

Indonesia vs. Thailand: Legal Challenges in Sustainable Agriculture

Ampuan Situmeang¹⁾, Nipon Sohngeng²⁾, Ninne Zahara Silviani³⁾, Shenti Agustini⁴⁾, and Shelvi Rusdiana⁵⁾

¹⁾ Faculty of Law, Universitas Internasional Batam, Indonesia,
Email: ampuan.situmeang@uib.ac.id

²⁾ Faculty of Political Science, Ramkhamhaeng University, Thailand,
Email: musa1234@yahoo.com

³⁾ Faculty of Law, Universitas Internasional Batam, Indonesia,
Email: ninne@uib.ac.id

⁴⁾ Faculty of Law, Universitas Internasional Batam, Indonesia,
Email: shenti.agustini@uib.ac.id

⁵⁾ Faculty of Law, Universitas Internasional Batam, Indonesia,
Email: shelvi@uib.ac.id

Abstract. *Agriculture, as a significant contributor to carbon emissions and climate change, needs to not only change its ways to a more sustainable practice but also revisit what has long been considered conventional agriculture practices to support sustainable development. This requires a comprehensive legal framework to ensure that the transition to sustainable agriculture is supported by structured and streamlined legal compliance that can balance stakeholders' interests. Employing the comparative legal research method, this study aims to analyze the potentials and challenges of applying sustainability in agriculture, using the comparison between Indonesia and Thailand. The findings of this study suggest that Indonesia's legal framework for sustainable agriculture, focusing on its single Sustainable Agriculture Law, is more comprehensive than Thailand's multiple regulations, effectively supporting sustainability across various agricultural processes. This framework aligns well with SDGs 2, 12, 13, and 15, which are crucial for agricultural sustainability. Conversely, Thailand faces challenges due to normative gaps and requires a more unified legal framework to address these SDGs adequately.*

Keywords: *Agriculture Law; Comparative Law; Environmental Protection; Indonesia; Thailand; SDGs; Sustainability Compliance; Normative Adequacy*

1. INTRODUCTION

Climate change has brought many threats to not only the livelihood of many people but also to human civilization overall.¹ The dangers brought by it have raised the urgency for a comprehensive framework of actions to tackle the causes that contribute to its acceleration, along with the impacts that are constantly threatening many

¹ M. Qasim Jan, Khazima Muazim, and Arshad Ashraf, "Climate Change and Its Threats to Sustainable Agriculture," *Regional Problems* 21, no. 3 (1) (2018): 36.

communities worldwide due to the damages already done. This framework of actions is conceptualized within Sustainable Development Goals (SDGs), which also includes non-environmental goals. Ultimately, sustainable development becomes the main principle and core concept for developing the green economy.² Sustainability as a concept covers the effort to ensure that the current utilization of resources and development overall do not come at the cost of the future so that future generations can live in a sustainable society that focuses on growth while being free of future failures, such as environmental problems and inequality.³

Agriculture is among the main sources of carbon emissions, which significantly affects the acceleration of climate change and the severity of its impacts.⁴ The call for more sustainable agriculture has also been made to improve sustainability. Sustainability as a concept in agriculture is crucial in protecting soil health,⁵ minimalizing toxic chemical wastes, and better utilizing natural ecosystems to fulfill agricultural needs. The application of sustainability in the agriculture sector can reduce carbon emissions and protect.⁶ In other words, sustainable agriculture can be utilized to tackle climate change and its impacts and promote the preservation of the natural environment at the same time, making it a good agenda for governments around the world to support, particularly from countries that have a big market for agriculture, such as Indonesia and Thailand. Not only that, sustainable agriculture is also important in tackling hunger, positioning agriculture as a stronghold for food security.⁷

Legal framework plays a key role in supporting the sustainability agenda, particularly in the context of environmental goals as conceptualized within the SDGs. For instance, within the ambit of SDG 2 (Zero hunger), legislation can enforce practices that minimize food waste, promote agroecological practices, and ensure equitable access to land, thereby directly enhancing sustainable agriculture's viability. Similarly, under SDG 15 (Life on Land), laws can mandate the conservation of natural habitats, protect endangered species, and regulate land use to prevent degradation, thereby preserving biodiversity essential for agricultural resilience. Regarding SDG 12 (Responsible Consumption and Production), legal measures can impose standards for sustainable

² Dajian Zhu, "Research from Global Sustainable Development Goals (SDGs) to Sustainability Science Based on the Object-Subject-Process Framework," *Chinese Journal of Population Resources and Environment* 15, no. 1 (2017): 11-12.

³ Tatsuyoshi Saijo, "Future Design: Bequeathing Sustainable Natural Environments and Sustainable Societies to Future Generations," *Sustainability (Switzerland)* 12, no. 16 (2020): 1-2.

⁴ Lu Zhang et al., "Carbon Emissions, Energy Consumption and Economic Growth: Evidence from the Agricultural Sector of China's Main Grain-Producing Areas," *Science of The Total Environment* 665 (2019): 1018-1019.

⁵ Monther M. Tahat et al., "Soil Health and Sustainable Agriculture," *Sustainability* 12, no. 12 (2020): 2.

⁶ Larba Hubert Balima et al., "Agricultural Land Use Reduces Plant Biodiversity and Carbon Storage in Tropical West African Savanna Ecosystems: Implications for Sustainability," *Global Ecology and Conservation* 21 (2020): 1-15.

