A6.4-INFO-MISC-008

Information note

Summary of the comments received from stakeholders on the draft methodological tool “Fraction of non-renewable biomass” from the call for public inputs to annexes of the MEP 011 meeting documents

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1. Introduction

1. This note provides a summary of the views submitted by stakeholders in response to the call for public inputs to the draft version of the methodological tool: "Fraction of non-renewable biomass" contained in Annexes to the meeting report of the eleventh meeting of the Methodological Expert Panel (MEP 011).

2. The call for public inputs was open between 03 to 24 February 2026, and a total of 19 submissions were received. The full list of submissions can be found in the appendix to this note.

2. Summary of views to the draft methodological tool "Fraction of non-renewable biomass"

3. The following sections summarize the views expressed in the submissions.

2.1. Cover Note

4. Main points for consideration:

5. "The cover note identifies the role of updated estimates of the fraction of non-renewable biomass (f_{NRB}) but the methodological tool should consider dynamic modelling approaches and broader system boundaries when assessing biomass supply and demand. "The Cover Note correctly identifies the role of default f_{NRB} values in facilitating Article 6.4 activities. However, it places strong emphasis on a single modelling approach (MoFuSS) without sufficiently highlighting the transitional nature of these defaults or the legitimate role of alternative conservative approaches. Explicit recognition that defaults are facilitative instruments—not scientific ceilings—would improve usability and reduce unnecessary barriers for activity developers and their consultants, particularly in complex or non-traditional biomass supply chains" [5].

6. The assessment of f_{NRB} should take into account dynamic f_{NRB} and system boundaries, as simplified assumptions may not adequately represent real-world biomass use and regeneration dynamics. "While the draft A.6.4. tool focuses on improving the estimation of default f_{NRB} values, a more fundamental issue arises when it comes to ER accounting of cookstove activities as the f_{NRB} is used as a fixed ex-ante parameter. Using MoFuSS definition, f_{NRB} represents the imbalance between biomass harvesting and the landscape's natural regeneration. Any project that reduces woodfuel demand necessarily modifies this balance. Consequently, $f_{NRB\,B}$ should not be assumed to remain identical in baseline and project scenarios. This revision has two implications for the design of scenarios with and without projects: 1. Dynamic f_{NRB} considerations: A reduction in biomass demand decreases the over-harvesting, thereby generally lowering f_{NRB} in the project scenario. This variation contributes to additional emission reductions. 2. Revision of the project system: Because f_{NRB} is calculated at landscape level (including households beyond project participants), any project-induced change in f_{NRB} affects the emissions of both project and non-project households relying on the same biomass supply pool. This implies that all those households (from the area used to calculate f_{NRB}) will reduce their emissions because their f_{NRB} changes. Current methodologies capture only the direct reduction in consumption among project households. They do not account for the additional mitigation effect resulting from the variation of f_{NRB} for the broader population included in the original

f_{NRB} assessment boundary. A proposed revision of ER formulas are found in the document outlining the approach in more detail" [9].

7. Any model intended to represent the real-world balance between biomass supply and demand should adequately capture underlying assumptions and uncertainties, as simplified modelling approaches may not fully reflect local conditions. "Any model which is expected to represent the real situation on the ground must not be relied on singularly. It has to be corroborated with measurements on the ground. It is not clear whether this has been done in all the host countries for which the f_{NRB} fractions have been approved" [11].

8. The methodological tool relies largely on legacy CDM approaches, and the framework should reflect more recent methodological developments and improved modelling approaches. "The tool relies almost entirely on legacy CDM TOOL33 values derived from the MoFuSS model (June 2024 version). No independent validation or country-level reassessment has been conducted under the Article 6.4 framework. This assumes that historical biomass dynamics and harvesting patterns remain unchanged, which is unlikely given population growth, urbanization, and fuel substitution trends. This creates a structural risk of systematic underestimation of non-renewable biomass, particularly in rapidly developing countries. We recommend that the MEP allow sufficient flexibility under Article 6.4 to use scenario-based and localized MoFuSS calculations where appropriate, rather than relying exclusively on fixed default values until the next revision of the tool in three years. While default values provide simplicity and predictability, dynamic and localized modelling should remain possible where it improves accuracy and environmental integrity." [12].

