

Article

The Challenges of Palm Oil Sustainable Consumption and Production in China: An Institutional Theory Perspective

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Abstract: The emerging economies are the centrepieces in the sustainable consumption and production of palm oil (SCP). With the collaborative efforts of the European Union and some non-governmental organisations, producers are kept in the spotlight, and scrutiny has begun to sweep down the supply chain. Palm oil environmental liabilities are extended to the consuming countries and criticism of emerging economies is evident in the context of weak institutions and inadequate attention from interest groups. China, one of the major consumers of palm oil, encompasses almost every potential environmental performance issue at the end of the palm oil supply chain. Sherri Torjman's six-step approach has been used to parse the constraints and contributions of institutional coercive, mimetic and normative drivers to the three goals of the economic, social and environmental performance of palm oil SCP. This paper investigates the relevant institutions in China and compares in detail the content of SCP-related elements in these institutions through desktop research. An institutional theoretical perspective is provided to take a more comprehensive look at the SCP challenges facing the palm oil supply chain in China whereby this paper aims to shed light on the linkages between the challenges and institutional drivers.

Keywords: palm oil; sustainable consumption and production; emerging economies; institution; supply chain



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1. Introduction

The sustainability of food consumption and production has attracted widespread attention in recent decades. Palm oil is also deeply involved in this attention while being generally noted for its embedded North–South paradoxical appearance. Palm oil is an edible vegetable oil that is refined from the red pulp of the fruit of oil palm. As a highly saturated vegetable fat with strong global demand, it can be used in food, cosmetics and biofuels [1]. In 2020, Asia attracted the highest sales volume from palm oil exports, with a shipment volume of US\$ 27.8 billion, accounting for 85.6% of the global total. Indonesia and Malaysia, the two biggest palm oil exporters, accounted for 83.6% of global palm oil exports. Meanwhile, the top 10 countries accounted for 57.5% of global palm oil imports, among which emerging markets accounted for 41.5% as shown in Table 1 [2].

Table 1. Top 10 countries that exported/imported the highest value (US\$) worth of palm oil during 2020.

Exporter	Sum (US\$)	Share of Total	Importer	Sum (US\$)	Share of Total
Indonesia	17.4 billion	53.5%	India	5.1 billion	15.1%
Malaysia	9.8 billion	30.1%	China	4.1 billion	12.2%

Table 1. *Cont.*

Exporter	Sum (US\$)	Share of Total	Importer	Sum (US\$)	Share of Total
Netherlands	1 billion	3.2%	Pakistan	2.1 billion	6.2%
Papua New Guinea	481.2 million	1.5%	Netherlands	1.9 billion	5.5%
Guatemala	465.7 million	1.4%	Spain	1.4 billion	4.1%
Colombia	406.3 million	1.3%	Italy	1.2 billion	3.7%
Honduras	338.9 million	1%	United States	1.1 billion	3.2%
Germany	279.6 million	0.9%	Bangladesh	896.9 million	2.7%
Thailand	157.3 million	0.5%	Kenya	829.6 million	2.5%
Estonia	150.5 million	0.5%	Russia	793.2 million	2.3%

Source: World's Top Exports 2021.

Palm oil has received a lot of criticism, which has a lot to do with the disproportionate presence of emerging economies in international multilateral trade. This trade plays a decisive role in the performance of palm oil sustainability, both in terms of consumption and production. The mass production of palm oil relies on the destruction of rainforests, which leads to harmful greenhouse gas emissions to the atmosphere, as well as the loss of biodiversity, especially for orangutans and human rights issues [3]. The European Commission is about to exclude palm oil from its list of raw materials in 2030 to ensure bioenergy sustainability [4]. WWF and RSPO believe that excluding palm oil from the world's product supply chain is not the answer and have developed their own certification system to ensure clean cultivation and supply chain [1,5]. The exploration of environmental sustainability of any commodities cannot omit the huge market of China and palm oil is no exception. Palm oil is widely used in food processing and industrial applications in China which are called 'industrial monosodium glutamate'. The rigid demand makes China the second-largest importer and the third-largest consumer of palm oil in the world [6].

In China, palm oil is not marketed as a single food cooking oil but is incorporated as an ingredient in other cooking oils, such as rapeseed, peanut and soybean oils. Green development is gaining momentum in China, however, sustainable consumption and production (SCP) of vegetable oils, such as palm oil, is still weak. Deliberation of the institutions in China enables us to trace some of the critical institutional conditions, which are often deemed to be too macro in nature. Nevertheless, micro-level practices often lack coercive, mimetic and normative drivers. In addition, the Green Belt and Road Initiative (BRI), proposed in 2017, is the expression of China's new international way forward, demonstrating a willingness and determination to take more meaningful action in terms of being environmentally effective and achieving harmonious livelihoods at home and abroad.

Sustainable governance of supply chains is a current research hotspot, from transparency and traceability issues, such as product certification, to purchaser and consumer-driven issues, but little has been undertaken to study it from an institutional theory perspective. There is much criticism of the shortcomings of sustainable practices in China (emerging economies), arguing that they ignore the negative environmental and social impacts, especially in the context of transnational supply chains. This paper, therefore, expects to rely on the interrogative lens of institutional theory to explore the challenges of building on the three main objectives of palm oil SCP (decoupling environmental degradation, life cycle thinking, measuring leapfrogging and opportunities), to address the gaps of institutions in their infancy, absence of life cycle thinking and deficiencies of institutional (coercive, mimetic and normative) drivers.

2. Methods

In this study, China was used as a case study. The motivations behind choosing a case study can be multiple and have a unique place in evaluation research where 'how' and 'why' are the focal points of its inquiry [7]. China is an emerging economy running a market economy with Chinese characteristics, where government action is seen as a hand in regulating the economy, and in this context, the government's planning, reporting, decision-making and regulating institutions influence the take-off and acceleration of palm oil SCP in China.

