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Policy Forums

Setback for sustainability: Brazil's new licensing law threatens climate and biodiversity goals

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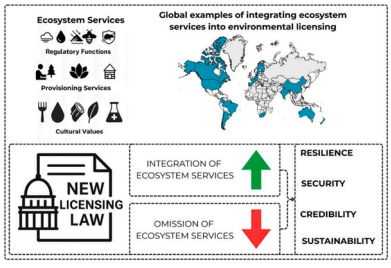
HIGHLIGHTS

- New licensing law omits ecosystem services from impact assessment, weakening environmental safeguards in Brazil.
- Omission raises socioecological risks and resource insecurity.
- We call for mandatory ecosystem services integration in licensing and impact assessment.
- Global climate and biodiversity commitments should issue binding guidance to align national laws.
- Ecosystem services integration is feasible and improves decision-making.

GRAPHICAL ABSTRACT



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ABSTRACT

Brazil's recent environmental licensing reform exposes a contradiction between national regulation and international climate and biodiversity commitments. Law No. 15.190/2025 narrows analytical scope, expands exemptions, weakens preventive mechanisms, and shifts responsibilities to subnational authorities with uneven technical capacity. Although environmental impact assessments remain formally required, the law reduces their applicability and overlooks indirect, cumulative, and synergistic impacts. It also omits ecosystem services, despite scientific consensus on their role in climate regulation, water provision, soil protection, and pollination. This omission underestimates socio-environmental risks and undermines resilience, food security, and long-term planning. This contradiction is evident in Brazil's renewed international engagement, including its role as host of the 30th United Nations Climate Change Conference (COP30) in Belém. To align national regulation with global commitments, integrating ecosystem services into licensing, alongside transparency and impact data disclosure, is urgently needed.

Introduction

Accelerated natural resource exploitation and habitat loss are pushing ecosystems toward critical tipping points, with cascading effects on climate regulation, water availability, soil protection, and pollination (Flores et al., 2024; IPBES, 2019). As ecological degradation intensifies, the disruption of ecosystem services (ES) increasingly translates into socio-economic risks, affecting food security, energy systems, and long-term development (MEA, 2005; Joly et al., 2019; IPBES, 2019). Scientific assessments have consistently emphasized that ES are central to understanding these dynamics, as they link ecological processes to human well-being and economic resilience (IPBES, 2019).

In this context, environmental impact assessment (EIA) has progressively evolved to incorporate broader analytical approaches capable of capturing indirect, cumulative, and long-term effects of development projects (Godoi et al., 2022; IAIA, 2019; Bond et al., 2014; Duinker et al., 2013). The explicit consideration of ecosystem services within EIA frameworks has been recognized as essential to improving risk identification and supporting more informed decision-making (Honrado et al., 2013; IPBES, 2019).

However, Brazil's recently enacted Environmental Licensing Law (Law No. 15.190/2025) moves in the opposite direction. By narrowing analytical scope, expanding exemptions, and weakening preventive mechanisms, the new framework not only reduces the effectiveness of impact assessment but also omits ecosystem services as a core analytical component (Fernandes et al., 2025; Reis-Filho et al., 2026). We argue that this omission leads to a systematic underestimation of socio-environmental risks and places Brazil at odds with global commitments on climate and biodiversity (IPBES, 2019; Guerry et al., 2015). Integrating ecosystem services into environmental licensing is therefore not merely a technical improvement, but a necessary step to ensure regulatory coherence, socio-ecological resilience, and long-term sustainability (IPBES, 2019; Joly et al., 2019).

The new environmental licensing law

Since 2023, Brazil appears to have resumed an active role in the international environmental agenda, after the setbacks observed during the previous far-right government (2019–2022). The reactivation of the Amazon Fund and the selection of Belém (PA) as the host city for the 30th United Nations Climate Change Conference (COP 30) symbolized a renewed engagement with global conservation commitments (Fearnside and Leal Filho, 2025). However, recent decisions approved by the National Congress contradict this movement and represent structural setbacks in environmental governance. The enactment of Law No. 15.190/2025, which establishes a new framework for environmental licensing, exemplifies this contradiction by profoundly reconfiguring impact assessment processes in the country (Fernandes et al., 2025).