⁷ Kalb T. Stevenson et al., "Sustainable Agriculture for Alaska and the Circumpolar North: Part II. Environmental, Geophysical, Biological and Socioeconomic Challenges," *Arctic* 67, no. 3 (2014): 311. See also, Indana Fawaizah, Arif Zaenal Abidin, and Anis Mashdurohatun, "Transfer Of Functions Of Agriculture To Non Agriculture Land Under Government Regulation Number 1 Of 2011 Concerning The Establishment And Transfer Function Of Agricultural Land Sustainable The Food," *Jurnal Akta* 5, no. 3: 712.

production methods, reduce waste throughout supply chains, and encourage recycling and sustainable resource management. Lastly, for SDG 13 (Climate Action), legislation is crucial in setting emission reduction targets, fostering renewable energy use, and supporting adaptation measures in agricultural sectors to cope with climate variability. In each case, robust legal mechanisms are vital for operationalizing these goals, providing the necessary enforcement mechanisms to ensure compliance and facilitating the transition towards sustainable agricultural practices.

The comparative analysis between Indonesia and Thailand can provide an important insight into the development of a legal framework to support SDGs, particularly in the agriculture sector, which is significant for both countries. Both countries are key players in the global food supply chain, with Indonesia ranking 4th with US\$ 145,046,000,000.00 and Thailand ranking 11th with US\$ 43,297,570,000.00 in agriculture sector values in 2020.⁸ From this data, it can be drawn out that both countries' success in implementing sustainability within their respective agriculture sector can significantly affect the global food supply chain, along with the global efforts in tackling climate change and its impacts. By analyzing the existing legal framework from both countries, potentials and challenges can be identified, with a particularly wider point of view, beyond each of the countries' respective borders.

Carbon emissions have been an issue associated with agricultural issues for quite some time. A study highlighted that the harm to the environment from the agricultural sector is frequently associated with deforestation, emissions from livestock, handling of nutrients, exploitation of soil and fossil fuels, application of fertilizers, incineration of biomass, and the utilization of farm machinery, all of which contribute to environmental degradation.⁹ The study also found causal relationships between the damages caused by the agriculture sector and electricity consumption, indicating that agricultural activities are often supported by fossil fuel consumption, contributing to even higher carbon emissions, adding to those already caused directly by agricultural activities. Another study added to this by highlighting the relationships between carbon emissions, natural resources, financial development, and agriculture value-added.¹⁰ The study called for an optimal resource management plan that can promote the development of high-tech agricultural infrastructure and the utilization of renewable resources. However, despite indicating the need for a comprehensive policy to deal with these, none of these studies pointed out the much-needed normative aspects that need to be included in such a policy.

Sustainability in agriculture is a concept that takes a lot of work to be made into reality, particularly considering the complexities brought by many of the stakeholders' interests, as highlighted in a study.¹¹ The study also highlights that sustainability needs to be at the center of equally weighted dimensions: economic, social, and ecological.

⁸ IndexMundi, "Countries Ranked by Agriculture, Value Added (Current US\$)," IndexMundi, 2020, <https://www.indexmundi.com/facts/indicators/NV.AGR.TOTL.CD/rankings>.

⁹ Daniel Balsalobre-Lorente et al., "Do Agricultural Activities Induce Carbon Emissions? The BRICS Experience," *Environmental Science and Pollution Research* 26, no. 24 (2019): 25218.

¹⁰ Lei Wang et al., "Globalization and Carbon Emissions: Is There Any Role of Agriculture Value-Added, Financial Development, and Natural Resource Rent in the Aftermath of COP21?," *Journal of Environmental Management* 268 (2020): 4-6.

¹¹ Judith Jancker and Stefan Mann, "Understanding the Social Dimension of Sustainability in Agriculture: A Critical Review of Sustainability Assessment Tools," *Environment, Development and Sustainability* 22, no. 3 (2020): 1683.

However, the discussion on the environmental aspect of sustainability in this study is not closely linked with any normative implications, unlike the non-environmental ones, which in itself shows an imbalance. This is particularly important to be addressed, mainly because climate change remains a consistent threat. Another study addressed this issue by highlighting that agriculture's role in ensuring nutritional and food security has significantly contributed to the worsening of climate change.¹² The study also highlighted the importance of adopting technological advances in the field of agriculture, particularly those that can significantly decrease carbon emissions without sacrificing productivity. Again, none of the studies cited addressed the importance of a legal framework in encouraging stakeholders to adopt sustainable agriculture practices.

There is a significant gap in the literature regarding the role of the legal framework in creating an affective, normative structure that can set up compliance to enforce sustainability in the agriculture sector. Analysis regarding this is also lacking, particularly one that juxtaposes Indonesia and Thailand as ASEAN countries with massive agriculture sectors. This study aims to analyze this gap and descriptively explain the potential and challenges of applying sustainability in Indonesia and Thailand from a regulatory design standpoint. Both countries compete against each other in the agriculture sector and share many similarities in addressing sustainability issues within this sector. Highlighting these differences can assist both countries in their quest for legal development to support the application of SDGs, as both nations possess immense potential.

2. RESEARCH METHODS

This research employs the normative legal research method. Normative legal research involves analyzing legal norms, principles, and doctrines to assess their validity, coherence, and applicability within the legal system, often focusing on legal philosophy and theory.¹³ The primary approach used in this research is the comparative legal approach to analyze the legal framework concerning sustainable agriculture in Indonesia and Thailand. The data utilized in this research are secondary data in the form of legal materials obtained through the literature review, which are then qualitatively analyzed through legal interpretation of the said legal materials. Secondary data used in this research are Law No. 22 of 2019 on Sustainable Agriculture System, Agricultural Standards Act, Enhancement and Conservation of National Environmental Quality Act, Hazardous Substance Act, and National Food Committee Act.

