CLEAN COOKING ALLIANCE

Achieving Climate Goals Through Clean Cooking

Webinar

March 30-31, 2022

BERKELEY AIR MONITORING GROUP | CLIMATE & CLEAN AIR COALITION TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS | UNFCCC | UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Webinar agenda

01 Introduction and welcome - CCA

02 Climate and environmental impacts and other co-benefits of clean cooking - CCA

03 Short-lived climate pollutants and clean cooking - CCAC

04 Clean cooking, the Paris Agreement, and NDCs - UNFCCC

05 Overview of measurement, reporting, and verification – Berkeley Air Monitoring Group

06 Technical support from the Clean Cooking & Climate Consortium - CCA

Webinar logistics

- Please submit **questions** through the **Q&A feature**; questions submitted via chat will not be answered.
- Please message about any technical difficulties or logistics via chat to "Hosts and Panelists"
- Please click on Interpretation and choose the English, French or Spanish channel
- If listening in Spanish or French, you can click "mute original audio" under "Interpretation" to avoid hearing quiet English in the background

Acronyms

Acronym	Definition
4C	Clean Cooking & Climate Consortium
BC	Black carbon
CC	Clean cooking
CCA	Clean Cooking Alliance
CCAC	Climate and Clean Air Coalition
CDM	Clean Development Mechanism
CER	Certified emission reduction
CH_4	Methane
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CPA	Component Project Activities
EnDev	Energising Development
fNRB	Fraction of non-renewable biomass
GCF	Green Climate Fund
GHG	Greenhouse gases
GS	Gold Standard
Gt	Gigaton
HAP	Household air pollution

Acronym	Definition
HHE	Household energy
IHME	Institute for Health Metrics and Evaluation
ISO	International Organization for Standardization
JI	Joint Implementation
KPI	Key performance indicator
LMIC	Low- and middle-income country
MRV	Measurement, reporting, and verification
NDC	Nationally Determined Contribution
PA	Project activity
PoA	Programme of Activities
SD	Standard deviation
SDG	Sustainable Development Goal
SLCP	Short-lived climate pollutant
UENP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
US EPA	United States Environmental Protection Agency
WHO	World Health Organization

01

Introduction and welcome

4C provides technical support to LMIC governments to achieve climate goals through clean cooking

The Clean Cooking & Climate Consortium (4C)

02

Climate and environmental impacts and other co-benefits of clean cooking

- Burning woodfuels produces ~1 Gt CO_2e / year (2% of global emissions)
- >50% of anthropogenic black carbon emissions come from household energy use

Forest degradation from solid fuel use leads to negative environment and climate impacts


