Sustainable Development Initiative

PILOTING THE A6.4 SUSTAINABLE DEVELOPMENT TOOL

LESSONS FROM EARLY USE

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SDI | Sustainable Development Initiative

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1. INTRODUCTION

With the Baku decisions on operationalizing Article 6, the Paris Agreement Crediting Mechanism (PACM) has made a decisive step towards implementation. The development is accompanied by the growing policy attention being given by major global economies to international market mechanisms. As of late, the European Union (EU) has announced in its latest 2040 target that it intends to utilize markets to reach its ambitious goals, emphasizing that these must adhere to strict standards. Specifically, the EU has articulated its NDC target for 2035 to include "an adequate contribution of high-quality international credits under Article 6 of the Paris Agreement in a way that is both ambitious and cost-effective" to deliver the 2040 target (EU 2025).

However, the long-term viability and ultimate success of carbon markets hinge on three fundamental principles: environment integrity, robust accounting, and project quality. A critical component of quality is the assurance of Sustainable Development (SD) impacts and adherence to the “do no harm principle”. While the primary objective of carbon market transactions is the mitigation of greenhouse gas emissions, Article 6 explicitly recognizes and mandates that cooperative approaches must promote sustainable development.

As implementation of Article 6 has moved from negotiations to reality, the need to demonstrate genuine and measurable SD impacts beyond the carbon metric becomes paramount – as is the safeguarding against unintended negative impacts of Article 6 activities. Stakeholders, including host countries, investors, and civil society, increasingly demand evidence that carbon projects are truly transformative, avoiding negative environmental and social impacts while positively contributing to local economies and communities. This heightened scrutiny underscores the vital importance of robust and standardized frameworks for assessing and verifying SD impacts aligned with national development priorities.

The Article 6.4 Sustainable Development tool (A6.4 SD tool)[1] is the PACM’s instrument to measure, report and verify sustainable development impact and to safeguard against harmful, unintended consequences due to the project activity. Adopted in October 2024, the SD tool is mandatory for every Art. 6.4 activity; for CDM projects transitioning to Art. 6.4, the final validation and registration under the Article 6.4 mechanism is contingent on successfully applying the A6.4 SD Tool, while initial transition requests had to rely on existing CDM documentation.

This paper analyses lessons learnt from piloting early use of the A6.4 SD tool in different cases. The paper is structured as follows: we first explain the methodology and the pilot use cases, followed by an introduction of the A6.4 SD tool. Chapter 4 analyses the pilot cases with respect to the safeguards and SDGs covered, but mainly regarding the insights gained and the lessons learnt. We then present options for improving the tool, looking at different time horizons / steps in the tool development. Chapter 6 discusses conclusions and next steps.

[1] In the following, we will call the tool the “A6.4 SD tool”, as this term used in official UNFCCC documents, while recognizing the mechanism it serves is called the “Paris Agreement Crediting Mechanism”

2. METHODOLOGY

This report analyses the findings from SDI's pilot activities of Art. 6.4 SD tool. The SDI piloting activities comprise three case studies, from which our findings were derived. All three cases have in common the fact that they applied the A6.4 SD Tool, making them the first pilots from which we can derive insides and lessons learnt. Case 1 comprises piloting the A6.4 SD Tool on a project previously verified by our partner SustainCERT under a voluntary GHG scheme. Case 2 comprises a real-life mitigation activity in Zambia currently at MADD stage, in which the SD tool was applied by a local consultant in an in-depth study. Case 3 describes the experiences and observations from analysing the CDM transition cases which applied the A6.4 SD tool so far, including insights gathered from an interview with a consultant who applied the tool to one of the CDM transition activities. For a detailed introduction to the cases / project activities, see below.

The basis for our assessment was the following questionnaire, which was answered either in writing or verbally (interview) by consultants within each of the three case studies.

A6.4 SD Tool Piloting Questionnaire

1. *Overall coverage and completeness*
   - Do you have access to all the information needed to answer questions?
   - Is it possible to monitor all requested aspects?
   - Completeness: Do you miss any aspects, topics? What is absent in comparison to SD provisions of other crediting programmes?
2. *Usability*
   - What is the general experience, or perspective, regarding the utilisation of the SD Tool?
   - Following the application of the SD Tool, what is your individual assessment of its usability?
3. *Integration in activity cycle*
   - In terms of the application of the SD tool within the broader context of the activity cycle, does it appear to be effective and compatible? What challenges have been encountered during its utilisation?
4. *Language and use of guiding examples*
   - Do the guiding examples in the Excel-Forms in their current form offer practical assistance, or do they lack specificity or genericness?
   - At the indicator level: would you prefer to have that pre-set by UNFCCC and/or pre-defined sector-specific indicators?
   - Did you comprehend the requests made when utilising the SD Tool?
   - Does the language employed and its accompanying explanations meet the comprehension levels of project proponents, or does it exceed the expertise required?
5. *Effort and Time needed*
   - Is the SD Tool regarded as an additional effort to use, or a simplification to have a reporting format on SD criteria by UNFCCC?
   - How does the time investment required for using the SD tool compare to other SD provisions of crediting programmes, such as GS4GG?
6. *User experience, Workflow, Digitalisation*
   - The SD tool in its current formats (Excel-Sheets) is not highly digitalised. Following the application of the SD tool in its current formats, do you envisage any viable options for a more digitalised reporting solution?
7. *Interoperability*
   - Could the SD tool be useful in terms of harmonising SD efforts with other mechanisms/crediting programmes, e.g. on the voluntary carbon market?
8. *Beyond the tool – national SD assessment and other mitigation actions*
   - Do you perceive any opportunities for enhancing domestic dialogues on sustainable development through the SD assessment of projects and programmes?

The findings from these ex-post responses, whether oral or written form the basis of a desktop analysis carried out by SDI. Case study evidence thus consists of non-published manuscripts and we therefore have chosen an anonymous approach to present insights without attributing them to particular cases. These findings from the cases are summarised in Section 4 of this report.

In the following, the piloting cases are described in detail.

