




Sustainable pathways in Indonesia's palm oil industry through historical institutionalism

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ABSTRACT

This study investigates the evolution of sustainable palm oil policies in Indonesia through a historical institutionalism framework, tracing the influence of both domestic institutional developments and global dynamics on the sustainability trajectory of the palm oil sector, focusing on the Indonesian Sustainable Palm Oil (ISPO) initiative. Employing longitudinal content analysis, this research examines institutional frameworks from 1957 to 2022, identifying patterns of institutional continuity and change, as well as how path dependency and critical junctures have shaped policy development. Utilizing a combination of primary and secondary data—including thirteen interviews, seven archived interview videos, four focus group discussions, and 143 document archives—this analysis thematically codes qualitative data to uncover key themes related to institutional change and sustainability pathways. Findings reveal that the institutionalization of sustainable palm oil in Indonesia is shaped by both exogenous and endogenous dynamics; international pressures and the emergence of global sustainability networks have prompted shifts in national institutional arrangements, while domestic political forces and commitments to reduce greenhouse gas emissions have facilitated gradual institutional transformations. The ISPO certification embodies these changes, reflecting a synthesis of existing regulations and illustrating the path-dependent nature of sustainability policies. This research contributes to the literature on institutional change and offers insights for policymakers aiming to design effective strategies that stimulate sustainable practices in the palm oil industry.

1. Introduction

Since the 1987 OECD report and the influential Brundtland definition, which emphasizes the intergenerational aspect of sustainable development—where both present and future generations meet their needs [40,65]—sustainability has increasingly been shaped by institutional arrangements within national policymaking across various countries [8,11,19]. The integration of a global concept into national policy positions sustainability as an important case study in the ongoing debate about how and when international institutions influence domestic policy and drive changes in governance [47]. When analyzing this process, it is essential to consider whether changes in the domestic domain occur abruptly or incrementally, and to determine whether these changes are driven by exogenous drives or emerge from endogenous dynamics.

This study focuses on shifts in Indonesia's palm oil industry towards sustainability, examining how these changes relate to both global and national governance. It investigates the establishment of institutions for sustainable palm oil, tracing back to the development of the nucleus-plasma smallholders' plan in 1970, which aimed to enhance smallholder livelihoods. As the sustainability agenda began to take root in the Indonesian palm oil sector, the rising global demand for palm oil spurred rapid expansion of large-scale, intensive corporate plantations, leading to significant environmental and social impacts [9,27,38,51,54,60]. These developments raised serious concerns about the sustainability of palm oil production.

In response, the Roundtable on Sustainable Palm Oil (RSPO) was established on April 8, 2004, as a collaborative effort between international environmental NGOs and transnational corporate interests [49]. Furthermore, in 2011, the Indonesian Ministry of Agriculture introduced

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The Indonesian Sustainable Palm Oil (ISPO) policy which requires all palm oil plantation companies in Indonesia to obtain sustainability certification. This market-based certification approach contrasts with the traditional command-and-control methods that underpin other environmental and social regulations in the palm oil industry, which are now incorporated into the ISPO framework.

This study aims to investigate the evolution of sustainable palm oil policies in Indonesia using a historical institutionalism framework. It seeks to trace how both domestic institutional developments and global influences have shaped Indonesia's sustainability trajectory in the palm oil sector, with a specific focus on the ISPO initiative. We hypothesize that international sustainability institutions have incrementally penetrated the palm oil industry over an extended period, gradually prompting national institutional changes that led to the establishment of ISPO. By employing a historical institutionalism approach, we intend to explore how international institutions have influenced the growth of national institutions managing sustainable palm oil production in Indonesia.

In particular, we seek evidence of contingency in path dependence during the policy evolution process and will explore the mechanisms of institutional change. Historical institutionalism reveals that path dependence and critical junctures occur when the consequences of historical events or decisions reinforce trends in society, policies, and institutional changes [13,17,37,48,56]. In this examination, we retrospectively explore the historical background of sustainable palm oil governance, tracing its evolution from the initiation to the execution of ISPO. We aim to clarify a range of possible explanations for the formation of institutional arrangements by examining the broader components of historical institutionalism involved in this process. This approach contrasts with the functionalist view that institutions develop solely to fulfill specific functions and produce intended outcomes [43].

We conjecture various processes unfold over time, either within the domestic sphere or at the intersection of domestic and international contexts [61]. Historical institutions serve as a lens for understanding the significance of diverse domestic institutions in various international relations settings, examining how, why, and which institutions are crucial (Farrell & Newman, 2010; [28]). Moreover, this research focuses on analyzing the development of domestic institutions and understanding how global institutional dynamics have shaped the formation of sustainable palm oil institutions in Indonesia. The findings of this study provide insights into the institutional dynamics that govern sustainable practices in the palm oil industry. It also highlights the intersection between domestic and international governance in influencing the development of these policies, making it useful for policymakers to design effective strategies to stimulate sustainable practices.

2. Conceptual framework

2.1. Historical institutionalism

Historical institutionalism (HI) examines the development of rule structures over time, resulting from a series of events rather than specific decisions made at a particular moment. Across various disciplines, historical analysis is frequently used to comprehend various social, political, and economic occurrences, as well as to assess the importance of institutions [15,21,26,56]. Three key characteristics distinguish the historical institutionalist perspective in modern political science [44]. Firstly, historical institutionalists concentrate on substantive agendas. Secondly, they analyse specific sequences and transformation processes. Thirdly, rather than analysing individual institutions in isolation, HI academics concentrate on broad circumstances that encompass the impact of institutions and processes.

