



**REQUEST FOR APPLICATIONS:
CLEAN COOKING AND NON-COMMUNICABLE DISEASES
(RFA 15 – 4)**

THE GLOBAL ALLIANCE FOR CLEAN COOKSTOVES

Exposure to smoke from traditional cookstoves and open fires – the primary means of cooking and heating for nearly three billion people in the developing world – causes 4.3 million premature deaths annually, with women and young children the most affected.¹ In sub-Saharan Africa and Asia, the lack of access to clean cookstoves and fuels for cooking is especially acute, with a third of the urban population and the vast majority of the rural poor using solid fuels to cook their daily meals over open fires or inefficient stoves. Cookstove smoke contributes to a range of chronic illnesses and acute health impacts such as pneumonia, lung cancer, chronic obstructive pulmonary disease, cataracts, low birth weight, and burns. Without intervention, the problem will continue to grow – the International Energy Agency estimates that by 2030, 100 million more people will use traditional biomass fuels than do so today.²

Reliance on biomass for cooking and heating also increases pressure on local natural resources (e.g., forests, habitat) and forces women and children to spend many hours each week gathering wood, or spend significant household income purchasing fuel. In addition, harvesting fuels for wood burning cookstoves can cause sustained land degradation. In conflict-affected settings, though food is distributed by the humanitarian community, fuel for cooking is often not provided or available, leaving millions of refugee and internally displaced women and girls at risk for daily attack. Inefficient cookstoves also contribute to global emissions of greenhouse gases such as carbon dioxide and short-lived climate pollutants such as black carbon, a major contributor to climate change.

The Global Alliance for Clean Cookstoves (the Alliance) is an innovative public-private partnership hosted by the United Nations Foundation to save lives, improve livelihoods, empower women, and combat climate change by creating a thriving global market for clean and efficient household cooking solutions. The Alliance's '100 by '2020' goal calls for 100 million homes to adopt clean and efficient stoves and fuels by 2020. The Alliance believes that the scope and severity of cookstoves' impacts on the health and environment of nearly 40% of the world's population – especially girls and women – necessitate an immediate and concerted response from the global research, policy, and donor communities.

ALLIANCE RESEARCH PRIORITIES

During the first phase (2012 – 2014) of its efforts, the Alliance's research portfolio focused on filling in key gaps in the evidence base needed to document the significant health, environmental, gender, and economic benefits of clean cookstoves and fuels. The Alliance helped direct almost \$5 million in research grants to the sector and supported 39 studies across 23 countries. Those studies show clean cooking solutions not only protect public health, but also offer clear environmental, gender and economic benefits that when aggregated, create a compelling case for global action.

The Alliance believes that by providing governments, NGOs, impact investors, and donors with evidence based information on the benefits of clean cooking technologies, it can help them quantify the impact of their investments in the sector. Thus, as we move into the next phase (2015-2017) of our efforts, the Alliance is focusing on scaling up adoption of clean cooking technologies. During Phase II, the Alliance has also expanded its research strategy to focus less on quantifying the impacts of traditional cooking towards quantifying the benefits (health, gender, livelihood, climate, and environment) of adopting clean cooking technologies. For more detailed information, please refer to our [Marketing Enabling Roadmap](#) (page 83) for Phase 2.

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BACKGROUND

Despite the fact that millions of people in low- and middle-income countries (LMICs) are moving out of poverty, over 40% of the world's population continues to utilize solid fuels to meet their daily energy needs.¹ Countless more rely on kerosene for cooking, heating, and lighting.³ These fuels, typically burned in open fires or inefficient cookstoves, contribute to concentrations of household air pollution (HAP) that often far exceed World Health Organization (WHO) guidelines.⁴ Exposure to HAP results in 4.3 million premature deaths annually, mostly from non-communicable diseases (NCDs).⁵

NCDs, including cardiovascular disease (CVD), chronic respiratory disease, cancer, and diabetes, kill more than 36 million people each year, with over 80% of NCD-related deaths occurring in LMICs (WHO 2013). Together, cardiovascular disease and chronic respiratory disease account for approximately 60% of NCD-related deaths. According to the 2010 global burden of disease (GBD) comparative risk assessment HAP is among the top global health risk factors,⁶ and a major modifiable risk factor for non-communicable diseases (NCDs) among the poor in developing countries. Unclear at the moment, however, is the time horizon over which the extent to which adopting clean cooking can reduce this burden.

