	NO	YES
17	Companies contribute to an ambitious, time-bound shift from animal protein to plant and alternative proteins in order to decrease animal protein consumption.	NO	NO	NO	NO	NO	NO	NO
18	Companies minimise use of pesticides.	NO	NO	YES	Partly	YES	YES	YES
19	Companies minimise use of water.	NO	YES	YES	YES	YES	YES	YES
20	Companies prevent water pollution.	YES	YES	YES	YES	YES	YES	YES
21	Companies conduct water scarcity impact assessments in water scarce regions.	NO	YES	YES	YES	NO	YES	YES
24	Companies are certified according to certification schemes criteria (mentioned in section 3.4.2) for raw materials.	NO	NO	NO	Partly	Partly	Partly	NO
25	Companies publish a sustainability report that may contain (a number of) disclosures from the GRI Standards.	YES	YES	YES	YES	YES	YES	YES
26	Large enterprises and multinational enterprises publish a sustainability report that is set up in accordance with the (Core or Comprehensive option of) GRI Standards.	YES	NO	NO	YES	NO	NO	YES
27	Companies integrate environmental, social and governance criteria in their procurement and operational policies.	YES	YES	YES	YES	YES	YES	YES
28	Companies include clauses on the compliance with environmental, social and governance criteria in their contracts with subcontractors and suppliers.	NO	NO	NO	YES	NO	NO	NO

Appendix C – financial links

Explanation

S = Shareholding	B = Bondholding	L = Loans and/or underwriting	Ex = excluded company

	Danske Bank	Länsförsäkringar	Handelsbanken	Nordea	SEB	Skandia	Swedbank
Archer Daniels Midland	Ex	S	S	S	S	S	S
Advent International							
Agravis Raiffeisen							
Alibem							
Arla Foods	L B	B	B	L	L B		B
Aurora Alimentos							
Blackstone	S	S	S	S	S	S	
Bom Jesus							
Boparan Holdings							
BRF	Ex	S	S		S		S
Bright Food Group							
Bunge	Ex	S	S	S	S	S	S
Cargill	Ex				L		
Carrefour Group	S	S	S	S B	S B	S	S B
Casino	B				B		
Cencosud	S	S	S				
China Mengniu Dairy	S	S	S	S	S	S	S
COFCO	S						
Copacol							
Coren							
DaChan Food (Asia)							
Danish Crown	L				L		
Danone	S	S	S	S	S B	S	S B
De Heus							
DMK							
Doyoo Group							
East Hope Group							
ForFarmers	S						
FrieslandCampina							B
Frigol							
Frimesa							
Fujian Sunner Development Co.	S				S		
Groupe Lactalis							
Groupe LDC							
Grup Batallé							
Grupo Amaggi							
Grupo Bom Futuro							
Grupo Muffato							
GT Foods Group (Goncalves & Tortola)							
Inner Mongolia Yili Industrial Group	S	S	S		S		S
JBS	Ex	S		Ex			
Lar Cooperativa Agroindustrial							
Louis Dreyfus Company							B
Marfrig Global Foods							
Minerva	Ex						
Muyuan Foodstuff	S	S	S				
New Hope Liuhe	S	S	S				S
Nutreco	L						
PHW Group							
Plukon Food Group							
Royal Agrifirm Group							
Shuangbaotai Group (Twins Group)							
SLC Agricola	Ex				S		
Tech-Bank Food	S						
Terra Santa							
Tönnies							
Vale Grande/Frialto							
Vion Food Group							
Want Want Holdings	S	S	S		S		S
Wen's Food Group	S	S	S		S		
Zhengbang Tech	S	S	S				

Appendix D – ethical funds

	Danske Bank	Länsförsäkringar	Handelsbanken	Nordea	SEB	Skandia	Swedbank
Archer Daniels Midland	-	-	Handelsbanken Global Index Criteria, Handelsbanken USA Index Criteria	-	SEB Sustainable Global Exposure Fund, SEB Sustainable US Exposure Fund	-	-
Arla Foods	-	-	-	-	-	-	Corporate Bond Europe IG
Blackstone	Danske Invest SRI Global	Länsförsäkringar Global KlimatIndex	Handelsbanken Global Index Criteria, Handelsbanken USA Index Criteria	-	SEB Sustainable Global Exposure Fund, SEB Sustainable US Exposure Fund	-	-
Bunge	-	-	Handelsbanken Global Småbolag Index Criteria	-	SEB Sustainable Global Exposure Fund, SEB Sustainable US Exposure Fund	-	Corporate Bond Europe IG
Carrefour Group	Danske Invest SRI Global	Länsförsäkringar Global KlimatIndex	Handelsbanken Europa Index Criteria, Handelsbanken Global Index Criteria	-	Sustainable Europe Exposure Fund, SEB Sustainability Fund Europé, SEB Sustainable Global Exposure Fund	-	Corporate Bond Europe IG
Casino	Danske Invst Euro Sustainable High Yield Bond	-	-	-	-	-	-
Cencosud	-	-	Handelsbanken Global Index Criteria	-	-	-	-
China Mengniu Dairy	-	-	Handelsbanken Global Index Criteria	-	SEB Sustainable Global Exposure Fund	-	-
Danone	Danske Invest European Corporate Sustainable Bond	-	Handelsbanken Europa Index Criteria, Handelsbanken Global Index Criteria, Handelsbanken Global High Dividend Low Volatility Criteria,	-	Sustainable Europe Exposure Fund, SEB Sustainability Fund Europé, SEB Sustainable Global Exposure Fund	-	Swedbank Robur Global Impact, Corporate Bond Europe IG
Want Want Holdings	-	-	Handelsbanken Global Index Criteria	-	SEB Sustainable Global Exposure Fund	-	-

