Sustainable development

The proposed project contributes to the sustainable development of the Nkhata Bay District and Malawi in a number of ways:

- Environmental
  - The project will help significantly reduce Malawi's greenhouse gas emissions;
  - The project will help reduce the use of non - renewable biomass from forests, thus assisting in conserving existing forest stock s, and the protection of natural forest eco - systems and wildlife habitats; and
  - The protection of standing forests will also help protect watersheds, reduce soil erosion and maintain rainfall in the project area.
- Social
  - The Changu Changu Moto stove provides a significantly safer method for cooking with biomass, helping to reduce burn injuries, especially for children;
  - The improved efficiency of the Changu Changu Moto stove significantly reduces wood fuel consumption, meaning that considerably less time is required to collect wood fuel. This reduces the work burden on rural families and allows for alternative opportunities for economic development.
- Health
  - Worldwide, it is estimated that around 1.5 million premature deaths occur annually due to indoor air pollution, with around 15,000 per year in Malawi[12]. Women and children are the main victims. Adoption of more efficient stoves can significantly reduce indoor air pollution respiratory and health problems associated with smoke emission from biomass stoves[13] [14]. The decrease in total biomass burned and an increase in the temperature of combustion in the Changu Changu Moto improved cook stove will result in lower carbon dioxide, carbon monoxide and particulate emissions.
- Economic
  - The project will create employment and contribute to the economic development of Nkhata Bay District through the stove construction, maintenance and monitoring activities.
  - In areas where wood fuel is purchased, use of the Changu Changu Moto stove will significantly reduce household expenditure on cooking fuel.

[12] Country profile of Environmental Burden of Disease - Malawi. [Online] 2004. [Cited: 13 June 2012.] http://www.who.int/quantifying_ehimpacts/national/countryprofile/malawi.pdf
[13] *Quantifying the effects of exposure to indoor air pollution from biomass combustion on acute respiratory infections in developing countries*. **Ezzati, M and Kammen, D M.** 2001, Environ Health Perspect, Vol. 109, pp. 481-488.
[14] **Khennas S., Anderson T., Doig A. and Rees D.**, 1999. Rural Energy Services: A Handbook for Sustainable Energy Development. London, United Kingdom: Intermediate Technology Publications