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Decoupling between aspirational talk and action in biodiversity reporting. A substantive or symbolic response to institutional pressures?

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Abstract

Purpose— This study explores the link between aspirational talk and action in biodiversity reporting to identify potential decoupling practices.

Design/methodology/approach— Content analysis is applied to 84 sustainability reports from companies in sectors with significant biodiversity impacts. A structural equation model based on partial least squares (PLS) examines the relationship between aspirational talk and action, as well as the influence of increased national-level commitment to the Sustainable Development Goals (SDGs) on the consistency of information.

Findings— Companies generally provide limited biodiversity disclosures. However, when disclosed, aspirations connect with actions, suggesting no content decoupling. In SDG-committed environments, companies adopt counter-coupling strategies in response to stakeholder pressures.

Originality/value— This study makes a dual contribution by analyzing decoupling in biodiversity reporting and examining the influence of institutional pressures at the national level on decoupling practices.

Practical implications— Findings can help policymakers develop regulatory frameworks promoting consistent reporting and biodiversity integration into corporate strategy. Preparers should connect aspirational talk with internal management practices and biodiversity performance data.

Social implications— This study has implications for enhancing the emancipatory nature of corporate biodiversity reporting.

Research limitations/implications— The analysis focuses on disclosed management practices and action plans rather than on the effectiveness of the organizational actions themselves. Furthermore, the study does not assess the quality of the disclosed information or the impact of the proposed initiatives on species conservation.

Keywords— biodiversity reporting; decoupling; extinction accounting; legitimacy theory; institutional theory; SDGs

Paper type: Research paper

Sustainability Accounting, Management and Policy Journal

1. Introduction

Biodiversity loss is currently recognized as one of the most pressing issues facing our planet and a highly alarming aspect of the ongoing environmental crisis (WEF, 2025). Aware of their role in preventing, conserving, and restoring biodiversity, companies are promoting biodiversity reporting as a significant source of insight into the connections between businesses and nature (Mair *et al.*, 2024; Saeed *et al.,* 2025), responding to increasing pressures from stakeholders demanding urgent solutions (Roberts *et al.*, 2021).

Corporate reporting can be an instrument that fosters positive change in the fight against species extinction (Jones and Solomon, 2013; Maroun and Atkins, 2018). However, it can also be used by companies as a greenwashing tool to preserve their own interests (Marquis *et al.,* 2016; Hassan *et al.,* 2020). Firms engage in greenwashing when they deliberately provide misleading content in their reports, or selectively disclose information, to project an overly positive image of reality (Boiral, 2016). Another form of greenwashing occurs when companies decouple their disclosures from actual practices and claim to meet stakeholder expectations without implementing substantive changes (Marquis *et al.,* 2016). To avoid this decoupling, it is insufficient for companies to merely disclose their aspirations regarding biodiversity conservation; they must also accompany their intentions with action plans to combat species loss and the destruction of ecosystems (Boiral, 2016; Maroun and Atkins, 2018; Maroun *et al.*, 2018). On the one hand, aspirational talk announces intentions, emotions, and idealized self-descriptions of the future (Trittin-Ulbrich, 2023), providing insights into how biodiversity is defined and understood by organizations (Maroun and Ecim, 2024). On the other hand, action represents past initiatives and current performance (Christensen *et al.,* 2021) and reflects how biodiversity is factored into operational and internal management practices (Maroun and Ecim, 2024). When both types of information are disclosed consistently, reporting has the potential to be a performative tool, as it helps organizations construct their perception of reality and feel more motivated to act, driven not only by increased commitment but also by the achievements attained (Christensen *et al.*, 2021). However, the dynamics between aspirational talk and action are complex and fraught with tensions and controversies (Christensen *et al.,* 2013; Winkler *et al.,* 2020).

When discrepancies between aspirational talk and actions in the disclosed information become evident, concerns arise regarding the actual contribution of reporting to sustainability and the true interests of firms (Cho *et al.*, 2015; Farias *et al.*, 2024). To ensure that reporting contributes to sustainability and becomes a transformative tool, companies should not limit themselves to theoretical statements with symbolic commitment; instead, they must use information disclosure to promote substantive changes in their internal processes (Manes-Rossi and Nicolo, 2022). If firms disclose their aspirations but do not accompany them with the means by which they plan to operationalize them, a false illusion of good intentions can be created (Farias *et al.*, 2024; Maroun and Ecim, 2024). In such cases, this decoupling of information, dominated by ceremonial announcements about their commitments and aspirations, may be a strategy to conceal poor performance and manage stakeholder impressions in their favor (Boiral, 2016; Roszkowska-Menkes *et al.*, 2024; Cepeda *et al.,* 2025). From the perspective of legitimacy theory, these inconsistencies can be interpreted as an attempt by companies to manipulate their image, focusing solely on appearance and self-justification to symbolically enhance their reputation (Christensen *et al.,* 2013; Tang *et al.*, 2023; Trittin-Ulbrich, 2023).

Sustainability Accounting, Management and Policy Journal

However, decoupling should not always be understood as a strategy by firms to gain symbolic legitimacy. On one hand, ambitious aspirational statements can be tolerated and even beneficial, as they may serve to stimulate improvements in order to move companies toward higher goals (Christensen *et al.,* 2013; Cho *et al.,* 2015). On the other hand, decoupling may be inevitable when attempting to satisfy contradictory interests and multiple competing expectations from stakeholders (Cho *et al.,* 2015; Farias *et al*., 2024). In such cases, companies may opt for a counter-coupling strategy to appease the most powerful stakeholders (Cho *et al.,* 2015). This counter-coupling approach involves a deliberate decoupling of reporting content to respond to conflicting stakeholder demands, prioritizing the information that best meets their expectations, and may lead companies to intentionally select which types of information to disclose in order to manage these tensions. This could be a substantially legitimate solution, especially in environments where institutional pressures are greater (Cho *et al.,* 2015; Maroun *et al.,* 2018; Cooper and Wang, 2024; Uche and Khalid, 2024).

The aim of this research is to explore whether decoupling practices exist in biodiversity reporting and whether these practices are influenced by institutional context pressures and stakeholder demands. Our study makes two main contributions. First, this study advances knowledge on biodiversity reporting practices and provides a comprehensive analysis that allows us to assess whether corporate disclosure reflects a genuine concern for species conservation or, alternatively, a strategy aimed at achieving symbolic legitimacy. Although previous studies have examined biodiversity disclosures from the perspective of the content included in corporate reports (e.g. Van Liempd and Busch, 2013; Adler *et al.*, 2018; Hassan *et al.*, 2020; Hassan *et al.*, 2022), or from the perspective of market responses to such disclosures (e.g. Ali *et al.*, 2023; Treepongkaruna, 2024), there is a lack of research exploring the tensions between aspirational talk and action. This offers a new approach to biodiversity disclosure based on the consistency of the information reported. Paradoxically, decoupling in biodiversity reporting remains an underexplored issue, despite being a critical one, as it undermines the ability of stakeholders and public bodies to assess the effectiveness of corporate commitments (Palea *et al.,* 2025). Furthermore, it may hinder the transformative potential of reporting (Maroun *et al.,* 2018). Our findings suggest that companies do not follow a decoupling strategy in biodiversity reporting, thereby providing new evidence on how firms build legitimacy in the context of the biodiversity crisis. Second, this study contributes to analyzing decoupling practices from a broader perspective by linking decoupling with the emerging research on the institutional drivers of biodiversity reporting (e.g. Bhattacharyya and Yang, 2019; Hambali and Adhariani, 2024; Roberts *et al.,* 2025). We introduce a novel approach that connects country-level sustainability commitments with firm-level reporting behavior, highlighting an unexplored area concerning the influence of the normative context on biodiversity reporting. This analysis is relevant because it helps explain how companies respond to institutional pressures and to the coexistence of different logics in biodiversity reporting (Weir, 2019). Specifically, in countries more committed to achieving the 2030 Agenda, consumers, governments, the media, and civil society are pressuring companies to adopt measures to achieve more sustainable behaviors (Raman *et al.,* 2023; Roberts *et al.,* 2025). We delve into the effects of these pressures on biodiversity disclosure and show that public scrutiny and increasing stakeholder pressures at the national level in countries more committed to the Sustainable Development Goals (SDGs) can incentivize companies to adopt decoupling strategies, which could be interpreted as a symptom of symbolic legitimacy seeking. At the same time, our results suggest that, in these contexts, companies also adopt counter-coupling practices,

thereby attempting to find a substantively legitimate solution to respond to the demands of salient stakeholders (Cho *et al.,* 2015; Roszkowska-Menkes *et al.*, 2024).

The remainder of the paper is structured as follows. Section two reviews the literature on biodiversity accounting and reporting, while section three develops the hypotheses. Section four outlines the methodology employed in our study. Section five presents the results of our analysis. Section six discusses these findings, and section seven summarizes the main conclusions and practical implications of our study.

