

# SUSTAINABLE CHARBRIQUETTES

## RECYCLING BIOMASS WASTE TO MEET ENERGY DEMANDS

Introducing a sustainable alternative to illegal fuel sources using biomass waste

### OBJECTIVES

- Reduce pressure on Cambodian natural forests
- Reduce climate change and greenhouse gas emissions
- Participate in the improvement of waste management in urban areas
- Improve the living conditions of the most impoverished communities
- Implement a social and responsible enterprise

### BENEFICIARIES

- Highly vulnerable families living near the municipal landfill of Stung Meanchey
- Urban households and enterprises that use charcoal for all or part of their daily energy needs

### BACKGROUND

In Cambodia, **wood and wood charcoal are the principal energy sources** for most families and small industries; they provide for over 80% of all energy demand. Annually, 90,000 tons of wood charcoal, made from illegally cut wood, are imported into Phnom Penh from other provinces. In addition, due to the rarefaction of resources, prices of wood and charcoal continue to increase (240% price increase for charcoal from 2007 to 2008). For poor communities, wood and charcoal are still the best sources of fuel, with LPG and electric cookers inaccessible to them.

Meanwhile, **tons of waste are dumped everyday in the municipal landfill**, and a substantial amount remains in the streets, the organic part of which would be a great potential source of energy. Moreover, wastes are partially burnt on-site to reduce volume, emitting smoke and pollutants. The unburnt waste decomposes naturally and produces methane, which contributes to global warming.

In addition, Cambodia is one of the least developed countries in the world, with a high rate of unemployment and few social security programs. This endemic poverty has forced some families to gather around the landfill, scavenging scrap materials in an attempt to get some income. In the process, they are exposed to dangerous

pollutants, medical waste and unclean drinking water.

To help address these issues, in 2004 GERES Cambodia started developing **charbriquettes, made of coconut waste and/or charcoal residues**. In partnership with the NGO "Pour un Sourire d'Enfant" (PSE), GERES has started a charbriquette factory near the landfill site of Phnom Penh. This factory will employ up to 20 highly vulnerable people who live in the area, and plans to produce and commercialize 500kg of charcoal briquettes everyday in 2010.



## ISSUES AND EXPECTED OUTCOMES

### Environmental impacts

- **Reduce pressure on Cambodian natural forests** by replacing unsustainable wood charcoal with charbriquettes made from biomass waste
- **Recycle over 900 tons of waste annually**, improving local environmental conditions and reducing greenhouse gas emissions from naturally decomposing waste
- **Save 1,604 tons of CO2** equivalent per year

### Economic impacts

- **Improved waste management in urban areas** by recycling organic waste
- **Production and sale of 500 kg of charbriquettes** everyday

### Social impacts

- Creation of a locally run social enterprise to produce the charbriquettes
- Provides **20 full-time jobs** stable job opportunities in acceptable working conditions, for highly vulnerable local people (impoverished families living around the Stung Meanchey landfill).



## ACTION PROGRAMME 2008 - 2012

### Local partnership

- Organization of the local actors, creation and registration of the SME "Sustainable Green Fuel Enterprise" (SGFE)
- Implementation of a factory and processing center near the municipal landfill of Stung Meanchey, with support from PSE

### Capacity building

- Training for SGFE employees
- Scale-up the production capacity
- Monitoring and awareness raising activities
- Research and development for product diversification
- Decentralize production

## PARTNERS

- Pour un Sourire d'Enfant (PSE)
- French Embassy
- Agglomeration Community of Rouen, France
- Charcoal companies in Phnom Penh



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