The new law narrows the scope of licensing analysis, relaxes technical requirements, and weakens preventive control mechanisms. Fernandes and colleagues (2025) indicate that the law reduces the State's capacity to anticipate socioenvironmental impacts, restricts public participation, extends flexibilities for sectors such as agribusiness and infrastructure, and reduces transparency for high-risk activities. The presidential vetoes originally proposed were already deemed insufficient to prevent the most severe setbacks (Fernandes et al., 2025). Their subsequent reversal by Congress further reinstated provisions that heighten institutional and regulatory instability in natural resource governance, increasing vulnerability in decision-making processes.

Environmental licensing is one of the primary regulatory instruments used by governments to manage activities with potential environmental impacts and has progressively advanced toward more rigorous, transparent, and evidence-informed assessment frameworks (Godoi et al., 2022). The International Association for Impact Assessment (IAIA) defines Environmental Impact Assessment (EIA) as the process of identifying, predicting, evaluating, and mitigating potential impacts before decisions are made (IAIA, 2019). In practice, EIA operates as a preventive instrument by requiring technical analysis, public scrutiny, and monitoring mechanisms designed to avoid or minimise risks before project implementation (Godoi et al., 2022). Under the new legal framework, however, this preventive logic is weakened by instruments that dispense with prior studies or reduce technical verification, shifting responsibility for identifying impacts to project proponents themselves (Reis-Filho et al., 2026; Fernandes et al., 2025).

Fernandes and colleagues (2025) highlight the most problematic elements retained in the sanctioned law. These include broad exemptions from licensing for activities classified as low or medium impact, expanding deregulation without establishing unified national parameters; the creation of self-declared licensing (LAC), whereby proponents obtain licenses based solely on self-reported information, without prior technical review by environmental authorities; and the introduction of the Special Environmental License (LAE), which allows licensing without environmental impact studies for strategically designated projects, even when associated with high socio-environmental risks.

The law further reduces the requirement for Environmental Impact Assessment (EIA), restricting its application to exceptional cases and limiting analyses to direct impacts only, thereby excluding indirect, cumulative, and synergistic effects. This narrowing of analytical scope runs counter to well-established principles of impact assessment, which emphasize early warning, consistency, and the systematic consideration of cumulative effects as essential to informed decision-making (Bond et al., 2014; Duinker et al., 2013). Additionally, the law expands the transfer of licensing responsibilities to states and municipalities, deepening regulatory asymmetries and increasing exposure to local political pressures, while establishing automatic license renewal through self-declaration, further weakening oversight and enforcement (Reis-Filho et al., 2026; Fernandes et al., 2025).

The expansion of such flexibilization affects not only technical capacity but also generates broader institutional and governance effects that have been widely documented in the impact assessment literature.

Fernandes and colleagues (2025) argue that the combination of self-declaration mechanisms, exemptions from environmental impact studies, reduced public participation, and extensive delegation of regulatory authority undermines constitutional principles of prevention, transparency, and social control.

Recent empirical evidence demonstrates that these effects are not merely theoretical. Reis-Filho and colleagues (2026) show that the delegation of licensing authority under Brazil's new legal framework disproportionately affects municipalities with low institutional capacity, limited technical staff, and weak enforcement structures, particularly in regions of high environmental sensitivity. From an impact assessment perspective, these changes erode core benefits historically associated with EIA, including early warning, fairness, and meaningful public involvement (Bond et al., 2014). Moreover, by excluding cumulative and synergistic effects from formal analysis, the new framework ignores a central scientific requirement for understanding long-term and large-scale environmental change, as emphasized in cumulative effects assessment research (Duinker et al., 2013). The resulting regulatory fragmentation tends to produce inconsistent decisions across territories, exacerbates territorial inequalities, increases legal uncertainty, and heightens socio-environmental vulnerability for populations exposed to cumulative, diffuse, and long-term risks (Reis-Filho et al., 2026).

