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Sustainability assessment: the state of the art in 2026

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ABSTRACT

Sustainability assessment (SA) has developed over the past three decades as a decision-support process explicitly directing choices towards sustainability. This paper provides an updated state-of-the-art review of SA in 2025, building on the 2012 assessment by Bond, Morrison-Saunders and Pope. We examine progress in theory, practice and process across selected jurisdictions, considering how SA has evolved conceptually and in application. While the volume of academic research on SA continues to grow, practical uptake remains uneven and context-dependent. Key innovations shaping the field include the embedding of sustainability provisions within Canada's next-generation impact assessment framework, the incorporation of holistic assessment principles in Western Australia, the global adoption of the sustainable development goals (SDGs), and the rise of sustainable finance taxonomies. Together, these developments sharpen debates about definitions, scope, and trade-offs inherent in SA, highlighting both its strengths – such as integrated treatment of cumulative effects – and weaknesses, including costs, jurisdictional constraints, and challenges of transdisciplinarity. Opportunities exist to enhance SA through improved design, cross-jurisdictional cooperation, and clearer sustainability benchmarks, but threats remain from political pressures to streamline assessment and reduce costs. We conclude by reflecting on the contested future of SA and the need to communicate its value more effectively.

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Sustainability assessment; practice; process; next-generation impact assessment; sustainable development goals; sustainable finance

1. Brief history and evolution of practice

Environmental assessment for sustainability assurance was highlighted as the key next step in its evolution in the International Study of the Effectiveness of Environmental Impact Assessment (EIA) (Sadler 1996, iv), and Sustainability Assessment (SA) subsequently emerged as the means for achieving this goal (e.g. International Association for Impact Assessment, and Institute of Environmental Assessment 1999; United Nations Committee of Experts on Public Administration 2021). The consequences of not beginning to deliver more sustainable decision-making are potentially catastrophic, and well understood (Bradshaw et al. 2021), and so the importance of the success of tools like SA has never been more critical. It is therefore important to reflect on the current state of the art of SA which is the primary purpose of this paper. A secondary aim is to update the 2012 state of the art of Sustainability Assessment paper (Bond A, Morrison-Saunders A, et al. 2012) to show the progress made. Readers should refer to A. Bond, A. Morrison-Saunders, et al. (2012) first as we repeat analysis presented in that paper only where essential to understanding. The increasing academic interest in SA was highlighted in the 2012 state-of-the-art paper

through statistics on the numbers of published works employing the terminology 'sustainability assessment', which is updated in Figure 1 to illustrate the evolution of the volume of research on SA. This trend reflects academic interest only, and is not indicative of any increase in practice. It is relevant here as it underpins the fact that the knowledge base for the assessment approach used to determine the state of the art (see Methods) is continuing to expand.

What is clear from publications on SA is that they continue to grow (with five times more articles published on SA in 2024 compared to 2012), although the evidence suggests that the initial exponential growth ceased after 2013, for reasons which are not clear. A bibliometric analysis published in 2025 (Marra 2025) does help to classify the focus of publications on SA, indicating that research on the topic is conducted globally, but 675 publications focus on life-cycle assessments (LCA). In this state-of-the-art update, we recognise that LCA approaches have expanded and are now often embedded within broader sustainability assessment and decision-support contexts (e.g. life cycle sustainability assessment, Finkbeiner et al. 2010), consequential LCA (Vance et al. 2022), and integration with circular economy strategies (Torkayesh et al. 2022). However,