CHRONIC RESPIRATORY DISEASE AND HAP

Chronic respiratory disease includes chronic obstructive pulmonary disease (COPD), pulmonary hypertension, and asthma, among others. According to the Global Burden of Disease (GBD) 2012, COPD is the third leading cause of death, and 90% of COPD-related deaths occur in LMICs;⁶ however, the majority of research for these diseases has been conducted in high-income countries.

There is sound evidence that exposure to HAP is associated with an increased risk of developing COPD.^{7,8,9,10} At the same time, more information on the exposure-response relationship for chronic respiratory disease is needed.¹¹ There is some evidence that reductions in HAP can lead to subjective improvement in respiratory symptoms in those with and without chronic respiratory disease.^{12,13} The real challenge is to evaluate whether cessation or reduction of HAP exposure can slow the decline of lung function, reduce the risk of incident COPD, and/or reduce exacerbation and/or severity of illness in patients with chronic respiratory disease.

CARDIOVASCULAR DISEASE AND HAP

Cardiovascular Disease (CVD) is well-established as a leading cause of mortality globally, with over 80% of CVD-related deaths occurring in LMICs.¹⁴ The cardiovascular effects of exposure to other major sources of combustion, namely ambient air pollution (AAP) and tobacco smoke (TS) (both active smoking and second hand smoke) has been well documented, with exposure to fine particulate matter from these sources associated with an increase in CVD at concentrations above and below concentrations expected from cooking with solid fuels.

A small number of studies have measured the impact of exposure to HAP on CVD and risk factors for CVD in developing countries, and provide evidence of the negative cardiovascular (CV) outcomes attributable to exposure to HAP, as measured by changes to biomarkers, CVD risk factors, and disease rates. Several studies have explored the relationship between HAP and selected predictors and/or biomarkers for CVD.¹⁵ While most studies have focused on blood pressure,^{16,17,18,19,20,21,22,23} others have

focused on biomarkers of inflammation,^{24,25,26} oxidative stress and systemic response,^{27,28} atherosclerosis development,²² and appearance of ST segment depression on electrocardiograms.¹⁵

There is a glaring lack of direct evidence linking HAP and CVD outcomes,^{29,30,31} particularly given the magnitude of the problem. As a result, the CVD burden attributable to HAP is based on interpolation of this evidence from AAP and TS, with almost 1.5 million strokes and over 1 million ischemic heart disease-related deaths attributable to HAP in 2012.⁶

THE NEED FOR DIRECT EVIDENCE ON HAP AND NCDs

Available evidence suggests that combustion source pollution, namely AAP, TS, and HAP, share similar characteristics. In many biomass dependent regions, where HAP contributes to approximately one-third of AAP, studies have found similar chemical components in biomass smoke and AAP.³² At the same time, it remains possible that variability in source characteristics and transport/transformation, including photochemistry, for different sources of combustion pollution could result in different pollutant mixtures with different health effects.

While it may be reasonable and biologically plausible to interpolate HAP risk based on evidence from AAP and TS, given the substantial risk to public health suggested by the indirect evidence, more direct evidence is needed to better characterize the association between HAP and cardiovascular disease, and to demonstrate the cardiopulmonary benefits of scaling up clean cooking.

OBJECTIVE

The Alliance is interested in supporting research to evaluate the links between exposure to household air pollution and chronic respiratory and cardiovascular disease. Up to \$500,000 will be available to support 3-5 studies over a 12 – 24 month period, dependent on the scope and scale of activities proposed. Given the limited budget and tight timeline for studies to be completed, opportunities to leverage ongoing projects and/or existing datasets are highly encouraged.