As the second-largest economy in the world, the case study contributes to research that addresses similar issues in emerging economies such as China where institutions are vibrant in economic activity. This paper lays down a framework with palm oil sustainable performance improvement in China as the ultimate goal, with the coercive, mimetic and normative drivers of institutions as the bridge to this study, coupling the objectives of SCP and palm oil sustainability goals. Figure 1 gives the research framework for this paper to achieve the objectives above.

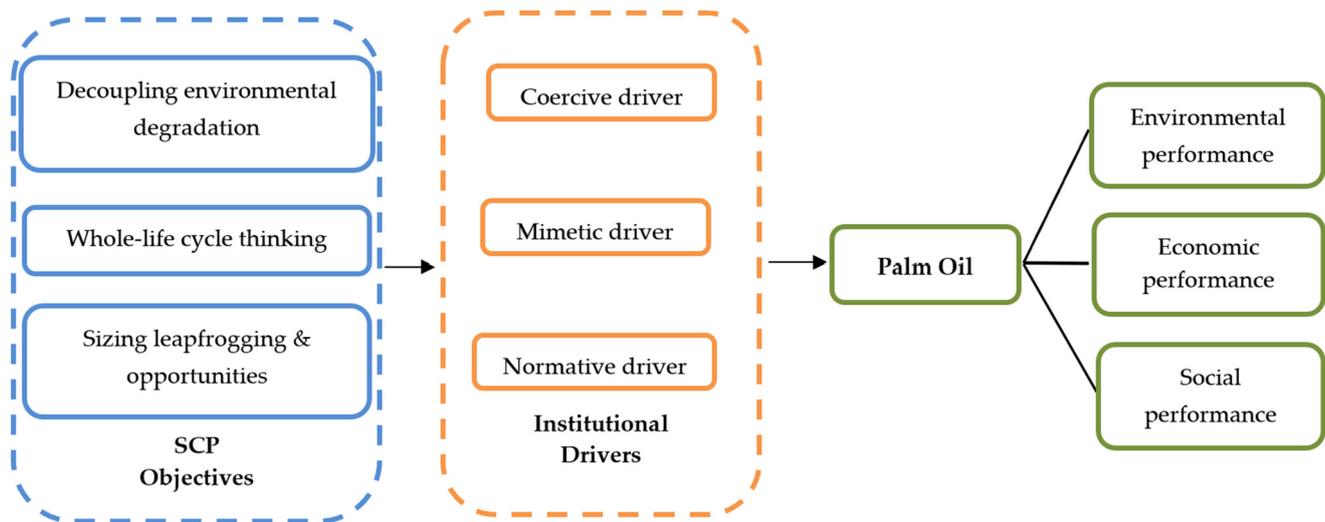


Figure 1. The structural relationships of the SCP objectives, institution drivers and performance of palm oil.

2.1. Data and Review

A structured and focused comparison of SCP-related institutions in China was undertaken whereby each institution was first structured and followed by a comparative analysis in the context of the palm oil sector. A previous literature search was conducted using SCP, palm oil, supply chain, China and institutions as keywords and it was found that little scholarly attention was given to both SCP and institutions. Then, the Chinese institutions were reviewed based on the keywords including green/sustainable development, SCP and supply chain. The scope covered policies, regulations, guidelines, opinions, circulars, plans and reports in which the sources were the government and corporate websites.

Our research into palm oil-related companies in China reveals that the palm oil supply chain is in a complex configuration in China, which is described in Figure 2 whereby three key nodes in the palm oil supply chain were identified: sourcing, retail and consumption. The imperative implication is that if these three nodes can be articulated, there is a holistic picture of the overall sustainability of the downstream palm oil supply chain. The literature and institutions retrieved were deliberately reviewed and analysed, with attention focused on their clipping of the three key nodes. The challenges in the three objectives, namely decoupling environmental degradation, lifecycle thinking, sizing leapfrogging and opportunities of palm oil SCP, and the role that institutions play in them were approached at the supply chain based on the key nodes of the China-side, which form the basis of this research.

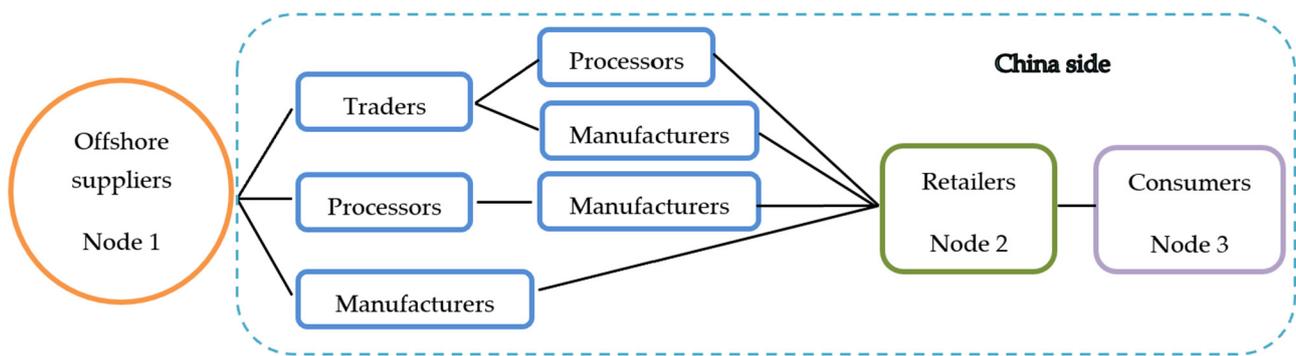


Figure 2. Palm oil supply chain in China side.