¹² Gurdeep Singh Malhi, Manpreet Kaur, and Prashant Kaushik, "Impact of Climate Change on Agriculture and Its Mitigation Strategies: A Review," *Sustainability (Switzerland)* 13, no. 3 (2021): 15.

¹³ David Tan, "Metode Penelitian Hukum: Mengupas Dan Mengulas Metodologi Dalam Menyelenggarakan Penelitian Hukum," *Nusantara: Jurnal Ilmu Pengetahuan Sosial* 8, no. 8 (2021): 2467; Hari Sutra Disemadi, "Lenses of Legal Research: A Descriptive Essay on Legal Research Methodologies," *Journal of Judicial Review* 24, no. 2 (November 30, 2022): 295-296.

3. RESULTS AND DISCUSSION

3.1. Importance of SDGs in the Agriculture Sector

Historically, agriculture and many of its concerns have always been an important part of human civilization. Agriculture is part of what Karl Marx described as the 'Metabolic Rift,' where he argued that capitalist tendencies, or to some degree, unconscious socialist tendencies, had disturbed the metabolic interaction between man and the earth.¹⁴ Nevertheless, agriculture has helped shape the world into what it is today and has remained ever so important for food security. The significance of agricultural development may vary across different regions, but its role as an indication of societal development remains the same. In the current globalized state of the world, agriculture is even more relevant due to the role of international trade, which has allowed countries that are not capable of producing certain agricultural goods or products to still access them from countries that produce them.¹⁵ Spanning across different types of goods, from animal to plant products, agriculture is also a significant contributor to the economy.

Sustainable Development Goals (SDGs), in itself, are conceptualizations of goals encompassing many different societal sectors. The parallel between SDGs and the agriculture sector is perhaps more unique than that of other sectors. This is mainly because of the nature of agriculture, which relies on the availability and sustainability of natural environments to support many kinds of agricultural establishments, be it for animal or plant products. This parallel is important to analyze as both SDGs and the agriculture sector can even significantly impact moral perspectives, especially when considering the agriculture sector's damages, which have caused what some refer to as a 'sustainability crisis.'¹⁶ Therefore, these two topics will always be intertwined, particularly in policy-making, as governments worldwide try to navigate the growth of the agriculture industry around sustainability as the core concept of SDGs.

Before analyzing the legal dynamics of agriculture sustainability, it is important to thoroughly describe all the relevant SDGs that directly correlate to the growth and success of the agriculture sector. Details of the SDGs and their connections to the agricultural sector are shown in Table 1.

Agriculture is, first and foremost, important for food security, making it an important part of SDG 2, which is specifically designed to achieve Zero hunger.¹⁷ Therefore, the application of sustainability as a concept for the agriculture sector is of utmost importance. From the sustainability point of view, sustainable agriculture is not only important in preventing hunger but also in the creation of a system that would ensure the prevention of hunger in the near and far future to ensure that the agriculture sector is capable of sustaining society's needs. This application strongly impacts

¹⁴ John Bellamy Foster, "The Earth-System Crisis and Ecological Civilization: A Marxian View," *International Critical Thought* 7, no. 4 (2017): 450.

¹⁵ Cong Nam Doan, "Diversifying the Seafood Market of Finland through International Sourcing" (Master's thesis, Aalto University School of Business, 2019).

¹⁶ Evelien M de Olde and Vladislav Valentinov, "The Moral Complexity of Agriculture: A Challenge for Corporate Social Responsibility," *Journal of Agricultural and Environmental Ethics* 32, no. 3 (2019): 417.

¹⁷ Jennifer Blesh et al., "Development Pathways toward 'Zero Hunger,'" *World Development* 118 (2019): 4.

economic stabilities, particularly in rural areas where the central government often overlooks development.

Table 1: Relationship between SDGs and the agriculture sector

SDGs	Impact Type	Key Points
SDG 2: Zero Hunger	Direct	- Promote sustainable agriculture to end hunger. - Ensure sustainable food production systems. - Implement resilient agricultural practices.
	Indirect	- Enhances economic stability in rural areas.
SDG 12: Responsible Consumption and Production	Direct	- Sustainable management and efficient use of natural resources. - Reduce food waste in production and supply chains.
	Indirect	- Influences sustainable agricultural processing, packaging, and transport. - Drives consumer demand for sustainably produced products.
SDG 13: Climate Action	Direct	- Address impacts of climate change on agriculture. - Implement resilient agricultural practices for climate adaptation.
	Indirect	- Supports agricultural adaptation strategies and influences agricultural policy and investments.
SDG 15: Life on Land	Direct	- Sustainable management of forests. - Combat desertification and halt land degradation. - Biodiversity conservation affects agriculture.
	Indirect	- Influences pest and disease cycles in agriculture through biodiversity. - Supports natural agricultural benefits like pollination and water regulation.

SDG 15, Life on Land, directly impacts agriculture by promoting the sustainable management of forests, combating desertification, and halting land degradation and biodiversity loss.¹⁸ These elements are crucial for sustainable agriculture as they ensure the continuity and health of the relevant ecosystems that support agricultural activities. Healthy forests regulate water cycles and climate, which are also vital for farming establishments and the effort to prevent desertification. These aspects, in turn, can prevent land degradation and maintain arable land for agricultural use.¹⁹ Additionally, biodiversity plays a significant role in agriculture by supporting essential ecosystems that are affected by agriculture and protecting soil health.²⁰ Ultimately, these aspects are important in conservation and supporting natural agricultural benefits like pollination and water regulation.

¹⁸ Rahul Kumar, Amit Kumar, and Purabi Saikia, "Deforestation and Forests Degradation Impacts on the Environment," in *Environmental Degradation: Challenges and Strategies for Mitigation*, ed. Vijay P Singh et al. (Cham: Springer International Publishing, 2022), 20-21.