Of particular interest are:

- **Studies measuring the impact of adopting clean cooking on predictors of chronic respiratory and cardiovascular disease**

Studies proposing to utilize indicators which may predict disease severity and/or predict events (i.e. those which may be used to estimate the public health impact of scaling up clean cooking) are desired. Results may also inform the design of larger randomized control trials, as well as applied public health evaluations to be conducted in the near future. Proposals focused on biomarkers which solely elucidate mechanisms will not be considered responsive.

The choice of appropriate indicator(s) should also be informed by other key considerations, including the study population, the feasibility of measurement in the proposed study setting, the disease outcome of interest, and the strength of evidence suggesting the biomarker is responsive to risk factor modification within a relative short time period.

- **Studies providing direct evidence of the link between exposure to HAP and CVD**

As mentioned above, while it is a reasonable and biologically plausible to interpolate HAP risk based on evidence from AAP and TS, given the substantial risk to public health suggested by the indirect evidence, more direct evidence is needed.

Given the limited budget and tight timeline for studies to be completed, **opportunities to leverage ongoing projects and analyze or reanalyze existing datasets are preferred.**

DATA

TECHNOLOGIES TO BE EVALUATED

Given uncertainties about ‘how clean is clean enough’ to achieve health benefits, studies which incorporate the evaluation of cooking technologies documented to be extremely low in emissions are desirable. Specifically, only studies assessing how the use of demonstrably clean^a cooking technologies (i.e. those with the potential to achieve extremely low emissions and associated health benefits) will be considered. In order to maximize public health benefits, ‘demonstrably clean’ is defined here as clean cookstoves at [IWA](#) tier 3 or higher for indoor air emissions, based on third-party verification, or clean fuels (LPG, electricity, ethanol, biogas). Detailed information on how the interventions are being assessed, i.e. detailed information on evaluated cooking technologies and practices should be provided.

HEALTH OUTCOMES AND COVARIATE DATA

Studies must involve the field-based collection of specific indicators and biomarkers, including the use of modern diagnostics techniques where relevant. Experience limited to imprecise confirmation of respiratory health indicators such as self-reported respiratory symptoms will be considered insufficient. **Respondents are encouraged to review technical materials from the recent meeting on [indicators and biomarkers of NCDs](#) as they consider the indicators most likely to demonstrate measurable changes over a short term period.**

Investigators must clearly document how they intend to evaluate the possible impact of potential confounders/effect modifiers, including but not limited to: other combustion-sources of pollution (e.g. AAP and TS), access to or utilization of health care, nutritional status, and socio-economic status.

EXPOSURE DATA

Applications must provide detailed information on how exposures will be assessed. Studies which propose to assess differences in exposure solely on the basis of qualitative factors or stove/fuel types will not be considered responsive. Key factors influencing exposure, including geographical determinants of exposure (i.e. the potential for community/outdoor exposures to ambient air pollution, including pollution originating indoors), temporal/seasonal trends in exposure, and critical exposure windows must be taken into consideration as relevant. Applications proposing to use novel exposure assessment technologies that have not been validated in the field will be considered unresponsive. While biomarkers can play a role in capturing exposure variability and addressing cumulative exposures, investigators proposing to use biomarkers must be able to clearly demonstrate the relationship between measured biomarkers and exposure to the cooking technologies being evaluated. Applications should demonstrate an effort to achieve an optimal balance between precision of exposure assessment and appropriate exposure modeling approach within current technological, resource, and human capacity constraints. Applications must include plans for quality assurance and control of proposed measurements.