2.2. Institutional Theory

Alongside institutional theory, dynamic capability theory and stakeholder theory have often been applied in the analysis of SCP challenges, indicators and barriers, and this discussion extends to the food supply chain [8]. Dynamic capability theory suggests that new dynamics in government regulations and customer demand are something that the food industry needs to adapt to and follow quickly, which means reallocating resources to gain a more competitive advantage [9]. Dynamic capability theory focuses too much on the role of resources in a firm's activities and neglects the role of other factors. Stakeholder theory recognises the influence of each stakeholder on the other nodes in the supply chain, and in particular, the requirements and aspirations of key actors, constitute the motivation for the evolution of the entire supply chain [10], but the complex relationships between stakeholders create obstacles to the study of corporate behaviour.

The study of institutional theory has always stood side by side with the study of economic activity in which institutions define the rules of the economic game [11]. Institutional theory describes how intentional and unintentional choices lead to institutions that reflect the values, norms and ideologies of the organisational field [12]. By conforming to the desired features of the environment, behaviour gains legitimacy and seeks access to a broader range of resources [13].

Three types of isomorphic pressures of institutions: coercive, mimetic and normative are generally endorsed [14]. Coercive pressures come primarily from the government [15], mimetic pressures from the actors themselves [16] and normative pressures from industry standards and customers [17]. Pressures influence organisations to follow similar patterns of behaviour for legitimacy and conformity to prevailing social codes, including culture, social environment, oversight (including legal environment), tradition and history, and economic incentives [18].

Institutional theory can be a good explanation of why organisations are willing to engage in certain practices with no obvious benefit in return [19]. Jennings & Zandbergen perceive that external social [20], political and economic pressures influence organisations' strategies and decisions as they attempt to take legal measures or legitimise their practices from the perspective of other stakeholders. Institutions play a pivotal role in the flow of decoupling palm oil from environmental damage in China. Institutional theory is posited as a guideline for social behaviour in the form of accepted structures, patterns, rules, norms and practices that are influenced by other members of the collective network of actors [21,22]. Compliance with institutionalised regulations is seen as a means of gaining legitimacy, reducing uncertainty and increasing the comprehensibility of organisational actions and activities [19].

When an organisation's success can be mimicked, emulation practices by competitors in the industry can create pressure to mimic. Successful practices of leadership or flagship organisations are often considered exemplary and become the benchmarks for sector competition. Oliver [23] suggests linking institutions to the strategic management of the organisation, drawing variations in organisational feedback to institutional guidance.

The presence of China-based downstream players in the palm oil supply chain that are leaders, ranging from local players, such as China Oil & Foodstuffs Corporation (COFCO) to multinational players, such as Yihai Kerry is important in sizing the leapfrogging and opportunities for palm oil SCP in China.

When observing institutions from a vertical and horizontal perspective, institutions spanning organisations, geographies and even cultures, play a norm-driven role. Norms drive organisations to adhere to legitimacy concerns in organisational practice. This driver may be exerted by external stakeholders who have direct or indirect profit in organisations [24]. With goods, information and finance flowing through the supply chain, whole-life-cycle thinking can assist stakeholders to gain a comprehensive understanding of palm oil consumer and market requirements (norms) and their rising environmental expectations, understandings and expectations which constitute the core normative drivers for the implementation of SCP by Chinese palm oil stakeholders.

2.3. Approach

The first phase of the study focused on the analysis of the existing sustainable palm oil and SCP literature. Google Scholar and Scopus were used to search the literature based on the keywords, including SCP, palm oil, supply chain, institutional and China. The results of the literature analysis formed the initial shape of this research and defined the research structure of this paper applying institutional theory in this area in China.

The second phase included the collection of SCP-related institutions (plans, guidelines, documents and regulations) currently in force in China, including those promulgated at both central and local levels. The collection of local systems requires the use of local government information disclosure systems, which are subject to field visits.

The third phase involved interpreting and comparing the institutions collected in the second phase, as well as researching the results of their implementation, which unfortunately was only conducted through desktop study due to the COVID-19 pandemic.

The six-steps method proposed by the institutional process was used as a conceptual approach to parsing the constraints and facilitating the three dimensions of institutional coercive, mimetic and normative drivers on the three objectives of SCP and palm oil's economic, social and environmental performance (Figure 3).

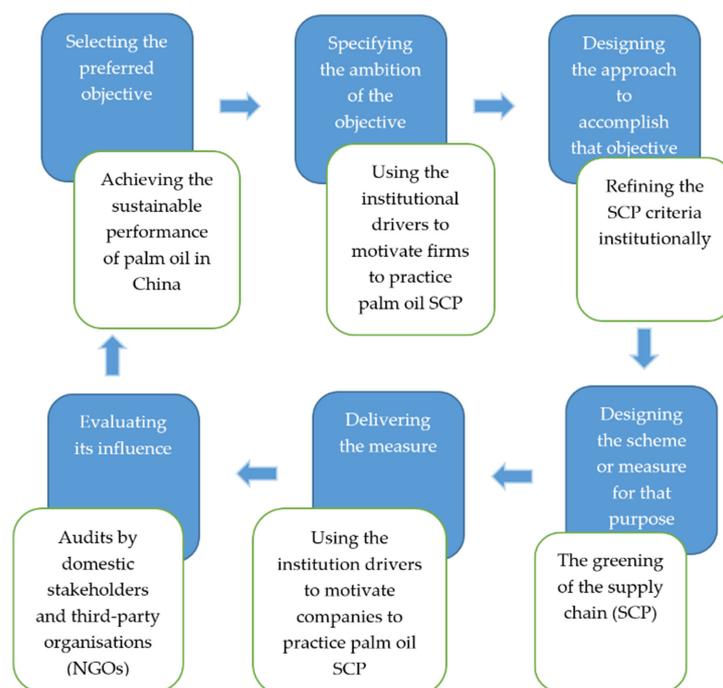


Figure 3. The six-steps method flow chart.