2.1. VCM Case

This piloting case includes the application of the SD Tool to an existing VCM project activity by SustainCERT. SustainCERT is an independent accredited Validation and Verification Body (VVB) specializing in digital climate impact verification. It acts as a VVB for various carbon crediting programmes, e.g. Verra's VCS, Gold Standard, JCM as well as Article 6.4) and is developing its digital Platform to streamline workflows, enhance data accuracy, and improve the scalability of verification.

SustainCERT undertook a pilot evaluation utilizing the Art. 6.4 SD tool. This pilot was applied to an existing project that had previously undergone verification by SustainCERT under a voluntary GHG scheme. The project selected for this assessment was an Efficient Cookstove Project located in Burkina Faso. The defined temporal scope for the assessment covered the monitoring period from 01 January 2022 to 31 December 2022. The Efficient Cookstove Project demonstrates contributions to, and has verified impacts on, several Sustainable Development Goals (SDGs). The specific SDGs are: SDG 1 (No Poverty), SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 7 (Affordable and Clean Energy), and SDG 15 (Life on Land). These verified impacts were established according to the criteria set by the Gold Standard Foundation (GSF).

2.2. Article 6.2 Case

The Kafue Sugar mitigation activity is hosted in Zambia and implemented by Consolidated Farming Ltd (CFL). The activity is centred on the utilization of bagasse generated during sugarcane processing for the generation of renewable electricity. It intends to be registered as an Article 6.2 mitigation activity in the country.

Currently, the existing 6 MW cogeneration plant consumes about 70,000 tonnes of bagasse to meet the facility's internal requirements for power and steam. The planned mitigation activity involves the expansion of the current cogeneration facility up to 40 MW. This expansion is designed to reduce greenhouse gas (GHG) emissions through utilizing the current unused proportion of bagasse in the expanded facility, thereby avoiding the emission of methane that would result from the unmanaged anaerobic disposal of the residues. In addition, the renewable electricity generated reduces CFL's use of fossil-based electricity from the Zambian national grid.

A key second component of the activity involves establishing an outgrower scheme designed to support surrounding communities in proximity to CFL's operations. Farmers participating in the scheme will cultivate sugarcane on their own fields and subsequently sell the harvested material to CFL. Furthermore, in areas designated for non-sugarcane farming, participants will benefit from improved water supply.

Currently, CFL is conducting prefeasibility, feasibility, and Environmental and Social Impact Studies for the outgrower component, involving broad participation from the farmers.

While this activity operates under Article 6.2 rules and regulations, the SDI has supported piloting of the A6.4 SD tool on it to assess and mitigate risks (safeguards) and promote sustainable development (SDG impacts). This pilot application has been carried out by a local consultant on behalf of the SDI.

2.3. CDM Transition Case

CDM projects that are eligible for, and have requested, transition to PACM are required to analyse environmental and social impacts and sustainable development benefits of its activities using the A6.4 SD tool.

Based on UNFCCC's database of CDM transition requests (see UNFCCC, 2025d), 18 projects have submitted A6.4 SD tool assessments. Because the tool was not available at the time of many of these submissions, most assessments relied on the CDM SD tool (13 projects), while five used the A6.4 SD tool.

At the time of the assessment, 1 project (10651) submitted the tool but was not accessible. These projects form the basis of the assessment below.

Table 1: Summary of CDM transition projects using the A6.4 SD tool

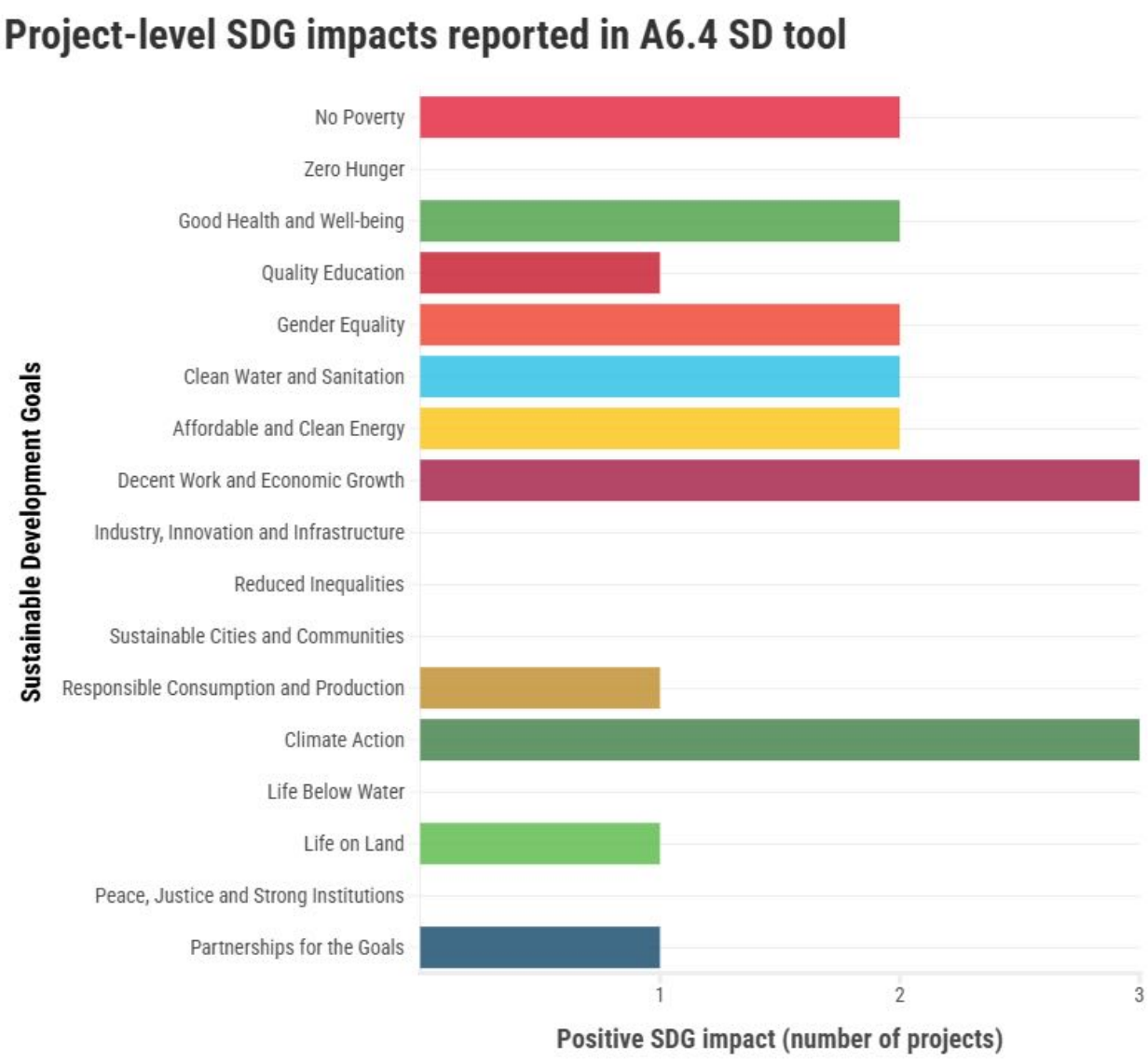
	Project title	Number	Host Party
1.	Development of a sustainable drinking water supply platform based on the Clean Development Mechanism	10538	Bangladesh
2.	International Water Purification Programme	5962	Ethiopia, El Salvador, Chile, Egypt, Kenya, Gambia, Madagascar, Nicaragua, Mexico, South Africa, Uganda, Vietnam, Iran (Islamic Republic of), Cambodia, Malawi
3.	The Uganda Improved Cookstove and Water Purifier Project	10610	Uganda
4.	UpEnergy Improved Cookstove Programme	9956	Uganda
5.	Institutional Improved Cook Stoves for Schools and Institutions in Uganda	10345	Uganda

