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The Article 6.4 Sustainable Development tool - a new benchmark for assessing sustainable development impacts in carbon markets?

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Summary

This paper analyses whether the A6.4 SD tool sets a 'new benchmark' by introducing higher standards for sustainable development assessment in the carbon market. A quantitative comparison with selected voluntary carbon market standards (GS4GG, CAR, ACR and SD VISta) reveals that the A6.4 SD tool scores highest with a total score of 7.5, followed by GS4GG (6.5). The A6.4 SD tool achieves this 'new benchmark' status through three key features that enhance rigour compared to existing standards, and by integrating several VCM best practice elements, such as safeguards, 'do no harm' principles, validation and verification, and monitoring and reporting.

1. Assessment of both positive and negative SDG impacts: This is a distinct element of the A6.4 SD tool. Project proponents are required to assess potential positive and negative direct impacts on all 17 SDGs in a structured manner using the Sustainable Development Impact Form (A6.4-FORM-AC-017). This approach goes beyond that of other crediting standards, which typically focus on 'co-benefits' and only assess negative impacts within the context of safeguards. By requiring the analysis of both positive and negative impacts, the tool allows for a comprehensive assessment of the total net impact, including the identification of synergies and trade-offs.

2. Structured mapping of host country SD priorities: The tool requires a rigorous, structured assessment of the host country's SDG objectives and priorities, documented in a specific form (A6.4-FORM-AC-017). This approach requires activity participants to identify relevant national strategies, SDG targets and indicators related to the activity. Compared to standards such as ACR, CAR and VCS, this approach is considered less flexible and more rigorous.

3. Bottom-up development of SD indicators: Unlike several other standards that provide generic, top-down SDG indicators, the A6.4 SD tool requires project proponents to develop specific, activity-level SD indicators. This process involves translating national or regional SDG indicators to the project level. Although this demands additional effort from developers, it ensures that the indicators are specific to the project's character, thereby facilitating the integration of SD assessment into monitoring and reporting.

Furthermore, the SD tool incorporates common and best practices such as safeguards, the 'do no harm' principle, validation and verification, and monitoring and reporting.

The complexity and comprehensiveness of the A6.4 SD tool, particularly with regard to the development of activity-level SD indicators and the use of Excel spreadsheets, suggests that refinements may be needed to balance robustness with feasibility, and to manage potential additional transaction costs. Policy recommendations for its further development include:

- The development of sector-specific indicators to provide guidance and simplify the process for some project developers.
- Utilize digital potential to transition from Excel forms to user-friendly digital assessment interfaces, and supporting digital monitoring, reporting and verification (MRV);
- Develop user-friendly training materials that use non-technical language to facilitate application, particularly for the private sector use.
- Seek global convergence in SD assessment between voluntary and compliance markets, utilising the scheduled review of the A6.4 SD tool in spring 2026 as an opportunity for alignment.

1 Introduction

2025 marks the tenth anniversary of two global landmark agreements on climate change and sustainable development: the Paris Agreement and the 2030 Agenda for Sustainable Development (UNFCCC, 2016; UN, 2015). Acknowledging their intrinsic link, this decade has proven that these two frameworks are mutually reinforcing and cannot be tackled in isolation. The recent UN Sustainable Development Goals Report 2025 underscores this, stating that "the 2030 Agenda represents our collective recognition that our destinies are intertwined and that sustainable development is not a zero-sum game, but a shared endeavour that benefits all" (UN, 2025). This symbiotic relationship highlights the need for a holistic approach to address both climate action and sustainable development for future progress (UN, 2025).

While actual implementation is slow, there is a growing political recognition of the need for such synergies. One example is the 2023 Global Stocktake (GST) outcome document, which calls for a comprehensive, synergistic approach to tackling climate change and biodiversity loss while implementing the SDGs. Drawing on the IPCC's assessments, it notes "that mitigation efforts embedded within the wider development context can increase the pace, depth and breadth of emissions reductions, as well as that policies that shift development pathways towards sustainability can broaden the portfolio of available mitigation responses and enable the pursuit of synergies with development objectives" (UNFCCC, 2023, 3).

Article 6 of the Paris Agreement on voluntary cooperation explicitly recognizes these interconnections. While the promotion of sustainable development is mentioned prominently in Article 6.1, which forms an umbrella for all three approaches, it is also covered in the subsequent texts on the individual approaches according to Article 6.2, 6.4, and 6.8, respectively. (UNFCCC, 2016, 7f.).

While developing the detailed rulebook for Article 6 has taken a considerable amount of time since the adoption of the Paris Agreement in 2015 (Obergassel et al. 2019, Olsen and Arens 2021, Obergassel et al. 2023), shaping the Article 6.4 framework has recently made significant progress. Not only did the Supervisory Body of the Article 6.4 mechanism (SBM) adopt crucial standards on methodology development and activities including removals in 2024 (UNFCCC, 2024b), it also adopted the mechanism's sustainable development tool (subsequently called A6.4 SD tool).

The A6.4 SD tool, approved at SBM14 in October 2024, introduces provisions for environmental and social integrity for the PACM under Article 6.4 of the Paris Agreement (UNFCCC, 2024a). All activities operating under the mechanism must use the tool to assess the sustainable development (SD) impacts of mitigation activities and implement safeguards against negative and harmful outcomes. Upon its adoption, the tool was welcomed by many observers, who voiced the expectation that it would become a major milestone in aligning international carbon markets with sustainable development priorities, enhancing the quality of international carbon market activities in general (see, for example, UNEP-CCC, 2024).[1]

Against this background, this paper asks if the A6.4 SD tool can be characterised as a 'new benchmark' for the carbon market. A first

[1] We would like to thank Karen Olson from UNEP-CCC for her review of this paper and for sharing her expertise and thoughtful input.

indication for this can be found by comparing the A6.4 SD tool to its relative of the Clean Development Mechanism (CDM) – the CDM SD tool –, the use of which was voluntary and did not cover any MRV provisions (Arens et al., 2015). The underlying assumption is therefore that the A6.4 SD tool introduces higher standards for SD assessment than the SD provisions of existing standards in the voluntary carbon market. The paper therefore aims to situate the newly established SD Tool of Article 6 of the Paris Agreement within the broader landscape of existing standards and provisions for measuring sustainable development. The central question guiding this analysis is *if and how the A6.4 SD tool sets a new benchmark for SD provisions in carbon market standards.* To answer this, a comparative analysis will be conducted between the A6.4 SD tool and other SD provisions in selected voluntary carbon market crediting standards.

The paper is structured as follows: after outlining the methodology (2); an introduction to the A6.4 SD tool is provided (3). Chapter 4 contains a comparative analysis of the SD tool and the selected crediting standards of the voluntary carbon market (4.1), as well as an in-depth examination and discussion of selected SD assessment elements (4.2). Chapter 5 draws a conclusion with an outlook for future research and recommendations for policymakers.

2 Methodology

This paper aims to answer the question of how the SD tool sets a new benchmark for SD provisions in carbon crediting standards. To achieve this, we will compare the A6.4 SD tool with the SD provisions of other selected voluntary carbon market crediting standards.

