Green Accounting: A Comparative Study of ESG's Performance Implementation between Uzbekistan and Indonesia.

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ABSTRACT

This study examines the comparative implementation of Environmental, Social, and Governance (ESG) frameworks and green accounting practices in Uzbekistan and Indonesia two emerging economies from different regions facing distinct yet intersecting sustainability challenges. While ESG has become a global focal point for promoting sustainable development, cross-regional comparisons remain limited in academic literature. Indonesia has made notable strides with mandatory ESG regulations, sustainable finance roadmaps, and increasing private sector engagement. Conversely, Uzbekistan, despite being in the early stages of ESG integration, has introduced a Green Economy Strategy and national taxonomy, reflecting growing political commitment. However, challenges persist in both contexts. Indonesia faces risks of greenwashing and uneven ESG reporting, while Uzbekistan grapples with weak governance, high energy intensity, and fragmented regulations. The study highlights the potential of Industry 4.0 technologies such as IoT, AI, and blockchain to enhance ESG data transparency and accountability. It also emphasizes the urgent need for standardizing ESG metrics globally, as the proliferation of disparate rating systems hampers comparability and policy alignment. Based on qualitative analysis and cross-national evidence, this research contributes to understanding how governance quality, technological capacity, and institutional coordination shape ESG outcomes. Insights from this comparison offer strategic implications for policymakers aiming to strengthen sustainable finance and green accountability frameworks in developing economies.

Keywords: Green Accounting; ESG Implementation; Sustainable Development; Uzbekistan; Indonesia; Environmental Policy; Industry 4.0; Governance; SDG Performance; Comparative Analysis; ESG Disclosure; Green Economy Strategy

INTRODUCTION

Despite green accounting, particularly in terms of Environmental, Social, and Governance (ESG) policies, having become a major area of research over the past four years, many aspects remain underexplored. One such gap is the comparison between countries from different regions, such as Eurasia and Southeast Asia. Green accounting refers to the integration of environmental and social considerations into traditional financial accounting frameworks, reflecting the growing global emphasis on sustainable economic development. ESG criteria have emerged as critical tools for evaluating corporate and national sustainability efforts.

Uzbekistan's economic model is highly resource-intensive, presenting significant ESG-related challenges. The country's energy sector, particularly power generation and heating consumed a large share of natural resources. According to the International Energy Agency, Uzbekistan's energy intensity is several times higher than the global average. In fact, it has been identified as having one of the highest energy intensities in the world. This inefficiency results in economic losses estimated at around 4.5% of GDP annually. Additionally, approximately three-quarters of the nation's greenhouse gas emissions originate from the energy sector. These figures underscore the urgent need for Uzbekistan to improve energy efficiency and transition to cleaner energy sources.

Recognizing this, the government has undertaken several policy measures. Uzbekistan ratified the Paris Agreement in 2018 and subsequently adopted a "Green Economy" strategy for 2019–2030. This strategy aims to double energy efficiency and increase the share of renewable energy to 25% of total electricity generation by

2030. However, as a fossil-fuel-rich nation particularly endowed with natural gas reserve the shift away from inefficient energy use and high emissions presents a slow and deeply structural challenge.

Sectoral regulations are beginning to emerge, including green taxonomy guidance and draft ESG reporting requirements. For instance, environmental consultancy sources report that, starting in 2025, large Uzbek companies will be required to publish audited sustainability reports. However, experts caution that Uzbekistan still lacks a single, unified ESG disclosure framework. In-depth analyses point out the absence of a comprehensive legislative document to consolidate the country's fragmented CSR and ESG-related laws. In practice, environmental and social regulations remain scattered across multiple decrees covering areas such as subsoil use, waste management, and energy and enforcement remains inconsistent. Until comprehensive reporting rules and enforcement mechanisms such as conflict-of-interest legislation and robust disclosure mandates are effectively implemented, these policy gaps will continue to constrain meaningful ESG progress.

Governance and Institutional Barriers. Perhaps the most formidable hurdle to ESG implementation in Uzbekistan is its governance environment. Multiple international assessments have emphasized the prevalence of corruption and weak institutional capacity within the country's business and governmental structures. One prominent risk report characterizes Uzbekistan as "one of the most corrupt countries in the world," stating that corruption "penetrates all levels" of government and business. While anti-bribery laws and legal measures against abuse of office do exist, their enforcement is reportedly weak, and high-ranking officials often operate with impunity. These structural deficiencies significantly undermine transparency and accountability, making it difficult to implement and enforce ESG policies and disclosure requirements reliably.

