



Short Paper on Global Deforestation and Greening Commodity Supply Chains - Best Practices for Chinese Supply Chain Actors

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EXECUTIVE SUMMARY

KEY FINDINGS

The global Covid-19 pandemic has been an alarming reminder of the extent of human impact on the natural environment. With growing global concerns around climate change and biodiversity loss, global leaders are giving greater consideration to the issue of how to address food security and poverty alleviation through balanced growth of the economy with environmental protection. Today, the increasing rates of tropical forest loss globally is one of the biggest challenges the world is facing. At the same time, tropical forests are a crucial piece for addressing the global climate crisis and biodiversity loss.

According to FAO, deforestation is the conversion of forest to another land use or the long-term reduction of tree canopy cover below the 10% threshold. Deforestation is part of the broader concept of native habitat loss, as a major driver of biodiversity change in terrestrial and inland water systems with the conversion of natural systems including forests, woodlands, and grasslands, mainly driven by agriculture expansion. Deforestation and land degradation reduces forest quality, including the density and structure of trees, but also reduces the ecological services, the species biodiversity and genetic biodiversity. As a major carbon sink and regulator for the climate, forests are the second largest storage for carbon after oceans, and have significant implications for climate change globally. According to UNFCCC, land clearance is responsible for approximately 12.5% of global GHG emissions.

According to FAO's State of the World Forest's 2020 Report, the leading drivers of deforestation and land conversion are agriculture expansion and cattle production. Cattle production is by the far the largest direct driver of forest loss, followed by palm oil, soybeans, cocoa, rubber and pulp and paper (together accounting for 57% of total forest loss). Large areas of the world's largest tropical forests including the Amazon rainforest and other key biomes such as the Cerrado savannah in South America, and the tropical forests of Borneo in Southeast Asia have been lost as a result of the production of commodities.

Brazil is one of the largest producers of cattle and the largest producer of soybeans. The Amazon rainforests region and tropical savannah Cerrado account for over half of all production in Brazil. These tropical forests are not only rich in biodiversity, but also the protection of tropical rainforests is an important nature-based solution for addressing global climate change.

With ambitious goals made through the New York Declaration on Forests to halve forest loss by 2020, climate change targets laid out in the Paris Agreement, and goals set out the Convention on Biological Diversity, increased efforts at speed and scale need to be made in order to achieve these ambitious targets.

While multi-national companies have made ambitious voluntary commitments to clean up their supply chains, in many cases, companies are failing to properly implement these targets. A majority of supply chain actors have neither formulated nor have made commitments or targets to make their supply chains deforestation and conversion free. The proliferation of individual corporate commitments (including Consumer Goods Forum 2010 commitment and NYDF) are proving very difficult to implement, monitor and audit. Therefore there is high potential for greenwashing.

Roundtable initiatives have been important platforms for enabling multi-stakeholder dialogue with certification schemes, such as RSPO, RTRS, FSC and GRSG. In addition, the global roundtables have developed multi-stakeholder communities and contributed to social capital, with large memberships to develop consensus and integrate sustainability into their corporate models. Some countries in the European Union or European Economic Area, such as Norway, are choosing to fulfill their national deforestation-free commitments, by purchasing 100% certified products, such as soy and palm oil. While certification volumes have increased in recent years, this has been relatively slow. Certification systems are not delivering the impact expected on the ground, and it is often difficult for smallholder producers and small-medium size enterprises to come into compliance with international certification standards, **considering producers cover the**

higher production costs, and actors further downstream are profiting. While certification schemes help set a standard in the industry, the process of certification is not fair and equitable, and the costs need to be shared across the whole supply chain to be effective.

While traceability and transparency continue to be a challenge in the industry to track and monitor deforestation risks from production to end-user, the development of innovative tools and technology show promise for tackling deforestation in the supply chains. Tools including Trase and Global Forest Watch Pro, but also government led platforms through satellite imagery, blockchain technology and advanced data analysis tools have been pivotal for helping companies to address deforestation. Finance is also crucial for addressing sustainability solutions to ensure adequate allocation of resources and incorporating sustainable finance into supply chain management through favorable sustainability loans and incentive measures. **The financial sector is important for producers to transition to a sustainable deforestation and conversion-free production.**

China aims to become a global leader in climate change and biodiversity protection through its ambitious commitments to achieve carbon neutrality by 2060. Considering its role as the largest importer of beef, soybeans, and paper products, and the second largest importer of palm oil, China has an important role to play to send a clear market signal all across global supply chains that will drive transformational change needed to address deforestation and land conversion across the globe. China is therefore in a strong position to drive positive change for deforestation and conversion-free global supply chains.

This short paper aims to provide insight and share examples of best practices for tackling deforestation in commodity supply chains. Taking stock in all of the different mechanisms, tools, initiatives and platforms that have already been developed, this report focuses on the unique conditions and needs of the Chinese market. This paper shares examples both from international and Chinese companies' experience, as a basis for guidance for policy makers to further develop approaches for the greening of global supply chains.

KEY RECOMMENDATIONS

To fully address global deforestation in the agri-commodity supply chains, a global consensus is needed, but also a general willingness by both top level leadership, and across society to help transform industry behavior towards sustainable deforestation-free supply chains.

China and the European Union are already well positioned for advancing the deforestation and land conversion free agendas in global value chains.

China and the EU are the two largest importers of relevant agriculture commodities, building a strong bilateral cooperation on environment and climate change. Together they are in strong positions to lead global action for deforestation and conversion-free supply chains. With the European Green Deal announced by President van der Leven, the European Union has established a new growth agenda that should set the EU on the path towards a green and just transition, which includes the promotion of policies that should stimulate the demand for agri-commodities that are sustainably produced and harvested. China is aspiring to be a global leader in environmental protection, through the application of the concept of ecological civilization. In 2020, President Xi Jinping announced China's ambitious goal to be Carbon Neutral by 2060. At the same time, China is preparing to host the Convention on Biological Diversity (CBD) to develop the post-2020 global Biodiversity Framework and is taking an active role in the preparation of UNFCCC COP 26. Forests play a critical role for meeting these ambitious global targets for climate change and biodiversity. The upcoming events provide opportunities for China and the EU to send a strong joint signal in support of deforestation-free supply chains.

A well coordinated two-pronged approach is needed to implement adequate measures for addressing deforestation in global value chains in China, considering its unique political structure and economic conditions.

- 1) **Short-term: Sending a clear demand signal for deforestation-free commodities.** China's top level leadership should take advantage of opportunities such as COP15 to acknowledge and encourage joint efforts for tackling deforestation and biodiversity loss in global supply chains. COP15 can be a pivotal moment for President Xi to make a statement to acknowledge global deforestation and biodiversity loss in supply chains and encourage China to transition to no illegal deforestation supply chains, as a demand signal from China to mobilize efforts from both global and China's domestic industry actors. **This demand signal would not only be an important signal for producing countries, but could also stabilize the price across the supply chain as both producers and buyers prepare to implement deforestation-free commodities.**
- 2) **Long-term: Develop a system to support the industry to enforce sustainable deforestation-free requirements.** Public policy intervention coupled with multi-stakeholder engagement, along with incentives for sustainable and green finance and investment is needed. While companies will need technical support and capacity building to transition to sustainable and deforestation-free supply chains in the long-term, the government can help to develop a system for monitoring the performance of deforestation risk. This can include developing a deforestation monitoring system to track risk. This can be complemented by a suppliers database. The government can develop a "white list" of suppliers that are performing well against deforestation-risk, and a "black list" of suppliers that face high deforestation risk. **At the same time, there needs to be a mechanism of monitoring to support suppliers who are not in compliance yet and operating in areas of high risk to get on track and improve performance. This method can help companies to identify which suppliers to source from, but also support high risk areas to make a positive transition.** The government can slowly make mandatory requirements of Chinese buyers to eliminate deforestation and land conversion from their supply chains.

I. Role of Government

Creating enabling policies and developing a system of monitoring and incentivizing the industry to transition towards sustainable deforestation-free supply chains, through the following:

1. Promoting international cooperation
2. Monitoring the performance of suppliers to the Chinese market, against sustainability and deforestation-free targets of companies
3. Incentivizing Local Governments
2. Raising Public Awareness
3. Supporting Businesses & Supply Chain Actors in Capacity Building Efforts
4. Coordination & Support in Pilot Projects

II. Role of Businesses & Supply Chain Actors

From Commitment to Action: step-by-step approach for setting and implementing deforestation-free targets

1. Make a commitment
2. Developing a Roadmap & Implementation Plan with time-bound goals and targets
3. Capacity Building
4. Tracking Performance & Reporting on Progress

Additionally, it will be critical to enable conditions for the following:

- Promote the use of multiple approaches to implementation sustainability across the supply chains
- Maximize on innovative technology and data platforms
- Setting market demands for sustainable and deforestation-free commodities and market access

The report includes several case studies in each sector for beef, soybeans, palm oil and pulp and paper. There is a no one-size fits all approach, but each example provides practical insight for the methods and approaches that can be used and potentially replicated for addressing deforestation in the supply chain.

Beef Case Studies -

Produce Conserve Include
Kerchin Group

Soybean Case Studies -

COFCO International
US Sustainable Soy Protocol

Palm Oil Case Studies -

Mars Wrigley
Jurisdictional Approach in Seruyan, Indonesia

Pulp & Paper Case Studies -

China-EU Bilateral Cooperation Mechanism on Forest Law Enforcement and Governance
UPM (Finland)

Introduction

Following rapid economic growth and globalization, the world has entered a new era with the challenges of addressing the global COVID-19 pandemic and mounting environmental crises including climate change and biodiversity loss. While food and agriculture supply chains remain the backbone to economies for ensuring food security, poverty alleviation, and providing millions of jobs, the global crises are proving that business-as-usual is not sustainable in the long term. Greater consideration for natural resource conservation, climate change and environmental protection, will be critical for ensuring the stability and resilience of global supply chains.

Occupying 31% of the world's surface, Forests have intrinsic value for addressing climate change and biodiversity protection (FAO, 2020). Forests are essential for maintaining biodiversity of species, supporting healthy ecosystem services, and regulating the global climate. Forests harbor most of Earth's territorial biodiversity, providing habitats for 80% of amphibian species, 75% of bird species, and 68% of mammal species. Approximately 60% of all vascular plants are found in tropical rainforests. Forests not only purify the air and water, but provide essential food and raw materials resources for human survival. Forests are the second largest carbon storehouse, after oceans, with tropical forests holding the potential to address one-third of the climate change solution.

Forests are not only important for environment and providing ecosystem services, but also an important resource for supporting the global economy and society. **Nature is the foundation to our global economy, with approximately \$44 trillion of global economic value according to the World Economic Forum. From the air we breathe, water we drink and the food, fuel and fibers we consume, our daily lives depend on natural resources and a healthy environment.** Over 300 million people live in forests, including 60 million indigenous people. Forests provide jobs for more than 86 million green jobs across the world. World forests are valued at an estimate of USD 50-150 trillion dollars, which is almost double to value of the global stock market (Boston Consulting Group, 2020).

According to the World Economic Forum Despite the high value of forests, deforestation of tropical forests and land degradation continue at alarming rates, with an estimated 420 million hectares of forest lost since 1990 (FAO, 2021). According to Global Forest Watch Pro, 2016, 2017, and 2018 were the highest years on record for global tropical forest loss (World Resources Institute, 2021).

The main drivers of deforestation and land-use change globally are agriculture and cattle production. In a recent report by the World Resources Institute, cattle, oil palm, soy, cocoa, rubber, coffee and wood fiber are the seven major commodities causing deforestation. 'Cattle pasture now occupies for approximately 45.1 million hectares of land deforested between 2001 and 2015, accounting for 36 percent of all tree cover loss associated with agriculture during the time period. Oil palm ranks second (10.5 million hectares), soybeans rank third (8.2 million hectares), with the remaining commodities representing about 2 million hectares each.

The world's largest tropical rainforests, namely the Amazon rainforest in Brazil and the tropical rainforests of Borneo in Southeast Asia, have been the most heavily impacted by deforestation and biodiversity loss as a result of the cattle industry and soybean expansion in South America, and palm oil production in Southeast Asia. A significant portion of cattle and soy production occur in the Brazilian Amazon and tropical savannah

known as the Cerrado. In Borneo, at least 50% of deforestation between 2001 and 2015 was related to the palm oil industry. According to the IUCN Red List of Threatened Species, at least 193 endangered species worldwide are affected by the palm oil industry.

Today, China is the largest importer and consumer for many commodities including the largest importer of soybeans (60%), the largest importer of beef (17%), the largest importer of timber (33%), and the second largest importer of palm oil (12%). The European Union is also a significant importer, as the 2nd largest importer of soybeans, the third largest importer of palm oil, and a significant importer of beef and pulp & paper products. Considering the position and market share in global supply chains, China and the European Union have a significant role to play in shaping the future outcomes to address deforestation risks in globally supply chains.

In September 2020, President Xi announced the target for China to achieve carbon neutrality by 2060 and also recognized the importance of biodiversity protection globally at the United Nations General Assembly. At the same time, President Xi emphasized the role of China and the EU to strengthen its green partnership for tackling climate change and biodiversity.