¹⁹ Genevieve Bennett, Jan Cassin, and Nathaniel Carroll, "Natural Infrastructure Investment and Implications for the Nexus: A Global Overview," *Ecosystem Services* 17 (2016): p294.

²⁰ M. Tahat et al., "Soil Health." 2.

Another relevant SDG is SDG 12 on Responsible Consumption and Production. This SDG directly relates to agriculture by advocating for the sustainable management and efficient use of natural resources, which includes reducing food waste at all stages of production and supply chains. This goal encourages agricultural establishments to minimize waste and environmental impact to promote sustainability throughout all production phases—from farming to final consumption. Indirectly, this SDG significantly impacts the agriculture sector by influencing how agricultural products are processed, packaged, and transported, aiming for sustainability at each step. It can even affect sustainable consumption among customers by driving consumer demand for products produced through environmentally sound practices. This goal not only helps reduce agriculture’s environmental footprint but also fosters economic efficiency and sustainability in food systems, linking consumer habits directly with agricultural production techniques.

Furthermore, SDG 13 on Climate Action is also pivotal to agriculture as it addresses climate change’s significant impact on agricultural productivity and sustainability. This goal directly encourages the implementation of resilient agricultural practices that can adapt to different types of weather, which is increasingly hard to predict due to climate change. This can include modifying crop rotations, altering planting dates, and adopting drought-resistant crop varieties. These practices help ensure that agriculture can continue to be productive and sustainable despite variable and changing weather patterns. Indirectly, SDG 13 supports the development of strategies and policies that facilitate adaptation in agriculture, influencing research, innovation, and investments in climate-resilient agricultural technologies. This goal helps bridge the gap between climate action and agricultural needs, ensuring that the sector can adapt to and mitigate the effects of climate change while maintaining food security and farmer livelihoods.

All of these intersections can significantly impact the legal sphere, particularly because of the rising awareness regarding climate change and its increasingly evident impacts on many people’s daily lives. The need for sustainable agriculture to be supported by key laws and regulations, in the first place, can also signify urgency to tackle many sustainability-related issues that have slowed the growth and innovation in the agriculture sector. Furthermore, sustainable agriculture is also relevant in the legal sphere because of its massive economic impacts, be it from the desire to solve problems, or to expand the market to fit the demands for more agricultural products made through sustainable practices.

While the legal framework is important in supporting the sustainability agenda, particularly those related to the agriculture sector, the complex nature of the relationship between SDGs and the agriculture sector, as described here, might prove difficult to keep up with. Lawmakers can even risk overregulating, confusing, and possibly creating disharmony among drafted laws. Therefore, a set of comprehensive and efficient legal norms is needed to ensure that stakeholders within the agriculture sector follow the legal standards set by the relevant laws and regulations after fully understanding their importance and real-life significance in agriculture sustainability. As the SDGs’ 2030 deadline is getting closer, it is imperative to analyze the adequacy of the relevant legal framework for sustainable agriculture, especially for countries whose agriculture sector is a significant contributor to the national economy.

3.2. Comparison of Legal Norms in Indonesia and Thailand

Indonesia is one of the key sources of agricultural products, particularly among ASEAN members. Indonesia is blessed with many natural resources, diverse biological ecosystems, and fertile lands that can sustain many agricultural developments. The legal framework is also often utilized as the government's stronghold on the country's agriculture sector, often justified as a part of Indonesia's national development. Much is the case in 1967, precisely during the early years of the New Order, where the government passed Law No.5 of 1967 on Basic Forestry (Basic Forestry Law), a law that gave the power to the ruling government to plan and regulate all forest ownership/control as a step in pursuing Indonesia's national development.²¹ This was essentially the start of Indonesia's seriousness in regulating the utilization of its natural environment, particularly for the purposes of agriculture.

Statistically, agriculture also remains a key contributor to Indonesia's GDP, with a 12.4% share of the country's total GDP in 2022.²² Therefore, it is only natural that agriculture remains an important part of the country's legal politics, directly affecting the direction of legal development. Instead of having a fragmented legal framework, Indonesia has its own law to directly regulate sustainable agriculture, which is Law No. 22 of 2019 on Sustainable Agriculture System (Sustainable Agriculture Law). Strategically, this law came a bit late, as the SDGs were conceptualized into Indonesia's development agenda in September 2015. Conceptually, the decision to draft a law that directly connects sustainability with the agriculture sector can be attributed to this fact. Indonesia also did not regulate any law supporting the sustainability agenda during the Millennium Development Goals (MDGs). The MDGs were the predecessor of SDGs, and many of their goals were not achieved by the relevant countries that applied them.²³

Sustainable agriculture is defined by Article 1, Number 1 of the Sustainable Agriculture Law as the management of biological natural resources in producing agricultural commodities to better and sustainably meet human needs by preserving the environment. This definition provides a key indicator of the direction of the provisions in this law, directing the development of the agriculture sector towards a more sustainable and environmentally conscious approach. This is further reflected in Article 2, which states that Sustainable agricultural cultivation systems are organized based on principles including usefulness, sustainability, sovereignty, integration, cooperation, self-reliance, openness, efficiency with justice, local wisdom, environmental sustainability, and national protection.

To analyze the adequacy of the existing legal framework for sustainable agriculture in Indonesia, it is important to analyze whether the legal framework aligns with the

²¹ Sobri, "Kejahatan Politik Dalam Pembangunan Dalam Kebijakan Pembangunan Industri Kehutanan Dan Perkebunan Di Provinsi Riau," *Sisi Lain Realita* 4, no. 1 (2019): 78. See also, Aris Yulia, Fatma Ayu Jati Putri, and Erna Wati, "Land Use Policies and Tenure in Economic Liberalization Regime: Land Law in Agro-Industrial Context," *Lex Publica* 10, no. 1 (2023):15.

