



## DEA Case Study Fact Sheet: SENEGAL

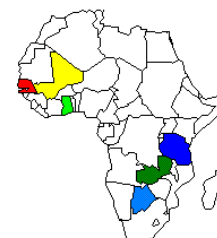
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### Development and Energy in Africa (DEA)

**Programme area:** COOPENER, Community cooperation with developing countries  
**Target countries:** Botswana, Ghana, Mali, **Senegal**, Tanzania, Zambia  
**Status:** ongoing

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**DEA**  
**Development and Energy in Africa**

**Case Study:** Dissemination of improved charcoal stoves

**Country:** SENEGAL

**Keywords:** Charcoal stove, energy management, indoor air pollution, energy saving, enterprises development

### Short description of energy intervention

- **Location**

The improved charcoal stoves dissemination registered in the demand Management and inter-fuel substitution component of Sustainable and Participatory Energy Management Programme (PROGEDE). This project is implemented by Senegalese authorities with the financial support of the Netherlands government, the GEF and IDA. The improved stoves dissemination on going activity covers all the country area since 1998.

- **IMPLEMENTATION**

The project is implemented by the Senegalese government (Ministries of Environment and Energy). This improved stove dissemination component aims to support for the reorganisation and modernization of the charcoal trade to establish long-term supply agreements between rural communities and urban traders.