As China enters a new stage of development and recognized by the World Bank as a middle-income country, the Chinese government has made great progress in economic development, but also poverty alleviation and tackling climate change. Economic stability, including food security and poverty alleviation remain top priorities for China. Incorporating the concepts of ecological civilization and “*building a global community for a shared future*”, China has been positioning itself as a global leader for tackling climate change and biodiversity protection. At the same time, China in its position as the largest importer of soft commodities, is at the center of global supply chains. Forests are a crucial component for meeting the ambitious climate change and biodiversity goals and ensuring the greening of global supply chains. China can use its strong market position and governance model to take decisive action to fight deforestation in line with its environmental and climate commitments.

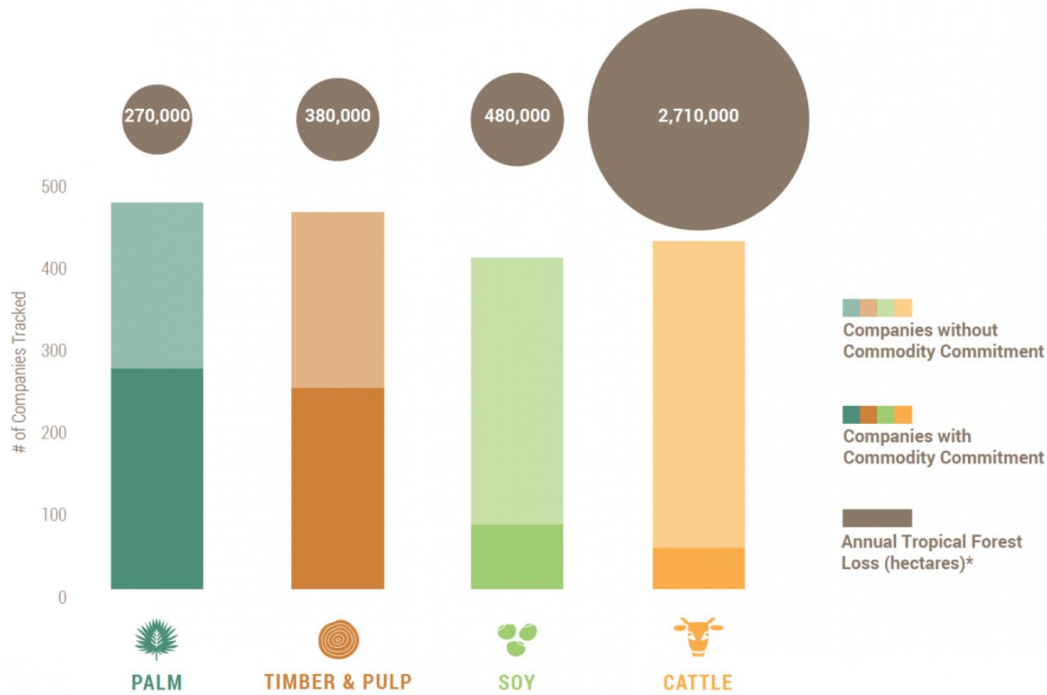
I. Progress

In 1992 at the Rio Earth Summit, three important global environmental agreements were initiated. This included the United Nations Convention to Combat Desertification, the United Nations Framework Convention on Climate Change (UNFCCC), and the United Nations Convention on Biological Diversity (CBD). The CBD was seen as the most ambitious plan to address global biodiversity loss and habitation transformation. Together these three agreements set ambitious targets to address the world’s most pressing environmental challenges.

Recognizing the importance of protecting global forests, in September 2014, New York Declaration on Forests was announced at the United Nations Climate Summit and signed by governments, multi-national companies, indigenous groups and NGOs as a non-legally binding commitment to take action to halt global deforestation. By 2019, the list of signatories to the NYDF had grown to over 200 supporters. The declaration set ambitious targets to end forest loss by 2030, and support in the restoration of 350 million hectares of degraded and deforested lands. It is estimated that achieving the NYDF goals could reduce greenhouse gas emissions by 4.5-8.8 billion metric tons each year. The thinking behind the declaration was that by setting ambitious targets, will lead the signatories and partners to take concrete action for implementation of the declaration. The NYDF releases an annual progress report to track performance against the targets.

Figure. Corporate Deforestation-free Commitments by Sector

Number of Companies with and without Commitments by Commodity



Source: Supply-Change, Forest Trends

Companies involved in the global soft commodities supply chains have made commitments and taken action for addressing deforestation. Supply-Change and Forest 500 have tracked progress made by companies for meeting these commitments. Multinationals including Unilever, L’Oreal, COFCO International, Mars, Nestle and Cargill, are some of the companies that are proactively pursuing step-by-step approaches for achieving the deforestation-free commitments.

More recently, Nestle has announced a new ambitious sustainability policy to achieve net zero GHG emissions by 2050, along with the promotion of regenerative agricultural practices to build soil health and a “forest positive” ambition. While the Swiss-based company has operations in multiple countries and sources its raw materials globally, their ambitious policy demonstrates that despite size and complexity of one company’s supply chain, it is possible and feasible to implement deforestation and conversion free supply chains.

Despite these efforts, companies alone can not achieve zero deforestation supply chains, and need the support and strong cooperation with governmental and civil-society actors. Multi-stakeholder platforms are important for maintaining the momentum and building consensus for promoting sustainable deforestation-free supply chains. NGOs collectively have set up roundtable initiatives for soft commodities to help stakeholders establish the principles and criteria for sustainable production and sourcing. Some of these roundtables include the Global Roundtable for Sustainable Beef (GRSB), the Round Table for Responsible Soy (RTRS), the Roundtable for Sustainable Palm Oil (RSPO) and Forest Stewardship Council (FSC).

Other region-specific initiatives have also been established. In 2012, the Amazon Soy Moratorium was an initiative signed and led by NGOs and companies to acknowledge deforestation in the Amazon due to agriculture and cattle production, with an agreement to not purchase soybeans from areas deforested after 2006. While the Amazon Soy Moratorium was praised as a success in significantly reducing deforestation from soy expansion, others claim that this was due to the fact that soy was being produced on already deforested land and soy expansion was moving into the Cerrado Savannah region and other countries in South America.

In Brazil, there was the In September 2017, over 60 NGOs released the Cerrado Manifesto as “a call for immediate action in defense of the Cerrado by companies that purchase soy and meat from within the biome, as well as investors active in these sectors”. Following this, in October of the same year, the Statement of Support for the Cerrado Manifesto (SoS Cerrado Manifesto Working Group) was released, and is currently endorsed by approximately 160 global FMCG companies and institutional investors.

The Soft Commodities Forum (SCF) was established as a global platform for leading soft commodities companies to take collective action for addressing sustainability challenges with a joint pledge to eliminate deforestation from their agricultural supply chains worldwide, deploying credible tested science-based methodologies for defining forests and biodiversity. The company members include ADM, Bunge, Cargill, LDC, Glencore and COFCO International. The platform helps the multinational traders to align agendas, and have a common transparency and reporting system in place to address and monitor deforestation and land conversion in the soy supply chain.

The Consumer Goods Forum, is a company-based membership platform that has developed standards and guidelines for the industry to address sustainability issues including deforestation. The Tropical Forest Alliance of the World Economic Forum brings together public and private stakeholders to advance the global agenda for addressing deforestation and land conversion across soft commodity supply chains.

The financial sector is an important potential influence the industry to make progress towards achieving zero-deforestation supply chains. More and more financial institutions are seeing deforestation as both a regulatory and financial risk, and will no longer finance clients who are exposed to deforestation risks. China has been a leader in incorporating green finance policies and mechanisms for addressing environmental issues. In 2016, the People’s Bank of China and six other authorities jointly issued the Guidance on Building a Green Financial System, the first green finance framework of its kind worldwide (CDP). This demonstrates China’s financial sector holds potential for driving the deforestation-free agenda through favorable financial incentives and policies.

II. Challenges

Complexity of the supply chain

The commodity supply chains are incredibly complex, long and fragmented. There is also a variety of types of industry players along the supply chain. While there are the large multi-national traders that dominate the industry, there is still a large percentage of small-medium size enterprises that make up a large percentage of the industry. This requires different solutions and approaches to meet the different conditions and needs of the industry players. Particularly in China where large state-owned enterprises have an important role to play in the commodity supply chains and tend to have more enabling conditions, the situation is very different for small private companies in each sector, that make up more than 50% of the industry market share.

Price stability and sensitivity

Fragmentation across the supply chain, but particularly the supply chain within China, makes the industry incredibly competitive and also price sensitive. Traders, processors and farms in China, often feel they lack leverage to request additional sustainability requirements, unless there is demand from downstream buyers or policy incentives from the government. Supply Chains actors, particularly the crushing industry have

very low margins, and verification of sustainability and deforestation-free commodities often is affiliated to high premium costs, which a majority of companies are so far, not willing to pay.

Lack of downstream demand

Companies often note the lack of downstream demand. This is a result of both relatively low awareness by consumers and cost sensitivity. There is still a large percentage of companies, including retailers and manufacturers, that still don't see the direct benefits of implementing sustainability measures and are not yet willing to pay a higher price for sustainability-verified raw materials and products.

Different priorities

Across the supply chain from production to consumption, the supply chain faces various challenges and is sensitive to external factors. While issues of deforestation and climate change go beyond borders, much of the sustainability and environmental policies in China focus on domestic issues including environmental management and pollution control. In recent years the pig farming industry, that relies on imported soybeans for soybean meal, has been faced with addressing new environmental regulations and the African Swine Fever (ASF), that wiped out nearly half of the swine industry in China. While the industry is slowly recovering, the companies are investing time and efforts to be in compliance with the domestic environmental regulations, and controlling and minimizing the spread of ASF. Deforestation and environmental risks embedded in the soybean meal are not viewed as an immediate risk for most companies. Many companies in consumer markets still don't have the sense of urgency for addressing deforestation and land conversion risks in the supply chain.

Despite these challenges, progress has been made for increasing transparency and traceability, accountability and monitoring. Numerous tools and mechanisms have been developed in recent years to facilitate in addressing deforestation in supply chains, enabling the implementation process to be more efficient and cost effective for the industry, but this requires further marketing and promotion of these tools further greater uptake by supply chain actors.

III. Tools

Tools and mechanisms for implementing sustainable production and sourcing

i. Sustainable Certification Standards

Certification standards are one method to verify compliance to sustainability criteria, including addressing deforestation, with the check and verification by a third-party, supply chains and products can receive certificates. Several Roundtables have been developed for different major agri-commodities including soybeans, palm oil, and sugarcane (Bonsucro), to name a few, started by multi-stakeholders aiming to address sustainability across the supply chains. However, certification schemes are proving to have limitations, as more of a niche market. While certification volumes have increased in recent years, this has been relatively slow. Certification systems are not delivering the impact expected on the ground, **as the cost of certified palm oil is not equally distributed across the supply chain, facing skewed perceptions on the true cost of certification. A recent study by China Dialogue shows that companies with business that spans from production, processing and trade have better information on pricing mechanisms for certified palm oil and can facilitate in both shouldering and distributing the cost across the supply chain. Multi-national traders play an important role in this process considering their global operations and active involvement across the supply chain.**

According to RSPO data, RSPO-certified palm oil in China has been increasing slowly year by year, with an increase in uptake by 1% in 2017, 2% increase in 2018, and 4% increase in 2019. The Round Table on Responsible Soy (RTRS) certified soybeans has also witness slow but increased growth in uptake. RTRS has also expanded its approach to adapt to the market needs, serving as a benchmarking tool for national level standards including the United States Soybean Sustainability Protocol (USSSP) and the European Feed Association (FEFAC) Responsible Soy Sourcing Guidelines. RTRS has also incorporated analysis of measuring GHG emission in soy production in 2019.

While the use of eco-labelling in Europe and North America have witnessed a growing willingness to pay by consumers, other major consumer markets in Asia and Africa, the awareness level and willingness to pay by consumers is still relatively low. In a recent study conducted by WWF on consumer awareness in China, there is a growing williness to pay for sustainable products is in the rise in recent years, and the added premium cost of sustainable products is no longer a prevention from buying these products.

Core Criteria of International & National Sustainability Standards:

1. Legal Compliance to local laws and regulations
2. Good agricultural practices
3. Social aspects: safe and healthy working conditions, good community relations
4. Environmental aspects: biodiversity, deforestation and land conversion, pollution control
5. Land-use rights

	Standard	Description
Soy	Round Table for Responsible Soy (RTRS)	Founded in 2006 in Zurich, Switzerland, the Round Table on Responsible Soy Association (RTRS) is a non-profit organization promoting the growth of production, trade, and use of responsible soy. It works through cooperation with those in, and related to, the soy value chain, from production to consumption. RTRS functions as a certification standard and also a global multi-stakeholder platform for responsible soy.
	Proterra Foundation	The ProTerra Foundation is a non-profit organization created in 2006. The Proterra Foundation is a multi-stakeholder platform and certification standard for sustainable non-GM soybean production and sourcing.
Palm Oil	Round Table on Sustainable Palm Oil (RSPO)	The Roundtable on Sustainable Palm Oil (RSPO) was established in 2004 with headquarters in Kuala Lumpur, Malaysia as a global certification standard and multi-stakeholder platform to promote the production and use of sustainable palm oil.

