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Natural Resource Exploitation and Intergenerational Justice in Islamic Economics

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Abstract

This study examined natural resource exploitation and intergenerational justice within Islamic economics by integrating economic explanations of resource scarcity and environmental externalities with Islamic ethical principles. A qualitative, literature-based conceptual approach was employed using secondary sources comprising scholarly publications and relevant institutional reports. Literature was analyzed through thematic synthesis focusing on resource scarcity, natural capital depletion, environmental externalities, distributive justice, and responsibilities toward future generations. The analysis identified three interconnected dimensions of intergenerationally just resource management: ecological responsibility, equitable distribution of economic benefits and environmental burdens, and long-term accountability. Ecological responsibility emphasizes the preservation of natural capital and essential environmental functions, while distributive justice addresses inequalities arising when extraction benefits and environmental costs are allocated disproportionately. Long-term accountability concerns the consequences of present resource decisions for future welfare and ecological opportunities. Islamic economic principles of amanah, khalifah, 'adl, and mizan provide complementary ethical criteria for evaluating these dimensions. The study contributes an integrated conceptual framework connecting natural resource economics with Islamic ethical obligations without assuming that normative coherence establishes policy effectiveness. Its findings support incorporating ecological costs, distributive fairness, and intergenerational responsibilities into resource governance, although empirical validation remains necessary for sector-specific applications.

Keywords: *Ecological responsibility, Environmental externalities, Intergenerational justice, Islamic economics, Natural resource exploitation.*

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INTRODUCTION

The increasing intensity of natural resource exploitation has generated substantial concerns regarding the compatibility of economic development with ecological sustainability and the equitable distribution of environmental opportunities across generations. Extractive activities contribute to industrial production, public revenue, employment, and infrastructure development, yet their economic benefits frequently depend on the depletion of natural capital and the transfer of environmental costs beyond the immediate beneficiaries of resource utilization. Dasgupta (2021) demonstrates that conventional assessments of economic prosperity remain incomplete when biodiversity loss and natural capital depreciation are excluded from economic valuation, while Richardson et al. (2023) and Rockström et al. (2023) establish the significance of ecological boundaries for sustaining human development. Contemporary resource extraction also raises distributive concerns because environmental degradation, unequal access to natural assets, and ecological risks may disproportionately affect vulnerable communities and future populations (Matanzima & Loginova, 2024; Yang & Koondhar, 2024). The relationship between resource exploitation and sustainable development consequently extends beyond the efficiency of extraction to encompass the allocation of environmental burdens, institutional accountability, and the preservation of long-term economic opportunities (De Sisto et al., 2024; Abbas et al., 2024). Within Islamic economics, these concerns acquire an additional ethical dimension because economic utilization of natural resources is subject to principles of stewardship, responsibility, distributive justice, and

ecological balance rather than unrestricted private appropriation (Basri et al., 2024; Shaleh & Islam, 2024). The central scientific problem concerns how the economic benefits of present resource exploitation can be evaluated against ecological limitations and obligations toward generations that cannot participate in contemporary resource-allocation decisions.

Contemporary scholarship on natural resource exploitation and intergenerational justice has developed through several related but analytically distinct approaches. Natural resource economics primarily examines scarcity, environmental externalities, sustainable extraction, and the allocation of natural capital over time, with particular attention to whether current resource consumption compromises future productive and ecological capacities (Cisco & Gatto, 2021; Graczyk, 2025). Economic analyses of sustainable extraction and resource-dependent development further indicate that conservation, institutional arrangements, and the treatment of environmental costs are central considerations in evaluating resource utilization (Lodhi, 2024; Ofori et al., 2024). A complementary strand of environmental justice scholarship examines the normative distribution of rights, ecological opportunities, and irreplaceable environmental goods across generations, emphasizing that equitable resource allocation cannot be reduced to aggregate economic welfare or the substitutability of natural assets (Mazor, 2023; Oliveira, 2023; Bessant et al., 2026). More operational approaches incorporate intergenerational considerations into resource-allocation models, particularly through the integration of water availability and environmental quality in long-term management decisions (Lv et al., 2025). Meanwhile, Islamic environmental scholarship has developed ethical arguments connecting human stewardship with ecological preservation, collective welfare, and responsibilities toward the natural environment (Gade, 2023; Wani & Azhar, 2024). These research traditions share a concern for sustainability but differ in their primary analytical emphasis: economic efficiency and resource scarcity, distributive rights and future welfare, or the moral obligations associated with resource utilization. Their combined contributions indicate that intergenerationally just resource management requires simultaneous consideration of economic incentives, ecological constraints, and normative criteria for allocating environmental responsibilities.