References

1. Note that 'investments' within the financial sector usually has a very narrow meaning (referring to the acquisition of assets like bonds, stocks and real estate with the goal of generating income or appreciation), while its meaning outside the financial sector can be much broader. For example, the United Nations' Committee on World Food Security defines investments in agriculture and food systems as referring 'to the creation of productive assets and capital formation, which may comprise physical, human or intangible capital'. As such, investments can be undertaken by a wide range of stakeholders, from labourers to scientists, from farmers to financial institutions. See Committee on World Food Security (2014), "Principles for Responsible Investment in Agriculture and Food Systems", online: http://www.fao.org/3/a-au866e.pdf, viewed November 2020. However, for convenience sake, this report uses the narrow meaning used within the financial sector.
2. See also Portfolio Earth (2020), "Bankrolling Extinction: the banking sector's role in the global biodiversity crisis", online: https://portfolio.earth/wp-content/uploads/2020/10/Bankrolling-Extinction-Report.pdf, viewed October 2020.
3. See also AIDESEP and Forest Peoples Program (2015), "Revealing the hidden: indigenous perspectives on deforestation in the Peruvian Amazon", online: http://www.forestpeoples.org/sites/fpp/files/publication/2015/02/fpppperureportenglishinternetfinalaug32015.pdf, viewed October 2020.
4. Goulding, M., R. Barthem and E. Ferreira (2003), "The Smithsonian Atlas of the Amazon", Washington and London: Smithsonian books, p. 18, 21, 44.
5. Van Dijkhorst, H., Kuepper, B. and Matt Piotrowksi (2018), "Cerrado Deforestation Disrupts Water Systems and Poses Business Risks for Soy Producers", Chain Reaction Research, online: https://chainreactionresearch.com/wp-content/uploads/2018/10/Cerrado-Deforestation-Disrupts-Water-Systems-and-Poses-Business-Risks-for-Soy-Producers-3.pdf, viewed October 2020.
6. Seymour, F. (2018, June 27), "Deforestation is Accelerating, Despite Mounting Efforts to Protect Tropical Forests. What Are We Doing Wrong?" Blog of Global Forest Watch, online: https://blog.globalforestwatch.org/data/deforestation-is-accelerating-despite-mounting-efforts-to-protect-tropical-forests-what-are-we-doing-wrong, viewed October 2020.
7. Correa, P. (2020, June 15), "Brazil's drives increase in global deforestation", phys.org, online: https://phys.org/news/2020-06-brazil-worldwide-forest-loss.html, viewed October 2020.
8. Nobre, A.D. (2014), "The Future Climate of Amazonia". Scientific Assessment Report, p. 24; Articulacion Regional Amazonica (ARA), Sao José dos Campos: (SP): Edition ARA, CCST-INPE and INPA. Online: http://www.ccst.inpe.br/wpcontent/uploads/2014/11/The_Future_Climate_of_Amazonia_Report.pdf, viewed October 2020. See also: Asner, G.P. et al. (2005), Selective logging in the Brazilian Amazon, Science volume 310, p.480-482.
9. CEPF (2017), "Ecosystem Profile: Cerrado Biodiversity Hotspot Extended Summary", online: https://www.cepf.net/sites/default/files/cerrado-ecosystem-profile-summary-english-revised-2017.pdf, viewed October 2020.
10. See the official Brazilian site with deforestation data: http://www.inpe.br/noticias/noticia.php?Cod_Noticia=5294.
11. Maisonnave, F. and L. de Almeida (2020, August 3), "Deforestation Grows Again in Indigenous Area of Pará after Ibama Dismissals", Folha de S.Paulo, online: https://www1.folha.uol.com.br/internacional/en/scienceandhealth/2020/08/deforestation-grows-again-in-indigenous-area-of-para-after-ibama-dismissals.shtml, viewed November 2020.
12. Spring, J. (2020, October 1), 'Fires in Brazil's Amazon the worst in a decade, data shows', online: https://www.reuters.com/article/us-brazil-environment-idUSKBN26M6EA, viewed October 2020.
13. Malhi, Y. et al. (2008), "Climate Change, Deforestation, and the Fate of the Amazon", Science, volume 319, issue 5860, p. 169; Piotrowski, M. (2019), Nearing the tipping point, https://www.thedialogue.org/wp-content/uploads/2019/05/Nearing-the-Tipping-Point-for-website.pdf, viewed October 2020.
14. IDH (2020), "European Soy Monitor: insights on European responsible and deforestation free soy consumption in 2018", p.15, online: https://www.idhsustainabletrade.com/uploaded/2020/05/IDH-European-Soy-Monitor-v2.pdf, viewed October 2020. Crushing soy beans produces soy meal (78,5%) and soy oil (18,5%). The latter is used for human consumption, biofuel, technical uses and as livestock feed ingredient (for which it is advertised to possess many beneficial properties, see for example: Enduratank (2018, May 22), "The benefits of feeding soybean oil to livestock", online: https://www.enduratank.co.uk/news/the-benefits-of-feeding-soybean-soya-bean-oil-to-livestock/, viewed October 2020). Note that animal industries sometimes try to portray soy meal not as the main product, but as a 'rest product', see for example: Nederlandse Zuivelorganisatie(2020), "Factsheet verantwoorde soja" online: https://www.nzo.nl/wp-content/uploads/2020/01/NZO-Factsheet-Verantwoorde-Soja-jan-2020.pdf, viewed October 2020.
15. In Europe, most soy used for human consumption is produced in Europe itself, or imported from countries like Canada. In total, 4,8% of soy used in the EU is for food, 90% for animal feed and the rest for biodiesel and other uses. China's domestic soy production is mainly used for food products such as tofu and soy milk thanks to its GM-free status. GM-soy cultivation is banned in EU+countries, Russia, China and India. In Brazil, only about 10% of soy production is non-GM (although this makes the country still the second largest producer of non-GM soy, after China). See: IDH (2017), "European Soy Monitor: Insight on the European supply chain and the use of responsible and deforestation-free soy in 2017", p.4-5, p.22, 26. Online: https://www.idhsustainabletrade.com/uploaded/2019/04/European-Soy-Monitor.pdf, viewed October 2020.
16. Zalles, V. et al (2018), "Near doubling of Brazil's intensive row crop area since 2000", PNAS, online: https://www.pnas.org/content/116/2/428, viewed October 2020.
17. Mining was believed to drive 1-2% of deforestation in the Brazilian Amazon, although recent insights put this number up to 10%, see Sonter, L. (ed) (2017), "Mining drives extensive deforestation in the Brazilian Amazon", Nature volume 8, issue 1013, online: https://www.nature.com/articles/s41467-017-00557-w.epdf, viewed October 2020.
18. See for expansion soy acreage in the Cerrado: http://biomas.agrosatelite.com.br/img/Geospatial_analyses_of_the_annual_crops_dynamic_in_the_brazilian_Cerrado_biome.pdf, viewed October 2020.
19. A study by Trase published in June 2020 identified illegal deforestation on soy properties in the Amazon. In the Amazonian part of Mato Grosso, the researchers first found that 24,000 ha of soy had been planted on land deforested between 2012-2017. This was consistent with non-compliance reported by the Soy Moratorium monitoring mechanism. Later they found an additional 115,000 ha of deforestation within the boundaries of soy farms in the Amazon biome in Mato Grosso, of which 106,000 ha (92%) was deforested illegally. The authors mention that these areas had not been converted for soy by 2017, and would not be detected by the Soy Moratorium monitoring mechanism because it only monitors the area of land where soy is grown and not the entire farm. "Yet these farms were still in breach of the Forest Code due to illegal deforestation. As a result, the soy produced on these farms may have been exported as deforestation-free under the Soy Moratorium, putting global markets at risk of importing soy from farms linked to illegal deforestation in the Amazon." The three companies most exposed to trade in soy from farms linked to illegal deforestation in Mato Grosso are Amaggi, Cargill and Bunge. Trase is a partnership between Global Canopy and the Stockholm Environment Institute. Trase (2020), "Illegal deforestation and Brazilian soy exports: the case of Mato grosso", online: http://resources.trase.earth/documents/issuebriefs/TraseIssueBrief4_EN.pdf, viewed October 2020.
20. Rajão, R. et al (2020, July 17), "The rotten apples of Brazil's agribusiness", Science, Vol. 369, Issue 6501, pp. 246-248, see p.247, online: https://science.sciencemag.org/content/369/6501/246/tab-pdf, p.10, viewed October 2020. There might be another reason why the success of the Soy Moratorium is less rosy than often imagined. Deforestation is monitored by PRODES, the national deforestation monitoring system, but much of the Amazon deforestation is relatively small-scale and will not be detected by PRODES, which does not consider deforestation of areas smaller than 6.25 ha. See: Soy Moratorium (2018-2019), "Soy Moratorium: monitoring soy crops in the Amazon biome using satellite images", online: https://abiove.org.br/wp-content/uploads/2019/01/Soy-Moratorium-Report-2018.pdf, viewed June 2020.

21. Barber, C. (2014, September), "Roads, deforestation, and the mitigating effect of protected areas in the Amazon", Biological Conservation, volume 177, online: https://www.sciencedirect.com/science/article/abs/pii/S000632071400264X, viewed October 2020.
22. Sauer, S. (2018), "Soy expansion into the agricultural frontiers of the Brazilian Amazon: The agribusiness economy and its social and environmental conflicts", Land use Policy, Volume 79, online: https://www.sciencedirect.com/science/article/abs/pii/S0264837718300863, viewed October 2020. See deforestation patterns around Santarém since 2001, when Cargill started the construction of the soy port: Gibbens, S. (2019, April 26), "This map shows millions of acres of lost Amazon rainforest", National Geographic, online: https://www.nationalgeographic.com/environment/2019/04/three-million-acres-brazil-rainforest-lost, viewed October 2020.
23. Burroughs, D. (2020, July 16), "Brazil's Ferragrão project moves forward ahead of public bidding", International Railway Journal, online: https://www.railjournal.com/infrastructure/brazils-ferrograo-project-moves-forward-ahead-of-public-bidding/ viewed October 2020. See for the controversial nature: MPF–Ministério Público Fédéral (2017, November 10), "MPF recomenda cancelamento de audiências públicas sobre a Ferrogrão", http://www.mpf.mp.br/mt/sala-de-imprensa/noticias-mt/mpf-recomenda-cancelamento-de-audiencias-publicas-sobre-a-ferrograo, viewed October 2020; MPF–Ministério Público Fédéral (2018, October 31), "Justiça paralisa concessão da Ferrogrão por insuficiência de estudos socioambientais", online: http://www.mpf.mp.br/pa/sala-de-imprensa/noticias-pa/justica-paralisa-concessao-da-ferrograo-por-insuficiencia-de-estudos-socioambientais, viewed November 2018.
24. Lenton, T.M. (2019, November 27), "Climate tipping points – too risky to bet against", Nature, corrected 9 April 2020, online: https://www.nature.com/articles/d41586-019-03595-0, viewed October 2020. Note that climate change may also cause flipping current savannah-ecosystems elsewhere into forests. The area that may undergo this reverse transition is calculated at 660,000 km2 in South America. See Staal, A., I. Fetzer, L. Wang-Erlandsson, J. H. C. Bosmans, S. C. Dekker, E. H. van Nes, J. Rockström, O. A. Tuinenburg (2020, October 5), "Hysteresis of tropical forests in the 21st century", Nature Communications volume 11, Article number: 4978, online: https://www.nature.com/articles/s41467-020-18728-7, viewed October 2020.
25. Recent research suggest that global climate change is the main driver of recent drying in the Amazon, more so than deforestation. However, the authors stress that 'a feedback between drought and deforestation implies that increases in either of them will impede efforts to curb both.' Staal, A., B.. M Flores, A. P. Aguiar, J. H C Bosmans, I. Fetzer and O. A Tuinenburg (2020, April 2), "Feedback between drought and deforestation in the Amazon", Environmental Research Letters, Volume 15, Number 4, online: https://iopscience.iop.org/article/10.1088/1748-9326/ab738e, viewed October 2020.
26. Nepstad, D.C. et al. (2007), "Mortality of large trees and lianas following experimental drought in an Amazon forest", Ecology, Vol. 88, 9, pp.2259-2269.
27. Hemming, J. (2009), Tree of Rivers: The Story of the Amazon, London, p. 357-358.
28. Nobre, C. (2019, October 22), "To save Brazil's rainforest boost its science", Nature, online: https://www.nature.com/articles/d41586-019-03169-0, viewed October 2020.
29. Amigo, I. (February, 2020 25), "When will the Amazon hit a tipping point?", Nature online: https://www.nature.com/articles/d41586-020-00508-4#ref-CR5, viewed October 2020.
30. Earth Innovation Institute (2019, August 23), "Amazon fires: what we know and what we can do", online: https://earthinnovation.org/2019/08/amazon-fires-what-we-know-and-what-we-can-do, viewed October 2020;

