REVIEW OF DEFAULT FNRB VALUE FOR PAKISTAN UNDER CDM EXECUTIVE BOARD'S

1. Background

The Clean Development Mechanism (CDM) Executive Board, in its 125th meeting held in June 2025, approved the default values of the fraction of Non-Renewable Biomass (fNRB) for several countries, including Pakistan. Under this decision, Pakistan was assigned a default fNRB value of 8 percent, derived through the Tool 33 methodology and the Model for Woodfuel and Land-Use Systems Simulation (MoFUSS) framework.

This value was generated through global-scale modelling based on open-source datasets (Google Earth Engine and other global land-cover products) without incorporating Pakistan's national datasets or any ground-verified information. The MoFUSS tool relies on numerous parameters derived from coarse-resolution (approximately 1 km) global databases that are insufficient to capture the country's ecological heterogeneity—particularly in dryland, irrigated, open-canopy forests, and agroforestry systems.

Furthermore, the model lacks clarity regarding the forest/woodland threshold definition used for spatial assessment and did not include any field validation or ground truthing, leading to significant reliability concerns.

 Accordingly, the Government of Pakistan express strong reservations, noting that the value does not reflect the country's actual conditions, data availability, or recent analytical work conducted at national and sub-national levels.

The fNRB value represents the proportion of fuelwood harvested unsustainably from forests and other biomass resources. Hence, accurate estimation is critical for all mitigation projects, particularly under renewable energy. A significantly underestimated value directly affects the potential for carbon credit generation and underrepresents the actual mitigation benefits achieved through sustainable biomass and forest interventions.

2. Review of the CDM fNRB Assessment

The international consultants engaged by the CDM Board used a coarse global approach relying primarily on low-resolution satellite datasets and generalized biomass productivity assumptions. The assessment did not incorporate Pakistan's national datasets, detailed surveys, or verified statistics from the Ministry of Climate Change and Environmental Coordination, Provincial Forest Departments, or national studies.

Key methodological limitations include:

- Low-resolution data – The use of global land-cover maps (approx. 1 km) fails to capture smallholder woodlots, open canopy forests, and trees outside forests.
- Omission of provincial-scale wood-fuel production and consumption datasets
- Neglect of farmland and wasteland fuelwood production, which constitute nearly 84% of the total national supply, and non-forest sources that influence the renewability component.
- The transition from the High-Resolution Settlement Layer (HRSL) to WorldPop data introduces major deviations from Pakistan's national census.
- Absence of ground-verified data and lack of consultation with national experts or institutions responsible for biomass energy statistics.

These shortcomings make the assigned 8 percent value technically inconsistent with national empirical evidence.

3. Preliminary Assessment Based on National Datasets

To address this gap, Pakistan's national experts undertook a very preliminary reassessment of fNRB using secondary estimates from the PIDE (2022) study.[i] This assessment resulted in values of fNRB ranging from 30% – 45% between different provinces. However, this assessment was based on broad national-level surveys (6,291 primary and secondary interviews across provinces, including rural industries, households, markets, and forest zones) rather than localized, empirical field data. This indicates that the actual fNRB value may, in fact, be considerably higher than the current estimates suggest. This ascertains that the true fNRB for Pakistan is substantially higher than 8%. They also align with community and industrial consumption patterns confirmed through extensive field surveys, provincial forest statistics, and socio-economic assessments.

The actual fNRB values at the provincial level will be determined through an ongoing study aimed at quantifying these ratios. These sub-national fNRB values for Pakistan should then be referenced for accurate estimation of carbon credits associated with mitigation activities that reduce emissions by avoiding biomass use.

4. Recommendation to the CDM Executive Board

Based on the technical review and preliminary assessment, the Government of Pakistan does not endorse the default fNRB value of 8% assigned under Tool 33. The figure is inconsistent with national evidence, uses inadequate spatial resolution, and lacks country consultation hence it results in significant under crediting of emission reductions.

It is therefore recommended that:

1. The current default value (8%) be withdrawn for Pakistan, pending revision.
2. The CDM Executive Board may review the sub-national values determined by the national study being conducted by the DNA for Pakistan and formally adopt them as the official fNRB values for Pakistan.
3. In the interim, Tool30 may be utilized as the reference tool for calculating emission reductions for relevant mitigation activities.

5. Conclusion

Pakistan appreciates the CDM Executive Board's efforts to update global biomass parameters to ensure over-crediting risks but emphasizes that standardized global defaults cannot adequately represent countries with complex and heterogeneous biomass systems. The application of coarse datasets has led to a severe underestimation of Pakistan's fNRB, with potential implications for carbon crediting and national mitigation accounting.

Pakistan requests that the CDM Executive Board acknowledge these technical concerns, suspend the 8% default value, and initiate a collaborative revision process involving national data, expert validation, and field-verified evidence to ensure methodological integrity and equity in global biomass accounting.

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[i] PIDE (2022). Comprehensive national assessment of demand and supply of forest products and services. Islamabad, Pakistan: Ministry of Climate Change and Environmental Coordination (REDD+ Readiness).