Despite these advances, the literature reveals a conceptual gap concerning the integration of natural resource economics, intergenerational distributive justice, and Islamic economic ethics into a coherent framework for evaluating resource exploitation. Economic approaches explain the implications of scarcity, environmental externalities, and resource conservation but do not necessarily establish how Islamic ethical obligations should inform the distribution of benefits and environmental costs between present and future generations. Conversely, scholarship grounded in Islamic jurisprudence increasingly articulates ecological protection through maqāṣid al-sharī‘ah, environmental responsibility, and the prevention of harm, although its principal analytical orientation frequently concerns legal reconstruction, ethical justification, or institutional governance (Kurniawan & Fadlillah, 2025; Ahmad et al., 2026; Fauzi et al., 2026). Recent contributions to Islamic environmental governance further clarify the relevance of ecological preservation to Islamic legal objectives and climate-related responsibilities, but these discussions do not themselves constitute an integrated economic assessment of resource scarcity, externalities, and intergenerational distribution (Andriansyah et al., 2026; Halilah et al., 2026). Studies addressing Indonesian natural resource governance similarly emphasize public responsibility, constitutional environmental protection, community participation, and the ethical limitations of extractive policies (Darwis, 2026; Susana et al., 2025). These contributions establish substantial foundations for ethical and institutional analysis, yet their different disciplinary orientations leave room for a more explicit conceptual connection between economic allocation problems and Islamic principles of justice. The research gap is therefore not an absence of scholarship on Islamic environmental ethics or intergenerational sustainability, but the insufficiently articulated relationship between the economic mechanisms of excessive exploitation and the ethical criteria through which its cross-generational consequences should be evaluated. Addressing this gap requires analytical synthesis rather than a further descriptive account of environmental obligations or an unsupported assumption that religious principles automatically produce sustainable economic outcomes.

The unresolved relationship between economic evaluation and Islamic ethical responsibility has significant implications for the interpretation and governance of natural resource exploitation. When environmental externalities are excluded from economic assessments, extractive activities may appear beneficial through immediate income and production while transferring ecological degradation,

resource scarcity, and restoration obligations to communities that receive limited economic advantages. Research on extractive industries illustrates the importance of geographically situated accountability, transparency, and participation in determining how resource-related decisions affect local populations (Putri & Rye, 2024; Zhou & Brown, 2024). Islamic economic ethics provides relevant normative foundations for examining these distributional problems through amanah, which emphasizes entrusted responsibility; khalifah, which concerns human stewardship; ‘adl, which requires justice; and mizan, which expresses balance between human activity and ecological conditions. The ethical implications of these principles extend beyond individual environmental conduct because resource exploitation involves institutional decisions affecting collective welfare, environmental protection, and future access to natural assets (Siswanto, 2025; Basri et al., 2024). In extractive-sector governance, the relationship between Islamic environmental principles, legal accountability, and protection of affected communities has received particular attention through discussions of environmental liability and protective institutional arrangements (Hakim et al., 2025). Failure to establish an analytical connection between such ethical principles and economic allocation mechanisms risks confining Islamic environmental responsibility to abstract normative declarations that provide limited guidance for evaluating competing resource-use decisions. A more systematic conceptual assessment can clarify why economic profitability is not sufficient evidence of socially just resource utilization and how the preservation of ecological functions can be considered alongside present economic needs. Its practical significance lies in providing evaluative considerations for public authorities, resource-management institutions, and economic stakeholders without presuming that conceptual principles alone establish the effectiveness of particular regulatory interventions.

This study positions intergenerational justice as the conceptual connection between natural resource economics and Islamic economic ethics, with resource scarcity, environmental externalities, and the distribution of economic benefits and ecological costs serving as the principal analytical concerns. Its proposed contribution differs from resource-focused economic studies that primarily examine extraction, conservation, or sustainability performance, and from Islamic environmental scholarship that principally develops moral, legal, or theological justifications for environmental protection. Rather than treating economic reasoning and Islamic ethical principles as independent explanations, the study organizes their relationship through three interdependent evaluative dimensions: ecological responsibility, distributive justice, and long-term accountability. Ecological responsibility addresses the consistency of resource utilization with environmental limits and the preservation of essential natural functions; distributive justice concerns the allocation of economic advantages and ecological burdens among affected populations and generations; and long-term accountability examines whether present decisions adequately consider future welfare and resource availability. This integrative orientation builds on the economic understanding of natural capital and intergenerational sustainability while drawing normative guidance from Islamic environmental ethics and maqāṣid-based ecological reasoning (Dasgupta, 2021; Cisco & Gatto, 2021; Kurniawan & Fadlillah, 2025). The conceptual relevance of combining these dimensions is reinforced by scholarship concerning sustainable extraction, environmental justice, and the economic implications of intergenerational resource allocation (Lodhi, 2024; Mazor, 2023; Lv et al., 2025). The novelty claimed here is specifically an analytical synthesis of these established bodies of knowledge into a common framework for evaluating resource exploitation, not the discovery of previously unrecognized Islamic principles or the development of an empirically validated policy model. This distinction establishes a defensible contribution for a qualitative, literature-based conceptual study while maintaining the boundaries between theoretical interpretation, normative evaluation, and empirical policy assessment.