Beef	Global Roundtable for Sustainable Beef (GRSB)	The Global Roundtable for Sustainable Beef (GRSB) was created in 2012 as a global multi-stakeholder platform that aims to advance, support and communicate the continuous improvement in sustainability of the global beef value chain. With over 75 members, GRSB members consist of producers and producer associations, the commerce and processing sector, retail companies, civil society and regional or national roundtables. GRSB provides guiding principle and criteria, but unlike the other Roundtables, GRSB principles are not a certification standard, but rather a guidebook.
Pulp & Paper	Forest Stewardship Council (FSC)	The Forest Stewardship Council (FSC) was established in 1994 as a forest management certification to confirm that the forest is being managed in a way that preserves biological diversity and benefits the lives of local people and workers, while ensuring it sustainable economic viability.
	Programme for the Endorsement of Forest Certification (PEFC)	An international forest certification system for the endorsement and mutual recognition of forest certification systems in over 40 countries.
	Accountability Framework Initiative (AFi)	The Accountability Framework Initiative is a collaborative effort to establish common definitions, norms, and good practices for delivering on companies' ethical supply chain commitments. The framework will fill in vital detail that is missing from high-level pledges, while helping to align a multitude of other efforts to implement commitments, foster transparency, and track progress. The framework is being developed by a coalition of leading environmental and social NGOs in consultation with private companies, government, and other stakeholders. While AFi is not a certification scheme, it is being used as a benchmarking tool to align with different standards such as RTRS, RSPO and FSC, among others.

	IFC Environmental & Social Sustainability Standard	IFC's Environmental and Social Performance Standards define IFC's clients' responsibilities for managing their environmental and social risks.
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ii. Traceability & Transparency

Traceability is defined as “the ability to trace and follow a food, feed, food-producing animal or substance intended to be, or expected to be, incorporated into a food or feed, through all stages of production, processing and distribution” (European Parliament, 2002). With growing consumer concern for food safety and quality, and wanting to know where food products originate from, traceability is viewed as an important mechanism for managing risks and verifying the origin of food and raw materials. In addition, traceability is viewed as an important tool to verify that products such as soy, palm oil and beef are not sourced from regions causing deforestation and land conversion.

Trase

Trase is a supply chain transparency initiative jointly developed by the Stockholm Environment Institute (SEI) and Global Canopy Programme that maps the trade flows of commodities including soy, beef, palm oil, pulp & paper, among others. Using official data sources, including customs data, the platform identifies different traders along the supply chain from producing countries at municipality level to consumer countries, as well as tracking the deforestation risks and CO2 emissions. The information enables improved decision making around responsible production, sourcing and investments, as well as monitoring and enforcement.

Agro-ideal

Agro-ideal is a free online territorial intelligence system developed jointly by companies, NGOs, banks and research institutions that supports decision-making and territorial assessment of socio-environmental risks associated with investments in the soy and beef sectors. The tool allows users to plan purchases and investments in sustainable expansion and adopt regional development strategies to minimize the environmental and social risks.

Global Forest Watch Pro

Global Forest Watch Pro is an online management platform that helps companies and financial institutions through geo-spatial planning to manage deforestation risk in commodity supply chains.

Tools for Transformation (T4T), renamed the Earthworm Foundation

The T4T is an online system that increases transparency and efficiency to give palm oil suppliers a way to understand where they stand against ‘No Deforestation, No Peat, No Exploitation’ (NDPE) requirements in the palm oil supply chain. The tool gives buyers the ability to reach many suppliers quickly and use data to prioritize engagement to develop an action plan to meet requirements and guidance for engaging suppliers.

iii. Reporting & Disclosure

Reporting and disclosure are key steps for setting goals, reporting progress on commitments and measuring performance and impact to drive the change needed from business-as-usual to sustainability. These are important steps for fulfilling the requirements for Environmental, Social, Governance (ESG) impacts for investors. The Global Reporting Initiative (GRI) is a globally recognized sustainability reporting framework that provides guidance on the reporting process and performance metrics, with the need to disclose certain information on the organization's impacts. CDP is an international organization that helps companies and

industries disclose their environmental impact and performance on forests, water, energy and climate issues.

iv. Jurisdictional Approaches

A Jurisdictional Approach is an integrated landscape approach which aims to reconcile competing social, economic and environmental objectives through participation by a full range of stakeholders across sectors, implemented within government administrative boundaries, and with a form of government involvement. RSPO, RTRS and other certification schemes are adopting jurisdictional approaches as a more cost-effective solution for verifying regions and jurisdictions are fulfilling principles and criteria for sustainable production, but also addressing land rights issues and social inclusion. Several jurisdictional approach pilots are underway including in Indonesia, Malaysia and Brazil.

v. Financial Tools

Investors and capital markets are increasingly factoring in Environmental, Social & Governance (ESG) performance into investment decisions. ESG performance, not only demonstrates reputational benefits, but also demonstrates whether a company is managing various risks. More banks and financial institutions are also making public commitments to not finance companies or industries that have links to deforestation and land conversion.

In a study done by IFC and its clients comparing the ESG performance against financial performance, IFC claims that “a vast majority of them find a direct link: companies that do good by the environment, their labor force and communities, do well financially” (IFC, 2021). IFC urges the importance of developing a strong reporting culture, claiming that companies with a well-established practice of reporting outperforms companies with a weak reporting culture.

More banks are also requesting clients to have strong sustainability policies in place and many international banks have made public statements that they will no longer provide financial services to clients exposed to deforestation risks. The financial sector is increasingly seeing deforestation as a major financial risk. Incorporating sustainability commitments into the due diligence enables companies to identify and avoid such risks. More importantly, financing producers should be given a priority as they need strong capital.

vi. Research & Development in Science & Innovation

With science-backed research and data, there is already a clear recognition for the relationship between deforestation and natural habitat conversion, with agriculture and cattle production as the leading drivers. However, there are other areas to further invest in research & development to improve production efficiency:

1. Improving production efficiency of soybeans to reduce impacts on the environment;
2. Feed conversion in China’s animal husbandry sector to reduce dependency on soybean meal protein;
3. Further investigate potential for palm oil production within China to reduce sustainability impacts from palm oil imports ;
4. Further efforts for sustainable forest management and utilization;
5. Further efforts to promote sustainable consumption;
6. Incorporating deforestation and land degradation into climate change schemes, such as the GHG emissions adjustment tax tools, with the potential incorporation of a deforestation tax.

CHAPTER 1. Global Beef Value Chain

Overview of Beef Industry

Cattle production accounts for 36% of all agriculture related forest loss worldwide. The conversion of forests to pasture for cattle production globally led to an estimated 45.1 million hectares of deforestation be-

tween 2001 and 2015. In Brazil, where cattle production linked to deforestation is the most prevalent, cattle expansion has led to forest clearing and habitat conversion in both the Amazon, accounting for 70% of all deforestation linked to cattle in Brazil, and the Cerrado savannah, accounting for 20% of all deforestation linked to cattle in Brazil, with 50-60% of land clearance in the Cerrado.

With growing demand for meat products from developed countries and emerging markets, beef production increases steadily each year. The United States is the largest beef producer globally producing 12.5 million metric tons in 2020, followed second by Brazil (10.3 million metric tons), third by the European Union (7.8 million metric tons), fourth by China (7 million metric tons) and fifth by India (4.2 million metric tons), according to USDA data. Brazil is the largest exporter of beef and meat products, exporting 2.5 million metric tons in 2020, followed by Australia (1.4 million metric tons), India (1.4 million metric tons) and the United States (1.4 million metric tons). For the case of Brazil, despite being the largest export of beef globally, still consumes over 75% of its own beef production domestically, and exports only 15% of its total annual beef production. In 2019, China overtook the United States as the largest importer of beef globally, importing 1.65 million metric tons mainly from Brazil, Uruguay, Argentina and Australia.

As the 4th largest beef producer and largest importer of beef in the world, China holds 10% of the global market share as the second largest consumer of beef globally. While China produces approximately 80% of its total beef consumption domestically, approximately 20% is imported. China's meat imports have increased significantly in the last five years. Although pork remains the main type of meat consumed in China accounting for nearly 60% of meat consumption, recent impacts of the African Swine Fever (ASF) that wiped out over half of China's pork production and drove up prices of pork, beef consumption and imports have since been increasing at a faster rate. China is continuing to invest efforts to improve domestic production efficiency that is unable to compete against the better price of imported beef. Imports from Brazil are significant, accounting for nearly 44% of China's total beef imports in 2019.

Brazil in particular has received much international attention for cattle production as a direct driver of deforestation in the Amazon and Cerrado savannah, contributing to Brazil's greenhouse gas emissions and biodiversity loss. As a result of this, in 2009, Brazil's largest beef processors, Bertin, JBS, Marfrig, and Minerva, together accounting for over 50% of Brazil's total production, signed the Brazilian Cattle Agreement (BCA). The aim of the BCA was to reduce deforestation linked to cattle production in the Amazon. Similar to the Amazon Soy Moratorium, the BCA was inspired by awareness campaigns led by environmental NGOs including Greenpeace and noted as an important step forward for corporate commitments and contributed to the approximate 70% decline in deforestation rates in the Amazon. However, deforestation rates began to climb again in 2012, and challenges of traceability and monitoring, and also land grabbing remain key barriers for resolving deforestation in Brazil's cattle production.

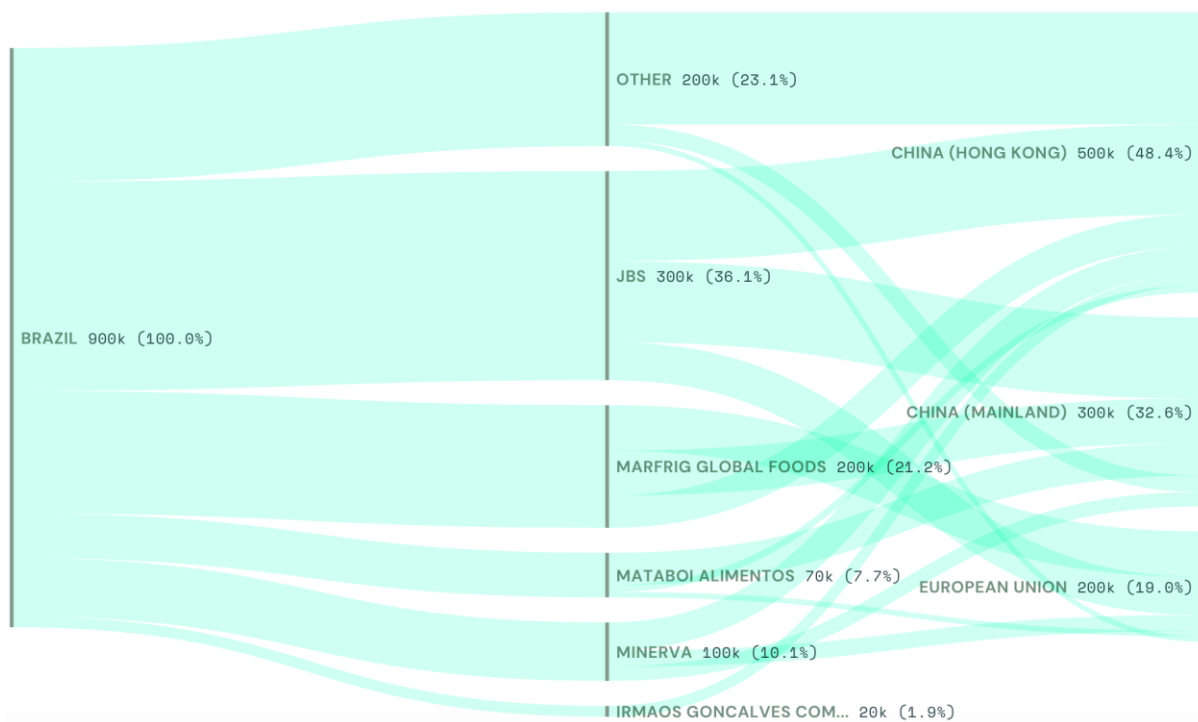


Chart. Brazil's Beef Exports to the European Union and China, & the Major Traders
Source: Trase

Figure. China's Beef Production, Imports & Consumption (in million tons)				
	2017/18	2018/19	2019/20	2020/21
Production	6.34	6.44	6.67	6.72
Imports	0.69	1.04	1.65	2.12
Consumption	7.04	7.48	8.33	
Imports Percentage	9.80%	13.90%	19.81%	

Source: China Customs Data

Overview of Country Specific Mechanisms for Sustainable Beef

Country	Mechanism	Type	Initiators & Members	Description

Argentina	Argentina Roundtable for Sustainable Beef (ARSB)	Industry Initiative	Industry and producer association groups	ARSB was established in December 2018 in alignment with the Global Roundtable for Sustainable Beef (GRSB) principles and criteria to coordinate membership and have aligned goals and consensus on cattle production in Argentina.
Australia	The Australian Beef Sustainability Framework	Industry Initiative	Australian Red Meat Advisory Council (RMAC)	The Framework was launched in April 2017, informed by globally accepted standards to apply the principles of environmental stewardship, animal welfare, economic resilience and social responsibility in the beef supply chain with a multi-stakeholders governance structure in place.
Brazil	Brazil Cattle Agreement (BCA)	Industry Initiative	Bertin, JBS, Marfrig, Minerva	The BCA is a commitment made in 2009 by the four largest beef processors in Brazil to address deforestation linked to cattle production in the Amazon.
	Brazilian Sustainable Livestock Working Group (GTPS)	Industry Initiative	Industry Associations, Companies, Civil Society	GTPS was established in 2009 as an association to promote and address sustainability issues in livestock production in Brazil including addressing deforestation and reducing related greenhouse gas emissions.