The six-steps method is [11]:

1. Selecting the preferred objective: achieving the sustainable performance of palm oil in China;
2. Specifying the ambition of the objective: using institutions to drive three SCP objectives while facilitating the take-off of sustainable palm oil in China;
3. Designing the approach to accomplish that objective: refining the SCP criteria institutionally;
4. Designing the scheme or measure for that purpose: the greening of the supply chain;
5. Delivering the measure: using the coercive, mimetic and normative drivers of the institution to motivate companies to practice palm oil SCP (increased transparency of the supply chain, traceability of palm oil, viable monitoring measures, green finance support, mandatory corporate (sustainability) responsibility reporting for public disclosure);
6. Evaluating its influence: audits by domestic stakeholders and third-party organisations (NGOs).

The scope of our study focused on institutional research, and although there was communication with companies to understand the structure of the palm oil supply chain, and some of the documentation collection required visits to local governments, field data remains the limitation of this paper.

3. Palm Oil and Sustainable Consumption and Production

3.1. *Decoupling Environmental Degradation from Growth in Palm Oil Consumption and Production*

The United Nations Environment Programme (UNEP) suggests that SCP aims to bring about a better quality of life in meeting basic needs while keeping the use of natural resources and toxic materials as well as the release of waste and pollutants over the life cycle of a service or product to a minimum, to avoid endangering the welfare needs of future generations [25]. Almost all the current mainstream phenomena in society such as urbanisation megatrends, lifestyle aspirations, resource constraints, pressure from stakeholders, natural resources and cross-cutting issues, interfere with SCP [26].

The practice in emerging economies continues to be critiqued for stumbling and is seen as the biggest obstacle to sustainable palm oil development [27]. The palm oil sector shares the desire to do more and better with less, increasing the net welfare gains from economic activity and reducing environmental degradation and pollution throughout the life cycle, while improving quality of life [28]. More refers to palm oil's contribution, while less refers to environmental degradation, pollution and biodiversity destruction. Roundtable on Sustainable Palm Oil (RSPO), the world's foremost not-for-profit palm oil non-governmental organisation (NGO), has established roundtables, buyers' scorecards, and certified and trademark licenses to reduce the negative impact of palm oil on the environment and society [3]. Indonesia and Malaysia have since established, in the context of the growing need for palm oil and sustainability concerns, their certified systems, in which these certifications are intended to assure customers that palm oil consumption and production will not compromise environmental or social goals [29]. Unfortunately, purchasers from emerging economies, who are downstream of the palm oil supply chain, are not fully integrated into these systems. In 2019, RSPO shows that RSPO-Certified Sustainable Palm Oil (CSPO) accounted for around 78% of the EU market and only 1.5–2% of the China market [30].

3.2. *Palm Oil Lifecycle Thinking*

Reflections on the whole life cycle of palm oil are a new development under SCP whereby literature [28,31,32] shows that the focus on palm oil is shifting from the plantation to the supply chain. The whole life cycle of palm oil is quite complex, both in terms of the value chain and the supply chain. While much of the efforts in previous research have been focused on the sustainability of palm oil plantations, the focus on the downstream of the

supply chain has come into attention in recent years [26,28,33–38], with emerging economies languishing in contrast to the ‘No Palm’ activities that have taken off in developed countries.

The CSPO has evolved from a process that has been focused on the plantation to processing in the producing countries and down to the supply chain and consumption. The RSPO has established two certification systems: first, Producer/Grower Certification or Principles & Criteria Certification, which ensures the sustainable production of palm oil; second, that system which focuses on the complete life cycle of palm oil trade, i.e., ensuring that palm oil circulating in the supply chain is produced by certified plantations [34]. Such a system is also followed by the ISPO in Indonesia and the MSPO in Malaysia.

Monitoring under the full life cycle has thrown the emerging economies downstream of the supply chain, where palm oil is a major site for processing industrial and food products, into the limelight. The demand for palm oil in China, which has almost the entire industrial chain, is always at a high level. Schouten and Glasbergen (2011) believe that it is very important to better understand the concerns and preferences of China’s stakeholders on sustainability and their roles in supporting sustainable production in the palm oil industry [33]. However, Kadarusman and Pramudya (2019) argue that in China, stakeholders are not interested in environmental sustainability issues, especially when purchasing palm oil, and that price still plays a major role in consumption and import demand.

3.3. Sizing Leapfrogging and Opportunities for Emerging Economies (China)

Indonesia and Malaysia’s dominant positions in the global palm oil industry contribute to massive profits and hence the palm oil sector is recognised by both countries as a vital catalyst in alleviating poverty, offering decent jobs and economic growth. The palm oil sector is one of the most important industries in Malaysia, contributing 38% of the country’s GDP [39]. In terms of agriculture, palm oil accounts for 1.5% to 2.5% of Indonesia’s GDP [40].

Emerging economies are the new engines of global economic development, but they are also important sources of greenhouse gas (GHG) emissions [41,42]. The concept, knowledge and culture of SCP are at an infant stage, and the passive acceptance of SCP by governments, enterprises and other organisations has shaped gaps and risks that have drawn the interest of all sides, and how to bridge gaps and turn risks into opportunities has become an urgent issue. Generally, consumption and production are intertwined and when it comes to palm oil sustainability, the focus here is on sustainable consumption, a far-reaching and all-encompassing impact may be realised because of the simple evolution of existing consumption patterns [43].

