GEF SGP

Key Innovations

GEF SGP Fuel-efficient Stove projects: One concept, 100 different models

GEF SGP FUEL-EFFICIENT STOVES PROJECTS

Presence: 46 countries

Period: 1/1/2003 to 1/1/2012

Number of efficient stoves projects: 162

Percentage from total portfolio: 7%

SGP Grant Contribution: US$ 4,645,074

Total projects budget: US$ 10,996,166.04

Projects by Community-Based Organizations: 33%

Projects by Non-Governmental Organizations: 67%

The GEF SGP has funded 162 efficient stoves projects during the last 10 years, equivalent to 7% of the Climate Change (CC) portfolio. Of the entire CC portfolio, 92% of projects are concentrated in Latin America, Africa and the Arab States. Efficient Stoves projects within the GEF SGP portfolio are commonly associated with capacity building workshops and women empowerment activities.

Instead of standardizing one model and replicating it, GEF SGP promotes a high degree of adaptation to local context, resources and needs. As illustrated in the following pages, the GEF SGP Efficient Stoves projects successfully replicate one concept by designing different models in each project.

FIGURE 1.
Percentage of Efficient Stoves projects by continent

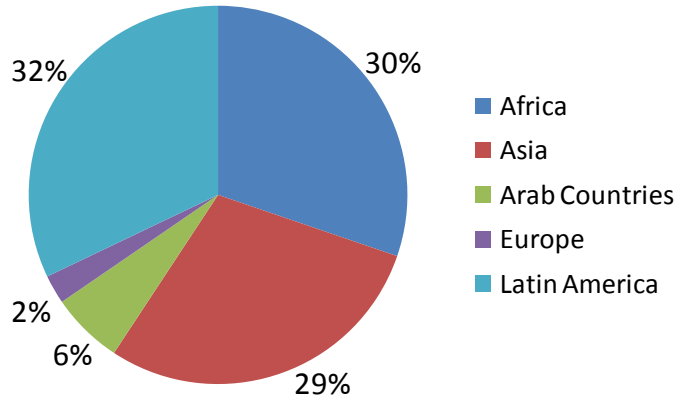
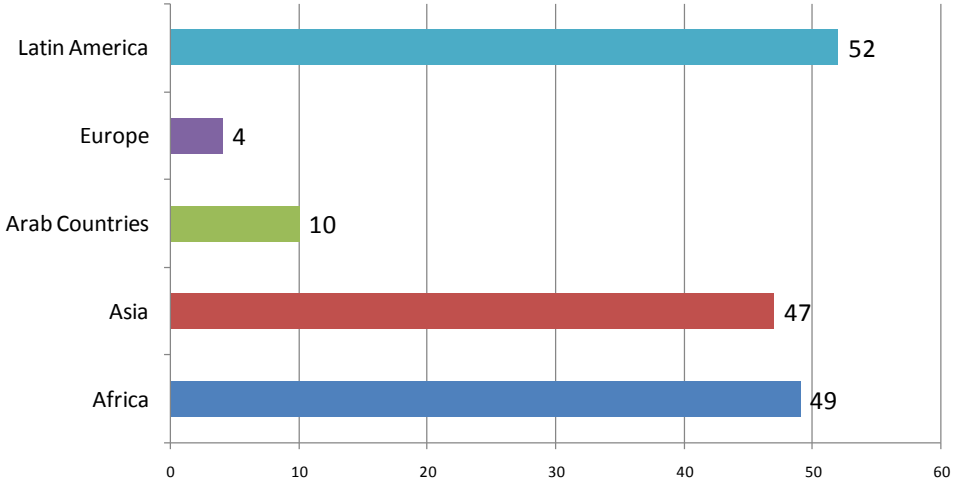


FIGURE 2.
Number of Efficient Stoves projects by continent



CAMBODIA

Stove model: Samaki Improved Stove

Price: n/a

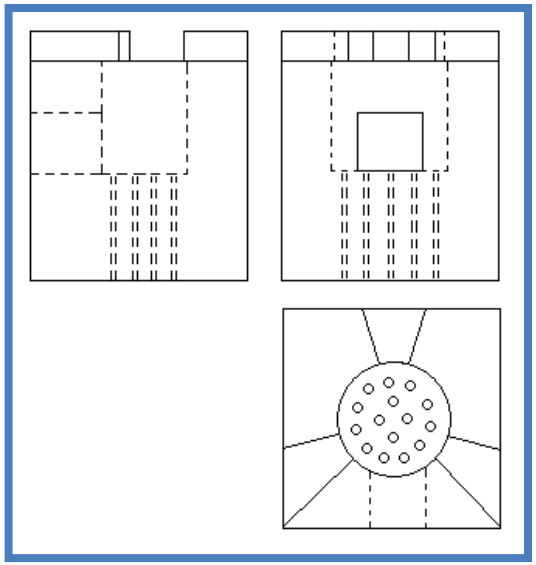
Number of beneficiaries: 3,669 women

Number of stoves installed: 2,760

Efficiency Improvement : 30% of wood consumption reduced

Tons of wood saved: The project as a whole reduced 908m3 of wood per year

Replication: 12 small improved cook stove enterprises were established and have produced more than 1,000 stoves to date