The following carbon crediting schemes were chosen: Gold Standard for the Global Goals (GS4GG), Climate Action Reserve (CAR), American Carbon Registry (ACR) and Verified Carbon Standard (VCS). These four programmes already meet a certain standard, as they are considered CCP-eligible by the ICVCM (ICVCM, 2025). They also are the major schemes in terms of market share: According to the Climate Focus dashboard in 2024, there have been 105 million credits issued by VCS, 84 million credits issued by Gold Standard, 19 million credits issued by CAR and 33 million credits issued by ACR (Climate Focus, 2025). Regarding VCS, we used the Sustainable Development Verified Impact Standard (SD VISta) for the analysis, a complementary crediting standard to VCS, due to its focus on sustainable development.[2]

The data used for this analysis are the crediting standard manuals and other official documents published by the standards that refer to the broader issue of SD benefits and safeguards. These documents include SDG impact tools and environmental and social impact assessment templates.[3]

This analysis is based on a set of nine qualitative elements derived from existing literature and expert knowledge (Arens et al 2015, Day et al. 2020, ICAT, 2020, Olsen et al 2018, Wissner et al 2022). Each element guides the desktop analysis and enables comparison of the respective outcomes.

1. **SD indicators provided:** Do the analysed provisions provide indicators for SD?
2. **Maps host country SD priorities**: Do the analysed provisions map host country SD priorities?
3. **Neg. impacts on SDGs**: Do the analysed provisions assess negative impacts on SDGs?
4. **Baselines used**: Do the analysed provisions require the use of baselines for assessing SD and safeguards?
5. **Safeguards/ do no harm**: Do the analysed provisions include safeguards or do no harm approaches?
6. **Stakeholder consultation**: Do the analysed provisions require stakeholder consultation?
7. **Grievance**: Do the analysed provisions include grievance mechanisms?
8. **Follow-up/monitoring**: Do the analysed provisions include a follow-up/monitoring after the project has been approved?
9. **Validation/verification**: Do the analysed provisions require validation and verification?

Based on this analytical framework, we compare the A6.4 SD tool with existing SD provisions and unpack the new elements of the SD tool, the 'benchmark', in a two-step approach. Firstly, we conduct a quantitative assessment of the standards, and secondly, we analyse qualitatively some of the elements that constitute the 'new benchmark'.

The quantitative comparison provides an overall score for each standard, calculated by adding up

[2] For a more detailed introduction of these crediting standards see chapter 3 of this paper.

[3] For an overview of the data used, see the section references at the end of this paper.

the assessment results obtained for each element set out in the analytical framework. An assessment score of 'Yes' is awarded a score value of 1, 'Yes, with limitations' earns a score value of 0.5, and 'No' is awarded a value of 0. This quantitative approach enables us to score analysed crediting standards in terms of their SD provisions and situate the newly established A6.4 tool within the pre-existing standards. We will discuss selected elements in more detail based on this quantitative comparison to examine the qualitative aspects more closely and determine the special features of the A6.4 SD tool.

	SD indicators provided?	Maps host country SD priorities?	Negative impacts on SDGs?	Baseline used?	Safeguards / Do no harm?	Stake-holder consulta-tion?	Griev-ance?	Monitoring / reporting of SD?	Validation / Verification?	*Total Score*
SD tool										
GS4GG										
CAR										
ACR										
SD VISta										

Table 1: Analytical framework for scoring, Source: Authors

3 Introducing the A6.4 SD tool

The A6.4 SD tool, the Sustainable Development Tool (UNFCCC, 2024a), ensures that activities under Article 6.4 of the Paris Agreement comply with the principles of 'do no harm', promote sustainable development, and contribute to the 17 Sustainable Development Goals (SDGs). For activities under Article 6.4, Paris Agreement's Crediting Mechanism (PACM), using the Sustainable Development Tool is mandatory and part of the activity cycle (ibid., 5). The tool is divided into three main areas: 1. Environmental and Social Safeguards (ibid., 13 – 26), 2. Impact on Sustainable Development (ibid., 27 – 31) and 3. Validation and Verification (ibid., 31 – 34). The A6.4 SD tool provides a structured approach to risk assessment, the development of a risk management, and the assessment of impacts on the SDGs. Validation and verification by a DOE ensure that the activities fulfil the requirements of the tool.

Environmental and social safeguards

To minimize the potential risks from a proposed A6.4 activity, the risk assessment shall ensure that the respective activities comply with environmental and social safeguarding elements. Project proponents are asked to conduct a structured risk assessment by using the A6.4-FORM-AC-015 (UNFCCC, 2025a). This helps to identify potential negative impacts of the activity based on 11 safeguarding elements, including environmental safeguards (Energy / Air, land and water / Ecology and natural resources). The social safeguards comprise human rights, labour, health and safety issues, gender equality, land acquisition and involuntary resettlement, Indigenous Peoples, corruption, and cultural heritage. The risk assessment is based on the 'guiding questions for the risk assessment of the environmental and social safeguards elements and criteria' (UNFCCC, 2024a, 35-59). Based on the risk assessment, the activity participants are to develop an environmental and social management plan, called A6.4-FORM-AC-016 (UNFCCC, 2025b). This plan contains measures to avoid, minimize, and mitigate the identified risks. As part of the environmental and social management plan, the activity participants define activity-related indicators, which are then used to monitor compliance with environmental and social safeguards throughout the implementation of the activity (UNFCCC, 2024a, 16ff).

Impact on sustainable development

Activity participants are asked to identify and assess potential positive and/or negative direct impacts of their A6.4 activities on the SD of the host Parties and the SDGs. In a first step, the activity participants must identify the relevant sustainability goals and priorities of the host party and document them in the form A6.4-FORM-AC-017 (UNFCCC, 2025c). In a second step, activity participants must identify the affected SDGs that are positively and/or negatively affected by the activity. In a third step, the activity participants are expected to establish A6.4 activity-level SD indicators and to identify the direct impact on SDG resulting from the activity. A6.4 activity-level SD indicators can be qualitative or quantitative and shall be monitorable over the crediting period. Negative impacts should refer to the outcomes of the risk assessment (UNFCCC, 2024a, 27ff).

Validation and verification

Validation and verification of the outcome of the A6.4 SD tool is carried out by a Designated Operational Entity (DOE). The DOE validates the information provided by the activity participants in the relevant A6.4 forms. It checks the appropriateness, relevance, and sufficiency of all the information provided in the forms and ensures that the activity fulfils the requirements of the A6.4 SD tool. The DOE later also verifies the monitoring of the environmental and social indicators as well as the activity-related sustainability indicators. It ensures that the activity participants accurately monitor and report the results in the monitoring report (ibid., 31).