These changes undermine the preventive pillars of licensing at a critical moment, when scientific literature and international organizations emphasize the need to reinforce environmental assessment instruments amid worsening climate, ecological, and biodiversity crises (Godoi et al., 2022). By weakening institutional capacity at subnational levels and fragmenting regulatory standards, the new licensing framework undermines not only environmental protection but also the coherence and credibility of environmental governance as a whole, reinforcing patterns of deregulation that have been associated with increased socio-environmental risk (Reis-Filho et al., 2026). This regulatory rollback weakens the effectiveness of environmental licensing and disregards scientific advances in environmental governance (Fernandes et al., 2025).

These structural changes not only weaken the effectiveness of environmental licensing as a preventive instrument but also raise critical questions about the scope of impact evaluation frameworks. By omitting key analytical components, the new framework limits the ability to capture the full range of socio-environmental risks associated with development projects. In this context, the exclusion of ecosystem services represents a fundamental gap in environmental governance, particularly given Brazil's global environmental responsibility and the scale of its natural capital. This gap becomes more evident when contrasted with international experiences that have progressively incorporated ecosystem services into environmental assessment frameworks.

Ecosystem services as a key element in environmental licensing

According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), ecosystem services (ES) encompass the benefits that people obtain from nature, including ecological functions, material goods, and non-material values essential for human existence and well-being (IPBES, 2019). These benefits include regulatory functions such as climate regulation, water purification, erosion control, and pollination, as well as provisioning services such as food, fresh water, fiber, timber, and medicinal resources (Fig. 1). They also include cultural values linked to well-being, spirituality and recreation identity. Neglecting ES in natural resource governance undermines the ability to identify critical socio-environmental risks, as emphasized by IPBES (2019).

Accelerated natural resource exploitation and habitat loss are pushing many ecosystems toward ecological tipping points. Degradation reduces vegetation cover, disrupts hydrological cycles, and threatens species interactions essential to provisioning and regulating services (Flores et al., 2024; IPBES, 2019). Forest conversion can lead to semiarid transitions and cascading impacts that weaken carbon storage, water cycling, and pollination networks, generating both ecological and economic losses. These risks are especially acute in sectors that rely on water availability, climate regulation, and pollinator services, where declines can undermine agricultural productivity, energy security and public supply, intensifying socio-environmental vulnerabilities (IPBES, 2019; MEA, 2005; Joly et al., 2019).

In the case of pollination, studies demonstrate that pollinators are essential to sustaining native vegetation and agricultural productivity, with significant contributions to the trade balance of megadiverse countries (IPBES, 2019; Silva et al., 2021; Moreira et al., 2024). When agricultural demand exceeds pollinator availability, substantial productivity losses occur, particularly for crops that depend on pollination (Bergamo et al., 2025). Strong evidence shows that agricultural intensification, landscape homogenization, and pesticide use reduce ES availability, undermining long-term agricultural resilience and food security (IPBES, 2019; Bergamo et al., 2025). The absence of legal support further amplifies Brazil's production model's vulnerability, heightening the risks of ecological degradation and severe economic consequences.

The lack of explicit ES criteria in EIA frameworks contributes to the underestimation of critical risks, particularly in sectors such as hydropower, mining, and infrastructure, where biodiversity and ecosystem