²² Aaron O'Neill, "Indonesia - Share of Economic Sectors in the Gross Domestic Product 2022," Statista, January 2024, <https://www.statista.com/statistics/319236/share-of-economic-sectors-in-the-gdp-in-indonesia/>.

²³ Gwilim Diouf, "Millenium Development Goals (Mdgs) and Sustainable Development Goals (Sdgs) in Social Welfare," *International Journal of Science and Society* 1, no. 4 (December 2019): 19.

relevant SDGs. The connections between the provisions in Sustainable Agriculture Law and SDGs (see Table 2).

Article 3 governs that the framework to improve agricultural diversity comprises different goals, one of which is to fulfill the needs for food and other aspects of agricultural productivity. This is based on understanding the close relationship between food security and agricultural productivity, where one can significantly impact the other. A further manifestation of SDG 2 is also provisioned in Article 69 paragraph (1) letter b, where 'food sovereignty' is recognized among many goals behind sustainable agriculture. The interdependence of these concepts is reflected in SDG 15, which aims to protect, restore, and promote sustainable use of land ecosystems. Article 12, paragraph (3), along with 13 paragraphs (2) and (3), describe the emphasis on conservation in agriculture, mainly in protecting, restoring, maintaining, and improving land functions to boost sustainable agricultural productivity. This highlight of the interdependence between environmental sustainability and agricultural productivity is in line with the current trend in many agricultural goods markets.²⁴

Table 2: Relevant SDGs regulated in Indonesia's Sustainable Agriculture Law

SDG	Article Number (Law No. 22 of 2019)	Descriptions
2	Article 3	The implementation of the Sustainable Agricultural Cultivation System aims to enhance agricultural diversification to meet food, clothing, housing, health, and industrial needs domestically and increase exports, raise farmer income and living standards, and promote business and employment opportunities.
	Article 69 paragraph (1) letter b	'Food sovereignty' is mentioned as one of the goals to support sustainability in agriculture.
12	Article 16 paragraph (1)	Agricultural cultivation development is carried out integrally through an area-based approach to ensure a seamless transition from cultivation, processing, marketing, research, and development to human resources.
13	Article 48 paragraph (1)	Agricultural protection is implemented through an integrated pest management system that addresses the impacts of climate change.
15	Article 12 paragraph (3)	Land utilization must be done in accordance with the suitability and capability of land and environmental conservation, particularly soil and water conservation.
	Article 13 paragraph (1) and (2)	Land utilization should be carried out using an agroecosystem management approach based on the principles of conservation agriculture. Furthermore, conservation in agriculture aims to protect, restore, maintain, and enhance land functions to improve sustainable agricultural productivity.

Article 16, paragraph (1), related to SDG 12, focuses on responsible consumption and production by explaining an integral approach to developing agricultural cultivation. This means applying sustainability aspects throughout all agricultural processes, from cultivation to processing, marketing, research, and human resources, highlighting the

²⁴ Arkadiusz Sadowski and Agnieszka Baer-Nawrocka, "Food and Environmental Function in World Agriculture—Interdependence or Competition?," *Land Use Policy* 71 (2018): 5.

importance of sustained commitment to sustainability throughout the agricultural supply chain. Lastly, for SDG 13, which targets climate action, Article 48 paragraph (1) emphasizes the importance of implementing agricultural protection through integrated pest management and measures to address climate change impacts. This essentially highlights the focus on reducing climate risks and improving agricultural resilience. Together, these parts reflect a holistic and sustainable approach to agricultural development, matching global sustainability goals.

Thailand also has an agricultural sector that has made a significant contribution to the country's economy. Statistically, the agriculture sector contributes about 8.8% of the country's GDP in 2022.²⁵ Despite the smaller percentage compared to Indonesia's agricultural share in GDP, Thailand remains one of the key exporters of agricultural products, specifically rice, which makes up 34.5% of global exports, bringing about \$6 billion worth of value.²⁶ This essentially makes agriculture a key aspect of Thailand's economy, and it needs to be properly regulated within Thailand's legal system to ensure that the country is fully capable of maintaining its role in the agricultural world while sustaining its economy and ensuring food security.

Thailand's legal framework for sustainable agriculture, unlike Indonesia's, is rather fragmented. Unlike Indonesia's unified approach through Sustainable Agriculture Law, Thailand utilizes a number of different regulations to safeguard its agricultural processes in a sustainable manner. Two of the most conceptually relevant laws in the context of agriculture sustainability in Thailand are the Agricultural Standards Act, which was drafted in 2008, and the Enhancement and Conservation of National Environmental Quality Act (New NEQA), drafted in 1992. However, unlike Indonesia, there is no established definition of sustainable agriculture by any of these laws. The Agricultural Standards Act, in particular, despite its name, does not set any actual standard for agriculture, which can be considered a missed opportunity. It also does not contain any provisions that directly address environmental protection or sustainable agriculture, even in basic forms such as the emphasis on environmental protection or responsible production throughout the supply chain. Instead, the law only governs that the government can govern certain aspects regarding agriculture to create suitable standards instead of actually setting standards for compliance.