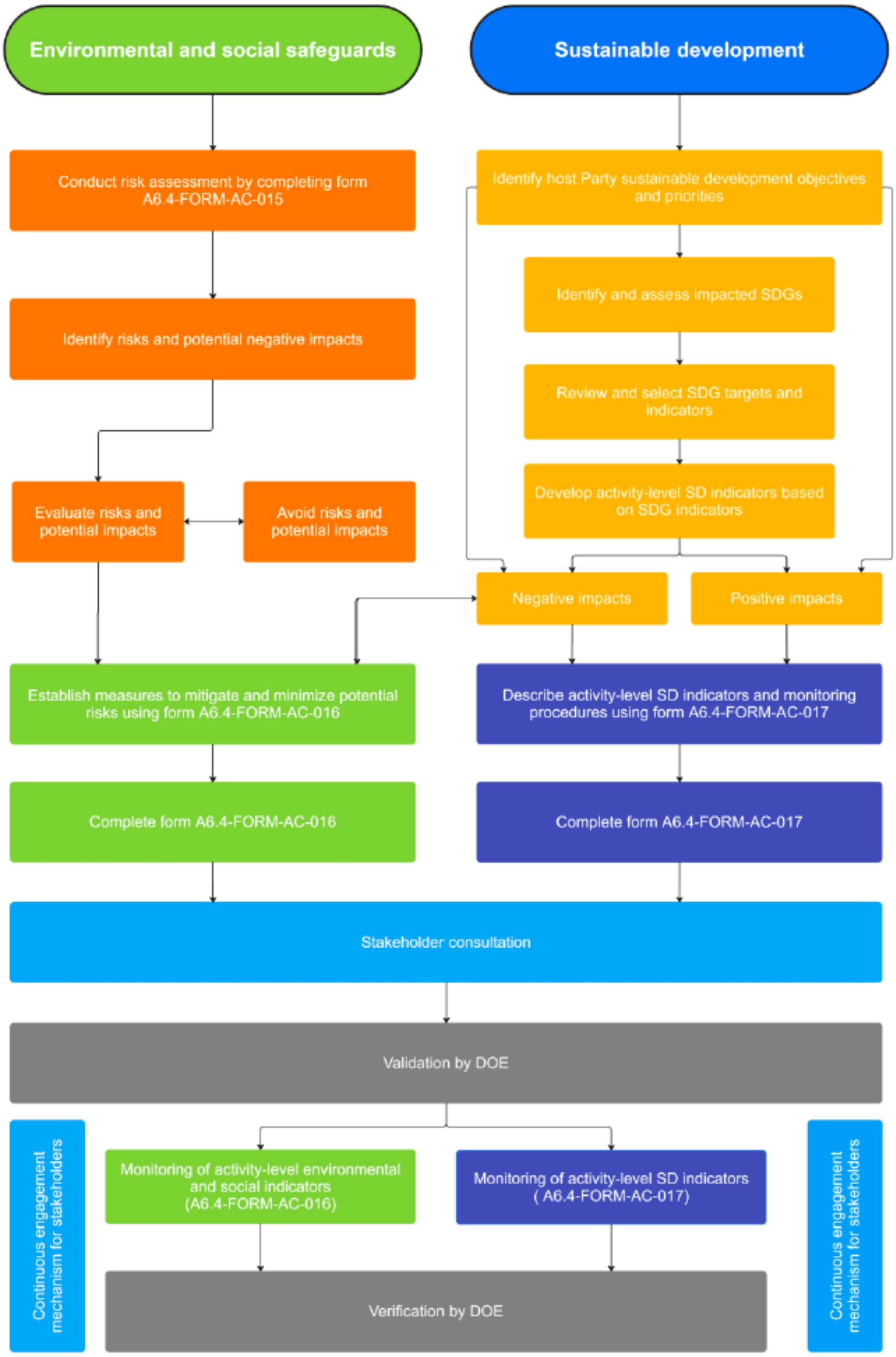

Figure 1: A6.4 SD tool flow chart (UNFCCC, 2024a, 9).

Overview of the five analysed crediting schemes used for comparison

As explained in the methodology chapter, we will compare the A6.4 SD tool's specifications against voluntary carbon crediting schemes with the largest market share. These are Gold Standard for the Global Goals (GS4GG), Climate Action Reserve (CAR), American Carbon Registry (ACR) and Verified Carbon Standard (VCS). In order to have an appropriate basis for comparison, we took SD VISta, a complementary crediting standard to VCS, as the relevant VCS standard due to its focus on sustainable development. For more details on the standards, please refer to Table 2.

Standard	Launched in	Responsible Organisation	Market Share [1)]	Additional information
GS4GG	2003	WWF	440 million emission reduction credits	▪ founded as a complementary standard to VCM ▪ emphasis on social and environmental aspects of projects
SD VISta	2019	Verra	N/A	▪ serves as a complementary standard to other programmes and certifications ▪ provides a framework for assessing sustainable development impacts that other standards may not cover fully ▪ SD VISta can be used to demonstrate a project's positive net impacts to buyers or other stakeholders
CAR	2001	founded in 2001 as the California Climate Action Registry by the state of California	180 million emission reduction credits	
ACR	1996	Winrock International	170 million emission reduction credits	▪ voluntary greenhouse gas registry
VCS	2005	Verra, Climate Group, IETA, World Economic Forum	over 1 billion emission reduction credits	▪ second-largest carbon certification program globally following the Clean Development Mechanism (CDM)

Table 2. Overview of the five analysed crediting schemes. Source: authors

1) Market Share in Total credit issuance so far. Source: Climate Focus, 2025.

4 Comparison and Analysis

This section begins with a comparison of the five crediting standards with regard to nine selected elements (4.1). For each element, it is asked whether the respective standard contains. If the answer is clearly positive (‘Yes’), a score value of “1” is awarded for this element. If the answer is positive, ‘but with limitations’, the scoring value is 0.5; if the answer is negative, the element scores “0”. For example, the element 1. 'SD indicators provided?' asks whether the analysed standards provide indicators for SD assessment. The analysis findings and the scores can be found in the table below, alongside a detailed analysis of each element.

In a second step (4.2), we present a detailed analysis of the following three elements: Firstly, the positive and negative impacts. Secondly, the indicators for monitoring of SD assessment and safeguards. Thirdly, validation and verification.

4.1 Comparison

1. SD indicators provided?

While some crediting standards provide indicators for SD assessment using the SDG indicators provided by UNStats (CAR, ACR and SD VISta/VCS) in a top-down manner, the SD tool requires project proponents to develop SD indicators at project level. GS4GG takes a mixed approach, providing project-type specific indicators for SD assessment and allowing project developers to propose new indicators. Therefore, GS4GG is ranked as ‘yes with limitations’ in the table below (see section 4.2.2 for a detailed assessment).

2. Maps host country SD priorities?

Almost all analysed crediting standards include the mapping of host country SD priorities. The SD tool requires the identification of host country's SD objectives and priorities. Activity participants are asked to assess potential sources of information such as ‘national strategies for SD and/or SDG achievement, SDG national targets and indicators, and economic, social and environmental indicators related to the A6.4 activity’ and ‘identify any SDG-specific objectives and priorities in the A6.4-FORM-AC-017’ (UNFCCC, 2024a, 27).