9. The importance of considering dynamic f_{NRB} and system boundaries was highlighted, noting that further improvements to modelling approaches and datasets may be necessary to accurately estimate biomass sustainability. "The tool mentions that DNAs/Stakeholders may propose revisions to the default values through a request for revision or may submit new tools for determining f_{NRB} values that result in further advancements in terms of accuracy and conservativeness. However, it does not explicitly mention the possibility of the direct application of more recent/accurate inputs to MoFuSS, based on more recent locally/nationally data, which could lead to more accurate values. It would be important to provide clarity to this possibility so that countries and other relevant stakeholders are encouraged to develop better primary/secondary sources and apply improved input parameters to MoFuSS with a view of using the resulting f_{NRB} defaults immediately", "The tool provides only national and regional default f_{NRB} values. Sub-national defaults would materially improve accuracy and integrity, as f_{NRB} can vary significantly within countries due to differences in forest cover, biomass demand, and regeneration rates. MoFuSS is a spatially explicit model capable of producing sub-national values. The CDM Methodology Panel had already begun work on sub-national defaults. There is no technical barrier to resuming this work — it should not wait for the three-year review cycle "[13,14,19].

2.2. Introduction

10. The development of a dedicated methodological tool for estimating the fraction of non-renewable biomass (f_{NRB}) could improve transparency and consistency across carbon market methodologies "We support developing a dedicated tool to determine the fraction of non-renewable biomass (f_{NRB}) under Article 6.4, as a transparent and standardized approach is crucial for credible mitigation and environmental integrity in biomass-based

energy. In Kenya, biomass is often portrayed as a main driver of forest loss, but this oversimplifies the reality: much biomass comes from non-forest sources, and land-use changes in drylands (≈70% of Kenya) are driven more by bush encroachment and agriculture than by fuelwood demand. Forest degradation is influenced by structural factors like tenure insecurity, agricultural expansion, and policy incentives, rather than biomass use alone. f_{NRB} therefore reflects governance, land-use, and social factors, not just biophysical ones. The proposed tool could enable a shift toward sustainable, managed biomass systems (e.g., agroforestry, community woodlands, restoration-linked production) and help avoid framing all biomass energy as inherently unsustainable, supporting its role in Kenya's energy mix." [3].

11. The introduction should clarify the scope of application of the tool and ensure alignment with broader carbon accounting frameworks "The scope appropriately defines the tool as providing default values for f_{NRB}. However, the current wording does not explicitly recognize that the tool may be applied across diverse activity contexts, including integrated energy systems, logistics chains, and site-specific applications. Clarifying this flexibility would improve consistency of application and avoid overly narrow interpretations that could limit eligible activity types. Add the following sentence at the end of paragraph 1: "The application of this tool may extend to diverse activity contexts where woody biomass use or displacement occurs, including site-specific, asset-specific, or integrated energy and logistics systems, as defined in the applicable mechanism methodology." [5].

2.3. Definitions

12. The definitions of renewable biomass and f_{NRB} are comprehensive but rely heavily on land-based sustainability conditions that may be difficult to evidence at project level and clarifying that the use of default f_{NRB} values does not require project-specific proof of renewability characteristics would reduce uncertainty and verification burden. "The definitions of renewable biomass and f_{NRB} are comprehensive but rely heavily on land-based sustainability conditions that may be difficult to evidence at project level. In practice, activity participants rely on defaults precisely to avoid such granular demonstrations. Clarifying that the use of default f_{NRB} values does not require project-specific proof of renewability characteristics would reduce uncertainty and verification burden. Add the following sentence at the end of paragraph 6(c): "Where default f_{NRB} values from this tool are applied in accordance with the applicable mechanism methodology, activity participants are not required to demonstrate compliance with the renewable biomass conditions at the project level for the purposes of determining f_{NRB}." [5].

13. The MoFuSS model is missing critical parameters in determining the correct value, and does not consider political power differentials between landowners and wood fuel users or the impact of international charcoal markets "The MoFuSS model is missing critical parameters in the determination of the correct value. Most importantly, it is not informed by the differentials in political power between land owners (who benefit from low f_{NRB}) and wood fuel users (who benefit from high f_{NRB}). It may be advisable to delegate authority on f_{NRB} definition to the DNAs directly, as such political questions between conflicting national stakeholder interests are not in scope for international scientific community to comment on. Further, MoFuSS does not consider the positive impact on carbon storage when less than the sustainable amount is harvested from a forest and underestimates leakage through international charcoal markets. Define pragmatic, rounded default values and delegate authority to define standardized national and subnational baselines to DNAs" [8].

14. Clarification is needed on the definition of f_{NRB}, as the definition used in the draft tool originates from earlier CDM guidance and differs from the way f_{NRB} is defined and calculated in models such as MoFuSS. The definition of f_{NRB} in the tool should be aligned with the definition used in the MoFuSS model, since the model defines f_{NRB} as the relative amount of wood harvested above the landscape's natural rate of regeneration and does not include soil organic carbon, below-ground biomass, or dead organic matter. "The draft tool's definition of f_{NRB} is based on earlier CDM guidance and applies at the local level, including all carbon pools. In contrast, the MoFuSS model calculates f_{NRB} at the landscape level using only above-ground woody biomass and dynamic factors like population growth and land cover change. This discrepancy between the normative text and the model creates ambiguity and risks methodological inconsistency, highlighting the need to clarify and align the f_{NRB} definition" [9, 13, 14].

