

## USAID's Contributions to Household Energy and Health

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### Background

USAID's concern over the harmful effects of smoke on women and children's health, the detrimental impact of inefficient fuelwood consumption on natural resources, and the associated constraints on economic and social development have prompted it to develop integrated programmatic approaches to improved household energy use that can be mainstreamed into USAID development efforts worldwide. Through joint support from health and energy offices within the agency, USAID aims to facilitate sustained adoption of improved technologies and practices to minimize indoor air pollution within high risk populations, especially young children and women. The initiative seeks to establish a comprehensive approach that includes support to existing household energy and indoor air pollution (IAP) programs and projects being implemented by key health, energy and development partners.

While a number of USAID programs implemented improved cookstove projects throughout the 1980s and 1990s, the focus on indoor air pollution began in 2004. USAID is collaborating with several global partners to address three areas related to the reduction of indoor air pollution:

- The factors which lead to the most effective adoption of improved stoves and other technologies;
- The approaches that motivate improved behaviors to reduce exposure to IAP; and
- Determination of the reduction in IAP exposure and associated health impacts resulting from the adoption of improved technologies and behaviors.

### Support to Partner Organizations

USAID's efforts in these areas encompass pilot projects designed by and implemented on behalf of USAID, as well as support to other organizations. Support to partner organizations is intended primarily to further international dialogue and cooperation on key issues, as well as to inform USAID projects. Key partners to date include the Partnership for Clean Indoor Air (PCIA) and World Health Organization (WHO). Specifically, USAID provided \$1 million to the PCIA to fund most of its 10 pilot projects.

USAID support to WHO has supported the following activities:

- research on the relationship between smoke reduction and malaria transmission;
- development of methodology for evaluations of household energy interventions;
- research on the relationship between indoor air pollution and birth weight; and
- provision of technical assistance to a key epidemiological study in the rural highlands of western Guatemala examining the relationship between smoke exposure and disease response

All of these activities help support USAID objectives of gauging the relationship between indoor air pollution and human health, and ascertaining which interventions will obtain the most promising results, from both the health and energy perspectives.

### **Pilot Projects**

USAID's support to field interventions involves collaborative effort engaging both health and energy sector experience to develop practical intervention strategies, with trials underway in Kenya, Peru and Bangladesh under the management of Winrock International.

For the Peru and Bangladesh trials, pre- and post-intervention monitoring is being conducted to evaluate the impacts on awareness, indoor air pollution (IAP) levels and selected health symptoms. As a first task, USAID supported the adaptation and testing of monitoring tools by Winrock in the Philippines. These tools include household energy and health knowledge and practices surveys, and IAP monitoring protocols. These tools have in turn been adapted for local use in the Peru and Bangladesh projects.

In Kenya, USAID is funding efforts to evaluate the utility of traditional health-focused social marketing approaches to promote adoption of smoke reducing devices. Winrock first worked with two women's cooperatives in the urban slums of Ngong and Rongai outside Nairobi, to strengthen their ability to manufacture and sell ceramic stove liners and "fireless" (retained heat) cookers.

USAID, Winrock and local partners in Kenya then developed and implemented a social marketing campaign, promoting the adoption of these cleaner cooking technologies, and associated behavioral changes. The campaign featured radio ads, radio call-in shows on IAP, road shows and demonstrations, and distribution of materials promoting awareness of IAP. Post-campaign monitoring is currently underway to gauge the campaign's impact on awareness of IAP and improved cooking technologies.

In Peru, the USAID-supported intervention is designed to reduce indoor air pollution in a typical high-Andean district, Inkawasi, in the department of Lambayeque, through access to improved technologies and information on healthy practices. In the Andes, cooking is done over open fires in kitchens with minimal ventilation, resulting in dense smoke.

For the indigenous population, death rates for children under 5, who are most susceptible to acute respiratory infections, are as high as 100 per 1000 live births, well over twice the national average. Evidence exists that chronic obstructive pulmonary disease (COPD) among women is also a significant problem within this population. The trial intervention, which builds on a previous single-community pilot implemented by GTZ and PAHO, focuses on working with rural microentrepreneurs, including stove builders and ceramic artisans, to build a local market for locally adapted efficient wood stoves with chimneys.

Based on experience of the local NGO Centro de Género y Ecología (Gender and Ecology Center) which adapted the stove from a "Justa" sunkenpot stove design, a

reduction of up to 80% in indoor concentrations of PM and CO is anticipated from this intervention. To maximize access to the improved stoves (and retained heat cookers) across the Inkawasi district of 6000 families, the project incorporates an animal husbandry-based micro-credit system well suited to the local barter system. A strong behavior change component facilitates awareness of the risks of IAP and the benefits of improved ventilation, cooking practices, and stoves with chimneys.

Local promoters from 23 intervention communities are transmitting these messages to women and men from the participating communities. “Healthy Kitchen” competitions among households are providing further awareness raising and incentive for participation in kitchen improvements. Radio spots, murals and posters have been developed and disseminated at strategic times and places to reach a maximum audience.

In Bangladesh, USAID is working with local NGOs Concern Worldwide Bangladesh and Village Education Resource Center, which have experience with behavior change communication in health and participatory implementation of improved cookstove programs, respectively. The pilot project is being implemented in two urban municipalities, Saidpur and Parbatipur, located in the Northwest of the country. The project is targeting 400 urban slum households with two main types of interventions:

- dissemination of improved stoves; and
- dissemination of behavior change messages, such as improved ventilation and child care practices, aimed at leading to further reduction in exposure to IAP.

Coupled with these efforts are an entrepreneurship development component and a product-based social marketing component. Potential entrepreneurs are receiving training and 10 or more of the trainees will receive micro-credit seed funding to launch improved stove businesses. Appropriate stove models are being identified through VERC’s innovative Methodology for Participatory Assessment (MPA), which has been adopted by the Asia Regional Cookstove Program (ARECOP) for improved stove programs.

Concern Bangladesh is disseminating behavior change messages, primarily through their existing network of health committees and volunteers, which were originally established to disseminate maternal and child health messages for USAID-funded health programs; it is expected that area concentrations of IAP will be reduced by at least 50%.

### **Looking Ahead**

Ultimately, program success will be measured by sustained changes in behavior, including adoption of improved stove technologies, use of higher quality fuels, improved household ventilation, and other approaches to reduce exposure. This approach explicitly recognizes the need for crosssector collaboration to improve household energy-related health impacts. USAID expects the results from the Kenya, Peru, and Bangladesh programs to be available by early 2007, and data analysis from the completed field activities in the Guatemala field trial is underway.