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Document reference number and title: (Recommendation from the MEP to SBM020)

Draft Methodological tool: Reversal risk assessment

Item	Section no. (as indicated in the document)	Paragraph/Table/Figure no. (as indicated in the document)	Comment (including justification for change)	Proposed change (including proposed text)
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1	-	32-38	I appreciate the the opportunity to comment on the Draft Methodological Tool of the Reversal Risk Assessment – Annex 07 of the Article 6.4 Mechanism (MEP014). Topline comment: As a prominent scientist studying durability and permanence of forest carbon with over 150 peer-reviewed publications in this area, I express my strong support of this draft tool and the approach presented for addressing natural reversal risks, including the data produced in the Appendices. This approach has robust grounding in the peer-reviewed literature, reflects the best available science, and accounts for variation in natural risks spatially and with climate change. This approach should be accepted and should not be altered, as no existing alternate approaches are scientifically robust or likely to guarantee the permanence of climate mitigation outcomes of A6.4ERs. I wish to note as well that while this draft is focused on reversal risk and buffer pool contributions for activities that reduce the consumption of non-renewable biomass such as clean cooking activities, the methodological tool is developed to also address forest carbon crediting protocols, including Improved Forest Management (IFM), Reducing Emissions from Deforestation and Forest Degradation (REDD+) and Afforestation/Reforestation (A/R) protocols. Criticisms that this approach should not be used because it is based on only a single study are incorrect and flawed for three major reasons: 1) the documented source of the data arises from a series of high-impact and high-quality studies over the past six years that form the theoretical, analytical, and quantitative basis of the data source – this is a broad body of evidence and scientific literature coming from dozens of leading independent experts in the fields and prominent scientific institutions (Anderegg et al. 2020, Science; Anderegg et al. 2022, Science; Wu et al. 2023, Nature Geoscience; Acil et al. 2024, Nature Sustainability; Anderegg et al. 2025, Global Change Biology; Wu et al. 2026, Nature), 2) this is the best-available evidence in the scientific literature currently, and 3) no scientifically robust alternatives exist currently or to my knowledge are provided by commenters. Such criticisms, including	No changes proposed.
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			those around uncertainty treatment, which is included in the draft tool as scenario-based that is widespread among climate science studies (e.g. Shared Socioeconomic Pathway scenarios), imply either that complete scientific consensus and complete uncertainty quantification are both prerequisites for policy decisions – meaning in that line of logic that no A6.4ERs should be allowed in the next 5-15 years until such terms are met – or that a non-robust and scientifically-unjustified alternate approach should instead be used, which would fundamentally undermine the permanence and climate mitigation impact of A6.4ERs. It's important that this tool be applied when clean cooking activities reduce losses in above-ground woody biomass. As this tool is based on the best available existing science and only robust approach in the academic literature, it should be applied to these protocols and other nature-based activities in the land use sector. For forestry applications under Article 6.4, this approach should be directly adapted at higher spatial resolution such as the underlying 8 km grid to account for well-documented higher resolution variation in natural risks across space. My subsequent comments focus on ensuring that reversal risk assessments are based on the best available, robust science on permanence and durability that will be absolutely necessary for climate mitigation success of A6.4Ers in clean cooking and forestry applications.	

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2	Cover note	23-24	The separation of wildfire risk from other natural risks is scientifically well justified due to 1) the significance of wildfire-related reversal risks, 2) the climate-sensitivity of wildfire in many regions, and 3) the ability to distinguish wildfire-related forest carbon losses from other natural drivers of forest carbon loss through peer-reviewed, open-source, and published satellite datasets (e.g. Acil et al. 2024; Sims et al. 2025). Thus, the decision for the MEP to subdivide natural risks into wildfire and all other natural reversal risks is well justified, reasonable, and scientifically robust. Furthermore, risk mitigation activities that could be considered in the future must be considered separately for wildfire, where some actions are possible in some cases that reduce risk based on the peer-reviewed literature, from other disturbances where risk mitigation activities are unknown or less effective.	No changes proposed.
3	Cover note	25	I agree with the proposed approach of using default values based on Wu et al 2026 for reversal risk factors and reversal risk reduction factors. This is a very robust source data study from leading experts that builds on a suite of multiple high-impact studies to develop these datasets and models and the only one in the literature that provides robust data necessary for delivering the climate mitigation benefits of A6.4ERs with respect to permanence.	No changes proposed.