2. Theoretical framework

In the context of extinction accounting, reporting can be a tool to promote companies' efforts to prevent the disappearance of species and mitigate their impacts (Maroun and Atkins, 2018). To achieve this, companies should maintain a holistic vision when disclosing information, combining the narrative that describes their aspirations regarding biodiversity with an explanation of how they plan to prevent extinction and improve biodiversity conservation (Atkins and Maroun, 2018; Maroun and Atkins, 2018). On the one hand, aspirational talk reflects the state of biodiversity, the commitments, and the companies' motivations in the disclosed information. However, while this descriptive information is crucial for raising awareness, it is insufficient to prevent extinction (Maroun et al., 2018). For this reason, the content disclosed should not be limited to the emotional or rhetorical; it should also demonstrate that companies have internal management practices geared towards action.

Companies' behavior in disclosing this information can be interpreted through the lens of legitimacy theory (Suchman, 1995). This theory argues that firms need to justify their actions to society in order to be accepted and operate normally. In this context, reporting becomes a key tool for demonstrating their commitments, reinforcing public trust, and responding to growing demands for transparency and accountability (Lai *et al.,* 2016; Manes-Rossi and Nicolo, 2022). This issue is critical because, in the face of the biodiversity crisis, companies need to explain to society how they understand their relationships with nature (Bhattacharyya and Yang, 2019). When companies acknowledge the importance of these relationships and assume their crucial role in species conservation, it would be reasonable to expect them to disclose more consistent information to maintain their legitimacy (Hassan *et al.,* 2022; Rimmel and Jonäll, 2013). However, companies may also use reporting instrumentally to positively influence stakeholders' perceptions (Boiral, 2016; Roszkowska-Menkes *et al.*, 2024; Roberts *et al.,* 2025), without a genuine approach to biodiversity protection. As a result, poor performers may use reporting to preserve their corporate image (Hassan *et al.,* 2020).

When rhetorical information is combined with evidence of action-oriented practices, reporting reveals signs of substantive legitimacy, demonstrating a deep ecological awareness and enhancing the emancipatory nature of accounting and its transformative capacity (Maroun *et al.*, 2018; Atkins and Maroun, 2018; Gallhofer and Haslam, 2019). If general statements and commitments are accompanied by internal management procedures and action plans, a good-faith effort is made to address stakeholder concerns (Cho *et al.*, 2015), and reporting becomes an instrument that legitimizes companies' substantive commitments (Trittin-Ulbrich, 2023).

However, if the information is decoupled, reporting may be used to construct a favorable perception (Roszkowska-Menkes *et al.*, 2024) to gain symbolic legitimacy, aiming solely to enhance their reputation, raising questions about the effectiveness of biodiversity reporting as a tool for change (Boiral, 2016; Hassan *et al.,* 2020). One manifestation of the pursuit of symbolic legitimacy occurs when reports convey authentic concern for biodiversity and a clear motivation to conserve it, yet the aspirational talk—announcing goals, intentions, future strategies, and desired outcomes—lacks a clear connection to initiatives aimed at preventing extinction (Maroun and Atkins, 2018; Hassan *et al.*, 2022). This legitimacy gap results in ceremonial announcements that lack genuine actionability (Trittin-Ulbrich, 2023). Such decoupling between aspirational talk and action in disclosed information suggests that companies may not be genuinely promoting proactive behavior in the fight against extinction (Raar *et al.*, 2020).

To attain legitimacy, companies adhere to institutional context pressures in order to meet social expectations (Palea *et al.,* 2025). Institutional theory (DiMaggio and Powell, 1983) explains that, in responding to these pressures, companies adopt homogeneous practices that are considered legitimate and socially acceptable—a phenomenon known as isomorphism. Rising institutional pressures force organizations to adopt institutionalized practices such as reporting (Cooper and Wang, 2024). Yet, when these pressures intensify, firms frequently respond by decoupling their aspirations from internal operations (Roszkowska-Menkes *et al.*, 2024) to avoid tensions arising from multiple and contradictory institutional logics (Weir, 2019; Haque and Jones, 2020).

First, there is a type of isomorphism known as coercive isomorphism, which leads companies to respond to requirements imposed by rules and regulations. For example, Saeed *et al.* (2025) suggest that biodiversity disclosure is influenced by the presence and stringency of legal mandates enacted by governments to protect natural resources. This form of isomorphism is more evident in countries where sustainability reporting is mandatory (Mair *et al.,* 2024).

There is also normative isomorphism, in which companies align with practices that are culturally acceptable and consistent with established norms in their environment. This type of isomorphism drives firms to adopt standardized guidelines for information disclosure. Specifically, Bhattacharyya and Yang (2019) and Haque and Jones (2020) examine the impact of the G4 guidelines from the Global Reporting Initiative (GRI) and find that their use has led to a notable increase in biodiversity reporting. However, according to Roszkowska-Menkes *et al.* (2024), adherence to standards such as GRI can foster decoupling since companies may sometimes settle for mere compliance without addressing stakeholders' needs.

The effect of other normative variables on corporate behavior has also been examined. Specifically, the cultural context of a country can be one of the strongest normative drivers of reporting (Hambali and Adhariani, 2024). For example, Adler *et al.* (2017) suggest that the adoption of governmental strategies for nature conservation increases the extent of firms' biodiversity disclosure. Similarly, national environmental performance positively affects companies' inclination to disclose biodiversity-related information (Hambali and Adhariani, 2024; Roberts *et al.*, 2025). Other factors within the institutional context at the national level, such as higher levels of corruption (Roberts *et al.,*

Sustainability Accounting, Management and Policy Journal

2025) or increased shareholder litigation risk (Treepongkaruna, 2024), also encourage greater disclosure of this type of information, as companies seek to legitimize their activities.

Although these studies have explored the effects of certain normative context variables on biodiversity-related information, they have primarily focused on their influence over the quantity or type of information disclosed. To date, their impact on the decoupling of information has not been analyzed, despite the importance of consistency between aspirational talk and action for the transformative potential of biodiversity reporting (Maroun *et al.,* 2018).

3. Hypotheses development

Companies are increasingly aware of the urgent need for solutions to address the crisis caused by species loss (Rimmel and Jonäll, 2013; Mair *et al.*, 2024; Saeed *et al.,* 2025). At the same time, stakeholders are placing greater value on biodiversity-related information (Hambali and Adhariani, 2024; Bassen *et al.,* 2025). These circumstances, together with the launch of voluntary frameworks that guide companies in presenting nature-related disclosures, may be positively influencing the consistency of the content disclosed (KPMG, 2024). For example, Maroun *et al.* (2018) found that rhetorical content typically accompanies action-focused disclosures, reflecting companies' genuine concern about the biodiversity crisis. Additionally, Ali *et al.* (2024) demonstrate that biodiversity commitments are increasingly prioritized by investors, who reward firms reporting both their business policies and management processes. Furthermore, ongoing improvements in biodiversity disclosure quality could be positively influencing content consistency (Blanco-Zaitegi *et al.,* 2022; Ali *et al.,* 2024; Hambali and Adhariani, 2024). All these factors may explain why, although biodiversity reporting is still in its early stages (Adler *et al.*, 2018; Blanco-Zaitegi *et al.*, 2022; Hassan *et al.*, 2020; Azizi *et al.,* 2025), companies are using it as a tool for substantive legitimacy by disclosing information about both their aspirations and their actions, leading us to propose our first hypothesis:

H1: There is a positive relationship between the extent of aspirational talk disclosures on biodiversity and the level of action-focused disclosures.

Moreover, reporting practices may also be influenced by factors within the institutional context. Among these, some authors have identified a country's level of commitment to the SDGs as a key driver for corporate sustainability disclosures (Raman *et al.,* 2023; Roberts *et al.,* 2025). A country's SDG performance level can be understood as a proxy for country wealth, stricter environmental regulations, greater public awareness, and more stringent stakeholder demands, all of which increase pressure on companies to adopt more sustainable behaviors and enhance disclosure levels (Hambali and Adhariani, 2024; Paridhi and Ritika, 2024). Similarly, Whittingham *et al.* (2023) suggest that the launch of the SDGs has brought significant changes to firms' sustainability reporting, positively impacting both content and form. Specifically, Paridhi and Ritika (2024) argue that in countries more committed to the 2030 Agenda, there is greater alignment between sustainability goals, policy development, and resource allocation in corporate reporting.

For all these reasons, it is reasonable to assume that stronger sustainability pressures in countries more committed to the SDGs encourage companies to demonstrate consistency between aspirational

Sustainability Accounting, Management and Policy Journal

talk and action in order to gain legitimacy in the eyes of their stakeholders. This leads us to propose the second hypothesis of the study:

H2: The SDGs positively influence the relationship between aspirational talk-oriented and action-focused biodiversity disclosures.

Finally, there are also arguments suggesting that firms may respond to increased institutional pressures by decoupling their disclosures (Tang *et al*., 2023; Talpur *et al*., 2024). When pressures intensify, companies are subject to greater scrutiny and may feel compelled to selectively disclose information in order to address the sometimes conflicting expectations of their stakeholders (Cho *et al.,* 2015). The deliberate decoupling between aspirational talk and action to resolve conflicting stakeholder demands—known as counter-coupling behavior—can be a legitimate alternative to appease the most powerful stakeholders (Cooper and Wang, 2024; Uche and Khalid, 2024). This type of decoupling is more likely in contexts subject to different institutional logics (Maroun *et al.,* 2018). The pressure exerted by frameworks such as the SDGs may compel companies to offer reporting solutions that respond to these diverse institutional logics (Damiano *et al.,* 2025), leading them to prioritize either intentions or actions in order to adapt to divergent stakeholder demands.