Loss of biodiversity


Loss of erosion control


Loss of flood control


Desertification


Climate change

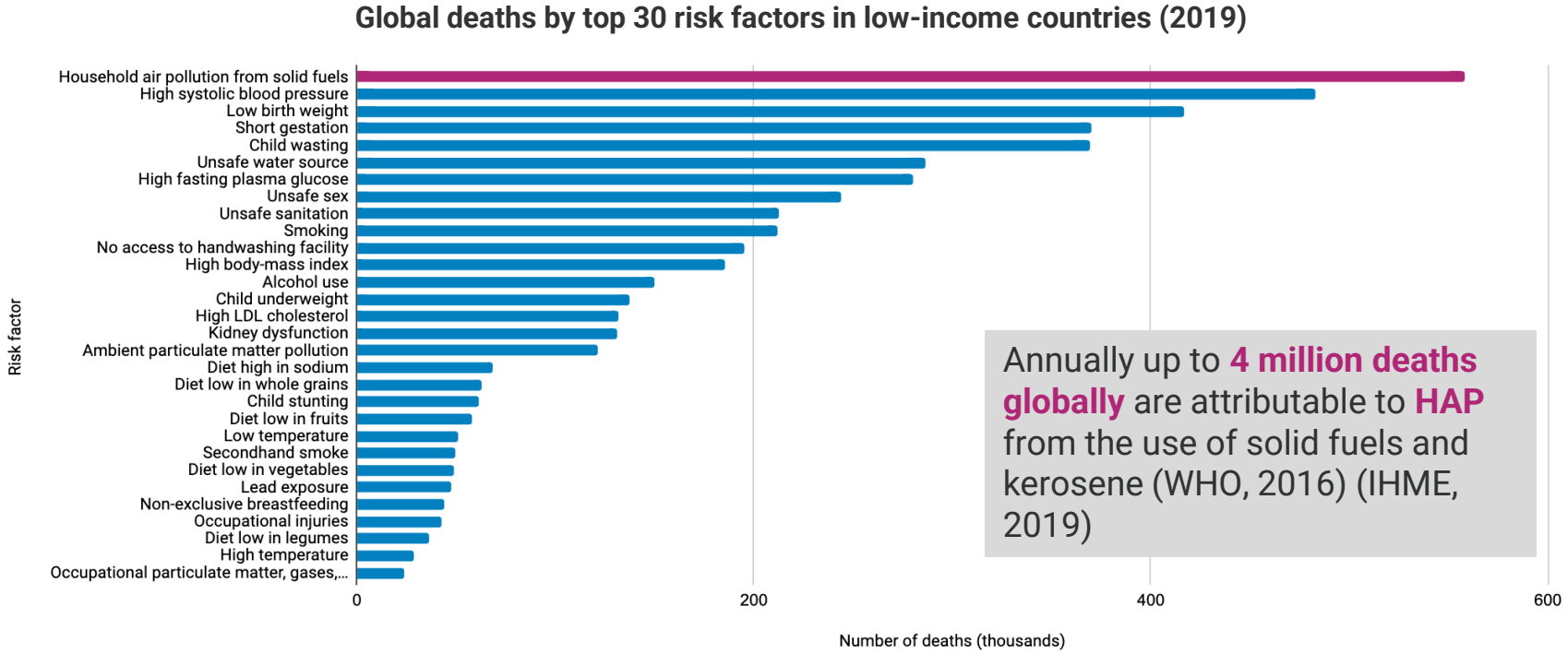
In 74 tropical countries, the amount of **carbon released** as a result of **forest degradation** was found to be equivalent to **4.3%** of total **global emissions**

Polluting fuels harm health and the climate

The burning of solid fuels and kerosene produces health- and climate-damaging levels of:

- Black carbon (BC)
- Carbon dioxide (CO_2)
- Carbon monoxide (CO)
- Methane (CH_4)
- Nitric oxide (NO) & nitrogen dioxide (NO_2)
- Organic carbon (OC)
- Polycyclic aromatic hydrocarbons (PAHs)
- Sulfur dioxide (SO_2)

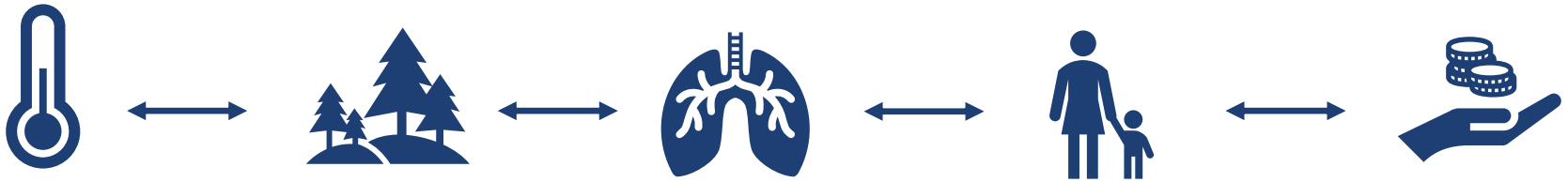
Household air pollution is the leading risk factor for premature death in low-income countries



Annually up to **4 million deaths globally** are attributable to **HAP** from the use of solid fuels and kerosene (WHO, 2016) (IHME, 2019)

Data from: Global Burden of Disease Study 2019. IHME, 2020.

The co-benefits of clean cooking contribute to multiple Sustainable Development Goals



Climate

Clean cooking mitigates climate-warming emissions and global temperature rise

Environment

Clean cooking reduces impacts to forests and the natural environment

Health

Clean cooking reduces household air pollution and ambient air pollution, alleviating adverse health outcomes

Women & Girls

Clean cooking reduces the negative health impacts and economic burdens on women of solid fuel use and collection

Livelihoods

Clean cooking opens opportunities for increased economic engagement and income-generating activities