    Fearnside, F. (2018), "Brazil's Amazonian forest carbon: the key to Southern Amazonia's significance for global climate", Environmental Change 18: 47-61, online: https://link.springer.com/article/10.1007/s10113-016-1007-2; viewed October 2020.
31. CEPF (2017), "Ecosystem Profile: Cerrado Biodiversity Hotspot Extended Summary", p. 9-10. online: https://www.cepf.net/sites/default/files/cerrado-ecosystem-profile-summary-english-revised-2017.pdf, viewed October 2020.
32. Poore J. and, T. Nemecek (2018), "Reducing food's environmental impacts through producers and consumers". Science, volume;360, pp:987–992, online: https://josephpoore.com/Science%20360%206392%20987%20-%20Accepted%20Manuscript.pdf, viewed October 2020. See erratum (2019): https://science.sciencemag.org/content/363/6429/eaaw9908, viewed October 2020.
33. Steinfeld H, et al. (2006), "Livestock's Long Shadow (FAO, Rome), p.112; Röös, E. et al (2016), "Protein futures for Western Europe: potential land use and climate impacts in 2050", Regional Environmental Change, oline: https://core.ac.uk/download/pdf/77611945.pdf. Viewed October 2020.
34. EAT (2019), Our Food in the Anthropocene: Healthy Diets From Sustainable Food Systems, online https://eatforum.org/content/uploads/2019/07/EAT-Lancet_Commission_Summary_Report.pdf , viewed October 2020; Springmann M. et al (2016), "Analysis and valuation of the health and climate change co-benefits of dietary change". Proc Natl Acad Sci USA. Volume 113: p. 4146-4151.
35. Marmontel, M., de Souza, D. & Kendall, S. (2016), "Trichechus inunguis. The IUCN Red List of Threatened Species", online https://www.iucnredlist.org/species/22102/43793736, viewed October 2020.
36. Da Silva, V., Trujillo, F., Martin, A., Zerbini, A.N., Crespo, E., Aliaga-Rossel, E. & Reeves, R. (2018) "Inia geoffrensis. The IUCN Red List of Threatened Species 2018" online: https://www.iucnredlist.org/species/10831/50358152#threats, viewed October 2020.
37. Gonzales, J. (2020, March 12), "Brazil sets record for highly hazardous pesticide consumption: report", Mongabay, online: https://news.mongabay.com/2020/03/brazil-sets-record-for-highly-hazardous-pesticide-consumption-report, viewed October 2020.
38. Philips, D. (2019, June 12), "Hundreds of new pesticides approved in Brazil under Bolsonaro", The Guardian, online: https://www.theguardian.com/environment/2019/jun/12/hundreds-new-pesticides-approved-brazil-under-bolsonaro, viewed October 2020; Cancian, N. (2019, March 6), "Pesticides approved for sale reached record high in 2018", Folha de S.Paulo, online: https://www1.folha.uol.com.br/internacional/en/brazil/2019/03/pesticides-approved-for-sale-reached-record-high-in-2018.shtml, viewed October 2020. See also: Coelho, F. (2019), "Brazil unwisely gives pesticides a free pass", Science, volume 365, issue 6453, online: https://science.sciencemag.org/content/365/6453/552.2, viewed October 2020.
39. Hanson, T. (2019, August 23), "Why have 500m bees dies in Brazil in the past three months?", The Guardian, online: https://www.theguardian.com/commentisfree/2019/aug/29/500-million-bees-brazil-three-months, viewed October 2020.
40. Fipronil is prohibited as insecticide, the only use allowed in the EU is in vet medicine.
41. Carta Campinas (2019, March 7), "Com 500 milhões de abelhas mortas em três meses, agricultura brasileira pode entrar em colapso", online: https://cartacampinas.com.br/2019/03/com-500-milhoes-de-abelhas-mortas-em-tres-meses-agricultura-brasileira-pode-entrar-em-colapso, viewed October 2020. See also: Regía, M. and E. Oliveira (2020, May 31), "Avanço da soja cria 'cemitério de colmeias' no interior do Pará", BBC, online: https://www.bbc.com/portuguese/brasil-52776670, viewed October 2020. For current state of play on the partial EU ban on neonicotinoids: European Commision (2020), online: https://ec.europa.eu/food/plant/pesticides/approval_active_substances/approval_renewal/neonicotinoids_en, viewed October 2020.
42. Interview with Jozenildo, chief of Açaizal, see: Van Gelder, J.W. and B. Kuepper (2020, August), Funding destruction of the Amazon and Cerrado-savannah - A Fair Finance Guide Netherlands case study on deforestation risks in soy and beef supply chains, Amsterdam, The Netherlands: Profundo, online: https://eerlijkegeldwijzer.nl/media/496074/2020-08-praktijkonderzoek-amazone.pdf, viewed October 2020. Moreover, the Inter-American Commission on Human Rights (IACHR) mentioned about the pollution of agrochemicals in the soy growing areas: 'IACHR has received information that farmland expansion into the Amazon region has brought a significant increase in the use of pesticides and herbicides. With regard to Brazil, the Açaizal indigenous people of Santarém, Pará State, are reportedly being harmed by the pollution of rivers and groundwater from the indiscriminate use of pesticides, herbicides, and other chemicals. Large ranching projects have also been set up in the Brazilian Amazon over the past number of decades. Particularly in relation to agri-industry, the widespread use of herbicides, pesticides, and chemical fertilizers is a major cause

of water pollution. The consumption of contaminated water by indigenous communities downstream from plantations has led to problems of poisoning.' http://www.oas.org/en/iachr/reports/pdfs/Panamazonia2019-en.pdf, p. 67. See also: S. Schlesinger (2014), The whole Pantanal, not just the half. Soy, waterway and other threats to the integrity of the Pantanal, p.25.

43. Hunt, L. et al. (2016), "Insecticide concentrations in stream sendiments of soy production regions of South America", Science of the Total Environment, volume 547, online: https://www.sciencedirect.com/science/article/pii/S0048969715312961?via%3Dihub, viewed October 2020; Wanderlei, A. et al. (2017), "Spatial distribution of pesticide use in Brazil: a strategy for Health Surveillance", online: https://www.scielosp.org/article/csc/2017.v22n10/3281-3293/en/#, viewed October 2020;

    Pires, N.L. (2020, June 25), "Determination of glyphosate, AMPA and glufosinate by high performance liquid chromatography with fluorescence detection in waters of the Santarém Plateau, Brazilian Amazon", Journal of Environmental Science and Health, online: https://www.tandfonline.com/doi/abs/10.1080/03601234.2020.1784668, viewed October 2020; Passos, C.J.S. et al (2016), "Residuos de glifosato y ampa en fuentes naturales de agua y límites normativos para valorar la contaminacion en brasil y colombia" in T. Boekhout van Solinge et al (eds.). Terra e direitos en áquas turbulentas: Conflitos socioambientais em Brasil e Colombia. Utrecht: Utrecht University/ Lands and Rights in Troubled Waters;

    IUCN (2018, June 21), "Amazon River Dolphin", online: https://www.iucnredlist.org/species/10831/50358152#threats, viewed October 2020.