On a more positive note, there are signs of reform. President Mirziyoyev's reform agenda for 2022–2026 explicitly includes initiatives to reduce corruption and enhance transparency. However, unless these efforts translate into stronger rule of law particularly in areas such as public procurement, environmental enforcement, and oversight of conflicts of interest investors and stakeholders are likely to remain skeptical of ESG-related data and commitments. These analyses implicitly contrast Indonesia's proactive regulatory regime with Uzbekistan's uphill struggle: Indonesia's Sustainable Finance Roadmap is in execution (assisted by World Bank and others), whereas Uzbekistan is only now aligning ministries (e.g. renaming the Ministry of Environment in 2023) and engaging international partners on green growth. Other corporate surveys add nuance. A 2024 PwC Eurasia study reports that ~25% of Uzbek companies have well-established ESG management systems, while about half have only separate, non-integrated environment/social policies. This implies a low baseline of ESG maturity in Uzbekistan. By contrast, Indonesia's market sees broader ESG commitment: for example, one analysis finds that consistent ESG implementation in Indonesian mining (or lack thereof) directly affects investment inflows, indicating that corporate ESG is becoming a commercial imperative. Collectively, these sources suggest Indonesia is comparatively farther along in ESG institutionalization (driven by financial regulators and SDG agendas), whereas Uzbekistan is in an earlier catch-up phase, reliant on top-down reform and international support.

Recent institutional reports provide comparative insight into the ESG landscapes of Uzbekistan and Indonesia. Globally, the United Nations Development Programme (UNDP) and other bodies underscore the immense value at stake: for instance, the UNDP projects that ESG-aligned assets could reach $53 trillion by 2025. However, progress is hindered by the proliferation of standards there are currently over 600 ESG rating systems worldwide. This lack of standardization affects both countries, complicating their ESG implementation strategies in the absence of universally accepted benchmarks.

A World Bank Sustainable Finance Country Progress Report highlights Indonesia's comparatively advanced position. It praises Indonesia's sustainable finance principles, which are closely aligned with the Sustainable Development Goals (SDGs), and notes robust collaboration between key stakeholders such as the Financial Services Authority (OJK), Bank Indonesia, and industry bodies in mainstreaming ESG. By contrast, the World Bank's Country Climate and Development Report on Uzbekistan underscores the magnitude of the country's challenges. It finds that achieving decarbonization by 2060 will require transformative changes in the energy sector responsible for 75% of national emissions and warns that the compounded effects of climate change, including the degradation of the Aral Sea and rising water stress, could reduce Uzbekistan's GDP by as much as 10% by 2050 if left unaddressed.

Emerging technologies of Industry 4.0 offer promise to improve ESG data quality in both countries. Academic research has begun to explore how advanced digital tools could enhance ESG reporting accuracy. For instance, Yu et al. (2022) propose an "Industry 4.0-enabled" ESG reporting system for a Chinese energy firm: using real-time IoT sensors and big-data analytics would allow continuous environmental monitoring, making disclosures more timely and reliable. Their model demonstrates that automated data streams can overcome the infrequent, manual reporting that now plagues sustainability reporting. Similarly, in theoretical studies of AI and ESG, researchers find that artificial intelligence can strengthen governance and environmental management. A recent study of Chinese state-owned companies shows AI adoption "enhances the practices" and sustainable development outcomes by improving data analytics and decision-making in ESG areas. Blockchain is another promising tool. As one technology review notes, blockchain's immutable ledger can embed transparency into ESG by making data tamper-proof. In practice, pilots have used blockchain to record carbon offsets and emissions projects with full traceability. As Fujitsu commentary explains, blockchain can introduce "accuracy, transparency and integrity" into ESG reports– in effect acting as a "trust machine" for sustainability data. By anchoring supply-chain and emission data on distributed ledgers, companies can provide verifiable evidence of their environmental performance. In short, Industry 4.0 tools (IoT, AI, blockchain) have the potential to bridge data gaps and enhance accountability in ESG for both developed and developing economies. However, actually deploying these in Indonesia or Uzbekistan will require investment and technical capacity – an area ripe for future study and pilot projects.

Future research should fill this void by systematically analyzing ESG adoption patterns and outcomes in under-studied economies. Second, there is a lack of standardization in ESG measurement. As noted above, the proliferation of metrics (hundreds of rating systems) makes cross-country or cross-company comparisons difficult. Academic research must critically assess how global ESG standards (GRI, SASB, TCFD, ISSB) align with local regulations in Indonesia and Uzbekistan. For instance, one might study whether Indonesian OJK guidelines are consistent with IFRS/ISSB requirements, or how Uzbek environmental laws could be harmonized with international carbon accounting frameworks. Similarly, linking corporate ESG reports to national SDG progress is an unexplored area: the weak SDG disclosures in Indonesiasuggest a need to investigate how firms' sustainability initiatives actually contribute to national development goals. Third, sector-specific and institutional studies are needed. The example of higher education shows a glaring gap: as one review found, "fewer studies have discussed ESG implementation in higher education"

The integration of ESG factors and green accounting has become a significant global concern, driven by the need for sustainable development and ethical corporate practices. Companies increasingly adopt ESG frameworks to enhance operational efficiency while aligning with stakeholder expectations and regulatory demands. Research shows that ESG practices are linked to improved financial outcomes, with studies highlighting positive correlations between high ESG scores and better accounting performance (Fang, 2023; Teng, 2024). Nevertheless, green accounting still faces challenges, including inconsistent reporting standards and the risk of greenwashing, where companies exaggerate their environmental responsibility (Lokuwaduge & Silva, 2022). Some studies even find mixed results regarding the influence of green accounting on stock returns, emphasizing the urgent need for clearer and standardized frameworks (Fitria & Murtanto, 2024; Zhang, 2025).