Thus, one form of counter-coupling may consist of *aspirational inflation*, where companies emphasize declarations of good intentions and emotional appeals in their disclosures, seeking to demonstrate a profound ecological consciousness to their stakeholders (Christensen *et al.,* 2021). On the other hand, another form of counter-coupling would involve compensating those stakeholders who demand substantive actions (Maroun *et al.,* 2018). These stakeholders are the most directly involved with the organization and exert the greatest pressure within the institutional context (Cho *et al.,* 2015). In this strategy, firms prioritize the effective communication of actions taken to combat extinction, aiming to demonstrate strong mobilization and position themselves as highly active (Boiral, 2016).

The possibility that higher levels of SDG achievement in some countries explain the extent of disclosure—whether in aspirational talk or action—as a response to increased stakeholder pressure leads us to formulate the following hypothesis:

H3: There is a positive relationship between a country's commitment to the SDGs and the level of aspirational talk in biodiversity disclosures.

H4: There is a positive relationship between a country's commitment to the SDGs and the level of action-focused biodiversity disclosures.

In line with the hypotheses mentioned above, the proposed model is presented in Figure 1.

[Insert Figure 1 about here]

4. Method

4.1. Sample

Our sample consists of the 2021 reports from companies listed in the Fortune Global 500, operating in five sectors: energy; food, beverages and tobacco; food and drugs; materials; and wholesalers. These sectors were selected because they significantly contribute to biodiversity loss (Finance for Biodiversity

Sustainability Accounting, Management and Policy Journal

Foundation, 2023). Some of the activities carried out by companies in these sectors—such as mining—represent major threats to wildlife and forests (Adler *et al.,* 2017; Sonter *et al.,* 2018). Companies in these sectors must rethink how they manage their relationship with nature (Sonter *et al.,* 2018) and have shown growing interest in biodiversity reporting due to increased stakeholder pressure and the need to clearly demonstrate their social commitment in order to maintain legitimacy, particularly given their higher exposure to biodiversity-related risks. Consequently, these companies are expected to provide more comprehensive biodiversity disclosures (Hassan *et al.*, 2022), making them especially suitable for achieving the objectives of this study.

Additionally, all companies included in the sample are listed in the Fortune Global 500. The decision to focus on the largest companies was based on two reasons. First, larger companies tend to provide more comprehensive and higher-quality biodiversity information (Adler *et al.*, 2018; Bhattacharyya and Yang, 2019; Hassan *et al.*, 2020). Second, from the perspective of legitimacy theory, the social and environmental activities of larger companies are generally more visible and subject to greater scrutiny and public attention (Bhattacharyya and Yang, 2019), making them particularly relevant for analyzing the influence of institutional pressures.

With respect to the selected year, 2021 offers a valuable opportunity to examine corporate biodiversity reporting practices prior to the influence of the main regulatory frameworks that now guide such disclosures. At that time, companies operated in a context largely free from formal biodiversity reporting obligations, allowing for an assessment of biodiversity reporting practices driven primarily by internal corporate priorities and stakeholder expectations, rather than regulatory compliance. The Corporate Sustainability Reporting Directive (CSRD) was approved in late 2022 and entered into force in 2023, with its reporting requirements based on the European Sustainability Reporting Standards (ESRS) developed by EFRAG (European Financial Reporting Advisory Group), whose first drafts began circulating in 2022. Globally, the TNFD (Taskforce on Nature-Related Financial Disclosures) framework began to be published in 2022, with its final version released in September 2023. Regarding GRI, the process to revise its biodiversity standard began in November 2021, culminating in the publication of GRI 101: Biodiversity 2024 in January 2024. This new standard replaces GRI 304: Biodiversity 2016 and is scheduled to come into effect in 2026. Additionally, the Kunming-Montreal Global Biodiversity Framework, which sets specific targets for the private sector, was adopted in December 2022. Taken together, these milestones confirm that in 2021 companies had not yet begun to adjust their reporting practices in response to these frameworks, making that year an ideal baseline for analyzing the pre-regulatory state of corporate biodiversity disclosures.

Out of the 108 companies from the selected sectors listed in the Fortune Global 500 index, 24 did not have their 2021 sustainability report available at the time of the study (see Appendix). Thus, the final sample comprises 84 reports downloaded directly from the companies' websites.

4.2. Data collection

To analyze the potential decoupling of information in biodiversity reporting, our study adopts the approach of Cho *et al.* (2015) and Maroun *et al.* (2018), distinguishing between aspirational-oriented disclosures (hereafter as *Aspirational Talk*) and action-focused disclosures (referred to as *Organizational Action*). The *Aspirational Talk* variable encompasses disclosures related to how firms

Sustainability Accounting, Management and Policy Journal

define biodiversity, their motivations and intentions for protecting it, the development of biodiversity-related mission statements intended to set the scene, and the identification of species and locations affected by their activities, thereby providing context for this scene-setting. (Maroun *et al.*, 2018). Such information indicates corporate awareness of biodiversity loss and its associated consequences. However, to avoid these disclosures being perceived merely as a symbolic legitimation strategy intended to divert stakeholders' attention, companies must transition from aspirational statements toward concrete actions that enhance biodiversity performance. To capture this, the *Organizational Action* variable reflects companies' proactive engagement in biodiversity conservation and restoration through internal management processes, including stakeholder engagement, setting targets and evaluating performance, integrating risk assessments, developing more sustainable products, and implementing biodiversity action plans.

To measure these two variables, we follow previous research that applies the framework developed by Van Liempd and Busch (2013), which was based on the GRI guidelines. This approach is also consistent with the recommendations contained in the TNFD guidance for nature-related disclosures. The framework has been widely applied in prior studies (e.g. Maroun and Atkins, 2018; Sun and Lange, 2023) and organizes biodiversity reporting into eight categories, which Maroun *et al*. (2018) further grouped according to the two dependent variables of our study. Specifically, *Aspirational Talk* encompasses three categories: scene setting, species-related, and external reporting. A parallel can be drawn between this variable and the TNFD *strategy* pillar, as companies' motivations shape their strategic direction and long-term vision. Moreover, the TNFD guidance encourages companies to describe the state of biodiversity, aiming to raise awareness of the scale of the issue. Meanwhile, *Organizational Action* includes five categories: social engagement, performance evaluation, risk, products and internal management. In the TNFD framework, these categories align with the pillars of *governance, risk & impact management, and metrics & targets*. Regarding *governance*, the role assumed by the board influences the organization's internal management and social engagement responses. The *risk & impact management* pillar corresponds to our categories related to risk management, product redesign, and the implementation of action plans. Finally, the *metrics & targets* pillar recommends analyzing aspects that are also included in our framework, such as biodiversity-related costs and performance.

These eight categories are further broken down into 22 specific indicators, following the structure proposed by Maroun *et al*. (2018). This detailed classification provides a robust framework for identifying relevant biodiversity-related disclosures. Each indicator is first assigned to one of the eight categories, and these categories are then grouped under one of the two overarching variables: *Aspirational Talk* or *Organizational Action*. The full list of indicators and their allocation is presented in Table 1.

[Insert Table 1 about here]

The methodology used was based on content analysis. According to Blanco-Zaitegi *et al.* (2022), this approach is one of the most commonly used in prior studies on biodiversity reporting (e.g., Van Liempd and Busch, 2013; Adler *et al.,* 2017; Adler *et al.,* 2018; Maroun *et al.,* 2018; Skouloudis *et al.,* 2019; Haque and Jones, 2020; Hassan *et al.,* 2022; Aké and Boiral, 2023). The analysis was

Sustainability Accounting, Management and Policy Journal

conducted manually by reviewing the full sustainability reports downloaded from each company's website, following an iterative, multi-stage process. First, to ensure consistency in how the information was processed, a meeting was held in which the researchers jointly defined each of the items to be analyzed and agreed on the type of information that should be considered under each item. This step ensured a shared interpretation of the indicators and enhanced the reliability of the coding process.

Next, the researchers identified biodiversity-related content within each report. This information was typically not concentrated in a single section but rather dispersed throughout the document. To locate relevant content, the researchers searched for all paragraphs containing any of the ten keywords defined by Van Liempd and Busch (2013): 'biodiversity', 'habitat', 'ecosystem', 'conservation', 'species', 'flora', 'fauna', 'wildlife', 'marine' and 'maritime'.

The selected excerpts were then examined for evidence corresponding to the 22 predefined indicators. Each item was scored using a binary coding system: a score of 0 was assigned if the indicator was not mentioned, and a score of 1 if it was present. The value of each category and each variable was calculated by summing the scores of its corresponding indicators. Each indicator was coded only once per report, regardless of how many times it appeared.

To ensure the validity and readability of the content analysis, the process was first applied to a subsample of five companies. The three researchers independently analyzed each of the five reports and assigned scores to the indicators. Inter-coder agreement was high, as shown by a Krippendorff's alpha of 0.95, indicating very strong consistency across coders. To ensure consensus, these scores were then discussed collectively, resolving discrepancies and aligning interpretations (Krippendorff, 2013). Once consensus was reached, the remaining reports were analyzed individually by one researcher.

