

An Eco-Theological Perspective on Oil and Gas Exploration in Papua, Indonesia

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Article	Abstract
<p>Article History : Received : May 22, 2026 Reviewed : June 03, 2026 Accepted : June 18, 2026 Published : June 19, 2026</p> <p>Keywords: <i>Ecotheology, Oil and Gas Exploration, Environmental Ethics, Indigenous Communities</i></p>	<p>This study examines oil and gas exploration and natural gas processing activities in the Sorong Raya region, Southwest Papua, Indonesia, particularly in Salawati Basin and Kasim Marine Terminal. The research explores how eco-theological perspectives derived from Islam, Christianity, and indigenous Papuan ecological values contribute to balancing environmental sustainability, economic welfare, and industrial development in one of Indonesia's strategic energy regions. Previous studies on extractive industries in Papua have mainly emphasized political economy, environmental conflict, and resource governance, while limited attention has been given to ecotheology as an ethical framework integrating religious morality, indigenous ecological wisdom, and sustainable development. This study employed a qualitative phenomenological approach involving 15 participants, including indigenous Papuan communities, oil/gas workers, government officials, religious leaders, and civil society representatives. Data were collected through in-depth interviews, field observations, and document analysis. The findings show that the oil and gas sector contributes to regional income, employment, infrastructure, education, and local economic growth. However, respondents also identified environmental challenges, including marine pollution, ecological degradation, unequal economic distribution, and reduced customary access to natural resources. The study concludes that eco-theological and indigenous ecological values provide important ethical foundations for participatory, transparent, and culturally inclusive environmental governance in Sorong Raya.</p>

INTRODUCTION

Global energy demand continues to increase alongside industrial expansion, population growth, and technological modernization. Oil and gas industries remain central to global economic systems because they support transportation, manufacturing, electricity generation, and national energy security (Butkouskaya et al., 2024). However, the expansion of extractive industries has also intensified environmental crises such as deforestation, marine pollution, biodiversity loss, climate change, and ecological degradation. These environmental challenges have generated growing international debates concerning sustainable development, environmental justice, indigenous rights, and ethical responsibility toward nature (Basri et al., 2025).

In recent decades, environmental scholars have increasingly argued that ecological destruction should not be understood solely as a scientific or technical issue. Rather, environmental degradation also reflects moral, spiritual, and social crises resulting from exploitative relationships between humans and nature (Said & Yusof, 2015; and Alhamid et al., 2025). Consequently, ecotheology has emerged as an important interdisciplinary framework integrating environmental ethics, religious values, ecological responsibility, and social justice. Ecotheology emphasizes that nature is not merely an economic commodity but a sacred trust entrusted to humanity for preservation and collective welfare (Wade, 2022).

Within Islamic perspectives, environmental ethics are strongly connected to the concepts of khalifah (human stewardship), amanah (moral responsibility), tawazun (balance), and maslahah (public benefit) (Hairani, 2025; and Basri et al., 2025). The Qur'an and Islamic environmental scholars emphasize that humans are entrusted with protecting the earth and maintaining ecological harmony rather than exploiting natural resources irresponsibly (Eliyanto et al., 2021). Environmental destruction is therefore considered not only socially harmful but also morally and spiritually unacceptable (Khusnul Khotimah & Hafidz, 2024).

Similarly, Christian eco-theological teachings emphasize creation care, environmental stewardship, justice, compassion, and responsibility toward God's creation. Contemporary Christian environmental thought increasingly advocates ecological protection as part of moral and spiritual responsibility (Sudarman, 2021; and Wade, 2022). Churches and Christian leaders globally have promoted environmental awareness, sustainable development, and social justice in response to ecological crises (delos Reyes et al., 2025).

At the same time, indigenous communities across the world possess ecological wisdom emphasizing spiritual relationships between humans, forests, rivers, oceans, and land (Nur, 2022; and Ansar & Podu, 2026). Indigenous ecological perspectives often view nature as sacred communal heritage interconnected with cultural identity, social survival, and spiritual continuity. Such perspectives resonate strongly with eco-theological principles promoting environmental harmony and intergenerational responsibility (Manshur & Munif, 2023; and Subair et al., 2024).