Compared to the SD tool, ACR, CAR and VCS offer project proponents a higher flexibility with regard to the mapping of host country priorities. In its SDG Contribution Report template ACR asks to provide information ‘on how the project activity is consistent with the SDG objectives of the host country, where the SDG objectives are relevant, and such is feasible’ (ACR, 2023a, 54). CAR requires project proponents ‘to conduct an assessment of how the project activity is consistent with the U.N. Sustainable Development Goals (SDGs) of the host country, in cases where the SDG is relevant and to the extent that it is feasible to do so’ (CAR, 2024, 16). And SD VISta/VCS says: “Where possible, project proponents should demonstrate how the project activity(s) is consistent with the SDG objectives of the host country” (VCS, 2024, 40). Although GS4GG does not explicitly request project proponents to map host countries SD priorities, it refers explicitly to national SDG targets and indicators to demonstrate SDG impact of the project (GS4GG, 2025a, 10). Based on this information, ACR, CAR, GS4GG and SDVISta/VCS map host country SD priorities ‘with limitations’ in the table (see Table 3).

	1. SD indicators provided?	2. Maps host country SD priorities?	3. Neg. impacts on SDGs?	4. Baseline used?	5. Safeguards / do no harm?	6. Stakeholder consultation?	7. Grievance?	8. Monitoring / reporting of SD?	9. Validation / Verification?	*Total score*
SD tool	No (0)[1]	Yes (1)	Yes (1)	Yes, with limitations (0.5)	Yes (1)	Yes (1)	Yes (1)	Yes (1)	Yes (1)	*7.5*
GS4GG	Yes, with limitations (0.5)	Yes, with limitations[2] (0.5)	No (0)	Yes, with limitations (0.5)	Yes (1)	Yes (1)	Yes (1)	Yes (1)	Yes (1)	*6 .5*
SD VISta	No (0)	Yes, with limitations[3] (0.5)	No (0)	Yes, with limitations (0.5)	Yes (1)	Yes (1)	Yes (1)	Yes (1)	Yes (1)	*6*
CAR	Yes (1)	Yes, with limitations[3] (0.5)	No (0)	No (0)	Yes (1)	Yes, with limitations[4] (0.5)	Yes (1)	No (0)	Yes, with limitations[6] (0.5)	*4.5*
ACR	Yes (1)	Yes, with limitations[3] (0.5)	No (0)	No (0)	Yes (1)	Yes (1)	Yes, with limitations[5] (0.5)	No (0)	No (0)	*4*

Table 3: Overview of analysed elements and main results. Source: Authors

Legend
Yes = 1 point in the scoring
Yes, with limitations = 0.5 points in the scoring. This yellow category includes all assessment results that show shortcomings compared to the green 'yes'. The reason for this differentiated view can be found in the footnotes beneath the table.
No = 0 points in the scoring

[1] Unlike the other standards, the A6.4 SD tool requires project proponents to develop activity-level SD indicators. These specific indicators are not provided by the tool. By contrast, the other standards mostly provide generic indicators, as provided by UN Stats, rather than indicators at the project level. Therefore, a 'no' evaluation for the SD tool does not necessarily represent a negative assessment. [2] GS4GG does not explicitly request project proponents to map host country SD priorities, but it refers explicitly to national SDG targets and indicators.

[3] ACR, CAR and VCS offer a higher flexibility for project proponents with regard to the mapping of host country SD priorities.

[4] CAR does not automatically include proactive stakeholder consultations, only the case when there are environmental or social impacts on the local community that 'may not be appropriately handled by other existing government structures' (CAR, 2024, 45f).

[5] The ACR requires project proponents to have grievance redress mechanisms in place, but does not specify how such a mechanism should work.

[6] While CAR includes information on safeguards and SD assessment in the verification process, it does not require project design validation.

3. Negative impacts on SDGs?

While all the crediting standards analysed include safeguards and ‘do no harm’ provisions, only the SD tool with A6.4 Sustainable Development Impact Form, called ‘A6.4-FORM-AC-017’, requires project proponents to assess positive and negative impacts on the 17 Sustainable Development Goals (SDGs) in a structured manner (UNFCCC, 2024a, 5). All other crediting standards assess potential negative environmental and social impacts, as indicated by the 'safeguards/do no harm' element, the assessment of negative impacts on the SDGs is not explicitly included. The standards CAR and ACS do require project proponents to demonstrate a positive contribution to the SDGs (CAR, 2024, 16; VCS 2024, 40).[4]

4. Baselines used?

In order to understand effectiveness of an intervention, comparing SD impacts against a baseline scenario can be helpful endeavour. At the same time, developing appropriate indicators for each SD impact category, estimating the related baseline values, and defining a hypothetical baseline scenario against which the project results can be assessed can be quite demanding and resource-intensive. Our analysis finds that only SD VISta’s takes up this approach, while the A6.4 SD tool and GS4GG take a lighter approach with regard to baselines (see below). In contrast, ACR and CAR do not require the use of baselines for SD assessment.

SD VISta’s manual provides a detailed explanation of the use of a baseline scenario for SD assessment. Project proponents are required to describe both the baseline scenario (i.e. the event/condition most likely to occur in the absence of the project activity) and the project scenario (i.e. the event/condition most likely to occur in the presence of the project activity), and then compare the two using a scenario method (SD VISta, 2019, 36). In the project description project proponents need to identify the social, economic and cultural conditions of stakeholders affected by the project, as well as significant changes in these elements in the past (ibid., 14). Additionally, they need to describe conditions and possible threats to natural capital at the project start (ibid., 15). This information represents the baseline scenario of the respective project.

The SD tool with its Article 6.4 Environmental and social management plan form, A6.4-FORM-AC-016, (UNFCCC, 2025b) requires the establishment of baselines for the monitoring of indicators: Activity participants are required to identify and assess the potential positive and negative direct impacts of their activities by establishing and identifying SD indicators at the activity level. After having identified host country SD priorities, project proponents need to review ‘indicators defined under the selected target(s) within the identified SDGs and select relevant indicator(s). Since these indicators are defined at regional and national levels, activity participants shall develop their own activity-level SD indicators…’ (UNFCCC, 2024a, 28). These indicators ‘can be qualitative or quantitative and shall be monitorable over the crediting period’ (ibid., 28). However, the reporting refers to stable baseline values and does not operate with scenarios, we thus regard the SD tool’s approach as a baseline approach with limitations.

GS4GG requires project developers equally to assess the potential environmental and social impacts of the project by referring mainly to the project scenario, while taking into account a hypothetical baseline development: ‘The safeguarding assessment shall apply to the Project Scenario, although assessment questions and requirements involve a comparison to the Baseline Scenario(s)…’ (GS4GG, 2023a, 8). We therefore categorize this a limited baseline approach as well.

[4] For further assessment see 4.2.1

5. Safeguards/do no harm?

All analysed crediting standards include safeguards. The SD tool requires an environmental and social risk assessment to be carried out against eleven elements, using the provided element-level questions (ELQs) and additional guiding questions (AGQs) (UNFCCC, 2024a, 35–58). The Gold Standard for the Global Goals (GS4GG) has safeguards and a strong 'do no harm' approach embedded within its framework. This includes a Safeguarding Principles Assessment, which requires project developers to answer questions on each of the safeguarding principles (GS4GG, 2023a, 40 ff.). The CAR requires all projects to conduct a qualitative environmental and social safeguard analysis prior to project registration and credit issuance (CAR, 2024, 14). The ACR standard explicitly includes 'safeguard procedures' and a 'do no harm' approach, as detailed in Chapter 8: Environmental and Social Impacts. GHG projects are required to adhere to best practices for environmental and social safeguards. These practices aim to 'ensure that GHG projects ‘do no harm’ by maintaining compliance with all relevant local, national and international laws, regulations, conventions and agreements' (ACR, 2023a, 52). To implement these safeguards, the ACR requires all project proponents to prepare and disclose an environmental and social impact assessment (ibid., 53). The VCS Standard also explicitly includes safeguards and a 'no net harm' approach. Section 3.19, titled 'Safeguards', sets out the requirements that project activities must meet to ensure they do not have a negative impact on the natural environment or communities (VCS, 2024, 45).