This study aims to examine natural resource exploitation and intergenerational justice within Islamic economics through a qualitative, literature-based conceptual approach. Specifically, it seeks to explain how resource scarcity and environmental externalities shape the relationship between present economic benefits and future ecological and social costs; analyze how the Islamic economic principles of amanah, khalifah, ‘adl, and mizan establish ethical criteria for responsible resource utilization; and synthesize these economic and ethical considerations into an analytical framework for intergenerationally just natural resource management. The analysis focuses on the relationship between ecological responsibility, the equitable distribution of economic benefits and environmental burdens, and accountability for the long-term consequences of resource exploitation. Its theoretical

contribution is to clarify how conventional resource-allocation reasoning can be connected with Islamic conceptions of responsibility and justice without reducing environmental sustainability to economic efficiency or normative declarations. Its methodological contribution lies in the thematic integration of economic and Islamic ethical literature through explicitly identified analytical dimensions rather than the independent description of each disciplinary tradition. The resulting framework is intended to provide a conceptual basis for evaluating the distributive and ecological implications of resource-management decisions while recognizing that judgments concerning policy implementation and institutional effectiveness require further empirical investigation. The study consequently seeks to advance a more integrated understanding of resource governance in which economic utilization remains compatible with ecological continuity, distributive fairness, and the protection of meaningful opportunities for future generations.

RESEARCH METHODS

This study employed a qualitative, literature-based conceptual research design to examine natural resource exploitation and intergenerational justice within Islamic economics. The research relied exclusively on secondary documentary materials, including peer-reviewed journal articles, academic publications, and relevant institutional reports addressing natural resource economics, environmental sustainability, intergenerational equity, Islamic environmental ethics, and resource governance. Literature identification was conducted through Google Scholar, relevant journal and DOI links, and official institutional websites and reports. Sources were considered according to their substantive relevance to resource scarcity, environmental externalities, the distribution of economic benefits and ecological costs, and Islamic principles governing human responsibility toward natural resources. The units of analysis comprised the conceptual arguments, theoretical propositions, and documented research findings contained in the selected publications rather than individual respondents, organizations, or geographically bounded populations. Particular attention was directed toward literature examining the relationship between present resource utilization and future welfare, alongside Islamic economic principles of amanah (trust and responsibility), khalifah (stewardship), ‘adl (justice), and mizan (balance). The research did not involve field observations, interviews, surveys, experimental interventions, or the collection of primary quantitative data. Its methodological scope was conceptual and interpretative rather than experimental, statistical, or systematic-review-based.

The analytical procedure followed a thematic synthesis of the selected literature, organized around the three research objectives established in the introduction. First, economic arguments concerning resource scarcity, natural capital depletion, environmental externalities, and the temporal allocation of economic benefits and environmental costs were examined to identify the mechanisms through which present exploitation may affect future resource availability and welfare. Second, the Islamic economic principles of amanah, khalifah, ‘adl, and mizan were interpreted in relation to responsibility for resource utilization, ecological preservation, distributive justice, and obligations toward future generations. Third, the economic and ethical arguments were compared and synthesized to construct an integrated conceptual interpretation of intergenerationally just resource management. The synthesis was structured around three analytical dimensions: ecological responsibility, equitable distribution of economic benefits and environmental burdens, and accountability for long-term consequences. Conceptual consistency was examined by distinguishing economic explanations of resource exploitation from normative Islamic ethical propositions and assessing their relationships within each analytical dimension. Interpretations were grounded in the arguments and findings documented in the consulted literature, without treating conceptual agreement as evidence of empirical causality or institutional effectiveness. The analysis did not involve statistical hypothesis testing, quantitative estimation, or empirical validation of resource-management policies. Its conclusions were restricted to theoretically supported relationships and conceptual implications, providing an analytical foundation for subsequent sector-specific empirical investigation.

RESULTS AND DISCUSSION

Natural Resource Economics, Scarcity, and the Limits of Economic Growth

Natural resource exploitation presents a fundamental economic problem when the extraction of environmental assets generates immediate productive benefits while reducing the ecological capacity required to sustain future economic activities. The conceptual analysis identifies a structural distinction between economic growth derived from resource utilization and development capable of maintaining the productive functions of natural capital across generations. Dasgupta (2021) establishes that economic prosperity depends on the condition of natural assets, making conventional growth assessments incomplete when environmental depreciation remains outside economic accounting. This distinction indicates that the economic contribution of extraction cannot be evaluated exclusively through production, income, or investment because these indicators do not necessarily capture the depletion of the ecological foundations supporting long-term welfare.

Resource scarcity involves more than the physical exhaustion of non-renewable materials because renewable resources may also become economically scarce when degradation exceeds their regenerative capacity. Excessive extraction reduces the future availability of productive assets, while ecosystem deterioration may diminish environmental services that are not adequately represented by market prices. Richardson et al. (2023) demonstrate the significance of transgressed planetary boundaries, while Rockström et al. (2023) distinguish environmental limits from the requirements of maintaining just conditions for human development. Their contributions support an interpretation of scarcity in which ecological thresholds constrain the sustainable expansion of economic activity, even when technological improvements or market mechanisms temporarily increase extraction efficiency.

The relationship between resource exploitation and economic development is further complicated by differences between private profitability and social welfare. Extractive enterprises may obtain financial returns from resource utilization without bearing the complete ecological costs associated with pollution, habitat degradation, or declining resource availability. De Sisto et al. (2024) examine the relationship between natural resource extraction and sustainable development, incorporating energy productivity as a relevant consideration in resource-rich economies. This analytical orientation suggests that extraction intensity alone cannot establish whether resource-dependent development is economically sustainable, since the relationship also depends on productivity conditions and the broader consequences of resource utilization.