44. Wurstbaugh. W.. H.Paerl and W. Dodds (2019), "Nutrients, eutrophication and harmful algal blooms along the freshwater to marine continuum", Wires Water, volume 6, issue 5, online https://onlinelibrary.wiley.com/doi/abs/10.1002/wat2.1373, viewed October 2020. ; Beman, M, R. Arrigo and P. Matson (2005), "Agricultural runoff fuels large phytoplankton blooms in vulnerable areas of the ocean", Nature, volume 434, online: .https://www.nature.com/articles/nature03370, viewed October 2020; OECD (2012). "Agriculture and Water Quality: Monetary Costs and Benefits across OECD countries", Edinburgh, Scotland: OECD, online: http://www.oecd.org/greengrowth/sustainable-agriculture/49841343.pdf, viewed October 2020.

45. Juan Han, W. et al (2019), "Impact of nitrogen deposition on terrestrial plan diversity : a meta analysis in China, Journal of Plant Ecology, volume 12, issue 6, online: https://academic.oup.com/jpe/article-abstract/12/6/1025/5527343?redirectedFrom=fulltext, viewed October 2020; M. F. WallisDeVries, R. Bobbink (2017), "Nitrogen desposition impacts on biodiversity in terrestrial ecosystems : Mechanisms and perspectives for restoration", Biological conservation volume 212, online: https://www.bware.eu/sites/default/files/publicaties/WallisDeVriesBobbink2017_0.pdf, viewed October 2020. Impacts on terrestrial fauna are less understood, see Nijssen, M, Wallis de Vries, M. and H. Siepel (2017), "Pathways for the effects of increased nitrogen desposition on fauna ", Biological Conservation, volume 212, pag. 423-431, online: https://www.sciencedirect.com/science/article/abs/pii/S0006320717302471, viewed October 2020.

46. IPBES (2020), "Workshop Report on Biodiversity and Pandemics", Intergovernmental Platform on Biodiversity and Ecosystem Services, p.5.online: https://ipbes.net/sites/default/files/2020-10/20201028%20IPBES%20Pandemics%20Workshop%20Report%20Plain%20Text%20Final_0.pdf, viewed October 2020.

47. United Nations Environment Programme and International Livestock Research Institute (2020). "Preventing the Next Pandemic: Zoonotic diseases and how to break the chain of transmission". Nairobi, Kenya., online: https://wedocs.unep.org/bitstream/handle/20.500.11822/32316/ZP.pdf, viewed October 2020.

48. IPBES (2020), "Workshop Report on Biodiversity and Pandemics", Intergovernmental Platform on Biodiversity and Ecosystem Services, p.5. Online: https://ipbes.net/sites/default/files/2020-10/20201028%20IPBES%20Pandemics%20Workshop%20Report%20Plain%20Text%20Final_0.pdf, viewed October 2020.

49. Petrovan, S.O. et al (2020), "Post COVID-19: a solution scan of options for preventing future zoonotic epidemics", online: https://osf.io/4t3en, viewed October 2020. As a counterpart, the authors listed increasing the acceptability of lower-risk substitutes like plants or synthetic substitutes for animal derived food.

50. Gilbert, M., Xiao X. and T. Robinson (2017), "Intensifying poultry production systems and the emergence of avian influenza in China: a 'One Health/Ecohealth' epitome" Archives of Public Health, volume 75, issue 48, online: www.archpublichealth.biomedcentral.com/articles/10.1186/s13690-017-0218-4, viewed October 2020; Otte J., Roland-Holst, D. and R. Pfeiffer et al. (2007), "Industrial Livestock Production and Global Health Risks", ProPoor Livestock Policy Initiative. A Living from Livestock Research Report, online: www.fao.org/3/a-bp285e.pdf, viewed October 2020.

51. IPBES (2020), "Workshop Report on Biodiversity and Pandemics", Intergovernmental Platform on Biodiversity and Ecosystem Services, p.5. Online: https://ipbes.net/sites/default/files/2020-10/20201028%20IPBES%20Pandemics%20Workshop%20Report%20Plain%20Text%20Final_0.pdf, viewed October 2020. Research shows that epizootics caused by Highly Pathogenic Avian Influenza in wild bird populations are seldom, and were mostly documented for virus strains that had previously been associated with poultry farming. In contrast, events in which Low Pathogenic Avian Influenza convert to Highly Pathogenic Avian Influenza mainly take place in intensive poultry systems, see: Dhingra, M.S. et al (2018), "Geographical and Historical Patterns in the Emergences of Novel Highly Pathogenic Avian Influenza (HPAI) H5 and H7 Viruses in Poultry Front", Veterinary Science. Online: https://doi.org/10.3389/fvets.2018.00084, viewed October 2020.

52. PENDINGHollenbeck, J.H. (2016), "Interaction of the role of Concentrated Animal Feeding Operations (CAFOs) in Emerging Infectious Diseases (EIDS)", Journal of Molecular Epidemiology and Evolutionary Genetics in Infectious Diseases, volume 38:44-6. Online: www.ncbi.nlm.nih.gov/pmc/articles/PMC7106093/, viewed October 2020.

53. O'Neill, J. (2014) Antimicrobial resistance: tackling a crisis for the health and wealth of nations. Review on antimicrobial resistance, pp.1-16. Online: https://amr-review.org, viewed November 2020.

54. World Animal Protection (2020), "Fueling the Pandemic Crisis. Factory farming and the rise of superbugs", London, online: https://dkt6rvnu67rqj.cloudfront.net/cdn/ff/9KJbXn5Ky9CxIoDFkLPWsfxGw7rsCeqxfeG20KmhYEw/1602706396/public/media/Fuelling_the_pandemic_crisis-AMR-Report-FINAL_Canada.pdf, viewed November 2020.

55. Shepon, A. et al. (2018), "The opportunity cost of animal based diets exceeds all food losses", PNAS 115 (15) 3804-3809, https://www.pnas.org/content/115/15/3804.short

56. Lawson, S. (2014), "Consumer Goods and Deforestation: An Analysis of the Extent and Nature of Illegality in Forest Conversion for Agriculture and Timber Plantations, Forest Trends". Furthermore: in February 2020, Brazil's Federal Public Prosecutor's Office MPF (which is independent and has a good reputation, just like Brazil's Federal Police) organized a seminar with Transparency International on the fight against organized crime and corruption as drivers of deforestation in the Amazon: MPF (2020, February 19), " MPF propõe atuação conjunta no combate ao crime organizado e à corrupção que movimentam o desmatamento na Amazônia", online at: http://www.mpf.mp.br/pgr/noticias-pgr/mpf-propoe-atuacao-conjunta-no-combate-ao-crime-organizado-e-a-corrupcao-que-movimentam-o-desmatamento-na-amazonia, viewed October 2020.

57. Boekhout van Solinge, T. (2014) Illegal Exploitation of Natural Resources in: Letizia Paoli (ed.), Oxford Handbook of Organized Crime, Oxford University Press, pp. 500-528; Boekhout van Solinge, T. (2016) "Ontbossing en criminaliteit in de Braziliaanse Amazone", Cahiers Politiestudies, volume 38, p. 87-110; Boekhout van Solinge, T. (2014), Researching Illegal Logging and Deforestation, International Journal for Crime, Justice and Social Democracy (3) 2 p. 35-48

58. CPT is a Brazilian NGO that was founded by the Catholic Church in the 1975s, during Brazil's military dictatorship. CPT is the authority on land conflicts in Brazil and assists communities by informing them about their rights and by helping them to getting access to justice and access to state institutions. Since 1985, CPT issues annual reports about land conflicts in Brazil, with detailed explanation about the nature of the conflicts around land and increasingly also water. CPT's most recent report of 2019 showed that North Brazil, the Amazon, is still the region with most land conflicts. Comissão Pastoral da Terra (2020) Conflitos no campo Brasil 2019, p. 102. Online: https://www.cptnacional.org.br/publicacoes-2/destaque/5167-conflitos-no-campo-brasil-2019, viewed October 2020. See also: Global Witness (2018), "At What Cost? Irresponsible business and the murder of land environmental defenders in 2017" London: Global Witness, p. 10; Brooks, B. (2011, May 28), "Like many before, Amazon activists silenced by gun", The Boston Globe, online: http://articles.boston.com/2011-05-28/news/29601132_1_rain-forest-amazon-activists-amazon-state, viewed October 2020.