To supplement the assessment, an interview was undertaken with a South Pole consultant. South Pole is a private company that develops carbon market projects, including in CDM and Article 6 projects, and have used the A6.4 SD tool for the transition of the CDM project "International Water Purification Programme" (5962).

Current use of the A6.4 SD tool shows that the majority (3) of the projects have reported a positive impact on SDG 8 (Decent work and Economic Growth) citing that these projects had a positive impact on the number of jobs created. Likewise, SDG 13 (Climate Action) were also positively impacted by the same projects citing a decrease in the amount of total GHG emissions. See Figure 1 for further details.

One of the key features of the A6.4 SD tool is the reporting of negative impacts of projects on Host Party SDGs. From the submitted assessments , none have identified negative impacts to SDGs.

Figure 1: Project-level SDG impacts reported in CDM transition projects



Source: UNEP-CCC Article 6 Pipeline

3. INTRODUCTION TO THE A6.4 SD TOOL

The A6.4 Sustainable Development (SD) tool ensures that activities carried out under the Paris Agreement's Crediting Mechanism (PACM) adhere to the 'do no harm' principle, support sustainable development, and contribute to the 17 Sustainable Development Goals (SDGs) (UNFCCC, 2024). The use of the SD tool is mandatory for activities under PACM and forms an essential part of the activity cycle. The tool is structured around three main components: 1. Environmental and Social Safeguards, 2. Impact on Sustainable Development and 3. Validation and verification. It provides a systematic framework for identifying and managing risks, as well as for evaluating contributions to the SDGs. Validation and verification by a Designated Operational Entity (DOE) ensures that each activity meets the requirements of the tool.

3.1. Environmental and social safeguards

In order to minimise the potential risks associated with a proposed A6.4 activity, the risk assessment must ensure that the activity aligns with the environmental and social safeguarding elements. Project proponents are required to carry out a structured risk assessment using the A6.4-FORM-AC-015 (UNFCCC, 2025a), which identifies possible negative impacts based on 11 safeguarding elements. These elements include environmental safeguards, such as energy, air, land and water, ecology and natural resources, as well as social safeguards, covering 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 a detailed questionnaire containing element level questions (ELQs) and the additional guiding questions (AGQs). Any identified risks must be addressed in the environmental and social management plan (A6.4-FORM-AC-016 (UNFCCC, 2025b)). This plan outlines measures to avoid, minimise, and mitigate the identified risks. As part of this plan, project developers must also establish activity-specific indicators to monitor compliance with environmental and social safeguards throughout the implementation of the activity.