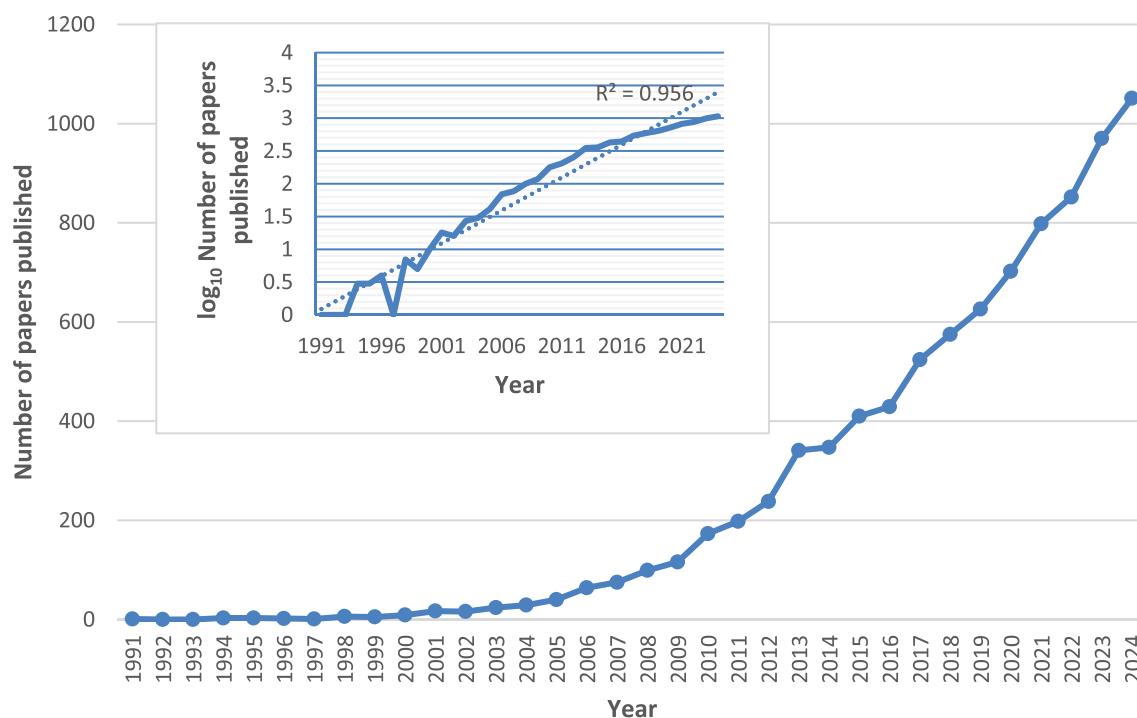


Figure 1. Number of papers published with the phrase ‘sustainability assessment’ in the article title, abstract or keywords, based on the Scopus database, March 18th 2025. Insert shows log10 transformation to end 2024 to demonstrate exponential trend up until 2013 and linear trend thereafter.

in line with the 2012 state-of-the-art paper (and to allow comparison with it), we do not include LCA as a type of SA *per se*, but do include it where it is integrated into a process with a sustainability assessment goal.

A. Bond, A. Morrison-Saunders, et al. (2012, 53) defined SA as ‘any process that directs decision-making towards sustainability’ (based on Bond and Morrison-Saunders 2011, derived from; Hacking and Guthrie 2008). At the same time, we acknowledged that, as in 2012, ‘the point has not yet been reached at which there is universal consensus as to what sustainability assessment is or how it should be applied’ (Bond A, Morrison-Saunders A, et al. 2012, 53). This definition of SA encompasses a significant proportion of all forms of impact assessment undertaken. Environmental Impact Assessment (EIA) spread globally after the Rio Declaration on Environment and Development was signed by over 170 countries agreeing to implement the process as a means of moving towards sustainable development (United Nations Conference on Environment and Development 1992), and Sheate (2009, 19) argued that 17 ‘environmental assessment’ tools (including EIA, Strategic Environmental Assessment and SA) have sustainability as an underlying purpose. The definition also reflects the approach taken by Hacking and Guthrie (2008) who defined SA as an umbrella term that could encompass a variety of existing IA processes. However, we find this unhelpful when trying to define the state of the art of SA given the large overlap that exists with a variety of other impact assessment processes. As a result, we argue

that SA has the goal of trying to achieve sustainability, as opposed to a sustainability-oriented IA process – which has the goal of identifying and mitigating some (a subset) of the potential impacts of proposed developments on an assumption that it contributes in some part to more sustainable outcomes. Thus, we amend the definition to SA being ‘any process that explicitly directs decision-making towards sustainability’. We make the assumption that the words used matter – that an explicit focus on sustainability is important when it comes to the specific goals of the process – and is non-specific in terms of the level of decision-making it addresses (that is, SA could apply to policies, plans, programmes and/or projects). Given this more specific understanding of what SA is, in terms of actual practice around the world, SA remains limited in application despite continuing to be a topic of research interest.