In this context, the need for global ESG standards is increasingly recognized. The absence of consistent reporting practices not only raises the risk of greenwashing but also undermines the credibility and comparability of ESG disclosures (Lokuwaduge & Silva, 2022). Establishing robust international ESG standards could enhance transparency, promote sustainable business practices, and ultimately create shared value for companies and society (Zhang, 2025).

In recent years, countries like Uzbekistan and Indonesia have increasingly incorporated ESG principles into their national policies. In Uzbekistan, regulatory efforts such as the Strategy on Green Economy Transition 2019–2030 and the adoption of a National Green Taxonomy in 2023 demonstrate the government's proactive stance toward sustainability (PwC, 2023). Meanwhile, Indonesia has introduced regulations like OJK Regulation No. 51/POJK.03/2017 and launched the Sustainable Finance Roadmap to encourage private sector participation, with additional momentum provided by the country's commitment to net-zero emissions by 2060 and international platforms such as the G20 and COP26 (PwC, 2023).

The comparative development between Indonesia and Uzbekistan offers valuable insights for enhancing ESG implementation in both countries. By examining each nation's strategies, strengths, and challenges, they can refine their approaches to achieve sustainable economic and environmental goals more effectively.

Indonesia has made notable strides in ESG implementation. It has committed to achieving carbon neutrality by 2060, focusing on reducing greenhouse gas emissions through a long-term strategy for low-carbon development (Батаева, 2023). Its regulatory framework includes laws such as the Forestry Law and guidelines for sustainable construction, which promote renewable energy and sustainable practices across sectors (Agnes & Koestoer, 2021). Additionally, Indonesia emphasizes youth engagement by mobilizing the younger generation to support green economy initiatives through ESG investments, highlighting collective responsibility in achieving the Sustainable Development Goals (SDGs) by 2030 (Budiman et al., 2024).

Conversely, Uzbekistan faces notable ESG challenges. Its economy, heavily reliant on natural resources, mirrors Indonesia's struggles with coal dependency, complicating the transition to sustainable practices (Батаева, 2023). The country also grapples with significant environmental issues, requiring innovative approaches to integrate sustainability into its economic development strategies (Alauddin, 2002).

While the comparative analysis highlights the potential for mutual learning, it is essential to recognize that each country faces unique challenges that may require tailored solutions. Understanding these differences can foster more effective ESG strategies and enhance overall sustainability efforts. This study seeks to address the gap in the literature by comparing ESG implementation between an Eurasian country (Uzbekistan) and a Southeast Asian country (Indonesia). The aim is to highlight the similarities, differences, and challenges faced by each region in advancing green accounting practices.

Specifically, this study explores:

How do governance-related strategies influence the implementation of ESG frameworks in Indonesia and Uzbekistan, and what challenges do both countries face in aligning national policies with sustainable development goals?

Despite the rapid growth in interest in green accounting and environmental, social and governance (ESG) policies over the past four years, many aspects remain under-explored, particularly the comparative dynamics between regions such as Eurasia and Southeast Asia (Fang, 2023). Green accounting incorporates environmental and social factors into conventional financial models, reflecting the increasing global focus on sustainable development (Lokuwaduge & Silva, 2022). ESG criteria have become essential for assessing sustainability initiatives at corporate and national levels (Zhang, 2025).

Uzbekistan's resource-intensive economic model poses significant challenges in terms of ESG. According to the International Energy Agency (IEA), the country's energy intensity is several times the global average, with energy inefficiencies resulting in annual economic losses of up to 4.5% of GDP (IEA, 2022). The energy sector alone accounts for around 75% of Uzbekistan's greenhouse gas emissions (World Bank, 2023). These challenges necessitate urgent reforms to improve energy efficiency and encourage the adoption of cleaner energy sources.

In response, Uzbekistan ratified the Paris Agreement in 2018 and adopted its 'Green Economy' strategy for 2019–2030, with the aim of doubling energy efficiency and increasing the share of renewable energy to 25% by 2030 (Government of Uzbekistan, 2019). However, transitioning from high-emission models remains slow and structurally complex for a fossil-fuel-rich nation such as Uzbekistan, particularly in terms of natural gas (PwC, 2023).

Progress in regulation includes the introduction of draft ESG reporting requirements and a national green taxonomy in 2023 (PwC, 2023). From 2025, large companies in Uzbekistan will be required to publish audited sustainability reports (Environmental Consultancy Source, 2023). However, experts caution that the lack of a unified ESG framework is problematic, as regulations are scattered across subsoil use, waste management and energy laws (Reineke & Gottschall, 2024). Weak enforcement further limits progress.