The rise of purchasers from emerging economies in the global palm oil market can be identified as a decisive factor in any attempt to make headway in the palm oil SCP. A closer appreciation of the preferences and concerns of purchasers and consumers from China for sustainable palm oil finally converges on the efficacy of the institutions in palm oil SCP, the thinking of which should be supply chain-wide, whereby the SCP is structured around three main objectives, namely decoupling environmental degradation, lifecycle thinking, and sizing leapfrogging and opportunities. Most supply chains are downstream dominating upstream, which is exactly what the palm oil sector is now. In the context where emerging economies are the dominant force, the key to SCP practice is in the assessment of downstream sustainability performance [44]. This paper brings together the challenges facing palm oil SCP in China from three institutional theoretical perspectives, i.e., coercive, mimetic and normative, to support policymakers, researchers and practitioners to stimulate policy development and project implementation as well as further research through the insights and recommendations of this paper.

4. Challenges for Palm Oil SCP

4.1. Institutions in Their Infancy

The Belt and Road Ecological and Environmental Cooperation Plan (2017) encompass two components: green trade and green supply chain (Table 2). Green trade enhances the eco-friendly import and export trade with the Belt and Road (B&R) partners, expanding the internal and external exchange of environmental products and services, and government procurement biased towards eco-labelled products. A green supply chain promotes the development of a green supply chain cooperation network from the perspective of the whole value chain of production, distribution and consumption to support green production, procurement and consumption [45]. A prosperous international exchange of green supply chains, a proper green supply chain standards certification and performance assessment, as well as an evaluation system among B&R partners, are needed.

Table 2. China SCP framework.

Objectives	Components
Studying and formulating policy measures and relevant standards and norms.	Promote the development of green trade.
Negotiating and implementing environmental and trade-related agreements.	Integrate environmental requirements into free trade agreements.
Improving the level of openness of the environmental protection industry.	Expand the import and export of green products and services.
Accelerating the research and development of green product evaluation standards.	Promote the construction of a green product standard system.
Strengthening international exchange and cooperation.	Promote Chinese green product standards and reduce green trade barriers.
Strengthening green supply chain management.	Promote green production, green procurement and green consumption.
Strengthening international cooperation and demonstration of green supply chains.	Promote the adoption of energy-saving and environmental protection measures upstream and downstream of the industry chain to reduce ecological and environmental impacts by market means.

BRI, China's main diplomatic initiative, has given more attention to green development in recent years, seeking to build sustainable development strategies among B&R partners [46]. In the BRI, green infrastructure is the main theme [47], and the agricultural sector is just a companion, but that does not imply less contribution to carbon reduction than any sector. Palm oil needs to be placed on the big picture in which palm oil is merely a very small part in the economic endeavours associated with BRI, but the Chinese government should realise that if palm oil is ignored, an embarrassing situation will be confronted in conversations in other domains [28], that environmental issues are integral and that the SCP should not be fragmented into a specific region. The Green BRI framework is an important manifesto for China and BRI partners in the international communities' struggle against climate change whereby the Green BRI mandate should be dedicated to assisting governments and enterprises to deliver on the landscape while balancing environmental, economic and social indicators [42].

The specification development of Green BRI is in its infancy. The performance of emerging economies (e.g., China), in terms of SCP of palm oil, is the consequence of a multi-factorial approach, in which institutions play a pivotal role. Table 3 reveals that appeals to desired behaviour through Green BRI are often vague and general, and such strategies suffer from limited effectiveness, including a lack of focus on areas associated with vegetable oils, where exhortatory or even advocacy statements are more effective in image-building. Strategy-specific documents typically contain statements of expected behaviour and, to a lesser extent, principles [25]. It remains to be seen how BRI will strike a

balance between environmental, economic and social values and translate them into a code of practice.

Table 3. Mapping of China SCP-related policies and regulations.

Policies and Regulations	Green Supply Chain	Green Production	Green Procurement	Green Consumption	Green Standard	Performance Appraisal	Green Finance
Guidance on Promoting Green Belt & Road	✓	✓	✓	✓	✓	✓	✓
The Belt & Road Ecological and Environmental Cooperation Plan	✓	✓	✓	✓	✓	✓	✓
Guidelines for Establishing the Green Financial System	✓	✓			✓	✓	✓
Integrated Reform Plan for Promoting Ecological Progress	✓	✓		✓	✓	✓	✓
Green Procurement Guidelines	✓	✓	✓	✓	✓	✓	
Environmental Protection Law	✓	✓	✓	✓	✓	✓	✓
Environmental Impact Assessment Law						✓	✓
Guidance on Strengthening Ecological Protection in Free Trade Pilot Zones to Promote High-Quality Development	✓	✓	✓	✓	✓	✓	✓
Guidance on Accelerating Establishment of Sound Economic System for Green, Low-Carbon and Circular Development	✓	✓	✓	✓	✓	✓	✓
14th Five Year Plan (2021–2025)		✓		✓		✓	✓

As a result, elaborating norms for the design and operation of Green BRI is difficult to identify, which obscures numerous facets of BRI in greening practice, and in particular, provides little detail on the implementation of such mechanisms [42]. In the context of greening, the supply chain has moved into the spotlight [29]. However, efforts on the border side have been uneven, the exact shape of the consensus has not yet been determined and the SCP macro- and micro-level regimes (Table 3) have not yet interacted. The formal and informal schemas of the sustainable palm oil institution can be replicated in China [3], and such schemes have been on the accounts of NGOs (e.g., WWF, RSPO). Unfortunately, the slow replication cannot match the rapid growth of the palm oil trade.

4.2. Absence of Lifecycle Thinking

The broad pressure for SCP in emerging economies (China) converges mainly at the national level and some of this pressure is transmitted to companies [28], while others are not, as in the case of vegetable oils, especially palm oil. The core of the shift to SCP patterns is the overall greening of the palm oil product supply chain [38]. The central point of the SCP should therefore be production, theoretically, if there are no unsustainable consumer goods on the market for sale, there is no consumption to talk about. China's domestic institutions have shown hot spots in green supply chains and green production in recent years (Tables 2 and 3), with extended tentacles in green procurement, green consumption and green finance. Local governments are encouraged to devise institutions and take measures to enhance green performance, and even establish accountability, linking it to the assessment of local officials [24,48].