59. https://cimi.org.br/wp-content/uploads/2020/10/Executive-Summary-2019-cimi_ingles.pdf
60. As can be found in many media reports, see e.g. Globo (2019, October 21), "Justiça condena ex-chefe do Ibama em Mossoró por corrupção", online: https://g1.globo.com/rn/rio-grande-do-norte/noticia/2019/10/21/justica-condena-ex-chefe-do-ibama-em-mossoro-por-corrupcao.ghtml, viewed October 2020; Dolce, J. (2020, January 14), "Como a corrupção no Incra levou à expulsão de um pequeno agricultor de sua terra", Carta Capital, online: https://www.cartacapital.com.br/sociedade/como-a-corrupcao-no-incra-levou-a-expulsao-de-um-pequeno-agricultor-de-sua-terra/, viewed in October 2020.
61. As is stated explicitly in capitals in an official document: "CAR IS NOT A DOCUMENT OF RECOGNITION OF PROPERTY RIGHT OR POSSESSION," Brazilian government (2016), PERGUNTAS E RESPOSTAS SOBRE O CADASTRO AMBIENTAL RURAL (CAR) E SUA INTERFACE COM TERRAS INDÍGENAS (TIs)", online: http://www.funai.gov.br/arquivos/conteudo/ascom/2016/doc/perguntaserespostas.pdf , viewed October 2020. See also the interview with Ione Nakamura, the public prosecutor of Pará, Van Gelder, J.W. and B. Kuepper (2020, August), Funding destruction of the Amazon and Cerrado-savannah - A Fair Finance Guide Netherlands case study on deforestation risks in soy and beef supply chains, Amsterdam, The Netherlands: Profundo, p.30-31. Online: https://eerlijkegeldwijzer.nl/media/496074/2020-08-praktijkonderzoek-amazone.pdf, viewed October 2020.
62. Instituto Socio Ambiental, (2017, July 17), "Tentativa de regularizar terras com CAR causa polêmica ". Online: https://www.socioambiental.org/pt-br/noticias-socioambientais/tentativa-de-regularizar-terras-com-car-causa-polemica, viewed October 2020.
63. Ministerío Público federal (2020, June 9), "MPF identifica quase 10 mil registros de proprietários privados no Cadastro Ambiental Rural em áreas destinadas a povos indígenas", online: http://www.mpf.mp.br/pgr/noticias-pgr/mpf-identifica-quase-10-mil-propriedades-rurais-em-areas-destinadas-a-povos-indigenas, viewed October 2020.
64. Azevedo-Ramos, C. et al (2020, December), "Lawless land in no man's land: The undesignated public forests in the Brazilian Amazon", Land Use Policy 99, 104863, online: https://www.sciencedirect.com/science/article/pii/S0264837720302180, viewed October 2020.
65. This indicates that CARs mainly seem to be used for traceability. See For example GPA (a subsidiary of Casino): GPA (2020), "Social and Environmental beef purchasing policy", p.8, online: https://www.gpabr.com/wp-content/uploads/2020/09/Social-and-Environmental-Beef-Purchasing-Policy_GPA.pdf, viewed October 2020.
66. Azevedo-Ramos, C. Et al (2020) , Lawless land in no man's land: The undesignated public forests in the Brazilian Amazon, Land Use Policy 99, 104863, online: https://www.sciencedirect.com/science/article/pii/S0264837720302180, viewed October 2020.
67. https://www.naturskyddsforeningen.se/artiklar/miljoforsvarare-under-allvarligt-hot-i-brasilien/
68. https://www.naturskyddsforeningen.se/artiklar/coronapandemin-gor-det-annu-svarare-for-brasiliens-urfolk/
69. Young, H. (2020, May 22), "Exploitative condition': Germany to reform meat industry after spate of Covid-19 cases", The Guardian, online: https://www.theguardian.com/environment/2020/may/22/exploitative-conditions-germany-to-reform-meat-industry-after-spate-of-covid-19-cases; viewed October 2020; Vettese, T. and A. Blanchette (2020, September 8), "Covid-19 shows factory food production is dangerous for animals and humans alike", The Guardian, online: https://www.theguardian.com/commentisfree/2020/sep/08/meat-production-animals-humans-covid-19-slaughterhouses-workers, viewed October 2020; Fearman,G and K.C. de Barros (2020), "The grilling of the meat sector', Actiam, https://www.actiam.com/4a9440/siteassets/perspectives/20201012-meat/actiam-perspective--the-grilling-of-the-meat-sector.pdf, viewed October 2020.
70. Gallo, C.B. and T.A. Tadich (2008), "South America" in: M.C. Appleby et al, Long distance Transport and Farm Animal Welfare, p.261-287, 271.
71. Rajão, R. et al (2020, July 17), 'The rotten apples of Brazil's agribusiness', Science, Vol. 369, Issue 6501, pp. 246-248, online: https://science.sciencemag.org/content/369/6501/246/tab-pdf, p.10, 12, viewed October 2020.
72. Kaye, L. (2016, October 11), "Indirect suppliers, deforestation and Brazil's beef industry", TriplePundit, online: https://www.triplepundit.com/story/2016/indirect-suppliers-deforestation-and-brazils-beef-industry/22211, viewed October 2020;

    Campos, A. and C.J. Barros (2020, June 8), "O 'boi pirata' criado em terra indígena e a conexão com os frigoríficos Marfrig, Frigol e Mercúrio", Repórter Brasil, online: https://reporterbrasil.org.br/2020/06/boi-pirata-criado-em-terra-indigena-e-a-conexao-com-frigorificos-marfrig-frigol-mercurio, viewed in October 2020
73. Rajão, R. et al (2020, July 17), 'The rotten apples of Brazil's agribusiness', Science, Vol. 369, Issue 6501, pp. 246-248, online: https://science.sciencemag.org/content/369/6501/246/tab-pdf, p.59, viewed October 2020.
74. https://www.newscientist.com/article/2249083-fifth-of-brazilian-beef-exports-to-eu-linked-to-illegal-deforestation/
75. Gallo, C.B. and, T.A. Tadich (2008), "South America", in: M.C. Appleby et al, Long distance Transport and Farm Animal Welfare, p.261-287, 273.
76. It does not set limits to the transport time from the farm to the Pre-shipment Establishment. Moreover, the legislations allows for exceptions. See: https://www.in.gov.br/materia/-/asset_publisher/Kujrw0TZC2Mb/content/id/39325268/do1-2018-09-03-instrucao-normativa-n-46-de-28-de-agosto-de-2018-39325102, viewed November 2020.
77. Sossidou, E. N., Broom, D. M., Cziszter, L. T. et al. (2009), "Welfare aspects of the long-distance transportation of cattle", Zootehnie şi Biotehnologii, vol. 42.
78. Phillips, C.J.C. (2008), "The Welfare of Livestock During Sea Transport", in: M.C. Appleby et al, Long distance Transport and Farm Animal Welfare, p.137-156.
79. See for example criticism voiced over cattle shipments by Minerva, 2018: Reuters (2018, February 5), "Cattle ship leaves Brazil amid legal wrangling over live animal export ban", online: https://www.reuters.com/article/cattle-shipment-santos-idUSL2N1PV0DW, viewed October 2020; Naghettini, A. (2018, February 15), "Judiciary in turmoil as 100,000 Brazilian bull calves are prepared for shipment and slaughter", online: https://theecologist.org/2018/feb/15/judiciary-turmoil-100000-brazilian-bull-calves-are-prepared-shipment-and-slaughter, viewed October 2020.
80. Gama, A. (2018, August 2), "Famílias do PA vão receber R$ 10,5 mi após naufrágio espalhar óleo e carcaças de boi pelo litoral... - Veja mais em", UOL, online: https://noticias.uol.com.br/cotidiano/ultimas-noticias/2018/02/08/familias-do-para-vao-receber-r-105-mi-apos-naufragio-de-navio-com-5000-bois.htm, viewed October 2020.
81. Kevany, S. (2020, October 28), "Exclusive: livestock ships twice as likely to be lost as cargo vessels", The Guardian, online: https://www.theguardian.com/environment/2020/oct/28/exclusive-livestock-ships-twice-as-likely-to-be-lost-as-cargo-vessels, viewed November 2020.
82. Globo.com (2020, June 13), "Prefeitura de Barcarena anuncia resgate de navio que naufragou com 5 mil bois vivos em Vila do Conde", online: https://g1.globo.com/pa/para/noticia/2020/06/13/prefeitura-de-barcarena-anuncia-resgate-de-navio-que-naufragou-com-5-mil-bois-vivos-em-vila-do-conde.ghtml, viewed October 2020.
83. Mellor, D.J. and C.W.S. Reid (1994), "Concepts of animal well-being and predicting the impact of procedures on experimental animals", online: https://org.uib.no/dyreavd/harm-benefit/Concepts%20of%20animal%20well-being%20and%20predicting.pdf, viewed October 2020.
84. Mellor, D.J. (2017), "Operational Details of the Five Domains Model and Its Key Applications to the Assessment and Management of Animal Welfare" Animals 7(8): 60, online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5575572/, viewed October 2020.
85. IDH (2020), "European Soy monitor: insights on European responsible and deforestation-free consumption in 2018", p.20, online: https://www.idhsustainabletrade.com/uploaded/2020/05/IDH-European-Soy-Monitor-v2.pdf, viewed October 2020. Soy for livestock feed is predominantly used in the form of soy meal. In addition, (toasted) soy beans and soy oil are also used. Most soy from Brazil is imported by the EU+ (=EU28 + Norway and Switzerland) in the form of soy meal (about 70%). The remaining import of soy beans is largely crushed in the EU. Crushing soy beans produces soy meal (78,5%) and soy oil (18,5%). The latter is used for human consumption, biofuel and livestock feed.