In Indonesia, environmental debates surrounding extractive industries have become increasingly significant due to rapid industrial expansion in the mining, oil, and gas sectors (Estriyanto & Maret, 2025). Indonesia's economic development policies continue to depend heavily on natural resource exploitation to support national revenue, infrastructure development, and energy security. Nevertheless, environmental conflicts involving pollution, deforestation, land disputes, and indigenous marginalization remain persistent challenges in many resource-rich regions (Lestari et al., 2024; and Brilian et al., 2025).

One of the most strategically important regions concerning oil and gas exploration in eastern Indonesia is Sorong Raya in Southwest Papua. The region includes important industrial and energy zones connected to the Salawati Basin, Kasim Marine Terminal, and surrounding exploration and processing areas. Sorong Raya possesses abundant natural resources, extensive marine ecosystems, rich biodiversity, and strong indigenous cultural traditions. Consequently, industrial expansion in this region generates both economic optimism and ecological concern (Mamboai et al., 2025).

Oil and gas activities in Sorong Raya contribute substantially to regional development. Industrial operations have stimulated infrastructure growth, employment opportunities, transportation improvement, educational assistance, and local business expansion (Mamboai et al., 2025). However, local communities and environmental organizations have also raised concerns regarding ecological degradation, marine pollution, reduced fishing areas, cultural displacement, and unequal distribution of economic benefits (Mamboai et al., 2025; and Xuemei, et.al. 2025). Existing studies concerning extractive industries in Papua generally focus on political economy, environmental governance, corporate social responsibility, or social conflict. Although these studies provide valuable insights, limited research has specifically examined how eco-theological values from Islam, Christianity, and indigenous ecological traditions can function as practical ethical frameworks for sustainable resource governance in Sorong Raya (Hendinata et al., 2024); (Mamboai et al., 2025).

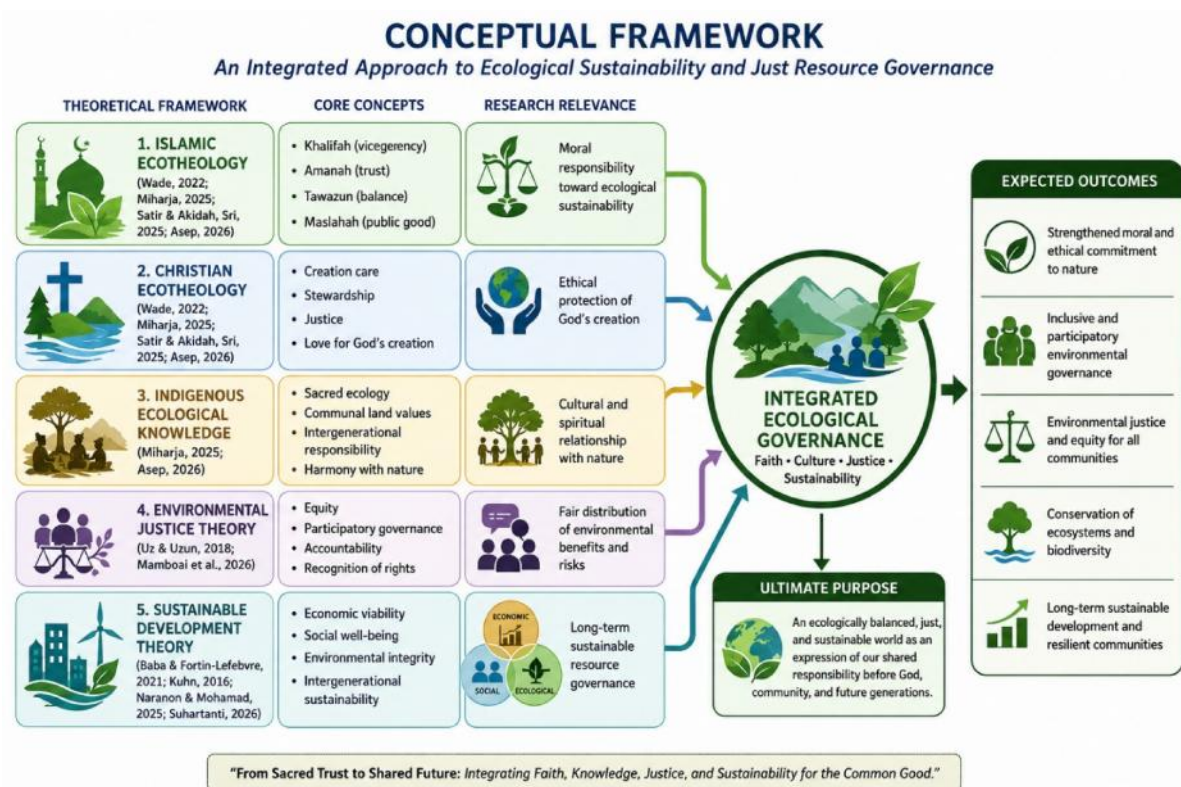
This study, therefore, addresses an important research gap by integrating environmental ethics, indigenous ecological wisdom, religious morality, and socio-economic realities within a single interdisciplinary framework. The novelty of this research lies in its effort to position ecotheology not merely as a theological reflection but as a practical governance model that can mediate tensions between industrial development and environmental sustainability.