Early practice of SA was characterised as representing integrated assessments attempting to co-consider the social, economic and environmental pillars of sustainability, but with an aspiration to reduce unsustainability rather than achieve sustainable development (Pope et al. 2004). More recently, conceptualisation of SA practice has evolved allowing two key dimensions to being identified as: 1) the sustainability concept (that is, defining what sustainability means); and 2) the decision-making context (that is, setting out how the assessment is undertaken, for what goal and by whom?) (Pope et al. 2017). These expectations and revised

conceptualisation of SA align far more closely with the revised definition of SA provided above and underpin our choosing not to define what sustainability is – because that remains a critical challenge in any SA process, and reflects the importance of context in examining any practice.

The 2012 state-of-the-art paper (Bond A, Morrison-Saunders A, et al. 2012) examined SA in four different jurisdictions (covering SA at both plan and project levels): Canada, England, South Africa and Western Australia were found to have clear procedures (to be procedurally effective), which led to achievement of minor improvements rather than making substantive contributions to sustainability (except in some Canadian examples). In all jurisdictions examined, concern was raised about the resource-intensive nature of SA except in Western Australia where the SA practice was voluntary at that time.

The key changes in SA practice from 2012 that will be considered in this update to the state of the art include:

- the advent of next-generation impact assessment, largely in Canada (Gibson, Doelle, and Sinclair 2016);
- the use of holistic assessment in Western Australia;
- the adoption of the sustainable development goals (SDGs) by the United Nations (United Nations 2015); and
- the possible influence of green taxonomies for sustainable finance (Dusik and Bond 2022).

These changes include further analysis of practice in Canada and Western Australia (practice in England remains unchanged from 2012, and practice in South Africa no longer falls within the revised definition of SA given it is sustainability facing EIA), and include a critical contextual element – the agreement of global goals that help to clarify what sustainable development is (the SDGs). They further highlight the potential for future change driven by green taxonomies that underpin classification of sustainable finance, encompassing what constitutes a substantial contribution to sustainable development, and what constitutes significant harm to the achievement of sustainable development. We recognise there are likely to be other examples that could fall under the SA umbrella, however, we regard these examples as useful because they illustrate different approaches for the two key dimension of SA (the sustainability concept and decision-making context).

The next section of the paper will briefly introduce the methodology. This is followed by an introduction to each of the four case examples in section 3. Section 4 will distil strengths and weaknesses of the current state-of-the-art of SA practice drawing on the elements of

four cases which best meet the criteria. Section 5 will highlight opportunities and threats that delivery of state-of-the-art SA needs to consider – with the suggestions being drawing on the authors' collective experience of the geopolitical context for impact assessment processes and sustainability policy more generally. Finally, section 6 will sum up the state of the art and highlight what needs to change to improve practice; this will be set in the context of the authors' opinions on what the future of SA is more likely to look like.

2. Methods

The state of the art will be identified through a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats). This method has been adopted by all papers in this special issue (by request of the editors) given that it *'is one of the most versatile and widely used tools for strategic planning'* (Karadzhov 2025, 66). Readers are referred to the editorial of this special issue for greater explanation of the method but, in brief, strengths and weaknesses are considered internal to the system under study (in our case, SA), and threats and opportunities are external (including policy drivers that impact on practice) (Karadzhov 2025). This method makes it ideal for the consideration of state of the art of practice in many fields of application because the simplicity of communication of results, using a 2×2 matrix (strengths and weaknesses at the top, and threats and opportunities below) allows a strategic overview to be taken in order to consider how best to turn opportunities into further strengths and avoid threats exacerbating the weaknesses.