HI provides a perspective that captures processes beyond short-term viewpoints, underscoring the inert nature of institutions and their resistance to change [44]. Scholars have applied HI to the context of sustainability. HI has been seen as a valuable approach to analyzing institutional dynamics, for example, in the politics transitions to

renewable energy [35]. In Korea, HI was applied to analyze policy shifts for sustainability in the education sector. It shows that the open schooling policy has been developed as a result of combined political, economic, social, and technological changes, aiming to provide educational opportunities for those in need. The case study demonstrates that the policy has evolved over time while continuing to adapt to shifting demands [30].

2.2. Path dependence

Path dependence, a concept concerned with self-reinforcing mechanisms or positive feedback loops within a governance framework [34], is a central theme in historical institutionalism. According to Pierson (2000b, p. 251), path dependence encompasses specific timing and sequencing patterns. A vast range of results is possible, even when starting from the same conditions, and "minor" or contingent occurrences might have significant consequences. Furthermore, once a particular path of action is started, it may be nearly unattainable to change. As a consequence, the evolution of politics tends to be characterized by critical moments or junctures. Recognizing path dependence suggests that various alternatives may arise from institutional change. Therefore, rather than relying on relative efficiency as a rationale, history must be explored. [43,57].

Path dependence is defined by Thelen and Conran (2016) as a theory that explains institutional stability instead of change. But rather than concentrating only on the processes that result in institutional persistence within particular arrangements, it is equally intriguing to explore the circumstances and mechanisms that drive institutional change. Historical institutionalists have traditionally explained change through the concept of punctuated equilibrium, where path dependence is disrupted by unpredictable events known as critical junctures. These junctures result in new pathways as public policy shifts to establish new goals, scopes, programs, and methods. Path dependence emphasizes that while institutions adapt to changing environmental conditions and evolving political strategies, these adaptations are constrained by the developmental pathways established in the past.

In Indonesia, historical institutionalism (HI) and path dependence have been applied to analyze the challenges in transitioning marine and coastal governance towards more sustainable practices. Despite efforts over the past two decades to reform Indonesia's marine governance, progress has been limited. This is largely due to the resilience of the existing governance system, which is deeply rooted in historical ideas, entrenched interests, and established institutions, making it resistant to change [59].

2.3. Exogenous, endogenous, and gradual institutional change

Streck and Thelen [58] argue that approaches to institutional change, which sharply distinguish between stable institutions and transformative ones while attributing all significant changes to external factors, are overly restrictive. They suggest that a series of minor, seemingly negligible changes can culminate in a major transformation. Crucially, a comparison is made between the two categories of change processes: gradual and abrupt; and continuous and discontinuous in terms of the consequences involved. For instance, during the oil crisis, actors strategically responded to challenges as a result of the shock. However, while they discussed possible actions, they largely adhered to the same institutional rules as before the crisis. Shocks are often viewed as windows of opportunity to modify institutions, with the critical conditions of the shocks shaping actors' strategic decisions [29].

A further distinction is made between the causes of change—whether they are external (exogenous) or internal (endogenous). Exogenous change occurs when institutions evolve due to external interactions, such as with other institutions or significant societal shifts (e.g., mass migration or secularization). In this case, the ultimate cause of change is attributed to these external variables. Endogenous change, by contrast,

results from dynamic internal processes within institutions [32].

Different kinds of endogenous change exist, such as exhaustion, drift, conversion, layering, displacement, and so on [12,36]. According to Capoccia [12], displacement is the process of replacing one set of rules with another. This process is frequently sparked by events like revolutions, colonization, regime changes, and the transition from socialism to market economies.

Layering involves the addition of new rules without eliminating the old ones. Institutional drift occurs when changes in policy contexts alter the effects of policies, often subtly, beneath the apparent stability of institutions [58,63]. Conversion describes a situation in which institutions remain unchanged in form but are reinterpreted and redirected toward new goals and functions. Lastly, exhaustion leads to institutional dissolution, though this process is gradual rather than abrupt, distinguishing it from the other forms of change. Understanding these types of change provides valuable insights for actors seeking to make institutions more beneficial to society. It helps identify strategies for adapting and reshaping institutions to better meet contemporary needs, both for the institutions themselves and the broader societal context.

3. Method

This study adopts a longitudinal content analysis and applies a historical institutionalism lens to investigate the evolution of sustainable palm oil policies in Indonesia from 1957 to 2022. The research design traces institutional developments over time, identifies sequences and types of institutional change, and examines how path dependency and critical junctures have influenced the palm oil industry's sustainability path.

3.1. Data

This study utilizes a combination of primary and secondary data. The analysis synthesizes thirteen direct interviews, seven archived interview videos, four focus group discussions (FGDs), and 143 document archives (see Table 1). The selection of interviews, FGDs, and document archives was guided by the aim of capturing multi-dimensional perspectives on the evolution of the palm oil industry, particularly concerning its sustainability pathways. Furthermore, the data emphasize both global and national influences to reflect the dynamic interplay between the palm oil sector and global sustainability goals.

This study analyzed policy documents from various sectors related to environmental and social policies for the Indonesian palm oil industry, published between 1957 and 2022. Several criteria guided the selection of secondary data. Key legal documents, policy papers, and government regulations that shaped the industry during this period were chosen. Additionally, publications from NGOs and industry sources were analyzed to trace institutional dynamics in adopting sustainable

Table 1
Data specification.