The study also contributes practical significance for multiple stakeholders. For local communities, the research provides ethical foundations for advocating environmental protection while supporting responsible economic development (Miharja, 2025). For government institutions, the study

offers recommendations for transparent and culturally inclusive governance. For corporations, the findings encourage socially responsible industrial practices that respect ecological sustainability and indigenous dignity. Academically, the study expands eco-theological scholarship within the context of Papua and the Global South (Pajarianto et al., 2025; Prakoso, 2022; Delos Reyes et al., 2025). The research addresses the following qualitative research questions: how do communities and stakeholders in Sorong Raya perceive the environmental, economic, and socio-cultural impacts of oil and gas exploration? How can Islamic, Christian, and indigenous eco-theological values contribute to sustainable resource governance in Sorong Raya? And what governance strategies can strengthen environmental protection, social justice, and community welfare within oil and gas development in Sorong Raya?

The conceptual framework of this study integrates Ecotheology Theory (Wade, 2022; Miharja, 2025; Satir & Akidah, Sri, 2025; and Asep, 2026), Environmental Justice Theory (Uz & Uzun, 2018; Mamboai et al., 2026), Indigenous Ecological Knowledge (Miharja, 2025; and Asep, 2026), and Sustainable Development Theory (Baba & Fortin-Lefebvre, 2021; Kuhn, 2016; Naranon & Mohamad, 2025; and Suhartanti, 2026).

Graphic 1. Conceptual Framework



RESEARCH METHODS

This study employs a qualitative phenomenological research design to investigate environmental, social, economic, and religious perspectives concerning oil and gas exploration and natural gas processing activities in Sorong Raya, Southwest Papua, Indonesia. A phenomenological approach was selected because the research seeks to understand lived experiences, ecological perceptions, moral values, and social realities experienced directly by communities and stakeholders affected by extractive industries (Creswell, 2009; and Ishtiaq, 2019).

The research was conducted in several strategic areas connected to oil and gas exploration and processing activities in Sorong Raya. These locations include communities surrounding the Salawati Basin, Kasim Marine Terminal, coastal settlements near industrial operational zones, and administrative areas associated with regional energy governance. These locations were selected because they represent areas where local communities interact directly with industrial development, environmental change, and socio-economic transformation (Fitria, 2025).

Sorong Raya was intentionally selected as the research setting because it represents one of the most significant oil and gas development regions in eastern Indonesia. The area possesses major ecological importance due to its coastal ecosystems, marine biodiversity, and indigenous customary territories. At the same time, the region plays an increasingly strategic role in national energy development. Consequently, Sorong Raya provides an important context for examining the relationship between industrial development, ecological sustainability, religious ethics, and indigenous welfare.

This study involved 15 participants selected through purposive sampling. Purposive sampling was considered appropriate because participants were chosen based on their direct experience, institutional involvement, and contextual knowledge regarding oil and gas activities in Sorong Raya.