In applying the method, the authors draw on over 90 years of collective experience of impact assessment research and practice, associated with interpretation of the literature since 2012, as identified in the literature review. This approach inevitably leads to judgements being made on the four cases covered in the next section reflecting the knowledge of the authors as well as the literature and we note a limitation here based on the advice of Karadzhov (2025) that to ensure rigour in undertaking a SWOT analysis, data collection should be comprehensive, e.g. involving the perspectives of a greater number of experts. Systematic criteria were not applied to determine the four cases covered in section 3, instead they emerged through discussion of literature and experience. Strengths, weaknesses, threats and opportunities were derived through coding of the literature that was consulted specifically for each of the four cases. The categorisation into SWOT reflects our consensus as authors, although we acknowledge that opinions of other researchers may differ.

3. International perspectives – practice and context

3.1. Next generation IA – application in Canada

The conceptualization of next-generation impact assessment (NGIA) was built on the history and foundation established in the literature regarding the basic components of impact assessment as well as the experiential evidence about successes and failures, apparent core requirements, best practices, commonly unmet needs, areas of deficiency, and promising innovations (e.g. Gibson RB and Hanna KS 2005; Bond A and Pope J 2012; Dalal-Clayton and Sadler 2014; Morrison-Saunders et al. 2015; Gibson et al. 2016; Sinclair et al. 2018; Fonseca and Gibson 2020). The core components of NGIA as outlined in Table 1 were developed in the context of moving IA law and practice to the next generation in the evolution of assessment process (e.g. Gibson et al. 2016; Sinclair et al. 2018). The components were meant to capture what should be included in IA law, regulation and policy globally to encourage the achievement of more sustainable outcomes (readers are directed to Gibson et al. 2021; Sinclair et al. 2022 to obtain more details on the specific requirements associated with each of these components). The framework established was applied and refined during the development of the *Impact Assessment Act* (IAA) (Government of Canada 2019, 2025) in Canada and used counterfactually to examine the resulting Act (Doelle and John Sinclair 2021; Gibson et al. 2021). The IAA includes sustainability provisions through the ‘factors to be considered’ and a required ‘public interest’ consideration of the extent to which the designated project contributes to sustainability. The ongoing application of the sustainability considerations of the Act have been tempered, however, through application of the Act to adverse effects under federal jurisdiction and perhaps further through the recent passage of Bill C-5 the Building Canada Act that eliminates the planning phase of the process and

could result in other process exemptions (see, for example, Wright and Olszynski 2025).

The IAA also includes for the planning and conduct of regional assessments, which focus on multi-sector developments across defined geographical areas. An example in preparation at the time of writing is the ‘Ring of Fire’ assessment in Northern Ontario, notable for its terms of reference including ‘*innovative ways to address negative effects and enhance benefits in a way that fosters sustainability*’ (Bonnell 2025, 3001). The next state-of-the-art update in ten years or more will be able to evaluate whether such initiatives are delivering more sustainable outcomes (as perceived by all stakeholders – including Indigenous peoples).

3.2. Holistic ia in Western Australia

The practice and examples of SA in Western Australia reported in A. Bond, A. Morrison-Saunders, et al. (2012) stemmed from an explicit sustainability agenda of the government in power from 2001 to 2006. SA has not become a formal policy platform or practice. While that same government did amend the prevailing environmental impact assessment (EIA) legislation to incorporate some ‘sustainability principles’ (Edwards 2002, 12,302), the practice of EIA in the state has not conformed with our earlier stated definition or expectations for a practice of SA. However, more recent changes to EIA procedures, requiring the ‘assessment of holistic impacts’ ([EPA] - Environmental Protection Authority [of Western Australia] 2024, 40) aligns with SA thinking and practice and is our focus here. Holistic IA stems from an independent legal review of EIA in Western Australia (Quinlan et al. 2016) which in turn drew upon comments about the reductive nature of the process in Morrison-Saunders and Bailey (2000).