If a situation is profitable in a given context, it will be perpetuated [28]. The efficacy of mimetic drivers is not significant in the palm oil sector based on the analysis of the background of the main Chinese importers that assists in explaining this finding. China is

almost entirely dependent on imports of palm oil, mainly from Indonesia and Malaysia [1]. From the angle of the supply chain, the SCP of palm oil in China can be better investigated as the palm oil supply chain in China mainly consists of traders, processors, manufacturers, retailers and consumers. Traders, processors and manufacturers are all likely to purchase palm oil directly from offshore suppliers. The cluster of major importers (traders, processors and manufacturers) of palm oil in China are Yihai Kerry, COFCO, Musim Mas, Noble Group, Shanghai Flow, Twin Wealth Group, Yizheng Fangshun, Tewood Group, Cargill, Sinar Mas, China Grain Reserves Corporation, CCFT group, Maoming Changsheng, FGV China Oil and so forth [49].

At the macro level, the attention of domestic institutions towards eco-efficiency factors in production and processing is mainly limited to pesticides, fertilisers, disinfectants and additives, energy losses and the environmental conditions of production. The weakness of environmental impact assessments of agricultural raw materials, especially imported products, has created a gap in sales of uncertified palm oil in the Chinese market. The micro-level institutions pay close attention to the moisture and volatile matter, insoluble, impurity, acid value and peroxide value of vegetable oils (palm oil), but an audit of the environmental and biodiversity hazards of vegetable oils (palm oil) in the country of origin has attracted external discontent. However, it has also been noted that foreign agricultural products can enter the Chinese market by obtaining certification of green or organic products. Administrative Measures for Organic Product Certification (2014) places importance on the eco-environment and biodiversity that informs the signing of a Memorandum of Understanding (MoU) with China. Palm oil that complies with Chinese Standards for Food Safety-Vegetable Oil (GB2716-2018) and -Palm Oil (GB15680-2009) can obtain the organic label. The supply chain's full lifecycle thinking is not reflected at the institutional level, and the result of institutional compartmentalisation leads to forced-driven involution.

4.3. Deficiencies in Institutional Drivers

How should NGOs, in emerging markets, where transparency is scarce, gaze at the palm oil supply chain and put the pressure back on local governments? A report released by China Chain Store & Franchise Association (CCFA) claims that safety and health are the top reasons for buying sustainable or green products and services. Environmental friendliness and good quality are the next two most popular reasons. The report is guided by the 10-year framework of programmes on SCP patterns, which is a global framework for developed and developing countries to move towards SCP [50]. The report states that over 70% of respondents are willing to pay 10% more for sustainable products or services than for unsustainable products or services [51]. The critical issue here is the definition of the sustainable or green spectrum, where cultural heritage and knowledge deficits assist in the emergence of misconceptions.

Research on sustainable palm oil has been on the rise in recent decades, particularly in Indonesia and Malaysia. Just because a system can survive or prosper in one regional ecology does not mean that it will necessarily prosper in another [14]. External NGOs, such as the WWF and RSPO, are facing a similar situation in China. In recent years, WWF works closely with RSPO in strengthening dialogues with Chinese NGOs, facilitating industry and consumer engagement to drive Chinese market transformation towards sustainability, to reduce the impacts of palm oil on the ecology of the producing countries. The China Sustainable Palm Oil Alliance (CSPOA), initiated by the CFNA, RSPO and WWF, is pledged to play a pivotal role in making sustainable palm oil standards the norm for future market activities and performance evaluation.

From an inherited, cognitive and cultural perspective, institutional effectiveness relies on the internalisation of patterns that tell conscious collective actions and unconscious individual behaviours how to proceed [21]. In the context where coercive, mimetic and normative drivers are ineffective, there is a distinct deficit in the motivation of organisations to practice palm oil SCP in the pursuit of profit instincts. Yihai Kerry, Sinar Mas and Musim

Mas have Indonesian origins; Twin Wealth Group and Noble Group are from Hong Kong; Cargill comes from the USA; FGV China Oil is tied to Malaysia; CCFT group originates from Singapore; COFCO, China Grain Reserves Corporation and Tewoo Group are state-owned enterprises; Maoming Changsheng, Yizheng Fangshun and Shanghai Flow are private enterprises (Figure 4). The overseas origin of the enterprise is not visually indicated by the advanced nature of the palm oil SCP. State-owned enterprises offer a stronger footprint in terms of sustainability due to their wide range of business areas. Privately-owned companies, on the other hand, are only labelled when they are faced with export transactions. Export and foreign purchaser restrictions are the two main drivers for Chinese companies to adopt high standards of environmental management and sustainable supply chain governance practices [41].