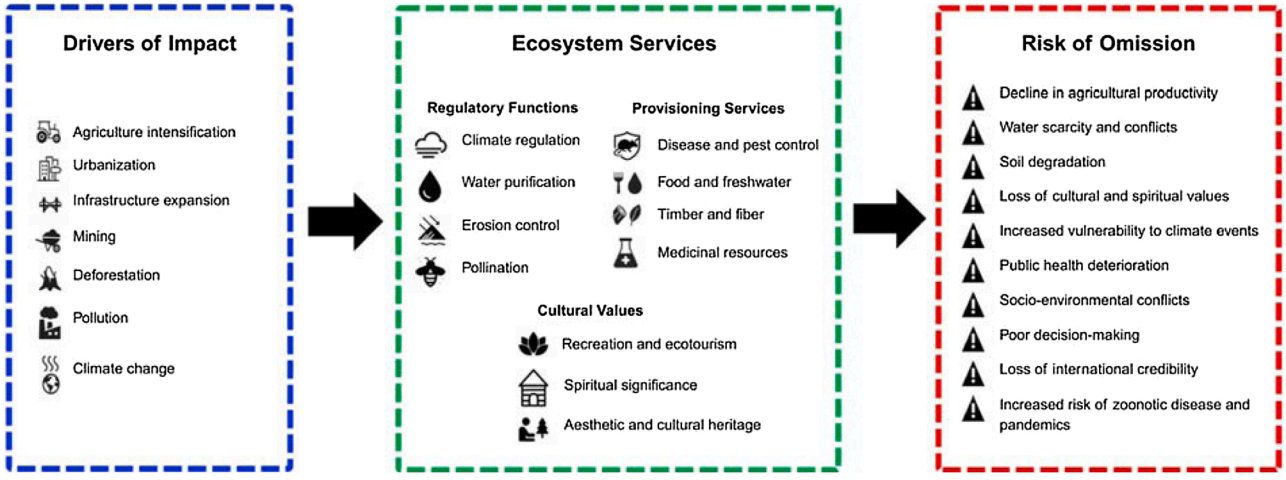

Fig. 1. Ecosystem services, drivers of impact, and the risks of omission in environmental licensing. Examples of impact drivers and associated risks when ES are omitted from licensing processes. Adapted from IPBES Global Assessment (IPBES, 2019).

services play a central role (Joly et al., 2019). Some isolated initiatives have emerged, such as the incorporation of ES into dam emergency plans in the state of Minas Gerais through Joint Resolution No. 3.181, but Brazil still lacks a consistent legal framework to guide the assessment or compensation of ecosystem services. Institutionalizing ES in national licensing procedures is therefore essential to ensure effective mitigation aligned with international best practices and to protect socioecological and economic resilience.

The adoption of self-declaratory models, such as the LAC, and the reduced requirement for EIA weaken technical scrutiny and erode

