

US EPA ARCHIVE DOCUMENT



Phase 2 Research and Evaluation Roadmap

Public Health, Environment, and Climate

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GLOBAL ALLIANCE FOR
CLEAN COOKSTOVES

The Global Alliance for Clean Cookstoves will create a thriving market for clean cookstoves and fuels.

PROBLEM

Every day,
3 BILLION
PEOPLE
(500 million households)
rely on solid fuels to
power their rudimentary
stoves



which leads to...

- ~4,000,000 deaths annually
- Wasted productivity
- Climate, forestry & other environmental degradation
- 21% of global black carbon emissions
- Health & economic burdens that disproportionately impact women & girls



MISSION

- SAVE LIVES
- IMPROVE LIVELIHOODS
- EMPOWER WOMEN
- PROTECT THE ENVIRONMENT



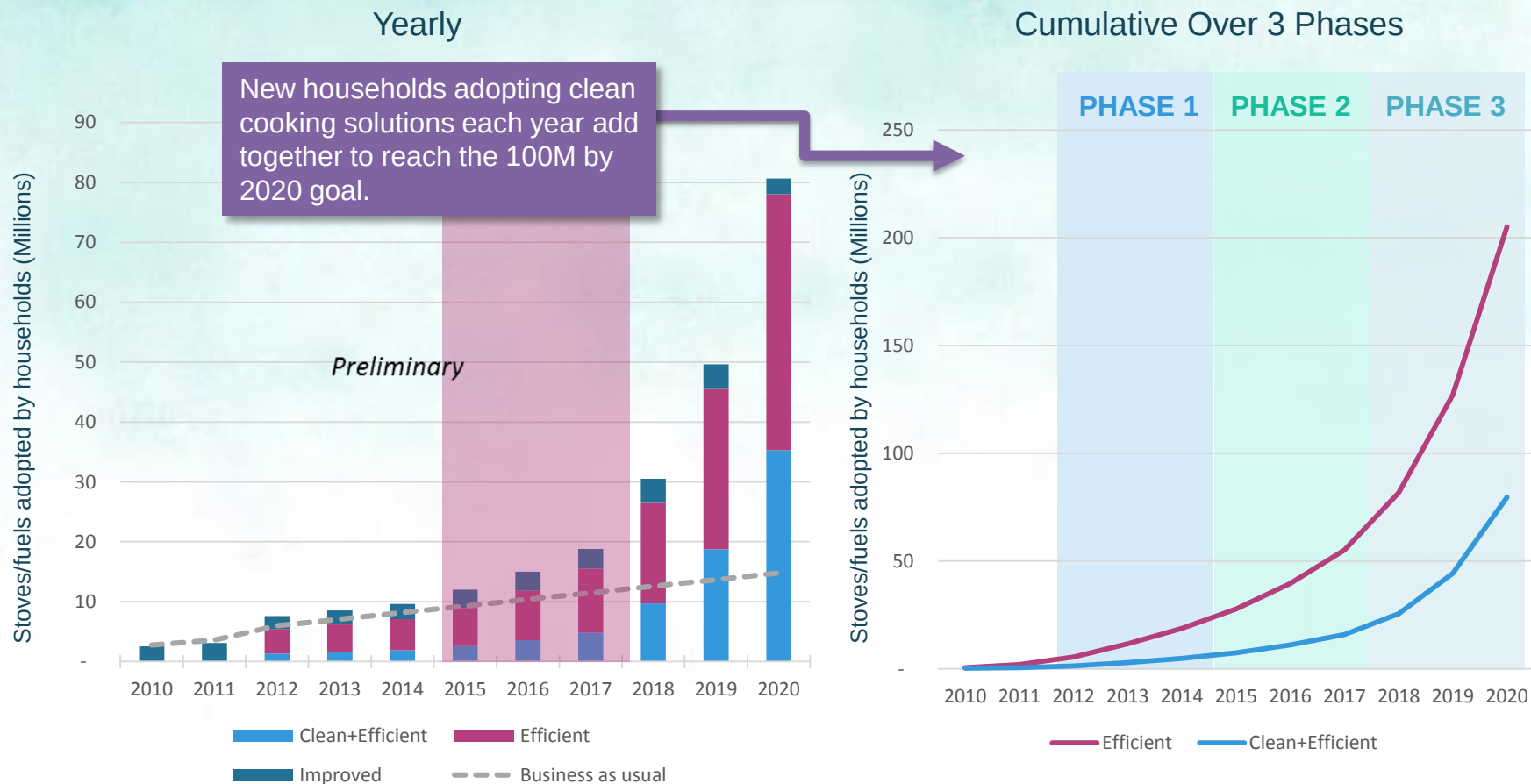
GOAL



100
MILLION
HOUSEHOLDS
ADOPT CLEAN AND
EFFICIENT
COOKSTOVES &
FUELS BY 2020

Strengthening Supply, Increasing Demand, and Creating an Enabling Environment to Facilitate Access to Cleaner and More Efficient Cookstoves and Fuels

Household Adoption of Stoves/Fuels



Challenge: Measuring Progress Towards Adoption of Higher Performing Options (and Associated Benefits)

Transformative Tools for the Sector

- *Interim tiered performance standards ISO International Workshop Agreement (IWA)*
 - *Performance-based standards*
- *WHO Air Quality Guidelines*
 - *Emission rate targets needed to achieve exposure-based standards*

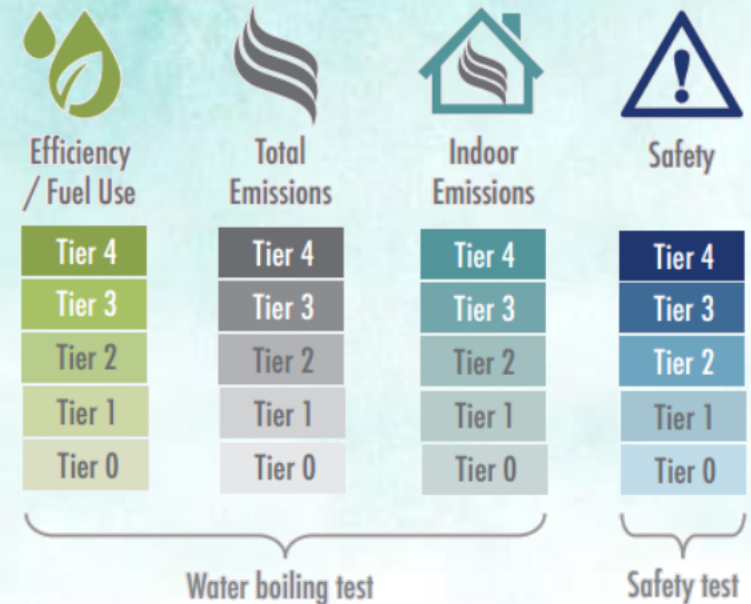


Table R1.2: Emission rate targets (ERT) for meeting WHO air quality guidelines for PM_{2.5}, including a less stringent intermediate ERT for which 60% homes would meet the guideline

Emissions rate targets (ERT)	Emission rate (mg/min)	Percentage of kitchens meeting AQG (10 µg/m³)	Percentage of kitchens meeting AQG IT-1 (35 µg/m³)
Unvented			
Intermediate ERT	1.75	6	60
ERT	0.23	90	100
Vented			
Intermediate ERT	7.15	9	60
ERT	0.80	90	100



Research and Evaluation



Alliance Research Strategy by Phase



Public
Health



Women
&
Children



Livelihoods



Environment



Phase 1
(2012-14)

Strengthen the
evidence base on
the impacts of
traditional stoves



Phase 2
(2015-17)