Data Type	Quantity	Details
Direct Interviews	12	Academics, District Government, Media, RSPO, IPOB, GAPKI, APROBI, FP2SB, Large private company, Ministry of Agriculture, ISPO, NGO
Interview Archives	7	Academics, Advisor of Ministry of Agriculture, APROBI, Apkasindo, IPOB, RSPO, Smallholders.
Focus Group Discussions	4	The FGDs involve at least 15 critical stakeholders as main speakers (Academics, advisors of the Ministry of Agriculture, NGOs, GAPKI, Palm oil companies, Ministry of Agriculture and Ministry of Industry, European Palm Oil Alliance, International NGOs, and international academics).
Document Archives	143	International Policies (23), National Policies (92), Technical Reports (7), News (21)

practices within the sector. International policy sources were gathered through online research and the integration of international agreements into national policies. Media coverage, both historical and recent, of pivotal moments—such as policy changes, international agreements, environmental concerns, and trade dynamics impacting Indonesia's palm oil policies—was also selected.

Primary data were collected through semi-structured interviews with stakeholders to understand the history and key issues surrounding the initiation of ISPO and the governance of Indonesia's palm oil industry. These interviews, conducted between 2013 and 2021, framed institutional development and explored specific aspects of institutional change and path dependency. Interviewees were selected based on their direct involvement in the evolution of the palm oil industry and the creation and implementation of ISPO and RSPO, with priority given to those who could offer insights on how past decisions have shaped current practices. Additionally, international stakeholders from organizations like the RSPO and international NGOs were interviewed.

Further data were gathered from national and international multi-stakeholder focus group discussions (FGDs) and archived interviews with palm oil stakeholders. The FGDs were selected based on their focus on the sustainability of palm oil, addressing regulatory dynamics, environmental and social impacts, and trade and economic issues. Numerous parties from both local and international levels participated in these discussions, including representatives from the business sector, NGOs, government agencies, and civil society.

3.2. Analysis

The qualitative data collected from interviews, focus groups, and document archives were thematically coded to uncover patterns and key themes related to institutional change, sustainability pathways in the palm oil sector, and the interactions among global, national, and local levels. This study adopts a longitudinal content analysis and applies a historical institutionalism lens to examine the evolution of institutional frameworks governing the palm oil industry in Indonesia, as well as global sustainability standards, from 1957 to 2021. The research design traces institutional developments over time, identifies patterns and types of institutional continuity and change, and explores how path dependency and critical junctures have influenced the sustainability path of Indonesia's palm oil sector.

The data analysis focused on three key aspects: (1) **Institutional path dependence**, tracing how initial policy decisions have shaped recent sustainability efforts; (2) **Critical national and international junctures**, identifying shifts in policy at both international and national levels; and (3) **Types of change**, distinguishing between endogenous and transformational changes versus exogenous changes arising from abrupt events. This analysis aims to reveal the factors triggering these changes and the mechanisms involved, thereby contributing to the literature on institutional change.

4. Results

4.1. Evolution of institutional frameworks in the Indonesian palm oil sector

The present section focuses on how domestic institutions evolved historically within the palm oil sector in Indonesia and how those institutions interact with international institutions. The analysis uncovers four pivotal turning points in the lengthy process of establishing a sustainable vision in the country's palm oil sector: (1) The introduction of the NES (nucleus-plasma smallholder's estate) scheme, serving as a precursor to both the developing environmental concerns and the notion of sustainability (1957–1986); (2) The increasing palm oil cultivation and persistent sustainability concerns (1986–2004); (3) Transnational efforts to incorporate sustainability concepts into palm oil production (2004–2011); and (4) The implementation of the Indonesian Sustainable

Palm Oil (ISPO) policy from 2011 onwards. Fig. 1 illustrates a schematic representation of Indonesia's historical institutional development in the direction of sustainable palm oil industry.

4.1.1. Phase one: the nucleus-plasma smallholder estate scheme) and the rise of environmental consciousness (1957–1986)

Four oil palm seedlings were originally brought to the botanical gardens in Buitenzorg, now known as Bogor, in West Java, Indonesia, in 1848 from Africa. According to the Dutch Indies Agrarian Law of 1870, all land that was not regularly farmed was referred to as "wasteland". Then, on 75-year renewable leases with low rent, Dutch developers have been given access to as much land as they require [16]. In 1911, the first large Indonesian oil palm plantation was established by Dutch entrepreneurs. Following that, the oil palm plantation grew to almost 200,000 acres [14]

President Sukarno instituted "Guided Democracy" after Indonesia's independence in 1945. The Guided Democracy introduced a political system that was antagonistic to foreign investment and credit [16]. The pattern of property ownership did not change, nonetheless. Up until 1957, when the New State Plantation Company was founded and given control of all Dutch-owned plantations, individual plantations were still being established. The 'National Agrarian Law' (Act No 5, 1960) replaced the 1870's 'Colonial Agrarian Law', which contained the fundamental rules governing agrarian affairs including land rights, land tenure, and land use planning. To advocate for the State's land reform agenda, Agrarian organizations in Indonesia (e.g. Barisan Tani Indonesia) were intimately allied with political parties, which culminated in the introduction of this important agrarian law [42]

The government's implementation of the "nucleus-plasma" smallholder estate (NES) strategy in the 1980s led to a rise in the number and size of smallholder estates in the palm oil business. The "nucleus" refers to the largest state-owned plantation enterprises. Smallholders were referred to as "plasma" farmers in comparison. These nucleus estates

were tasked with creating and maintaining the plasma farmer plantations that would be created as part of the partnership initiative, as well as assisting in the training and improvement of plasma farmers' skills. The new order governmental era/presidency in 1966 produced the General Guidelines of State Policy (GBHN) along with the Three Principles of Development (Trilogi Pembangunan), a roadmap for national strategic development policy which served as the legal foundation for the establishment of NES. The NES program lasted from NES I to NES VII and was supported by the World Bank ([41], p. 34). Additionally, from 1969 to 1978, the government offered financial policies to seven sizable private and public estates to strengthen the role of nucleus estates ([5], p. 64; [41]).