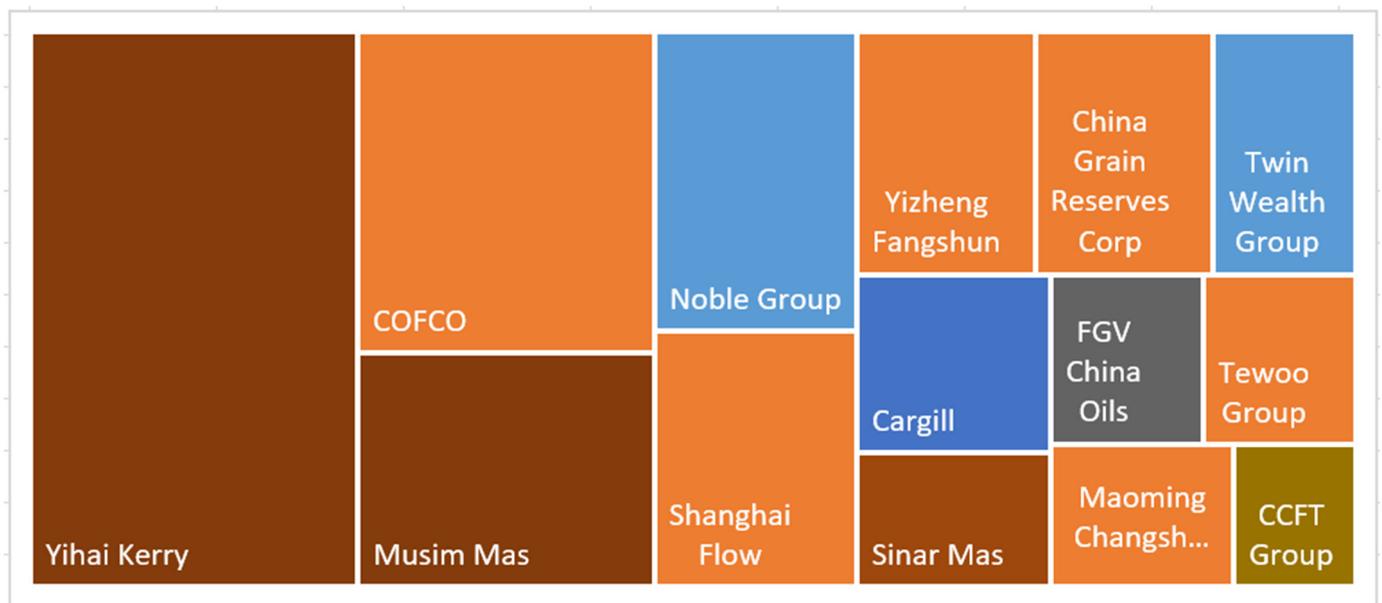


Figure 4. Market share of top 14 palm oil importers in China, 2018. (Source: Yihai Kerry, Shenzhen, China).

The supply chain is the centre of the stage. The stakeholder focal dialogue will be imprinted in the subsequent practices of the enterprises and flow along the palm oil supply chain to generate interactions at other nodes [38], where collaboration up-downstream of the supply chain offers the potential to avoid environmental degradation and biodiversity damage [36]. How to transform from a traditional palm oil supply chain to a green/sustainable supply chain and ensure transparency throughout the supply chain, especially for bulk commodity transactions, has become a major issue for the future [24]. Demand for palm oil in emerging markets also presents very complex circumstances, non-certified palm oil consumption is concentrated in small and medium-sized manufacturers and processors [19]. The rising costs associated with the transition, e.g., the cost of certification, which is borne purely by producers or consumers will undoubtedly hinder the achievement of palm oil sustainability goals, and the practice of full compensation through revenue streams or public incentives has yet to be experimented with [22].

The institution serves to discern the appropriateness or legality of behaviour [52], but its efficacy is not always positive when it comes to palm oil sustainability. Although palm oil accounts for about 50% of supermarket products [53] and is widely spread in food, cosmetics and toiletries, this palm oil is usually invisible to consumers due to the characteristics of the products. Palm oil is notorious among small groups of consumers in China who have heard of this product, not because of the damage to the environment and biodiversity, but because of trans fatty acid as a carcinogen. Consumer goods do not have

an entirely equal impact on the environment, and informed consumer choices can have an impact in terms of production decisions.

The significant biases in human cognition make a uniform norm of behavioural compliance necessary to avoid the irrational maximisation of self-interested utility. This approach to human motivation drives scholars to consider the interplay between rules, cultural system variations, human preferences and judgements [25]. In the context of evolving variation, preferences and cognition, institutional options may take different routes, with new options interacting with other existing institutions and subsystems to produce hindering or advanced outcomes. The co-development of institutions has received increased attention [54]. The bias against sustainable pressure of vegetable oils is trapped in palm oil. In virtue of its excellent oil production per hectare, palm oil has long established its position as the most cost-effective oilseed in the global market in which only 0.26 hectares of land are needed to produce one tonne of oil, while rapeseed, sunflower and soybean need 1.52 hectares, 2.0 hectares and 2.22 hectares, respectively [55]. Benign sustainability strategies should set rival products aside in a synchronised system, and sustainability standards for palm oil alternatives should be driven in parallel in emerging economies, where high environmental level standards for a single oil would be devastating to the sector.

5. Results and Discussion

Referring to Figure 2, the minimum level for achieving palm oil SCP are institutional statements addressing sustainability in general, while the maximum level for achieving palm oil SCP are institutional statements that explicitly refer to the application of lifecycle thinking. The coercive driver is linked to palm oil environmental performance whereby most of the environmental attributes are anchored in the product during the inception phase, which largely stems from the option of raw materials and the determination of product performance [56]. Compulsion narrows the organisational options for palm oil SCP practices due to the restricted span of environmental network structures and organisational capabilities [36]. The SCP is undoubtedly the best route to achieving environmental performance in palm oil. At this stage, the CSPO programme offers the possibility of SCP implementation, and China could put sufficient institutional pressure to drive an increase in the volume of CSPO sourcing in China through the sustainable governance of the downstream domestic palm oil supply chain.

China will implement fresh interventions to pursue better cross-border transaction policy systems by 2025, backed by globally competitive industrial clusters and leading enterprises [48]. The State Council Guidelines for Promoting Supply Chain Innovation and Application suggest improving the ability to collaborate and allocate resources in supply chains on a global scale, promoting deeper government green procurement, studying and developing guidelines for building green supply chains for enterprises in essential industries, establishing and improving systems for environmental credit evaluation and mandatory disclosure of information, and disclosing information on environmental violations throughout the supply chain following the legislation. The National Development and Reform Commission and the Ministry of Justice on accelerating the establishment of a green production and consumption regulation and policy system specify the construction tasks of 27 essential regulations in nine areas, including 'promoting green design', to be completed by 2022 at the latest. The Ministry of Ecological Environment and another ten departments have laid down the Guidelines on Promoting Green Consumption to encourage enterprises to implement green supply chain construction, carry out clean production audits and reduce the environmental impact of products throughout their life cycle.