**Demonstration and
evaluation of
benefits associated
with sustained
adoption**



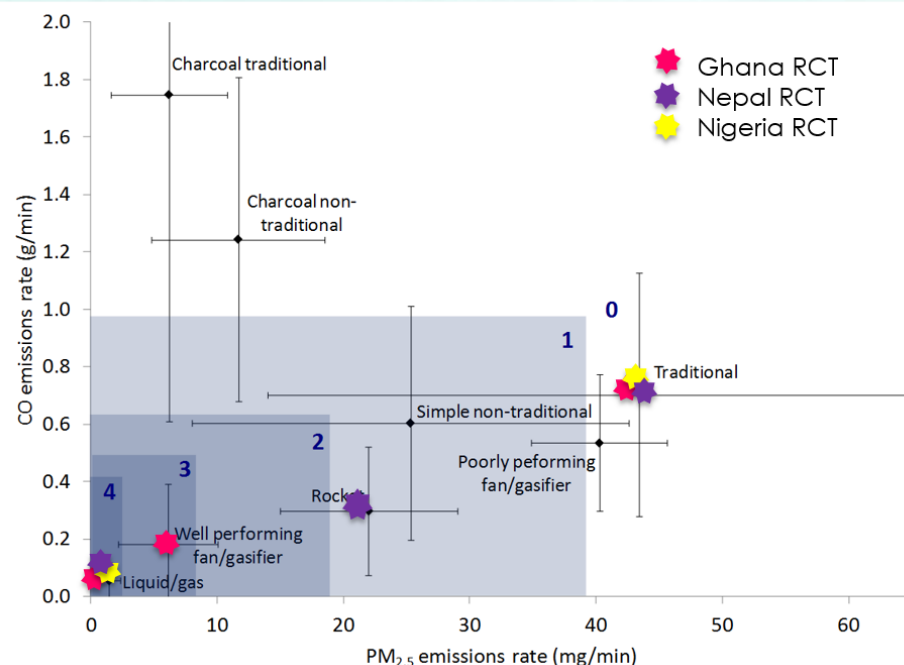
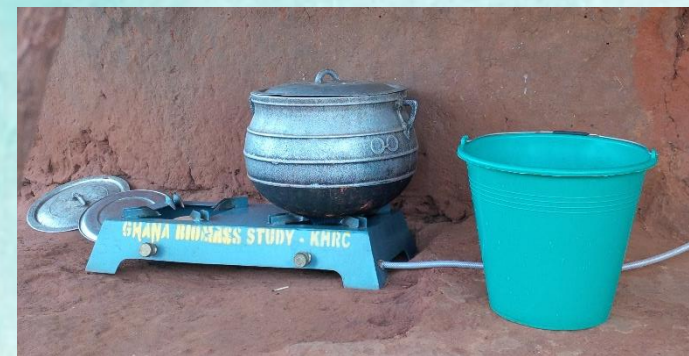
Phase 3
(2018-20)