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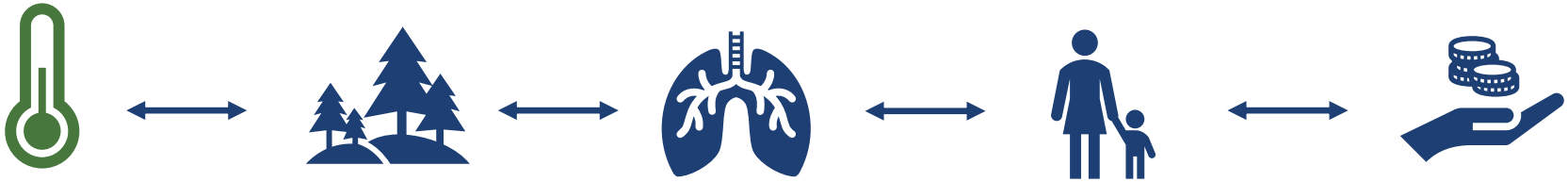

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03

Short-lived climate pollutants (SLCPs) and clean cooking

Climate and Clean Air Coalition

- The Climate and Clean Air Coalition (CCAC) is a global, voluntary partnership dedicated to addressing short-lived climate pollutants. There are 73 State Partners and 78 Non-State Partners.
- We are guided by our 2030 Strategy and work with our Partners and interested parties through 6 Sector-based Hubs and a National Planning Hub.
- Our Household Energy Hub is co-led by Ghana and the United States.
- Approximately $9 million in funding will be announced in June/July to support national action on SLCPs and advance our work in the 6 sectors.

Short-Lived Climate Pollutants

- Climate forcers are many times more powerful than carbon dioxide
- Air pollutants that are harmful to people, ecosystems and agricultural productivity
- Present in the atmosphere for a few years

460-1,500X	4-12 days	6.6 million tonnes	51%
Black carbon has a warming impact on climate 460-1,500 times stronger than CO_2 per unit mass	The average atmospheric lifetime of black carbon particles is 4-12 days	About 6.6 million tonnes of black carbon were emitted in 2015	Household cooking and heating account for 51% of man-made black carbon emissions

How to Join the CCAC

- Countries who are not already members of the CCAC are encouraged to join. The process is to send a letter to the UNEP Executive Director, and more details on this are on our website here: https://www.ccacoalition.org/en/content/country-engagement

- Non-State institutions are encouraged to join the CCAC Household Energy Hub by sending an email to the CCAC Secretariat at: secretariat@ccacolation.org

(Photo: Sistema.bio)

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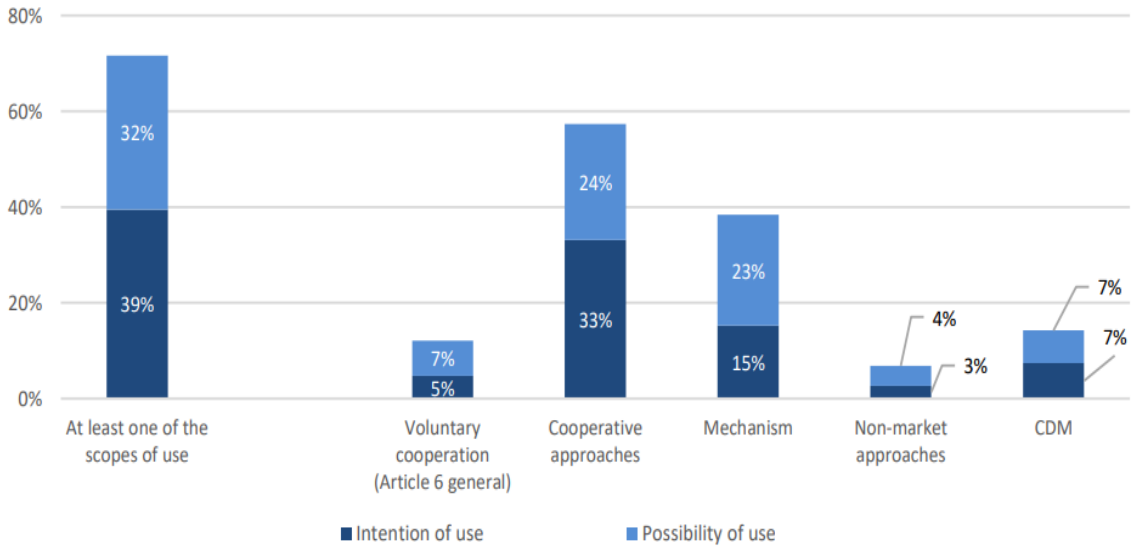
Clean cooking, the Paris Agreement, and NDCs

Cooperative approaches prevalent in NDCs

- Art. 6 of the Paris Agreement outlines voluntary cooperation to facilitate implementation of the NDCs and enhance climate ambition
- 87% of the Parties indicate the use of cooperative approaches in the new or updated NDCs:
    - As a condition to meet mitigation targets in some manner; or
    - With qualitative and quantitative limits



Source: Nationally determined contributions under the Paris Agreement. Synthesis report by the secretariat, November 2021.