Table 1. The participant groups

Participant Groups	Number of Participants	Reason for Selection
Indigenous Papuan community members	4	Directly affected by environmental and social impacts
Oil and gas workers	4	Understand industrial operations and environmental practices
Government representatives	3	Responsible for regulation and regional development
Religious leaders (Islam and Christianity)	2	Provide eco-theological and moral perspectives
Civil society organization representatives	2	Advocate for environmental protection and indigenous rights
Total of participants	15	

The four indigenous Papuan community members included fishermen, customary landowners, coastal residents, and small-scale local traders living near industrial operational areas. These participants were selected because they directly experience ecological changes, economic opportunities, and socio-cultural transformations associated with oil and gas development.

The four oil and gas workers consisted of technical operators, field staff, and industrial supervisors employed within exploration and processing activities in Sorong Raya. They were selected because they possess direct knowledge regarding industrial operations, environmental management systems, safety protocols, and corporate-community relations.

The three government representatives were drawn from regional institutions connected to environmental management, public policy, and regional planning. Their inclusion was important because they possess authority and experience regarding environmental governance, development planning, licensing procedures, and public welfare policies.

The two religious leaders represented Islamic and Christian communities, which are the dominant religious groups in Sorong Raya. They were selected because religious institutions play significant roles in shaping public morality, ecological awareness, and social ethics within local communities. Their perspectives were important for understanding how eco-theological teachings influence environmental responsibility and social justice. Additionally, two representatives from civil society organizations were included because they actively engage in environmental advocacy, indigenous rights protection, public education, and community empowerment programs related to natural resource governance.

Data collection employed three primary techniques: semi-structured in-depth interviews, direct field observations, and document analysis. Semi-structured interviews enabled participants to express their experiences openly while allowing the researcher to explore recurring themes systematically. Interview questions focused on environmental impacts, economic benefits, community welfare, industrial responsibility, religious environmental ethics, indigenous ecological values, and governance challenges.

Each interview lasted approximately sixty to ninety minutes and was conducted in the Indonesian language, although local dialects were occasionally used to facilitate participant comfort and contextual understanding. All interviews were audio-recorded with participant consent and later transcribed verbatim. Field observations were conducted in coastal areas, fishing zones, industrial surroundings, transportation infrastructure, and community settlements connected to oil and gas activities.

Observations focused on identifying environmental conditions, visible ecological changes, public infrastructure development, and community interactions with industrial operations.

Document analysis was conducted to strengthen triangulation and contextual interpretation. The documents reviewed included environmental impact reports, regional development plans, corporate sustainability reports, local government regulations, religious environmental statements, media publications, and advocacy reports from civil society organizations.

The collected data were analyzed using thematic analysis techniques. The analysis process consisted of transcription, coding, categorization, thematic interpretation, and conceptual synthesis. Initial coding identified recurring issues such as ecological degradation, economic expectations, environmental ethics, indigenous rights, employment opportunities, and social inequality. These codes were subsequently organized into broader thematic categories aligned with the research questions and conceptual framework. To ensure validity and trustworthiness, the study employed methodological triangulation and source triangulation by comparing data from interviews, observations, and documents. Member checking was also conducted by sharing summarized findings with selected participants to verify interpretive accuracy. Reflexive field notes were maintained throughout the research process to minimize researcher bias.

Ethical considerations were prioritized throughout the study. Participants received explanations regarding research objectives, confidentiality protection, and voluntary participation before interviews were conducted. Participant identities were anonymized using pseudonyms to protect confidentiality. Furthermore, the researcher respected local cultural protocols and indigenous customary values during field engagement. Through this qualitative phenomenological approach, the study seeks to produce contextually grounded insights regarding ecotheology, environmental sustainability, and socially responsible resource governance in Sorong Raya.

Findings

The findings reveal that oil and gas exploration and natural gas processing activities in Sorong Raya produce complex economic, environmental, social, and moral consequences. Participants expressed both supportive and critical perspectives regarding industrial development.