Evaluation
research network
and sustainable
funding for
research

Alliance Research by Phase



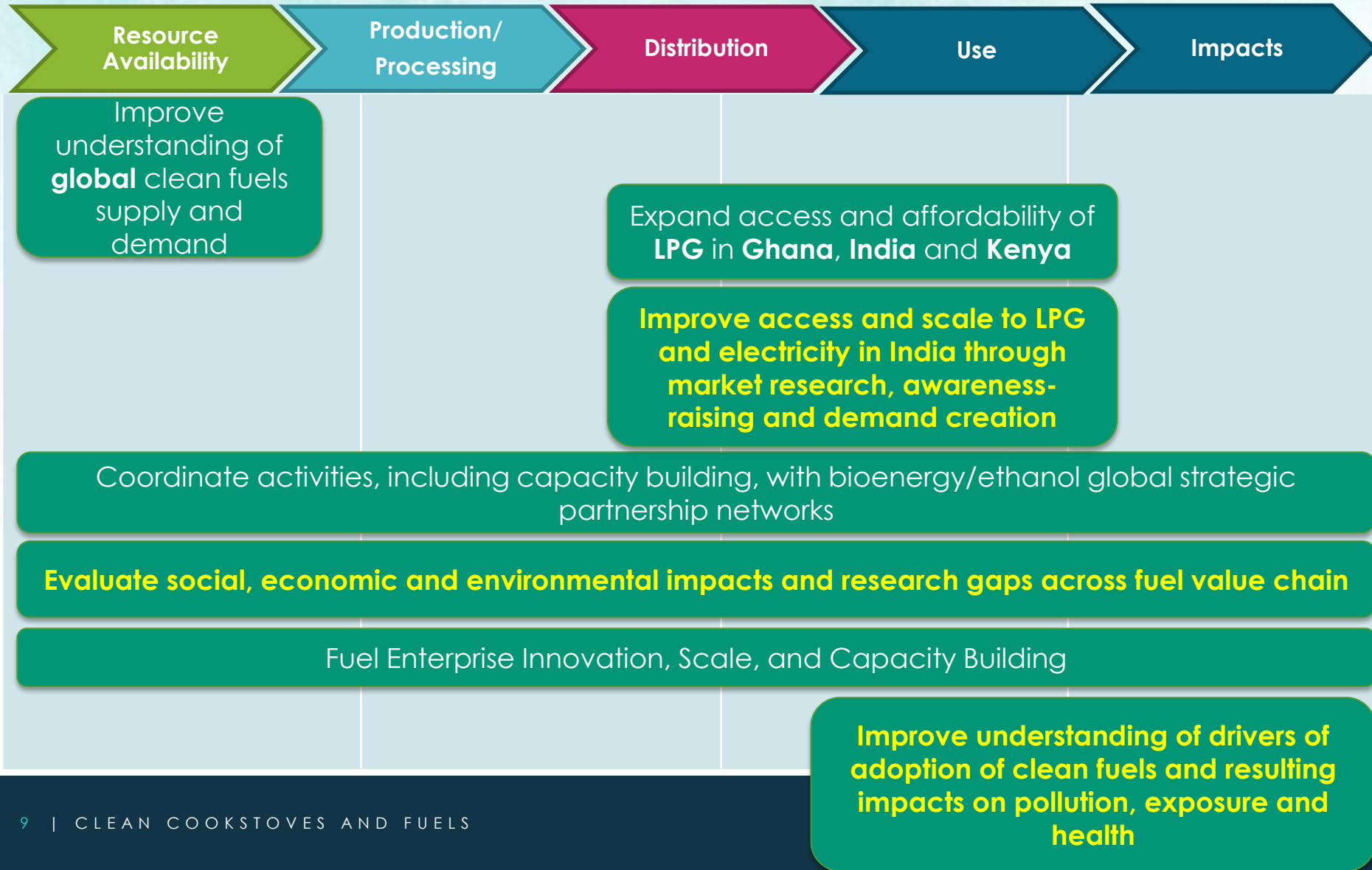
Clean Fuels are Central to Alliance Public Health Portfolio



- 'Clean' for Environment ≠ 'Clean' for Health!
- Credible International Standards Development Bodies Inform Definition of 'Clean' Cooking Technologies
 - **Tier 4*** for 'indoor emissions' will likely achieve the greatest health benefits