Cooperative approaches in Kyoto and Paris

Kyoto Protocol (1997)

Emissions Trading, Joint Implementation, **CDM (2005):**

- **2.17 Billion CERs**
- **US$300 Billion climate investment**
- **US$200 million to Adaptation Fund**

Paris Agreement (2015)

Art 6.2: Guidance on cooperative approaches;

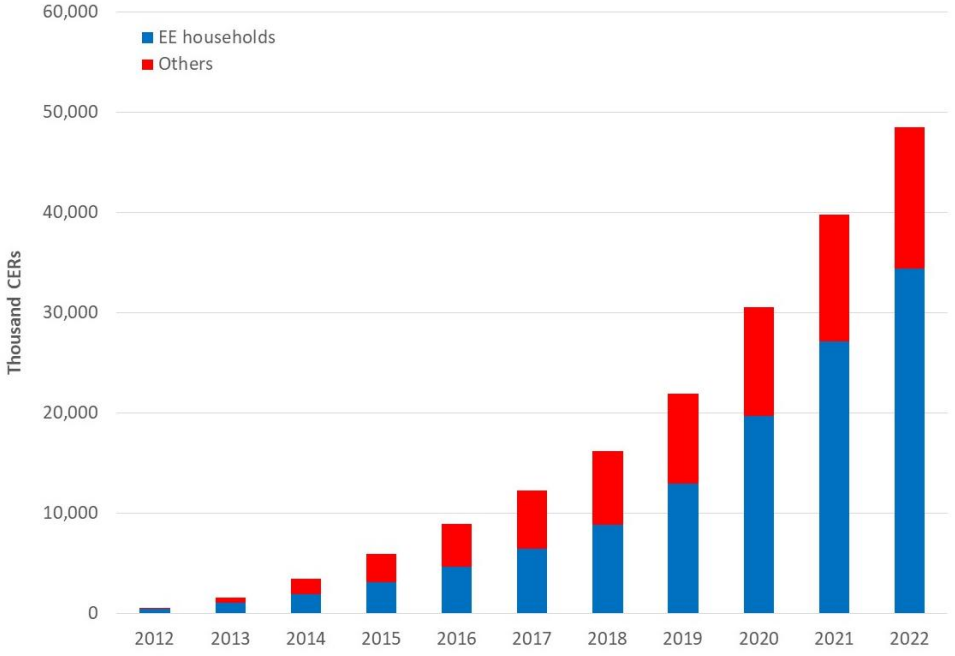
Art 6.4: Rules, modalities and procedures for the mechanism;

Art 6.8: Work programme under the framework for non-market approaches

CMA 3 (2021)

POAs enabled participation of household energy projects under the CDM since 2012

- Programme of Activities (PoA) reduce transaction costs, continuously add and monitor similar Component Project Activities (CPAs)
- 73 registered clean cookstoves PoAs and 527 CPAs (30 million CERs issued)
- Transition of the CDM projects/PoAs to the A6.4 mechanisms enabled
- “Carbon credits” issued from project registered after 01/01/2013 can be used by the country’s first NDC
- CDM activities can transition to A6.4M upon approval by host country (request by 2023, approval by 2025), if they comply with A6.4M rules



Source: https://cdm.unfccc.int/Statistics/Public/PoA/files/202202/exp_cers_byType.pd

Stove projects need robust MRV

Findings from a study* of 193 CDM monitoring reports in 55 countries:

- Some reported values consistent with published defaults
- Others were inconsistent, showing areas of improvement for data collection
- Art. 6 mechanisms have more rigorous requirements for baseline than CDM
    - 3 options: best available technologies, benchmarks of average of top performing technologies, or historic emissions adjusted
    - Most CDM projects used historic baselines
    - CDM Standardized baselines for cookstoves used bench marking approach to some extent

