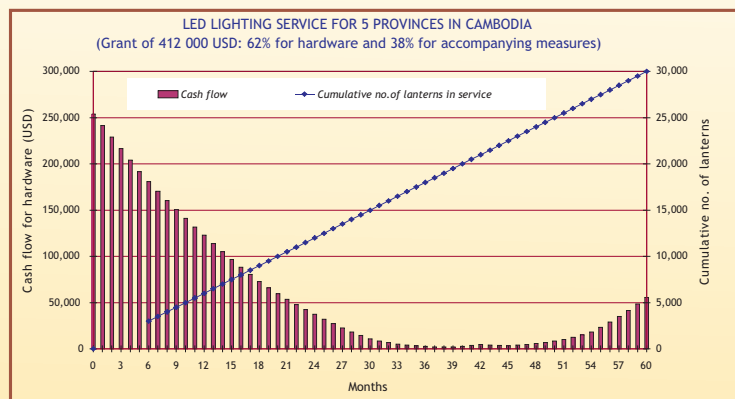


Pro-poor public-private partnership scheme

Based on the field experience, the PRO-SEED project proposes the creation of a Pro-poor public-private partnership scheme to provide LED lighting service in rural Cambodia. A one-time funding of 412,000 USD needs to be channelled through the concerned authorities of 5 selected provinces in Cambodia.

Almost 2/3rd of the funds would be lent to 5 rural entrepreneurs, each entrepreneur working with about 20 Lighting Service Providers (LSPs) covering that many villages. Assuming that about 60 households in each village will benefit from the lighting service, 6000 households can be covered in 100 villages within a year. This number is sufficient to set up a commercially viable rural lighting system manufacturing facility. The remaining 1/3rd of the funds would cover all accompanying measures, including capacity building of entrepreneurs and training of LSPs, promotion of lighting service, etc.



The above figure shows the cash flow for the LED lighting services over a period of 5 years. By that time, the local LED lantern manufacturer would provide lighting service to 30,000 households. The initial grant would be very effective to sustain the scheme during the first crucial period of 3.5 years. Beyond that period, the money generated from the lantern service will be big enough to make the cash flow increasingly positive, thus allowing the dissemination of lanterns at a faster rate than 500 lanterns per month, and also covering the transaction costs of the local authorities.

PRO-SEED PROJECT Enhancing energy service in the rural areas of Cambodia



Village lighting service provider

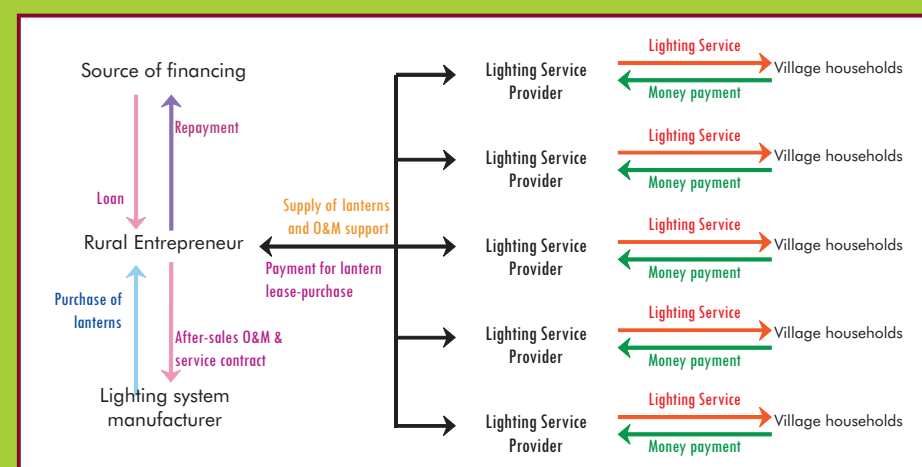


Solar-powered battery charging



Lighting service for households

PROVISION OF AFFORDABLE AND EFFICIENT MODERN LIGHTING SERVICE: "BANKER" INITIATIVE



Pro-Seed project is an initiative of Electriciens sans Frontières (ESF) and the French Environment and Energy Management Agency (ADEME) in partnership with Centre Kram Ngoy (CKN) and the Ministry of Industry, Mines and Energy (MIME).