Environmental externalities constitute a central mechanism through which resource exploitation can become inconsistent with long-term economic efficiency. When ecological damage is not incorporated into production costs, market transactions may encourage extraction levels that exceed those justified by the full social consequences of resource utilization. Abbas et al. (2024) examine the relationships among resource-based taxation, green innovation, minerals trade, and ecological sustainability, indicating the relevance of fiscal and technological considerations to environmental performance in resource-rich economies. Such mechanisms provide a basis for evaluating the institutional conditions of extraction, although their effectiveness cannot be assumed to be uniform across resource sectors, regulatory systems, or ecological settings.

The conceptual relationships identified in the literature can be organized into distinct economic mechanisms linking resource exploitation with ecological sustainability and future welfare. Table 1 presents an analytical synthesis of these mechanisms, distinguishing the immediate economic incentives associated with extraction from the environmental costs and intergenerational concerns that conventional profitability assessments may overlook. The synthesis treats resource depletion, environmental externalities, productive efficiency, and institutional accountability as interrelated analytical categories rather than independent determinants of sustainable development. This distinction is consistent with the argument that resource allocation must be assessed against both economic sustainability conditions and obligations concerning the preservation of environmental opportunities (Cisco & Gatto, 2021; Graczyk, 2025).

Table 1. Conceptual Synthesis of Natural Resource Exploitation, Economic Mechanisms, and Intergenerational Implications

Economic dimension	Immediate economic consideration	Long-term economic or ecological concern	Intergenerational implication
Natural capital depletion	Extraction supports production and economic income	Declining availability of natural assets	Reduced future resource access
Resource scarcity	Current demand encourages resource allocation	Depletion and ecological constraints	Restricted future economic opportunities
Environmental externalities	Private costs may exclude environmental damage	Uncompensated social and ecological burdens	Transfer of environmental costs to future generations
Productive efficiency	Higher output from resource inputs	Efficiency gains may not prevent cumulative depletion	Need to distinguish efficiency from sustainability
Resource-based taxation	Fiscal revenue and incentives	Incomplete pricing of ecological damage	Potential support for long-term environmental accountability
Resource conservation	Reduced immediate extraction	Preservation of ecological functions and natural capital	Maintenance of future welfare opportunities

Source: Conceptual synthesis of the literature used in this study.

The distinctions presented in Table 1 indicate that resource exploitation creates several forms of economic trade-off that cannot be adequately represented by extraction volume or short-term financial returns alone. Natural capital depletion directly affects future resource availability, whereas environmental externalities create distributional consequences when ecological costs are imposed on populations that do not receive proportionate economic benefits. Graczyk (2025) addresses the optimal use of natural resources in relation to intergenerational equity, providing a conceptual basis for examining resource allocation beyond immediate consumption requirements. The interpretation of optimality consequently depends on whether economic evaluation incorporates ecological preservation and the distribution of welfare across time rather than treating present net returns as the sole criterion for resource-management decisions.

The economic rationale for conservation becomes particularly relevant when extraction involves assets whose ecological functions are difficult to restore or replace. Lodhi (2024) examines the relationship between resource extraction, conservation, and sustainable environmental governance through the Hartwick rule, which connects the treatment of resource-derived wealth with intertemporal sustainability considerations. Such reasoning raises the question of whether economic investment derived from resource depletion can preserve future welfare when the depleted natural assets provide ecological functions that produced capital cannot fully substitute. The conceptual distinction is significant because maintaining an equivalent monetary value of aggregate capital does not necessarily guarantee the continued availability of specific environmental services or the protection of irreversible ecological conditions.

Resource-based development also presents distributional challenges associated with inequalities in environmental exposure, economic participation, and access to the benefits of extraction. Ofori et al. (2024) examine the relationships among energy equity, income inequality, and environmental sustainability, emphasizing the relevance of distributive conditions to the evaluation of environmental outcomes. An economy may expand resource-dependent production while allowing ecological burdens to accumulate among communities with limited influence over extraction decisions. This possibility demonstrates that sustainable resource economics requires attention to both intertemporal efficiency and distributive conditions, since preserving aggregate economic output does not establish that environmental costs and economic benefits are allocated fairly.

The assessment of resource exploitation becomes more complex when extraction supports technological transitions or strategically important mineral supply chains. Yang and Koondhar (2024) examine environmental and social equity in mineral exploitation in the Global South, directing attention to the inequalities associated with resource-dependent development. Their analytical orientation indicates that the contribution of extractive industries to economic modernization cannot be separated from the social distribution of environmental risks and access to resource-derived benefits. For intergenerational justice, this distinction is particularly relevant because future generations may inherit environmental degradation even when the economic assets generated through extraction are concentrated among present beneficiaries.

The synthesis establishes that the limits of resource-dependent economic growth arise from the interaction of ecological scarcity, incomplete environmental cost accounting, and unequal distributions of resource-related benefits and burdens. These mechanisms reveal why economic efficiency, although necessary for responsible resource utilization, does not independently establish intergenerational justice. The intergenerational sustainability framework developed by Cisco and Gatto (2021) supports the consideration of long-term environmental and economic conditions when evaluating development trajectories, while Dasgupta (2021) reinforces the dependence of durable prosperity on natural capital preservation. The resulting conceptual interpretation identifies a requirement for resource governance that moves beyond immediate profitability toward the maintenance of ecological functions, the equitable allocation of environmental costs, and accountability for future welfare, providing the economic foundation for examining Islamic principles of stewardship and distributive justice.