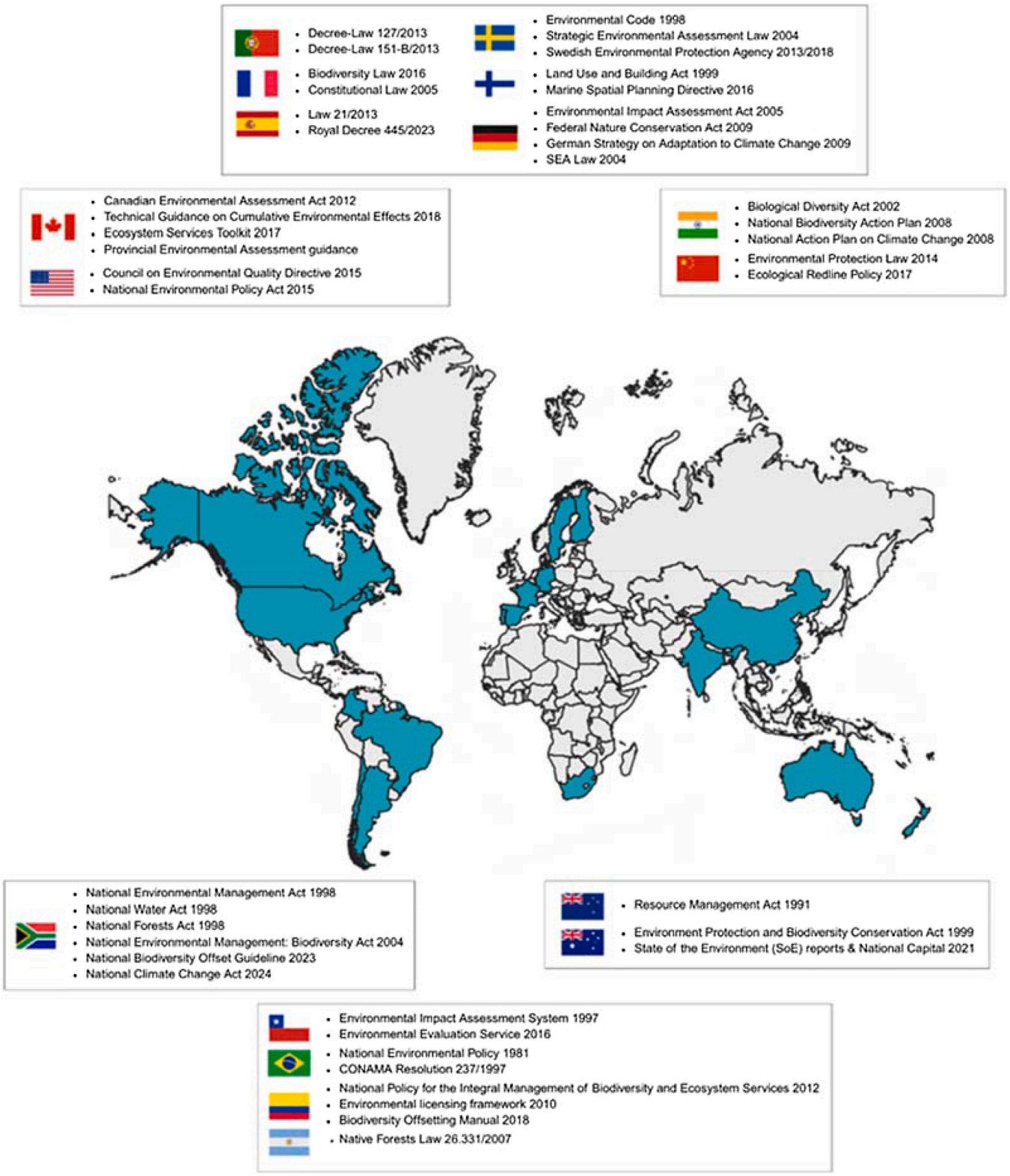

Fig. 2. Examples from national frameworks illustrating how ecosystem services are either explicitly referenced or implicitly incorporated through ecosystem-based approaches in environmental assessment and planning instruments.

mechanisms designed to safeguard critical ecological functions (Fernandes et al., 2025). These instruments reduce the capacity of licensing procedures to prevent impacts on ecosystem services essential to biodiversity and human well-being, whose protection is widely recognized as necessary by scientific literature and international assessments (Joly et al., 2019; IPBES, 2019). By relaxing analytical and preventive requirements, the new law increases the risks of habitat fragmentation, pollinator decline, and disruptions to ecological interactions that are fundamental to agricultural productivity and ecosystem resilience (IPBES, 2019). In addition, weakened continuous monitoring compromises the detection of cumulative long-term impacts, a process broadly associated with the erosion of natural capital and reduced state capacity to anticipate and mitigate socio-environmental risks (Guerry et al., 2015).

Global evidence and comparative lessons

The explicit integration of ES into EIA enables decision-makers to account for regulatory functions (e.g., climate regulation, water purification, soil protection, pollination), provisioning services (e.g., food, freshwater, timber), and cultural values (e.g., spiritual enrichment, recreational opportunities), while highlighting the full societal costs and benefits of development projects beyond short-term economic gains. This approach is widely recognized in the scientific literature as a necessary improvement to impact assessment practice (Honrado et al., 2013) and is consistent with international assessment frameworks such as the Millennium Ecosystem Assessment (MEA, 2005), the Brazilian Assessment on Biodiversity and Ecosystem Services (Joly et al., 2019), and the IPBES Global Assessment (IPBES, 2019).

It is also aligned with recent Brazilian legislation, such as the National Policy for Environmental Services Payment (Law 14.119/21). These initiatives reinforce that explicitly considering ecosystem services in Environmental Impact Assessments can improve the capacity of decision-making processes to address indirect, cumulative, and long-term implications of development projects (Honrado et al., 2013). The Convention on Biological Diversity (CBD), the International Finance Corporation Performance Standards, and IPBES all call for the systematic integration of ecosystem services into environmental planning and regulation to ensure policy effectiveness and sustainability (CBD, 2006; IFC, 2012; IPBES, 2019).

This shift toward incorporating ES, either through their explicit inclusion in legal and policy instruments or their implicit incorporation through ecosystem-based approaches in environmental assessment and planning, is already underway in several countries (Fig. 2). In the European Union, Directive 2014/52/EU mandates consideration of biodiversity, water, and human health in EIA, closely linked to ES. The EU has also advanced complementary instruments, such as Delegated Regulation (EU) 2025/2188, which standardizes pollinator monitoring across Member States. By generating comparable data on pollinator diversity and abundance, this regulation indirectly supports the incorporation of ES into environmental assessments, even though it does not formally modify the EIA Directive itself.