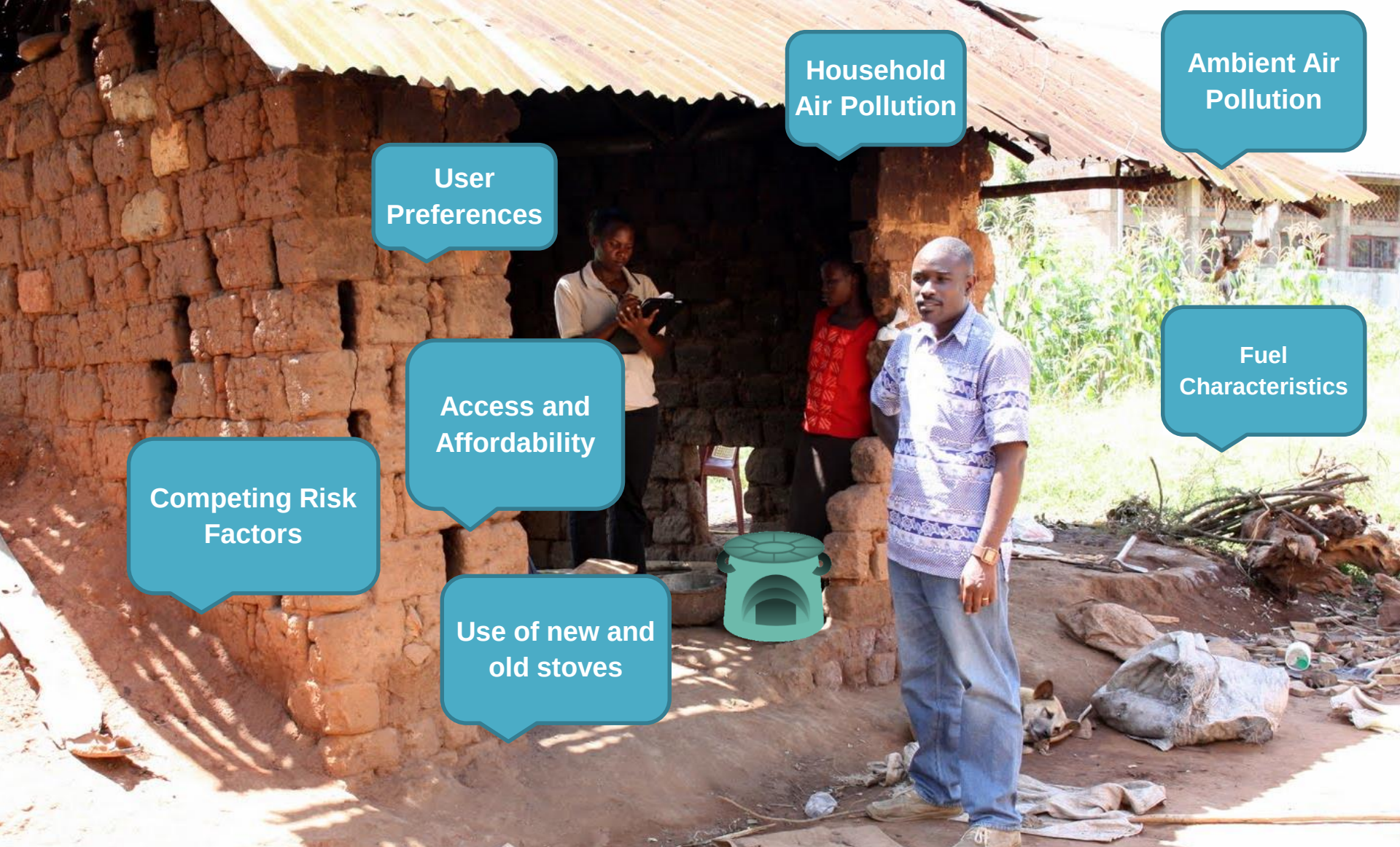


Strengthening the Impact of Clean Fuels Across the Value Chain





Health & Adoption



Household
Air Pollution

Ambient Air
Pollution

User