For the variable related to the institutional environment's commitment to sustainability, we use the SDG index of the country in which the company is headquartered, as developed by Sachs *et al.* (2021). The SDG index measures each country's overall progress toward the SDG. It is indeed the country-level SDG index score, calculated annually using 126 indicators (102 global indicators plus 24 additional ones for OECD countries).

4.3. Data analysis

Statistical method: Partial least squares

In this study, we utilize Partial Least Squares (PLS), a variance-based approach to Structural Equation Modeling (SEM) (Roldán and Sánchez-Franco, 2012). This analytical method allows us to examine relationships among latent variables (unobservable constructs representing theoretical concepts) and their observed indicators, serving a dual exploratory and predictive purpose. PLS is particularly useful for identifying complex predictive relationships and exploring data structures. However, while robust theoretical frameworks can explain why certain variables should influence others, PLS alone does not justify causal interpretation (Hair *et al.*, 2022). Our research employs the statistical software SmartPLS 4.0.9.3 to perform this analysis.

The decision to use PLS is primarily based on the characteristics of the research model and the sample. PLS is particularly recommended for research models involving interaction effects and a relatively large number of variables. In this study, PLS is appropriate for achieving our goal of

Sustainability Accounting, Management and Policy Journal

measuring the relationships between aspirational talk and organizational action, as well as examining the direct and moderating effects of the institutional context's commitment to the SDGs. The research models consist of three latent variables (*Aspirational Talk*, *Organizational Action* and *SDG Index*). These latent variables are composed of nine indicators distributed as follows: three indicators for *Aspirational Talk* (scene setting, species-related, and external reporting), five indicators for *Organizational Action* (social engagement, performance evaluation, risk, products and internal management), and one indicator corresponding to *SDG Index*. Additionally, the model includes three hypothesized pathways and one hypothesized moderating effect (see Figure 1).

The sample consists of 84 sustainability reports. Although PLS path modeling is particularly suitable for smaller sample sizes (Henseler *et al.*, 2014), our study's sample size exceeds the minimum threshold recommended by Chin and Newsted (1999). They suggest a minimum sample calculated as ten times the largest number of arrowheads pointing to an endogenous variable, which in our case is 50 (i.e., 10 × 5).

Hair *et al.* (2022) suggest that if the indicators explaining a variable are highly correlated and interchangeable, the construct should be modeled as reflective. Accordingly, the variables *Aspirational Talk* and *Organizational Action* were modeled as reflective constructs. The variable *SDG Index* consists of only one indicator.

Assessment of the Common Method Bias (CMB)

One of the steps in PLS analysis is to examine the potential presence of CMB, as CMB can introduce bias affecting the reliability and validity of measurements. To detect potential CMB, this research employs a statistical approach known as the full collinearity test, based on Variance Inflation Factors (VIFs). The model can be considered free from CMB if all variables exhibit VIF values below the recommended threshold of 3.3.

Assessment of the measurement model

A preliminary analysis in PLS involves assessing the measurement model. As explained by Hair *et al.* (2022), reliability and validity should be examined if the construct is reflective. To meet reliability requirements, outer loadings typically should exceed 0.707. Additionally, Cronbach's alpha, Jöreskog's rho (rho_A), and composite reliability should all surpass 0.7. Convergent validity is confirmed when the average variance extracted (AVE) exceed 0.5. Discriminant validity is assessed using the cross-loadings matrix, where each indicator's loading on its corresponding construct must be higher than its loadings on other constructs (Hair *et al.*, 2022). Finally, VIF values below 3.3 indicate the absence of multicollinearity among constructs.

Assessment of the structural model

After confirming the reliability of the construct measures, the structural model is assessed to evaluate its predictive capacity. To test the structural model, this study employs a bootstrapping procedure with 5,000 resamples to generate standard errors, t-statistics, p-values, and 95% bias-corrected confidence intervals (BCCI) (Hair *et al.*, 2022). This procedure allows evaluating the statistical significance of the hypothesized relationships within the proposed research model. A coefficient of determination (R^2) is considered acceptable when exceeding 0.25 (Hair *et al.*, 2022). Regarding effect size (f^2), values

Sustainability Accounting, Management and Policy Journal

between 0.02 and 0.15 are considered weak, values between 0.15 and 0.35 moderate, and values greater than 0.35 indicate strong effects (Cohen, 1988).

5. Results

5.1. Descriptive Statistics

Before analyzing the relationship between the *Aspirational Talk* and *Organizational Action* variables, we conducted a preliminary descriptive analysis to explore firms' behavior regarding biodiversity information disclosure. To compute the descriptive statistics, we calculated a score for each of the eight defined categories by summing the indicator scores within each category and dividing this total by the maximum possible score for that category (Gaia and Jones, 2020). This proportional scoring method enables the construction of comparable disclosure scores across categories.

Table 2 presents the descriptive analysis of the variables and the frequency distribution across categories. Overall, diffusion levels are low. *Aspirational Talk* (52%) shows higher levels of diffusion compared to *Organizational Action* (32%). Within *Aspirational Talk*, compliance with regulations and standardized guidelines notably stands out with the highest value (86%), significantly surpassing other categories. In contrast, the description of threatened sites and species shows the lowest level (26%). Regarding the *Organizational Action* variable, none of the categories scored highly; the highest values were observed in stakeholder engagement (37%) and internal management practices (37%). The lowest-scoring categories were the evaluation of corporate biodiversity performance (26%) and risk analysis (29%).

A more detailed analysis of individual item frequencies shows that adherence to the GRI guidelines (81%) and other sustainability reporting frameworks (90%) are the most prominent practices. In terms of *Aspirational Talk*, companies tend to provide more information about their motivations (56%) and mission statements (62%). For *Organizational Action*, partnerships (58%) and business action plans (58%) are the most frequently reported items. In contrast, definitions of biodiversity (20%) and surveys conducted to understand the context (15%) are rarely included in *Aspirational Talk*, while awards received (5%) and the existence of a dedicated biodiversity office (11%) are among the least reported elements in *Organizational Action*. Additionally, key principles that influence the quality of sustainability reporting, such as stakeholder engagement (48%) and materiality analysis (45%), still show considerable room for improvement.

[Insert Table 2 about here]

To deepen our understanding of corporate behavior regarding biodiversity disclosure and to substantiate this relationship, it is essential to move from the previous linear and aggregated analysis toward a more detailed examination. This nuanced approach aims to assess whether *Aspirational Talk* and *Organizational Action* are significantly related. Furthermore, we seek to explore whether increasing national-level pressures for companies to adopt sustainable practices and align with the SDGs are fostering or discouraging decoupling between these two types of content in biodiversity reporting. Consequently, we implemented measurement and structural models using Partial Least Squares (PLS).

Sustainability Accounting, Management and Policy Journal

5.2. *Measurement and Structural Model*

The model is free from CMB, as the variables exhibit a maximum VIF of 1.011, which is below the recommended threshold of 3.3.

Measurement model

The measurement model yields satisfactory results, meeting established reliability and validity criteria (see Tables 3 and 4). The reflective constructs *Aspirational Talk* and *Organizational Action* meet individual reliability standards for most indicators, with outer loadings exceeding the recommended threshold of 0.707. All indicators have been retained due to their statistical significance and to preserve the content validity of the scale. The results confirm that all loadings are statistically significant for their respective constructs in both models. Furthermore, all criteria for construct reliability, as well as convergent and discriminant validity, are fully satisfied. Although a Cronbach's alpha of 0.7 or higher is typically considered ideal for strong reliability, a value of 0.6 is still considered acceptable in certain practical contexts, such as exploratory research or when constructs are in the early stages of development (Hair *et al*., 2022).

[Insert Table 3 about here]

[Insert Table 4 about here]

Structural model

The validity of the structural model was assessed through analysis of variance (Table 5), focusing on the explanation of *Organizational Action*, the central variable of this study. The model accounts for a substantial proportion of variance in Organizational Action ($R^2 = 0.665$). Effect size analysis revealed a strong influence of *Aspirational Talk* on *Organizational Action* ($f^2 = 1.857$), while the effect of *SDG Index* on *Organizational Action* was weak ($f^2 = 0.063$). These findings suggest that *Aspirational Talk* contributes significantly more to explaining *Organizational Action* over time, in terms of variance (R^2). Moreover, the proposed research model demonstrates good predictive capability for forecasting *Organizational Action* in new cases, as indicated by a positive Q^2 value (0.023) (Shmueli *et al*., 2016).

The parameters presented in Table 5 confirm two of the hypothesized direct relationships. Specifically, significant positive associations were found between *Aspirational Talk* and *Organizational Action* (H1 confirmed; coef. = 0.791, $p < 0.001$), indicating that the companies analyzed are not following a decoupling strategy in their biodiversity reporting. However, the results also suggest that full coupling does not occur; rather, a partial coupling is observed, and a certain level of misalignment persists. A positive relationship was also found between the *SDG Index* and *Organizational Action* (H4 confirmed; coef. = 0.147, $p < 0.05$). However, the hypothesized positive relationship between the *SDG Index* and *Aspirational Talk* (H3) was not supported.