*Source: MP 85 annex 7 at https://cdm.unfccc.int/Panels/meth/index.html

Outlook for the future

- Engaging in A6 activities involves considerations of NDCs' scope, targets, and baseline setting and sectoral abatement costs (i.e. whether to use A6 activities, the choice of A6 activities and how to ensure the availability of the data/parameters for the selected approach)
- The effective use of A6 cooperative approaches would entail detailed accounting and reporting requirements and integration of these elements into national climate change institutional frameworks .
- High demand for credits expected if quality can be assured (especially for energy access projects with high sustainable development benefits)
    - Initiatives to rate the methodologies for their reliability and accuracy (considering the parameters to estimate GHG emissions, stove performance and MRV)
    - Price offered depends on the quality attributes of the "carbon credit" as determined by above parameters

Article 6 pilot projects*

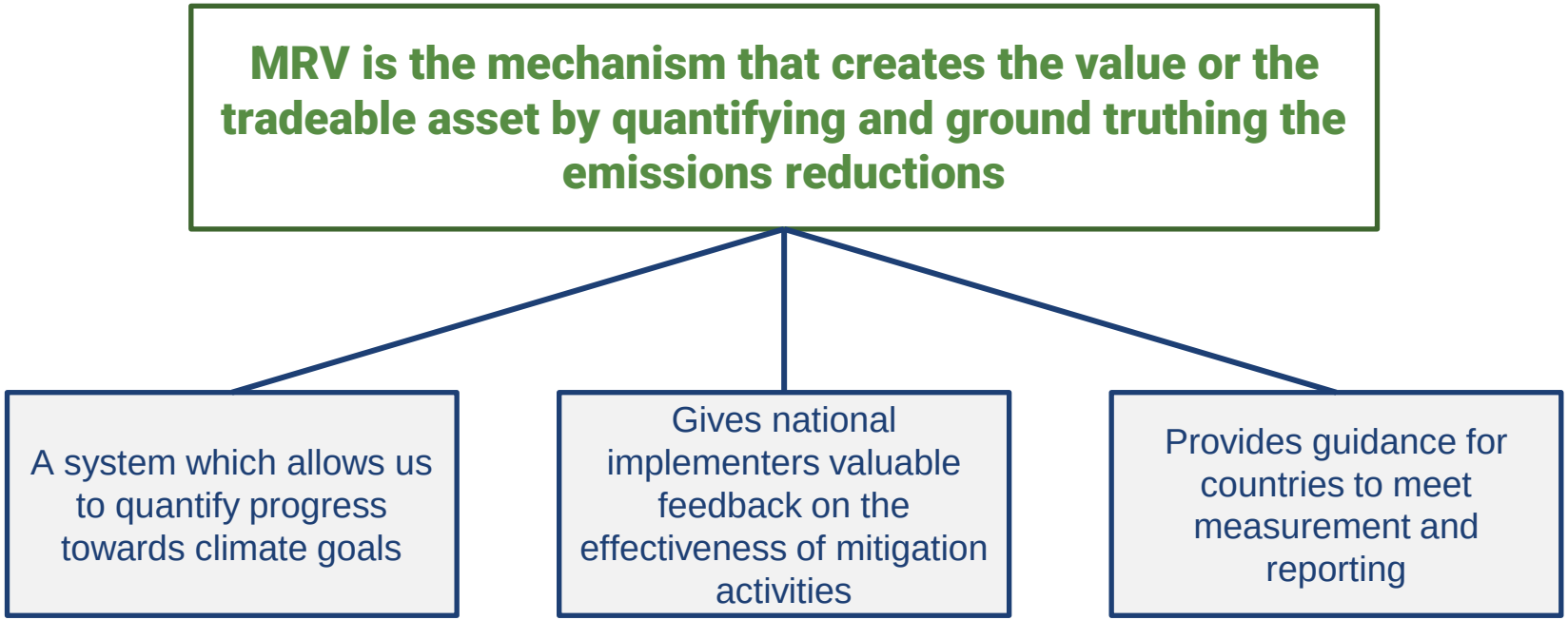
Biogas			Clean cooking (general)	Clean cooking (ethanol)
Senegal & Switzerland (Includes both conditional and unconditional targets)	Mexico & Switzerland	Indonesia & Sweden	Rwanda & World Bank	Madagascar & World Bank
	Dominican Republic & Sweden	Argentina & Sweden	Laos & World Bank	
Ethiopia & Sweden	Kenya & World Bank	Burkina Faso & World Bank		