The UN Summit on the Human Environment, usually known as the Stockholm Conference, was convened as the first big UN summit on global environmental concerns from June 5–16, 1972. Indonesia participated in the meeting and signed the environmental agreements at the international level including environmental pollution, conservation of natural ecosystems, and international cooperation in addressing those issues. The Stockholm summit signalled a turning point in Indonesia's and the world's increasing environmental consciousness. The conference led to the creation of an interdepartmental committee focused on environmental and sustainability issues, mandated by Presidential Instruction No 16/1972. The second 5-year development plan's environmental development program was successfully created by this group (REPELITA II).

In 1978, the Indonesian President established a new ministerial department focused on development and environmental monitoring (Men-PPLH) to fulfil environmental obligations outlined in the development plan. The key tasks included building a synergy of environmental issues within the development and reconciling environmental management at multiple national and local authorities. The term "sustainable development" was incorporated into international policy through the introduction of the World Conservation Strategy in 1980

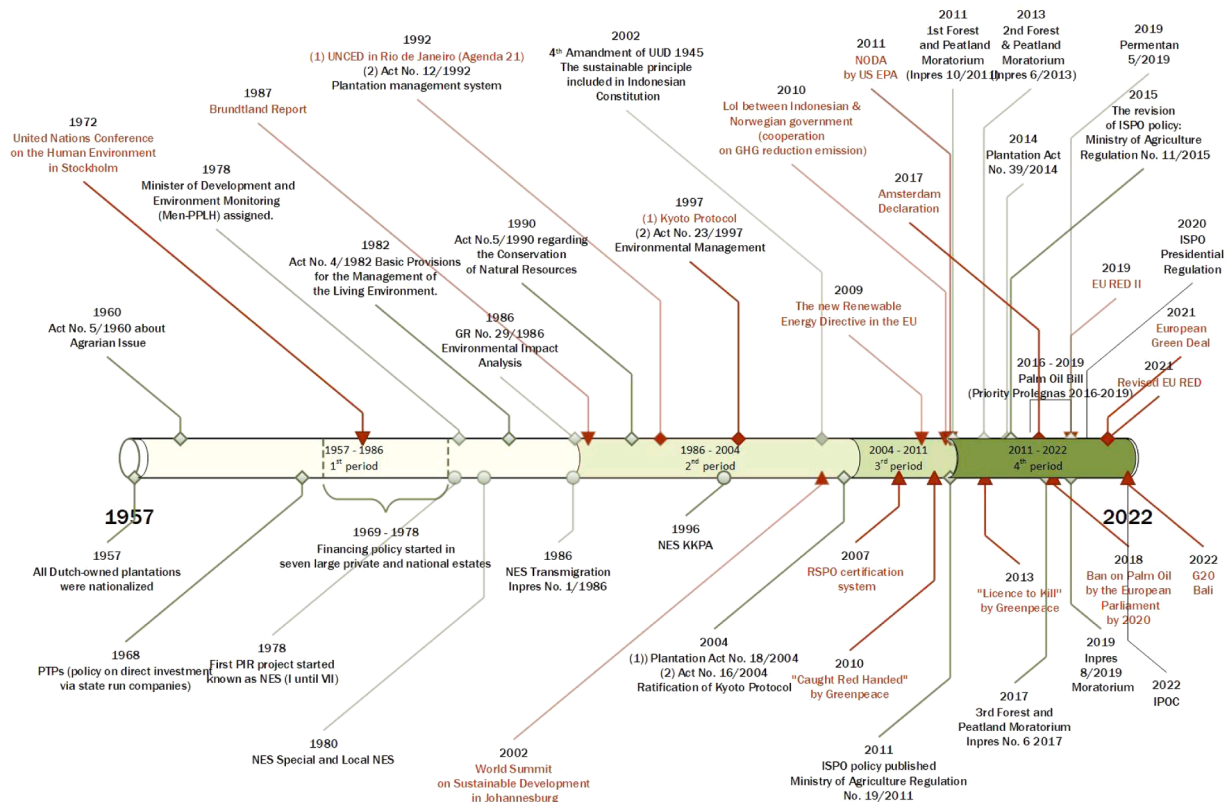


Fig. 1. The evolution of historical institutions in Indonesia towards sustainable palm oil. *Red coloured notes = international institution; black coloured notes = international institution.

[2]. On a national level, the Indonesian government passed the PP No 29/1986 Act, which first legalized the Environmental Impact Assessment (EIA) legislation, and the UU No 4/1982 Act, which included measures for the management of the living environment.

As a prerequisite for the release of funds, international organizations, particularly the World Bank, requested a thorough investigation of environmental and socioeconomic impacts as a result of growing environmental consciousness during this phase. The NES program included participants from the local community and forest encroachers. It also provided a structure for the palm oil plantation procedure, including analysing the viability of economic, ecological, and social variables ([6], p. 23).

4.1.2. Phase two: palm oil expansion and sustainability concerns emergence (1984–2004)"

The continuing expansion of NES programs (Special NES, Local NES, and NES transmigration actions (PIR Trans) in 12 provinces has increased to around 566,000 hectares of palm oil plantations, with 30 % nucleus estates and 70 % smallholders [41]. The success of NES programs has attracted more investors, smallholders, and bankers to be involved in this program [5,67]. Through the various NES programs, the oil palm industry in Indonesia expanded nearly twentyfold rise over two decades from 295,000 hectares in the 1980s to over 4 million hectares in 2000. As shown in Fig. 2, smallholder estates grew the most, 200 times, from 6000 hectares to 1,1 million hectares [41].