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Web site: <http://www.electriciens-sans-frontieres.org/proseed/en/home.htm>

Present situation

Around 80% of the Cambodians do not have access to grid quality electricity. Their lives come to a halt at sunset; people are either left in the dark or they use kerosene for lighting. This is inefficient, unsafe and polluting; the price of kerosene also keeps increasing incessantly.

The poor in rural areas usually pay higher price for inferior quality of energy service because of lack of access to clean energy source, paucity of money for the high cost of energy efficient devices, poor knowledge of the technical options, untrained human resource, etc.

Pro-Seed project initiative

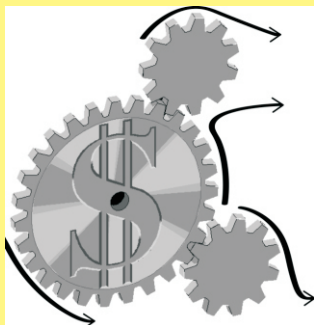
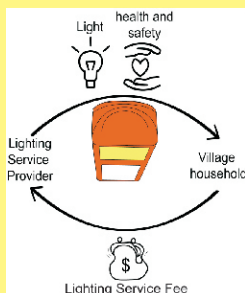
The business model that the PRO-SEED project has adopted attempts to tap the dispersed wealth at the "bottom of the pyramid" in order to provide improved energy service to the poor households, create livelihood opportunities in rural areas, and reduce the need for fossil fuels and their adverse impacts on the environment.

An average household in Cambodian villages spends between 200-400 Riel (0.05 to 0.1 USD) per day for 2 to 4 hours of kerosene lighting. The project team took up the challenge to provide these households with a more efficient, safe and non-polluting lighting service for longer hours and for the same amount that they spend on their present mode of lighting.

First, it was important to develop a technology that works. The project led to the designing of a state-of-the-art lantern using White Light Emitting Diodes (LEDs). The lantern's lighting output is hundred times better than the kerosene lamp.

Next, an affordable lantern rental service was conceived that meets the expectations of the villagers, in terms of safety, health and economy. In addition to reducing the fossil fuel use, the lighting service allows to extend the life of the lantern as well as its components, especially the battery and electronic circuits, thus reducing their adverse impacts on the environment.

Finally, the economic model is at least as important as the technology. It is the rental option that was retained because the villagers using the kerosene lamps often do not have the means to purchase the lanterns, and giving it free is not a solution.



Economic model to provide lighting service

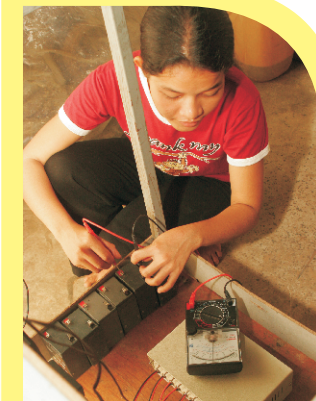
This economic model has been tested successfully in about 10 villages in Cambodia, involving 10 operators and around 400 families. It can very well be adapted in many other countries, benefitting all those who are confronted with similar situations as in Cambodia.

The proposed economic model involves a private sector manufacturer that sells the lanterns to a network of entrepreneurs working as franchises in different parts of the country. Each entrepreneur invests on lanterns, recruits "lighting service providers" (LSPs) from surrounding villages and signs a lease-purchase cum O&M contract with them. In their respective villages, the LSPs identify households that opt for the improved lighting service while paying the same amount as they spend on kerosene lighting.

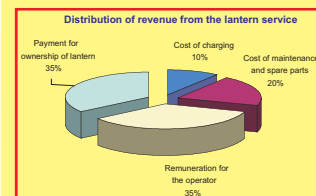
The LSPs are required to spend about an hour or so every day to provide the lighting service and are remunerated an amount comparable to what an average poor rural Cambodian earns in the whole day. Moreover, the LSPs eventually become owners of the lanterns through payment of installments within 3 to 4 years.

The "Banker" model can be adapted in many other countries, benefitting all those who are confronted with similar situations as in Cambodia. The technology and the concept developed are available in public domain for any manufacturer or entrepreneur.

While most other similar initiatives depend on continuous financial support for sustaining/expanding the lighting service, this model generates sufficient resources to gradually widen the service network without further external support. All that is needed is the seed money to help achieve an economy of scale for the lighting system manufacturer and the rural entrepreneurs. Once that is achieved, it can allow the service to grow at a compounded rate.



Operator checking the battery being charged



LED lantern assembled in Cambodia