The lack of actual standards and guiding principles provided by the Agricultural Standards Act essentially renders it aimless, as the provisions of this regulation do not reflect its name almost at all. It also fails to address key issues in agricultural development, which can significantly impact Thailand's legal compliance with the application of sustainability. Unlike Indonesia's Sustainable Agriculture Law, there is no manifestation of SDG 12, 13, and 15 in Thailand's Agricultural Standards Act. Ultimately, it reflects the stagnant legal development for the agriculture sector in Thailand despite it being one of the country's key contributors to its GDP.

On the other hand, the New NEQA provides a better legal basis for the application of sustainability in environmental issues. However, unlike Indonesia's Sustainable Agriculture Law, Thailand's New NEQ does not govern anything directly connected to

²⁵ Aaron O'Neill, "Thailand - Share of Economic Sectors in the Gross Domestic Product 2022," Statista, January 2024, <https://www.statista.com/statistics/331893/share-of-economic-sectors-in-the-gdp-in-thailand/>.

²⁶ Stephen D. Simpson, Thomas Brock, and Pete Rathburn, "Top Agricultural Producing Countries," Investopedia, July 2022, <https://www.investopedia.com/financial-edge/0712/top-agricultural-producing-countries.aspx>.

agriculture, as the law itself consists of basic legal norms for environmental protection. Section 12 governs the National Environment Board, consisting of representations of different governmental bodies, including the Agriculture Ministry. There is also a body governing another aspect of agriculture, namely pollution, called the Pollution Control Committee (PCC), governed by Section 52. Another aspect of agriculture is covered only briefly by this law through Section 79 regarding the issuance of further regulations for the use of hazardous substances in various industries, including agriculture. The parallel of this in the Indonesian legal framework would be Law No. 32 of 2009 on Environmental Protection and Management, a much less comprehensive legal framework and less relevant for agricultural sustainability in Indonesia.

Interestingly, SDG 15, covering the protection of life on land, is manifested comprehensively within Thailand's legal system. This is done through the Hazardous Substances Act, which was drafted in 1992, with the latest amendment in 2019 through Hazardous Substance Act No. 3. Sustainable agriculture is an integral part of this regulation, as emphasized in Section 6 paragraph (3), stipulating that the members of Hazardous Substance Committee must have experience in sustainable agriculture, among other aspects relevant to the regulation. Furthermore, this law is equipped with criminal provisions that cover many offenses related to the use of substances throughout many processes within the agriculture supply chain. As this regulation specifically governs the use of hazardous substances, it provides a much more comprehensive structure of legal norms for the protection of the environment, people, and animals from possible damages caused by hazardous substances. An example of this comprehensive framework can be seen in one of the criminal provisions, particularly Section 22, which addresses the use, disposal, or handling of hazardous substances so it does not endanger public health, natural ecosystems, or biodiversity.

From the standpoint of SDG 2 on Zero Hunger, there is the National Food Committee Act, which is similar to the Agricultural Standards Act in all of its limitations, mainly because it does not really set any standard or even apply any concept that can be used as a guiding principle in ensuring the success of SDG 2. It also does not provide any regulation regarding agriculture, despite the mention of 'food security' as one of the goals the committee aims to achieve. The acknowledgment of the agriculture sector as an integral part of food security here is paramount to the success of applying sustainability in the agriculture sector. This is also a missed opportunity, considering the fact that Thailand is the world's second-largest exporter of rice, which is considered one of the most important agricultural commodities.

3.3. Future Legal Developments for Indonesia and Thailand

From the normative analysis of both countries' legal frameworks for agricultural sustainability, it is clear that Indonesia is ahead of Thailand in providing a comprehensive legal framework. Despite using only Indonesia's Sustainable Agriculture Law in the normative analysis in comparison to Thailand's numerous regulations, Indonesia is still ahead in its legal capacity for applying sustainability in its agriculture sector. This is mainly reflected using the analysis of relevant SDGs, namely SDG 2, 12, 13, and 15, highlighting the Indonesian legal framework's capability to address all of the SDGs mentioned. On the other hand, Thailand only has concrete manifestation of SDGs, which is SDG 15 through the Hazardous Substances Act. This regulation provides provisions regarding the utilization of pesticides and other relevant substances

in agriculture establishments and criminal provisions to punish those who do not abide by this regulation.

However, this does not mean that Indonesia's legal framework is perfect and not in need of further development. Issues such as the usage of hazardous substances need to be addressed in a more comprehensive manner, much like how it is regulated in Thailand, to provide a more robust framework of application for SDG 15. There is also a pressing need to integrate the protection of forests into a legal framework for sustainable agriculture, particularly because of the forest fires caused by agricultural land expansion, which have raised serious international pressure.²⁷ This can be started by creating a robust set of provisions regarding land expansion for agricultural purposes to create a layer of legal compliance.

For Thailand, due to the fact that its legal framework is behind in almost every aspect of the relevant SDGs used as the guiding principle of analysis, there needs to be a serious legislative commitment to bridge the many legal gaps identified. The main problem is perhaps the lack of a normative basis for the development of actual agricultural standards, where the Agriculture Standards Act appears to be aimless, at least from the normative standpoint. Thailand needs first to address the pressing needs that have to be manifested in its legal system, such as responsible production in agriculture and the protection of biodiversity, among many others. These specific aspects need to be properly addressed and explicitly governed with a comprehensive set of provisions to set the basis for the rule of law.

While it can certainly be argued that the technological and managerial skills of the agriculture sector are also crucial for export competitiveness,²⁸ applying sustainability in Thailand's agricultural sector can also improve its output even more, especially considering the fact that Indonesia can catch up to the numbers of output that Thailand offers in the global sector of agriculture, due its more robust legal framework. It is also important to be prudent in legal development to prevent overregulation that can stifle the growth and output of the agriculture sector with legal compliances that are too strict. Therefore, the main focus of legal development for Thailand in the agriculture sector should be the manifestation of SDG 2, 13, and 14, with slightly less focus on SDG 15, which has been covered partly by the Hazardous Substance Act.