Preferences

Fuel
Characteristics

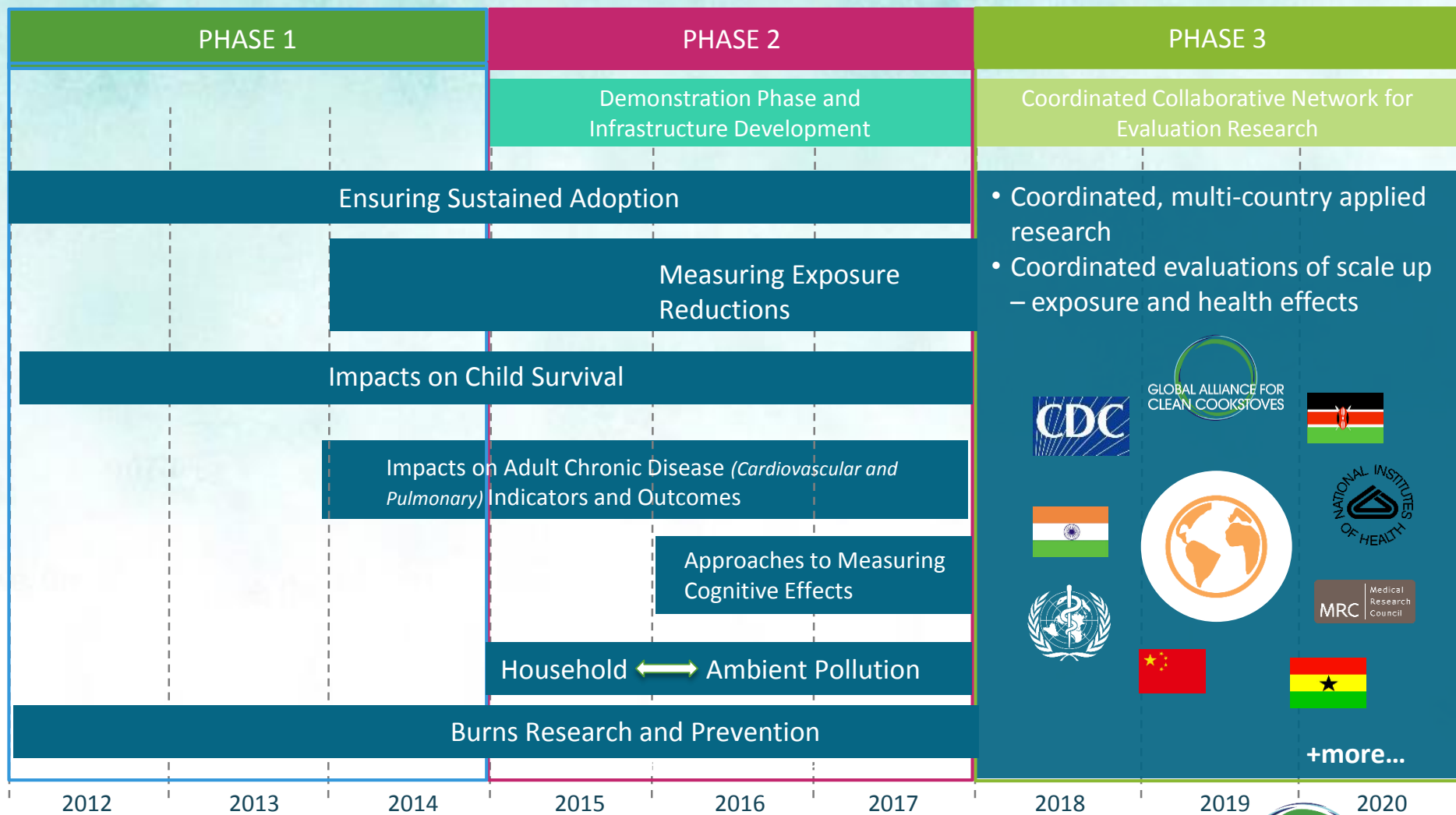
Access and
Affordability

Competing Risk
Factors

Use of new and
old stoves

Key Challenge: demonstrating