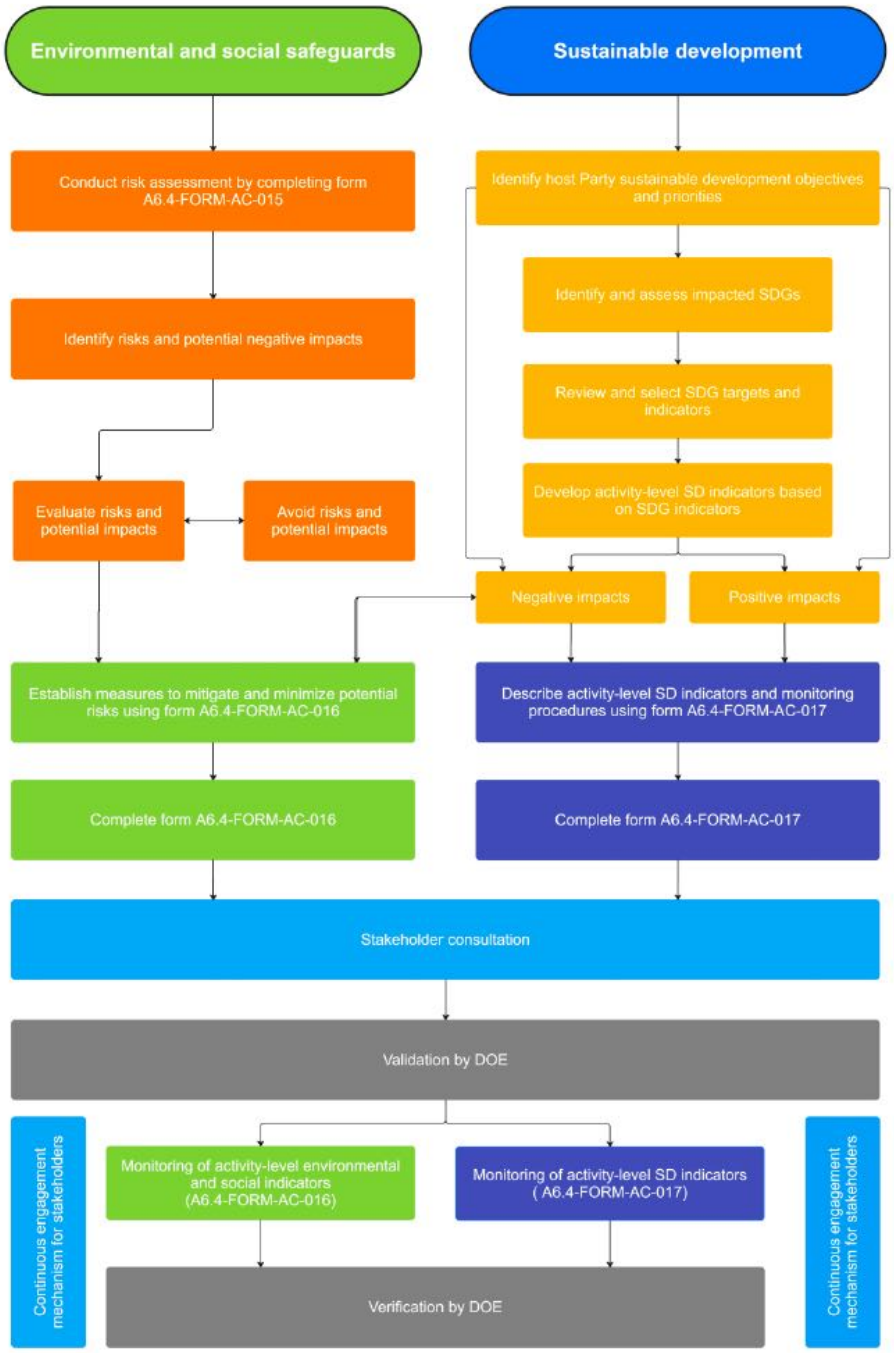
3.2. Impact on sustainable development

Activity participants are required to identify and assess potential positive and/or negative direct impact of the A6.4 activities in form A6.4-FORM-AC-017: In a first step, the activity participants must identify the relevant sustainability goals and priorities of the host Party. In a second step, project proponents must determine which SDGs that are positively and/or negatively affected by the activity. In a third step, they are expected to establish A6.4 activity-level SD indicators and assess the activity's direct impact on the SDGs. These indicators may be qualitative or quantitative, but they must be measurable and monitorable throughout the crediting period. Any negative impacts should refer to the results of the risk assessment.

3.3. Validation and verification

A Designated Operational Entity (DOE) is responsible for validating and verifying the outcomes derived from the A6.4 SD tool. The DOE is responsible for validating the information submitted by the activity participants in the relevant A6.4 forms and ensuring that the provided data is appropriate, relevant and sufficient. The DOE also confirms that the activity complies with all A6.4 SD tool requirements. Subsequently, the DOE verifies the monitoring of both the environmental and social indicators and the activity-specific sustainability indicators. Throughout this process, the DOE ensures that activity participants accurately monitor, document and report the results in the official monitoring report.

Figure 2: A6.4 SD tool flow chart (UNFCCC, 2024a)



4. INSIGHTS FROM APPLYING THE TOOL

The observations in this section are based on reports and interviews with experts who used or applied the A4.6 SD Tool. Of the three cases analysed in the previous section, all three reported to or were interviewed by us on the basis of the questionnaire outlined in the methodology chapter (see Section 2). Topics covered by the questions, whether oral or written, included the following:

- The overall coverage and completeness of the A6.4 SD tool;
- Its usability: how the A6.4 SD tool is integrated into the activity cycle;
- The language used in the A6.4 SD tool: how useful the guiding examples are; how much effort and time is needed to apply the tool;
- The user experience: the workflow and state of digitalization

Experiences of applying the tool were gathered from consultants working on the following cases: VCM, Article 6.2 and the CDM transitioning projects. Further details of these cases can be found in Section 3.1. Below, we analyse the experiences and observations made in the cases with regard to the topics mentioned above.

4.1. Overall coverage and completeness

The three analysed cases demonstrate that the application of the A6.4 SD tool provides a robust structure: The A6.4 SD tool was described as a structured and credible framework for assessing sustainable development impacts, which is crucial for ensuring consistency with the SDGs and the "do no harm" principle, while facilitating systematic risk identification, mitigation, and monitoring through DOE validation and inclusive stakeholder engagement. One case called it "a structured, qualitative framework" and confirmed that the UNFCCC A6.4 SD Tool is procedurally complete.

However, the major operational challenge common is the significant burden placed on resources and data collection. It was noted that the data collection process was highly resource-intensive, requiring site visits, stakeholder consultations, and alignment with regulatory reporting processes. This necessitated extensive baseline and monitoring data, which are necessary for a credible assessment. For instance, indicators had to be derived from existing national sectoral documents, such as gender strategies, climate policies, and other Environmental Impact Assessment (EIA) reports. One case described the most significant conceptual difficulty as the "macro micro gap" between the SDGs and the project's contribution to them, alluding to the fact that the A6.4 SD tool's requirements are set at global (macro) level, but these have to be translated into project-level indicators at (micro) project level.

Where experiences with the application of the A6.4 SD tool diverge, the cases highlight specific functional or efficiency gaps in the framework:

- One case study highlighted critical safeguarding deficiencies, noting that although the tool emphasises the importance of referencing safeguards throughout the activity cycle, it does not establish a direct link to the 6.4 grievance mechanism.
- During the interviews with stakeholders a site visit was held to inform the application of the A6.4 SD tool, where participants raised several issues regarding the project's design and implementation.
- While this must be seen against the project's early status in the project cycle, it also raised the question of timely stakeholder inclusion, the timing and avenues of filing complaints, and their inclusion in the project cycle.

Other observations focused on the assessment methodology, noting that the SD tool places greater emphasis on expert justification and documentation than in measurement. This qualitative approach was contrasted with the observation that the SDG tools of other GHG schemes offer more quantitative,

outcome-based, activity type -specific approaches. This focus on documentation may present challenges if projects in a PoA are implemented across multiple countries.

Further observations also identified a procedural gap in Step 1 of the A6.4-FORM-AC-017, which asks for the selection of host Party objectives that are not available in the typical project monitoring reports or project-specific safeguarding tools. Additionally, it was noted that most voluntary schemes offered a selective SD range, with no pressure on developers to report neutral or negative aspects.