1. Economic Benefits and Community Welfare

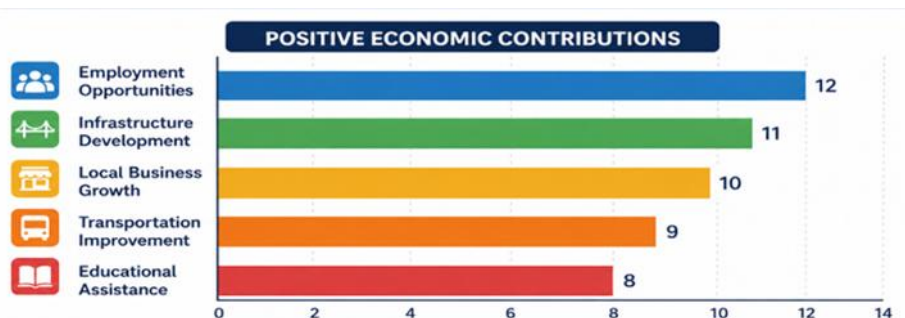
Most respondents acknowledged that the oil and gas industries contribute positively to economic development in Sorong Raya.

Table 2. Economic Contributions

Economic Contributions Identified by Respondents	Frequency of Responses
Employment opportunities	13
Infrastructure development	12
Educational support and scholarships	9
Local business growth	11
Transportation improvement	10

Community participants explained that road construction, transportation access, and local trade activities improved significantly following industrial expansion. Government representatives similarly argued that industrial investment increased regional economic productivity.

Graphic 2. Positive Economic Contributions



However, several respondents also stated that economic benefits remain unevenly distributed. Indigenous participants argued that higher-level employment positions are frequently dominated by external workers rather than local Papuan communities.

2. Environmental and Ecological Concerns

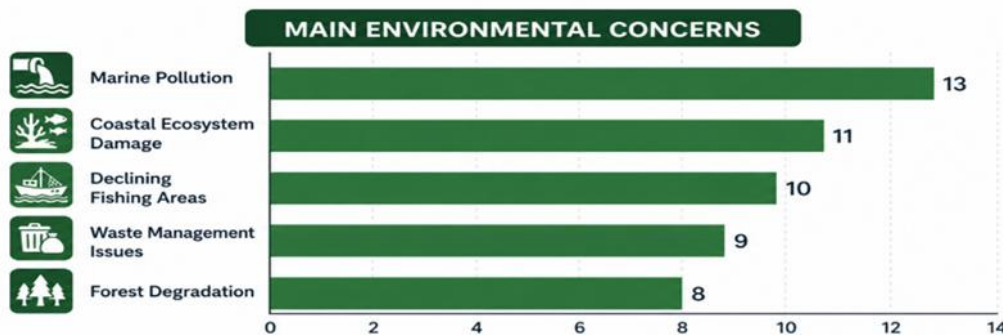
Environmental degradation emerged as the strongest concern among respondents.

Table 3. Environments Concerns

Environmental Concerns	Frequency
Marine pollution	14
Coastal ecosystem disruption	12
Declining fishing areas	11
Forest degradation	9
Waste management concerns	10

Fishermen and coastal residents reported declining fish populations and concerns about marine contamination near industrial operations. Civil society organizations similarly criticized insufficient environmental transparency and weak community participation in environmental monitoring.

Graphic 3: Main Environmental Concerns



These findings demonstrate that environmental sustainability remains one of the most critical issues within extractive industry governance in Sorong Raya.

3. Eco-theological Perspectives from Islam, Christianity, and Indigenous Values

Religious leaders and community participants emphasized that environmental protection represents a moral and spiritual obligation.

Islamic Ecotheology

Islamic respondents explained that humans are khalifah (stewards) responsible for preserving ecological balance. Environmental destruction was considered a violation of amanah (moral trust) entrusted by God. Participants also emphasized maslahah (public welfare) and tawazun (balance) as important ethical principles supporting sustainable development.

Christian Ecotheology

Christian leaders emphasized creation care and stewardship as moral responsibilities toward God’s creation. Environmental destruction was interpreted as injustice against humanity and future generations.

Indigenous Ecological Wisdom

Indigenous Papuan respondents explained that forests, oceans, and land possess spiritual significance connected to communal identity and ancestral heritage. Consequently, ecological destruction is interpreted not only as environmental damage but also as cultural and spiritual loss.

Table 4. Eco-theological Values

Eco-theological Values	Practical Implications
Khalifah and stewardship	Environmental responsibility
Amanah and justice	Ethical industrial governance
Creation care	Ecological preservation
Indigenous sacred ecology	Cultural and environmental protection

4. Community Expectations and Governance Solutions

Participants proposed several strategies for improving sustainable governance in Sorong Raya.