that adoption of clean cooking technologies can save lives

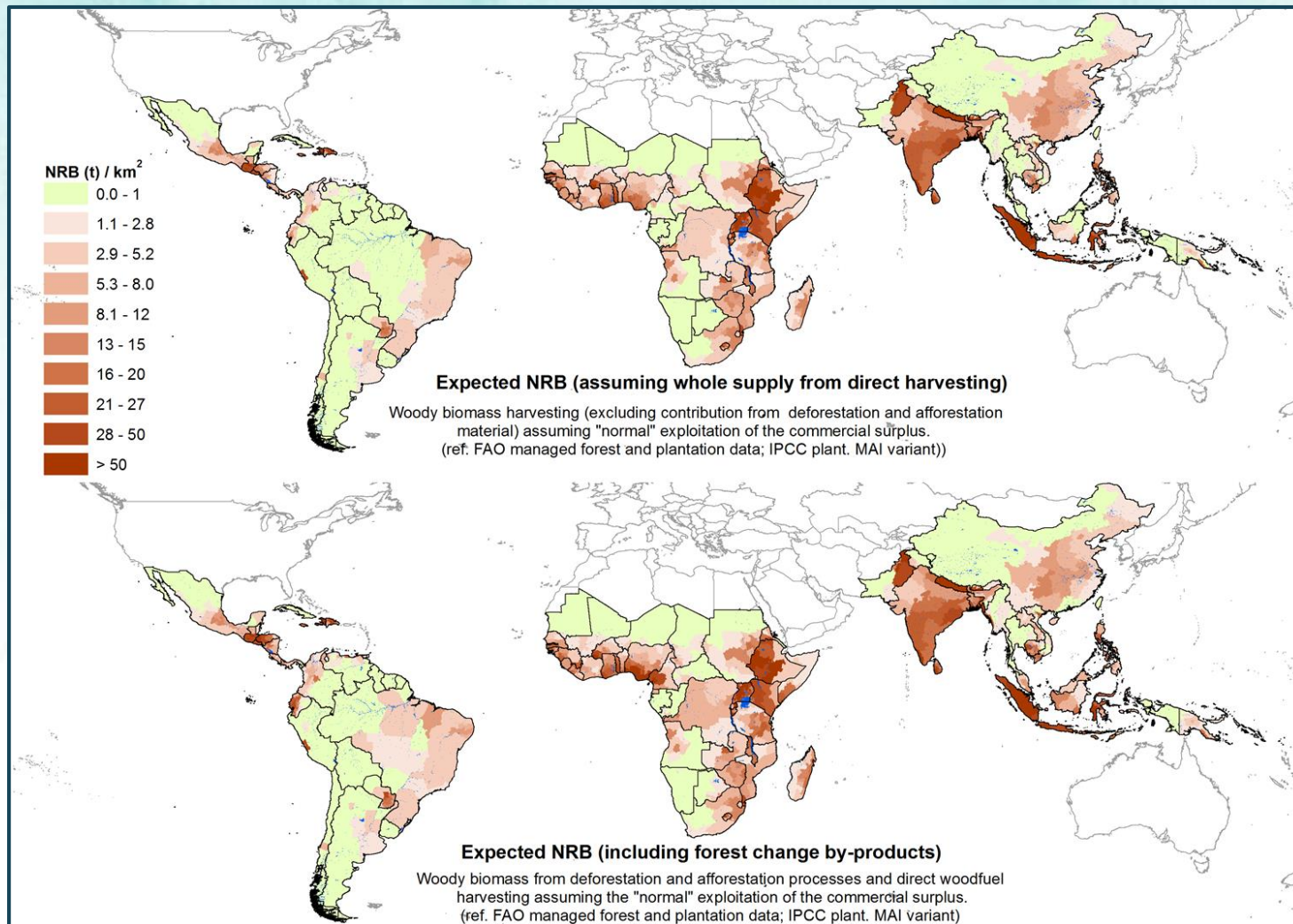
Clean Cooking Exposure and Adoption: Network for Evaluation Research (CLEANER)