Developed by the local Non-Profit Development Khmer Community, this project organized stove production workshops in 20 villages of the Kagn Chriech district. The technology used for the Samaki stove demonstrates excellent stability and carbon emission reduction and the simple manufacture of these stoves allows for replication by other communities. The stoves have a 6-year lifetime and can also be fuelled with waste (leaves, paper etc.).

Predominantly poor families were trained in the stove production during the workshops, while wealthier families were targeted to purchase these stoves and generate income for the poor.

CHINA

Stove model: Energy-saving stove

Prize: US$ 30

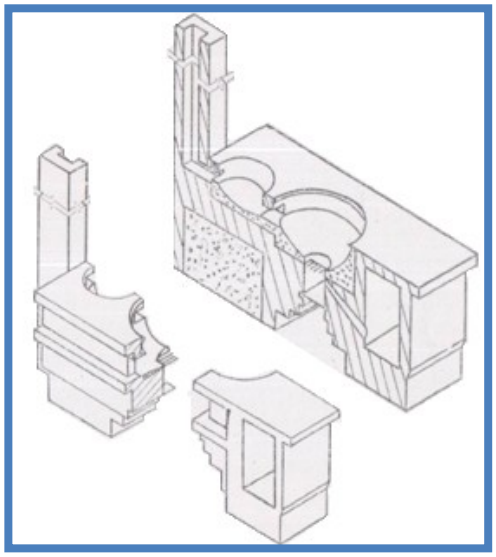
Number of beneficiaries: 543 women

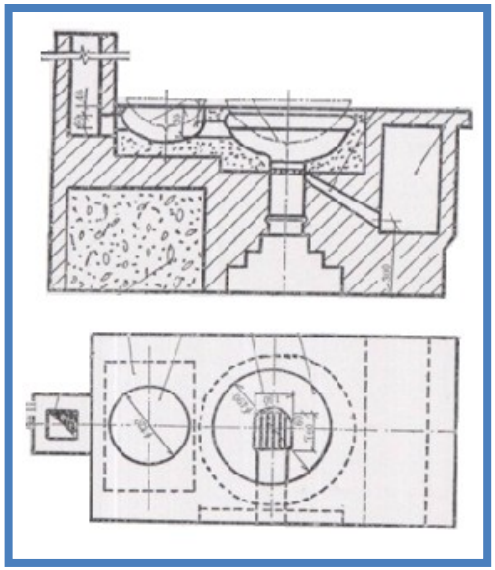
Number of stoves installed: 30

Efficiency Improvement : One energy-saving stove can reduce 0.5 tons of coal per year

Tons of CO2 saved: The project involving 30 stoves, 50 brick beds, 30 biogas systems and 60 solar cookers reduces 1,183 tons of CO2 per year

Replication: Ford Conservation and Environmental Award supported the NGO to replicate the model in two villages with a total of 360 beneficiaries





A community located in one of the most desertified areas in China approached the Ningxia Center for Environment and Poverty Alleviation to seek support in adapting to severe desertification and drought. The implementing NGO investigated the local issues and concluded that the local community was facing included drought, desertification, climate change impacts, poverty, a low education level and a lack of natural resources.

By implementing the project involving the energy-saving stoves, the community was able to decrease the pressure over the existent natural resources in the area, becoming more climate impendent and saving a total of US$ 4,590 per year.

NEPAL

Stove model: Rice Husk Stove (RHS)

Price: US$ 12

Number of beneficiaries: 1,293 families

Number of stoves installed: Over 100,000 sold

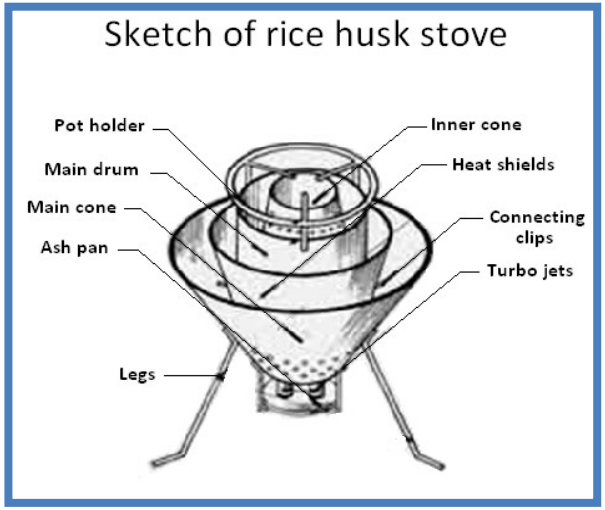
Efficiency Improvement: A 5 people family uses 5 kg of firewood a day to cook its meals while the rice husk stove combusts only 2 kg of rice husk