Internationally, the publication of "Our Common Future," also known as the Brundtland Report in 1984 by the World Commission on Environment and Development (WCED) of the UN [65], became a significant milestone. The worldwide community then called several conferences to explore some of the most important issues facing the world. "Agenda 21" was adopted at the Rio de Janeiro United Nations Conference on Environmental Development (UNCED) in 1992. It promoted the integration of environmental and development issues, as well as the environment's role in supplying basic needs, raising living standards, and protecting and managing ecosystems. The UN Convention to Combat Desertification, the Framework Convention on Climate Change, and the Convention on Biological Diversity (CBD) are just a few of the significant legally binding accords that came out of the meeting. The Kyoto Protocol was signed in 1997 by participants in the United Nations Framework Convention on Climate Change (UNFCCC), who agreed it under the presumption that human activity was causing global warming [7]. The treaty included measures to promote North-South cooperation on emission reductions and made industrialized countries commit to reducing global emissions of several greenhouse gases.

The sustainability issue affected Indonesia's institutions as a whole after being ratified and incorporated into national policy, especially concerning the plantation sector and agreements on sustainable development. For instance, Act No 12/1992, contained a framework about how to manage the plant cultivation system in the plantation sector, and Act No 5/1990 was about the conservation of biological resources and their ecosystems which protect all procedures involved in the cultivation of various types of plants in Indonesia. Both legal frameworks cover environmentally friendly and sustainable plantation development.

Furthermore, in Article 33, sub-Article 4 of the fourth amendment to the Constitution of Indonesia (Undang-Undang Dasar 1945), enacted in 2002, the significance of the sustainability principle was underscored in the advancement of Indonesia's national economy. International agreements stipulated in Act No 6/1994 for the ratification of the UNFCCC and Act No 17/2004 for the ratification of the Kyoto Protocol confirmed this commitment to sustainability. Furthermore, the introduction of the initial Plantation Act No 18/2004, along with a constitutional amendment that year, officially recognized the importance of sustainability. This Act established regulations for all facets of the plantation sector, including licensing, environmental control, management, and marketing of plantation goods, among others. For the benefit of the populace as well as the environment, it was declared that the

plantation sectors needed to be managed and expanded sustainably. It included an explanation of how plantations function economically, environmentally, and socially.

4.1.3. Phase three: sustainable palm oil institutionalization (2004–2011)

The global community is increasingly alarmed by the expansion of oil palm plantations in Indonesia due to their environmental impact, including deforestation, loss of biodiversity, and widespread land fires. These issues have affected over 5 million hectares in Kalimantan, leading to international concern [16]. Concerns about the sustainability of the oil palm industry have increased dissatisfaction with oil palm cultivation methods in Indonesia as well as other palm oil-producing countries, leading multinational non-state groups to launch a transnational private governance framework. The term "sustainable palm oil" was further defined by the RSPO (Roundtable on Sustainable Palm Oil). The RSPO was formally established in April 2004 to advance the production and consumption of sustainable oil palm products through stakeholder involvement and the application of credible international standards [52].

Nevertheless, industry representatives from Indonesia have expressed their dissatisfaction with the RSPO. According to the industries, RSPO failed to persuade the world market of Indonesia's dedication to sustainable practices [14,50]. The certification provided by RSPO was viewed as having the potential to contribute to carbon emissions and may raise concerns about its economic implications [22]. Furthermore, some stakeholders, particularly growers, have voiced concerns about its inability to sufficiently recognize or address their perspectives. This perspective is supported by one of our interviews with a committee member of the Indonesian Palm Oil Association (GAPKI): "Growers are the owners of this industry, but their rights in the RSPO are the same as those of people who do not have direct involvement with the industry, so we feel that there is something wrong with the mechanism scheme there regarding regulations" (Direct Interview, 2017). They expressed concern with the RSPO's perceived inability to fully engage with the needs and challenges of local producers, highlighting the broader issue of aligning global sustainability frameworks with local realities. In this period as well, Indonesia and many other nations that produce palm oil sought to capitalize on the growing worldwide market for biofuels. The Renewable Energy Directive (Directive 2009/28/EC, which repealed Directives 2001/77/EC and 2003/30/EC) was approved by the European Union (EU) on April 23, 2009. According to the new Directive, by 2020, renewable energy must account for 20 % of EU energy consumption. This mandate was divided into locally binding sub-targets to account for the various starting positions across the Member States. To take advantage of this opportunity, Indonesian palm oil producers had to ensure that their palm oil products met EU standards, as the EU had certain principles and criteria that importer nations had to meet.

Another significant milestone occurred in 2009 at the G20 meeting in Pittsburgh, when Susilo Bambang Yudhoyono, Indonesia's sixth president, pledged to reduce the country's greenhouse gas emissions (GHG) by 26 % on its initiative and by 41 % if foreign aid was received by 2020, compared to "business as usual". The commitment was made following the agreements established in the Copenhagen Accord during COP-15 which held in Copenhagen and COP-16 held in Cancun, as well as the Bali Action Plan agreement made during the 13th Conference of Parties United Nations Climate Change Convention (COP-UNFCCC) in Bali, December 2007. To implement the commitment, the Presidential Regulation of The Republic of Indonesia No 61 Year 2011 released the National Action Plan for GHG Emissions Reduction (RAN-GRK).

