Integrating black carbon into methodologies for clean cooking

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PRESENTATION OVERVIEW

1. IMPORTANCE OF BC IMPACTS
2. METHODOLOGY DEVELOPMENT
3. KEY CHALLENGES
4. METHODOLOGY IMPLEMENTATION
5. PROGRESS AND NEXT STEPS

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IMPORTANCE OF BC

BC has critical impacts

- BC has high warming impacts over shorter timeframes - mitigation can provide immediate benefits
- BC reductions provide multiple benefits: climate, health, infrastructure, economic, agriculture
- Residential energy is the largest anthropogenic source of BC emissions
- Current market focus on CO2 emissions neglects BC's impact

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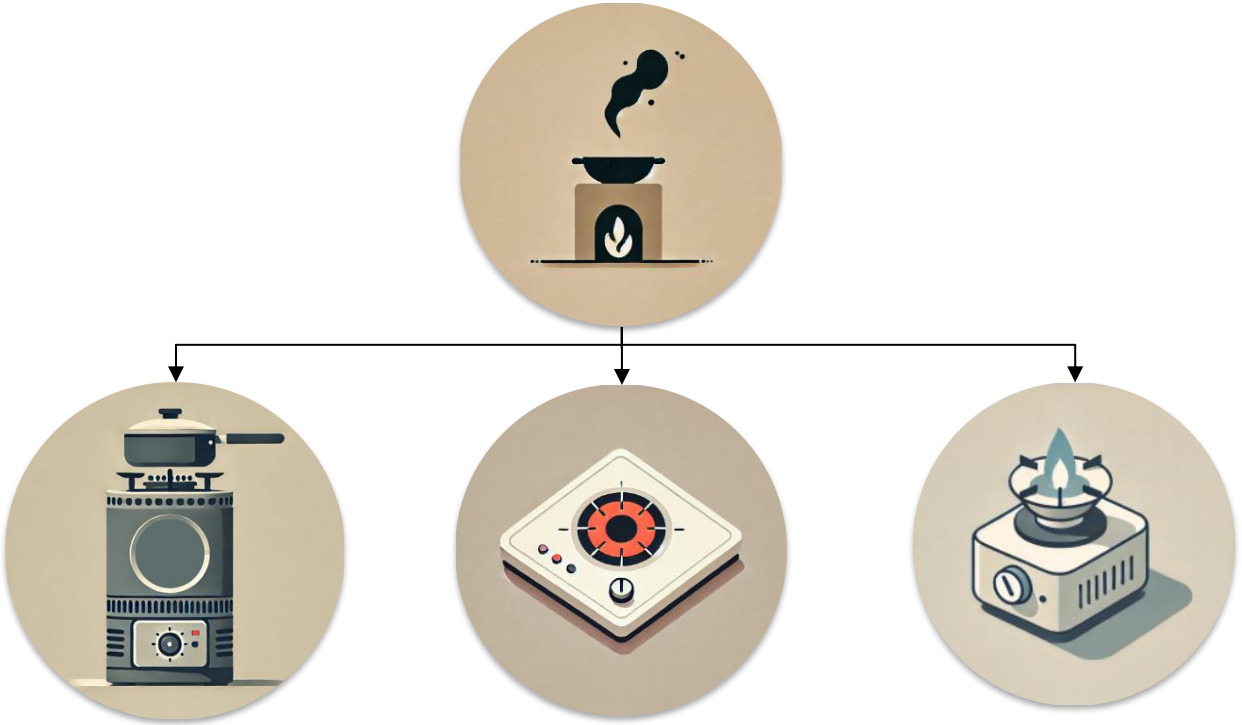
BLACK CARBON METHOD DEVELOPMENT

Project goal and outcomes

Goal: Develop a methodology add on to the current Gold Standard metered methodology

- **Simple approach with no additional monitoring burden**
- **Provide additional revenue through reductions of a critical climate and health pollutant**

Why start with the metered methodology?



- Project technologies have minimal BC emissions
- Easy integration into digital approaches
- Currently the least susceptible to overcrediting

How will the method work?

Add-on approach

- Structured to be an appendix to the metered methodology
- Fuel consumption estimates from the already-in-place carbon program monitoring

Emission factors

- Apply default point-of-use emission factors for black carbon and organic carbon based on **field studies**
- Use standard practice databases for upstream emission factors

Calculate impact

- Convert emissions to metric that fairly and appropriately estimates impact.