Holistic IA gives attention to the ‘*connections and interactions between impacts, and the overall impact of the proposal [under assessment] on the environment as a whole*’ (EPA 2024, 67). In the international literature, Ehrlich (2022) uses the expression ‘*collective impacts*’ (129) to impart the equivalent meaning and SA approach, recording how it relates to Indigenous perspectives and worldview. The inclusion of holistic IA in Western Australian practice seeks to overcome the reductionist problem that underpins traditional project-level EIA (Morrison-Saunders 2023). Similar sentiment is expressed by writers documenting Indigenous perspectives (e.g. Arsenault et al. 2019; Arnold et al. 2024). As noted by Ehrlich (2022, 129) considering impacts of a project individually makes it easier to argue that the project is not likely to cause significant adverse impact, noting that there are situations where ‘*the multiple impacts of a single project ... may not be individually significant, but may be collectively significant*’. Morrison-Saunders (2023, 137) argues that to undertake a holistic IA ‘*it is necessary to apply systems*

Table 1. The 14 components of next-generation impact assessment.

Components of next generation assessment
• Sustainability-based assessment • Consideration of alternatives • Integrated, tiered assessments including RIA, SIA, PIA • Cumulative effects assessment throughout • Assessment streams • Early process initiation • Cooperative assessments by all affected jurisdictions • Co-governance with Indigenous Nations • Meaningful public participation, early & throughout • Learning oriented assessment • Transparency and accountability, authoritative decision making • Implementation follow-up for compliance, adaptation, and learning • Independent and impartial administration and assessment review • Effective, efficient and fair processes

thinking in which each individual impact or each individual component of the environment that will be impacted by development is visualized in the broader system'. While now incorporated into mainstream IA practice in Western Australia there are not yet well-established procedures or techniques for carrying it out; it remains a component of SA thinking and practice still in a nascent stage.

3.3. The advent of the sustainable development goals

Given SA is fundamentally about achieving sustainability, the adoption of the Sustainable Development Goals (SDGs) by the global community in 2015 was a potentially significant event. The idea to develop SDGs was agreed at Rio +20 to build on the success of the Millennium Development Goals (MDGs); 193 member states of the United Nations subsequently agreed in 2015 to a new 2030 Agenda for Sustainable Development (United Nations General Assembly 2015). This agenda set out 17 sustainable development goals with 169 targets, and therefore had the potential to benchmark the meaning of sustainability within decision-making in general (Kørnøv et al. 2020), and SA specifically.

The International Association for Impact Assessment (IAIA) published tips on how to integrate IA and the SDGs (Partidário and Verheem 2019) using them as a benchmark with IA argued to have a role in operationalising targets (González Del Campo et al. 2020). However, in practice, this has not proven to be the case. Hacking (2019) indicates that it is problematic relating the SDGs formulated at the global level with local-level equivalents and Kørnøv et al. (2020) found only one source reference out of 32 looking at integration of IA (not including Life Cycle Assessment) and SDGs that mentioned any progression to empirical piloting and testing (for Strategic Environmental Assessment). Indeed, Boess et al. (2021, 1) found that, even where SDGs are referenced in Environmental Assessment reports (from five continents) they '*are merely mentioned with no further function*'. Some of the SDGs map on to some of the sustainability elements that might be considered in SA or sustainability-focused IA – but not in a manner which fits the context-specific nature of most assessments. In fact, whilst many expected the SDGs to lead to an expansion of the coverage of impact assessments beyond traditional EIA, the reality is that the SDGs are 'cherry picked' which allows developers to ignore those that make uncomfortable reading (Hacking 2019). In order to fully implement the SDGs, Morrison-Saunders et al. (2020) argue that IA would need to be far more comprehensive and integrated (i.e. like SA as defined in this paper).

3.4. Sustainable finance

Dusík and Bond (2022) led a debate in the journal *Impact Assessment and Project Appraisal* about the extent to which emerging green taxonomies (also called sustainable finance taxonomies) might lead to a mindset change for IA. Such taxonomies are being developed globally, with at least 60 national taxonomies being adopted by countries by 2023 (Sementsov and Golysheva 2023). Of these, the European Union (EU) Taxonomy (European Union 2019) is considered one of the more far-reaching, and has inspired the text of many other taxonomies (Sautner et al. 2025). These taxonomies are essentially classification systems that set out what counts as 'sustainable' investment. The suggested mindset change was predicated on the approach to determining sustainability in the EU Taxonomy. Six environmental objectives are established:

- (1) climate change mitigation;
- (2) climate change adaptation;
- (3) the sustainable use and protection of water and marine resources;
- (4) the transition to a circular economy;
- (5) pollution prevention and control;
- (6) the protection and restoration of biodiversity and ecosystems.