Additionally, a moderation analysis was conducted. As explained by Hair et al. (2022), PLS enables the testing of moderation effects within a single model. Results from this analysis did not confirm a moderating effect of the *SDG Index* on the relationship between *Aspirational Talk* and *Organizational Action* (H2 not confirmed).

[Insert Table 5 about here]

Sustainability Accounting, Management and Policy Journal

Sensitivity analysis

This analysis reinforces and validates the results obtained from the primary model. A robustness check was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate the stability of path coefficients under various model specifications. Specifically, the independent variable global *SDG Index* was replaced with three alternative country-level variables: SDG 14 – Life Below Water, SDG 15 – Life on Land (each representing institutional commitment to biodiversity, with data sourced from Sachs *et al*. (2021)) and Environmental Well-being (with data obtained from https://ssi.wi.th-koeln.de/). All three measurement models meet established reliability criteria, as well as convergent and discriminant validity criteria, Detailed results are available upon request from the authors.

The structural models were validated through variance analysis (Table 6), which effectively explained the variance in *Organizational Action* across all models (SDG 14 Model $R^2 = 0.655$; SDG 15 Model $R^2 = 0.660$; Environmental Well-being Model $R^2 = 0.660$). Effect size analysis revealed a strong impact of *Aspirational Talk* on *Organizational Action* (SDG 14 Model $f^2 = 1.842$; SDG 15 Model $f^2 = 1.789$; Environmental Well-being Model $f^2 = 1.887$), while the SDG 14, SDG 15 and Environmental Well-being variables showed weaker effects over time (SDG 14 Model $f^2 = 0.046$; SDG 15 Model $f^2 = 0.054$; Environmental Well-being Model $f^2 = 0.057$). These results suggest that *Aspirational Talk* contributes substantially more to explaining *Organizational Action*, in terms of explained variance (R^2).

Additionally, the proposed research model demonstrated good predictive ability for forecasting *Organizational Action* in new observations, particularly in the SDG 15 Model, as indicated by a positive Q^2 value (0.017) (Shmueli *et al.*, 2016).

The parameters presented in Table 6 confirm two of the hypothesized direct relationships. Significant positive associations were found between *Aspirational Talk* and *Organizational Action* (H1 confirmed; SDG 14 Model coef. = 0.798, $p < 0.001$; SDG 15 Model coef. = 0.785, $p < 0.001$; Environmental Well-being Model coef. = 0.801, $p < 0.001$), and between *SDG 14/SDG 15/ Environmental Well-being* and *Organizational Action* (H4 confirmed; SDG 14 Model coef. = 0.153, $p < 0.05$; SDG 15 Model coef. = 0.145, $p < 0.05$; Environmental Well-being Model coef. = 0.178, $p < 0.05$). However, the hypothesized direct relationship between *SDG 14/SDG 15/Environmental Well-being* and *Aspirational Talk* (H3) was not supported. Similarly, the moderation effects of *SDG 14/15/Environmental Well-being* on the relationship between *Aspirational Talk* and *Organizational Action* were not confirmed (H2 not supported).

In conclusion, the analysis demonstrates that the model consistently yields stable path estimates across different specifications, indicating strong robustness under varying conditions.

[Insert Table 6 about here]

6. Discussion

This study aims to analyze decoupling practices in biodiversity reporting by assessing the relationship between aspirational talk regarding companies' intentions toward biodiversity and the actual organizational actions needed to achieve positive change and mitigate species extinction.

Sustainability Accounting, Management and Policy Journal

The results show that when companies operating in sectors with the greatest impacts on nature disclose biodiversity information, the content tends to be coupled (H1 confirmed). This provides new evidence supporting the conclusions of Marquis *et al.* (2016), who demonstrated that companies in industries with greater environmental impact tend to be less selective in their information disclosure. The consistency of the information reflects the emergence of an extinction accounting approach and demonstrates a genuine concern for species conservation (Maroun *et al.,* 2018).

However, the results also reveal that the coupling of disclosures is not complete, as aspirations are not fully translated into action. On the one hand, companies frequently adopt an avoidance strategy by omitting both aspirational and action-related disclosures (Maroun *et al.,* 2018; Roszkowska-Menkes *et al.*, 2024), despite operating in sectors with some of the most detrimental impacts on species conservation. Our results confirm that, compared to other areas such as climate-related disclosures, biodiversity information is being incorporated more slowly into corporate reporting (Bassen *et al.,* 2025), and that biodiversity reporting is still in an early stage of development (Adler *et al.*, 2018; Blanco-Zaitegi *et al.*, 2022; Hassan *et al.*, 2020; Azizi *et al.,* 2025). The absence of disclosure raises questions about the true motivations behind biodiversity reporting, suggesting that it may be primarily driven by symbolic legitimacy (Boiral, 2016; Adler *et al.*, 2018; Hassan *et al.*, 2020). However, it is also possible that companies choose not to disclose information because they are not yet fully aware of their role in mitigating threats to biodiversity or perceive the biodiversity crisis as beyond their sphere of influence (Maroun and Ecim, 2024).

On the other hand, when companies do disclose information, content related to aspirations predominates over action-oriented disclosures (Hassan *et al.*, 2022). This finding aligns with Cho *et al.* (2015), who argue that in the early stages of reporting, intentions often outweigh action. Initially, this inconsistency may be acceptable because, although aspirational talk is vague and largely descriptive, it carries performative potential that may stimulate concrete actions in the future (Christensen *et al.*, 2013; Winkler *et al.,* 2020; Trittin-Ulbrich, 2023). It is also possible that aspirations dominate because companies are encountering difficulties in operationalizing their commitments. As suggested by Schaltegger *et al.* (2023), biodiversity remains a complex concept and pragmatic management approaches and nature-based solutions are still needed to mitigate the threat of species extinction.

From the perspective of legitimacy theory, these findings suggest that companies are beginning to move beyond symbolic legitimacy by adopting substantive reporting practices and actively engaging in biodiversity conservation, rather than merely projecting a positive image.

Regarding the effects of institutional context on decoupling, our results indicate that stronger pressures exerted by stakeholders in countries more committed to the SDGs do not positively influence the relationship between rhetoric and action (H2 not confirmed), contrary to expectations. This suggests that the consistency of disclosures is better explained by companies' own awareness of the biodiversity crisis rather than by external contextual pressures at the country level, at least in relation to SDG achievement. This result is consistent with previous studies showing that pressures arising from normative institutional factors—such as environmental regulation, stakeholder demands, or governmental structures—can contribute to decoupling practices when companies struggle to achieve

social acceptance, thus turning to symbolic legitimacy (Marquis *et al*., 2016; Tang *et al*., 2023; Talpur *et al*., 2024).

However, it is also possible that such decoupling represents a safeguarding response to conflicting stakeholder demands, and that to maintain legitimacy, companies disclose the information they perceive as most relevant to their salient stakeholders (Roszkowska-Menkes *et al.*, 2024; Palea *et al.,* 2025). Our results suggest that, in the face of institutional pressures, companies legitimately follow a counter-coupling strategy to appease stakeholders (Cho *et al.,* 2015), prioritizing the interests of those who demand organizational actions (H4 confirmed), over those who expect more ambitious goals and greater commitments (H3 not confirmed).

This form of counter-coupling may represent a legitimate response aimed at satisfying the interests of powerful stakeholders who demand greater actionability (Cho *et al.,* 2015). Our findings reveal that, in contexts more strongly committed to sustainability, companies may make greater efforts to meet the expectations of their most salient stakeholders—such as investors—by providing more information about immediate actions and internal management processes to mitigate risks (Duho *et al.,* 2024).

Nevertheless, this response may not be satisfactory for other stakeholders—such as civil society, local communities, or NGOs—who expect deep ecological awareness and long-term commitments to biodiversity protection, since the absence of aspirations may progressively undermine future initiatives. This may only be a valid solution in the short term, as it reflects limited ambition. According to Farias *et al.* (2024), these organizations tend to focus on weak sustainability and typically act only when such actions align with their financial objectives, aiming to enhance their reputation. Maroun *et al.* (2018) interpret this situation as an attempt by companies to present themselves favorably and appear highly active in order to improve their image. These companies should reconsider their true motivations regarding biodiversity conservation and protection.

7. Conclusions

Biodiversity reporting can serve as a powerful tool for promoting more sustainable behavior in society and addressing biodiversity loss and species extinction (Jones and Solomon, 2013). However, the low level of disclosure suggests that companies are not yet fully aware of their impacts and the risks associated with biodiversity loss. It is also possible that they find the concept difficult to grasp or have not fully internalized the role of reporting and its emancipatory potential.

Despite the low levels of disclosure, when companies do report biodiversity information, they demonstrate a significant commitment by connecting their rhetoric with concrete actions. These findings suggest that there is no decoupling strategy in biodiversity reporting and that, when companies disclose information, they achieve substantive legitimacy. In response to external pressures, they react legitimately by providing information that seeks to satisfy the conflicting expectations of their stakeholders.

Our study proposes a theoretical framework for the critical analysis of biodiversity information and highlights the need to disclose more consistent information, contributing new elements to the field

of extinction accounting. Stakeholders may use this framework to evaluate firms' intentions regarding biodiversity.