STUDY LOCATION

The choice of study location should be driven by the availability of a strong research infrastructure, prevalence of cardiopulmonary disease, expected distribution of HAP exposures within the proposed study population, and near-term feasibility of scaling up demonstrably clean cooking within the proposed study area. While studies in Alliance focus countries (Bangladesh, China, Ghana, Guatemala, Kenya,

^a Demonstrably clean based on IWA of <http://www.cleancookstoves.org/our-work/standards-and-testing/guidelines-and-standards/guidelines--standards-documents/iso-iwa-final.pdf>

India, Nigeria and Uganda) are of particular interest, proposals will be evaluated primarily on the basis of their technical merit, potential scientific contribution and likely policy relevance.

INVESTIGATIVE TEAM

Given the interdisciplinary nature of these studies, the Alliance encourages the formation of qualified teams of scientists possessing the range of necessary skills and expertise (i.e. epidemiology, clinical research, exposure assessment, and statistics) required to execute the proposed research. All teams must be either locally based in-country or demonstrate substantial local partnerships, including the designation of a local co-principal investigator. Local provision of data/field activities alone will not be considered a demonstration of active local ownership of the research.

STUDY DURATION

The period of performance for studies should not exceed 2 years, excluding 45 days for report writing, dependent on the scope and the scale of the proposals. Given the considerable resource and time constraints associated with designing and executing a high quality epidemiologic study on household air pollution from scratch, opportunities to leverage ongoing epidemiologic studies with high quality health and covariate data are thus strongly encouraged.

PROTECTION OF HUMAN SUBJECTS

The institution receiving the research award is responsible for protecting the rights and welfare of human subjects. For all studies involving human subjects, applicants must submit written assurance for compliance with the guidelines established by the appropriate Institutional Review Board (IRB) or equivalent concerning the protection of human subjects before the research study begins. The following documentation must be submitted to the United Nations Foundation prior to the start of the study: 1) complete application submitted to IRB or equivalent; 2) consent forms to be used in the study, if applicable; and 3) a signed letter from the IRB or equivalent indicating that the study has been approved or exempted by the IRB.

ELIGIBILITY REQUIREMENTS

- Applicants must also be partners of the Global Alliance for Clean Cookstoves. For partnership details, and to register as a partner, visit <http://cleancookstoves.org/partners/>.

APPLICATION PROCESS AND DEADLINES

SUBMISSION OF PROPOSALS

LETTERS OF INTENT

Electronic letters of intent (LOI) are encouraged, but not mandatory. LOIs help the Alliance staff 1) ensure that applications received are responsive to RFAs and 2) plan for the application review process, including the identification of relevant expert reviewers. Applicants are encouraged to submit a LOI (maximum of 3 pages) summarizing their research goals, and briefly describing their proposed research methods.

The deadline for submission of letters of intent is August 21, 2015.

Electronic copies of letters of intent should be sent to:

research@cleancookstoves.org

FULL APPLICATION

The deadline for submission of applications is October 12, 2015.

Electronic copies of full applications should be sent to:

research@cleancookstoves.org

In addition, two hard copies of proposal materials (postmarked by October 12) should be sent to:

Alex Trueman, Program Associate, Operations
Global Alliance for Clean Cookstoves
c/o The United Nations Foundation
1750 Pennsylvania Ave, Suite 300
Washington DC 20006
United States

EVALUATION PROCESS

Responses will be reviewed by the Alliance's technical staff and the external peer review panels. The Alliance convenes expert review panels for each funding announcement to technically evaluate and rank proposals. These panels are selected by the Alliance programmatic staff in consultation with the Executive Director, Advisory Committee members, and other relevant stakeholders. Submissions are screened internally to flag non-responsive or non-competitive applications.

The Alliance uses a standardized response template to facilitate direct comparisons among proposals during the evaluations process. In addition, when necessary, panel discussions may also be informed by written comments received from additional external peer reviewers to evaluate specific technical aspects of applications received. Given the interdisciplinary, inter-sectoral nature of the Alliance and its goals,

final funding decisions will be made on the basis of technical merit as well as the relevance for scale up of interventions with demonstrated effectiveness in the field.