Based on these objectives, an economic activity can only be declared as being sustainable if it:

- makes a substantial contribution to at least one of these environmental objectives;
- does no significant harm (DNSH) to any other environmental objectives;
- complies with minimum social safeguards; and
- complies with technical screening criteria established by the European Commission through so-called Delegated Acts.

The requirement to both achieve some level of substantial contribution to sustainability at the same time as doing no significant harm to any other environmental objectives addresses a pervasive barrier to good SA practice – how to deal with trade-offs. In theory, sustainable finance taxonomies prevent trade-offs. However, the specific detail for substantial contribution and DNSH thresholds became apparent once delegated Acts were adopted, one dealing with climate change mitigation and adaptation, the other with the remaining four environmental objectives (European Commission 2021, 2023). The delegated Acts have led to scholars arguing that it remains 'business as usual' because the thresholds that define what is a substantial contribution or DNSH are not appropriately sets and will not prevent significant impacts

(Palerm 2022), and that the politics of decision-making is the barrier to achieving sustainability – not an assessment tool (Fischer 2022; Howard 2022; Partidario 2022; Slootweg 2022).

4. Strengths and weaknesses of sustainability assessment practice

This section highlights what we consider to be strengths and weaknesses of sustainability assessment as currently practiced in the jurisdictions considered in section 3.

It is clear that SA has a broader potential scope than most other forms of assessment. This has its challenges, but a broad scope can also be viewed as a strength through providing the basis for more thorough investigation of interactions between different impacts, and also cumulative effects (Gibson 2011; Duarte et al. 2013). This follows the expectation for next-generation IA outlined in section 2.1, and holistic approaches as conducted in Western Australia. However, the broader potential scope is also a potential weakness if viewed through the lens of cost or resources needing to be spent, which is increasingly a threat to practice to IA in general (see next section). Countering the demands of more complexity and data is contingent on better scoping processes to narrow down the assessment to manageable proportions. So scoping remains a significant challenge for SA, where solutions that have been proposed, including cyclical scoping throughout the process (Weaver and Rotmans 2006) and a focus on ecosystem services to narrow down assessments to the services that matter to communities (Landsberg et al. 2011), need to be considered against the possibility that the ability to identify interactive and cumulative effects could be jeopardised.

Decision-makers can abuse traditional environmental assessments to manipulate trade-off decisions in favour of permitting developments where socio-economic benefits and environmental impacts are separately reported and not fully integrated (Alberts et al. 2024). However, by avoiding the ease of operating in subject-silos, SA has the potential to better understand and manage trade-offs that might otherwise be missed in decision-making (Morrison-Saunders and Pope 2013). This makes it far more difficult for decision makers to manipulate trade-off decisions given the components investigated are connected rather than separated. A concern over emerging sustainable finance approaches (see section 2.4) is precisely that the disaggregated nature of reporting allows manipulation to take place much more readily, and reporting against identified SDGs can easily suffer the same fate. Recognising that IA approval decisions take place during the time period '*of speculation, exploration, and preparation*' (Sax and Tubb 2021, 4)

of the development life-cycle, '*creates a challenging atmosphere to consider project trade-offs*' (Isbister et al. 2025, 2) and can render projects '*socially impossible to oppose*' (Isbister et al. 2025, 2), thus serving to underscore the importance within SA thinking to explicitly address trade-offs (Gibson RB, Hassan S, et al. 2005; Morrison-Saunders and Pope 2013).

SA findings can require actions to be taken (for mitigation purposes) beyond the realm of individual proponents and projects. This can be a strength in increasing the efficiency of mitigation measures through better understanding of interactions and cumulative effects (again following next-generation IA and holistic IA approaches) but is also perceived to be a weakness in that undertaking SA is more likely to extend the geographical scope of assessments beyond jurisdictional boundaries, which themselves are frequently drawn based on environmental elements (like rivers). This recognises that sustainability impacts do not respect jurisdictional boundaries, but this can be a significant challenge in practice given regulation (through courts) can restrict the considerations of an individual jurisdiction, requiring them to 'stay in their own lane' jurisdictionally (Johnston et al. 2025). Constitutional divisions of power can, therefore, be a significant impediment to the application of more strategic SA which is essential for fully considering interactive and cumulative effects.