A wide-angle photograph of a lush, green landscape. The foreground is filled with dense, vibrant green trees and foliage. In the middle ground, a large, spreading tree with a dense canopy of green leaves dominates the left side. The background shows a rolling landscape with more trees and a distant horizon under a cloudy sky. A dark blue horizontal band is overlaid across the middle of the image, containing the text "Environment & Climate" in white.

Environment & Climate

Phase 1 Climate Research Emphasis: Strengthening the evidence base on nonrenewability of biomass



276 million rural people experience scarcity of subsistence energy!

Widespread interest already expressed in applying these estimates within and beyond the sector!

Alliance Environment/Climate Research Activities in Phase 2: Minimizing Environmental Degradation

- Scaling up clean cooking in areas most vulnerable to environmental degradation
 - Wide communication of results from Phase 1 nonrenewable biomass mapping study
 - In progress: exploring the potential role of the international mechanism to reduce emissions from deforestation and forest degradation (REDD+) in scaling up financing for clean cooking
- Continued support for SPARK grantees focused on reducing carbon emissions, reducing wood fuel harvesting, increasing efficiency
 - Scaling up processed biofuels: char-briquettes (agriculture residue), ethanol gel (sawdust), biogas
 - Evaluating lifecycle impacts, including SLCP emissions reductions
- Evaluating fuel options for environmental impacts across the fuel production and distribution value chain



Black Carbon Research

- Supporting efforts to better determine black carbon emissions from a range of cookstoves and fuels in key geographic locations
- Recently released TORs:
 - *analyze existing, archived particulate samples to provide field-based BC emission factors for a range of cookstove technologies*
 - *conduct field studies to provide black and organic carbon emissions performance metrics of stove/fuel combinations during normal usage in homes*

Specific Technologies and Regions of Interest

Location	Technologies		
South America	Traditional wood	Biomass chimney	
Sub Saharan Africa	Traditional wood	Natural draft biomass	Forced draft biomass
South East Asia	Traditional wood	Natural draft biomass	Forced draft biomass



Ensuring Widespread Relevance of Research Results



Opportunities to Leverage Always Welcome!

- NIH Child Survival Studies in Nepal (Tielsch) and Ghana (Jack)
- EPA STAR Grant in India (Bailis) ...
- Project Surya (N Ramanathan)
- GEOHealth Hubs (TBA)
- Adoption of Clean Cooking (with USAID)
<http://cleancookstoves.org/funding-opportunities/85.html>
- and more...