Furthermore, our findings offer practical implications for preparers aiming to enhance consistency of corporate biodiversity reporting in order to maintain legitimacy in a substantive manner. We recommend that companies maintain open communication channels with stakeholders to better understand their informational needs regarding biodiversity, especially in contexts more strongly committed to the SDGs, where pressures are greater. The findings can also assist policymakers in developing regulatory frameworks that promote consistent reporting and the integration of biodiversity considerations into corporate strategy. Finally, standard setters developing nature-related reporting initiatives could draw on our findings to refine their guidelines.

This study has some limitations. To evaluate companies' progress and their contribution to sustainability, it would be necessary to measure the impact of the proposed statements or concrete actions. Our analysis is based on disclosed action plans rather than actual performance on biodiversity outcomes. We were also unable to assess the true intentions behind companies' counter-coupling strategies, making it difficult to determine their motivations for disclosing biodiversity information, which stakeholders they are prioritizing, or whether the information provided meets stakeholder expectations.

For future research, we recommend developing performance indicators to measure the impact of proposed initiatives on biodiversity, in order to confirm whether the reported actions are truly substantive and contributing to positive change. To further explore companies' intentions behind decoupling or counter-coupling strategies, a future line of research should analyze which interests are being prioritized and consider stakeholders' own perceptions of the relevance of the disclosed information. Additionally, other explanatory variables of corporate behavior could be introduced, such as the legal context.

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Sustainability Accounting, Management and Policy Journal

Appendix. Sample composition: company, sector, country and report availability at the study date

Company name	Sector	Country	Report* (Yes/No)
AEON	Food & Drug Stores	Japan	No
Albertsons	Food & Drug Stores	United States	Yes
Anglo American	Energy	United Kingdom	Yes
Anhui Conch Group	Materials	China	Yes
Archer Daniels Midland	Food, Beverages & Tobacco	United States	No
Bharat Petroleum	Energy	India	Yes
BHP Group	Energy	Australia	Yes
BP	Energy	United Kingdom	Yes
Bunge	Food, Beverages & Tobacco	France	Yes
Carrefour	Food & Drug Stores	France	Yes
Centrica	Energy	United Kingdom	Yes
Chevron	Energy	United States	Yes
China Datang	Energy	China	No
China Energy Investment	Energy	China	No
China Huadian	Energy	China	No
China Huaneng Group	Energy	China	Yes
China National Building Material Group	Materials	China	Yes
China National Coal Group	Energy	China	No
China National Nuclear	Energy	China	No
China National Offshore Oil	Energy	China	Yes
China National Petroleum	Energy	China	Yes
China Southern Power Grid	Energy	China	No
CHS	Food, Beverages & Tobacco	United States	No
Chubu Electric Power	Energy	Japan	Yes
Coles Group	Food & Drug Stores	Australia	Yes
Coop Group	Food & Drug Stores	Switzerland	Yes
CRH	Materials	Ireland	Yes
Danone	Food, Beverages & Tobacco	France	Yes
E.ON	Energy	Germany	Yes
Edeka Zentrale	Wholesalers	Germany	Yes
Électricité de France	Energy	France	Yes
ELO Group	Food & Drug Stores	France	Yes
Enel	Energy	Italy	Yes
ENEOS Holdings	Energy	Japan	Yes
Engie	Energy	France	Yes
ENI	Energy	Italy	Yes
Equinor	Energy	Norway	Yes
Exelon	Energy	United States	Yes
Exxon Mobil	Energy	United States	Yes
Finatis	Food & Drug Stores	France	No
Fortum	Energy	Finland	Yes
Gazprom	Energy	Russia	Yes
George Weston	Food & Drug Stores	Canada	Yes

Sustainability Accounting, Management and Policy Journal

Company name	Sector	Country	Report* (Yes/No)
Glencore	Energy	Switzerland	Yes
Holcim	Materials	Sweden	Yes
Huayang New Material Technology Group	Energy	China	No
Iberdrola	Energy	Spain	Yes
Idemitsu Kosan	Energy	Japan	Yes
Indian Oil	Energy	India	Yes
J. Sainsbury	Food & Drug Stores	United Kingdom	Yes
JBS	Food, Beverages & Tobacco	Brazil	Yes
Jinneng Holding Group	Energy	China	No
Kansai Electric Power	Energy	Japan	Yes
Koç Holding	Energy	Turkey	Yes
Korea Electric Power	Energy	South Korea	Yes
Kraft Heinz	Food, Beverages & Tobacco	United States	Yes
Kroger	Food & Drug Stores	United States	Yes
Louis Dreyfus	Food, Beverages & Tobacco	Netherlands	Yes
Lukoil	Energy	Russia	Yes
Marathon Petroleum	Energy	United States	Yes
Metro	Wholesalers	Germany	Yes
Migros Group	Food & Drug Stores	Switzerland	Yes
Mondelez International	Food, Beverages & Tobacco	United States	Yes
Nestlè	Food, Beverages & Tobacco	Switzerland	Yes
New Hope Holding Group	Food, Beverages & Tobacco	China	Yes
Oil & Natural Gas	Energy	India	No
Olam International	Wholesalers	Singapore	Yes
Pemex	Energy	Mexico	Yes
PepsiCo	Food, Beverages & Tobacco	United States	Yes
Performance Food Group	Wholesalers	United States	Yes
Pertamina	Energy	Indonesia	Yes
Petrobras	Energy	Brazil	Yes
Petronas	Energy	Malaysia	Yes
Phillips 66	Energy	United States	No
PTT	Energy	Thailand	No
Publix Super Markets	Food & Drug Stores	United States	No
Reliance Industries	Energy	India	Yes
Repsol	Energy	Spain	Yes
Rio Tinto Group	Energy	United Kingdom	Yes
Rite Aid	Food & Drug Stores	United States	Yes
Rosneft Oil	Energy	Russia	Yes
Royal Ahold Delhaize	Food & Drug Stores	Netherlands	Yes
Royal Dutch Shell	Energy	Netherlands	Yes
Saint-Gobain	Materials	France	Yes
Saudi Aramco	Energy	Saudi Arabia	Yes
Shaanxi Coal & Chemical Industry	Energy	China	No
Shaanxi Yanchang Petroleum (Group)	Energy	China	Yes

Sustainability Accounting, Management and Policy Journal

Company name	Sector	Country	Report* (Yes/No)
Shandong Energy Group	Energy	China	Yes
Shanxi Coking Coal Group	Energy	China	No
Siemens Energy	Energy	Germany	Yes
Sinopec Group	Energy	China	Yes
SK	Energy	South Korea	Yes
State Grid	Energy	China	No
State Power Investment	Energy	China	No
Sysco	Wholesalers	United States	Yes
Tesco	Food & Drug Stores	United Kingdom	No
Tokyo Electric Power	Energy	Japan	No
TotalEnergies	Energy	France	No
Tyson Foods	Food, Beverages & Tobacco	United States	Yes
United Natural Foods	Wholesalers	United States	Yes
Vale	Energy	Brazil	Yes
Valero Energy	Energy	United States	No
Veolia Environnement	Energy	France	Yes
Walgreens Boots Alliance	Food & Drug Stores	United States	Yes
WH Group	Food, Beverages & Tobacco	China	Yes
Wilmar International	Food, Beverages & Tobacco	Singapore	Yes
Woolworths Group	Food & Drug Stores	Australia	Yes
X5 Retail Group	Food & Drug Stores	Netherlands	Yes

* Indicates whether the 2021 report was available at the study date and, therefore, included in the final sample.

Sustainability Accounting, Management and Policy Journal

Table 1. Categories and Indicators for Aspirational Talk and Organizational Action in Biodiversity Reporting

ASPIRATIONAL TALK	**1. Scene-setting**	
	Motivation	Does the report explain what motivates the company to engage in biodiversity protection? Does it provide insights into the factors driving its commitment to biodiversity conservation?
	Definition	Does the report include a definition of biodiversity?
	Mission statement	Does the report include a biodiversity-related mission statement or overarching objective?
	2. Species related	
	Site-specific	Does the report include site-specific biodiversity information, such as the location of threatened species, areas of special importance for biodiversity and rapid decline, or the size in hectares of the converted natural ecosystem?
	Specific species	Does the report identify specific species affected by the company's activities?
	Surveys	Does the company report on surveys regarding the number and status of species?
	IUCN Redlist	Does the report reference species classification based on the IUCN Red List?
	3. External reporting	
	GRI	Does the company report using GRI biodiversity-related indicators?
	Accounting schematics	Does the report include references to compliance with biodiversity laws and regulations?
ORGANIZATIONAL ACTION	**4. Social engagement**	
	Partnerships	Does the report mention which organizations (NGOs, universities, governments) the company collaborates with on biodiversity initiatives?
	Awards	Does the report indicate whether the company has received any awards or recognition for its contributions to biodiversity?
	Stakeholder engagement	Does the report describe how the company engages with stakeholders on biodiversity issues? This may include collaboration with local communities, schools, employee training programs, stakeholder feedback mechanisms, or biodiversity awareness activities.
	5. Performance evaluative	
	Targets performance	Does the report specify whether the company has set biodiversity-related targets and explain how the company assesses and reports on its biodiversity performance, including progress toward targets?
	Costs	Does the report disclose biodiversity-related costs, such as those associated with rehabilitation, site closure, or specific conservation initiatives?
	6. Risk	
	Risk assessment	Does the report include an evaluation of biodiversity risks?
	Risk management	Does the report describe the systems or processes in place to manage or mitigate biodiversity risks?
	Incidents	Does the report disclose specific incidents or accidents that have impacted (or not impacted) biodiversity
	Materiality	Does the report indicate whether the company considers biodiversity a material risk? Is biodiversity identified as a significant business risk?
	7. Products	
	Products	Does the report describe whether the company's products contribute positively to biodiversity conservation, restoration, or improvement?
	8. Internal management	
	Internal management	Does the report mention whether the company's supply chain management involves supplier discussions, evaluations, and audits regarding biodiversity policies and management practices?
	Biodiversity action plans	Does the company report on biodiversity action plans?