Governance remains a formidable barrier. Transparency International and other international risk assessments

categorise. Uzbekistan as a highly corrupt country, where systemic corruption is prevalent at all levels of government and business (Transparency International, 2023). Although anti-bribery legislation is in place, it is rarely enforced, and impunity among high-level officials is a serious concern (Younis & Chaudhary, 2020). These issues inhibit reliable ESG implementation and data credibility.

Nevertheless, President Mirziyoyev's 2022–2026 reform plan incorporates anti-corruption and transparency initiatives (Presidential Reform Agenda, 2022). However, unless institutional reforms enhance the rule of law, especially with regard to procurement, environmental enforcement and conflict-of-interest oversight, investors will remain sceptical of ESG commitments (Mukti & Sobirov, 2023).

By contrast, Indonesia has a more developed ESG landscape. The country's Sustainable Finance Roadmap, guided by OJK Regulation No. 51/POJK.03/2017, has been implemented and is supported by the World Bank and other international partners (OJK, 2017; World Bank, 2023). Indonesia has aligned its ESG strategies with the Sustainable Development Goals (SDGs), and institutional coordination — for example, between Bank Indonesia, the OJK and financial institutions — has strengthened the mainstreaming of ESG (Budiman et al., 2024).

A 2024 PwC Eurasia study shows that around 25% of Uzbek companies have established ESG management systems, while almost 50% operate with isolated policies (PwC Eurasia, 2024). Conversely, ESG in Indonesia is increasingly commercialised, especially in sectors such as mining, where ESG performance directly affects foreign investment inflows (Agnes & Koestoer, 2021).

The United Nations Development Programme (UNDP) estimates that ESG-aligned assets could exceed $53 trillion globally by 2025. However, the existence of over 600 rating systems worldwide complicates standardisation, affecting both Uzbekistan's and Indonesia's ESG coherence (Zhang, 2025).

Meanwhile, the World Bank's Sustainable Finance Country Progress Report commends Indonesia for its robust alignment of ESG and SDG objectives, as well as its effective stakeholder cooperation (World Bank, 2023). Conversely, the World Bank's Country Climate and Development Report for Uzbekistan highlights several risks, including the fact that 75% of emissions originate from the energy sector and that climate-related issues such as the degradation of the Aral Sea could reduce GDP by 10% by 2050 if left unaddressed (World Bank, 2023).

Technologies from Industry 4.0 offer opportunities to improve the quality of ESG data. Studies show that real-time monitoring using the Internet of Things (IoT), artificial intelligence (AI), and blockchain can improve the transparency and reliability of ESG data (Yu et al., 2022). AI tools can improve environmental and governance decision-making, and blockchain technology can prevent data manipulation and establish trust (Fujitsu, 2022; Teng, 2024).

Despite these promises, implementing such tools in Uzbekistan or Indonesia requires significant investment and technical capacity — a domain ripe for future research and pilot testing (Fang, 2023).

Future studies should systematically analyse the adoption of ESG in under-researched economies, assess the compatibility of global ESG standards (GRI, SASB, TCFD and ISSB) with local legislation and examine how corporate ESG strategies contribute to national SDG performance (Lokuwaduge & Silva, 2022). Studies focusing on specific sectors, such as higher education, are particularly lacking, highlighting the need for context-specific approaches (Zhang, 2025).

In sum, ESG and green accounting have become global imperatives for sustainable and ethical business. Though ESG adoption often correlates with better financial outcomes (Fang, 2023; Teng, 2024), inconsistencies in standards and risks of greenwashing highlight the need for clear, enforceable global benchmarks (Lokuwaduge & Silva, 2022).

Both Uzbekistan and Indonesia have made efforts to embed ESG into national policy. Uzbekistan's Green Economy Strategy (2019–2030) and Green Taxonomy (2023), and Indonesia's Sustainable Finance Roadmap and commitment to net-zero emissions by 2060, reflect growing political will (PwC, 2023; Батаева, 2023). Yet challenges remain.

Indonesia's ESG governance benefits from sectoral laws like the Forestry Law and active youth involvement in green investments (Agnes & Koestoer, 2021; Budiman et al., 2024). In contrast, Uzbekistan's natural resource dependency and underdeveloped environmental frameworks make sustainability transition more difficult (Батаева, 2023; Alauddin, 2002).

This comparative study of Uzbekistan and Indonesia aims to identify commonalities, differences, and national-level constraints in ESG implementation and green accounting practices.