PROJECT NEGOTIATION AND MANAGEMENT

In some cases, panels or the Alliance may request modifications in project scope, scale, and/or budget to ensure maximum responsiveness to the sector's needs and available funding.

GRANTS / CONTRACTS AGREEMENT

The mechanism of funding may take the form of a grant or a contract, depending on the scope of the proposed project and /or the nature of proposed deliverables. Agreements will be made between the Grantee/ Contractor and the United Nations Foundation.

Payments received by the Grantee/ Contractor from UNF may be expended only for the purposes outlined in the approved scope of work, subject to any special conditions itemized below. No other uses are authorized without the express, written consent of UNF.

The Grantee/ Contractor agrees that none of the funds covered by this Agreement shall be used to participate in, or intervene in any political campaign on behalf of (or in opposition to) any candidate for public office. If the project involves any lobbying activities, as defined by the Internal Revenue Code of 1986 (the Code), the Grantee/ Contractor represents that 1) funding is not earmarked for any lobbying activities and 2) the amount of funding, together with any other funding by UNF for the same project for the same year, does not exceed the amount budgeted (if any) for the year of funding, by the Grantee/ Contractor for non-lobbying activities. If funding is for more than one year, the proceeding sentence applies to each year of funding with the amount of funding measured by the amount actually disbursed by UNF in each year.

REPORTING REQUIREMENTS

TECHNICAL REPORTS

Progress on funded projects and activities will be periodically reviewed by a combination of Alliance staff and expert review panel members, with progress reports required bi-annually for projects under \$50,000 and quarterly for grants over \$50,000. Those projects that have secured multi-year funding must be current on their reporting requirements and have demonstrated acceptable progress in order to ensure subsequent year funding.

Final technical reports should be submitted within 30 days from the end of the grant term. These reports should include a brief summary of the study methods and results written for a nontechnical audience. Final reports will be reviewed by Alliance staff and expert review panel members, along with external peer reviewers, to assess the strengths and limitations of the studies, including study methods and approaches to analyses. In addition, reviewers will evaluate whether reported results / conclusions are adequately supported by the available evidence. Depending on the reviewer comments received, investigators will be asked to make revisions to their final reports within a reasonable time frame mutually agreed upon by the investigators and the Alliance programmatic staff.

PROGRAMMATIC REPORTS

The Alliance also requires an annual or final report within 30 days from the end of the funding term. This report needs to: i) describe in narrative fashion what was achieved with the funds; and ii) provide a full financial accounting of the funds.

I. Narrative Report

Each narrative report should, in five (5) pages or less, summarize how the grant funds were used and the results that were achieved. The report will be used by Alliance staff to evaluate and provide an overview of your work to the Alliance's advisory board. Reports should include the following:

- a. Description of any notable progress and accomplishments, and describe any relevant activities that contributed substantially to these successes.
- b. Description of challenges or obstacles that were experienced during the reporting phase. Were these challenges outlined in the original grant proposal? Describe how these challenges were addressed and if it is possible to prevent them from reoccurring.
- c. Description of tangible results of the project to date.
- d. Copies of significant publications, including manuscripts, reports, books or media productions that stem from your efforts in connection with this grant.

II. Financial Report

Each financial report should be as detailed as possible and include the following:

- a. A line item comparison of budgeted versus actual expenses as they relate *specifically to this grant/contract*.
- b. A statement certifying that all funds were expended for the purposes of the grant/contract. If the entire funds have not been expended, an explanation of why funds were not spent should be provided. At the end of the project, any unexpended amount should be returned.
- c. An explanation of any variance from the project budget submitted with your original proposal.