Tons of wood saved: Saving 5 kg of firewood per family a day the project saves 551 tons per day

Replication: GEF SGP supported the establishment of an enterprise commercializing the RHS. Following the stove's success, 6 metal workshops in Nepal and 2 in India started to produce the RHS

The Rice Husk Stove is a metal stove which uses rice husks as fuel. It is conical and supported on a tripod. It consists of an inner cone where rice husks are burnt. These two cones are separated by a heat shield and the lower parts of both are perforated with small holes. At the base of the inner core, there are two burners; these provide a steady supply of oxygen.

The RHS works on the principle of husk gasification. The stove is fired from the top by inserting waste paper inside of the combustion chamber (inner core). Once the husk is heated, combustible gases are released from perforations and the flames rise.



PAKISTAN

Stove model: Fuel-Efficient Stove

Prize: n/a

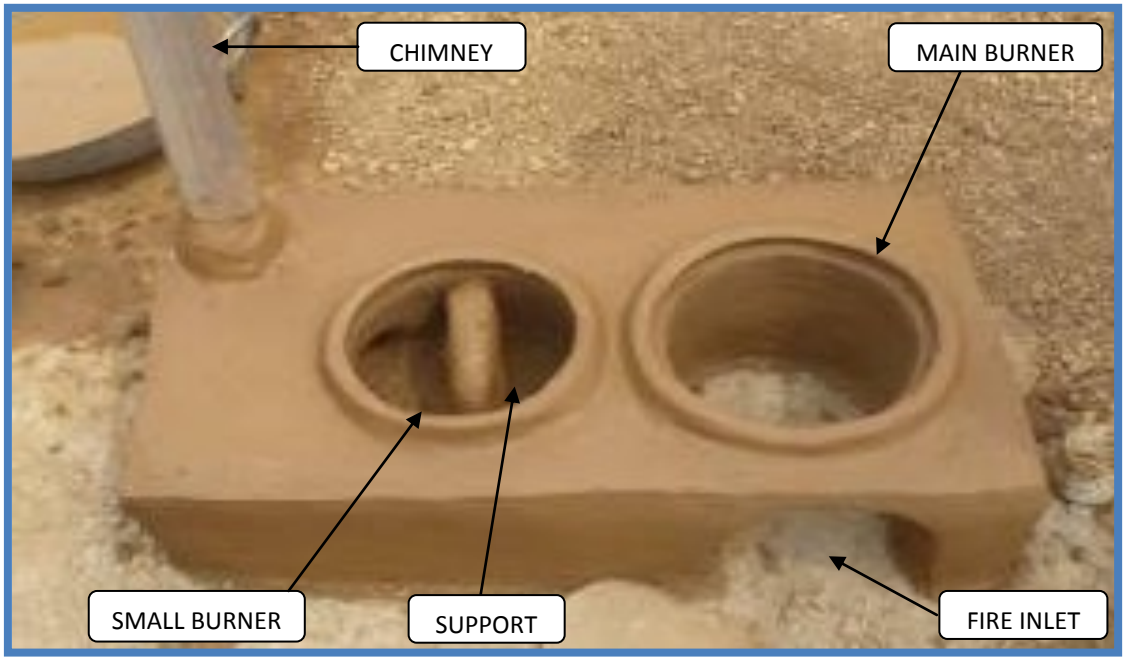
Number of beneficiaries: 3,500 women

Number of stoves installed: 7,120

Efficiency Improvement : The fuel-efficient stove reduces the use of wood by 50%

Tons of wood saved: Every household with an average of 7-8 people consume 2000-2500 kg of wood, therefore the project saves 8,731 tons p.a.

Replication: The district government of Haripur was mobilized to use the fuel-efficient stove as a strategy to slow deforestation in the district.



In Pakistan, the local NGO PHKN organized capacity building workshops for different women groups in 100 villages in the most vulnerable areas of the Haripur district . The women were trained on the benefits of the fuel-efficient stoves and in building them. Each women trained would later have to disseminate the FES technology to at least five women as a condition to participate in the training.

The stove is made of local materials such as clay, bricks and a metal chimney for the exhaust gases. By using the FES, indoor pollution decreased by 80% compared to when using traditional stoves.