The integration of environmental, social, and governance (ESG) frameworks and green accounting has become essential to sustainable development, reflecting the global effort to balance economic growth with ecological and social responsibility (Lokuwaduge & Silva, 2022; Zhang, 2025). Green accounting incorporates environmental and social costs into traditional financial metrics and is being adopted by more and more corporations and governments in order to address stakeholder demands for transparency and ethical practices (Fang, 2023; Teng, 2024). Despite its rapid proliferation, comparative studies of ESG implementation across regions, particularly between emerging economies, remain scarce. This leaves critical gaps in our understanding of how institutional, technological, and governance factors shape outcomes (Rezaee et al., 2023; Ospanova et al., 2023). Though geographically and economically distinct, Uzbekistan and Indonesia exemplify the challenges and opportunities faced by resource-dependent nations transitioning toward sustainability. Uzbekistan's economy is characterized by high energy intensity and reliance on fossil fuels. The country loses an estimated 4.5% of its GDP annually due to inefficiencies, and the energy sector contributes 75% of the country's total greenhouse gas emissions (IEA, 2022; World Bank, 2023). In response, the government ratified the Paris Agreement in 2018 and launched the Green Economy Strategy in 2019, which aims to increase the share of renewable energy to 25% by 2030 (Government of Uzbekistan, 2019). However, structural barriers, including fragmented regulations, weak enforcement, and systemic corruption, persist and hinder ESG transparency (Transparency International, 2023; Younis & Chaudhary, 2020). Conversely, Indonesia has made greater progress in institutionalizing ESG principles through policies such as OJK Regulation No. 51/POJK.03/2017 and its Sustainable Finance Roadmap, both of which align with the Sustainable Development Goals (SDGs) (OJK, 2017; Budiman et al., 2024). Indonesia's commitment to achieving carbon neutrality by 2060 and its sector-specific legislation (e.g., the Forestry Law) highlight its multi-stakeholder approach (Agnes & Koestoer, 2021; Bataeva, 2023). Nevertheless, challenges such as coal dependency, uneven reporting, and greenwashing risks remain (Lokuwaduge & Silva, 2022; Kuswantoro et al., 2023).

Globally, the lack of standardized ESG metrics, exemplified by over 600 rating systems, complicates cross-country comparisons and policy coherence (UNDP, 2023; Zhang, 2025). Meanwhile, Industry 4.0 technologies (e.g., the Internet of Things [IoT], artificial intelligence [AI], and blockchain) have the potential to transform data accuracy and accountability; however, their adoption in developing contexts is still in its early stages (Yu et al., 2022; Fujitsu, 2022).

This study addresses these gaps by comparing ESG implementation in Uzbekistan and Indonesia, examining how governance, regulatory frameworks, and technological adoption shape their sustainability trajectories. The findings aim to inform policymakers and stakeholders in designing context-sensitive strategies for green accountability. easy way to comply with the conference paper formatting requirements is to use this document as a template and simply type your text into it.

RESEARCH METHOD

The presented study on the cases of Indonesia and Uzbekistan is both descriptive (examining the development and implementation of ESG principles in both countries) and explanatory (analyzing the challenges, strategies, and outcomes related to ESG advancement). It draws on the research and analyses of scholars and experts who have investigated the integration of ESG frameworks into national policies and corporate practices, the role of green accounting, and the interaction between economic, social, and environmental sustainability (Stepanova & Scherbin, 2024; Mukti & Sobirov, 2023; Reineke & Gottschall, 2024; Younis & Chaudhary, 2020; Lokuwaduge & Silva, 2022; Fang, 2023; Teng, 2024; Zhang, 2025).

The empirical foundation of the study includes statistical data, regulatory documents, and analytical reports from

national institutions, international organizations, and global ESG performance rankings. It also considers the Sustainable Finance Roadmap issued by Indonesia's OJK and various sustainability initiatives outlined by Uzbekistan's government. The methodological basis of the study consists of comparative analysis and content analysis.

The study uses comparative thematic coding to identify similarities and differences in the ESG trajectories of the two countries. Although numerical data (e.g. energy intensity and emissions) are referenced, they are employed interpretively to reinforce qualitative findings rather than for statistical analysis.

To ensure validity, the analysis incorporates triangulation of sources, drawing from multiple perspectives, including government publications, international organisations (e.g. the World Bank and the UNDP) and corporate ESG disclosures. Potential researcher bias is minimised through consistent thematic criteria and cross-referencing across documents.

RESULTS AND DISCUSSIONS

Integration of ESG and Green Accounting in Global Context: The findings reaffirm that ESG principles and green accounting have become central to sustainability-oriented governance and corporate responsibility globally. ESG adoption is driven by the increasing demand for transparent, ethical, and environmentally responsible practices. Several studies (Fang, 2023; Teng, 2024) link ESG adherence to improved financial performance, while others (Fitria & Murtanto, 2024; Zhang, 2025) caution against the inconsistency of reporting standards and the risk of greenwashing. These concerns underscore the need for robust, internationally harmonized ESG frameworks to ensure comparability and accountability.