6. Stakeholder consultation?

While all analysed crediting standards include stakeholder involvement, only the SD tool incorporates safeguards, SD assessment and monitoring plans into the consultation process. SD VISta explicitly refers to the need for culturally appropriate stakeholder consultations to identify vulnerable groups.

The SD tool involves local and global stakeholder consultations prior to activity registration. Project developers must share the three completed A6.4 SD tool forms with stakeholders. During the global stakeholder consultation, parties, stakeholders, and UNFCCC-admitted observer organisations can submit comments on the forms. The stakeholder input, along with the revised forms, must be submitted to the DOE for validation. After registering the activity, project developers must establish a stakeholder engagement mechanism to ensure compliance with the SD tool (UNFCCC, 2024a, 7f).

The GS4GG requirements for stakeholder involvement are recorded in 'Stakeholder consultation and engagement requirements' (2022), which set out a detailed stakeholder consultation process. This includes a minimum of two consultation rounds, one of which must be a physical meeting (GS4GG, 2022, 6). Project developers must provide feedback to stakeholders on how their comments were considered, share updated project documentation with them, and use the Stakeholder Consultation Report to document all consultation process steps, including evidence (ibid., 11).

CAR includes a 30-day public comment period from the date the project is listed in the Reserve’s registry. Stakeholders can submit comments, which will be reviewed by CAR and the project developer. These comments will then be made available on the Reserve’s website. Proactive stakeholder consultations are not automatically included in the CAR manual. This is only the case when there are environmental or social impacts on the local community that ‘may not be appropriately handled by other existing government structures’ (CAR, 2024, 45f). In such cases, the individual protocol may include additional requirements for local stakeholder consultations. Compared to other crediting standards, this approach seems rather vague. Therefore, the assessment of CAR in the table is ‘yes, with limitations’ (see Table 3).

Like the other crediting standards, ACR facilitates a thirty-day public comment period for all listed GHG projects, allowing local and global stakeholders to provide feedback. These comments are reviewed by the project proponent, the validation and verification body (VVB) and ACR (ACR, 2023a, 35). For community-based projects, the environmental and social impact assessment shall include a description of the project's impact on local communities and indigenous peoples, detailing the stakeholder consultation process undertaken with the community. This includes documenting meetings, attendees, meeting minutes, and how stakeholder comments and concerns were addressed. Evidence of free, prior and informed consent is required where relevant (ibid., 52f).

Unlike the other crediting standards, SD VISta explicitly addresses the question of how effective stakeholder consultation should be conducted: it should enable all those affected by the activity to influence the design and implementation of the project. 'The consultations shall be carried out with respect for local customs, values, and institutions. It shall provide an ongoing opportunity for the self-identification of stakeholder groups that are vulnerable' (SD VISta, 2019, 6).

7. Grievance?

The SD tool does not include its own grievance mechanism, but A6.4 has one in place (UNFCCC, 2024b).

GS4GG requires projects to 'provide means for the affected to voice their grievances, ensuring that there is a functioning mechanism in place to receive, process, resolve, communicate and record these grievances' (GS4GG, 2023a, 18). The reporting requirements of the crediting standard state that project activities must 'report any grievances related to compliance and safeguarding principles that are registered at any point during the applicable monitoring period, along with details how they have been resolved' (ibid., 9). The safeguarding assessment questionnaire refers to grievances as follows: It asks whether local communities or individuals have raised human rights concerns through grievance processes and whether the project has established a functioning mechanism to receive, process, resolve, communicate and record grievances (ibid., 41). It also specifically asks about the availability and accessibility of grievance mechanisms for workers and indigenous peoples (ibid., 47).

The Climate Action Reserve (CAR) includes a formal grievance process comprising the following steps: Firstly, stakeholders submit the ‘Grievance Submission Form’ to the Reserve with all the necessary information. Secondly, the Reserve confirms receipt within seven calendar days. Thirdly, the Reserve convenes an unaffiliated review team to review the grievance, potentially including external parties or legal consultation. Lastly, a determination is made within 90 days of receipt and is published in writing alongside the Grievance Submission Form (CAR, 2024, 46f).

The ACR requires project proponents to have grievance redress mechanisms in place (ACR, 2023a, 52), but does not specify how such a mechanism should work. Compared to the other crediting standards, the ACR seems to be less ambitious with regard to grievances. Due to these limitations, ACR assessment is ‘yes, with limitations’ (see Table 3).

SD VISta requires project proponents to establish a grievance redress procedure for resolving disputes with stakeholders during the planning and implementation phases. This procedure must take into account the traditional methods that stakeholders use to resolve conflicts. This procedure shall form part of the project description, be made publicly available and be accessible to all project stakeholders. All grievances and project responses must be documented in the monitoring report (SD VISta, 2019, 8).

8. Monitoring/reporting of SD?

The monitoring requirements of all analysed crediting programmes do not include SD impact/assessment, unlike safeguards monitoring. While the SD tool and GS4GG request verified information on SD assessments for regular reporting, CAR and ACR do not include updates on SD assessments in their monitoring requirements.[5]

9. Validation/verification?

While the SD tool, GS4GG and SD VISta all incorporate SD assessment into their validation and verification processes. However, it is not clear whether the ACR includes information on SD in its own validation and verification processes. Therefore, the ACR is ranked as 'no' in this regard. The CAR does include information on safeguards and SD assessment in the verification process, but does not require project design validation. Therefore, CAR is ranked as 'yes, with limitations'.

4.2 Analysis and Discussion

The analysis has shown that while there are significant differences in some areas, the standards are closely aligned on specific elements: All five standards require the use of safeguards and a 'do no harm' approach to project activities.

Standard	Total score
1. A6.4 SD tool	7.5
2. GS4GG	6.5
3. SD VISta	6
4. CAR	4.5
5. ACR	4

Table 4: Scoring results. Source: Authors

The quantitative analysis shows that most standards do respond to the majority of the elements we analysed, with the A6.4 SD tool (Total score 7.5) and GS4GG (6.5) scoring best, followed by SD VISta (6). One outcome of the quantitative analysis is that the A6.4 SD tool displays added value through the way it integrates host country SD priorities. The A6.4 SD tool requires activity level SD indicators, but it does not provide them and activity participants have to develop them bottom-up. Therefore, this assessment element is scored 'No' for the SD Tool. The GS4GG, in turn, does not address negative impacts on SDGs (nor do the other standards), but fulfils all other criteria fully or with limitations.

Overall, the big picture reveals that all five standards analyzed do cover the majority of the elements. The main differences between them lie in their specific approaches to providing sustainable development indicators and whether they explicitly evaluate negative impacts on Sustainable Development Goals.