15. Definitions of renewable biomass rely on compliance with national regulations, yet the default values do not systematically integrate official forest inventories, satellite monitoring, or national energy surveys. "Definitions of renewable biomass rely on compliance with national regulations, yet the default values do not systematically integrate official forest inventories, satellite monitoring, or national energy surveys" [12].

16. The definition of renewable biomass should focus on the biomass itself rather than management practices, since biomass used in a project may include both renewable and non-renewable sources even when it originates from the same forest. "The f_{NRB} is further defined as "the fraction of woody biomass saved by the Article 6.4 activity during year y that cannot be established as renewable biomass." This means that f_{NRB} is defined as the local level, as the contribution of pre-project consumption to the permanent loss of biomass. However, this definition of f_{NRB} is different from the definition of f_{NRB} as calculated by the various models. There is a risk of using the same f_{NRB} terminology for different concepts that may not represent the same thing" [19].

2.4. Applicability

17. The methodological tool should consider dynamic modelling approaches and broader system boundaries, as simplified assumptions may not adequately represent real-world biomass supply and demand dynamics. "The applicability section appropriately establishes that use of the tool must be explicitly referenced by the mechanism methodology. However, it does not sufficiently clarify the hierarchy between this tool and methodology-specific provisions. A clearer statement would reduce interpretative risk and facilitate efficient project design by consultants" [5].

18. The assessment of f_{NRB} should take into account dynamic system boundaries and modelling assumptions, as simplified approaches may not reflect actual biomass consumption and regeneration patterns. " MoFuSS (Model for Fuelwood Supply and Sustainability) provides a dynamic, spatially explicit and temporally sensitive modelling approach to estimating f_{NRB}. Unlike static national averages, MoFuSS integrates: Land cover changes, Biomass regeneration, Demographic pressure, Urban-rural demand gradients, trade dynamics. MoFuSS can be run to produce subnational, marginal, and temporally updated f_{NRB} values that respond to actual landscape and energy trends, rather than frozen default snapshots. The ICVCM and Gold Standard have already adopted MoFuSS-derived values as the basis for future f_{NRB} default generation. Aligning Tool 33 with this approach promotes inter-standard harmonization, minimizes conflict, and supports cross-use of data" [9].

19. Clarification is needed regarding how the methodological tool should be applied and updated over time, particularly in relation to modelling assumptions and underlying datasets. "The MEP may wish to clarify the time frame by which the f_{NRB} values would apply and how future changes to the f_{NRB} values may be incorporated. As it is possible that there could be changes to the f_{NRB} value over time, the methodological tool may need to make clear the crediting period(s) that a certain value would apply and how changes in f_{NRB} values would be accounted for within the tool, as developers would need to have stability and some predictability in case of such changes" [10].

2.5. Normative and informative references

20. Additional references and supporting sources may be required to ensure that methodological assumptions and datasets are properly documented. "The current reference list is appropriate but narrowly focused. In sectors characterized by international operations, cross-border supply chains, or non-traditional biomass uses, additional contextual references may support more accurate interpretation without introducing new binding requirements" [5].

21. The methodological tool should include relevant references to modelling frameworks and datasets used to estimate f_{NRB}, particularly those related to spatial biomass modelling approaches. "The tool mentions that DNAs/Stakeholders may propose revisions to the default values through a request for revision or may submit new tools for determining f_{NRB} values that result in further advancements in terms of accuracy and conservativeness. However it does not explicitly mention the possibility of the direct application of more recent/accurate inputs to MoFuSS, based on more recent locally/nationally data, which could lead to more accurate values. It would be important to provide clarity to this possibility so that countries and other relevant stakeholders are encouraged to develop better primary/secondary sources and apply improved input parameters to MoFuSS with a view of using the resulting f_{NRB} defaults immediately." [13,19].

2.6. Default values for fraction of non-renewable biomass

22. The proposed default values for f_{NRB} may not reflect national circumstances and updated national data or studies should be used where available. "Kenya's default non-renewable biomass (f_{NRB}) is set at 29%, but the country's BTR shows that Land Use Change and Forestry (including wood for cooking) accounts for 46 million tCO_2, or 41% of total emissions, with a 20% annual growth rate. This means deforestation emissions are roughly 70% of all other sources combined. While wood fuel is 71% renewable by definition, its use is linked to significant emissions, creating a discrepancy" [1,2].