China	China Sustainable Meat Declaration	Industry initiative	China Meat Association	In 2017, the China Meat Association and 64 Chinese companies signed the China Meat Declaration. The declaration includes several goals to continuously work towards reducing impacts on the environment including deforestation and habitat conversion.
European Union	The European Roundtable for Sustainable Beef	Industry Initiative	Farmers and industry associations, processing & retail industry, civil society organizations	ERSB is a multi-stakeholder organization aligned with the GRSB principles to unite and coordinate programs and agendas in Europe around a common agenda to deliver measurable and positive impact in the beef value chain.
United States	U.S. Roundtable for Sustainable Beef	Industry Initiative	Industry Associations, producers, processors, retail and civil society Members: McDonald's, Cargill, JBS, Tyson, WWF, TNC, among others	The U.S. Roundtable for Sustainable Beef (USRSB) is a multi-stakeholder initiative developed to advance, support and communicate continuous improvement in sustainability of the U.S. beef value chain.

Case Study 1 for beef - Inner Mongolia Kerchin Cattle Industry Co.

Inner Mongolia Kerchin Cattle Industry Company was founded in 2002, and is both a large domestic cattle producer in China, but also imports beef from abroad. Kerchin ensures full compliance to EU food hygiene standards, and has been well-recognized for innovation in its technology and equipment. Kerchin works with local farms in China, establishing cooperative to enable shared benefits amongst producers. **Kerchin, although the company doesn't address deforestation directly in its supply chain publicly, serves as a case study to demonstrate the innovations and technology in China meat sector to promote transparency and sustainability, and how these methods may be applied to address deforestation in the supply chain.**

In order to increase the company's future competitiveness and with the high demand from Chinese consumers to ensure food safety and quality, in 2012 Kerchin launched the "Kerchin Cattle Industry Product Tracing Enquiry System" to ensure safe, secure and transparent products in the beef industry. The system includes information disclosure available to consumers including slaughter date, breed, age, and farm origin. By 2015, Kerchin developed a full traceability system from production to consumer for 100% of its products. Kerchin has developed a strong reputation in China, and is often selected as the main beef supplier for big national and international events including the Beijing 2008 Olympics, Conference of the Two Parties, and the Asian games.

Blockchain Technology & E-Commerce

In 2017, Kerchin cooperated with e-commerce platform JingDong, to use blockchain technology to track meat to the Chinese consumers in the select cities of Beijing, Shanghai, and Guangzhou. The system enables greater transparency and traceability of products from production to table, allowing consumers to verify the quality and safety of the beef products by scanning a QR code.

Challenges

There is still a lack of standardization and monitoring of such tools in the industry. While there has been new innovations developed to address food safety and food security, there is less transparency in terms of the progress made on these tools. Due to high pressure of competition and replication in the market, companies don't always share detailed progress on such systems.

Recommendations

Using Technology & Innovation for Tracking and Monitoring Deforestation

China's experience with developing domestic food traceability systems and the advanced e-commerce industry, provides a good foundation to apply similar methodologies to address sustainability and deforestation in beef and food supply chains, which is worthwhile to explore further. Particularly in the meat industry in recent years, large Chinese companies including Tencent, Alibaba, Huawei have developed software for traceability in food supply chains from production to consumer. Huawei in particular already has the monitoring technology to track deforestation and biodiversity, with projects both in China and in Latin America to help local organizations to monitor and track deforestation. With coordination of these different tools and technologies, Chinese companies can lead the way to develop a sound traceability system for monitoring deforestation risk in the supply chains.

Incorporating the System into Certification Schemes as a Benchmarking Tool

Kerchin's traceability system provides a good foundation for incorporating the principles and criteria of international sustainability standards such as RSPO or RTRS. The system can be benchmarked against the international standards to provide greater market recognition, especially in the Chinese market.

Developing a Standardized Process for Reporting on Progress

Companies also need to develop the habit of reporting on progress of such systems and make these report publicly available on websites, following the Global Reporting Initiative (GRI) standards. This will help companies to become more competitive and match international standards for continuous improvement of the supply chains. **This will help to strengthen Chinese companies' Corporate Social Responsibility (CSR) awareness, capacity and implementation.**

Case Study 2 for beef - 'Produce, Conserve, Include' Initiative (Mato Grosso State, Brazil)

The state of Mato Grosso in Brazil's central region, which produces 30% of Brazil's soy and has the largest cattle herd in the country, launched the "Produce, Conserve, Include" Initiative as a jurisdictional approach to increase productivity while maintaining ecological preservation. The initiative established a framework for coordinated action at the state level in order to achieve the state's voluntary forest emissions reduction target and reduce deforestation. The concept of the jurisdictional approach requires the collective efforts of stakeholders including producers, companies, government, and civil society to achieve the sustainability targets. The initiative built up strong momentum when Pedro Taques was elected as governor of Mato Grosso State in 2014 and fully supported the PCI strategy as a cornerstone for Mato Grosso State as a state-

wide plan for addressing sustainability, but also climate change goals. With the government endorsement, the program was able to set up a multi-sector and multi-stakeholder working group to have a clearly defined governance structure in place to reach consensus on the targets for the PCI strategy. **PCI provides a good case study as a territorial landscape approach involving the coordinated action and efforts of the relevant stakeholders within a specific region covering all commodities produced in that given region.**

Mato Grosso State has also received funding supporting from European governments, particularly Norway, and Reducing Emissions from Deforestation and Degradation (REDD+) program to combat deforestation in the state. This additional funding support has facilitated Mato Grosso to carry out and implement such strategies.

PCI's 2030 Ambitious Goals

The PCI includes conserving native vegetation, eliminating illegal deforestation, and recovering degraded land, with the goal of achieving over six gigaton of avoided emissions by 2030. Upon establishing the targets of the program, PCI established a monitoring platform to track performance based on reliable and public sources of data. **PCI's main partners include IDH and the REDD Early Movers Program and has also managed to mobilize other public investors including Fundo Amazonia, World Bank, United Nations, AFD, and private investors including Althelia, Andgreen and Agri3.**

Some of the more specific targets for cattle production include:

- Increasing livestock productivity to 95 kg per hectare by 2030
- Recover 2.5 million hectares of low productivity pasture areas by 2030
- Increase the area of tree plantations on already cleared land to 800,000 hectares by 2030.

Challenges:

For some indicators in the PCI targets, there was a lack of data available to accurately measure the progress. The other aspect is that in order to achieve the full implementation of the PCI strategy requires a huge investment of approximately USD 1 billion per year, and both the federal and state governments in Brazil face budget restraints.

Intensification of beef production, together with the implementation of the forest code, is the most demanding investment goal of PCI. The initiative is currently developing investment models to support the transformation of this supply chain.

Another challenge is that despite PCI receiving strong government support with the state governor endorsing and leading the process at its inception, jurisdictional approaches face risk from political cycles and changes in government leadership. Fortunately, the new governor of Mato Grosso State, Mauro Mendes, continued to support the PCI strategy to ensure the sustainability of the initiative and seek further ways to ensure long-term policy and financing, which has allowed the PCI to continue with less impact from political changes.

Recommendations:

1. The active role of local governments is crucial for supporting and carrying out actions on the ground to reduce deforestation and land degradation.
2. Corporate deforestation commitments are an important first step, but need to be supported by public policies to develop shared public-private sustainability strategies.
3. By promoting production efficiency and low-carbon production methods, in addition to incentivizing production and recovery of degraded land through adequate access to finance, can reduce deforestation and land degradation.
4. **Companies with sustainability commitments should procure their supply in producing regions that are also committed and showing progress towards sustainable development and reducing deforestation and land degradation at production level.**

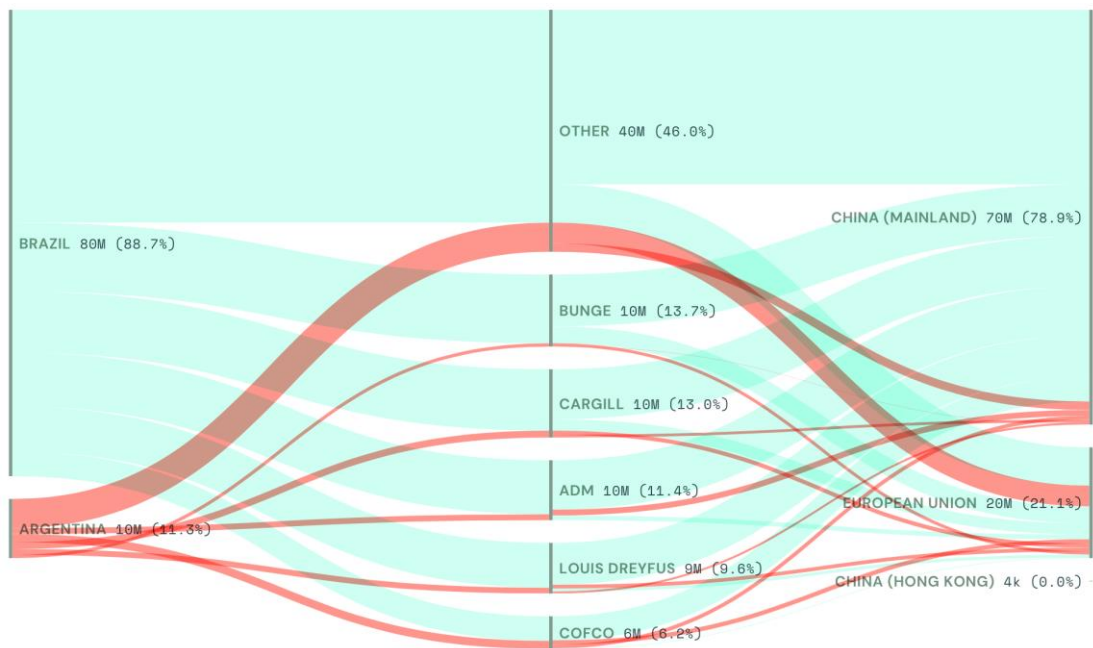
Chapter 2. Global Soybean Value Chain

Overview of the Soy Industry

With economic development and globalization, consumers in developed and growing economies have increasingly higher demand for food and feed. Changing diets towards more meat and animal protein, has led to higher demand for feed including soybeans and corn. Soybeans are a key commodity to ensure food security and economic development. Originating from China thousands of years ago, the primary use of soybeans in recent decades has shifted from tofu and soy milk to a major protein in animal feed, particularly for pork and poultry products. According to multiple sources, today approximately 97% of total soybeans produced globally are used as soybean meal for feed.

The leading soybean producing countries include Brazil, the United States, Argentina, China, and India. The major importers of soybeans globally are China and the EU. China maintains its position as the largest importing and consuming country of soybeans. In 2020, China's soybean imports reached 100 million metric tons. The EU is the second largest importer of soybeans, with soybean imports reaching nearly 15 million tons in 2020. As a result of the U.S. and China trade tensions in recent years, China stopped importing soybeans from the U.S. and imported more soybeans from South America. Brazil is now the largest producer of soybeans, with China as the biggest market, importing over 73% of Brazilian soybean exports in 2020, followed by European countries including the Netherlands and Spain.

Chart. 2018 Soybean Trade Flows from Producing Countries (Brazil and Argentina) to Consumer Markets



(China and the European Union) and the Major Traders

Source: Trase

Agribusiness and soybean production in Brazil has been a major driver of economic development, providing millions of jobs and improving the socio-economic conditions. However, soybean expansion has been linked to environmental impacts, including deforestation and habitat conversion in key biomes including the Amazon Rainforest and the Cerrado savannah. These regions are not only rich in biodiversity, but also home to indigenous communities. Global efforts have been made to curb deforestation and land conversion, with initiative such as the Amazon Soy Moratorium and enforcement of the Brazil Forest Code, Brazil witnessed decreases in deforestation rates between 2010 to 2019. This was mainly a result of international media attention and commitments from the EU and multinationals. Ambitious commitments have been made by governments and multi-nationals to address deforestation, but progress is slow. In 2019, Brazil witnessed a significant increase in deforestation rates, and the number of forest fires rose significantly for the first time since 2010, as images of Amazon forest fires spread across international media channels, raising much alarm.

