

PALM SUGAR STOVES

THE SWEET TASTE OF SUSTAINABILITY

Improved palm sugar production and local economic development

OBJECTIVES

- Reduce the impact of firewood collection on natural forests
- Protect the environment by reducing CO₂ emissions
- Improve the quality of life for palm sugar producers
- Reduce palm sugar production expenses
- Build producers' capacity and improve the quality of palm sugar
- Reduce women's' drudgery and health hazards associated with smoke inhalation and poor air quality

BENEFICIARIES

- Rural families involved in palm sugar production
- Local ceramic craftsmen and producers
- Palm sugar consumers

BACKGROUND

In Southeast Asia, palm sugar is a cultural tradition. It has also been shown to be a healthier, more environmentally friendly alternative to cane sugar; the UN FAO has called palm sugars the most sustainable sweeteners in the world. In Cambodia alone, it is estimated that **20,000 families are involved in palm sugar production**, mostly in rural areas.

However, inefficient cooking techniques mean that palm sugar production is dangerous, costly and time consuming. Traditional palm sugar production consumes around **144,000 tons of fuelwood annually** (JP Mahe, 2000), the second highest usage after domestic cooking. 100% of the wood consumed for this type of production comes from illegal harvesting of natural forests. Constant exposure to smoke causes health problems for producers, who are primarily women, and reduces the quality of the palm sugar itself. These practices have **severe environmental and socio-economic consequences** which exacerbate the development challenges in the country.

In 2005 GERES Cambodia, in collaboration with Planète Bois, developed **the Vattanak stove**, a post-combustion stove designed specifically for palm sugar producers. This stove is 30% more fuel efficient than a traditional palm sugar stove, **saving each family over 2.4 tons of fuelwood every year**.

This results in money savings for the palm sugar producer, a cleaner environment, and a significant reduction in CO₂ emissions. Last but not least, it improves the quality of palm sugar, allowing it to be sold at a higher price both domestically and internationally.

Since 2007, GERES has disseminated 200 Vattanak stoves, and is committed to distributing a total of 5,000 Vattanak stoves by 2014.



ISSUES AND EXPECTED OUTCOMES

Environmental impacts

- Burning less fuelwood reduces greenhouse gas emissions and limits pressure on Cambodian natural forests.
- 2.4 tons of wood saved per stove annually.
- 46,732 tons of CO₂ equivalent: total estimated emissions reductions by 2015.

Health and social impacts

- Vattanak stoves also produce less smoke, and the use of a chimney means that smoke is kept out of the local surroundings, improving palm sugar producers' working conditions.
- Each stove provides 60% more thermal efficiency than the traditional stove.
- The use of less fuelwood also means that producers spend less time collecting wood, reducing drudgery and allowing them to spend time with their family and in other pursuits such as education, craftwork, etc.

Economic impacts

- A higher quality, granulated palm sugar is easier to store and ship, sells for a higher price locally, and can be sold more readily to the international market.
- Increased earnings for palm sugar families, raising many of them above the poverty line.



ACTION PROGRAMME 2009- 2014

- **Train local middleman and stove installers**
- **5,000 stoves disseminated by 2014**
- **Create networks between local suppliers and middlemen/installers**
- **Develop a sustainable wood supply** by working with community forests or wood lots
- **Promotional** and awareness raising campaigns
- **Monitoring and quality control.**
- **Training and capacity building:** develop construction operation and maintenance manuals.

PARTNERS

- Planète Bois
- World Bank - ESMAP
- Fondation Ensemble
- ICOPRODAC
- DATe
- Eco-Biz



CONTACT GERES CAMBODIA:

Iwan BASKORO, Country Director
i.baskoro@geres.eu
Tel: + 855 16 852 369

Groupe Energies Renouvelables, Environnement et Solidarités Group for the Environment, Renewable Energy and Solidarity

House no.350, Street 350, Sangkat Boeung Keng Kang 3, P.O.Box 2528, Phnom Penh 12304, Cambodia
Tel: +855(23)986 891, Fax: +855(23)221 314
www.geres-cambodia.org – cambodia@geres.eu