OTHER REPORTING REQUIREMENTS

1. **Studies Involving Human Subjects:** Protecting the rights of human subjects is the responsibility of grantees. For all studies involving human subjects, applicants must submit written assurance for compliance with the guidelines established by the appropriate Institutional Review Board (IRB) or equivalent concerning the protection of human subjects.
2. The Grantee/Contractor will cooperate with the Global Alliance for Clean Cookstoves, on behalf of the United Nations Foundation (UNF), in supplying any information or complying with any procedures which might be required by any governmental agency in order for UNF to establish the fact that it has observed all requirements of the law with respect to the grant.
3. **Site Visits:** Site visits may also be required to ensure compliance with Alliance goals and objectives. The Alliance, on behalf of the United Nations Foundation, may monitor and conduct formal evaluations of operations under the grant/contract, which may include a visit from Alliance personnel to observe your projects and programs and to review financial and other records and materials connected with activities supported by the grant/contract. The Grantee/Contractor agrees to keep accurate and complete books and records of receipts and expenditures using funds for at least four (4) years after the completion of use of the project and will make these books and records available to the Alliance and UNF for inspection as reasonably required from the time of the Grantee's/Contractor's acceptance.

COMMUNICATION OF RESULTS

The Alliance is committed to ensuring that results will inform the sector, as well as advance the adoption of cleaner, more efficient cooking technologies. The Alliance will work with funded investigators to ensure that study progress and results are widely disseminated, and profiled at technical meetings as relevant. All materials, reports, and results of Alliance grants will be available for dissemination to the public, i.e. through the Alliance website, newsletters, and webinars. In addition to preparing Alliance reports, investigators are encouraged to publish in open-access, peer-reviewed literature. The Alliance has the right to ensure that study results are made publically available in a timely and transparent process, while ensuring intellectual property rights of investigators, as well as subject and manufacturer confidentiality as required.

DATA ACCESS

The Alliance reserves the right to request access to any data collected as part of Alliance-funded activities as needed in order to ensure data quality.

APPLICATION MATERIALS

Application forms are available online at <http://cleancookstoves.org/funding-opportunities/>.

1. Cover Sheet

2. Project Plan

While no specific application form is provided for the project plan, investigators must adhere to the guidelines described below. The project plan should not exceed the page limitations for each section, using 11-point font size or larger, and 1 inch margins. Appendices may be provided for supplementary materials as relevant, but review will be based mainly on the information provided in the project plan.

Section A. Background and Objectives (1-2 pages)

Section B. Significance of Research (1-2 pages)

Section C. Description of Investigative Team (1-2 pages)

Include Organizational Qualifications as Relevant

Section D. Related Previous Studies (1 page)

Section E. Research Plan and Methods (not to exceed 10 pages)

Section F. Literature Cited

3. Biosketch

Fill in one for each proposed team member, as well as key subcontractors / subgrantees / consultants.

4. Budget and Narrative Budget Justification

Fill in the budget form provided. The narrative budget justification should include descriptions of the specific roles, responsibilities, and compensation for all project investigators and consultants, as well as detailed descriptions of proposed travel, supplies, and equipment to be purchased. Note that indirect cost estimates may not exceed 13%. In addition, sub-contract expenses should not be included in indirect cost calculations.

ADDITIONAL SUBMISSIONS

5. Subcontracts

Letters from each proposed consultant / subcontractor confirming their agreement to collaborate must be provided.

6. Data Provision

All agreements for data provision must be confirmed in writing, on official letterhead, from potential collaborators. Where appropriate, particularly for routinely collected sources of data, applicants are strongly encouraged to provide sample data (stripped of key identifiers) demonstrating the availability and adequacy of proposed data sources.

7. Protection of Human Subjects

The institution receiving the research award is responsible for protecting the rights and welfare of human subjects. For all studies involving human subjects, applicants must submit written assurance for compliance with the guidelines established by the appropriate Institutional Review Board (IRB) or equivalent concerning the protection of human subjects before the research study begins. The following documentation must be submitted to the United Nations Foundation prior to the start of the study: 1) complete application submitted to IRB or equivalent; 2) consent forms to be used in the study, if applicable; and 3) a signed letter from the IRB or equivalent indicating that the study has been approved or exempted by the IRB.

QUESTIONS ABOUT RFA

Questions should be sent by email to research@cleancookstoves.org.

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