Figure. China's Soybean Production, Imports & Consumption (in million tons)				
	2017/18	2018/19	2019/20	2020 (Oct) /21 (Oct)
Production	14.85	15.90	18.10	19.60 (Jan)
Imports	95.53	88.03	88.51	100.33 (Jan)
Total Supplies	122.80	114.29	125.51	135.94 (Jan)
Consumption	107.21	101.40	109.50	114.50 (predicted)
Imports Percentage	89.11%	86.81%	80.83%	87.62% (predicted)

Source: China Customs Data

Overview of Country Specific Mechanisms for Sustainable Soy in Major Production Countries

Country	Mechanism	Type	Initiator & Members/Signatories	Description

Brazil	Brazil Forest Code	Forest-related Law & Regulation	Ministry of Environmental Protection	The Forest Code was approved in 2012, to establish general rules on the protection of natural vegetation, such as Permanent Preservation Areas (PPA), Legal Reserve Areas, forest exploitation, among other instruments. Every rural property must maintain an area of native vegetation cover (70% in the Amazon Biome, 20% in the Cerrado Biome), which is called Legal Reserve. The PPA and Legal Reserve records must be on the property's Rural Environmental Registry (CAR).
	Environmental Rural Register (CAR)	National Policy Tool	National Institute for Space Research (INPE)	The Environmental Rural Register serves as a tool or territorial and environmental management. This allows the planning of rural property producing a database for control, monitoring and environmental and economical planning. The System conducts mapping of rural properties and using satellite imagery for geo-mapping.
	Soja Plus Program	Industry initiative	Soy Producer Association of Brazil (Aprosoja), Brazilian Imports & Exports of Vegetable Oils Association (ABIOVE)	The Soja Plus Program is a transparent and participative management program that seeks the continuous improvement of rural properties. It provides free capacity building, training material distribution, courses on health and safety as work, rural building adequacy and environmental regulation. Field days and technical visits are performed to monitor the performance indicators on properties.
	Amazon Soy Moratorium	Public-private agreement	Initiators: ABIOVE, ANEC members, Ministry of the Environment, Conservation International, Greenpeace, IPAM, IMAFLORA, TNC, WWF-Brazil	The Amazon Soy Moratorium was an agreement signed in 2006 to commit to stopping the production, trade and financing of soy that leads to deforestation in the Amazon. The agreement is monitored using satellite images and field observation.

	Cerrado Manifesto Working Group & Statement of Support (SoS) Group	Public-private agreement	WWF-Brazil, Greenpeace Brazil, Amazon Environmental Research Institute (IPAM), The Nature Conservancy, Conservation International, among other NGOs. SoS Signatories: Unilever, Walmart, McDonald's, Nestle, Tesco, among others.	The Cerrado Manifesto was announced in 2017 by over 60 Brazilian NGOs as a call for action to protect the Cerrado biome by companies that purchase soy and meat from within the biome. The Cerrado Manifesto was endorsed by over 160 global companies and institutional investors through the Statement of Support.
Argentina	Native Forest Territorial Ordinance Law	Forest-related Law & Regulation	Argentina Ministry of Environment	In November 2007, Argentina's National Congress enacted a new law to regulate the management and conservation of native forests, that requires provincial level governments to implement comprehensive and participatory Land Use Planning Processes (LUPPs).
	Certified Sustainable Agriculture (ASC)	Industry Initiative	Argentina No-tillers Association (AAPRESID)	The ASC aims to address social, environmental and productive aspects with shared objectives to RTRS. The program works to assist soybean producers to plan improvements, anticipate problems and take preventative measures through certification.
United States	U.S. Sustainability Soy Assurance Protocol (USSSP)	Industry initiative	United States Soybean Board (USB), American Soybean Association (ASA), U.S. Soy Export Council	The U.S. Sustainability Soy Assurance Protocol (SSAP) is a producer-support program that outlines conservation regulations and farming practices. More than 300,000 U.S. soybean producers follow the SSAP guidelines for responsible farming.

China	Forest Law of the People's Republic of China	Forest-related Law & Regulation	Standing Committee of the National People's Congress	The Forest Law of the People's Republic of China was amended for a third time on December 28, 2019 at the 15th Session of the Standing Committee of the Thirteenth National People's Congress. The law covers aspects of proper forest management while ensuring ecological security and sustainable development. In regards to soybean production, the law requires farms to take responsibility for afforestation and protecting forest resources.
	Global Good Agricultural Practices (GAP) - Chinese GAP Standard	Chinese National Interpretation of Global Good Agriculture Practices	Certification and Accreditation Administration of the People's Republic of China (CNCA)	Global Good Agricultural Practices (GAP) is the internationally recognized standard for farm production covering food safety and traceability, environment (including biodiversity), workers' health and safety, animal welfare and crop management.

Overview of Country Specific Mechanisms for Sustainable Soy in Major Consumer Countries

Country	Mechanism	Type	Initiators & Members	Description
China	China Sustainable Soy Guidelines	Civil society-led initiative	Solidaridad	The China Sustainable Soy Guidelines was developed by Solidaridad to provide guidance on sustainable soy production and sourcing based on principles of environmental, social and economic criteria.

	China Sustainable Meat Declaration	Industry-led initiative	China Meat Association, WWF, 60 Chinese meat companies (Kerchin, New Hope Group, etc.)	The China Sustainable Meat Declaration was launched in 2017 by the China Meat Association together with WWF and 60 Chinese companies with the aim to address all environmental and social aspects in the meat supply chains including beef and soy.
European Union	Amsterdam Declarations Partnership	Government-led initiative	Belgium, Denmark, France, Germany, Italy, the Netherlands, Norway, Spain and the United Kingdom	A declaration to work towards deforestation-free sustainable commodities with the main focus on soy, palm oil and cocoa. The aim is for the signatories to influence the key processes to reduce and eventually eliminate deforestation in the supply chains.
	Soy Imports Deforestation Risk Due Diligence Law (UK & France)	Government led initiative	UK, France	The United Kingdom has enacted a new law in its environmental bill to require greater due diligence of businesses for deforestation risk in soy imports.
	Feed Manufacturers Industry Federation (FEFAC) Responsible Soy Guidelines	Industry led initiative	FEFAC, FMO	The European Feed Manufacturers Association (FEFAC) has issued Responsible Soy Sourcing guidelines for the procurement of soybeans, which reflects the factors that the European Feed Producers' Union has identified as a responsible soybean standard. This guidance is not a new standard in itself, but it is used to assess the rationality of existing and future sustainable soybean standards as a benchmarking tool. Therefore, farmers do not need to obtain any certification from the European Feed Manufacturers Union.

Case Study 1 for Soy - COFCO International

COFCO is China's largest food processing company, with products covering all the main categories of Chinese daily consumption, including rice, wheat, corn, oil and oilseeds, sugar, cotton, meat and dairy products. COFCO International is the overseas agri-business subsidiary of COFCO Group. The company trades with over 50 nations, connecting farmers' products to mainly the growing Chinese market, but also other key global consumer markets including Europe. In 2018, COFCO International handled over 100 million tonnes of related commodities with revenues of USD 31 billion. Having acquired 100% of the major global commodity trade Nidera in 2016, the company has become a major exporter of soy from Brazil, Paraguay and Argentina. COFCO's animal feed production is among the ten largest globally. COFCO Corporation's Grains & Oils subsidiary is also a top player in palm oil trade and processing for the Chinese market. **COFCO International provides a strong case study as the company has invested multiple approaches and efforts to address deforestation in the supply chain, as a pragmatic and up-to-date approach.**

Forest-related Sustainability Policy

COFCO International has made a public commitment for both the global soy and palm oil supply chains respectively, with a deforestation and conversion-free policy for the soy supply chain and a No Deforestation, No Peat, No Exploitation (NDPE) policy for the palm oil supply chain. COFCO International is an active member of multiple multi-stakeholder platforms including the Tropical Forest Alliance, Soft Commodities Forum, RSPO and RTRS, among others.

Mapping & Traceability

COFCO International along with other major multi-national traders (ADM, Cargill, Bunge, Louis Dreyfus, Glencore) is a member of the Soft Commodities Forum convened by the World Business Council for Sustainable Development (WBCSD), a global platform for leading soft commodities companies to ensure sustainable agriculture supply chains and working in partnership with government, producers, consumers and civil society. Through the Soft Commodities Forum, members align commitments, actions, monitoring and reporting of progress to reduce deforestation and land conversion risks in the agriculture supply chains. By gathering supply chain data and reporting, members can jointly improve transparency and traceability in the soy supply chain. Each member submits a bi-annual progress report. Through this process and collective action, the multinationals are held accountable for their global deforestation commitments.

By 2019, COFCO International had already achieved 100% soy traceability to farm for all direct sourcing in 25 priority municipalities in Brazil's Cerrado region. Annual traceability results are checked by an independent verification body. In addition, COFCO International actively engages with its suppliers to collect information and data on soy farms' sustainability profiles and engage with producers. In an effort to further enhance the traceability commitment, on 1 July 2020, COFCO International announced that the company aims to achieve full traceability of all directly sourced soy across Brazil by 2023. COFCO International publicly discloses its information and progress, in order to be held accountable for its public sustainability commitments.

Sustainable Finance

In 2019, COFCO International signed an agreement with a consortium of 20 of the world's largest international and Chinese banks including ING, BBVA, and Rabobank for a USD 2.1 billion sustainability-linked loan based on the company's sustainability performance. The loan includes three tranches, including a 1-year revolving credit facility (RCF), a 3-year RCF, and a 3-year term loan. The loan provides an interest discount

on sustainability savings that are reinvested into COFCO Internationals sustainability work. The targets include:

1. Year-on-year improvement of environmental, social and corporate governance (ESG) performance, assessed by Sustainalytics, a leading ESG provider of ESG research and ratings, and;
2. Increasing traceability of agri-commodities, with a focus on directly sourced soy in Brazil, assessed by an independent inspector annually.

Challenges

It is important to note that COFCO International is a subsidiary of COFCO Group, so it can not fully represent the voice of the Group. While COFCO International has operations on the ground in Latin America, which enables the company to engage with suppliers and farms more directly, a majority of Chinese companies do not have operations on the ground in producing countries. Most Chinese crushing companies purchase soybeans through the big multi-national traders (ABCDs), and therefore do not have operations on the ground in producing countries and don't have direct contact with producers. COFCO International has made various efforts to address deforestation in the supply chain and can lead as a good example. However, in order to transform the market to demand deforestation-free soy, COFCO International needs support through collective action together with other Chinese companies to create a market incentive and strong signal to eliminate the deforestation risk in the soy supply chain in the Chinese market.

Recommendations

Start inquiring about deforestation risk

For other Chinese companies, it is recommended to start asking suppliers questions about deforestation policies to demonstrate an interest and concern for deforestation risks in the commercial transactions. These continuous inquiries about deforestation risk from Chinese buyers can help send a signal to suppliers that the Chinese market cares about deforestation and habitat conversion. This requires a well-planned and informed messaging and training of the purchasing teams in companies to be informed and ask the right questions. This alignment can be supported by the Chinese government, who can also start to inquire about deforestation risks with their foreign counter parts in producing countries.

Share Experience from Sustainability Loan

COFCO set a good example by establishing the sustainability-linked loan. Sustainable finance can be an important incentive for companies to implement sustainable deforestation-free measures in the supply chain. The Chinese government, particularly the ministry of finance and Chinese banks can work together to replicate this example with other Chinese companies.

Create a recognized “Black List” and “White List” for deforestation risk amongst suppliers

For the case of Brazil, companies can also commit to not purchase soy from embargoed farms, that are not in compliance with Brazil's forest regulations. Chinese companies with the support from the Chinese government can collectively request to not purchase soy from farms and traders that are embargoed and not in compliance with the Brazil Forest Code as a “Black List”, and request companies that are in compliance, to be put into a “White List”, as a market mechanism for Chinese companies to recognize the minimum of no illegal deforestation in the supply chain.

Develop a Farmer Compensation Mechanism

Recognizing the price sensitivity amongst the Chinese crushing industry, adding additional costs for sustainability premiums to soybean purchases is not economically viable for Chinese crushing companies. Considering China's ambitious carbon neutrality commitment and biodiversity agenda, to help fulfill these goals, the government and industry actors in consumer markets such as China and the EU can jointly establish a mechanism and contribute to providing compensation for producers to protection forests and natural vegetation on their farms as incentive for soy producers to not deforest the natural vegetation on farms.

Case Study 2 for Soy - U.S. Soybean Sustainability Assurance Protocol (SSAP)

The U.S. Soybean Association launched the U.S. Soybean Sustainability Assurance Protocol to support farmers to continuously improve their sustainability performance at national level, to reduce impacts on the environment and ensure social benefits. **The US experience offers a good example as it is supported and works directly with farmers on the ground as a benchmarking tool to international standards, while also able to provide a clear market mechanism to receive recognition in key markets such as China.**

SSAP Principles & Criteria

1. Biodiversity and high carbon stock production control measures and regulations
2. Production practices control measures and regulations
3. Public and labor health and welfare control measures and regulations
4. Continuous improvement or production practices and environmental protection control measures and regulations

The program is funded through farmers' annual membership fees and general U.S. taxes. Over 300,000 farms participate in the program, and at the end of each year, the producers go through a process of internal auditing followed by a third-party audit to check compliance. The USDA selects a random percentage of farms to be audited with not less than 5%. This allows the farmers participating in the program to not know whether they will be selected for the audit procedures, but at the same time reduce costs of auditing.