However, the CAR (Climate Action Reserve) and ACR (American Carbon Registry) standards score lower than the others because they do not include key components: first, they do not include MRV of the SD impacts. Second, these standards do not work with a baseline, which makes

[5] See 4.2.2 for a more detailed analysis of monitoring and reporting.

assessing the SD impacts more difficult. Last but not least, CAR and ACR also do not assess negative impacts on SDGs.

In the following, we will discuss selected elements in more detail. This will allow us to closer examine qualitative aspects, i.e. how and in what way the elements are put into practice and what this means for the evaluation.

4.2.1 Assessing positive and negative impacts

One distinct element of the Art. 6.4 SD tool is the assessment of both positive *and* negative SDG impacts. Activity developers are to screen the 17 SDGs and identify both positive and negative impacts to sustainable development caused by the activity. This shall cover 'direct' and 'significant' impacts, which are recurring / lasting for at least the entire crediting period of the activity (UNFCCC, 2024a, 27).

In case negative impacts are detected, these should be referred to in the outcomes of the risk assessment of the tool. Therefore, such impacts are expected to have been considered in the respective risk assessment form of the tool as well as in the environmental and social management plan form. If this is not the case, activity participants are to define activity-level SD indicators with the aim to minimize and mitigate the negative impacts identified (UNFCCC, 2024a, 28).

The reasoning behind this assessment is to analyse synergies and trade-offs to promote (net) positive climate and development impacts as well as to manage trade-offs: While the analysis of safeguards focuses on preventing the harm that the project could cause (e.g. environmental hazard or violation of labour rights), here project proponents must comprehensively analyse the total net impact of their activity on the SDGs. For example, a solar PV incentive policy would create jobs in PV installation, operations, and maintenance, while at the same time reducing jobs in the fossil fuel sector. Additionally, in the long term, the activity might cause an increased number of jobs in the domestic solar PV manufacturing sectors (ICAT, 2020). Systematically assessing both positive and negative impacts therefore allows to judge the net benefit per category and helps understanding local and national development context and the linkages with the mitigation activity in question.

This distinct assessment element makes the Art. 6.4 SD tool stand out from the other standards, which have a clear focus on the so-called 'co-benefits' and do assess negative impacts in the context of safeguards / do no harm analyses only. However, such an approach might lead to overseeing possible trade-offs and negative effects on some SDGs that could be caused by the activity and therefore does not completely and accurately reflect the complex reality of sustainable development impact assessment.

4.2.2 Indicators for monitoring of SD assessment and safeguards

This section answers the following questions: In what ways do the analysed crediting standards differ in terms of the monitoring and reporting of SD assessment and safeguards? Do the crediting standards provide indicators for SD assessment and monitoring/reporting?

Indicators for SD assessment

All analysed crediting standards require indicators for SD assessment, but they derive these in different ways: While the SD tool requires project proponents to develop activity-level indicators from bottom-up, the VCS / SD VISta and CAR refer to the SDG indicators provided by UNStats and offer these rather generic indicators to project proponents from the top down. Therefore, the analysis shows that the quality of the indicators differs.

The SD tool requires project proponents to develop activity-level indicators specific to their project for SDG targets in Form A6.4-FORM-AC-017 (UNFCCC, 2024a, 5). This process involves translating SDG indicators from the national or regional level to the project level (ibid., 28), which requires additional effort from project developers and is a bottom-up approach.

The GS4GG SDG Impact Tool contains 142 default monitoring indicators covering five project types and 16 SDG goals, and includes detailed guidance on how to calculate them. Project developers can also propose new indicators to GS4GG (GS4GG, 2023b). Therefore, the question whether GS4GG provides SD indicators is answered with “yes, with limitations” (see Table 2).

CAR also provides indicators for SDG monitoring in its SDG reporting tool, which is top-down. While project developers must report on SDG assessments, they are not required to use CAR's tool (CAR, 2024, 16). The reporting tool makes use of the UN's official SDG indicators. The Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs, 2016) has developed 230 indicators for SDG assessment (UNStats, 2017).

ACR only requires project developers to measure and disclose the positive impact of their projects on the SDGs. For reporting purposes, the ACR provides the ACR SDG Contribution Report template and asks project developers to also capture the host country’s SD priorities (ACR, 2023a, 54). The ACR’s SDG Contribution Report Tool includes only one target for each SDG, whereas the CAR uses all official UN indicators. Reporting is only required for direct or indirect positive impacts (ACR, n.d.).

VCS / SD VISta uses the UN’s Sustainable Development Goals as a framework for SD assessment, requiring projects to demonstrate contributions to at least three of these goals.[6] It provides project developers with the document 'VCS Sustainable Development Contributions Report Template' (Verra, 2020). For indicators, it refers, like CAR and ACR, to the list of indicators from UN-Stats.

Indicators for safeguarding

All analysed crediting standards include indicators for safeguarding. While the SD tool and GS4GG require project proponents to answer a full questionnaire, the guidelines for safeguarding of the other crediting standards are less detailed.

	Safeguards	SD Assessment
SD Tool	Excel: A6.4-FORMS AC-015 + AC-016	Excel: A6.4-FORM-AC-017
GS4GG	pdf: Annex 1 of “Safeguarding Principles & Requirements”	digital: Gold Standard Digital SDG Impact tool (GS4GG, 2024)
CAR	Template: Environmental and Social Safeguards Assessment Form	Excel: SDG reporting Tool
ACR	pdf: Section ‘Environmental and Social Impacts” in: ACR, 2023, 52	Excel: ACR SDG Contribution Report Tool
VCS/SD Vista	pdf: section ‘Safeguards’ in: VCS, 2019, 45ff.	Template: VCS Sustainable Development Contribution Report Template

Table 5: Overview of reporting templates and forms. Source: Authors

[6] As the SD VISta is a complementary standard to VCS, these conditions also apply to this standard.

Both the SD tool and GS4GG provide detailed catalogues of assessment questions designed to prevent social or environmental harm (UNFCCC, 2024a, 5; GS4GG, 2023a, 40f). For the SD tool these questions are covered in the Form A6.4-FORM-AC-016. If any of these questions are answered 'yes' or 'potentially', mitigation measures must be prepared, pre-set tolerances must be developed, and this information must be included in each monitoring report (GS4GG, 2023a, 9). For the SD tool, activity-level environmental and social indicators should be designed so that monitoring is possible over the activity crediting periods and so that responsibilities for implementing risk mitigation measures are assigned (UNFCCC, 2024a, 16f).

In contrast, CAR, ACR and VCS/SD VISta do not have a detailed set of safeguarding assessment questions. Nevertheless, they require project developers to carry out a risk assessment and implement risk mitigation measures. CAR provides an 'Environmental and Social Safeguards Assessment Form' (CAR, n.d.), while ACR requires project developers to describe the safeguards in place to address potential negative impacts (ACR, 2023a, 23). VCS provides a set of guiding questions on safeguards in its manual (VCS, 2024, 45ff.).

Almost all crediting standards use Excel or Word forms to assess and report on SD indicators. Of the safeguarding tools, only the SD tool uses an Excel form; the others use a Word template or PDF.