ESG Implementation in Indonesia: For Indonesia demonstrates notable progress in institutionalizing ESG frameworks. Through OJK Regulation No. 51/POJK.03/2017 and the Sustainable Finance Roadmap, the government promotes responsible financial and corporate behavior. Commitments to carbon neutrality by 2060, alongside sector-specific regulations like the Forestry Law, reflect a comprehensive national strategy. Youth participation in ESG investments and awareness campaigns shows Indonesia's inclusive approach to sustainability, encouraging a shift in values across generations (Budiman et al., 2024). These multi-level efforts contribute to the integration of green accounting in national development policies, though challenges in data transparency and cross-sector alignment remain.ESG Development in Uzbekistan: A Uzbekistan has taken significant initial steps with the adoption of the Strategy for Green Economy Transition (2019–2030) and the National Green Taxonomy (2023). These frameworks reflect a growing institutional commitment to sustainability. However, implementation is hindered by structural economic dependencies especially on resource extraction and legacy environmental challenges, such as water mismanagement and pollution (Alauddin, 2002). Despite regulatory progress, ESG reporting and green accounting remain underdeveloped. The absence of consistent disclosure practices and limited private-sector involvement reduce the effectiveness of Uzbekistan's ESG agenda. Comparatively, Uzbekistan's efforts appear more state-driven and less participatory than Indonesia's, indicating the need for greater stakeholder engagement and capacity building.

Comparative Insights: Both countries exhibit a strong commitment to ESG, yet their paths differ significantly. Indonesia's approach is characterized by broader stakeholder inclusion, stronger regulatory enforcement, and growing investor interest. Uzbekistan's model remains more centralized and policy-driven, facing steeper institutional and infrastructural barriers.

Table I Comparative Table

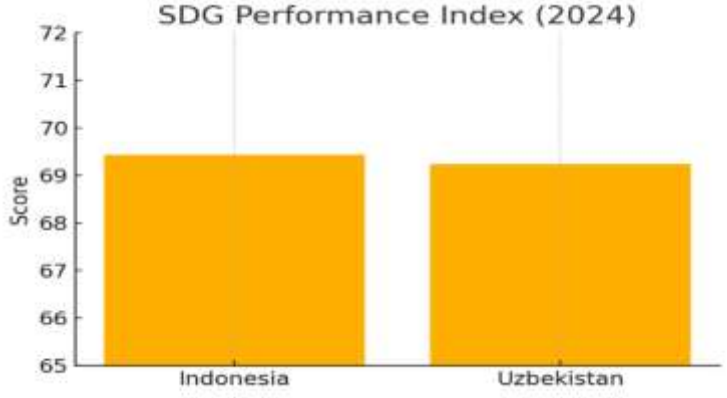
Aspect	**Indonesia**	**Uzbekistan**
Policy Framework	OJK Sustainable Finance Roadmap, TKBI 2024	Strategy on Green Economy Transition 2019–2030
ESG Regulation	Mandatory for financial institutions & public companies (POJK 51/2017)	Emerging, limited mandatory ESG disclosure

Higher Education Integration	ESG instruments under development; GreenMetric ranking system	Low integration; limited ESG engagement in universities
Corporate ESG Disclosure	Moderate uptake, 74% SDG disclosure index (Kuswantoro et al., 2022)	Fragmented and voluntary, limited quality (PwC, 2024)
Green Taxonomy	Launched Sustainable Finance Taxonomy (TKBI v2) in 2025	Green Taxonomy launched in 2023, under Ministry of Economy
Energy Policy	Fossil-fuel reliant but has 2060 net-zero target	One of the highest energy intensities globally, fossil dependence
Governance Quality	Moderate, improving through financial reforms	Weak; corruption and institutional limitations persist
International Cooperation	Member of G20, active in COP26, part of NGFS & PRI	Initial partnerships with UNDP, World Bank, Green Climate Fund
Technology Adoption in ESG	Initial stage, growing interest in blockchain & AI for ESG	Very limited; conceptual interest in ESG tech
Private Sector Participation	Moderate; several green bonds & sustainability-linked loans issued	Low; green finance in early pilot phase, no sovereign green bond yet
SDG Performance Index (2024)	Score: ~69.43 (Ranked 79th globally)	Score: ~69.24 (Ranked 82nd globally)
Main ESG Challenges	Coal dependency, uneven ESG reporting, greenwashing risks	Weak governance, high energy inefficiency, limited ESG literacy

These two countries exhibit distinct approaches to ESG policy frameworks. In Indonesia, ESG regulations are now mandatory, particularly for financial institutions and publicly listed companies, as stipulated in POJK 51/2017. In contrast, Uzbekistan's ESG regulatory environment remains limited, with disclosure requirements still emerging and largely voluntary. In the education sector, Uzbekistan shows low levels of integration of ESG-related content, whereas Indonesia has reached a moderate phase, with initiatives such as the Green Metric university ranking system and ESG instrument development underway.

Despite these differences, Uzbekistan is demonstrating progress in developing its ESG policies and frameworks to support sustainable development. This is reflected in their relatively close positions in the 2024 SDG Performance Index Indonesia ranks 79th globally with a score of approximately 69.43, while Uzbekistan is not far behind at 82nd with a score of 69.24.