One case study revealed that the conceptual complexity and efficiency issues could potentially lead to "reporting fatigue". Translating SDG targets at global and national levels into activity level indicators is complex and only a small portion of the 232 unique indicators in the 2030 Agenda have indicators that may be directly eligible for the project level. It was also pointed out in this context that accessing policy information can be difficult in certain host countries where ministry websites are not very effective. From an operational perspective, it was suggested that the risks relating to human rights, labour, and health and safety could have been consolidated into one safeguard element, as the current redundancy was causing both 'reporting fatigue' and confusion among respondents.

4.2. Usability

The general experience of the cases concerning the usability of the A6.4 SD tool highlights shortcomings in terms of technical implementation and the establishment of indicators for SD assessment and monitoring. It was revealed that applying the A6.4 SD tool is highly technical and repetitive, which leads to usability challenges. The tool was described as poorly digitised and PDF-based, requiring familiarity with UNFCCC-specific procedures and terminology. This poses a challenge for less experienced users.

Regarding the establishment of indicators for SD assessment, experience from the pilot cases shows that little guidance is available on how to formulate activity-level SD indicators. For example, in the absence of pre-set indicators for the labour element (SDG 8: Decent Work and Economic Growth), the assessment lacked specific measures for quantifiable outcomes. These included the number of full-time skilled jobs created in plant operations, the proportion of casual workers converted to formal employment and the percentage of workers covered by occupational health and safety training.

Without this guidance, project developers must design the necessary qualitative and quantitative metrics independently. While this step can be time-consuming for unexperienced users, this self-designed approach also risks inconsistent reporting across different projects and host parties, ultimately diminishing the comparability and credibility of the resulting data.

In addition to these technical and structural challenges, the tool's usability is hindered by its dependence on existing documents such as Environmental Impact Assessments (EIA), which are not integrated directly into the tool itself. A particular concern emerges during the evaluation process when assessing indicators with multiple options (for example, EGQ 2.1 has four distinct options). If a project fails to meet all these options, it is unclear whether the entire indicator should be scored as meeting or not meeting the criteria.

4.3. Integration in activity cycle

Based on the piloting experiences, the SD tool is considered to be effectively integrated into the Article 6.4 project cycle. This covers activity design, validation and verification phases. It is noted that the tool is embedded as a mandatory step that successfully aligns activity design with sustainable development objectives, safeguarding requirements and host Party priorities.

Utilisation of the tool has been hindered by challenges relating to technical demands, resource intensity and a lack of standardised metrics. Observations underpinning this include the following aspects:

Resource intensity and technical complexity: The SD tool proved to be highly resource-intensive, requiring field validation and lengthy consultation. This intensive effort stemmed from the difficulty in obtaining technical information, as questions related to issues such as the effect of open sugarcane burning on

communities or gender equality proved too technical for some stakeholders.

Functional Scope Creep: Finally, it was observed that the SD tool sometimes transcended its intended purpose. In one instance involving a power project that lacked a completed Environmental Impact Assessment (EIA), applying the tool effectively mirrored an EIA exercise rather than safeguarding validation.

4.4. Language and use of guiding examples

Regarding the practical utility of the guidance provided in the tool, the piloting experiences indicate that the guiding examples in the Excel forms tend to be generic, offering only limited practical assistance. This broadness in framing allows for substantial subjective interpretation, which introduces the risk of inconsistencies in reporting.

At the indicator level, there is clear interest in a more predefined direction. It was therefore recommended that an additional guidance document be developed which would explicitly list potential indicators related to specific SDGs.

The experience concerning comprehension and language varied significantly based on the user's level of expertise. Consultants reported that they generally understood the language employed. However, the tool uses “legacy legal language” which is described as complex and bureaucratic. This often consists of very long sentences which potentially hinder overall comprehension.

Another case study came to a similar conclusion, observing that the language used was beyond the comprehension level required for non-technical stakeholders, including community representatives and casual workers. This presented a significant challenge when trying to engage these groups. For example, complex SDG-linked terminology such as “affordable energy” needed to be translated into relatable terms, such as lower electricity bills, to be successfully conveyed. Furthermore, translating from English into local languages was challenging, often resulting in the original meaning or intention becoming unclear.

Even within the technical framework, specific requests caused uncertainty, particularly regarding the difference in meaning and use of “No” versus “Not Applicable” in the SD Tool’s Excel forms.

4.5. Effort and Time needed

Based on the experiences of the analysed cases, the SD tool is largely viewed as requiring additional reporting efforts, necessitating a significant time investment rather than offering procedural simplification. The mandatory application of the SD tool clearly adds to the workload for implementing activities. . It was noted that the tool can be highly time-consuming due to its manual nature and reliance on qualitative justifications. Another case study highlighted that the tool required time-consuming, extensive stakeholder consultations, site visits and follow-up activities.

In terms of the amount of time investment required, the insights gained from the pilots give a mixed picture, acknowledging the need for significant effort, but also comparing the time needed with using the Gold Standard. At this point of time, however, no simple answer can be given to the question “how much extra effort does the SD tool cause?” In order to get a thorough understanding of resources and effort needed, much more data would be required, and it would need be real-world data from activities actually taking place on the ground.

4.6. User experience, Workflow, Digitisation

Following the application of the tool in its current manual format, the case studies have identified several viable options for achieving a more digitalised reporting solution. A key recommendation is to prioritise a digital, web-based platform for the A6.4 SD tool.

Moving to a fully digital solution would address the efficiency and accessibility issues caused by the current system, which relies on offline manual submission via downloadable forms. Such a system should integrate features observed in other successful crediting schemes, which often utilise fully digital solutions. These include interactive dashboards, automated workflows and real-time reporting functionalities, all of which contribute to a more responsive and transparent project experience.

Specifically, the digital platform must resolve the current fragmented workflow. It was noted that manual navigation leads to duplication of effort, despite the fact that forms are logically dependent on one another (for example, mitigation responses depend on risk identification, and indicator monitoring builds on those responses). To streamline this process, the proposed digital platform should incorporate automated cross-linkages between forms. This automation would also help to eliminate problems caused by repetition within and between the current Excel tools regarding linked and non-linked cells.