Linkage to the International Market

Considering the importance of U.S. soybeans in the international market, the SSAP is benchmarked against international standards including the Roundtable for Responsible Soy (RTRS), European Feed Manufacturers' Federation (FEFAC) Responsible Soy Sourcing Guidelines and the International Trade Centre (ITC). In addition, the program is recognized as an international certification and provides certificates to traders, shippers and buyers of U.S. soybeans free of charge. In order to receive the certificate of compliance to the SSAP, buyers need to complete the following process:

1. Register as a user of the U.S. Soybean Sustainability Assurance Protocol.
2. Establish a shipper-specific and secure record on the database and maintain records of the volumes and shipments.
3. The company will be issues an attestation that the specific batch of soy follows a mass balance accounting method chain of custody from a volume of USSAP compliant soy verified by the authorized audit body.

In China, the U.S. Soy Export Council has provided the SSAP certificate to large Chinese soy importers and crushing enterprises including COFCO Group and Sinograin. With China as the largest aquaculture producer, reaching over 50 million metric tons in 2019, the industry depends on soybean imports for soybean meal for feed. In 2020, Liyang Chen Qiang Special Aquaculture Products farm in Jiangsu Province specializing in the production of yellow catfish, established a partnership with USSEC to receive certification for the U.S. Soy Sustainability Assurance Protocol (SSAP) and also Best Aquaculture Practices (BAP). USSEC supports the company with technical support and partial subsidy for receiving the SSAP-BAP certification. Through the certification, the company receives multiple benefits including:

1. More scientific management to enable the production of higher quality, safer products that can be marketed on higher sales platforms and receive better prices;
2. The certification ensures that the farm can only use feed, i.e. soybean meal, produced with Sustainable Soy Assurance Protocol (SSAP) verified productions.
3. Consumers will be able to trace the product with a QR code and verification of the quality, safety, and sustainability of the products.

USSEC is working with the company and other farms and feed mills to carry out the use of the SSAP logo on the products and feed bags, guaranteeing that the soybean meal is at least 60% verified.

Recommendations:

The United States Sustainability Soy Assurance Protocol (SSAP) sets a good example for other major producing countries such as Brazil and Argentina to develop similar robust and comprehensive producer-support programs for addressing sustainability. The initiative also has initiated a mechanism for linkage to the major markets in China and Europe to recognize the efforts from producers all the way to consumers.

Other major producing countries such as Brazil and Argentina can set up a similar structure to the United States Sustainability Soy Assurance Protocol. Brazil can build upon its Soja Plus program to also develop certificates to companies buying Brazilian soybeans to demonstrate the soybeans are sustainable and no illegal deforestation. With Chinese companies such as COFCO and Sinograin already acquiring the United States Soy Sustainability certificates, the industry and government in China can also request from Brazil to provide certificates as proof of no deforestation risk in the soybean purchases.

CHAPTER 3. Global Palm Oil Value Chain

Overview of Palm Oil Industry

Palm oil is the most efficient vegetable oil, with 6 to 10 times higher oil yields than other vegetable oils. With its high efficiency and lower price, palm oil accounts for 33% of global vegetable oil production and has become the main cooking oil used in not only Asia, but also Africa and the Middle East. As a main ingredient for processed foods, palm oil is found in approximately 50% of supermarket products.

Palm oil is produced in tropical forest regions in Southeast Asia, Central and Western Africa and parts of South America. Indonesia and Malaysia account for approximately 85% of global palm oil production. Indonesia, India, the European Union and China are the largest consumers of palm oil globally. In the last 30 years, the increasing production of palm oil has contributed significantly to the economic growth of Indonesia and Malaysia, as a key means to combat poverty and further develop rural areas by increasing household incomes, providing jobs and improving livelihoods of people in rural communities. At the same time, palm oil expansion has been highly controversial for its contribution to deforestation, biodiversity loss and greenhouse gas emissions, and associated social concerns.

Chart. Palm oil consumption by main consumer countries (million tons)

Source: *IndexMundi*

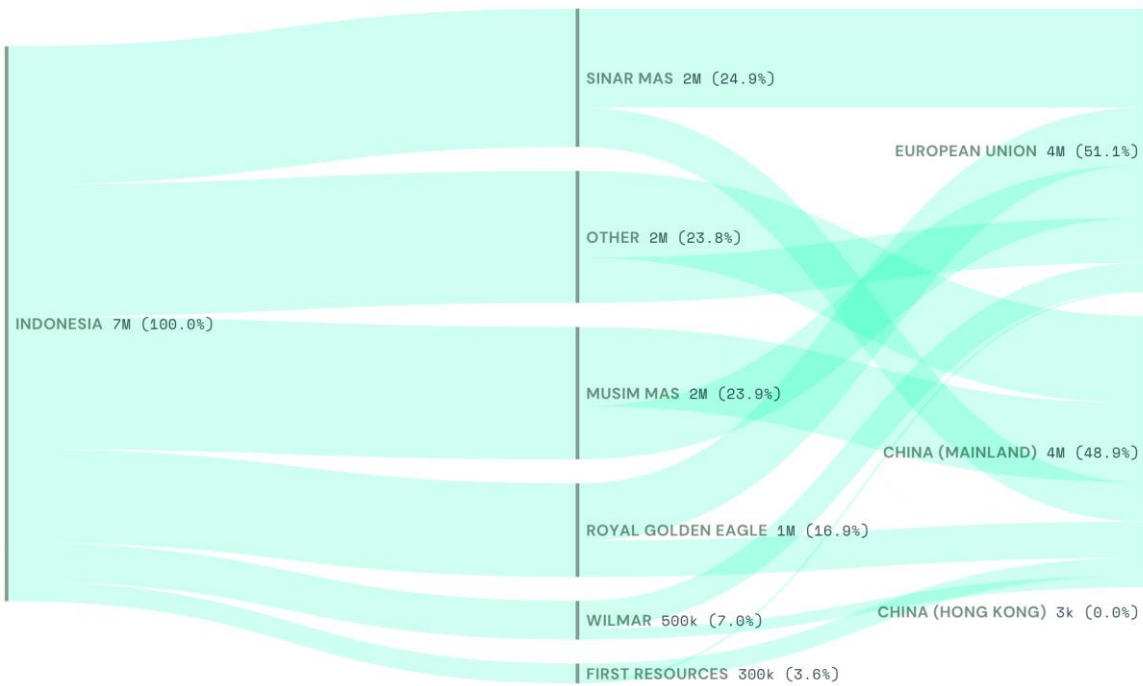
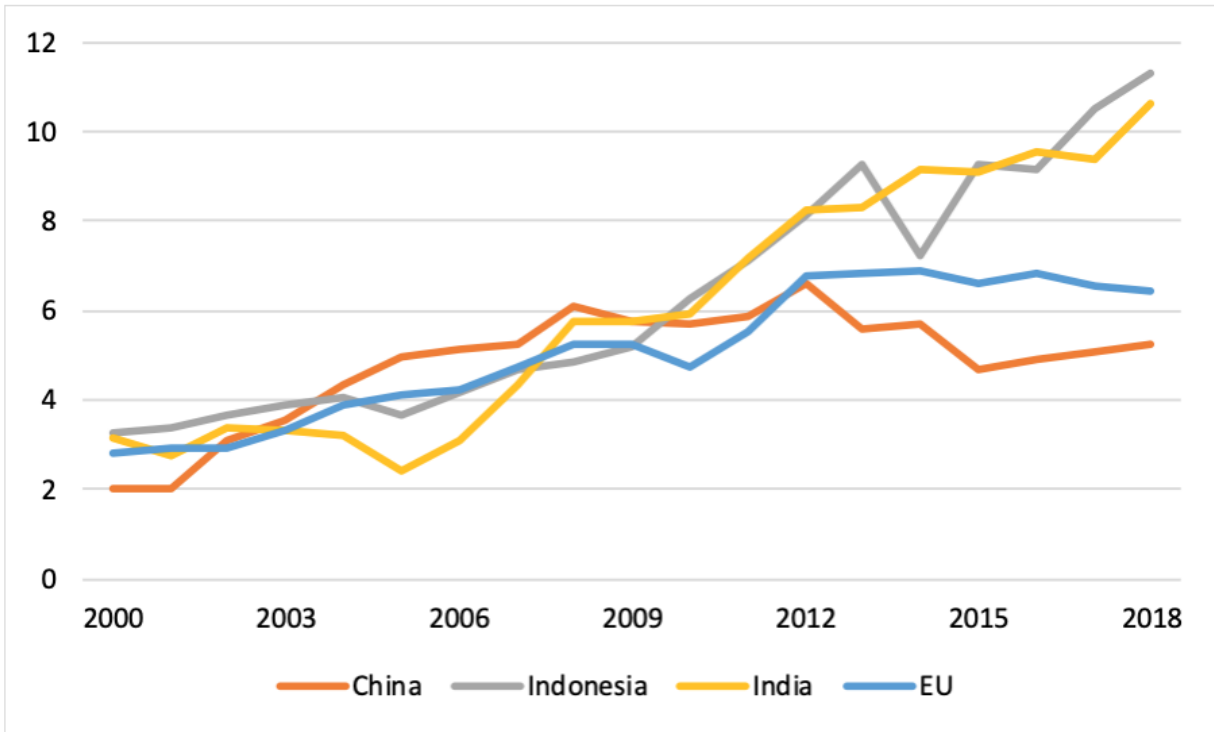


Chart. Overview of Palm Oil Trade Flows from Indonesia to the European Union and China in 2015

Source: Trase

Figure. China's Palm Oil Production, Imports & Consumption (in million tons)				
	2017/18	2018/19	2019/20	2020/21
Imports	3.46	3.57	5.61	4.66
Consumption	4.85	5.47		
Imports Percentage	71.34%	65.27%		

Source: China Customs Data, China Bureau of Statistics

Overview of Country Specific Mechanisms for Sustainable Palm Oil

Country	Initiative	Type	Initiators & Members	Description
China	China Sustainable Palm Oil Alliance	Multi-stakeholder initiative	China Chamber of Commerce of Imports & Exports of Foodstuffs & Native Produce (CFNA), WWF, RSPO, HSBC, AAK, Cargill, Mars, L'Oreal, Ming-fai Group, Musim Mas, Barry Callebaut, CDP, Bureau Veritas, Tropical Forest Alliance (TFA), Louis Dreyfus Commodities	The China Sustainable Palm Oil Alliance was launched in July 2018 by the China Chamber of Commerce of Foodstuff & Native Produce (CFNA), WWF and RSPO. The aim of the initiative is to engage cooperation amongst stakeholders in China and along the palm oil supply chain to raise awareness about the importance of sustainable palm oil. Currently, CFNA is developing Sustainable Palm Oil Guidelines.

European Union	Amsterdam Declarations Partnership	Government initiative	Denmark, France, Germany, Italy, the Netherlands, Norway, and the United Kingdom	The Amsterdam Declaration Partnerships was launched in 2015 with the aim to achieve full sustainable deforestation-free supply chains by 2020. The initiative covers not only palm oil, but also soy, beef and other forest-related commodities in Europe.
India	Indian Palm Oil Sustainability Framework (IPOS)	Industry Initiative	The Solvent Extractors Association, Solidaridad, Indian Institute of Oil Palm Research, SOPOPRAD	The Indian Palm Oil Sustainability Framework (IPOS) was developed in 2017 as guiding principles around social, economic and environmental principles for the sustainable production and trade of palm oil. There is a council that oversees the implementation and collective action for IPOS.
Indonesia	Indonesia Sustainable Palm Oil (ISPO)	Public-Private Initiative	Indonesian Ministry of Agriculture	The Indonesian Sustainable Palm Oil (ISPO) certification scheme is a program developed by the Indonesian government to increase sustainability and competitiveness amongst palm oil producers as a mandatory legality standard.
Malaysia	Malaysia Sustainable Palm Oil (MSPO)	Public-Private Initiative	Malaysian Palm Oil Certification Council	MSPO is a voluntary certification scheme to promote productivity, traceability, and improve the reputation and image of Malaysian palm oil, to meet the growing demand for sustainable palm oil.

Mars Wrigley Inc. (Mars) is a global leader in the confectionary industry, and also a significant player in the market for processed food, drinks and pet care. It manufactures goods under well-known global brands including M&Ms, Dove, Snickers, Uncle Ben's and Royal Canin. The company uses significant quantities of palm oil in its confectionary items and food products, but also soy and beef. Mars Wrigley provides a good case study example as an innovative and programmatic supply chain approach for addressing deforestation.

Forest-related Sustainability Policy

Mars has a zero-net deforestation policy, committing to only beef, palm oil, pulp and paper, and soy from producers and suppliers that demonstrate compliance with no deforestation of primary forest or areas of high conservation value, no development in high carbon stock forest areas, and no development on peatlands regardless of depth. Mars Wrigley is an active member of RSPO, and in China, Mars is a member of the China Sustainable Palm Oil Alliance founded by China Chamber of Commerce for the Imports & Exports of Foodstuffs & Native Products (CFNA), WWF and RSPO.

RSPO-certified Palm Oil

Mars requires that all palm oil is certified under the Roundtable for Sustainable Palm Oil (RSPO) principles and criteria in order to meet the company's zero-net deforestation policy. So far, RSPO is internationally recognized as the most stringent certification standard that can be used to address deforestation in the supply chain. To date, Mars has reported 81,834 tonnes of RSPO-certified palm oil in their 2020 Sustainability Report.