Each country faces unique challenges in implementing ESG policies. Indonesia struggles with coal dependency, inconsistencies in ESG reporting, and risks of greenwashing. Meanwhile, Uzbekistan contends with weak governance structures, high energy inefficiency, and limited ESG awareness across sectors. Nonetheless, both nations are actively working to strengthen their ESG strategies in pursuit of long-term sustainability.



The chart indicates that Indonesia holds a higher score than Uzbekistan in the 2024 SDG Performance Index. This data can serve as a valuable benchmark for policymakers in Uzbekistan, encouraging them to continuously improve their national strategies and raise their index score in the future.

CONCLUSIONS

This study has explored the comparative implementation of Environmental, Social, and Governance (ESG) frameworks and green accounting practices in Indonesia and Uzbekistan, revealing both shared challenges and country-specific strategies. While both nations have demonstrated a growing commitment to sustainability through national roadmaps, taxonomies, and regulatory reforms the effectiveness of ESG integration remains influenced by governance quality, economic structure, and regulatory consistency. Indonesia, with its more established ESG policies and international engagement, shows stronger institutional support and private sector involvement. Conversely, Uzbekistan, though in earlier stages, has taken important steps toward a green transition, including adopting a national green taxonomy. However, both countries still face major obstacles such as inconsistent ESG disclosures, reliance on natural resources, and the risk of greenwashing. The findings underscore the need for clearer global standards, improved governance mechanisms, and stronger public-private collaboration. Comparative insights from this study can inform policymakers and stakeholders in shaping more effective, transparent, and context-sensitive ESG strategies to support sustainable development goals.

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REFERENCES

1. Agnes, Maria, and Raldi Hendro Koestoer. 2021. “A Review on Sustainable Construction Regulations in Asian Countries: Savvy Insights for Indonesia.” *Jurnal Ilmu Lingkungan* 19(2): 459–64. doi:10.14710/jil.19.2.459-464.
2. Alauddin, Mohammad, Robin Ghosh, Yujiro Hayami, Kali Kalirajan, and K L Krishna. 2002. “ENVIRONMENTALISING ECONOMIC DEVELOPMENT : A SOUTH EAST ASIAN PERSPECTIVE * ENVIRONMENTALISING ECONOMIC DEVELOPMENT : A SOUTH ASIAN PERSPECTIVE Abstract.”
3. Anjani, Zalfa, and Denik Haryani. 2023. “The Importance of Environmental, Social, and Governance (ESG) Principles in Public Works and Housing Infrastructure.” Journal of Infrastructure Policy and Management 6(1): 15–31. doi:10.35166/jipm.6.1.15-31.
4. Bambang Ahmad Indarto, and Dwi Ari Ani. 2023. “The Role of Green Accounting Through the Implementation of Carbon Taxes as an Instrument for Climate Change Mitigation in Indonesia.” The Accounting Journal of Binaniaga 8(01): 73–84. doi:10.33062/ajb.v8i01.24.
5. Bataeva, B. S. 2023. “Implementation of Measures to Decarbonize the Indonesian Economy for Sustainable Development.” Journal of Law and Administration 19(3): 64–76. doi:10.24833/2073-8420-2023-3-68-64-76.
6. Budiman, Ilham Febri, Michael Boris, Rasi Sitanggang, Muhammad Rafly, Politeknik Keuangan, and Negara Stan. 2024. “Meningkatkan Peran Generasi Muda Dalam Mendukung Green Economy Dengan Instrumen Investasi Berbasis Environmental , Social , and Governance (ESG) Melalui Program Dimension Circular.” (6).
7. Cahyandito, Martha Fani. 2017. “The Effectiveness of Community Development and Environmental Protection Program in Oil and Gas Industry in Indonesia: Policy, Institutional, and Implementation Review.” Journal of Management and Sustainability 7(1): 115. doi:10.5539/jms.v7n1p115.
8. Efria, Dea Agnes, Mellya Embun Baining, and Mohammad Orinaldi. 2023. “Pengaruh Green Accounting Dan Kinerja Lingkungan Terhadap Kinerja Keuangan Perusahaan Pertambangan.” Al Fiddhoh 4(September): 77–88.
9. Fang, Yi. 2023. “Can ESG Ratings Impact Accounting Performance: Evidence from Chinese Companies.” Highlights in Business, Economics and Management 18: 36–42.