Sustainability Accounting, Management and Policy Journal

	Biodiversity officer	Does the company have a designated officer responsible for biodiversity management?

Source: adapted from Van Liempd and Busch (2013)

Sustainability Accounting, Management and Policy Journal

Table 2. Descriptive statistics

	Total (N=84)	
	Average	SD
Aspirational Talk	**0.52**	**0.25**
1. Scene-setting	***0.46***	***0.38***
Motivation	*0.56*	*0.50*
Definition	*0.20*	*0.40*
Mission statement	*0.62*	*0.49*
2. Species related	***0.26***	***0.32***
Site-specific	*0.29*	*0.45*
Specific species	*0.24*	*0.43*
Surveys	*0.15*	*0.36*
IUCN Redlist	*0.35*	*0.48*
3. External reporting	***0.86***	***0.31***
GRI	*0.81*	*0.40*
Accounting Schematics	*0.90*	*0.30*
Organizational Action	**0.32**	**0.27**
4. Social engagement	***0.37***	***0.31***
Partnerships	*0.58*	*0.50*
Awards	*0.05*	*0.21*
Stakeholder engagement	*0.48*	*0.50*
5. Performance evaluative	***0.26***	***0.32***
Targets Performance	*0.33*	*0.47*
Costs	*0.19*	*0.40*
6. Risk	***0.29***	***0.34***
Risk assessment	*0.32*	*0.47*
Risk management	*0.19*	*0.40*
Incidents	*0.19*	*0.40*
Materiality	*0.45*	*0.50*
7. Products	***0.35***	***0.48***
Products	*0.35*	*0.48*
8. Internal management	***0.37***	***0.34***
Internal Management	*0.43*	*0.50*
Biodiversity action plans	*0.58*	*0.50*
Biodiversity officer	*0.11*	*0.32*

Sustainability Accounting, Management and Policy Journal

Table 3. Composites and measures

Variable	Outer Loadings		Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Aspirational Talk			**0.616**	**0.785**	**0.773**	**0.562**
Scene Setting	0.900	***				
Species Related	0.869	***				
External Reporting	0.348	*				
Organizational Action			**0.806**	**0.836**	**0.866**	**0.567**
Social Engagement	0.739	***				
Performance evaluative	0.647	***				
Risk	0.700	***				
Products	0.764	***				
Internal Management	0.893	***				
SDG Index						
SDG Index	1	n/a				

The Loading significance was estimated by bootstrap 95% confidence interval (based on n = 5000 subsamples).

****p ≤ 0.001; *p ≤ 0.05 (based on t(4999), two-tailed test)*

Sustainability Accounting, Management and Policy Journal

Table 4. Discriminant validity. Cross-loadings matrix

Variable	Aspirational Talk	Organizational Action	SDG Index
Aspirational Talk			
Scene Setting	0.900	0.778	0.180
Species Related	0.869	0.652	-0.080
External Reporting	0.348	0.148	-0.153
Organizational Action			
Social Engagement	0.553	0.739	0.167
Performance evaluative	0.471	0.647	0.095
Risk	0.546	0.700	0.071
Products	0.622	0.764	0.102
Internal Management	0.771	0.893	0.250
SDG Index			
SDG Index	0.053	0.193	1.000

Table 5. Structural Model

Relationship	Path Coefficient	T Statistics	P Values		2,50%	97,50%	Hypothesis	Significance
R^2 Organizational Action = 0.665								
Direct Effects								
Aspirational Talk -> Organizational Action	**0.791**	**21.837**	**0.000**	***	**0.701**	**0.847**	**H1**	**Sig. (Confirmed)**
SDG x *Aspirational Talk -> Organizational Action*	0.048	0.787	0.431		-0.073	0.162	H2	No Sig. (Not confirmed)
SDG Index -> Aspirational Talk	0.053	0.501	0.616		-0.159	0.250	H3	No Sig. (Not confirmed)
SDG Index -> Organizational Action	**0.147**	**2.469**	**0.014**	*	**0.033**	**0.267**	**H4**	**Sig. (Confirmed)**

Bootstrapping 95% confidence intervals bias corrected (based on n = 5000 subsamples).

****p ≤ 0.001; **p ≤ 0.01; *p ≤ 0.05 [based on t(4999), two-tailed test]. Relevant relationships in bold.*

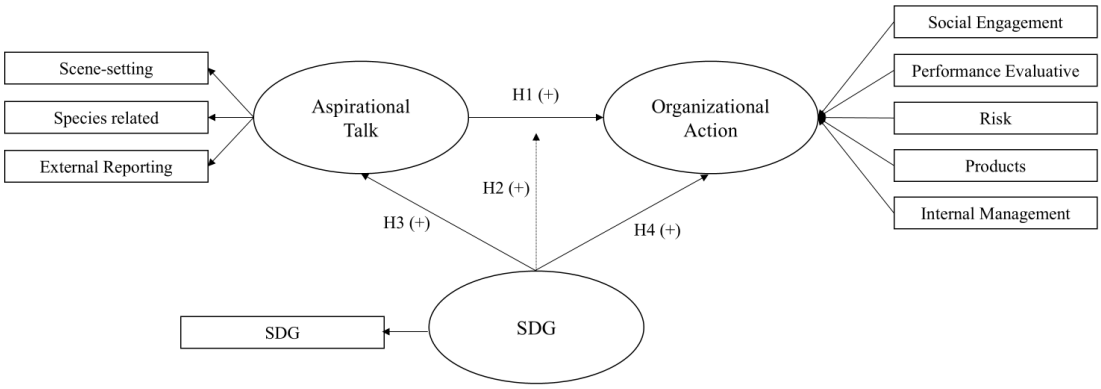
Table 6. Sensitivity Analysis. Structural Model

Relationship	Path Coefficient	T Statistics	P Values		2,50%	97,50%	Hypothesis	Significance
SDG14 | R² Organizational Action = 0.655								
Direct Effects								
Aspirational Talk -> Organizational Action	**0.798**	**20.955**	**0.000**	***	**0.706**	**0.860**	**H1**	**Sig. (Confirmed)**
SDG14 x *Aspirational Talk -> Organizational Action*	-0.028	0.510	0.610		-0.135	0.079	H2	No Sig. (Not confirmed)
SDG 14 -> Aspirational Talk	0.011	0.078	0.938		-0.259	0.278	H3	No Sig. (Not confirmed)
SDG 14 -> Organizational Action	**0.153**	**2.198**	**0.028**	*	**0.025**	**0.298**	**H4**	**Sig. (Confirmed)**
SDG15 | R² Organizational Action = 0.660								
Direct Effects								
Aspirational Talk -> Organizational Action	**0.785**	**20.759**	**0.000**	***	**0.694**	**0.847**	**H1**	**Sig. (Confirmed)**
SDG15 x *Aspirational Talk -> Organizational Action*	-0.034	0.606	0.545		-0.146	0.077	H2	No Sig. (Not confirmed)
SDG 15 -> Aspirational Talk	0.112	0.912	0.362		-0.135	0.338	H3	No Sig. (Not confirmed)
SDG 15 -> Organizational Action	**0.145**	**2.360**	**0.018**	*	**0.020**	**0.261**	**H4**	**Sig. (Confirmed)**
Environmental Well-being | R² Organizational Action = 0.660								
Direct Effects								
Aspirational Talk -> Organizational Action	**0.801**	**19.080**	**0.000**	***	**0.701**	**0.868**	**H1**	**Sig. (Confirmed)**
Environmental Wellbeing x *Aspirational Talk -> Organizational Action*	-0.030	0.348	0.728		-0.222	0.124	H2	No Sig. (Not confirmed)
Environmental Well-being -> Aspirational Talk	-0.021	0.148	0.883		-0.284	0.273	H3	No Sig. (Not confirmed)
Environmental Well-being -> Organizational Action	**0.178**	**2.176**	**0.030**	*	**0.026**	**0.335**	**H4**	**Sig. (Confirmed)**

Bootstrapping 95% confidence intervals bias corrected (based on n = 5000 subsamples).

****p ≤ 0.001; *p ≤ 0.05 [based on t(4999), two-tailed test]. Relevant relationships in bold.*

Figure 1. Research model



Sustainability Accounting, Management and Policy Journal

COMMENTS IN RESPONSE TO REVIEWERS 1 AND 2

We thank the reviewers for their continued support throughout the revision process and for acknowledging the changes made in previous rounds. We appreciate the additional comment provided by Reviewer 1 at this stage and address it below.