*Source: UNEP CCC Article 6 Pipeline Analysis and Database, https://article6pipeline.org/

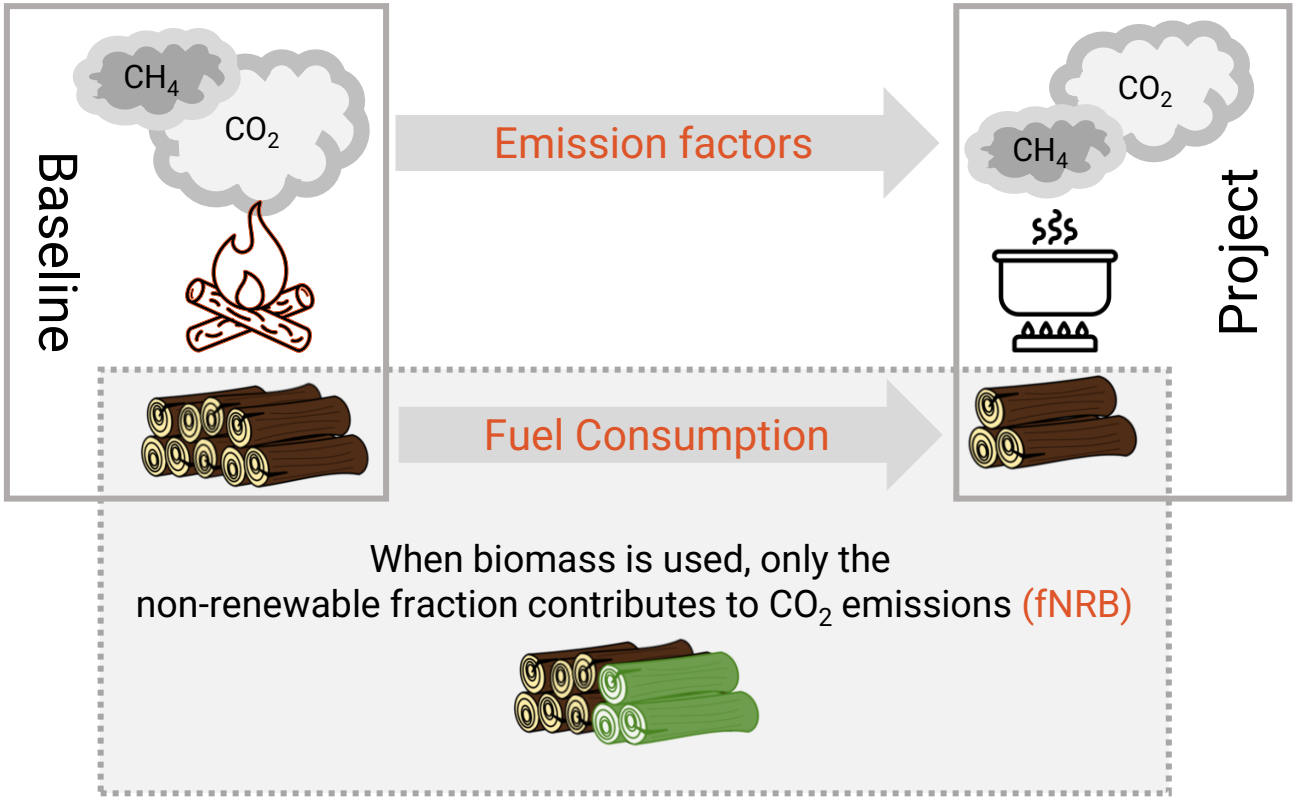
05

Overview of measurement, reporting, and verification

Measurement, reporting, and verification (MRV)



Main inputs for estimating emission reductions



Best practices for MRV systems and approaches

Applying best practices for MRV systems and approaches is crucial because…

- Emissions result from many distributed point sources in homes
- Substantial variation in fuel and stove use patterns in homes across regions, user characteristics, and time

Best Practices

- Robust baseline data collected
- Stove testing conducted in the lab or field to ascertain information on fuel consumption
- Data collection from the field on stove use
- Conservative estimates used for biomass renewability

Key performance indicators can help early stage MRV programs start to measure CO_2e reduction