Environmental Externalities and Intergenerational Justice in Natural Resource Exploitation

Environmental externalities represent a fundamental source of intergenerational injustice when the economic benefits of natural resource exploitation are realized by present actors while ecological costs are transferred to populations excluded from the original allocation decisions. The conceptual synthesis identifies a temporal asymmetry between resource consumption and environmental consequences, particularly where extraction generates immediate financial returns but produces degradation that persists beyond the productive life of an economic activity. Cisco and Gatto (2021) connect climate justice with intergenerational sustainability through an overlapping-generations economic framework, demonstrating the analytical relevance of relationships between present decisions and future welfare. This perspective establishes that economic allocation cannot be considered intergenerationally equitable merely because resource exploitation increases current aggregate income, since future populations may inherit diminished environmental quality and restricted access to productive natural assets.

The distribution of environmental costs becomes particularly problematic when natural resources possess ecological functions that cannot be adequately replaced through financial compensation or technological substitution. Oliveira (2023) examines the relationship between sustainability and intergenerational sufficientarianism through the concept of irreplaceable goods, providing a normative basis for questioning whether aggregate economic gains can compensate for the permanent loss of essential environmental assets. This distinction challenges interpretations of sustainability that permit extensive resource depletion provided that equivalent monetary or productive capital is transferred to future generations. Intergenerational justice consequently requires attention to the qualitative characteristics of environmental resources, especially where their ecological functions contribute directly to fundamental conditions of human welfare.

Questions concerning the legitimate distribution of natural resources also extend beyond the preservation of aggregate environmental wealth to the rights and claims of individuals who belong to different generations. Mazor (2023) examines the allocation of rights to the natural world through a non-absolute approach to equal division, demonstrating that environmental justice involves normative judgments about competing entitlements rather than the mechanical distribution of identical resource quantities. Such reasoning is relevant to extractive activities because current generations exercise practical control over resources that may also constitute essential opportunities for populations not yet represented in economic and political institutions. The conceptual implication is that present ownership, legal authorization, or market access does not independently establish the moral

legitimacy of exhausting resources whose ecological and economic functions extend across generations.

Intergenerational justice must nevertheless accommodate the legitimate developmental requirements of present populations, particularly where resource utilization supports employment, public expenditure, infrastructure, and access to essential goods. An absolute prohibition on extraction would disregard the economic dependence of existing communities on natural assets, whereas unrestricted exploitation could compromise the environmental foundations of future welfare. Bessant et al. (2026) examine the translation of intergenerational climate justice into policy, highlighting the relevance of institutional decisions to the distribution of environmental responsibilities across generations. The central analytical challenge is consequently to distinguish justified resource utilization from extraction practices that impose avoidable, disproportionate, or irreversible environmental burdens on future populations.

The conceptual synthesis identifies several mechanisms through which environmental externalities become questions of intergenerational distributive justice. Table 2 organizes these relationships by distinguishing the origin of ecological burdens, their temporal consequences, the distributive problems they generate, and the corresponding ethical considerations for resource governance. The analytical categories draw on scholarship addressing intergenerational rights, sustainability, environmental equity, and the allocation of ecological costs rather than representing observations obtained through field measurements or statistical estimation (Oliveira, 2023; Mazor, 2023; Yang & Koondhar, 2024). This classification permits a more precise interpretation of environmental injustice by identifying the circumstances under which present economic activities restrict the environmental opportunities available to future generations.

Table 2. Conceptual Dimensions of Environmental Externalities and Intergenerational Justice

Environmental externality	Economic mechanism	Intergenerational consequence	Justice consideration
Natural resource depletion	Current extraction reduces available natural capital	Restricted future resource access	Equitable allocation across generations
Environmental pollution	Environmental costs are incompletely reflected in production decisions	Persistence of ecological and social burdens	Responsibility for environmental harm
Biodiversity degradation	Economic activities diminish ecosystem functions	Loss of ecological services and potentially irreplaceable assets	Preservation of essential environmental goods
Unequal extraction benefits	Economic gains and environmental burdens accrue to different groups	Unequal distribution of benefits and inherited costs	Distributive justice
Ecological restoration obligations	Remediation costs may be deferred beyond the extraction period	Transfer of financial and environmental liabilities	Long-term accountability
Resource governance exclusion	Affected populations have limited influence over allocation decisions	Insufficient representation of long-term interests	Procedural and intergenerational fairness

Source: Conceptual synthesis of the literature examined in this study.

The distinctions presented in Table 2 indicate that environmental externalities produce intergenerational injustice through both ecological deterioration and unequal distributions of responsibility. Resource depletion reduces the natural assets available for future utilization, whereas pollution and biodiversity degradation may impose persistent burdens even after extractive activities have ceased. Matanzima and Loginova (2024) examine sociocultural risks associated with resource extraction for the low-carbon energy transition, establishing the relevance of social consequences to assessments of environmentally motivated resource development. The implications extend beyond direct environmental damage because extraction may alter the distribution of livelihood opportunities,

community interests, and institutional responsibilities associated with resource-dependent economic systems.