In European contexts, ecosystem services have been incorporated into environmental protocols to varying degrees, either explicitly or through ecosystem-based approaches. This is reflected in practical applications within environmental assessment processes. The use of ecosystem services has been implemented in sectors that require environmental licensing, particularly in industrial and infrastructure projects. For example, in Belgium, ecosystem services have been incorporated into environmental and social impact assessments (ESIA) for large-scale industrial developments, where they are systematically used to identify priority services, establish baseline conditions, assess project impacts and dependencies, and define mitigation and compensation measures linked to changes in land use and ecosystem functioning (Arcadis, 2022).

In addition, ecosystem services have been applied in environmental assessment at the planning level, as demonstrated in peri-urban development plans in Italy, where they guide the selection of priority services, the evaluation of alternative land-use scenarios, and the design of mitigation strategies based on green infrastructure (Semeraro et al., 2021). These examples illustrate how ecosystem services can be operationalized to explicitly link ecological changes to socio-economic outcomes, improving decision-making in sectors highly dependent on natural capital.

Beyond Europe, similar progress is evident in South Africa, China, Colombia, and Canada. These models demonstrate that the legal and procedural integration of ES is not only possible but also necessary to ensure resilient environmental governance. In comparative perspective, Brazil's new licensing framework contrasts sharply with this trend by weakening instruments that other nations are reinforcing to improve risk anticipation and mitigation.

Implications and pathways forward

Although Article 225 of Brazil's 1988 Constitution requires impact assessments for potentially harmful activities and defines ecosystems holistically, the legal framework does not address ES. The law approved by Congress aims to facilitate environmental licensing by reducing requirements and the level of analytical scrutiny. Beyond weakening safeguards established in existing legislation, it fails to advance environmental governance in the context of escalating climate change, biodiversity loss, and degradation of ecological functions (Reis-Filho et al., 2026; Fernandes et al., 2025).

Structuring instruments such as Law No. 6,938/1981 and CONAMA Resolutions No. 01/1986 and No. 237/1997 establish the foundations of environmental licensing in Brazil but omit ecosystem services from impact assessment. Despite growing federal recognition of their importance, there is no legal obligation to incorporate ecosystem services into licensing procedures. In practice, Congress is moving in the opposite direction. The new licensing framework not only fails to address this gap but also reinforces a regulatory system that is misaligned with scientific knowledge and international best practices (Reis-Filho et al., 2026; Fernandes et al., 2025).

Some recent policy initiatives in Brazil already point toward the incorporation of ecosystem services into legal and procedural frameworks. These include the National Policy for Payment for Environmental Services (Law No. 14.119/2021), which formally defines ecosystem services, establishes them as a central objective of environmental policy, and creates institutional mechanisms for their valuation, monitoring, and integration into decision-making processes. By embedding ecosystem services within national policy frameworks and linking them to climate regulation, water security, and biodiversity conservation, this law demonstrates that ecosystem services are already recognized as a foundational element of environmental governance in Brazil.

At the same time, regulatory instruments, including subnational initiatives such as the Joint Resolution SEMAD/FEAM/IEF/IGAM No. 3.181, which explicitly incorporates ecosystem services into environmental assessment and risk management procedures associated with environmental licensing, requiring their consideration in baseline diagnostics, impact assessment, and emergency planning. These initiatives demonstrate that incorporating ecosystem services into environmental governance is both feasible and already underway in the Brazilian context. However, the new Environmental Licensing Law (Law No. 15.190/2025) moves in the opposite direction by failing to incorporate ecosystem services into licensing procedures and by weakening analytical and preventive requirements. This divergence highlights a growing mismatch between emerging policy advances and recent regulatory changes.