4. CONCLUSION

The analysis highlighted that Indonesia's legal framework for sustainable agriculture, despite using only Sustainable Agriculture Law in comparison to Thailand's numerous regulations, is more comprehensive and capable of facilitating the application of sustainability in many processes of agriculture production and development. This analysis focuses on implementing SDGs 2, 12, 13, and 15, which are all highly relevant for agricultural sustainability. Consequently, the analysis also highlights the pressing need for Thailand to develop a comprehensive legal framework that can at least cover the four relevant SDGs mentioned before, much like Indonesia's Sustainable Agriculture Law. While Thailand needs a much more serious level of development due to its many identified normative gaps, Indonesia can also learn from Thailand in the

²⁷ Alfajri, Azhari Setiawan, and Herry Wahyudi, "Civil Society Organizations (CSOs) Perspective and Haze-Free ASEAN 2020: Evidences from Riau," *Malaysian Journal of International Relations* 7, no. 1 (2019): 27.

²⁸ Da Huo, "Impact of Country-Level Factors on Export Competitiveness of Agriculture Industry from Emerging Markets," *Competitiveness Review* 24, no. 5 (January 2014): 396.

aspect of SDG 15 to better regulate the use of chemical substances in agricultural processes. The limitation of this study comes from its purely normative results, which might require further analysis supported by qualitative data on how the highlighted normative gaps have affected Thailand's agricultural growth and how the proposed aspects of future legal development can affect sustainability among key agriculture stakeholders.

5. REFERENCES

Journal Articles:

- Alfajri Alfajri, Azhari Setiawan, and Herry Wahyudi. "Civil Society Organizations (CSOs) Perspective and Haze-Free ASEAN 2020: Evidences from Riau." *Malaysian Journal of International Relations* 7, no. 1 (2019): 23–60. <https://doi.org/10.22452/mjir.vol7no1.2>.
- Balima, Larba Hubert, Blandine Marie Ivette Nacoulma, Philippe Bayen, François N'Guessan Kouamé, and Adjima Thiombiano. "Agricultural Land Use Reduces Plant Biodiversity and Carbon Storage in Tropical West African Savanna Ecosystems: Implications for Sustainability." *Global Ecology and Conservation* 21 (2020): 1–15. <https://doi.org/https://doi.org/10.1016/j.gecco.2019.e00875>.
- Balsalobre-Lorente, Daniel, Oana M Driha, Festus Victor Bekun, and Olawumi Abeni Osundina. "Do Agricultural Activities Induce Carbon Emissions? The BRICS Experience." *Environmental Science and Pollution Research* 26, no. 24 (2019): 25218–34. <https://doi.org/10.1007/s11356-019-05737-3>.
- Bennett, Genevieve, Jan Cassin, and Nathaniel Carroll. "Natural Infrastructure Investment and Implications for the Nexus: A Global Overview." *Ecosystem Services* 17 (2016): 293–97. <https://doi.org/https://doi.org/10.1016/j.ecoser.2015.05.006>.
- Blesh, Jennifer, Lesli Hoey, Andrew D Jones, Harriet Friedmann, and Ivette Perfecto. "Development Pathways toward 'Zero Hunger.'" *World Development* 118 (2019): 1–14. <https://doi.org/https://doi.org/10.1016/j.worlddev.2019.02.004>.
- Diouf, Gwilim. "Millenium Development Goals (Mdgs) and Sustainable Development Goals (Sdgs) in Social Welfare." *International Journal of Science and Society* 1, no. 4 (December 2019): 17–24. <https://doi.org/10.54783/ijssoc.v1i4.144>.
- Disemadi, Hari Sutra. "Lenses of Legal Research: A Descriptive Essay on Legal Research Methodologies." *Journal of Judicial Review* 24, no. 2 (November 30, 2022): 289–304. <https://doi.org/10.37253/jjr.v24i2.7280>.
- Fawaizah, Indana, Arif Zaenal Abidin, and Anis Mashdurohatun. "Transfer Of Functions Of Agriculture To Non Agriculture Land Under Government Regulation Number 1 Of 2011 Concerning The Establishment And Transfer Function Of Agricultural Land Sustainable The Food." *Jurnal Akta* 5, no. 3: 711-716. <http://dx.doi.org/10.30659/akta.v5i3.3247>
- Foster, John Bellamy. "The Earth-System Crisis and Ecological Civilization: A Marxian View." *International Critical Thought* 7, no. 4 (2017): 439–58. <https://doi.org/10.1080/21598282.2017.1357483>.
- Huo, Da. "Impact of Country-Level Factors on Export Competitiveness of Agriculture Industry from Emerging Markets." *Competitiveness Review* 24, no. 5 (January 2014): 393–413. <https://doi.org/10.1108/CR-01-2012-0002>.
- Jan, M. Qasim, Khazima Muazim, and Arshad Ashraf. "Climate Change and Its Threats to Sustainable Agriculture." *Regional Problems* 21, no. 3 (1) (2018): 37–40. [https://doi.org/10.31433/1605-220X-2018-21-3\(1\)-37-40](https://doi.org/10.31433/1605-220X-2018-21-3(1)-37-40).
- Janker, Judith, and Stefan Mann. "Understanding the Social Dimension of Sustainability