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4	5. Reversal risk assessment	22	Human-induced reversal risk factors, such as management failures, regulatory uncertainty and social instability, political, governance and legal risks, and others, have not yet been defined in this draft, and do not have published, quantitative estimates in the academic literature currently. Human-induced reversal risks depend on future economic, political, and social factors, which are much harder to model from historical trends alone. As such, modelling these future risks may be very challenging, but these risks are likely substantial and important to consider and take a conservative approach by the atmosphere for Article 6.4 to succeed. A reasonable and promising approach for quantifying human-induced reversal risks to have an empirical basis for determining these parameters would be to leverage evidence from voluntary and compliance forest carbon markets around project failure due to a range of human-driven factors, such as a survival analysis of projects over time. Such evidence could help inform human-induced reversals risks, and may also inform whether failure rates differ by region or project type. I am aware of some academic work that is in-progress here and should be publicly-available in the coming months that could provide a valuable reference to inform these decisions.	No proposed changes.

5	5. Reversal risk assessment	16-18	Fbuffer,i,t is used in mechanism methodologies to determine the number of A6.4ERs to be forwarded to the reversal risk buffer pool account. This calculation requires a procedure for combining the reversal risk ratings for natural reversal risks and human-induced reversal risks. While we currently lack a detailed quantitative analysis globally as to the relationship between natural and human-induced reversal risks, based on all of our extensive research on natural risks and in-progress research on social risks, I believe to a first order they are likely largely statistically independent and thus should be summed, as proposed in this draft by the MEP. These risks are likely independent because the underlying drivers of natural and human-induced reversal risks are different, with human-induced risk largely driven by human behavior and policy changes and natural risks driven by ecological and climatological variation. Considering the range of potential scenarios of risk covariance, the most likely case for non-independence would be where strong governance and economic infrastructure is cited as rationale to reduce natural risks like wildfire. However, evidence strongly suggests that this is highly unlikely to mitigate or reduce high wildfire risk in carbon projects, even in very wealthy, high-adaptive-capacity places like California (e.g. CARB's buffer pool per Badgley et al. 2022 Frontiers in Forests and Global Change; Wu et al. 2026 Nature). Given the lack of evidence for or documented non-independence, assuming independence and combining the risks additively is the most parsimonious and reasonable approach currently and to my knowledge there is no evidence-based approach for an alternate combination. Regarding reversal risk reduction factors, it is crucial that risk rating reductions should only be allowed when there's robust, quantitative, and peer-reviewed scientific evidence that a given activity works in a given region. Currently, voluntary carbon registries allow large (e.g. 50-75%) risk reductions based on a wide array of activities and regions, which is not scientifically supported in many cases (Anderegg et al. 2025, Global Change Biology; Levine et al 2026, Environmental	No proposed changes.
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			Research Letters). Further, it is appropriate and reasonable for the clean cooking applications that natural reversal risk mitigation factors should be set to zero as there are currently, to our knowledge, no quantitative studies that document jurisdiction-wide natural reversal risk mitigation measures that are relevant for cookstove protocols, although this could be revisited in the future if such studies were published. Furthermore, project, jurisdictional and site-specific data may not be demonstrably superior nor demonstrate a more accurate characterization of reversal risk, and have historically led to strong patterns of over-crediting and underplaying risk in forest carbon projects (e.g. Haya et al. 2023). Thus, independent, transparent, open-source, and peer-reviewed risk estimates such as the current approach are far more robust and far more likely to lead to rigorous climate mitigation outcomes than bespoke and gameable project or site-specific data. More granular risk data should only be allowed when two criteria are met that guarantee rigorous permanence outcomes of 1) strict requirements for evidence of a peer-reviewed study demonstrating a statistically robust estimate for that region, and 2) financially-independent verifiers who are not hired by project developers to ensure no potential conflict of interest in verifying the robustness of risk estimates.	
6	Appendix 2. Methods used for deriving...	Future updates	This draft uses the best available, peer-reviewed science so that this tool is scientifically robust with high integrity. This draft has a sufficient mechanism to incorporate additional advances in reversal risk science periodically—every 2 to 3 years to incorporate scientific advances in natural and social risk science, especially those from independent researchers with no individual or organization potential conflict of interest in the carbon market. This is overall an important mechanism that I support.	No proposed changes.