Further improvements focus on internal quality control and user support. It is suggested that the digital solution incorporates features such as real-time validation checks, colour-coded alerts for incomplete or inconsistent entries and integrated guidance notes. Digitisation would also solve technical issues such as the frequent malfunctioning of macros in forms like A6.4-FORM-AC-017 during the pilot phase.

4.7. Interoperability

While the issues raised above show areas for improvement, the overall concept of the A6.4 SD tool has the potential to become industry standard because of its innovative approach and best practice elements such as the assessment of both positive and negative SD impacts (cp. Arens and Schell 2025). Alignment and convergence towards harmonized SD impact assessment across standards was mentioned in the piloting case study assessments, but is also voiced by prominent market players such as IC-VCM, which recently called for exploring “opportunities for long-term collaboration with the Paris Agreement Crediting Mechanism, governments and market stakeholders to evolve the framework” (IC-VCM 2025).

In addition, the A6.4 SD Tool can streamline the reporting under the Article 6.2 framework. In initial reports on cooperative approaches, participating countries are required to describe how a cooperative approach minimises and avoids negative environmental, economic and social impacts, is consistent with the SD objectives of the country, and applies any safeguards and limits.[2] Use of the A6.4 SD tool is not mandatory in this case, but it provides an efficient, and structured way to assess and document the above requirements.

[2] Para 18(h) of the Annex to decision 2/CMA.3

5. OPTIONS FOR IMPROVEMENT

This section takes up the key issues and current challenges for the A6.4 SD tool, as identified in the case studies and, in a second step, derives areas for continuous improvement, both on the conceptual level as well with regard to practical and technical enhancements.

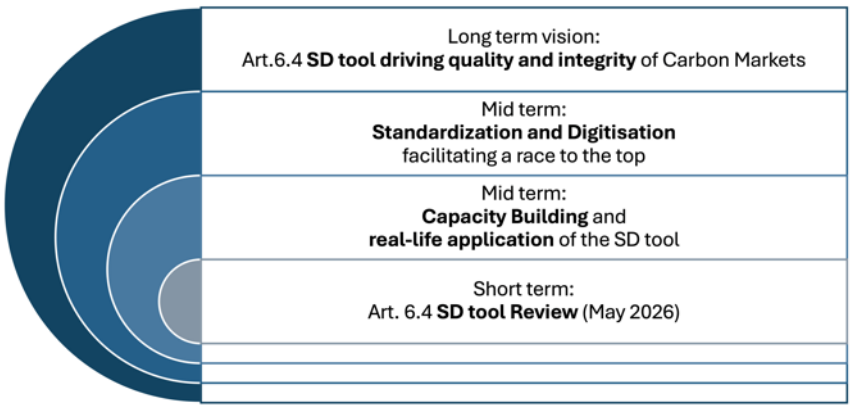
The following table summarises key issues and shortcomings revealed by the case studies.

Table 2: Key issues and challenges identified in the piloting case studies

Overall approach and coverage
• Focus on qualitative assessments and justification, in addition to quantitative assessment of outcomes • Data-collection is resource-intensive, need for stakeholder input and expert judgement • Link to host country policies and SD priorities not established • Clear integration to Environmental Impact Assessment (EIA) is missing • Continued stakeholder interaction from early stages is needed • Gap between national SDG targets and the development of project-specific indicators • Lack of activity or sector-specific, pre-defined indicators for users to pick from
Usability and practical application
• Lack of digital interface and cumbersome manual input format • Missing interlinkage between Excel-Forms, need for double entries (“Excel-burden”) • Guiding examples seen as too generic and of limited use in current form • Unclear assessment criteria and use of input options (e.g., scoring rules, ”No” vs. “Not Applicable”) • Built-in guidance and tool-specific manuals are missing • Language is too technical and UNFCCC-specific vocabulary for understanding by broader audience and newcomers
Effort and time needed
• Use of the A6.4 SD tool is perceived as time-consuming and requiring significant resources • The amount of extra work depends on professional background, work experience in the field, and type of activity • Lack of a digital interface. Automated processes could save time • Highly technical or legal language hampers understanding and costs time
Interoperability
• While there are areas for improvement, the A6.4 SD tool’s approach has potential to become industry standard • In the process of developing best practice and fostering a race to the top, standardization and convergence should be sought across carbon market standards • Processes such as the IC-VCM’s continuous improvement work programme can facilitate this

The piloting has shown that users perceive the tool as structurally complete, but complex, too technical and lacking user-friendliness. This chapter is going to discuss options for improving the PACM A6.4 SD tool, grouped into different time perspectives , ranging from short-term actions with regard to the review of the SD tool early 2026, to mid-term activities and, finally, a long-term goal for uptake of the SD tool to drive quality and integrity in carbon markets. This approach is illustrated in Figure 3.

Figure 3: Layers of SD tool improvements



5.1. SHORT TERM INCREMENTAL IMPROVEMENTS

Overall approach and coverage

One relevant area for incremental refinements is at conceptual level, focusing on enhancing conceptual clarity and rigor.

Streamlining for Clarity

Check for conceptual overlaps or repetitions and streamline assessment categories. Certain risks—such as those related to land and water, or air and pollutants—tended to produce similar or repetitive answers. Similarly, elements dealing with gender, labour, and human rights frequently overlapped, with respondents unsure of how to differentiate between the categories.

Refine the risk assessment requirements, particularly for critical thematic areas. For example, review and update form 15, Element 1 "Energy" to move beyond basic energy supply to incorporate aspects like improving reliability of supply for rural communities, or enabling productive uses of energy, thereby ensuring the tool captures the full scope of sustainable development ambition and rigor.

Strengthening qualitative and quantitative approaches

Explore shifting relevant areas of the tool towards more complementary quantitative approaches, as the tool in its current form remains largely qualitative, PDF-based, and manual in nature. Quantifiable indicators can support expert judgment and stakeholder input toward outcomes that are more easily verifiable and measurable.