Furthermore, in 2010, under the REDD+ scheme, the Indonesian government and the Norwegian government partnered to enhance Indonesia's commitment to lower their GHG from deforestation, degradation of natural reserves and forest, and peatland, through a pledge made in Bali and Pittsburgh (Norwegian Embassy, 2010). Indonesia agreed to a two-year ban on all new permits for natural forest

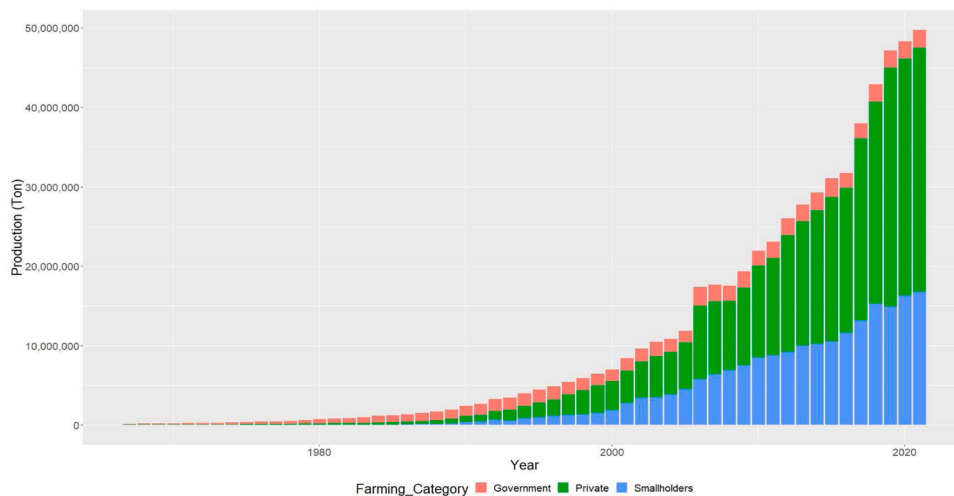


Fig. 2. Palm oil cultivation based on farming types (1967–2021).
Source: BPS – Statistics Indonesia (2020)

land and peatland following the agreement. The Inpres No 10/2011 complies with this criterion. Environmental NGOs' boycotts and campaigns against the unsustainable palm oil industry during this third phase, which demanded reform in the Indonesian palm oil industry, also played a significant role (Greenpeace, 2010).

4.1.4. Phase four: Indonesian sustainable palm oil policy era (2011–2022)

The fourth phase is related to the launch of ISPO by the Indonesian government to establish its national sustainability requirements. Under the REDD+ policy, the Indonesian government is committed to reducing greenhouse gas emissions from deforestation, forest degradation, and peatlands, thus The Ministry of Agriculture formulated ISPO through Permentan No 19/2011 as part of the commitment of the Indonesian palm oil industry to reduce GHG emissions.¹ The ISPO adheres to the regulations and legislation of Indonesia concerning the palm oil production process (see Supplementary Material D). ISPO aims to have affordable certification expenses without levying a membership fee, unlike RSPO certification which was seen as too expensive for smallholders and small to medium-sized businesses (Suharto, 2010). To fully support the ISPO program, the Indonesian Palm Oil Producers Association (GAPKI) formally quit the RSPO. The head of GAPKI claims that the ISPO created an innovative framework for the industry's palm oil certification and standards, fostering competitiveness for the production of sustainable palm oil (The Jakarta Post, 2011). Among the various agencies involved were, the Ministry of Environment, the Ministry of Domestic Affairs, the Ministry of Forestry, and the Land Agency Authorities.

The Indonesian palm oil industry continued to face numerous worldwide concerns regarding unsustainable output even after the ISPO was issued. A Notice of Data Availability (NODA) was released by the United States Environmental Protection Agency ([62]). It published a Renewable Fuel Standard (RFS) program and an analysis of the lifecycle greenhouse gas (GHG) of palm oil [62]. According to the EPA's analysis, biodiesel and renewable diesel made from palm oil did not achieve the required lifecycle GHG reduction of 20 % required to be considered a renewable fuel. The statute does not forbid the import of crude palm oil into the nation, even though it astonished palm oil growers who anticipated exporting CPO or palm oil to the US [33]. The Indonesian government stated that the NODA data were inaccurate and were not gathered from current records. Inadequate access to information damages the Indonesia's palm oil business and creates a distortion in trade

which is prejudiced opposed to biofuel produced from feedstock obtained from palm oil [20].

Greenpeace released a list of well-known companies who buy their palm oil from Singapore-based palm oil trader Wilmar International in October 2013. By doing so, buyers unintentionally contribute to the degradation of Indonesia's forests, jeopardizing species that are highly endangered, like as the Sumatran tiger. The report reveals illegal oil palm plantations located in Tesso Nilo National Park. Analyzing Tesso Nilo National area, Greenpeace found that barely five percent of the area is still intact. This destruction is being fuelled by palm oil plantations [25].

The Ministry of Agriculture altered the ISPO certification procedure in 2015, requiring oil palm plantation companies, palm oil mills without plantations, and plantations without palm oil mills to comply with it. However, companies that produce palm oil for bioenergy, smallholders, and plasma farmers have the option to voluntarily apply for certification. In 2019, the President of Indonesia issued a presidential instruction to improve the legality of ISPO, which included a national sustainable oil palm plantation plan from 2019 to 2024.

The European Commission has decided that palm oil-based biodiesel from Indonesia and Malaysia contributes to excessive deforestation and should not be eligible for national governments' renewable transport goals. This decision has been met with resistance from the governments of Indonesia and Malaysia. A new policy on sustainable palm oil in Indonesia was announced in 2020, and it mandated certification for all plantations, including state-owned and private companies, and smallholders, but with exceptions for certain social responsibility principles. The policy includes five dimensions, such as certification, market competitiveness, and penalties, with guidance from the agriculture ministry.

The development of ISPO certification presents challenges and opportunities. Micro-level challenges include land legality, certification costs, smallholder diversity, and lack of information in remote areas. Opportunities include land reform, group certification, and premium pricing schemes. Macro-level challenges include data discrepancies and negative campaigns against palm oil. Opportunities include big data initiatives and government social forestry regulations. Currently, 763 ISPO certificates have been issued, but the certification target cannot be met due to implementation issues including the disparity of policies, regulations, and authorities between the national and sub-national levels of governments [46]. A sustainability certification for the entire palm oil industry is being developed to increase international recognition and competitiveness (Deputy Minister for Food and Agribusiness, 2021).