Table 5. Community Expectations

Community Expectations	Stakeholder Recommendations
Stronger environmental monitoring	Government and corporations
Greater indigenous participation	Local government
Transparent revenue distribution	Industry and policymakers
Ecological rehabilitation programs	Corporations
Faith-based environmental education	Religious institutions

Most participants did not reject industrial development completely. Instead, they demanded development models that balance economic growth, environmental sustainability, indigenous dignity, and social justice.

Discussion

The findings of this study demonstrate that oil and gas exploration in Sorong Raya generates contradictory yet interconnected realities involving economic development, ecological sustainability, indigenous identity, and moral responsibility. These findings confirm global environmental debates arguing that extractive industries frequently produce both developmental opportunities and ecological risks simultaneously.

One of the major contributions of this study lies in its integration of Islamic ecotheology, Christian environmental ethics, and indigenous ecological knowledge within a single analytical framework. Previous studies on extractive industries in Papua generally focused on political economy, environmental governance, or social conflict in isolation. In contrast, this study demonstrates that environmental sustainability in Sorong Raya cannot be separated from moral values, spiritual beliefs, and indigenous ecological traditions (Junaidin, 2025).

Islamic ecotheology emerged as a significant ethical framework among Muslim respondents. Concepts such as *khalifah*, *amanah*, *tawazun*, and *maslahah* provide strong moral foundations for sustainable environmental governance. Respondents emphasized that humans are entrusted by God to preserve ecological balance rather than exploit nature irresponsibly. This perspective aligns with broader Islamic environmental scholarship advocating stewardship and sustainability.

Similarly, Christian respondents emphasized creation care and stewardship as essential moral responsibilities. Environmental destruction was interpreted as injustice against humanity, future generations, and God's creation itself. These findings support contemporary Christian eco-theological scholarship promoting environmental ethics and ecological responsibility.

Another important novelty of this study concerns the integration of indigenous Papuan ecological wisdom into environmental governance discussions. Indigenous participants consistently described forests, oceans, and customary lands as spiritually interconnected with communal identity and ancestral heritage. Consequently, environmental destruction was interpreted not only as material loss but also as cultural and spiritual disruption.

This finding demonstrates that environmental governance in Sorong Raya must recognize indigenous ecological values rather than relying solely on technocratic or economic approaches. Ignoring indigenous perspectives risks increasing social conflict, environmental injustice, and community distrust toward industrial actors.

The study also highlights the complexity of community attitudes toward industrial development. Importantly, most respondents did not reject the oil and gas industries entirely. Instead, they demanded development models characterized by transparency, environmental responsibility, equitable economic participation, and indigenous inclusion.

These findings challenge polarized assumptions portraying communities as either fully supportive or entirely resistant toward extractive industries. The research instead demonstrates that local communities can support industrial development when ethical governance principles are implemented effectively. Another significant contribution concerns participatory governance. Respondents consistently emphasized the importance of community involvement in environmental monitoring,

decision-making processes, and revenue allocation. Government representatives acknowledged that greater participation could strengthen public trust and reduce environmental conflict.

The findings therefore support environmental justice theory, emphasizing fair distribution of environmental benefits and risks. Economic development alone is insufficient if communities continue to experience ecological degradation, social marginalization, and unequal access to industrial benefits. The study additionally contributes practical implications for policymakers and corporations. Participants recommended stronger environmental monitoring systems, ecological rehabilitation programs, transparent revenue management, local employment prioritization, and faith-based environmental education initiatives. Faith-based environmental education emerged as one of the most innovative solutions proposed by respondents. Religious institutions possess strong influence within Sorong Raya communities and can therefore contribute significantly to ecological awareness, ethical responsibility, and environmental conservation.

The findings also demonstrate the importance of integrating environmental ethics into corporate governance. Industrial development should not focus exclusively on economic profitability (Komariah et al., 2025), but must simultaneously prioritize ecological sustainability, community welfare, and cultural dignity. From a theoretical perspective, this research contributes to global eco-theological scholarship by contextualizing environmental ethics within indigenous Papuan realities. Much eco-theological literature remains dominated by Western contexts, whereas this study offers a Global South perspective integrating religion, indigenous knowledge, and extractive industry governance.