doi:10.54097/hbem.v18i.12387.
10. Farida, Ida, Adi Prawira, and Hj Alfira Sofia. 2025. "The Green Economy : A Comparative Study of Uzbekistan and Indonesia ISSN : 2792-8268." : 129–56.
11. Huang, Po Tsang B., Ching Chow Yang, Maria Magdalena Wahyuni Inderawati, and Ronald Sukwadi. 2022. "Using Modified Delphi Study to Develop Instrument for ESG Implementation: A Case Study at an Indonesian Higher Education Institution." Sustainability (Switzerland) 14(19). doi:10.3390/su141912623.
12. Jovita, Gabriella Alodia. 2023. "Impact of ESG Implementation on Financial Performance and Capital Structure." Jurnal Informatika Ekonomi Bisnis 5: 1480–86. doi:10.37034/infeb.v5i4.778.
13. Kuswantoro, Henry, Mahfud Sholihin, and Hadrian Geri Djajadikerta. 2023. "Exploring the Implementation of Sustainable Development Goals: A Comparison between Private and State-Owned Enterprises in Indonesia." Environment, Development and Sustainability 25(10): 10799–819. doi:10.1007/s10668-022-02505-1.
14. Lokuwaduge, Chitra S.De Silva, and Keshara M. De Silva. 2022. "ESG Risk Disclosure and the Risk of Green Washing." Australasian Accounting, Business and Finance Journal 16(1): 146–59. doi:10.14453/aabfj.v16i1.10.
15. Muminov, Abdulkhamid (PwC Uzbekistan). 2024. "ESG Awareness in Eurasia." (July)..
16. Murdianingrum, Sri Luna, Zuhrohtun Zuhrohtun, Indro Herry Mulyanto, Heri Susanto, Alfistia Maradidya, and Handani Maheresmi. 2024. "Exploring The Impact of Green Accounting and Corporate Social Responsibility Disclosure on Firm Value Through Profitability In Mining Companies In Indonesia." Asian Journal of Social and Humanities 2(5): 1133–47. doi:10.59888/ajosh.v2i5.245.
17. Lokuwaduge, Chitra S.De Silva, and Keshara M. De Silva. 2022. "ESG Risk Disclosure and the Risk of Green Washing." Australasian Accounting, Business and Finance Journal 16(1): 146–59. doi:10.14453/aabfj.v16i1.10.
18. Muminov, Abdulkhamid (PwC Uzbekistan). 2024. "ESG Awareness in Eurasia." (July)..
19. Murdianingrum, Sri Luna, Zuhrohtun Zuhrohtun, Indro Herry Mulyanto, Heri Susanto, Alfistia Maradidya, and Handani Maheresmi. 2024. "Exploring The Impact of Green Accounting and Corporate Social Responsibility Disclosure on Firm Value Through Profitability In Mining Companies In Indonesia." Asian Journal of Social and Humanities 2(5): 1133–47. doi:10.59888/ajosh.v2i5.245.
20. Nur, M, E Indriyanto, K Digdowiseiso, and ... 2023. "The Implementation of Green Accounting in Indonesia: A Bibliometric Analysis." … and Social Science … 2(4): 294–302. https://cvodis.com/ijembis/index.php/ijembis/article/view/242%0Ahttps://cvodis.com/ijembis/index.php/ijembis/article/download/242/217.
21. Okuwaduge, Chitra S.De Silva, and Keshara M. De Silva. 2022. "ESG Risk Disclosure and the Risk of Green Washing." Australasian Accounting, Business and Finance Journal 16(1): 146–59. doi:10.14453/aabfj.v16i1.10.
22. Ospanova, Aigerim, Gulmira Musina, Zhaslan Nurbayev, Seyit Ali Avcu, Erbolat Sergazin, and Yermek Chukubayev. 2023. "Digital Economy as a Driver of Regional Integration to Achieve Esg Principles: The Case of the Eurasian Economic Union." Journal of Law and Sustainable Development 11(11): e1631. doi:10.55908/sdgs.v11i11.1631.
23. Regulations, Financial Sector. 2025. "What Specific Government Policies in Indonesia Have Most Effectively Promoted ESG Adoption." : 2021–24.
24. Rezaee, Zabihollah, Saeid Homayoun, Ehsan Poursoleyman, and Nick J. Rezaee. 2023. "Comparative Analysis of Environmental, Social, and Governance Disclosures." Global Finance Journal 5(4): 554–63. doi:10.1016/j.gfj.2022.100804.
25. [Teng, Xinrong. "The Impact of ESG on Corporate Performance : A Case Study of Yunnan Baiyao." 0: 23–29. doi:10.54254/2754-1169/116/20242315.
26. Rezaee, Zabihollah, Saeid Homayoun, Ehsan Poursoleyman, and Nick J. Rezaee. 2023. "Comparative Analysis of Environmental, Social, and Governance Disclosures." Global Finance Journal 55(4): 554–63. doi:10.1016/j.gfj.2022.100804.
27. Ummah, Masfi Sya'fiatul. 2019. 11 Sustainability (Switzerland) CSR and ESG in Emerging Markets. http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI.

28. Wahyuni, Wahyuni, Inten Meutia, and Syamsurijal Syamsurijal. 2019. "The Effect of Green Accounting Implementation on Improving the Environmental Performance of Mining and Energy Companies in Indonesia." Binus Business Review 10(2): 131–37. doi:10.21512/bbr.v10i2.5767.
29. Zhang, Jiaxin. 2025. "Green Finance and Corporate ESG Practices : A Dual- Driving Mechanism for Promoting Sustainable Development." 18(1): 3–5.