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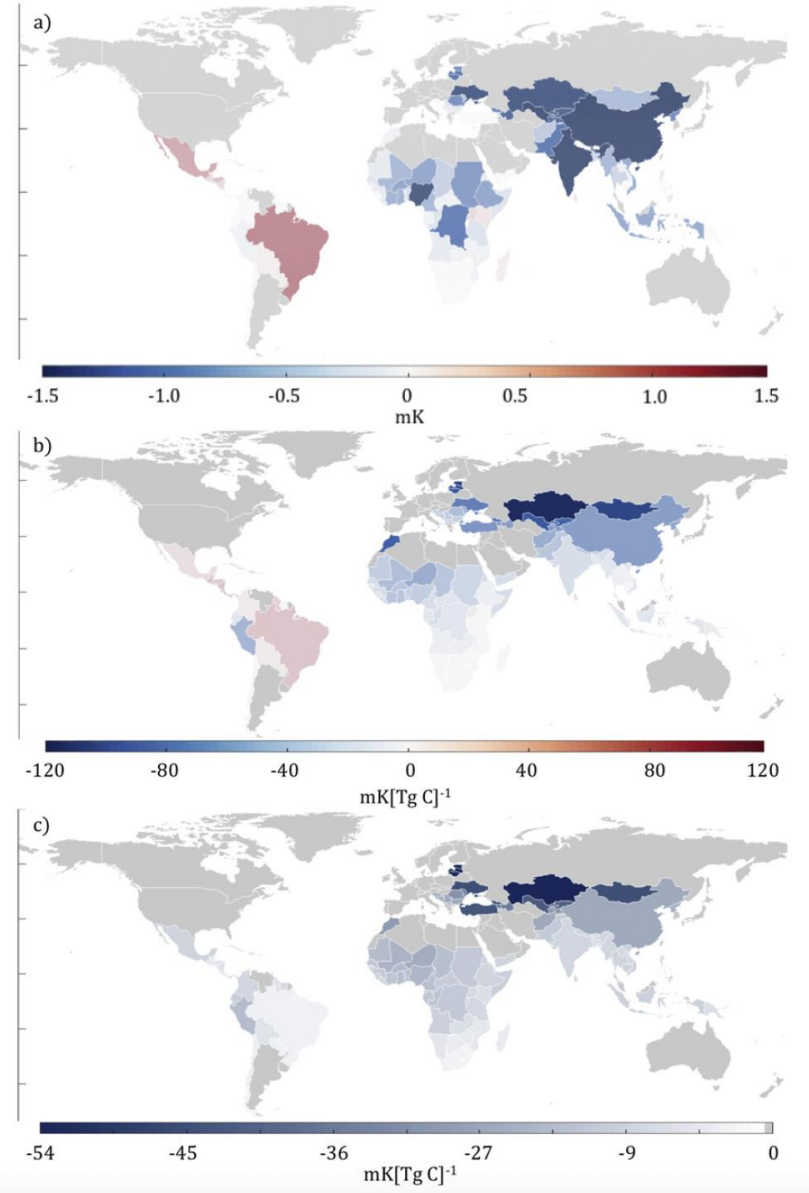
KEY CHALLENGES

Development of a BC impact metric

- BC (and OC) has impacts on much shorter (weeks) timeframe than CO2 (decades)
- BC has differential impacts depending on geography
- Adapting approaches that have looked at how emissions at the country or sector level affect climate trajectory
- CO2 is more closely linked with long-term climate stability
- These approaches take into account location, putting more weight on regions where BC has greater impacts (e.g. near Himalayas)



Lacey, F., & Henze, D. (2015). Global climate impacts of country-level primary carbonaceous aerosol from solid-fuel cookstove emissions. *Environmental Research Letters*, *10*(11), 114003. https://doi.org/10.1088/1748-9326/10/11/114003

Market integration

- CO2-equivalent is the standard for carbon markets
- Is there buyer/investor demand for BC impacts?
- Can we quantify and communicate BC impacts from projects in way that is scientifically sound and digestible?

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PROGRESS AND FUTURE WORK

Current progress

- Literature review to determine default emission factors
- Basic calculations to estimate BC and OC emissions
- Evaluating metrics for impact

Future work

- Formalize and finalize technical components of the method, including the determination of metric
- Develop pathways to integrate BC impacts into markets
- Submit method to Gold Standard for review (target of April)

THANKS!

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