¹ ISPO Commission (2013), personal communication

4.2. Key sustainability events and institutional development in Indonesia's palm oil industry

Table 2 outlines the evolution of institutions within Indonesia's palm oil industry and their interactions with global institutions. It summarizes the mechanisms that contribute to institutional stability and change throughout this evolution. Both international and endogenous factors have played significant roles in creating opportunities for policy and institutional transformation. The identified types of institutional change related to the institutionalization of sustainability in Indonesia's palm oil industry include displacement and conversion. Understanding these types of institutional changes offers valuable insights into the dynamics of international influence over domestic affairs, shaping both societies and economies.

The foundational phase of institutional development in Indonesia's palm oil industry unfolded gradually during the transition from colonial rule to national independence, exemplifying a lengthy process of "territorialization" following the colonial era [10]. The introduction of the PIR and NES initiated a shift toward sustainability, influenced by various environmental movements within domestic politics and supported by external factors, such as foreign funding that emphasized environmental concerns. This foreign funding led to the adoption of new standards and practices in Indonesia's policymaking. Political forces were the main drivers of endogenous change brought about by power dynamics; this process is known as "displacement". In this context, displacement encompasses both the intentional nurturing of activities within existing institutional frameworks and the intrusion of foreign initiatives [58].

In the subsequent phase, sustainability emerged as a vital global norm and became institutionalized domestically, significantly influencing Indonesian institutions. The most significant milestone during this time was the fourth amendment to the Indonesian constitution, which included sustainability into the country's highest legal structure, demonstrating the government's dedication to its objectives. Global institutions promoting sustainability began to form a "policy network" or "epistemic community," resulting in new interaction patterns and institutional arrangements that center sustainability in Indonesia's governance.

As the policy networks for sustainability grew, various multi-stakeholder processes emerged. Global consumers and private institutions raised concerns about the environmental and social impacts of

the Indonesian palm oil industry. In response, the establishment of the RSPO certification system marked a significant institutional breakthrough, replacing conventional government strategies based on rules and deterrence. The changing social expectations exerted pressure on the Indonesian palm oil industry, and the RSPO, recognized internationally as a credible organization for sustainable palm oil, played a key role in this transition.

The RSPO aimed to regulate the industry indirectly, embedding social and environmental considerations into markets without state mediation. By offering incentives like premium prices, green labeling, and enhanced market access, the RSPO encouraged compliance among Indonesian palm oil plantation enterprises. However, the introduction of the RSPO and other non-state governance mechanisms also disrupted existing institutions, allowing international entities to engage in governance contestation and knowledge transfer [66].

The launch of the ISPO certification system marked the conclusion of this institutional development phase. The government's decision to implement ISPO was influenced by the RSPO's establishment, demonstrating its capacity to regulate internal sectors. Based on the interview with one of the non-government organizations "NGOs" persistent campaigns against the palm oil industry's unsustainable practices increased the pressure on the Indonesian government to demonstrate its commitment to sustainability" (Stakeholder Interview, 2021). Furthermore, the treaty between the governments of Indonesia and Norway, as well as global calls for sustainability and transparency, encouraged the establishment of palm oil organizations in Indonesia.

However, external factors were not the sole contributors to the ISPO's establishment. The Ministry of Agriculture also aimed to fulfill the Indonesian government's commitment to sustainability through the initiation of ISPO policy. One stakeholder emphasized, "The birth of ISPO reflects the foundational attitude of the Indonesian nation, as mandated by our Constitution" (Stakeholder Interview, 2021), underscoring Indonesia's sovereignty in managing natural resources sustainably while maintaining its position in the international palm oil market.

The ISPO is not a totally novel policy; it represents an adaptation of existing regulations to address emerging global demands for sustainability. This adaptation signifies internal transformation, as new environmental challenges and shifts in societal power dynamics, such as the RSPO's influence, illustrate gradual institutional change akin to "conversion" [31,58]. Conversion indicates that institutions are not entirely reformed but redirected toward new aims and roles. As one stakeholder

Table 2
Key sustainability events and institutional stability/ change in Indonesia's palm oil industry.

Phase	Key events	International (exogenous) factors	Domestic (endogenous) factors	Mechanisms and Type of institutional stability/change
Phase One (1957–1986)	PIR and NES projects emergence.	The project was supported by the World Bank with requirements for environmental viability.	<ul style="list-style-type: none"> The transition from colonialism to nationalism. Vast development in infrastructure and economy in the era of the new order. 	<ul style="list-style-type: none"> Exogenous and endogenous change (Displacement).
Phase Two (1986–2004)	The Fourth Amendment to the Indonesian Constitution (UUD 1945)	<ul style="list-style-type: none"> Global Sustainable Development Institutions emergencies Increase awareness of sustainability 	The growing body of sustainability regulations.	<ul style="list-style-type: none"> The occurrence of an exogenous type of change yet incremental in the development of institutions.
Phase Three (2004–2011)	The development of a sustainable palm oil framework under Indonesia's National Interpretation by RSPO.	<ul style="list-style-type: none"> The formation of RSPO International Ongoing efforts by non-governmental organizations (NGOs) advocating for sustainable palm oil. Global concerns on impacts of Indonesian palm oil 	—	<ul style="list-style-type: none"> Exogenous change. New non-state institutions arose and coexisted with government institutions.
Phase Four (2011–present)	Establishment of the ISPO policy	<ul style="list-style-type: none"> The rise of new institutional frameworks (e.g., RSPO, EU Directive Criteria, etc.). related to the sustainable certification system 	<ul style="list-style-type: none"> Alteration to the social power structure (due to the entry of new players like RSPO). Economic factor - Expanding the market while maintaining the palm oil industry's level of foreign exchange revenue high. 	<ul style="list-style-type: none"> Both exogenous and endogenous Changes (conversion involving stability and lock-in).

noted, "ISPO principles and criteria cannot easily be changed or adapted based on market expectations, as it is a regulation governed by its umbrella law" (Stakeholder Interview, 2017), emphasizing the role of path dependence in the development of Indonesia's palm oil industry.