Key performance indicators (KPIs) can help early stage MRV programs because they are…

Simple	KPIs are simple measures that demonstrate progress achieved
Informed by existing data	KPIs may be informed by data that are already collected in existing national surveys or inventories, or these existing data collection tools may be updated to include KPI metrics
An easy starting point	Monitoring KPI progress in the short-term allows countries to build the infrastructure to formally estimate CO2e reductions in the longer term

ISO standards support improvement over time

ISO standards:

- Are international voluntary performance standards developed by the clean cooking community
- Standardize test procedures and reporting for use in the lab and field
- Can be used in any country regardless of national policies and contexts
- Allow countries to identify the best available technologies, which are specific to each context

Understanding the performance of cooking technologies for both baseline and project scenarios allows countries to track incremental improvements and increase their ambition over time

High-quality MRV leads to confidence in emissions reductions

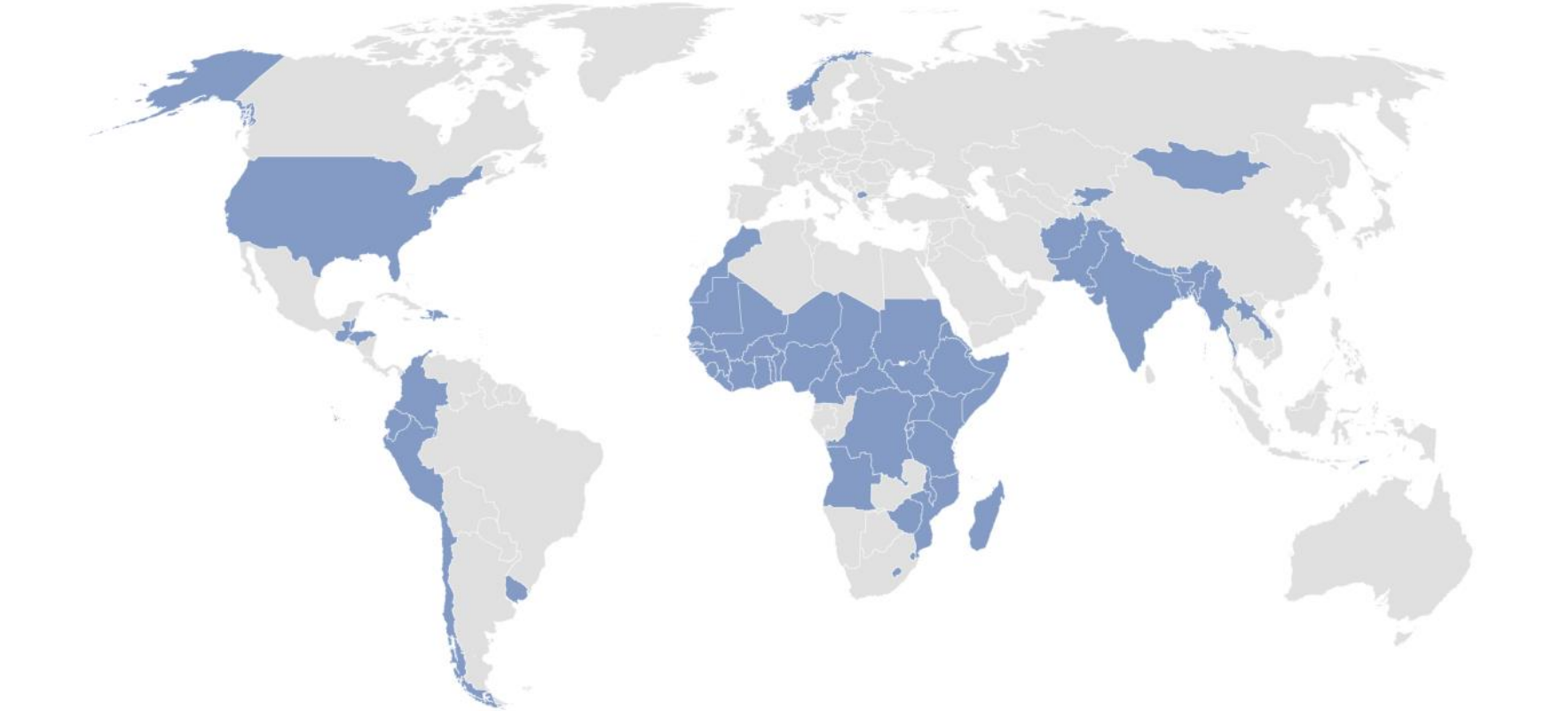
High-quality MRV entails:

- Sound science
- Best practices
- Robust emissions estimates
- Common framework
- Harmonized approaches
- Consistency in application

06

Technical support from the Clean Cooking & Climate Consortium (4C)

4C applauds the countries that have included HHE or CC in their NDCs



These 67 countries* include…

1. Afghanistan
2. Angola
3. Azerbaijan
4. Bangladesh
5. Barbados
6. Belize
7. Benin
8. Bhutan
9. Burkina Faso
10. Burundi
11. Cameroon
12. Central African Republic
13. Chad
14. Chile
15. Colombia
16. Comoros
17. Democratic Republic of the Congo
18. Djibouti
19. Dominican Republic
20. Ecuador
21. Eritrea
22. Ethiopia
23. Ghana
24. Guatemala
25. Guinea
26. Guinea-Bissau
27. Haiti
28. Honduras
29. India
30. Ivory Coast
31. Kenya
32. Kyrgyzstan
33. Laos
34. Lesotho
35. Liberia
36. Madagascar
37. Malawi
38. Mali
39. Marshall Islands
40. Mauritania
41. Mongolia
42. Morocco
43. Mozambique
44. Myanmar
45. Nepal
46. Niger
47. Nigeria
48. Norway
49. Pakistan
50. Peru
51. Republic of North Macedonia
52. Rwanda
53. Senegal
54. Sierra Leone
55. Somalia
56. South Sudan
57. Sudan
58. Swaziland
59. Tanzania
60. The Gambia
61. Timor-Leste
62. Togo
63. Uganda
64. United States
65. Uruguay
66. Vanuatu
67. Zimbabwe

Up to date as of COP26

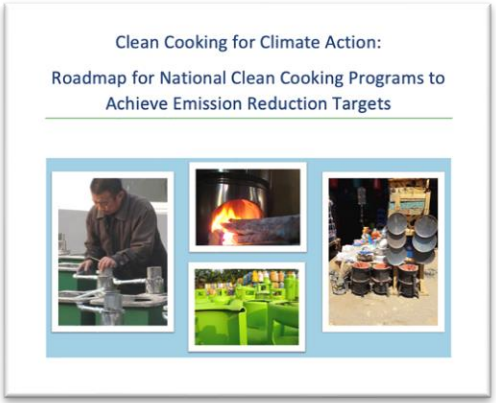
4C guidance documents will empower governments to achieve climate goals through clean cooking

The first of its kind for clean cooking and climate goals, this framework:

- Introduces MRV approaches and recommendations as they apply to cooking energy interventions

This roadmap:

- Assists nations in initiating, expanding, or enhancing clean cooking initiatives, particularly in order to support their commitments under the Paris Agreement



Technical assistance office hours

- The consortium will offer customized technical assistance tutorials to countries actively implementing clean cooking plans
- Questions will be collected ahead of regularly scheduled Zoom sessions and will be answered during the sessions

If your country is interested in participating in the office hours, please fill out the interest form linked in the chat and webinar follow-up email

Support available from 4C partners

NDC Partnership:

- Works directly with national governments, international institutions, civil society, researchers, and the private sector to fast-track climate and development action.

Gold Standard:

- Manages best practice standards for activities – such as clean cooking - that reduce emissions while promoting sustainable development, creating value for people around the world and for the planet.

International Renewable Energy Agency (IRENA):

- Uses its knowledge and expertise in different facets of the energy transition to support Member States develop and implement their climate actions.
- Current engagement on climate action support spans 74 countries, including 22 SIDS, 20 LLDCs, 18 LDCs, with the combined population of 1.8 billion and the carbon footprint of 3.2 billion tonnes of CO_2 per year.

Support available from 4C partners (cont.)

Energising Development (EnDev):

- Has implementation structures on the ground and provides policy advisory to national government partners in 18 of the 67 countries.
- Contributes to the implementation of the NDCs with clean cooking interventions and has developed an MRV methodology to quantify the GHG emission reduction and reports the results to the national NDC mitigation tracking.
- Contributes learnings of the GCF co-funded project Promotion of Climate-Friendly Cooking: Kenya and Senegal to 4C.

CLEAN COOKING ALLIANCE

Discussion and Q&A