Nationally, approval of the new licensing law exposes a clear case of normative incoherence: while instruments such as the National Native Vegetation Recovery Policy aim to strengthen conservation and ecological restoration, the new framework relaxes controls and reduces

analytical requirements, generating contradictory incentives and weakening the achievement of climate and biodiversity targets (Reis-Filho et al., 2026; Tchinda and Talbot, 2023). Internationally, such flexibilization diverges from the direction taken in multilateral climate and biodiversity agreements, which emphasize coherent governance and alignment between regulatory instruments and environmental commitments, as articulated under the Convention on Biological Diversity (CBD, 2006). These international frameworks also underscore the need for transparency and an integrated climate policy consistent with the United Nations Framework Convention on Climate Change (UNFCCC). Under these commitments, safeguarding ecological functions is foundational, since climate regulation, water provision, public health, and food security depend on ecosystem services, as demonstrated by the IPBES Global Assessment (IPBES, 2019) and the Millennium Ecosystem Assessment (MEA, 2005).

The weakening of environmental licensing increases the likelihood of inconsistencies emerging between international commitments and domestic regulation, with potential implications for the country's credibility in global negotiations (Reis-Filho et al., 2026; Fearnside and Leal Filho, 2025). In this context, Brazil must adopt concrete measures to align its regulatory frameworks with scientific consensus (IPBES, 2019; Joly et al., 2019) and the political direction reinforced in multilateral negotiations (CBD, 2006). This alignment requires bringing national legislation closer to international commitments, promoting coherence between environmental licensing, climate policy, and conservation instruments (MEA, 2005; IFC, 2012). Such convergence can generate substantive environmental benefits, reduce conflicting incentives across productive sectors, and strengthen institutional accountability for achieving climate and biodiversity targets beyond voluntary and fragmented commitments (Joly et al., 2019; Fearnside and Leal Filho, 2025).

Addressing this challenge also requires attention to the international dimension, as persistent gaps between global environmental commitments and national regulatory frameworks highlight the need for stronger, more specific guidance in multilateral agreements. Although conventions such as the CBD and UNFCCC promote ecosystem-based approaches, they stop short of requiring concrete legal instruments such as licensing standards that incorporate ES. Concerns over national sovereignty and perceived technical barriers often limit the adoption of more prescriptive obligations. However, the worsening environmental crisis demands progress toward binding and enforceable guidance capable of supporting more consistent implementation across jurisdictions.

Given these limitations, moving in this direction requires explicitly incorporating ES into environmental legislation and establishing mandatory transparency and data disclosure requirements. By sustaining ecological integrity and supporting mitigation and adaptation efforts, ecosystem services are central to commitments under both the CBD and the UNFCCC. Ignoring these interdependencies limits Brazil's capacity to anticipate, prevent, and mitigate socio-environmental impacts in the short, medium, and long term (Guerry et al., 2015). Explicitly embedding ES in binding environmental licensing and land-use planning frameworks is therefore a necessary step to align national regulation with converging climate and biodiversity agendas, ensuring that nature-based solutions are effectively integrated into mitigation, adaptation, and sustainable development strategies (Seddon et al., 2020).

Integrating ecosystem services into environmental licensing should be understood not as a bureaucratic burden, but as a strategy to support inclusive and sustainable development models grounded in the best available scientific knowledge (Joly et al., 2019). By improving the identification of risks, trade-offs, and long-term impacts, the incorporation of ES enhances decision-making quality rather than delaying it. Guaranteeing transparency and open access to EIA data further strengthens this approach by improving environmental governance and long-term social resilience (GBIF, 2020).

Brazil's vast natural capital represents an invaluable opportunity to align socio-environmental integrity with long-term economic resilience. Aligning international expectations with national legal frameworks through the incorporation of ES is both strategic and necessary. National biodiversity assessments emphasize that public policies need to integrate ES as a foundational element in environmental and land-use planning, recognizing them as critical natural capital sustaining economic prosperity and social well-being (Joly et al., 2019). Ensuring regulatory coherence between domestic policies and international commitments is essential for restoring credibility and strengthening resilient development pathways (Fearnside and Leal Filho, 2025). Achieving this coherence requires transforming scientific evidence into binding regulatory standards rather than relying on voluntary or discretionary instruments. As Hipólito and colleagues (2021) warn, policy-making detached from science amounts to management in the dark. Breaking this barrier is therefore central to enabling transparent, accountable, and evidence-informed environmental governance.

Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the first author used ChatGPT to correct the English and to conduct a preliminary survey of environmental legislation across countries. After using this tool/service, all authors reviewed the content as needed and take full responsibility for the content of the publication.

Declaration of competing interest

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

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