All changes made to the manuscript in response to the reviewers' comments and suggestions are highlighted in yellow.

Reviewer 1: Comments to the Author: Well done for addressing the comments raised in the previous draft. Please revise the table presented in the appendix. Please include a column to show the companies that published/did not publish sustainability report in 2021. Doing this will align the table with the statement in the methodology section: "Out of the 108 companies from the selected sectors listed in the Fortune Global 500 index, 24 did not publish a sustainability report in 2021". In addition, make reference to this table in the methodology section. It would be better to name the table as "Table 7" as all tables after the references should be included in the Appendix.	We have now updated the Appendix table to indicate which companies had their 2021 sustainability report available at the time of the study. We also added a reference to this table in the methodology section. Previously, this table was included only within the separate file containing tables, which is why it had not been renumbered or referenced as part of the manuscript. In the revised version, the table has now been incorporated into the main document and is presented after the reference list, at the end of the manuscript, as part of the Appendix.

Sustainability Accounting, Management and Policy Journal

COMMENTS IN RESPONSE TO REVIEWER 3

We would like to thank the reviewer for their constructive feedback. The comments provided have been extremely helpful in guiding our thinking throughout the revision process, and we found them very valuable for strengthening the contribution of our work. We have revised the manuscript to address all the issues raised.

All changes made in response to the reviewers' comments and suggestions are highlighted in yellow.

Thank you for letting me read this interesting article. It is well written and address an important topic. I have a few questions and remarks that I hope will help you bring the manuscript to its next level of development.	Thank you very much for your comments. We have carefully addressed all your questions and remarks, which have undoubtedly helped us significantly improve the quality of the manuscript.
1. I will give the rest of the remarks in my order of reading. However, my main and overall remark is that the contribution of the article is relatively small in the end. If my reading is correct, you find evidence that i) there is a link between aspirational talk and actual action and that ii) the institutional context matters in terms of actual action. I find this a bit underwhelming as a contribution to Sustainability Accounting, Management and Policy Journal.	Thank you very much for this comment. We agree that, in the previous version, the interest and relevance of the study, as well as the full scope of its contributions, were not sufficiently clear. In the revised manuscript, we have substantially strengthened the contribution section to more clearly and convincingly articulate the value added by our study within the context of existing research and in alignment with the scholarly expectations of Sustainability Accounting, Management and Policy Journal (SAMPJ). This process has also allowed us to enhance the discussion and further develop both the theoretical and practical implications of the paper. More specifically, we now explain more clearly that our study offers a comprehensive analysis of biodiversity reporting, enabling an assessment of how companies construct legitimacy and whether decoupling exists between what they disclose and what they actually do. We also deepen our analysis of corporate responses to institutional pressures and the coexistence of multiple logics that shape biodiversity disclosure practices. We believe that, with these revisions, the contribution of the article is now presented in a clearer, stronger, and more substantive manner than in the previous version.
2. Is the "decoupling" you are referring to the same as "greenwashing"? The two sounds very close to me… Perhaps a short sentence clarifying the interrelation between the two concepts could help.	Thank you for this observation. In the introduction, we have clarified the relationship between greenwashing and decoupling to avoid any ambiguity.
3. You are invoking theoretical concepts such as "institutional theory" and "legitimacy". Yet, it feels that you are not engaging strongly with the literature on these topics. For instance, I would have expected to see at least the two seminal contributions below. I think you should rework your theoretical framework	We have sought to improve the theoretical framework. To this end, we have added several contributions from legitimacy and institutional theories to the scope of our study.

Sustainability Accounting, Management and Policy Journal

(and introduction to some extent) sections in this light, engaging more deeply with these theoretical concepts. In the same vein, the first two paragraphs of your theoretical framework sound a bit disconnected from the rest. Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. Academy of management review, 20(3), 571-610. DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. American sociological review, 48(2), 147-160.	In addition, we have sought to engage more deeply with these two theories, while avoiding excessive length given the journal's word limits. Thank you for your suggestion regarding the seminal works by Suchman and DiMaggio & Powell; we have incorporated them into the manuscript. As the literature on both theories is extensive, we have focused on prior studies that use these theories to explain the motivations and practices of biodiversity reporting. We agree with your observation that the first two paragraphs of the theoretical framework were disconnected from the rest. We have removed them and rewritten the opening of the theoretical framework to connect it with the theories that underpin our study.
4. The build-up leading to Hypothesis 1 is confusing. You go back and forth between arguments that seems to support H1 and argument that go counter to it.	We agree that the argumentation leading to our first hypothesis was somewhat confusing, as it was formulated in two contradictory directions. We have retained only the arguments that support H1 as stated and that explain the existence of a positive relationship between aspirational talk and action. In addition, we have added some new arguments in H1 to strengthen the justification for this relationship. Some of the arguments against this relationship have been moved to the discussion section in order to explain the lack of full coupling between rhetoric and action, following the reviewer's comments in point 7, which have been very helpful in this new version.
5. Methodology: an inter-rater reliability coefficient would help reassure the reader here. Could you also clarify what the variable SDG index measures? Is it the SDG index score for the country?	Thank you very much for these helpful suggestions. We have now computed inter-rater reliability using Krippendorff's alpha, which is appropriate for nominal data and for more than two raters. In our case, three coders independently assessed 22 binary items across five sustainability reports, resulting in 110 units of analysis. The reliability coefficient obtained was $\alpha = 0.95$. Only 4 out of 110 units (3.6%) showed any disagreement, indicating an almost perfect level of agreement among coders. We have incorporated this information into the Methods section (4.2. Data collection) to enhance transparency and methodological rigor. We have also clarified in the revised manuscript that the SDG index used in the analysis corresponds to the country-level SDG Index score, as developed by Sachs et al. (2021). This indicator measures each country's overall progress toward achieving the Sustainable Development Goals and is computed annually using 126 indicators (including additional OECD-specific indicators). The added sentences now explicitly state that the variable captures the SDG index score of the country in which the

Sustainability Accounting, Management and Policy Journal

	company is headquartered, thereby clarifying the nature of the measure.
6. I understand that you have 84 sustainability reports. However, there should be multiple instances of "aspirational talk" and "organisational action" in each of them. So, how many datapoints do you have in total? How do you account for the fact that some of these datapoints come from the same company? If you are not coding this way, please explain.	Thank you very much for this clarification request. In our coding scheme, "*aspirational talk"* and "*organizational action"* are not coded at the level of each individual textual instance within a report. Instead, each construct is composed of a predefined set of binary items that capture whether specific types of content appear at least once in the report. Each of the 22 items is coded once per report (1 = present at least once; 0 = not present), and the variables "*aspirational talk"* and "*organizational action"* are then constructed by aggregating their respective items. Therefore, each report contributes exactly one score for each construct, and there are no multiple datapoints per firm arising from repeated instances within the same report. We have clarified this point in the manuscript to avoid any misunderstanding regarding the structure of the data.
7. Results/discussions: you find a link between aspirational talk and institutional action. Unless I am mistaken, this does rule out a full decoupling, but not partial decoupling. That is, talk is followed by some action, but this does not mean that the talk is fully transcribed into action. For instance, companies who promise 100 might deliver 50, while companies who promises 50 only deliver 25. In such a situation, I would argue that there is still some greenwashing/decoupling going on.	Thank you for this observation; it has been very helpful in reflecting on our results. First, in the results analysis we clarify that, although H1 is confirmed, we cannot claim that there is full coupling, and that a certain level of decoupling persists. Second, in the discussion we return to this point and explain potential reasons for the lack of full coupling: absence of disclosure, limited corporate awareness of their role in combating extinction, and a lack of concrete proposals on how to operationalize commitments to nature.
8. While the discussion is quite lengthy, it could be clearer. The reader wants to know clearly and rapidly what the theoretical and practical implications of your research are.	In this revised version, we have almost completely rewritten the discussion to make it clearer and more direct. We have reorganized it by discussing the results of each hypothesis in a more structured manner. We have added some new elements to the discussion so that the implications can be identified more quickly. In addition, in the conclusions section we now highlight the theoretical and practical implications of the research more clearly.
Once again, thank you for letting me read this interesting manuscript. I wish you the best in bringing it to its next stage of development!	Thank you.
Originality: See my first comment. While I found your contribution interesting, it is a bit on the weak side for such a journal.	As mentioned above, we have revised the contribution of our research to give it greater depth and to make its relevance within the field more apparent.
Relationship to Literature: The literature on legitimacy and institutional theory should be more carefully depicted.	We have thoroughly revised the entire theoretical framework to clarify the role of these theories in our research.

Sustainability Accounting, Management and Policy Journal

Methodology: Some additional methodological details would be appreciated.	We have followed your recommendations.
Results: See comment 7 on decoupling - I am not sure that you prove there is not decoupling, but rather that there is not a "complete" decoupling.	As we mentioned, we greatly appreciated this comment, which helped us to contextualize our results. It has also guided us in refining our discussion.
Practicality and/or Research implications: Implications could be clarified in the discussion.	In the discussion section, we have highlighted both the theoretical and practical implications.
Quality of Communication: The paper is well written overall.	Thank you for this comment.

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