Mimetic drivers play a role in assessing opportunities and gaps. The dominant factors, i.e., market strength, cost advantages and quality control are driven by simulation in emerging economies (China) that were unable to ignite the economic dynamism of palm oil SCP practices. The decision to mimic leadership or flagship in palm oil SCP practices can directly or indirectly influence the economic and environmental performance of the simulator. The mimetic driver's contribution stems from multi-stakeholder collaboration, and if the

territory of China is only a node in the palm oil supply chain, embedding the international SCP model becomes necessary. Furthermore, the collaboration of internal and external stakeholders improves the integration of China's stakeholders into the mainstream. The combined efforts of internal and external NGOs have resulted in a proliferation of alliances and forums for environmental and sustainable development agendas. Internal NGOs act as vassals to the government, such as the China Chamber of Commerce of Foodstuffs and Native Produce (CFNA), providing guidance and support for policy implementation and pilot measures. External NGOs are proactive and practical, e.g., WWF and RSPO, providing mentoring and evaluation for domestic organisations.

The Ministry of Industry and Information Technology intends to make the Green Manufacturing Standard System Construction Guide support enterprises in developing green products, implementing green design, improving product energy efficiency and low-carbon levels, and guiding green production and green consumption. It seeks to support the development of green products (through green product design, reduction, non-hazardous, product energy efficiency and water efficiency utilisation, clean energy resource utilisation and life cycle), green factories (through green factory planning, resource conservation, energy conservation, clean production, waste utilisation, greenhouse gases and pollutant emissions), green enterprises (through green enterprise creation, resource structure, energy structure, product structure, output efficiency, environmental and social responsibility), green supply chain (through green procurement, green marketing, green logistics and warehousing, recycling and comprehensive use and green supply chain construction), green evaluation and services (through green evaluation, labelling and reporting and green services) and other national standards to enhance China's SCP system. Benefiting from an improved policy framework for cross-border transactions with market-based purchasing, the various segments of the palm oil supply chain should be integrated to enhance resource interconnectivity and information sharing.

The normative driver is embedded in the whole lifecycle of palm oil. CSPO, green supply chain and other norms have been promoted by stakeholders to erode organisational decisions, but the ranking of these norms among the various influential norms in the current sequence of palm oil practices in China is bothersome. The context dominated by external trade voluntary institutions weakens the coercive, mimetic and normative drivers' efficacy and the consistency assessment instruments for SCP practices in vegetable oils and their sub-sectors are inadequate.

Consumer confusion about palm oil, cultural variations and knowledge deficits constrain the progress of emerging economies (China) in sustainable development. Unsustainable behaviour that harms environmental, economic and social performance is contrary to countries' commitments and is associated with constant external pressure and recriminations. The specificity of the palm oil SCP is reflected in the sense that it does not reduce the cost of using palm oil in consuming countries, such as reductions in energy consumption, nor is it subject to the rigid requirements of domestic environmental regulations, such as wastewater and GHG emission standards. The lack of both economic and institutional drivers leads the insensitivity to palm oil SCP to be intuitively reflected in the palm oil supply chain.

In pursuit of the goals of the palm oil SCP, appropriate mechanisms need to be developed among institutions. Mechanisms to underpin palm oil SCP practice are either direct, through incentives, or indirect, through disincentives. Institutions are the cornerstone of palm oil SCP. The interaction of institutional and other (economic, educational, informational, etc.) instruments paves the way for palm oil SCP implementation, performance and evaluation [57]. The obstacle to sustainable palm oil is not that the institution is outdated or has a loophole, but that the concept of sustainable palm oil is still in its first step of expansion in this area, especially in emerging economies.

6. Conclusions

Concerns remain as to how the macro flexible guiding principles will be detailed in specific projects, especially along the B&R route where most countries are emerging economies with insufficient experience in green practices. These concerns are somewhat mitigated by the positive interaction between governments, international organisations and NGOs. The effectiveness of the Green BRI activity rules in the economic and social exchange of B&R partners is expected, and the monitoring system at the government level, or carbon tax, is one of the main drivers behind the implementation of green supply chains by enterprises [57].

Palm oil SCP can drive sustainable production and lead to structural changes in this industrial sector, thus triggering the formation of a virtuous circle and encouraging the continued growth of sustainable consumption [58]. In the short term, the cost burden increases, but in the long term, the SCP will present new business opportunities between the palm oil sector and adjacent sectors.

This paper has carefully reviewed the literature published in this area and found that it is developing into a new focus area. We also focused on combing through the institutions (policies, regulations, documents, guidance, etc.) promulgated in China, covering both the central and local scales, and found that overly macroscopic institutions and a shift in focus have allowed agricultural products (palm oil) to hide in the blind spot of governance. This study is novel in that institutional theory was used to look at the gaps in Chinese SCP practice in the palm oil supply chain and used this to draw out the challenges faced, in which a similar study was not found.

Certainly, the limitations of this study are evident as the Chinese documents examined are mostly in Chinese form and might have discrepancies when they are translated into English, due to differences in the understanding of the subject matter. In addition, this study is primarily a desktop study, and the collection of provincial government literature and actual regional research was limited by the COVID-19 pandemic to a few unaffected provinces, mainly concentrated in the south-central region. This study, by focusing on the identification of gaps and challenges, does not offer solutions, which gives room for future researchers to continue exploring options for achieving SCP in palm oil. Palm oil and similar agricultural products, as they relate to food security and national livelihoods, also provide more scope for researchers on how to direct the perspective of consuming countries from the goods themselves that flow along the supply chain to the negative environmental and social impacts of the goods.

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