86. Oliveira, G.L.T. (2016), "The geopolitics of Brazilian soybeans", The Journal of Peasant Studies, volume 43, issue 2, p.348-372.
87. Hoste, R., Bolhuis, J. (2014), "Sojaverbruik in de Nederlandse diervoederindustrie, 2011-2013", LEI Wageningen UR, p.11.
88. See for example: RSPCA (2020), "Eat. Sit. Suffer. Repeat. The life of a typical meat chicken, p.11, 17-18.
89. Torrey S, Kiarie E, Widowski TM (2020), "In Pursuit Of A Better Broiler: A Comprehensive Study On 16 Strains Of Broiler Chickens Differing In Growth Rates", University of Guelph.
90. See for example: RSPCA (2020), "Eat. Sit. Suffer. Repeat. The life of a typical meat chicken, p.11, 17-18, online: https://www.rspca.org.uk/webContent/staticImages/BroilerCampaign/EatSitSufferRepeat.pdf, viewed October 2020.
91. Ibidem. 29
92. This is especially the case if chicken feed is based on waste streams and by-products not of immediate use for human consumption or not of use to improve the soil of agricultural land. Obviously, total broiler chicken production would then be limited by the availability of these feed inputs, which denotes the shift to a sustainable, circular food system. See: De Boer, I. and M. van Ittersum (2018), "Circularity in agricultural production", Wageningen University and Research, p.25-27, online: https://www.wur.nl/upload_mm/7/5/5/14119893-7258-45e6-b4d0-e514a8b6316a_Circularity-in-agricultural-production-20122018.pdf, viewed October 2020.
93. RSPCA (2020), "Eat. Sit. Suffer. Repeat. The life of a typical meat chicken", p.27-28, online: https://www.rspca.org.uk/webContent/staticImages/BroilerCampaign/EatSitSufferRepeat.pdf, viewed October 2020.
94. Avined (2019), Antibioticumgebruik pluimveesector in 2018, Netherlands, AVINED, p.7, online: https://www.avined.nl/sites/www.avined.nl/files/antibioticagebruik_-_sectorrapportage_2018.pdf, viewed October 2020.
95. https://www.compassioninfoodbusiness.com/media/5819738/chicken-meat-production-in-the-eu.pdf
96. Note also that in the EU, no specific welfare legislation for dairy cows exists.
97. EFSA (2009), "Scientific Opinion on the overall effects of farming systems on dairy cow welfare and disease", The EFSA Journal, volume 1143, p. 1-38, online: http://www.efsa.europa.eu/en/efsajournal/pub/1143.htm, viewed October 2020.
98. Broom, D. and A. Fraser (2015), Domestic Animal Behaviour, p. 87.
99. To quote animal welfare scientist Donald Broom, CIWF, EFSA dairy report – a summary of key findings and recommendations, online: https://www.ciwf.org.uk/media/3818638/efsa-dairy-report-summary.pdf, viewed October 2020.
100. Duurzame Zuivelketen (2019), "Factsheet verantwoorde soja", online: https://www.duurzamezuivelketen.nl/resources/uploads/2017/12/NZO_Factsheet_soja_NL_2019.pdf, viewed October 2020.
101. Hoste, R., J. Bolhuis(2014), "Sojaverbruik in de Nederlandse diervoederindustrie", 2011-2013, LEI Wageningen UR, p.14, online: https://edepot.wur.nl/316027, viewed October 2020.
102. Vlees.nl, "Dubbeldoelkoeien", online: https://www.vlees.nl/vlees/rundvlees/dubbeldoelkoeien, viewed October 2020. See also: Winter, M.A. de, Vogelenzang, T.A. and J. van Schaick (2010, March), "De blaarkop: ouderwets goed", LEI Wageningen UR. Online: https://edepot.wur.nl/137662, viewed October 2020.
103. De Boer, I., M. van Ittersum (2018), "Circularity in agricultural production", Wageningen University and Research, p.29-30. https://www.wur.nl/upload_mm/7/5/5/14119893-7258-45e6-b4d0-e514a8b6316a_Circularity-in-agricultural-production-20122018.pdf, viewed October 2020.
104. Rockström, WW., J Loken et al (2019), "Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems", online: http://dx.doi.org/10.1016/S0140-6736(18)31788-4, viewed October 2020.
105. Council of Animal Affairs (2020), "Animal Welfare in Circular Agriculture",, p.11-13, 16, online: https://english.rda.nl/publications/publications/2020/07/21/animal-welfare-in-circular-agriculture, viewed October 2020. See also: Crump, A. et al. (2019) "Pasture Access Affects Behavioral Indicators of Wellbeing in Dairy Cows", Animals 9(11), 902, online: https://doi.org/10.3390/ani9110902, viewed October 2020.
106. Forest Declaration (2019), "Protecting and Restoring Forests: A Story of Large Commitments yet Limited Progress", New York, United States, p.27, online: https://www.climatefocus.com/sites/default/files/2019NYDFReport.pdf, viewed October 2020.
107. Cargill (2020), "Progress report mid-year update: South American Soy", Cargill, online: https://www.cargill.com/doc/1432166466608/soy-progress-mid-year-report-2020-en.pdf, viewed October 2020;