- in Agriculture: A Critical Review of Sustainability Assessment Tools." *Environment, Development and Sustainability* 22, no. 3 (2020): 1671–91. <https://doi.org/10.1007/s10668-018-0282-0>.
- M. Tahat, Monther, Kholoud M. Alananbeh, Yahia A. Othman, and Daniel I. Leskovar. "Soil Health and Sustainable Agriculture." *Sustainability* 12, no. 12 (2020): 1–26. <https://doi.org/10.3390/su12124859>.
- Malhi, Gurdeep Singh, Manpreet Kaur, and Prashant Kaushik. "Impact of Climate Change on Agriculture and Its Mitigation Strategies: A Review." *Sustainability (Switzerland)* 13, no. 3 (2021): 1–21. <https://doi.org/10.3390/su13031318>.
- Olde, Evelien M de, and Vladislav Valentinov. "The Moral Complexity of Agriculture: A Challenge for Corporate Social Responsibility." *Journal of Agricultural and Environmental Ethics* 32, no. 3 (2019): 413–30. <https://doi.org/10.1007/s10806-019-09782-3>.
- Sadowski, Arkadiusz, and Agnieszka Baer-Nawrocka. "Food and Environmental Function in World Agriculture—Interdependence or Competition?" *Land Use Policy* 71 (2018): 578–83. <https://doi.org/https://doi.org/10.1016/j.landusepol.2017.11.005>.
- Saijo, Tatsuyoshi. "Future Design: Bequeathing Sustainable Natural Environments and Sustainable Societies to Future Generations." *Sustainability (Switzerland)* 12, no. 16 (2020): 1–21. <https://doi.org/10.3390/su12166467>.
- Sobri, Sobri. "Kejahatan Politik Dalam Pembangunan Dalam Kebijakan Pembangunan Industri Kehutanan Dan Perkebunan Di Provinsi Riau." *SISI LAIN REALITA* 4, no. 1 (2019): 70–89. [https://doi.org/10.25299/sisilainrealita.2019.vol4\(1\).4050](https://doi.org/10.25299/sisilainrealita.2019.vol4(1).4050).
- Stevenson, Kalb T., Heidi B. Rader, Lilian Alessa, Andrew D. Kliskey, Alberto Pantoja, Mark Clark, and Jeffery Smeenk. "Sustainable Agriculture for Alaska and the Circumpolar North: Part II. Environmental, Geophysical, Biological and Socioeconomic Challenges." *Arctic* 67, no. 3 (2014): 296–319. <https://doi.org/10.14430/arctic4408>.
- Tan, David. "Metode Penelitian Hukum: Mengupas Dan Mengulas Metodologi Dalam Menyelenggarakan Penelitian Hukum." *Nusantara: Jurnal Ilmu Pengetahuan Sosial* 8, no. 8 (2021): 2463–78. <https://doi.org/10.31604/jips.v8i8.2021.2463-2478>.
- Wang, Lei, Xuan Vinh Vo, Muhammad Shahbaz, and Aysegul Ak. "Globalization and Carbon Emissions: Is There Any Role of Agriculture Value-Added, Financial Development, and Natural Resource Rent in the Aftermath of COP21?" *Journal of Environmental Management* 268 (2020): 1–8. <https://doi.org/https://doi.org/10.1016/j.jenvman.2020.110712>.
- Yulia, Aris, Fatma Ayu Jati Putri, and Erna Wati. 2023. "Land Use Policies and Tenure in Economic Liberalization Regime: Land Law in Agro-Industrial Context". *Lex Publica* 10 (1):14-27. <https://doi.org/10.58829/lp.10.1.2023.14-27>.
- Zhang, Lu, Jiaying Pang, Xingpeng Chen, and Zhongmingnan Lu. "Carbon Emissions, Energy Consumption and Economic Growth: Evidence from the Agricultural Sector of China's Main Grain-Producing Areas." *Science of The Total Environment* 665 (2019): 1017–25. <https://doi.org/https://doi.org/10.1016/j.scitotenv.2019.02.162>.
- Zhu, Dajian. "Research from Global Sustainable Development Goals (SDGs) to Sustainability Science Based on the Object-Subject-Process Framework." *Chinese Journal of Population Resources and Environment* 15, no. 1 (2017): 8–20. <https://doi.org/10.1080/10042857.2017.1286147>.

Book Section:

Kumar, Rahul, Amit Kumar, and Purabi Saikia. "Deforestation and Forests Degradation Impacts on the Environment." In *Environmental Degradation: Challenges and Strategies for Mitigation*, edited by Vijay P Singh, Shalini Yadav, Krishna Kumar Yadav, and Ram Narayan Yadava, 19–46. Cham: Springer International Publishing, 2022. https://doi.org/10.1007/978-3-030-95542-7_2.

Thesis:

Doan, Cong Nam. "Diversifying the Seafood Market of Finland through International Sourcing." Master's thesis, Aalto University School of Business, 2019.

Web Pages:

O'Neill, Aaron. "Indonesia - Share of Economic Sectors in the Gross Domestic Product 2022." Statista, January 2024, <https://www.statista.com/statistics/319236/share-of-economic-sectors-in-the-gdp-in-indonesia/>.

O'Neill, Aaron. "Thailand - Share of Economic Sectors in the Gross Domestic Product 2022." Statista, January 2024, <https://www.statista.com/statistics/331893/share-of-economic-sectors-in-the-gdp-in-thailand/>.

IndexMundi. "Countries Ranked by Agriculture, Value Added (Current US\$)." IndexMundi, 2020, <https://www.indexmundi.com/facts/indicators/NV.AGR.TOTL.CD/rankings>.

Simpson, Stephen D., Thomas Brock, and Pete Rathburn. "Top Agricultural Producing Countries." Investopedia, July 2022, <https://www.investopedia.com/financial-edge/0712/top-agricultural-producing-countries.aspx>.