Procedural conditions constitute an additional component of environmental justice because the allocation of resource-related benefits and burdens depends partly on the institutions through which extraction decisions are formulated and implemented. Putri and Rye (2024) examine the significance of place in extractive-industry transparency within an Indonesian oil-producing district, directing attention to the relationship between local conditions and institutional accountability. Their analytical orientation indicates that transparency cannot be understood solely as the formal disclosure of information, since the social significance of resource governance also depends on how extractive decisions relate to affected communities. From an intergenerational standpoint, procedural justice requires consideration of interests that may not be represented directly within existing governance arrangements, particularly when environmental consequences extend beyond contemporary decision-making periods.

The distributive implications of resource exploitation are further complicated by the growing economic importance of minerals required for energy transitions and technological development. Extraction undertaken to support lower-carbon technologies may contribute to broader environmental objectives while simultaneously generating localized ecological damage and unequal social burdens. Zhou and Brown (2024) examine epistemic justice in relation to critical minerals and a planetary just transition, emphasizing the relevance of knowledge, recognition, and fairness to mineral-resource governance. Their contribution supports a critical distinction between the environmental objectives associated with resource development and the distributive legitimacy of the extraction processes used to achieve those objectives.

The relationship between environmental quality and distributive justice also becomes evident where resource allocation involves competing demands for essential ecological services. Lv et al. (2025) develop an intergenerational equity-based optimization approach that jointly considers water allocation and water quality management, illustrating the analytical importance of treating environmental availability and resource quality as interconnected management concerns. This approach is consistent with the proposition that distributive justice cannot be assessed exclusively through the quantity of resources transferred across generations because ecological deterioration may reduce their effective economic and social value. The conceptual relevance of such models lies in demonstrating how intergenerational concerns can be incorporated into resource-allocation reasoning, although findings derived from water management cannot automatically be generalized to mineral extraction, forestry, or other resource sectors.

The synthesis establishes that intergenerational justice involves more than preventing resource exhaustion or maintaining aggregate economic wealth across successive generations. It requires consideration of ecological continuity, the distribution of environmental costs, the preservation of essential natural assets, and institutional accountability for decisions whose consequences extend beyond present beneficiaries. Graczyk (2025) addresses the relationship between optimal natural resource utilization and intergenerational equity, while Susana et al. (2025) examine the relevance of Islamic legal principles to environmental governance and resource-related institutional responsibilities in Indonesia. These complementary orientations indicate that economic allocation and distributive justice must be connected through explicit ethical criteria, providing a foundation for examining how Islamic principles of amanah, khalifah, ‘adl, and mizan can inform responsible resource governance and the protection of future generations.

Islamic Economic Principles and Intergenerationally Just Natural Resource Governance

Islamic economics provides a normative foundation for evaluating natural resource exploitation through the relationship between economic welfare, ecological responsibility, and justice across generations. Resource utilization is recognized as a legitimate economic activity, but its legitimacy cannot be determined exclusively by ownership rights, production efficiency, or the financial benefits obtained by present economic actors. Gade (2023) and Shaleh and Islam (2024) examine Islamic environmental ethics as a framework connecting human responsibility, environmental protection, and broader considerations of social justice. The conceptual synthesis identifies amanah, khalifah, ‘adl, and mizan as complementary ethical principles through which resource exploitation can be evaluated according to its ecological consequences, distributive implications, and effects on future welfare.

The principle of khalifah establishes human stewardship as a responsibility accompanied by limitations on the exercise of authority over natural resources. This understanding distinguishes the capacity to exploit environmental assets from an unrestricted moral entitlement to consume, degrade, or exhaust them without considering their broader consequences. Basri et al. (2024) associate Islamic environmental ethics with responsible resource management and ecological stewardship, while Wani and Azhar (2024) emphasize the preservation of environmental balance as an element of Islamic moral responsibility. Applied to natural resource economics, khalifah provides an ethical basis for evaluating whether extraction preserves essential ecological functions rather than merely maximizing the economic returns obtained during a particular production period.

The concept of amanah extends environmental stewardship by emphasizing accountability for the exercise of economic authority and the consequences arising from resource-management decisions. Natural resources may generate private income and public revenue, but the ability to capture these benefits does not eliminate responsibility for environmental degradation or the depletion of assets needed by future populations. Siswanto (2025) addresses the ethical dimensions of natural resource management in Islamic economics, providing a basis for interpreting resource utilization as an activity subject to moral responsibility beyond immediate economic interests. Under this interpretation, amanah connects present economic choices with long-term obligations by requiring attention to ecological preservation, responsible consumption, and the consequences of transferring environmental liabilities to subsequent generations.

Distributive justice constitutes a separate but interconnected dimension of Islamic resource governance because economic benefits and environmental burdens are frequently allocated among different social groups. The principle of ‘adl provides a normative basis for evaluating arrangements in which extractive enterprises or public authorities receive immediate financial advantages while communities experience environmental damage or restricted access to essential resources. Kurniawan and Fadlillah (2025) connect Islamic environmental jurisprudence with maqāṣid al-sharī‘ah and intergenerational equity, indicating the relevance of Islamic legal and ethical reasoning to the distribution of ecological responsibilities. This interpretation requires resource-management decisions to consider not only whether extraction generates economic value but also whether the associated benefits, risks, and obligations are distributed fairly among present populations and across generations.