Enhancing access to host Party documentation and procedures

Systematize the process for activity participants to access crucial host Party documentation and regulations, such as SD priorities and further relevant policies. Currently, obtaining this information—such as the relevant climate policy documents, SDG strategies, Gender Action Plans, and Biodiversity Policies—is often difficult and cumbersome for activity proponents. Develop clear guidance on priority national data sources, or explore the establishment of an integrated, centralized database linked to the A6.4 SD Tool. This will ensure systematic access to relevant national legislation and policy documents. It

is acknowledged that this step will take time. It is important to begin the scoping and planning phase immediately by identifying priority data fields and consulting with Host Parties on data sharing.

Mandating Integration with National Assessment Procedures

Consider establishing a mandatory and formal link between the A6.4 SD tool's assessment and existing host Party national data and procedural safeguards, utilizing the Environmental Impact Assessment (EIA) as a key reference point. This procedural integration enhances the validity and rigor of the SD claims and avoids duplication of environmental due diligence efforts.

Improving guiding examples

Make the existing guiding examples provided in the current Excel-based forms significantly more specific and detailed, as the existing broad framing allows for too much subjective interpretation, which ultimately undermines consistency across different activities. For the short team, focus initially on developing a high-priority set of comprehensive, detailed examples, based on existing data, e.g. from voluntary schemes, and continue with a medium-term effort in conjunction with the “sector-specific indicator” approach (see below).

Usability and practical application

Building in guidance and workflow support

Develop a comprehensive, built-in guidance directly into the A6.4 SD tool's interface, along with a detailed workflow description that effectively walks users through each step of the assessment process. A first set of training material and interactive how-to-guides would help ensuring that activity proponents can accurately navigate the tool without expensive external support, thereby reducing errors and transaction costs.

Resolving technical ambiguities and enhancing clarity

Undertake a targeted technical review to resolve critical ambiguities and functional deficiencies within the current tool's framework, such as clarifying the scoring methodology for indicators with multiple sub-options (e.g., Q2.1 with four options). Specifically, establish and clearly communicate whether an indicator is met only when all sub-options are satisfied, or if partial fulfilment is recognised.

Provide explicit definitions and guidance on the correct use of the responses "No" versus "Not Applicable" to ensure accurate data capture and avoid misinterpretation during validation.

Enhancing accessibility

Beyond technical features, address accessibility and clarity of the tool. Shift to clearer, plain English will serve to “demystify” the tool, minimize errors, and make the content accessible to a broader audience unfamiliar with highly technical, some bureaucratic UNFCCC-specific language, especially to users with limited legal or technical backgrounds.

Improving technical functionality

Systematically check and ensure the seamless, functional automation of data flow—for example, where results or inputs from Form 15 are required to correctly populate calculations or summaries in Form 16. This will help eliminating manual data transfer and reduce potential human error.

5.2. MID-TERM ADVANCEMENTS

Regarding a mid-term evolution strategy for the tool, recommendations focus on digitisation, sector-specific indicators, and capacity-building, which serve for addressing the key barriers to A6.4 SD tool scalability and consistent, high-integrity application.

Overall approach and coverage

Developing sector-specific indicators to enhance rigor and contextual relevance

Address the persistent macro-to-micro gap by clearly connecting the overarching global SDGs with national SDG targets and to the tangible, activity-level contributions.

Streamline data entry and reduce the considerable resource load, develop and integrate pre-defined, standardised indicators at the sector- or activity-type level. While the use of these standardised metrics should remain optional to preserve flexibility for innovative activities and experienced users, their presence will drastically simplify measurement and improve the comparability of results.

As this will cause the need for concerted data gathering and analytical review, mandate a dedicated effort to systematically gather and analyse data on the A6.4 SD Tool's current application and performance across various sectors and activity sizes.

Consider strategic collaboration and knowledge exchange with other carbon market standards and key data providers to leverage existing expertise and data. This collaboration is crucial for ensuring the A6.4 SD tool remains the high-integrity benchmark and that it works across various sectors and activity sizes. Special attention should be given to the exchange with umbrella initiatives like the Integrity Council for the Voluntary Carbon Market (ICVCM), in order to identify best practices and potential areas of convergence. Consulting with data providers such as Allied Offsets and others could help exploring mechanisms for integrating reliable external data sources and automating data collection for the quantitative metrics prioritised in the long-term strategy.

Usability and practical application

Digitising the tool for improved efficiency and accessibility

Give priority to creating a fully digitalised, web-based platform, enabling actionable, data-driven assessment. The pilot applications indicated that the current format (e.g., Excel forms) presents a high barrier to entry, complexity, and transaction costs for activity developers, especially SMEs and users in developing countries.

This transition is critical to resolving the immense resource intensity associated with manual, unlinked Excel input. Users specifically demand a streamlined experience incorporating automated workflows and interactive features, such as dashboards.

A new digital platform should include systematic cross-linkages between related data entry forms (e.g., automatically transferring data between Form 15 and Form 16) to eliminate duplication of effort and prevent inconsistencies. Furthermore, the system should incorporate real-time validation checks, colour-coded alerts for incomplete or contradictory entries, and context-sensitive, integrated guidance notes directly within the forms. This approach will also serve to support interoperability across external systems or databases, opening up adaptability in multi-platform environments.

Setting up targeted capacity building measures

Design and support the development of comprehensive training programmes on the A6.4 SD tool to foster uptake and further development, utilising non-technical language and country-specific examples. Design and conduct readily available webinars, explanatory video tutorials, and dedicated online help desks, especially for first-time users, using peer-to-peer approaches, learning by doing, in order to localize capacity building to retain capacity in host countries. Make use of established partnerships with UNEP CCC A6 pipeline, UNFCCC, support programmes such as A6IP, SPAR6C or GCM, African Alliances, MDBs, Project Developer Forum and VVBs.

Support DNA‘s on challenges in integrating SD in carbon markets, such as formulating and communicating SD priorities, approval process complexities for SD aspects in mitigation activities, and MRV barriers. This could include targeted events and products explaining benefits and options for using the Art. 6.4 SD tool, options for host Parties in integrating the SD tool into Article 6 activities, reducing costs for host Parties in assessing SD criteria for Article 6.2 activities and related reporting and using the tool for authorization

under VCM. Consider further topics include benefit sharing agreements and local stakeholder engagement incl. local communities and indigenous people in a balanced mix of country-specific and broader, peer-to-peer learning knowledge-sharing activities.