    Sax, S. (2019, July 10), "Cargill rejects Cerrado soy moratorium, pledges $30 million search for ideas", Mongabay Series: Cerrado, online: https://news.mongabay.com/2019/07/cargillrejects-cerrado-soy-moratorium-pledges-30-million-searchfor-ideas, viewed October 2020. Not surprisingly, Cargill scores low in the Green Cats 2018 score on forest policy and transparency. Its competitors ADM, Bunge and LDC score better, but not great. Moreover, its issuer Foresy Heroes note that 'The soy market has an even larger gulf [than the palm oil sector] between the policies to which its companies have committed and their implementation and transparency. See: Forest Heroes (2018), "Green Cats 2018 update: scoring palm oil and soy companies on forest policies and transparency", Forest Heroes, onlinet: https://forestheroes.com/greencats/, viewed October 2020.
108. In particular Ahold Delhaize has been singled out as 'partner in crime' by Mighty Earth, see: Mighty Earth, "Cargill is the worst company in the world", Mighty Earth, online: https://stories.mightyearth.org/cargill-worst-company-in-the-world/#group-Cargills-Partners-in-Crime-pGYNhmE2vX , viewed October 2020. see also: Smit, P. (2020, April 8), "Activisten willen dat Ahold breekt met agroreus Cargill", Nieuwe oogst, online: https://www.nieuweoogst.nl/nieuws/2020/04/08/activisten-willen-dat-ahold-breekt-met-agroreus-cargill, viewed October 2020.
109. Chain Reaction Research (2020), "The Chain: Spike in Fire Alerts Within Sourcing Regions of the top Brazilian Meatpackers Increases Investor Risks", Washington DC, United States, online: https://chainreactionresearch.com/the-chain-spike-in-fire-alerts-within-sourcing-regions-of-top-brazilian-meatpackers-increases-investor-risk/, viewed October 2020.
110. Late September 2020, JBS announced it would introduce a new system to monitor its cattle suppliers, including its indirect suppliers, by 2025, following a report by Amnesty International. Amnesty International considers this timeline too far removed, stating that 'JBS has been aware of the risks that cattle illegally grazed in protected areas may enter its supply chain since at least 2009, and previously pledged to monitor its indirect suppliers by 2011. In light of the company's longstanding awareness of these issues, Amnesty International believes that JBS should implement due diligence and preventive measures by the end of 2020.' See Amnesty International (2020), "From Forest to Farmland: cattle illegally grazed in Brazil's Amazon found in JBS'supply chain", London, online: https://www.amnesty.org/download/Documents/AMR1926572020ENGLISH.PDF, viewed October 2020.
111. Steinweg, T. et al (2020), "JBS: outsized Deforestation in Supply Chain, Covid-19 Pose Fundamental Business Risks", Washington DC, United States, online: https://chainreactionresearch.com/wp-content/uploads/2020/08/JBS-CRR-Report-1.pdf, viewed October 2020.
112. Amnesty International (2020), "From Forest to Farmland: cattle illegally grazed in Brazil's Amazon found in JBS'supply chain", London, United Kingdom, online: https://www.amnesty.org/download/Documents/AMR1926572020ENGLISH.PDF, viewed October 2020.
113. Graber, R. (2020, October 15), "JBS parent company pleads guilty in bribery cases", wattpoultry.com, online: https://www.wattagnet.com/articles/41365-jbs-parent-company-pleads-guilty-in-bribery-cases, viewed October 2020;

Philips, D. (2020, March 3), "Brazilian meatcompanies linked to farmer charged with 'massacre' in Amazon", The Guardian, online: https://www.theguardian.com/environment/2020/mar/03/brazilian-meat-companies-linked-to-farmer-charged-with-massacre-in-amazon, viewed October 2020.

114. https://www.wsj.com/articles/meat-giant-jbss-owner-settles-u-s-corruption-charges-11602707950
115. RFD-TV (2019, October 2), "Meat Packer Admits To Bribing Inspectors", RFD TV, online: https://www.rfdtv.com/story/41130956/meatpacker-admits-to-bribing-inspectors#.XZ3dX-dKhN0, viewed October 2020.
116. Forest Declaration (2019), "Protecting and Restoring Forests: A Story of Large Commitments yet Limited Progress", New York, United States, p.16, online: https://www.climatefocus.com/sites/default/files/2019NYDFReport.pdf, viewed October 2020. See also Jopke, P. and G. Schoneveld (2018) "Corporate commitments to zero deforestation. An evaluation of externality problems and implementation gaps", Center for International Forestry Research, online: https://www.cifor.org/publications/pdf_files/OccPapers/OP-181.pdf, viewed October 2020.
117. Chain Reaction Research (2019), "Carrefour May Face Financial Risks from Deforestation-Linked Beef Sourcing in Brazil", Washington DC, United States, online: https://chainreactionresearch.com/report/carrefour-may-face-financial-risks-from-deforestation-linked-beef-sourcing-in-brazil/, viewed October 2020.
118. Chain Reaction Research (2020), "The Chain: Carrefour's Deforestation Risks May Increase with Brazilian Expansion", Washington DC, United States, online: https://chainreactionresearch.com/the-chain-carrefours-deforestation-risks-may-increase-with-brazilian-expansion/, viewed October 2020.
119. GPA (2020), "Social and Environmental Beef Purchasing Policy", Brazil, online: https://www.gpabr.com/wp-content/uploads/2020/09/Social-and-Environmental-Beef-Purchasing-Policy_GPA.pdf, viewed October 2020.
120. Ibidem, p.8.
121. Prodani, K. et al (2020), "Casino Group's Legal and Financial Risks Accelerate Due to Deforestation in Brazilian Beef Supply Chain", Chain Reaction Research, Washington DC, United States, online: https://chainreactionresearch.com/wp-content/uploads/2020/09/Casino20Group27s20Legal20and20Financial20Risks20Accelerate-2.pdf, viewed October 2020.
122. Forest Declaration (2019), "Protecting and Restoring Forests: A Story of Large Commitments yet Limited Progress", New York, United States, p. 43, online: https://www.climatefocus.com/sites/default/files/2019NYDFReport.pdf, viewed October 2020.
123. Oxfam Novib (2017), "Pathways to Deforestation Free Food", Nairobi, Kenya, online: https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/file_attachments/bp-deforestation-exploitation-free-food-sector-070917-en.pdf, viewed October 2020.
124. See for example Eerlijke Bankwijzer (2019), "Risking animal welfare: follow up case-study on investment in chicken and pig meat production", Profundo and World Animal Protection, p. 33-34, online: https://eerlijkegeldwijzer.nl/media/495465/2019-12-praktijkonderzoek-dierenwelzijn.pdf, viewed October 2020.
125. Greenpeace Nederland (2020, October 25), "Albert Heijn verdient circa 40 miljoen per jaar aan dubieuze soja uit Brazilië", online at: https://www.greenpeace.org/nl/natuur/43254/albert-heijn-verdient-40-miljoen-per-jaar-aan-dubieuze-soja-uit-brazilie, viewed October 2020. Note that soy production in other parts of the world can also have severe adverse impacts, which again points to the need to phase out the use of monocrops for animal feed and a shift to more plant-based diets. See for adverse impacts of soy in the US WWF's Plowprint reports, WWF (2018), "The Plowprint report 2018", Gland, online: https://c402277.ssl.cf1.rackcdn.com/publications/1171/files/original/PlowprintReport_2018_FINAL_082318LowRes.pdf, viewed October 2020. Update 2019: WWF (2019), "Plowprint Report 2019 update", online: https://c402277.ssl.cf1.rackcdn.com/publications/1300/files/original/Plowprint_Report_2019.pdf, viewed October 2020.
126. Rajão, R. et al (2020, July 17), 'The rotten apples of Brazil's agribusiness', Science, Vol. 369, Issue 6501, pp. 246-248, see p.12, online: https://science.sciencemag.org/content/369/6501/246/tab-pdf, p.10, viewed October 2020.
127. IDH (2019) "European Soy Monitor: Insights on European responsible and deforestation-free soy consumption in 2018" p. 6, online: https://www.idhsustainabletrade.com/uploaded/2020/05/IDH-European-Soy-Monitor-v2.pdf, viewed October 2020.
128. As Solidaridad, member of the RTRS, summarised it: "For buyers, one issue is that with buying RTRS certificates they still cannot claim to have zero deforestation supply chains, as the vast majority of certified RTRS is through credits and certainly not traceable, segregated chains. There are attempts to ensure that credits are closer to the supply of companies, through mass balance, area mass balance or regional credits. But basically the way it works will be the same. And although there is a lot of progress in traceability and transparency, it is not likely that buyers will be able to say their soy supply is deforestation free, unless they are willing to pay a much higher premium to compensate for logistical costs." See Solidaridad (2020, April 9), "Responsible Soy- 10 years on", online: https://www.solidaridadnetwork.org/news/responsible-soy-10-years-on, viewed October 2020.
129. Elgart, L. (2016), "More soy on fewer farms in Paraguay: challenging neoliberal's agriculture's claim to sustainability", The Journal of Peasants Studies, Vol. 43, issue 2, pp. 537-561.
130. RTRS Management Report (2018), p.16. online: http://www.responsiblesoy.org/wp-content/uploads/2019/06/IG-2018-ENG-low.pdf, viewed October 2020. Total soy production Brazil in 2018: 116 MMT.
131. European Soy Monitor (2019), "European Soy Monitor: insights on the European supply chain and the use of responsible and deforestation free soy in 2017", IDH and IUCN, p.41.
132. Forest Declaration (2019), "Protecting and Restoring Forests: A Story of Large Commitments yet Limited Progress", New York, United States, p. 17, online: https://www.climatefocus.com/sites/default/files/2019NYDFReport.pdf, viewed October 2020. Moreover, concerns are mounting that many so called 'green bonds' are an exercise in greenwashing. See for example S&P Global ratings (2019, December 4), "Could Agriculture and Forestry be the new frontier for green bonds?", online: https://www.spglobal.com/ratings/en/research/articles/191204-could-agriculture-and-forestry-be-the-new-frontier-for-green-bonds-11263672, viewed October 2020.
133. De Nederlandsche Bank, PBL (2020), "Indebted to nature Exploring biodiversity risks for the Dutch financial sector", p.37.
134. TNS opinion & social (2016), Attitudes of Europeans towards Animal Welfare, European Commission.
135. OECD/FAO (2016), "OECD-FAO Guidance for Responsible Agricultural Supply Chains", Paris, France: OECD Publishing, p.11. Moreover, a Dutch sector risk assessment commissioned by the Dutch government, identified animal welfare as an important risk for the financial sector, KPMG Advisory N.V (2014), "MVO sector risico analyse. Aandachtspunten voor dialog", Den Haag, p.99.
136. FAIRR (2015), "Considering farm animal welfare in investment decision-making", p.1
137. UNEFPI (2019), "Principles for Responsible Banking", Geneva, Switzerland, online at: https://www.unepfi.org/wordpress/wp-content/uploads/2019/09/PRB-Guidance-Document-Final-19092019.pdf, viewed October 2020; UNEFPI (2019), "Managing environmental, social and governance risks in non-life insurance business", Geneva, Switzerland, online: https://www.unepfi.org/psi/wp-content/uploads/2020/06/PSI-ESG-guide-for-non-life-insurance.pdf, viewed October 2020.
138. OECD (2017), "Responsible business conduct for institutional investors", Paris, France: OECD Publishing, p.3.
139. See for example, De Nederlandsche Bank, PBL (2020), "Indebted to nature Exploring biodiversity risks for the Dutch financial sector", p.37.
140. SEB has responded they will soon stop branding and naming these funds as sustainability funds and instead apply the same sustainability criteria for all SEB's funds.