The relationship between these ethical principles and the economic mechanisms of resource exploitation can be examined through a structured conceptual synthesis. Table 3 integrates the principal Islamic economic concepts with the environmental and distributive problems identified in the preceding analyses, distinguishing their normative functions from their implications for resource-management evaluation. The classification draws on Islamic environmental ethics, ecological jurisprudence, and contemporary discussions of Islamic environmental governance rather than empirical measurements of institutional performance (Ahmad et al., 2026; Fauzi et al., 2026; Andriansyah et al., 2026). These relationships establish an analytical connection between resource scarcity, environmental externalities, and Islamic obligations concerning stewardship, justice, ecological balance, and long-term accountability.

Table 3. Conceptual Integration of Islamic Economic Principles and Intergenerationally Just Resource Governance

Islamic economic principle	Normative orientation	Resource-management concern	Intergenerational implication
Khalifah (stewardship)	Responsible human management of natural resources	Excessive extraction and ecological degradation	Preservation of environmental functions for future generations
Amanah (trust and responsibility)	Accountability for entrusted resources	Neglect of long-term environmental consequences	Responsibility for inherited ecological conditions
‘Adl (justice)	Fair distribution of rights, benefits, and burdens	Unequal allocation of extraction benefits and environmental costs	Protection of future generations from disproportionate burdens

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Mizan (balance)	Maintenance of ecological and economic balance	Resource utilization beyond ecological limits	Continuity of essential natural systems
Maslahah (public welfare)	Protection of collective and enduring welfare	Prioritization of narrow economic interests	Consideration of long-term social and ecological benefits
Israf (excess and waste)	Restraint against excessive consumption	Wasteful utilization of finite resources	Reduction of avoidable resource depletion
Fasad fi al-ard (destruction on Earth)	Prevention of environmental harm	Ecologically destructive production and extraction	Protection against persistent environmental degradation
Hifz al-bi'ah (environmental protection)	Preservation of environmental conditions	Insufficient integration of ecological protection into governance	Institutional recognition of long-term ecological responsibilities

Source: Conceptual synthesis of the literature examined in this study.

The relationships presented in Table 3 demonstrate that Islamic economic ethics can be interpreted through distinct but mutually reinforcing evaluative dimensions rather than as a single generalized obligation to protect the environment. Khalifah and amanah establish responsibilities concerning the exercise of economic authority, while ‘adl and maslahah direct attention toward the distribution of resource-related welfare and environmental burdens. The principle of mizan introduces an additional requirement to consider ecological balance when evaluating the economic justification for resource utilization, particularly where productive activities threaten environmental continuity. Ahmad et al. (2026) and Halilah et al. (2026) develop Islamic ecological and maqāṣid-oriented approaches to environmental responsibility, supporting the relevance of connecting these ethical principles with institutional considerations of ecological protection and public welfare.

The application of Islamic environmental ethics to natural resource governance requires a distinction between normative legitimacy and the institutional mechanisms through which ecological obligations may be implemented. Ethical commitments can identify unacceptable distributions of environmental harm, but they do not independently determine regulatory instruments, enforcement capacity, or the economic consequences of particular resource-management policies. Hakim et al. (2025) examine the incorporation of Islamic environmental principles into legal frameworks through hima, primum remedium, and strict liability in relation to communities affected by mining activities. Their contribution illustrates how ethical concerns regarding environmental protection can be connected to legal accountability, although the effectiveness of such arrangements remains dependent on their institutional design and implementation.

The relevance of Islamic economic principles also extends to the relationship between environmental governance and the public responsibilities of economic institutions. Darwis (2026) examines natural resource-management policy through siyasah shar‘iyyah and constitutional environmental considerations, while Susana et al. (2025) analyze Indonesian resource policies through a maqāṣid-based legal approach. These contributions position environmental protection within broader questions of public welfare, regulatory responsibility, and the legitimacy of resource-related policy decisions. The resulting conceptual implication is that intergenerational justice cannot depend solely on the voluntary ethical commitments of resource users because ecological protection also requires institutional arrangements capable of addressing environmental costs and competing claims over natural assets.

The incorporation of ecological preservation into Islamic jurisprudential reasoning provides a further basis for assessing environmental degradation as a concern directly related to the protection of human welfare. Fauzi et al. (2026) examine the relationship between Qur’anic environmental ethics and ecological jurisprudence, while Andriansyah et al. (2026) address the institutionalization of hifz al-bi’ah within the objectives of Islamic law. These approaches support interpreting environmental preservation as an integral component of responsible governance rather than an obligation separate from economic and social considerations. Nevertheless, extending such principles to resource-allocation decisions requires explicit attention to scarcity, environmental externalities, and the unequal

temporal distribution of ecological consequences, since normative recognition of environmental protection does not itself establish an operational method for determining sustainable extraction levels. Figure 1 presents the conceptual relationship between natural resource exploitation, Islamic economic principles, and intergenerational justice. The framework illustrates how ecological responsibility, distributive justice, and long-term accountability provide interconnected criteria for evaluating resource utilization. The principles of amanah, khalifah, ‘adl, and mizan inform the ethical interpretation of economic decisions concerning resource scarcity, environmental externalities, and future welfare. This conceptual arrangement clarifies the relationship between economic mechanisms and Islamic ethical obligations without implying empirically established causal relationships.