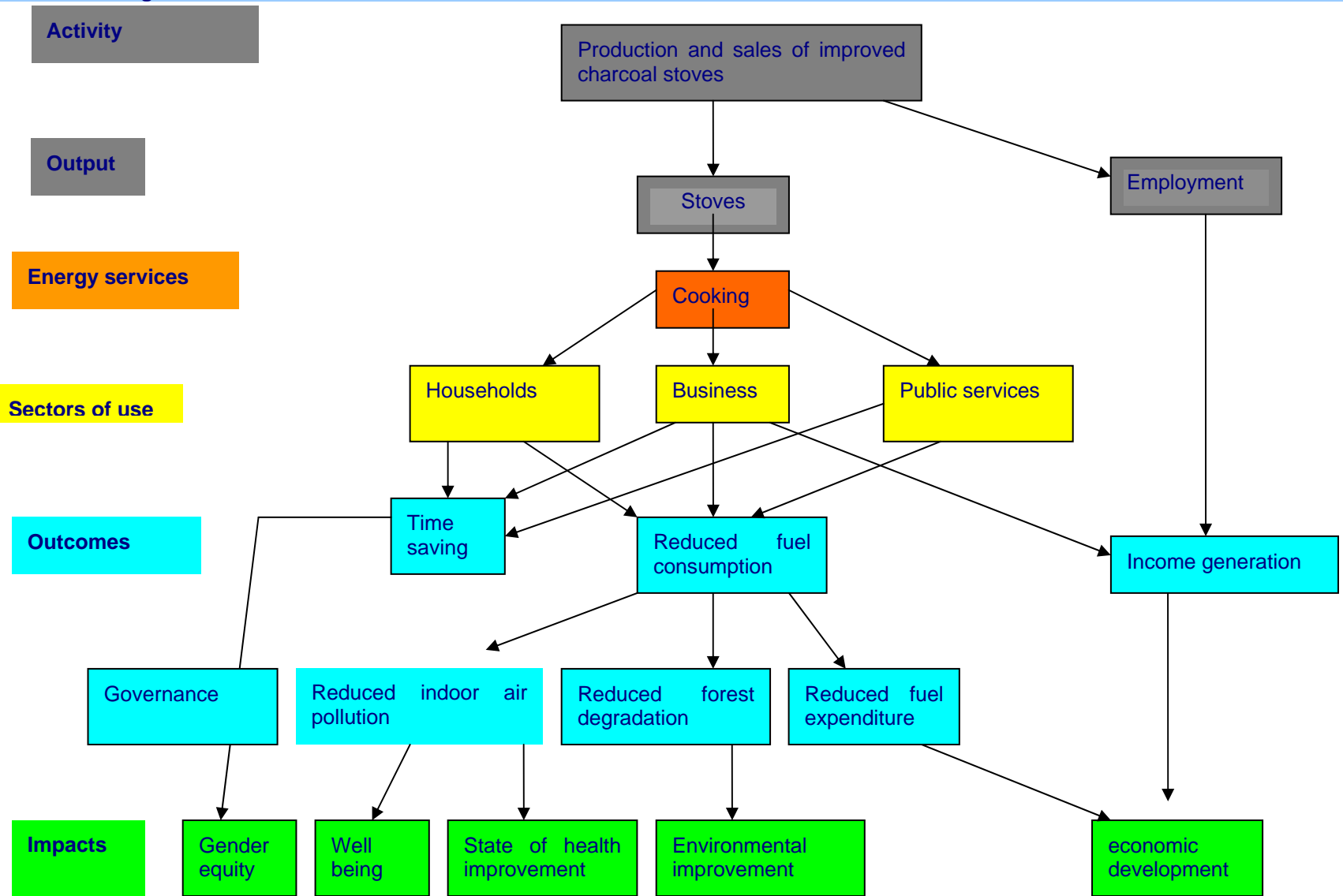
- **OBJECTIVE**

PROGEDE's objective is "to contribute to the supply of household with domestic fuel on a regular and sustainable way, while ensuring environmental protection and by offering alternatives and options as well as comfort to end users".

### Case study methodology

- The methods of data collection consisted of inquiries, focus group, observations and crosschecking.
- The inquiry tools used were questionnaires and interviews
- Questionnaires were targeted at the rural and urban households using improved stoves (quantitative data).
- Interviews were conducted with businesses, women association, improved stove manufacturers and retailers
- Health services and some established focus group (women groups).

**Causal link diagram**



## Results

- During the enquiry, the performance of traditional stoves and improved stoves highlighted the real consumption of charcoal, the time for cooking the main meal and the frequency of renewal of kitchen stove. These have been translated into social, environmental and economic impacts of the energy intervention.
- **Households:**
  - Urban and peri-urban households save at least 1.4 kg of charcoal per day when they change from traditional to Diambar improved stove.
  - Cost saving in fuel wood of US\$0.40 from avoided cost of replacing traditional stoves.
- **Economy :**
  - **Households:** Financial returns / household / year: US \$ 128
  - **Business:**
    - (Restaurants) Financial returns/years: US \$ 207
    - (Manufacturers):
      - An average of 6 employees (income / month, from US \$ 22 to US \$ 62 )
      - Creation of indirect jobs (retailers)
- **Health**
  - In rural area, 50% of affected individuals currently suffer from respiratory problems, 34% from sore eyes and 16% from other diseases. The average cost of the treatment of smoke related diseases is US \$ 3.6
  - Observation : Tendency to minimize consultations relating to respiratory affections, skin diseases and sore eyes in a number of health centres
- **Gender:** Time saving
  - Rural women: firewood collection once a week compared to 2 - 3 days/week previously
  - Timing saving on cooking: 40 min. to 1 h.
  - Participation in group life
- **Environment :** Preservation of the environment
  - Stoves using charcoal : 2.70 m3/year, representing 2.025 T
  - Stoves using firewood : 3.9 m3 / year, representing 2.925 T

## Lessons learnt

- General satisfaction of stakeholders with the Assessment framework
- Attribution of impact will still be problematic since energy is a cross-sectoral issue.
- Necessity to refer to baselines information (problematic of the availability of Data)
- Flexibility of the tool (AF)

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*From 1 January 2007, Risø National Laboratory, the Danish Institute for Food and Veterinary Research, the Danish Institute for Fisheries Research, the Danish National Space Center and the Danish Transport Research Institute have been merged with the Technical University of Denmark (DTU) with DTU as the continuing unit.*

### Website:

<http://www.deafrica.net>