Project Developer Forum Ltd.
First Floor, Waterside House
Waterside Drive, Wigan,
England, WN3 5AZ
Europe: +49 171 279 8223
office@pd-forum.net
www.pd-forum.net

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Updated fNRB research creates opportunity for new consensus on high integrity cookstove and clean cooking fuel carbon credits

Introduction

Globally, 2.4 billion rely on polluting cooking fuels and technologies, representing an urgent environmental, health and socioeconomic crisis. Emissions from burning wood fuels account for 3% of global emissions, akin to the impact of the aviation industry.

Achieving universal access to clean cooking by 2030 will require an estimated $8-10 billion annually. Current commitments stand at a mere $130 million each year. While clean cooking projects have helped millions gain access to clean cooking fuels and technologies in the past decade, the absolute number of people without access to clean cooking is outpacing the rate of growth. Carbon market funding has proven essential for scaling access to clean cooking, especially to poor, rural households in Sub-Saharan Africa and Southeast Asia.

fNRB context

To measure emissions reductions generated by cookstove carbon projects, developers must consider how much of the wood or charcoal used by a family for cooking is sustainably sourced. This variable is known as the fraction of non-renewable biomass (fNRB).

At its simplest, the fNRB equation looks at the ratio of available biomass (proximity and size of forests, rate of regrowth) to wood fuel demand (population, consumption per capita). Given data availability and wide regional variance, fNRB is difficult to model.

Recent academic reports and ratings agency research have drawn attention to the gap between the current fNRB norm of >0.8 (calculated using the CDM's "TOOL 30") and research from Bailis et al. (2015, data from 2009) which suggested lower values in specific countries, and 0.3 as a global default.

On 13th October 2023, the UNFCCC released draft national fNRB default values for Sub-Saharan Africa based on new statistical modelling by Bailis et al. (2023) using the peer-reviewed "MoFUSS" tool. Importantly, sub-national fNRB estimates are made available for the first time. With the right data inputs, this new model could allow for emission reduction calculations to be grounded in detailed localized analysis, enabling greater accuracy.

The UNFCCC will now open a public consultation process and once codified, the new defaults will likely take effect in Q2 2024. As the Project Developer Forum, plus leading cookstove and safe water carbon project developers, we support the UNFCCC's effort to refresh fNRB defaults and ensure high integrity across the industry.

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What has changed?

Where the CDM's TOOL 30 estimates fNRB nationally, this study uses MoFUSS to estimate fNRB on a "pixel" level (1km2). While MoFUSS gives more granular geographic analysis, and shows evolution over time, any model is only as good as the data and assumptions on which it is built.

We are currently reviewing the research closely and will submit detailed feedback to the UNFCCC's consultation. While we welcome a revised approach, we share concerns regarding certain data inputs and assumptions. These include the use of a global default for per capita wood consumption; the omission of secondary fuel consumption; the treatment of charcoal vs wood; and the modelling of wood supply.

We commend Bailis et al. for their impressive effort in establishing defaults for 43 countries in Sub-Saharan Africa. However, we must ensure that a greater sophistication in statistical modelling is matched with the most relevant local data inputs, including using satellite technology and ground-sourced data. Globally, the data gaps for fNRB calculations are wide, and we call on host country governments, researchers, and funders to take up this challenge.

What next?

As the industry transitions to more conservative fNRB values, we wanted to outline some initial considerations from the project developers' perspective:

- **Standardising fNRB approaches:** The UNFCCC and the Clean Cooking Alliance's 4C consortium are developing a new methodology for cookstove carbon projects. We call on the key registries and standards bodies to work together to align on guidelines for the application of new fNRB defaults, and a unified approach for existing projects and credits that use TOOL 30.

- **Peer-reviewing data inputs and assumptions:** Although the MoFUSS tool has been peer-reviewed, any model is only as good as the data inputs. There is a need for a thorough interrogation of the latest data sets and assumptions used to calculate these defaults. To ensure best practice, we recommend a full peer-review before new fNRB values are implemented.

- **Engaging host country governments:** Now more than ever, there is a need for good local data inputs into forest cover change, under the canopy forest degradation from wood collection, and fuel demand for cooking. We commend initiatives like those from the Government of Ghana to commission more research to generate the best data inputs for the MoFUSS model. Moving forwards, host country governments should be consulted as experts in their own local contexts.

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- **Towards higher integrity:** As an industry, we support the move towards higher integrity across the carbon markets. Greater confidence in accurate, locally relevant fNRB values could translate into higher prices for cookstove and clean cooking fuel carbon credits.

- **Avoiding carbon tunnel vision:** While lower fNRB numbers may provide buyers with greater certainty that 1 ton = 1 ton, we caution against carbon tunnel vision. The fNRB calculation gives equal value to carbon stored in old growth rainforest and the carbon stored in fast-growing saplings. By only assessing the net biomass in a landscape, we risk underfunding projects that protect old forests, valuable trees, and preserve biodiversity. In a world that has already reached 1.2 degrees of heating, and with no credible pathway to the 1.5 degrees Paris target, we question the logic of deeming *any* use of fuelwood for cooking as “sustainable” or “renewable.”

- **Keeping sight of the impact:** Achieving universal access to clean cooking – will require funding and cooperation on a major scale. Carbon markets were established to promote sustainable development, in addition to reducing greenhouse gas emissions. Given the proven SDG benefits of clean cooking, we call on the global community to ensure that sufficient funding remains available for high-impact cookstove projects, best in class technologies, and fuel transition programmes. All families deserve access to safe, clean cooking.

Moving forward we will fully engage with the UNFCCC’s consultation process. Our aim is to ensure that final fNRB defaults and guidelines deliver the most benefit to both people and the planet.

Signed on behalf of the PD Forum’s 43 members, 8 affiliate members, and other leading cookstove project developers including:

Alexandre Dunod
Chief Operating Officer,
Aera

Molly Brown
Head of Carbon Strategy,
BURN

Paul Chiplen
Director of Sales &
Marketing, Co2balance

Erik Wurster
VP, Sustainability and
Environmental Markets,
BioLite

Rich Gilmore
CEO, Carbon Growth
Partners

Tim Bauer
President & COO,
Envirofit

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Europe: +49 171 279 8223
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Evan Haigler
CEO,
Impact Carbon

Ruan de Wet
Managing Director,
Seed Ecology

Nick Marshall
Co-Founder & Director,
TASC

Emilia Giron de Mendoza
Director,
Proyecto Mirador

Esther Altorfer
Chief Strategy Officer,
Sistema.bio

Anantha Karthik Rajagopalan
Director of Carbon Programmes, UpEnergy Group

Dr. Sven Kolmetz. Chair PD Forum