Reporting & Disclosure

Mars publicly announced the Mars' Palm Positive Plan. The company actively tracks performance and reports on progress, which is shared publicly in the company's annual sustainability report. On the website, Mars publishes the palm oil supplier list, and also requests trace back to mills. In order to simplify the tracing system, Mars has chosen to work with fewer suppliers and mills in order to have more simplified control and verification of the suppliers. Mars has set the target goal of engaging with 1,500 mills and 15 suppliers in 2019, to sourcing from less than 100 mills by 2021. With this method, Mars is going beyond the direct supply chain, to engage through long-term contracts with suppliers who commit and deliver on Mars' zero-net deforestation policy. By reporting on progress and disclosing information on suppliers, Mars can be held accountable for making progress towards achieving its zero-net deforestation commitment.

Challenges

As a highly fragmented and long supply chain, traceability in the palm oil supply chain from plantation to final product continues to be a major difficulty for many companies and also costly to implement, which results in inaction or not reporting on progress. Without downstream demand from retailers and manufacturers, traders and processors often lack incentive to buy certified palm oil, as this often requires further efforts for chain-of-custody certification in order to certify processing facilities.

Recommendations

Establish Effective Communication with Suppliers

Mars' sustainable palm oil implementation demonstrates the benefits of simplifying the sourcing strategies of companies and developing long-term relationships with suppliers to bring added value while eliminating deforestation risks in the palm oil supply chain. Other palm oil buyers and end-users can initiate more communication with suppliers to establish long term relationships and contracts to more effectively communicate on eliminating deforestation in the supply chain and provide market incentive.

Market Mechanism: Monitoring System & "Black List" & White List" of Suppliers for Deforestation Risk

Palm Oil buyers are often burdened with the complexity of the palm oil supply chain and managing the deforestation risk effectively. Multiple tools and systems have been developed to monitor deforestation risk at origin and amongst suppliers. More Chinese buyers can use tools such as Global Forest Watch Pro, Trase and Earthworm Foundation to monitor this deforestation risk. Awareness, training materials and capacity building around using these tools can be carried out by the government ministries to ensure alignment on the implementation.

Case Study 2 for Palm Oil - Jurisdictional Approach in Seruyan, Indonesia

Once a forest dense region, Seruyan District in Central Kalimantan of Indonesia has lost much of its forest to logging and palm oil production. For the past ten years, Central Kalimantan Province has been advancing legal reforms in accordance with international human rights laws and the standard, Roundtable for Sustainable Palm Oil (RSPO), including compliance to the High Conservation Value (HCV) system. Seruyan District is one of several Jurisdictional Approach pilot projects underway to receive RSPO certification. Working with the local government, the pilot is being supported by RSPO, the UN Environment Programme, Unilever and Inovasi Bumi (Inobu), an Indonesian NGO. **This initiative provides a good case study as the first jurisdictional scale supply chain intervention that connects both with local government, companies and with certification (RSPO).**

The pilot aims to address High Conservation Value, High Carbon Stock land use planning, but also social issues including self-representation by indigenous people and local communities, and customary land rights. The district government aims to bring all palm oil producers under compliance with RSPO requirements, including not only the large plantations, but also smallholders. The initiative has the advantage that several of the biggest companies are already operating in the district including Wilmar, Indofood, Sinar Mas and Goodhope.

Although the pilot is still in the implementation phase, the project demonstrates the willingness and the joint efforts of multiple stakeholders in a given jurisdiction working together to achieve compliance to sustainability measures, including working towards achieving zero deforestation goals.

Challenges:

There has already been significant forest clearing, especially on peat land and destroying areas of orangutan habitats in the district. In addition, as the Jurisdictional Approach applies voluntary requirements, the district government in Seruyan is working to pass district level laws, that would make compliance to the initiative requirements mandatory, but this takes time for the laws to be passed and put into effect, but demonstrates the importance of using legality as a means for implementing sustainability criteria.

Recommendations:

Consumer countries can develop preferential sourcing agreements with producer countries to source from specific regions that are implementing sustainable practices through a jurisdictional approach. This offers further incentive to production regions to implement and maintain sustainability practices with a clear market signal.

Establish Mechanism for Market Recognition and Differentiation amongst suppliers for Deforestation Risk

Similar to the case in Brazil for soy, consumer markets can work with producing countries to develop a “Black List” and “White List” for suppliers in Indonesia and Malaysia that have deforestation risks at the origin of production as a transition method to encourage producers and suppliers to eliminate deforestation, and enable buyers to better understand and differentiate the deforestation risk amongst suppliers.

Chapter 4. Global Pulp & Paper Value Chain

Overview of Pulp & Paper Industry

China is one of the largest traders and producers of forest products globally, followed by the United States and Japan. Together the three countries account for more than half of all pulp and paper production globally. China is the world’s largest wood manufacturing, with a growing demand for furniture, plywood, wood moldings and flooring products. Domestic supply of wood has not been able to keep up with growing demand from domestic consumption and exports. China is also considered one of the most important exporters of forest products to the EU market, which is driving China’s increasing demand for forestry products.

In terms of tropical forest regions, Brazil and Indonesia are the 9th and 10th largest paper producing countries respectively. Indonesian pulp is one industry that is the only commodity that is completely covered by zero-deforestation commitments adopted by exporters, according to a recent report by Trase.

Although the pulp and paper industry is not the largest contributor to deforestation loss in recent years, good progress has been made for addressing deforestation in the industry. , This provides some good experience sharing and lessons that can be learned for the other industries. In the EU, the EU timber regulation was enacted on 3 March 2013 and aims to reduce illegal logging by ensuring that no illegal timber or timber products can be sold in the EU. It requires EU traders who place timber products on the EU market for the first time to exercise 'due diligence' and to keep records of their suppliers and customer. China's Forest Law amended in 2020 can also further address the sustainability of production and trade for the pulp and paper industry and other forest-linked commodity supply chains. The **Article 65¹ of the newly amended Forest Law includes a ban on buying, transporting, and/or processing illegally sourced timber and requires processing companies to establish a data record of raw materials and products. To avoid any loopholes, specific elements should be further clarified by a dedicated guidance. It should be clear that article 65 requirements also apply to timber imported into China from foreign countries. More importantly, as flagged by NGOs², while the law stipulates that “no operator or individual may knowingly purchase, process, or transport timber of illegal sources,” it has clear ambiguity and thus leaves a loophole if an operator claims lack of knowledge. Strong enforcement is therefore very important, and an implementable due diligence system is urgently needed.**

¹ **Article 65** Any timber operating or processing enterprise shall keep a standing book for entry and exit of raw materials and products of woods. No organization or individual may purchase, process, and transport woods in full awareness of their illegal origins such as illegal felling or wanton deforestation.

² <https://www.clientearth.org/latest/latest-updates/opinions/china-introduces-new-law-to-safeguard-forests-and-improve-governance/>

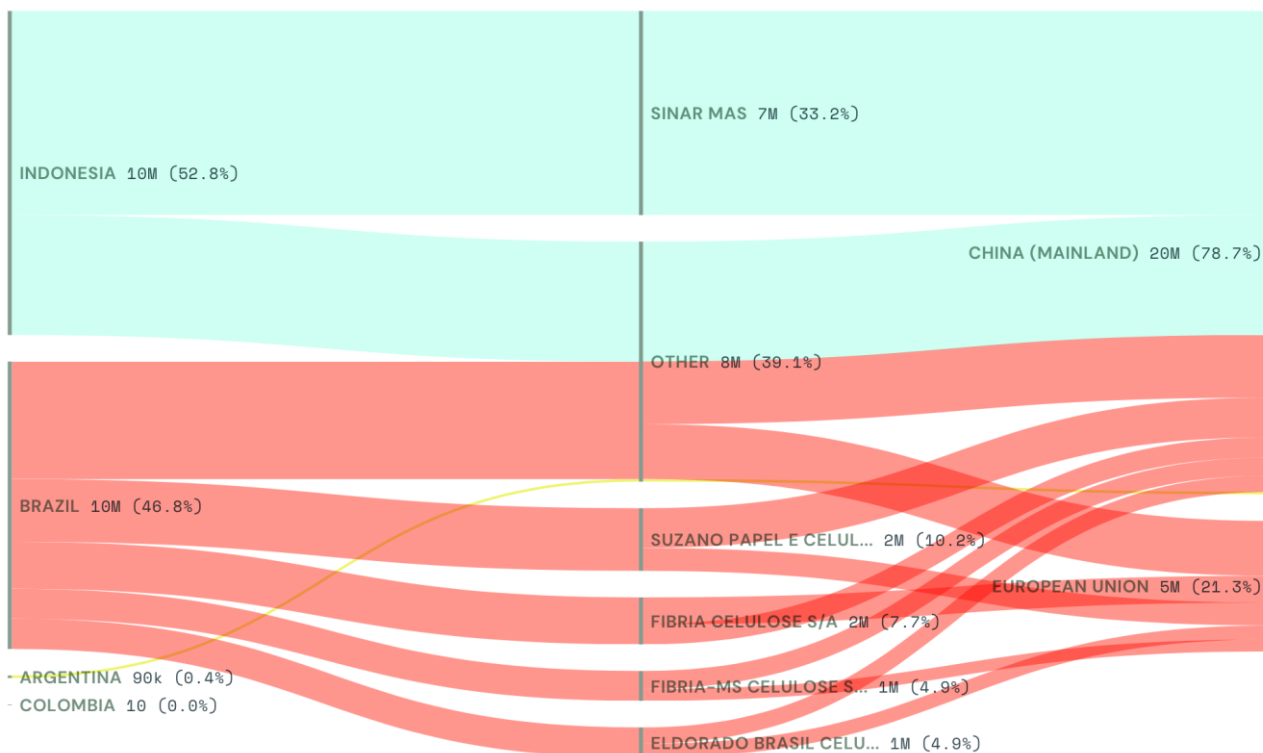


Chart. Pulp & Paper Trade Flows from Producing Countries (Indonesia, Brazil, Argentina, Columbia) to Consumer Markets (China and the European Union)

Source: Trase

Figure. China's Pulp & Paper Production, Imports & Consumption (in million tons)				
	2017/18	2018/19	2019/20	2020/21
Production	79.49	72.01	72.07	
Imports	23.72	24.79	27.20	30.63
Consumption	100.51	93.87	96.09	
Imports Percentage	23.60%	26.41%	28.31%	

Source: China Customs Data, China Bureau of Statistics

Overview of Country Specific Mechanisms for Sustainable Pulp & Paper

Country	Mechanism	Type	Initiators & Members	Description

China	China's Forest Law	Forest-related law & regulation		The Forest Law of the People's Republic of China was amended for a third time on December 28, 2019 at the 15th Session of the Standing Committee of the Thirteenth National People's Congress.
	Guide on Sustainable Overseas Forest Management and Utilization by Chinese Enterprises	Policy Guidelines for industry	Ministry of Commerce and State Forestry Administration	In 2013, the State Forest Administration and Ministry of Commerce started to develop guidelines for sustainable overseas trade and investment in forest products by Chinese enterprises. The guidelines urge operators and investors from China to respect local laws and regulations, to pursue and support sustainable forestry operations and follow ethical business practices.
United States	American Tree Farm System	Industry-led initiative	Family forest owners	The American Tree Farm System was developed in 1941 as a voluntary standard to improve forest management practices.
	Sustainable Forestry Initiative		Board members represent academic institutions, conservation organizations, aboriginal/tribal entities, family forest owners, public officials, labor and forest products industry.	The Sustainable Forestry Initiative is a sustainability organization operating in the U.S. and Canada as the world's largest single forest certification standard by area.

	Lacey Act	Forest-related law & regulation	US Congress	The Lacey Act was introduced in the US in 1900 to ban the transport of illegally captured animals or wildlife products. In 2008, the Act was amended to include timber, paper and other forest products. It is illegal for anyone in the US to import, export, transport, sell, receive acquire or purchase illegally sourced forest products.
Indonesia	Indonesian Forestry Certification Cooperation (IFCC)	Industry-led initiative	Business and Civil Society members	IFCC was established in 2011 as a non-profit organization. IFCC is a forest certification system in Indonesia endorsed and mutually recognized under the PEFC.
Australia	Responsible Wood	Industry-led initiative	Australian forestry industry endorsed by Australia's federal, state and territory ministers.	A forest certification system established in Australia in 2002, that is endorsed and mutually recognized under the PEFC to define environmental performance and sustainability in the forestry industry.
European Union	EU Timber Regulation	Forest-related law and regulation	The European Commission	The EU timber regulation was enacted on 3 March 2013 reduce illegal logging by ensuring that no illegal timber or timber products can be sold in the EU. This was supported by the EU's FLEGT Action Plan.