Ultimately, the study argues that the future sustainability of oil and gas development in Sorong Raya depends upon the ability of governments, corporations, religious institutions, and local communities to construct participatory governance systems grounded in environmental ethics, social justice, and indigenous dignity.

CONCLUSION

This study concludes that oil and gas exploration and natural gas processing activities in Sorong Raya, Southwest Papua, produce multidimensional impacts involving economic development, ecological sustainability, indigenous identity, social justice, and moral responsibility. The findings demonstrate that industrial development contributes significantly to regional infrastructure, transportation access, employment opportunities, educational assistance, local business growth, and public welfare. These contributions indicate that extractive industries continue to play important roles in regional economic transformation and national energy development.

However, the research also reveals that environmental concerns remain highly significant among local communities and other stakeholders. Marine pollution, coastal ecosystem disruption, declining fishing areas, waste management concerns, and ecological degradation emerged as dominant issues throughout the interviews. Indigenous participants further emphasized that environmental destruction threatens not only natural ecosystems but also communal identity, cultural continuity, and spiritual relationships with ancestral lands and oceans.

One of the most important conclusions of this study is that local communities in Sorong Raya do not fundamentally reject industrial development. Instead, they expect development models that are transparent, participatory, environmentally responsible, and socially inclusive. Respondents consistently emphasized the importance of balancing economic growth with ecological protection and indigenous welfare.

The study further concludes that ecotheology provides a transformative ethical framework capable of mediating tensions between industrial development and environmental sustainability. Islamic eco-theological concepts such as *khalifah*, *amanah*, *tawazun*, and *maslahah* strengthen moral responsibility toward ecological preservation and public welfare. Similarly, Christian teachings concerning stewardship, justice, and creation care encourage ethical environmental governance. Indigenous Papuan ecological wisdom also reinforces sacred relationships between humans and nature. The integration of these ethical and spiritual perspectives represents one of the major novelties of this study. Unlike previous research focusing primarily on economic or political dimensions of extractive

industries, this study demonstrates that sustainable governance in Sorong Raya requires the integration of religious ethics, indigenous ecological values, and participatory environmental justice frameworks.

Another important contribution of this research concerns participatory governance. The findings demonstrate that community involvement in environmental monitoring, decision-making processes, and revenue management is essential for strengthening public trust and reducing social conflict. Local participation also improves environmental accountability and policy legitimacy. The study additionally contributes practical implications for government institutions, corporations, and civil society organizations. Sustainable industrial governance should include stronger environmental regulations, ecological rehabilitation initiatives, transparent revenue distribution systems, local employment prioritization, and culturally sensitive development programs. Faith-based environmental education programs can also strengthen ecological awareness and moral responsibility within local communities.

From an academic perspective, this research expands contemporary eco-theological scholarship by contextualizing environmental ethics within the realities of Papua and the Global South. The study, therefore, contributes a new interdisciplinary perspective integrating religion, indigenous ecological wisdom, environmental justice, and sustainable resource governance. Ultimately, the future of oil and gas development in Sorong Raya depends upon the ability of all stakeholders to establish environmentally sustainable, socially just, and culturally respectful governance systems. Economic progress cannot be separated from ecological responsibility and moral accountability. Sustainable development in Sorong Raya must therefore preserve environmental integrity, protect indigenous dignity, and strengthen collective responsibility toward future generations.

Recommendation

This study recommends that government institutions, oil and gas corporations, religious organizations, indigenous leaders, universities, and civil society groups collaboratively establish participatory and ecologically responsible governance systems in Sorong Raya. Policymakers should strengthen environmental regulations, transparent revenue distribution mechanisms, and community-based monitoring systems involving indigenous communities directly affected by industrial activities. Corporations should prioritize ecological rehabilitation, local employment opportunities, waste management improvement, and culturally inclusive corporate social responsibility programs. Religious institutions representing Islam and Christianity should develop faith-based environmental education initiatives emphasizing stewardship, justice, ecological ethics, and collective responsibility toward nature. Indigenous ecological knowledge should also be integrated into environmental policymaking and industrial planning processes. These integrated strategies are essential for ensuring that oil and gas development in Sorong Raya contributes not only to economic growth but also to environmental sustainability, social justice, and long-term community welfare.

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