The Gold Standard stands out due to its digital approach, which replaces the MS Excel-based SDG Impact Tool. It will be mandatory for all projects from 1 August 2025. According to GS4GG, the digital SDG Impact Tool aims to streamline ‘the reporting, quantification, verification, and certification of the sustainable development impact Gold Standard project…enhancing data transparency and informing the decision of project supporters’ (GS4GG, 2025b). Verra has introduced a digital interface, the Verra Project Hub (Verra, n.d.), which aims to facilitate the submission and review of project’s documentation for validation, verification and monitoring (Verra, 2024), but this has not found its way into official documentation requirements yet.

Monitoring of safeguards

All crediting standards require regular monitoring, including a verified update on safeguarding measures.

For the SD tool, the monitoring of safeguards is structured similarly to the SD assessment (UNFCCC, 2024a, 17). Project activities at GS4GG need to have safeguarding measures indicated in the monitoring report at each verification (GS4GG, 2023a, 8). Monitoring information includes details of the indicators identified at the design review stage. Additionally, GS4GG requires project proponents to provide an update on any assessment question that was answered with 'potentially'. Validation and verification of the monitoring report shall be provided by VVBs (ibid., 9). CAR requires project developers to submit the verified ‘Environmental and Social Safeguards Assessment Form’ for monitoring purposes. Changes to the monitoring plan must be updated and submitted (CAR, 2024, 35 ff.). Even during zero-crediting reporting periods, a monitoring report must be submitted (ibid., 44). The ACR requires project proponents to submit a monitoring report for each reporting period (ACR, 2023a, 81), including all negative risks and impacts identified in the environmental and social impact assessment (ibid., 53). SD VISta's monitoring plan requires project developers to indicate changes in 'natural capital and ecosystem services due to project activities' (SD VISta, 2019, 15). Activities intended to reduce environmental risk must be documented and included in the monitoring report.

Monitoring of SD assessment

Unlike safeguards monitoring, SD impact/assessment is not included in the monitoring requirements of all analysed crediting programmes. While the SD tool and GS4GG request verified information on SD assessments for regular reporting, CAR and ACR do not include updates on SD assessments in their monitoring requirements.

The monitoring procedures for the SD tool's activity-level SD indicators are recorded in A6.4-FORM-AC-017 (UNFCCC, 2025c). Project developers must describe the relevant indicators, the selected SDGs and SDG targets, the basis of the monitoring data, and the monitoring methods and frequency – which is indicated with 'at least annually' (UNFCCC, 2024a, 31). Project proponents must report the monitoring outcomes in the monitoring report, and a DOE must verify the monitoring within the activity cycle. For the GS4GG, the monitoring of SD indicators is situated within the SDG-Impact Tool, which must be completed for each monitoring period (GS4GG, 2023b). SD VISta includes reporting on SDG targets that will be used as SD VISta claims or assets in the monitoring information (SD VISta, 2019, 15). SD assessment monitoring is not part of the reporting requirements of ACR and CAR.

Overall, the analysis shows the following:

- While all crediting standards refer to the SDGs for SD assessment, some use the SDG indicators provided by the United Nations Statistics Division (UNStats) exclusively and in a top-down manner. Others, however, require the UN indicators to be translated at the project/activity level and allow indicators to be developed by the project proponent bottom-up.
- All analysed crediting standards require reporting and monitoring on safeguards, but reporting on SDG assessment is not mandatory. CAR and ACR do not seem to include this aspect in their reporting requirements.
- Crediting standards that allow for the bottom-up development of SDG indicators integrate SDG assessment into their monitoring and reporting.

4.2.3 Validation and verification

While the SD tool, GS4GG and SD VISta incorporate SD assessment into their validation and verification processes, the Climate Action Reserve (CAR) does only verify information on safeguards and SD assessment. Additionally, it remains unclear whether the ACR includes information on SD assessment in its verification requirements. Therefore, ACR is ranked with a 'no' with regard to validation and verification in the overall table.

The Climate Action Reserve (CAR) does require periodic third-party verification of all GHG projects, but does not require validation for the project design (CAR, 2024, 39f.). Verification involves an independent review of the data and information used to register Climate Reserve Tonnes (CRTs) (ibid.). ISO-accredited and Reserve-approved third-party verification bodies conduct verification. They review documentation, monitoring data and procedures used to estimate GHG reductions or removals (ibid., 35, 39). The verification bodies then submit a verification opinion and verification report, which determine the number of CRTs to be issued. These documents are made publicly available. After the initial verification and registration, subsequent verifications must be submitted within 12 months of the end of each verification period (ibid., 2, 39). The Environmental and Social Safeguards Assessment form, as well as the Project Contributions to the UN Sustainable Development Goals (SDGs) Reporting Tool, must also be verified by the verification body (ibid., 35). Therefore, the assessment of CAR with regard to validation and verification is 'with limitations' as CAR includes only verification for SD assessment, and no validation in general.

The SD tool foresees validation and verification by DOEs. It explicitly details the roles of DOEs in the validation and verification of compliance with its requirements. This includes validating risk assessments, management plans and SD impact assessments, as well as verifying ongoing indicator monitoring (UNFCCC, 2024a, 33f).

Gold Standard validation is carried out by the Gold Standard Validation and Verification Body (GS-VVB). A completed Safeguarding Principles Assessment must be validated by a GS-VVB during the design review stage (GS4GG, 2023a, 9). GS4GG validation involves a formal, independent assessment conducted by a GS-VVB during the project design phase. This involves a thorough review of the project's Safeguarding Principles Assessment and supporting evidence, as well as the incorporation of expert stakeholder input, to ensure that the project design adequately addresses potential negative impacts and aligns with the Gold Standard's principles and requirements (ibid., 10).

ACR requires third-party validation by an accredited, ACR-approved validation and verification body (VVB) once during each crediting period and before ERT issuance (ACR, 2023a, 50). A validation report and validation opinion must be submitted to ACR (ibid., 58). Verification is a systematic, independent and documented assessment of the GHG statement for a specific reporting period (ibid., 22, 55). It confirms compliance with the methodology and the accuracy of GHG emission reductions and removals (ibid., 22). Verification must be conducted by an accredited, ACR-approved VVB before any ERTs are issued (ibid., 51). Both validation and verification must be performed by independent, accredited VVBs approved by the ACR (ibid., 100, 105). Whether SD assessment is part of the verification process remains an open question.

The issuance of SD VISta assets depends on validation and verification. The SD VISta validation/verification process involves two steps: validation of the project design and verification of the project implementation. An independent assessment of projects is carried out by a VVB to determine whether they comply with the SD VISta rules. Verification involves the VVB conducting an independent ex-post assessment, in accordance with the SD VISta rules, of the sustainable development outcomes and impacts resulting from project activities during the monitoring period. Validation and verification may be undertaken concurrently (SD VISta, 2019, 23).

4.2.4 Conclusion

Taking the qualitative assessment and discussion into account, the A6.4 tool adds value by integrating both positive and negative SD impacts into its assessment. This allows for a holistic analysis of the activity impacts and a balanced picture of trade-offs and benefits of the activity. Clearly, this is a stand-alone element of the A6.4 SD tool – complementing the added value through the way the tool integrates host country SD priorities (see 4.1).