Case Study 1 for Pulp & Paper - China-EU Bilateral Cooperation Mechanism on Forest Law Enforcement and Governance

In 2009, the EU and China established a Bilateral Coordination Mechanism (BCM) on Forest Law Enforcement and Governance (FLEG), to work together to stop illegal logging and timber trade globally. The cooperation is represented by the Chinese National Forestry and Grassland Administration and the Directorate-General for Environment of the European Commission. The initiative enables dialogue and information exchange on policies and legal frameworks. Through the cooperation, the initiative has jointly developed multiple studies and publications on forest governance and guidelines for sustainable timber, facilitated in awareness raising, capacity building activities and dialogues with timber-producing countries. **This initiative serves as a case study as it demonstrates the importance of bilateral government cooperation and effective policy mechanisms for transitioning the industry towards more sustainable practices.**

Current Activities include:

1. Supporting the setting up of new legislation in China on promotion of legally-sourced timber and timber products.
2. Further developing trilateral cooperation between China, Indonesia and the EU on promoting trade of legally-sourced timber and timber products.
3. Providing information about timber legality developments in China to international stakeholders, and information to Chinese stakeholders about international markets.
4. Creating synergies and strengthening the cooperation between China and VPA countries in Asia and Africa on forest governance.

Forest Law Enforcement & Due Diligence

Through the cooperation on timber trade, Indonesia and the European Union have a Voluntary Partnership Agreement (VPA) in which Indonesia “V-Legal Document” serve as licenses that verify proof of legality of timber shipment to the EU market. Indonesia also issues export licenses to non-EU markets, however China still doesn’t recognize V-Legal Documents as proof of legality of timber imports from Indonesia.

The Chinese Academy of Forestry (CAF) conducted research to explore how Indonesian V-Legal documents can be recognized in China. The research found that this could help companies to simplify their due diligence systems and recommended that a series of pilot projects are implemented to integrate V-Legal documents into the due diligence systems.

Challenges

Illegal logging continues to be a problem with the industry of forest product trade. There are loop holes and leakage of illegally logged timber that still enter the markets. In addition, not all forestry products, particularly from Indonesia, can go through multiple countries and ports before entering China. This makes it difficult to regulate the legality and sustainability of these products.

As a result of China not wanting to deforest its own forests domestically, this has led to a spill over effect with other countries, particularly in Southeast Asia, to log its own forests to export timber to consumer markets. Import markets need to take responsibility for imports for forest products to ensure the sustainability and deforestation-free products.

Recommendations

Multilateral cooperation between countries is an important mechanism to jointly promote the sustainable production, sourcing and trade of products. This can facilitate in developing consensus, sharing best practices and knowledge exchange, and aligning and supporting agendas. This cooperation can be further enhanced by working closely with other major producing and importing countries to jointly discuss and align agenda and policies, to develop a roadmap for zero-deforestation timber products.

China’s recently amended forest law shows promise for addressing the regulatory issues in the timber trade into China although potential loopholes should be addressed. This can serve as a good example for the timber trade and incorporating regulation in the industry, particularly in China’s imports.

Case Study 2 for Pulp & Paper - UPM (Finland)

With headquarters in Finland, UPM is one of the largest forest procurement companies in the world producing pulp and paper products, packaging and bio-chemicals. The company owns 50 million hectares of forest in Finland, Uruguay and the U.S. With forests as the most important resource, the company has established a strong policy for managing forests and resources in a sustainable way. **UPM Finland provides a good case study for the pulp and paper sector as a company with a strong commitment and clear targets for achieving sustainable production and procurement.**

Sustainability Policy

UPM has a commitment that all forests and plantations in the company's operations and supply chains are 100% certified, knows the origin of the wood with 100% traceability coverage, and wood sourcing and forestry has zero deforestation. The company has committed by 2030, to reduce carbon dioxide in the products including logistics, suppliers and producers.

Forest Certification

100% of UPM forests are FSC and PEFC certified, with products coming from sustainably managed forests. UPM has the goal to achieve 100% of their products certified by 2030. UPM uses certified chain of custody and controlled wood systems verified by independent external auditors to ensure wood is 100% responsibly sourced. UPM has its own Code of Conduct for its suppliers to fulfill the environmental and social requirements, in addition UPM conducts its own risk analysis, requiring suppliers to also complete a performance assessment report. UPM has achieved 100% certification and continues to report and update the information on the official UPM website.

In an effort to help build consumer awareness, UPM includes labels on the products so that consumers are informed that the products are in compliance to the certification criteria. UPM aims to have all products in the European and Chinese markets to include the certification label.

Sustainable Finance

In 2020, UPM initiated a sustainability-linked financing framework to its operations, borrowing EUR750 million from BNP Paribas as a five-year plan with interest rate reductions linked to performance indicators. The plan covers net-positive impact on forest biodiversity and reductions in CO2 emissions by 2030, with environmental targets for investing in impact assessments, monitoring systems, and land remediation activities.

Challenges

There is growing perception that certification standards have limitations and it is difficult to scale up certified volumes for larger markets such as China. While certification is one approach, it will be difficult to increase volumes of certified products for larger volumes. Certification standards can be one approach as a stepping stone for working towards full sustainability, but need to be applied with other methods that are more economically viable in the long term.

Recommendations

With growing membership of the FSC standard in China, FSC can continue to be an important multi-stakeholder platform for promoting sustainable products. The government can encourage the industry to be members and develop a roadmap for achieving sustainable deforestation-free products. This needs to be implemented in parallel to law enforcement so that companies and government are working together to address loop holes and gaps.

Chapter 5. Conclusions

To fully address global deforestation in the agri-commodity supply chains, a global consensus is needed, but also a general willingness by both the top-level leadership and society as a whole to help transform industry's behavior towards sustainable deforestation-free supply chains.

China and Europe are already well positioned for advancing the deforestation and land conversion free agendas in global value chains.

As the two largest importers of most agriculture commodities, but also with a strong bilateral cooperation on environment and climate change, China and the EU are in strong positions to lead global action for deforestation-free value chains. The European Union is already making concerted efforts to demand more sustainability for commodities, with the Green Deal. China has become a leader in environmental protection, with the concept of ecological civilization. In 2020, President Xi Jinping announced China's ambitious goal to be Carbon Neutral by 2060. At the same time, China is preparing to host the Convention on Biological Diversity (CBD) to develop the post-2020 global Biodiversity Framework. With forests playing a critical role for meeting these ambitious targets for climate change and biodiversity, these upcoming events provide opportunities for China and the EU to send a demand signal for deforestation-free supply chains.

A well-coordinated two-pronged approach is needed to implement adequate measures for addressing deforestation in global value chains in China, considering its unique political structure and economic conditions.

- 1) **Short-term: Sending a clear demand signal for deforestation-free commodities.** China's top level leadership should take advantage of opportunities such as COP15 to acknowledge and encourage joint efforts for tackling deforestation and biodiversity loss in global supply chains. COP15 can be a pivotal moment for President Xi to make a statement to acknowledge global deforestation and biodiversity loss in supply chains, as a demand signal from China to mobilize efforts from both global and China's domestic industry actors.
- 2) **Long-term: Develop a system to support the industry to enforce sustainable deforestation-free requirements.** While companies will need technical support and capacity building to transition to sustainable and deforestation-free supply chains in the long-term, the government can help to develop a system for monitoring the performance of deforestation risk. This can include developing a deforestation monitoring system to track risk. This can be compliment by a suppliers database. The government can develop a "white list" of suppliers that are performing well against deforestation-risk, and a "black list" of suppliers that face high deforestation risk. This method can help companies to identify which suppliers to source from. The government can slowly make a mandatory requirements of Chinese buyers to not source products from suppliers with high deforestation risk.

I. Role of Government

Promoting International Cooperation

Harmonization between producing countries and consumer countries is needed to achieve sustainability and address deforestation across the supply chains. Strong cooperation should help to make the transition to sustainable agricultural practices, promote sustainable consumption, with a view to addressing deforestation and avoid land conversion. Such collaboration should also help to address illegality, inappropriate labor practices and respect the rights of indigenous and local communities.

Monitoring the performance of China's suppliers against sustainability and deforestation-free targets of companies

The government can play a key role in developing a sound monitoring and control system for the whole industry. Monitoring is a key aspect for the effective implementation of deforestation and land conversion-free sourcing policies and the enforcement of compliance with forestry regulations. Some companies have developed their own systems, this can however be costly and complicated. The government can lead by organizing an overall monitoring system along the value chain in China to reduce costs and share the benefits. Good tools have already been developed for monitoring and tracking deforestation risks including Global Forest Watch Pro and Agro-ideal.

In addition to a deforestation monitoring system, the government can develop a suppliers database of suppliers to help Chinese buyers map suppliers that have high deforestation risk to zero deforestation risk. The government can develop a "white list" of suppliers that are performing well against deforestation-risk, and a "black list" of suppliers that face high deforestation risk. This method can help companies to identify

which suppliers to source from. The government can slowly make a mandatory requirements of Chinese buyers to not source products from suppliers with high deforestation risk.

Incentivizing Local Governments

Collective action through local multi-stakeholder engagement, show promise to both incentivize supply chain actors, and also achieve greater cooperation with producer regions to deliver regional impacts at a lower cost. Consumer market such as China and the EU can develop responsible sourcing policies to further incentivize production practices that are aiming at achieving sustainability. Cooperation between sub-national producing regions and provinces in China can speed up the implementation process and establish demonstration zones for implementing deforestation and land-conversion free pilots. This will be a positive market signal and reward producers implementing sustainability and deforestation-free strategies.

Raising Public Awareness

Awareness and understanding of deforestation issues within the broader sustainability concept are still relatively low in China. Considering the complexity of the issues, to fully address deforestation and land conversion issues requires a full transformation and behavioral change amongst both individual consumers, communities and organizations within the broader concept of China's "ecological civilization" and "green low-carbon lifestyle". The government needs to facilitate in education and awareness building activities to fully embed the concepts within society.

Supporting Businesses & Supply Chain Actors in Capacity Building Efforts

The government needs to support and facilitate in the capacity building efforts amongst the industry and companies, financial institutions and civil society to enable the development of sustainability and deforestation-free agendas, action plans and the implementation process.

Coordination & Support in Pilot Projects

While different companies and stakeholders along the supply chain are at different stages of the sustainability journey, this is made further difficult by the variations of each country and region. Recognizing the regional differences within the business environments, different regions may need to adapt tailor-made approaches to fit the local social, economic and political context. Pilot projects should be implemented to test what methods and approaches work best for the given region. Deforestation-free commitments can be incorporated into China's green cities initiative to incentivize and encourage local governments and enterprises to adapt and implement deforestation-free soft commodity practices within a city's overall green transition agenda.

II. Role of Businesses & Supply Chain Actors

From Commitment to Action

Making a commitment

With full support from top leadership, companies along the supply chain can start by making commitments to address deforestation in the supply chain to demonstrate concern and as a demand signal for sustainable deforestation-free products. Companies can make a commitment individually or jointly with other companies through industry initiatives, that include appropriate monitoring arrangements so that companies making commitments can be held accountable. Experience such as the Brazilian Cattle Agreement, demonstrate the power of public commitments to help reduce deforestation and land conversion.

Developing a Roadmap & Implementation Plan with time-bound goals and targets

Developing an implementation plan and roadmap can be done in parallel to developing the commitment, or completed after the commitment has been made. The implementation plan needs to be a practical step-by-step approach considering resource allocation, methodologies, and the types of tools and mechanisms that may be used. In addition, the team needs to set specific, measurable, achievable, realistic, and timely (SMART) targets and KPIs.

Capacity Building

With endorsement from top leadership, a focal person or ideally a department team needs to be established or elected to take responsibility for the implementation of the strategy. Notification and trainings of the deforestation-free strategy needs to be implemented within the company to inform and train all staff through capacity building workshops. In addition, the company needs to inform and disseminate the strategy to suppliers and clients in order to come into compliance with the strategy and related terms can be integrated into procurement agreements.

Tracking Performance & Reporting on Progress

Once companies and industries make public commitments to eliminate deforestation from commodity supply chains, it is important to track performance and share progress publicly, to be held accountable to corporate commitments. Otherwise, companies face reputational risks.

Promoting the use of multiple approaches to implementation sustainability across the supply chains

It has been proven that there is no one single solution for solving the issue of deforestation. Companies' experiences, through trial and error, demonstrate that blended approaches and usage of multiple tools and mechanisms can driver greater impact, and as tools further advance, companies are adapting a continuous improvement approach for meeting sustainability and deforestation-free targets.

Innovative Technology & Data Platforms

There is already a diverse array of innovative technology and data-driven platforms that provide cost-effective solutions for addressing traceability and transparency in the supply chain to both monitor deforestation, verify the sustainability of end-user products and also increase production efficiency. China can play a leading role with its mature e-commerce industry and experience in food safety traceability systems as model examples for addressing deforestation in the supply chains.

Enabling Market Access

Access to markets is a key driver for large scale agriculture production, and producers respond to markets demands. The EU has set strong demand signals for deforestation-free commodities through the Amsterdam Declaration, corporation commitments and rising consumer preferences for sustainable products, which led the industry to respond and adopt sustainable production practices. Mechanisms are needed for rewarding and incentivizing producers to implement sustainable and deforestation-free measures in production.

Considering the ambitions for addressing climate change and biodiversity by China, tackling deforestation in the soft commodity supply chains should become a prioritized issue for achieving these targets. China and the EU are in strong positions to build upon existing efforts, to coordinate and drive collective action for eliminating deforestation from supply chains. With the upcoming Convention on Biological Diversity (COP15) and the Framework Convention on Climate Change (COP26), these key events serve as opportunities for China and the EU to join hands and send demand signals for deforestation-free supply chains globally.

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