Whilst the potential for more thorough assessment does exist in SA, realising the benefits are also thought to depend on using transdisciplinary approaches (Wiek and Binder 2005), which are argued to be essential for sustainability learning (Posch and Scholz 2006), a key component of next-generation IA and systems thinking inherent in holistic IA processes. Such approaches are inherently difficult to implement '*since uni-disciplinary education is still widely predominant in all Universities*' (Max-Neef 2005, 5), therefore the knowledge of how to be transdisciplinary is a rare commodity. We caveat this claim in the context of Indigenous populations having different ways of knowing and being which do not accommodate disciplines in the same way they are understood in western education settings (Harriden et al. 2024). Nevertheless, assessments involving Indigenous peoples, whilst potentially being led by them in some settings, currently still follow the disciplinary understandings underpinning impact assessment legislation.

5. Opportunities and threats to sustainability assessment practice

This section highlights what we consider to be the key opportunities and threats facing the future practice of sustainability assessment, drawing on experience in the jurisdictions covered in *Methods*, but also considering generic threats and opportunities to SA practice.

Experience from Canada suggests that planning for better sustainability assessment processes can manifest in legislation that requires assessment incorporating the components listed in Table 1. Typically, assessment processes build on learning from elsewhere (known as policy diffusion, see Minkman et al. 2018), and so contingent on the Canadian IAA being considered to add value, then it may gain purchase in other systems. This could potentially mirror the way the world's first EIA legislation, NEPA (US Congress 1969), spread globally (Glasson and Therivel 2019). There is a significant opportunity to learn from successful SA cases, many of which will remain undocumented in academic literature.

In the same way that a weakness of current SA practice was identified as the mismatch between jurisdictional boundaries and the reach of sustainability impacts, it becomes a threat to practice if it is seen to be working ineffectively for this reason. At the same time, it potentially represents an opportunity to evolve decision processes to reflect the geographical scope of their implications. This suggests the need for greater cooperation and collaboration among jurisdictions, which would be a benefit to SA, or suggests an opportunity should be taken to transfer decision-making authority to larger geographical scales.

A continuing threat to the practice of SA is the perception that decision-making needs to be quicker and more efficient, or it becomes a threat to development. There are common arguments that assessment processes do not fit the neoliberal agendas of governments (Bond et al. 2020). For example, the European Commission's (2012) proposal to amend the EIA Directive sought to '*simplify procedures, with a view to reducing unnecessary administrative burdens*' (European Commission 2012, 4), and the Organisation for Economic Cooperation and Development state that '*lengthy permitting procedures and broad environmental impact assessments are time- and resource-consuming. In the worst case, these rules can place significant financial and administrative burdens on businesses, reduce investment in low-carbon technologies and energy efficiency, and stifle innovation*' (OECD 2025, 63). This ties in with political cycles typically being much shorter in duration (4–5 years often) than the period of time over which impacts may manifest themselves, or mitigation measures may start to function as planned. The counter argument is that where assessment processes are shortened, the opportunities for litigation are increased: '*Agencies with short NEPA timelines, such as the United States Forest Service (USFS) were 1.4 times as likely to be litigated than other agencies, and agencies with long NEPA timelines such as the Federal Highway Administration (FHWA) were merely 0.3 times as likely to be litigated against as other agencies*' (Rossetti 2021). SA could, therefore, be seen as a means of streamlining decision-making! Given that an IA approval represents

the '*critical point of no return*' (Isbister et al. 2025, 9) for initiating development so often having profound and irreversible consequences for socio-ecological systems, it is imperative that SA decision-making is afforded the opportunity it deserves to 'get it right'.