23. Default values should reflect country-specific conditions and national data sources, including information from national studies and energy surveys "The default national f_{NRB} value of 29% assigned to Kenya in Table 3 appears to be methodologically inconsistent with Kenya's most recent Biennial Transparency Report (BTR) submitted to the UNFCCC. Under Section 2.2(b) of this tool, biomass is considered renewable only where carbon stocks do not systematically decrease over time. However, Kenya's official reporting to the UNFCCC clearly demonstrates systematic carbon stock decline associated with woodfuel use, evidenced by the scale and growth of LULUCF emissions. This creates a methodological contradiction classifying 71% of Kenya's woodfuel as renewable. The tool should allow, or require, adjustment of national default f_{NRB} values where official UNFCCC-submitted national inventory data (e.g. BTRs, NDC technical annexes) demonstrate

evidence of systematic carbon stock decline linked to woodfuel extraction. The supervisory body should review the 29% value in light of Kenya's BTR LULUCF data." [6].

24. Using generalized global or regional default values could introduce significant uncertainty, and country-specific or project-specific studies should be allowed where available. "Due to high transaction costs and small total volumes, it is not tenable for small island states to finance consultants to write f_{NRB} reports. Please provide a realistic default value. It is highly problematic in terms of equal access to the mechanism to provide a very low average f_{NRB} for Asia (by averaging with the low values in India, China, Turkey, etc.) and NOT provide adapted national levels for most of the Asian Small Island Countries. Please provide at least sub-regional default values for pacific island nations. [8].

25. Developing new national studies for every project may involve high transaction costs and feasibility challenges, and methodological requirements should balance rigour with practical implementation considerations [8].

26. "On behalf of Rwanda, the Designated National Authority (DNA) respectfully requests that the data and evidence outlined above, together with the referenced national sources (including EICV7, the National Forest Inventory, Forest Cover Mapping 2019, and forestry statistics and land -use maps), be duly considered in the refinement of the draft f_{NRB} tool. Rwanda encourages the recalculation and adjustment of its f_{NRB} value based on these nationally representative data to ensure that the final methodology yields realistic, conservative, and country -appropriate f_{NRB} estimates consistent with on -the -ground conditions on country'' [15].

27. "India has been given an f_{NRB} of 7. This would make any clean cooking projects un-viable in India from a carbon-financing point of view. Either increase the f_{NRB} or remove f_{NRB} as a parameter for ER calculation of cookstove projects. Cookstove projects should not be seen as "avoidance of deforestation" rather it should be seen as energy efficiency projects because irrespective of f_{NRB} there is a definite reduction in emissions" [7].

28. "It is not appropriate to have a single value for f_{NRB} for large countries like India, China, which have several geo-climatic zones. The MoFuSS model relies entirely on the satellite based assessment of biomass. This should be corroborated by ground-based field studies to assess biomass availability over seasons. The f_{NRB} is an indication of deforestation of a region over time. Low f_{NRB} values should therefore indicate a stable or increasing forest cover. For countries like India where the f_{NRB} values have significantly shrunk (from 85% in previous version to 7% in the latest version of the Tool 30), should indicate significant jump in the forest cover over the past few years. This is not the case in reality. These points therefore necessitate inclusion of ground based studies as an essential requirement. The value that prevails should be preferred over the default value given in Table 3 of the proposed tool. For projects which apply methodologies requiring calculation of f_{NRB} values to estimate baseline emissions should as a first choice carry out an on-ground study of the availability of biomass. This should be done over the crediting period and if the project proponent has chosen renewable crediting period, the biomass study to estimate f_{NRB} value should be done at every renewal of the crediting period." [11]

Appendix. List of submissions

1. The following table contains the list of submissions used in this information note.

Table 1. List of submissions received

Submission #	Stakeholder	Submission date
1	Independent (TM)	6 Feb 2026
2	Kiota Social Innovation Center	6 Feb 2026
3	Cookswell Jikos Ltd.	6 Feb 2026
4	Congo	7 Feb 2026
5	The House of Shipping	8 Feb 2026
6	FIE CONSULT	8 Feb 2026
7	Anaxee Digital Runners	10 Feb 2026
8	myclimate	18 Feb 2026
9	Independent carbon consultant (VC)	19 Feb 2026
10	The Integrity Council for the Voluntary Carbon Market.	20 Feb 2026
11	Independent consultant (VD)	21 Feb 2026
12	Value Network Ventures Pte. Ltd.	23 Feb 2026
13	The Project Developer Forum (PD Forum)	24 Feb 2026
14	DelAgua	24 Feb 2026
15	Rwanda Environment Management Authority (Designated National Authority)	24 Feb 2026
16	Clean Cooking and Climate Consortium (4C)	24 Feb 2026
17	Independent Consultant (O)	24 Feb 2026
18	Columbia University / UC Berkeley Carbon Trading Project	24 Feb 2026
19	BURN manufacturing	24 Feb 2026

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Document information

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