The analysis also shows that, unlike other crediting standards, the SD tool and GS4GG request verified information on SD assessment for regular reporting. While all analysed crediting standards include monitoring and reporting of safeguarding, only the SD tool and GS4GG provide project proponents with a full questionnaire. With regard to indicators: Unlike the other crediting standards, the SD tool requires project proponents to develop activity-level indicators that capture the project's specific conditions, whereas the other crediting standards provide top-down indicators for SD assessment. Therefore, our comparison table displays a 'no' regarding the question 'Indicators provided?' (see Table 3).

It remains to be seen whether this special feature of the SD tool will set a ‘new benchmark’ or be replaced in the near future by activity-level indicators provided by the UNFCCC. Asking project proponents to develop activity-level indicators could potentially be time-consuming and be simplified by providing sector-specific indicators.

On the other hand, developing activity-level indicators could be a helpful process for deriving indicators that precisely fit the project's character and, at best, facilitate monitoring and reporting. One potential indicator of this hypothesis is the following observation: As crediting standards that allow for the bottom-up development of SD indicators integrate SD assessment into their monitoring and reporting, the bottom-up development of indicators appears to be a feasible method of integrating SD assessment into the activity cycle.

5 Conclusions

This paper analysed if and in what way the SD tool of the Paris Agreement's Article 6.4 mechanism sets a new benchmark for assessing sustainable development impacts of carbon market mitigation activities. To address this question, we compared the A6.4 SD tool with selected crediting standards of the voluntary carbon market in a structured desktop analysis and facilitated a scoring of the analysed SD provisions.

The quantitative assessment shows the outcome that the SD tool scores best with 7.5, and the paper's analysis shows that the SD tool introduces higher standards for sustainable development assessment in several key features. Therefore, it can indeed be characterised as 'a new benchmark' for the carbon market, particularly when compared to existing voluntary carbon market (VCM) standards.

The A6.4 SD tool sets a 'new benchmark' in the following ways:

1. **Assessment of both positive and negative SDG impacts:** While all analysed crediting standards include safeguards and 'do no harm' provisions, the A6.4 SD tool uniquely requires project proponents to assess both potential **positive and negative direct impacts** on all 17 Sustainable Development Goals (SDGs) in a structured manner. This goes beyond merely preventing harm, aiming for a comprehensive analysis of the total net impact on the SDGs, including synergies and trade-offs, which other standards often overlook by focusing primarily on co-benefits. This structured approach helps ensure all potential impacts are adequately covered.
2. **Structured mapping of host country SD priorities:** The SD tool mandates a structured assessment of the host country's SD objectives and priorities using a specific form. Activity participants must identify relevant national strategies, SDG targets, and indicators related to the A6.4 activity. This is a more rigorous and less flexible approach than offered by other standards like ACR, CAR, and VCS / SD VISta, which provide project proponents with higher flexibility. This structured method can lead to a more complete integration of host country SD priorities into projects and increase project developers' awareness of these priorities.
3. **Bottom-up development and translation of SD indicators:** Unlike some crediting standards that provide top-down SDG indicators (e.g., CAR, ACR, SD VISta/VCS), the A6.4 SD tool requires project proponents to develop activity-level indicators specific to their project by translating national or regional SDG indicators to the project level. This "bottom-up" approach demands additional effort from developers but ensures that indicators are specific, measurable, and aligned with the project, thereby facilitating the inclusion of SD assessments in monitoring and reporting. It remains unclear whether this feature will become part of the 'new benchmark' or evolve into a version of the SD Tool that includes partly top-down indicators—both options have pros and cons.

In addition to these distinctive features, the A6.4 SD tool meets common practices and, in many aspects, aligns with best practices of the VCM:

Safeguards and 'do no harm' principles: The tool includes comprehensive environmental and social risk assessments against eleven elements, with detailed guiding questions, similar to other robust standards like GS4GG.

Stakeholder consultation: All analysed standards involve stakeholder consultation, but the SD tool integrates safeguards, SD assessment, and monitoring plans into this process, requiring completed forms to be shared with stakeholders for feedback.

Grievance mechanism: While the SD tool itself does not include its own grievance mechanism, the broader A6.4 crediting mechanism does, aligning with best practices in the VCM.

Validation and verification: The SD tool explicitly details the roles of Designated Operational Entities (DOEs) in validating risk assessments, management plans, and SD impact assessments, as well as verifying ongoing indicator monitoring. This is a practice also found in GS4GG and SD VISta, which incorporate SD assessment into their validation and verification processes.

Use of baselines: The SD Tool requires project proponents to develop baseline values in order to monitor SD assessment over the crediting period, which project developers must to refer to when assessing the potential environmental and social impacts of their activity. This involves understanding the conditions that would most likely occur in the absence of the project activity.

Overall, the A6.4 SD tool is considered an **assessment tool** with the potential to elevate the standards for evaluating the impact of carbon market projects on sustainable development. However, its comprehensiveness, particularly with regard to the development of activity-level SD indicators, may lead to additional transaction costs.

Observations and recommendations for further development

The A6.4 SD tool thus stands out as an assessment tool that has the potential to raise the bar in assessing sustainable development impacts in market-based interventions. However, only time will tell whether this ambitious approach does work out in practice. Further refinements will be needed, combined with a close look at transaction cost in order to strike the right balance between robustness and feasibility. The following observations from this analysis may thus serve as initial ideas for the discussion of the tool's further development:

1. Develop sector-specific indicators: In its current form, the A6.4 SD tool leaves it up to project participants to develop indicators for SD assessment. While this might be useful for many as it allows to develop case-specific indicators and prevents the tool to become a 'tick-box exercise', other project developers might benefit from some more guidance in this regard. Based on experience and data from the voluntary market, sector-specific indicators for the most relevant activity categories could be developed and its use made optional.

2. Make use of digitization potential: Currently, the A6.4 tool is based on Excel-sheets, which can be time-consuming to use and cumbersome in the handling. As Gold Standard's new digital impact tool shows, there is potential in user-friendly digital assessment interfaces. Also, options for digital MRV should be explored, cp. the ongoing activities by the Sustainable Development Initiative (SDI) as well as Gold Standard. One important advantage of digitization is that it enables connectivity and comparability between systems and carbon crediting programmes, which in turn can support convergence of best practice in SD assessment (see below).

3. Consider user-friendly, non-technical language: The UNFCCC process is full of acronyms and has developed a specific type of jargon over the years which can be difficult to understand, especially for newcomers. At the same time, (new) private-sector engagement is an explicit wish of all actors in the process. It should therefore be considered to develop user-friendly training material, brochures in non-technical language, and / or video tutorials to facilitate the application of the SD tool.

4: Looking ahead: towards global convergence in SD assessment

In general, convergence of best practice SD assessment in both voluntary and compliance should be sought. The Integrity Council for the Voluntary Carbon Market (ICVCM), for example, launched in 2024 the core carbon principles and assessment framework criteria to set industry best practice for integrity and quality of carbon credits with sustainable development impacts and safeguards being one of the core carbon principles. The further development of these best practice elements is foreseen by ICVCM in the form of a continuous improvement work program. The first review of the A6.4 SD tool, scheduled for spring 2026, would thus be a good opportunity for further action towards alignment and convergence across standards and markets with regard to SD assessment.

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