EL SALVADOR

Stove model: Armenia

Prize: US$ 102.35

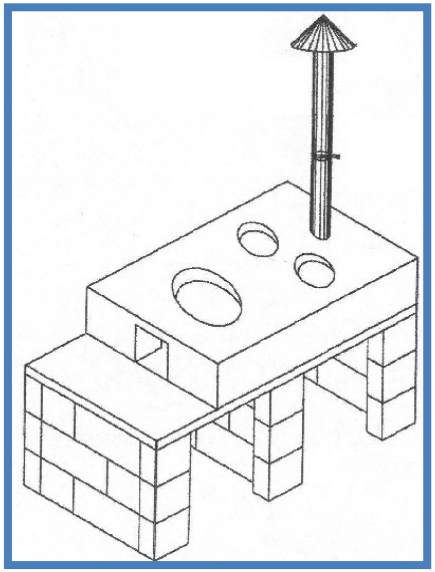
Number of beneficiaries: 226,256 beneficiaries

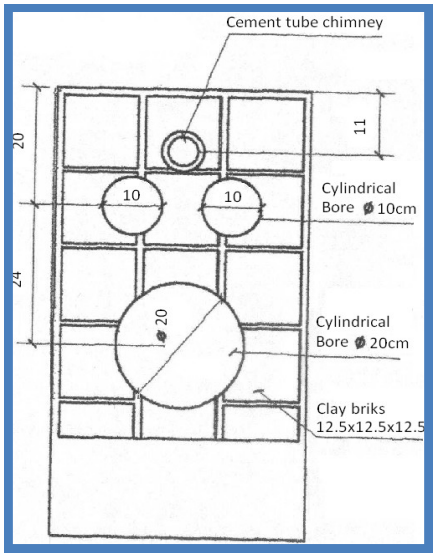
Number of stoves installed: 516

Efficiency Improvement : The Armenia stove reduces the use of wood by 50% .

Tons of wood saved: 58 kg of wood saved per week in an average household.

Replication: The initial project installed 36 Armenia stoves in 6 rural communities of El Salvador. Recently, another 15 projects were developed involving awareness raising and stove construction.





The Armenia stove is an improved design of the previous model "Lorena". The operating principle is based on an improvement in the combustion chamber, which allows for a better distribution of the flame through enhanced air circulation. The result is greater conservation of heat within the furnace reducing the consumption of firewood.

The input materials are: clay bricks, sand, clay, iron rods, tiles, ceramic glue and cement pipes. For the exhaust gases a cement pipe is installed with an air regulator and a cap that prevents the entry of air.

SRI LANKA

Stove model: Anagi

Number of beneficiaries: 300 families

Number of stoves installed: 3 million stoves sold

Efficiency Improvement : 30%

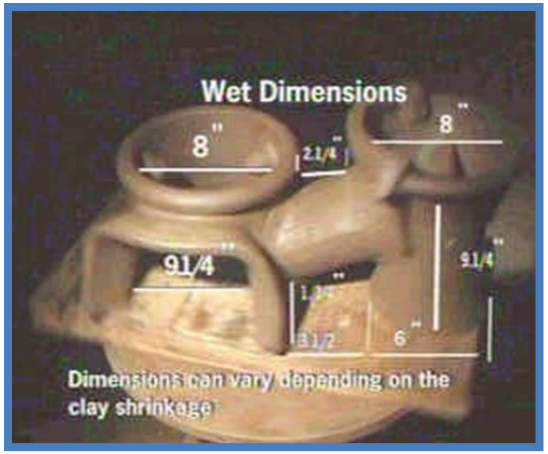
Tons of wood saved: n/a

Replication: Originally ,300 poor potter families where trained in collaboration with the Integrated Development Association. At present, almost 300,000 stoves are produced annually and since 1991, over 3 million stoves have been produced and sold throughout the country through traditional commercial networks.

Sri Lanka is in an advanced stage of stove development. Since 1979, several stove models have been tested by various organizations but with little success.

However, the stove design developed by Sarvodaya NGO and the practical action, which took 3 years to develop with the participation of the community, became very popular. This stove design was later modified retaining the same characteristics to suit commercialization with a brand name “Anagi”.

It is a two pot ceramic stove that can be used without insulation, is suitable for urban users, or with a mud insulation for the rural users.



Community Action
Global Impact

The GEF Small Grants Programme
220 E 42nd Street, 21st Floor
New York, NY 10017
Phone: +1 (646) 781-4353
Fax: +1 (212) 906-6568
Email: sgp.info@undp.org
Website: http://sgp.undp.org/

Design and text: Juan Manuel Rodilla

Review and Edits: Tamara Tschentscher