The example in section 2 of sustainable finance hints at the threat of a move towards reductionism in assessment, whereby metrics start to replace rigorous assessment against relevant sustainability components. In the financial field, Environmental, Social and Governance (ESG) metrics are the norm for reporting sustainability performance, yet there is little evidence that these have any rigour (Berg et al. 2022). The advent of Sustainable Finance Taxonomies, however, marks a move in the direction of metric-based assessment that could potentially jeopardise the willingness of governments to persevere with the rigour of approaches like SA. A similar threat is potentially related to the advent of outcome-based assessments (e.g. Fischer 2023), whereby assessments are conducted based on generic outcomes targets set by, typically, national governments, which cannot accommodate local context. This is important because of the pivotal role of context in determining the effectiveness of any form of IA (Bond et al. 2022).

6. The future for sustainability assessment

Table 2 synthesises the strengths weaknesses, opportunities and threats which form the basis for our thoughts on the future of SA.

Future threats to the practice of SA share the common threat of governments attempting to streamline assessment processes, such as is currently being considered federally in Canada, blaming them for delayed development in times of economic hardship and a lack of cost-effectiveness (Fischer 2023; Snyder and Smokelin 2025); SA is not immune from these threats, especially given the breadth of (and therefore time required for) the assessments. This narrative of IA in general (and SA specifically) being inefficient and ineffective is not borne out by evidence, yet remains a pervasive political argument, perhaps scapegoating IA tools for other procedural and political failings. However, removing the need for tools like SA is an enormous threat to the sustainability of the planet, whereby checks and balances are ignored, and decision-making returns to the issues experienced prior to the 1970s, where a lack of understanding of impacts led to serious consequences. It is also the case that in current decision-making, there are many obligations for engagement and specific assessments embedded in other pieces of legislation which would remain and, whilst one might argue this supports the weakening of SA processes, the reality is that SA brings all the evidence together in one place and presents it to a variety of

Table 2. SWOT analysis of state-of-the-art of SA, synthesised from sections 3 and 4.

Strengths	Weaknesses
• Broader scope than EIA, SIA, etc. • Better management of trade-offs • Better identification of cumulative effects • Ability to synthesise diverse data and assessments required under other regulations • Facilitating communication inter and intra-disciplines	• Broader subject focus increases cost • Wider geographical scope increases expense • Difficult to implement transdisciplinarity
Opportunities	Threats
• Better designed assessment processes based on learning from experience • Better cooperation between jurisdictions • Decisions taken at appropriate geographical scale (reflecting the scale of cumulative effects) • More effective mitigation measures	• Perception SA is not cost effective • Perception SA delays development • Move to ESG-type metric evaluations • Move away from consideration of local context • IA process streamlining

stakeholders. It is this synthesis and communication role that is perhaps the greatest benefit of undertaking processes like SA; especially for affected communities without the knowledge to navigate the myriad of regulatory requirements supporting decision-making. For these communities, SA supports them! However, what is rarely acknowledged is the length of time it has already taken to develop the knowledge based on all the other regulatory and administrative demands that are subsequently synthesised in SA; it is not evidence gathering within an SA that delays decision-making – it is all the other requirements for evidence embedded in these diverse regulatory requirements (e.g. for water quality, air quality, soil pollution, workplace equality, minimum living wage, etc.). In our view, blaming SA for delays to decision-making is naïve to the complexity of sustainability-oriented decision processes. Another issue is that politicians can feel constrained by SA given that trade-off implications are explicit; this removes the wiggle room for politicians to act according to manifesto pledges and lobbying – which is an uncomfortable place to be.

The bottom line is that the future for SA is presently unclear given the competing strengths and weaknesses we have outlined, along with the threats and opportunities. Ultimately, the fate of processes like SA rests on judgements made by politicians over which of these considerations matter most. On the timescales that matter to politicians, there is sometimes little political will to invest in capacity development to address weaknesses and threats given that the next political administration is the one that will benefit from such investment. That is – there must be a belief in the benefits of SA before political players will invest in its future. It is our contestation that SA practitioners and researchers need to get better at communicating the strengths and opportunities arising from the conduct of SA and actively rebutting the misconceptions that seem drive the threats to its existence.

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