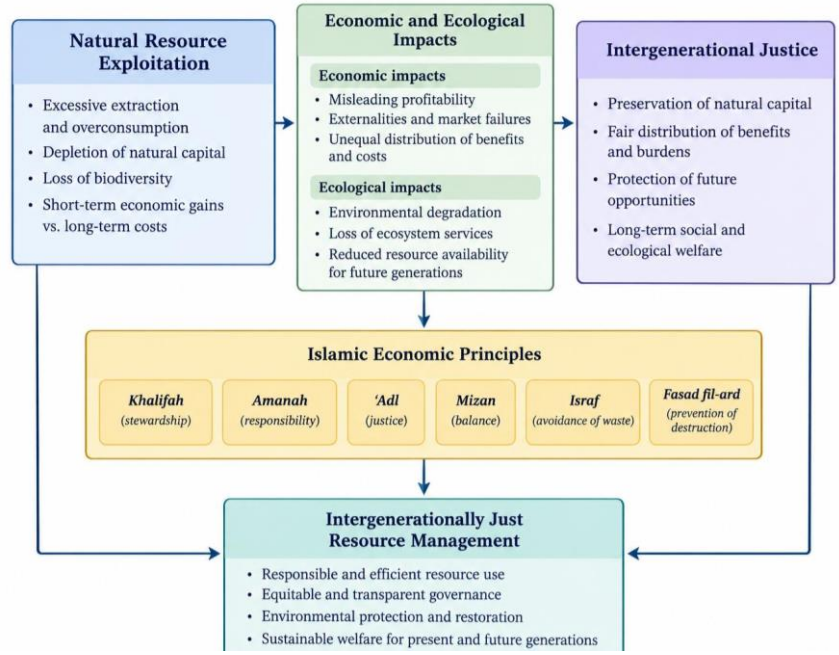


Figure 1. Conceptual Framework of Natural Resource Exploitation and Intergenerational Justice.

The integrated conceptual framework identifies ecological responsibility, distributive justice, and long-term accountability as the principal dimensions through which Islamic economics can contribute to the evaluation of natural resource exploitation. Ecological responsibility concerns the preservation of natural capital and essential environmental functions, distributive justice examines the allocation of economic benefits and environmental burdens, and long-term accountability addresses the consequences of present decisions for future welfare. The relationship between these dimensions is consistent with the Islamic environmental ethics examined by Gade (2023), the intergenerational equity considerations developed by Kurniawan and Fadlillah (2025), and the institutional concerns addressed by Halilah et al. (2026). The contribution of this synthesis lies in establishing explicit analytical connections between economic mechanisms and Islamic ethical principles without assuming that normative coherence constitutes evidence of policy effectiveness. The framework provides criteria for conceptual evaluation of resource-management decisions, while its application to specific extractive sectors and regulatory arrangements requires subsequent empirical examination.

CONCLUSION

This study examined natural resource exploitation and intergenerational justice in Islamic economics through a qualitative, literature-based conceptual approach. The analysis established that excessive resource exploitation presents an economic and ethical problem when immediate production benefits are prioritized without adequately accounting for natural capital depletion, environmental externalities, and the welfare of future generations. Resource scarcity and ecological degradation demonstrate the limitations of evaluating economic development exclusively through short-term

profitability, particularly when environmental costs are transferred to communities and generations that receive limited benefits from extraction. Islamic economic principles of amanah, khalifah, ‘adl, and mizan provide complementary normative criteria for assessing resource utilization through responsibility, stewardship, distributive justice, and ecological balance. The synthesis identifies three interconnected dimensions of intergenerationally just resource management: ecological responsibility, equitable distribution of economic benefits and environmental burdens, and long-term accountability for resource-related decisions. These dimensions establish a conceptual relationship between natural resource economics and Islamic ethical obligations, emphasizing that sustainable economic welfare requires consideration of both present development needs and the preservation of future ecological opportunities.

The principal theoretical contribution of this study is an integrated conceptual framework that connects economic mechanisms of resource exploitation with Islamic principles of intergenerational justice rather than treating environmental sustainability and religious ethics as separate analytical concerns. Its practical implications concern the incorporation of ecological costs into resource-management assessments, the equitable consideration of affected communities, and the recognition of long-term environmental responsibilities in institutional decision-making. The proposed framework offers normative criteria for evaluating resource governance but does not establish the empirical effectiveness of particular policies, regulatory arrangements, or conservation strategies. As a literature-based conceptual study, its conclusions remain limited to the interpretation and synthesis of existing scholarship without primary empirical observations, statistical testing, or sector-specific policy evaluation. Subsequent research should examine the applicability of the three analytical dimensions to particular extractive industries and resource-governance arrangements using empirical evidence on environmental conditions, benefit distribution, and institutional accountability. Such investigation would clarify the practical relevance of Islamic economic principles for safeguarding ecological continuity and equitable welfare opportunities across generations.

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