Foster uptake by addressing the needs of buyers' side by focusing on activity quality criteria and integration in buyers' national strategies and priorities, successful implementation in activities and MRV challenges and communication towards national audiences and private sector buyers. Consider designing trainings for selecting SD criteria and priorities in buyer country policies, network events with Article 6 purchase programs, and exploring the willingness to pay for SDG impacts to drive a race to the top.

5.3. THE LONG-TERM PERSPECTIVE

Continuing improvement activities on the tool

Apart from the three focus areas for mid-term evolution, continue improving the A6.4 SD tool regarding selected topics, such as project cycle integration, strengthening SDG linkages, and streamlining for clarity and efficiency. This applies to short-term recommendations such as strengthening complementary qualitative and quantitative assessments, or enhancing access to Host Party documentation and procedures, which will not be solved by short-term incremental changes. A further action area could be reviewing the integration of safeguard assessment and SD impact assessment in the PACM activity cycle, as the pilot activities have shown that stakeholders have voiced concerns about project activities, which make a closer linkage between stakeholder inclusion, SD assessment and the grievance mechanism advisable. The continuous stakeholder engagement process under the PACM is a very good step in this regard.

6. CONCLUSIONS AND NEXT STEPS

In the following, we develop a proposed action plan for continuous improvement of the A6.4 SD tool towards achievement of the long-term goal. Promoting A6.4 SD tool uptake among carbon market stakeholders can position the PACM as the Party-driven UN best practice standard driving quality and integrity for sustainable development.

6.1. ACTION PLAN FOR THE A6.4 SD TOOL TO DRIVE A RACE TO THE TOP

Carbon market stakeholders play different roles to promote uptake of the A6.4 SD tool. An action plan with proposed improvements is proposed for discussion and agreement with key partners as shown in Figure 4.

Figure 4: The SD tool actors

The UNFCCC Secretariat and SBM

- Develop and integrate **pre-defined, standardised indicators** at sector- or activity level. Keep this feature optional to preserve flexibility for innovative activities and experienced users. Align with the ICVCM continuous improvement program for sustainable development, safeguards and benefit sharing.
- Explore the systematic integration of **complementary quantitative approaches**, as the tool currently relies on qualitative justification and expert input, to improve empirical foundation of the assessment and make outcomes more standardised for ease of measurement and verification.
- Consider enhancing the SD tool with **clearer links to national assessment procedures** especially Environmental Impact Assessments (EIA) in order to enhance validity and avoid duplication of efforts.
- Make the current **guiding examples more specific and detailed** and complement with integrated guidance notes directly within the forms. Incorporate real-time validation checks, colour-coded alerts for incomplete or contradictory entries.
- Begin working towards a **digitalised, web-based platform** for assessing SD impact and safeguards. Incorporate automated workflows and interactive features, such as sophisticated dashboards, and include systematic cross-linkages between related data entry forms
- Shift to **clearer, non-technical language** to minimise errors and make the content accessible to a

broader audience

- Support uptake and usage of the tool through **webinars, explanatory videos,** and dedicated online help desks, especially for first-time users.

DNAs

- Develop or support transparent carbon market frameworks that clearly lay out **Sustainable Development priorities**, related climate policies and activity related documents as well as relevant procedures.
- Work towards offering a central **national data platform for activity proponents** to check further relevant national policies and documents, such as Gender Action Plans.
- Make SDG-related policies as concrete as possible and, if applicable, develop goals and indicators with a high level of granularity so as to **bridge the macro-micro gap for SD impact** assessments of projects.
- **Use the A6.4 SD tool for transparency reporting** under Article 6.2 as well as reporting on Sustainable Development Goals and share knowledge and experiences.
- Build relevant national **capacities**, train staff and use exchange fora such as the DNA forum, Carbon Market Alliances and other relevant.

Buyers

- Design **transparent acquisition policies** factoring in clear quality criteria for expected SD impacts and safeguards.
- **Support host Parties**, activity developers and other actors through capacity building and knowledge exchange.
- **Show willingness to pay for verified SD impacts** that contribute to local sustainable development benefits and reflect high-integrity credits.

VVBs

- **Support the improvement, revision and digitisation** of the A6.4 SD tool for the development of standardised activity specific indicators, driving down the costs of validation and verification.
- **Train staff** for assessing SD impacts and support of activity participants.
- **Share knowledge** and experience at relevant fora and occasions.

Voluntary market actors

- Consider **aligning SD assessment with UNFCCC benchmark.**
- Strive for **convergence**, e.g. in the context of IC-VCM's continuous work programme.
- Continue sharing knowledge and best practice, especially regarding **digitised approaches and methodologies**.

The Sustainable Development Initiative

- Support UNFCCC/SBM in the May 2026 **review of the A6.4 SD tool.**
- Launch **a global SDG impact knowledge hub** for PACM and Article 6.2 activities aligned with

national and global targets hosted on the UNEP CCC Article 6 Pipeline

- Support **technical work** supporting the UNFCCC Secretariat for development of activity-type specific indicators.
- **Facilitate host country data collection** for easy access of activity proponents, particularly on host Party Sustainable Development priorities, carbon market frameworks, and relevant national SDG-related policies such as Gender Action Plans or National Biodiversity Strategies and Action Plans.
- Expand and support development of **capacity building** activities with the UNFCCC RCCs, A6IP and others.
- **Support DNAs** through trainings and exchange fora, and advise in terms of data collection and aligning SDG assessment with national policies and goals.
- Develop **support measures for acquiring Party quality criteria** development, SD policies, ways to make SD impacts of supported activities visible and tangible for the general public.

6.2. NEXT STEPS

In order to support the continuous improvement process, a coordinated, concerted effort by all carbon market stakeholders is required. The SDI intends to convene a strategic dialogue forum, discussing ways to best design this process with the aim to making the A6.4 SD tool the international best practice standard and promoting a race to the top. Elements to feature in this discussion should comprise not only enhancements to the tool and targeted capacity building, but also tailor-made activities for specific stakeholders, such as potential buyers and their needs in terms of transparency and reporting to the general public on the quality and integrity of the projects they support.

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