A window for change has emerged through the disruption of institutional stickiness by both exogenous and endogenous factors. However, the evolution of sustainable palm oil institutions in Indonesia illustrates path dependency, as newly imposed policies reflect the initial choices made. Consequently, reversing these developments is challenging. The gradual evolution of sustainable palm oil institutions has involved mechanisms such as displacement and conversion, wherein existing institutions are not diminished but reassigned and redirected along new trajectories, shaping governance in this sector. This phase is characterized as a period of semi-institutionalization, where sustainable development is deeply integrated but not fully realized [24].

The institutionalization of sustainable development is a crucial initial step toward creating comprehensive policies for implementation. However, many projects fail to address environmental concerns and focus solely on economic and social progress. Effective dialogue among stakeholders at local, national, and regional levels is essential, particularly when a clear economic focus is promoted [53]. Policies on moratoriums, peat protection, and agrarian reform show promise for reducing impacts but require complementary efforts, such as increasing productivity through intensification, land swaps for peatland restoration, and selecting low-carbon stock zones for agrarian reform [45]. Nevertheless, skepticism about the ISPO from international NGOs and markets remains [3,18].

The four phases of sustainable palm oil institutions identified in this study, from the early NES to the formalization of ISPO, have played direct and indirect roles in shaping contemporary practices and challenges. Environmentally, factors such as the inaccessibility of remaining forests and enhanced legal frameworks for community land claims have contributed to periods of declining deforestation trends (Purnomo et al., 2023), indicating a shift toward more sustainable practices. Nevertheless, despite institutional advancements, significant environmental challenges continue, including deforestation [4,23,39,64], and biodiversity loss [51,54].

From a socio-economic perspective, ISPO certification has been associated with poverty reduction in communities reliant on market-based livelihoods, though benefits are less pronounced in subsistence-based communities [51]. In some villages in Bengkulu Province, palm oil production has significantly boosted incomes compared to previous reliance on rubber or timber [1]. Farmers adopting ISPO practices demonstrate higher production levels—averaging 2 tons per month compared to 1.5 tons for non-certified farmers—due to improved management and access to premium markets [55]. This enhancement in production quality, coupled with adherence to ISPO standards, has fostered greater economic stability and income for participating farmers, showcasing the dual benefits of improved environmental practices and socio-economic outcomes.

The institutionalization of the NES and subsequent expansion of palm oil cultivation set the stage for the economic reliance on palm oil, creating a strong path dependence that continues to shape modern policy decisions. Looking ahead, the historical analysis suggests that the observed path dependency will likely continue to influence the effectiveness of ISPO and other sustainable palm oil institutions. While institutional inertia may impede swift reforms, the gradual shifts that have historically occurred indicate that further progress remains achievable.

5. Conclusion

This study reveals that the institutionalization of sustainable palm oil in Indonesia is shaped by both exogenous and endogenous dynamics. While international institutions have pressured for economic adjustments and created a global sustainability policy network, changes

within the palm oil industry have also evolved gradually. Exogenous changes, driven by market pressures and the establishment of non-state governance frameworks like the RSPO, have led to shifts in national institutional arrangements, fostering compliance with sustainability norms. Endogenous transformations have been marked by political forces, such as the transition from colonialism to nationalism, and the Indonesian government's commitment to reducing greenhouse gas emissions. The introduction of the ISPO certification reflects these changes, integrating existing regulations and illustrating the path dependence of sustainability policies, which have been reinforced over time despite external influences.

Theoretical contributions include expanding historical institutionalism (HI) within sustainability literature, highlighting how colonial legacies and global pressures shape long-term policy pathways. By analyzing these path dependencies, this study uncovers the institutional inertia that hinders sustainability shifts and emphasizes the interplay between global governance and local frameworks. This contributes to multi-level governance literature and provides insights for aligning global sustainability initiatives with local realities.

The policy implications underscore the importance of involving a wide range of stakeholders in the policymaking process, such as private sector actors, NGOs, and local communities. Collaborative governance can ensure responsiveness to local needs, fostering ownership among smallholders and supply chain participants. Balancing domestic and international sustainability pressures is also essential for enhancing Indonesia's global competitiveness while addressing environmental challenges. Findings offer crucial lessons for sustainable palm oil institutional development, suggesting that effective policies and politics produce strong institutions vital for advancing sustainability. To further progress post-institutionalization, improving stakeholder participation, aligning policies with global objectives, and measuring outcomes are necessary.

Limitations include a limited number of interviews, which constrain qualitative insights into stakeholders' experiences, and challenges in capturing the interplay between formal and informal institutions. While this research provides valuable historical insights into Indonesia's palm oil policies, it may not fully reflect the latest regulatory developments impacting ISPO's effectiveness. Future research should incorporate more empirical evidence, particularly statistical data on environmental and socio-economic outcomes from policy changes. Cross-country comparisons with other palm oil-producing nations like Malaysia and Colombia could enrich analyses of policy evolution and institutional structures, ultimately informing more effective sustainability initiatives globally.

CRedit authorship contribution statement

Annisa Joviani Astari: Writing – original draft, Methodology, Investigation, Data curation, Conceptualization. **Jon C. Lovett:** Writing – review & editing, Supervision. **Meditya Wasesa:** Writing – review & editing, Validation, Project administration.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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