141. https://www.actiam.com/49e60f/siteassets/4_verantwoord/documenten/en/open-letter-brazilian-embassy-202006.pdf
142. . https://www.aljazeera.com/economy/2020/7/9/brazil-bows-to-investor-pressure-bans-setting-fires-in-amazon
143. https://www.tropicalforestalliance.org/en/collective-action-agenda/investors-policy-dialogue-on-deforestation-ipdd-initiative/
144. https://www.unpri.org/sustainable-land-use/pri-ceres-investor-initiative-for-sustainable-forests/5872.article
145. https://www.unpri.org/download?ac=10610 and https://www.unpri.org/download?ac=10609
146. https://www.retailsoygroup.org/wp-content/uploads/2020/05/Letter-from-Business-on-Amazon.pdf
147. https://www.retailsoygroup.org/wp-content/uploads/2021/05/Letter-from-Business-on-Amazon_2021.pdf
148. https://www.sida.se/en/for-partners/private-sector/swedish-investors-for-sustainable-development
149. https://www.fairr.org/engagements/meat-sourcing/
150. https://cerradostatement.fairr.org/
151. https://www.fairr.org/engagements/amazon-soy-moratorium/
152. https://www.fairr.org/engagements/sustainable-proteins-engagement/
153. https://www.unpri.org/Uploads/r/z/f/investorstatementondeforestationandforestfiresintheamazon_10jan2020_53267.pdf
154. https://www.inesc.org.br/wp-content/uploads/2021/02/DossieHidrovias-VersaoFinal_EN2.pdf?x99685
155. https://www.theguardian.com/environment/2020/jul/28/investors-drop-brazil-meat-giant-jbs
156. Grim, Ryan (2019), "A Top Financier of Trump and McConnell Is a Driving Force Behind Amazon Deforestation", The Intercept.141 https://theintercept.com/2019/08/27/amazon-rainforest-fire-blackstone/
157. Institute for Socioeconomic Studies (INESC) (2021). "As Soy Moves Forward: Impacts of Hidrovias Do Brasil in Itaituba, Pará.", https://www.inesc.org.br/wp-content/uploads/2021/02/DossieHidrovias-VersaoFinal_EN2.pdf?x99685
158. Journal do Commercio (2019), https://www.jornaldocomercio.com/_conteudo/cadernos/jc_logistica/2019/08/699640-hidrovias-do-brasil-quer-dobrar-movimentacao-de-graos.html
159. Blackstone has in the last decade held significant direct and indirect shareholdings in Hidrovias do Brasil, especially through the private equity company Patria Investments Ltd, of which Blackstone has owned 40%. In September 2020 Hidrovias do Brasil was listed on the stock market and Patria Investments reduced its ownership in the company from over 50% to around 25%. In January 2021 Patria Investments was listed on the stock market and Blackstone reduced its holdings from 40% to 14%. In May 2021 Blackstone also sold its 9% stake in Hidrovias to Patria Investments which thereby increased its ownership in Hidrovias. After the transaction Blackstone has no direct ownership in HIdrovias but Blackstone is still the largest institutional shareholder in Hidrovias' largest owner Patria Investments.
160. Chain Reaction Research (2019), https://chainreactionresearch.com/report/carrefour-may-face-financial-risks-from-deforestation-linked-beef-sourcing-in-brazil/
161. Chain Reaction Research (2020), https://chainreactionresearch.com/the-chain-carrefours-deforestation-risks-may-increase-with-brazilian-expansion/
162. Forest 500 ranking of Carrefour SA (2020), https://forest500.org/rankings/companies/carrefour-sa
163. ITC Trade Map (2020), "Exports - Yearly time series", viewed in July 2020; Eurostat (2020), "EU trade since 1988 by HS2-HS4"
164. Forest 500 ranking of China Mengniu Dairy (2020), https://forest500.org/rankings/companies/china-mengniu-dairy-co-ltd
165. Fair Finance Guide (2020), "Svenska sparpengar kopplas till skövlingen av Amazonas", https://fairfinanceguide.se/senaste-nytt/2020/svenska-sparpengar-i-amazonas/
166. Aristova, Ekaterina (2020), "Call for EU Human Rights Due Diligence Legislation: What Can Be Learnt from France and the Netherlands?", Bonavero Institute of Human Rights, https://www.business-humanrights.org/en/blog/call-for-eu-human-rights-due-diligence-legislation-what-can-be-learnt-from-france-and-the-netherlands/
167. WWF (2021), "STEPPING UP? THE CONTINUING IMPACT OF EU CONSUMPTION ON NATURE WORLDWIDE", https://wwfeu.awsassets.panda.org/downloads/stepping_up___the_continuing_impact_of_eu_consumption_on_nature_worldwide_fullreport_low_res.pdf
168. Löwhagen, Christian (2019), "EU consumption linked to tropical deforestation", https://www.chalmers.se/en/departments/see/news/Pages/EU-consumption-plays-major-role-in-tropical-deforestation.aspx
169. Gonzales, Jenny (2020), "World's biggest trade deal in trouble over EU anger at Brazil deforestation", https://news.mongabay.com/2020/07/worlds-biggest-trade-deal-in-trouble-over-eu-anger-at-brazil-deforestation/
170. FERN (2021), FERN POSITION ON THE EU-MERCOSUR AGREEMENT, https://www.fern.org/fileadmin/uploads/fern/Documents/2021/Fern_Mercosur_position_paper.pdf
171. Röös, E. et al(2016), "Protein futures for Western Europe: potential land use and climate impacts in 2050", Regional Environmental Change; Poore J. and T. Nemecek, "Reducing food's environmental impacts through producers and consumers" Science. 2018;360:987–992, online: https://josephpoore.com/Science%20360%206392%20987%20-%20Accepted%20Manuscript.pdf, viewed October 2020. Other calculations may well arrive at lower, albeit still considerable reductions. For example the Netherlands Environmental Assessment Agency calculated that adopting a vegetarian diet with fish, would reduce land use by 40%, Westhoek, H. (2019), "Kwantificering van de effecten van verschillende maatregelen op de voetafdruk van de Nederlandse Voedselconsumptie", PBL, Den Haag, p.32.
172. Council for Animal Affairs (2020), "Animal Welfare in Circular Agriculture", p.16, online: https://english.rda.nl/publications/publications/2020/07/21/animal-welfare-in-circular-agriculture, viewed October 2020.