

Case study summary

Shri Kshethra Dharmasthala Rural Development Project (SKDRDP), India

SKDRDP won a 2012 Ashden Award for its success in providing affordable loans so that rural households can buy renewable energy systems.

Households with low incomes find it difficult to plan their spending. Money gets used for immediate needs, rather than for purchases that might improve life in the longer term. Credit, which could help spread the cost of larger purchases, is often available only through unscrupulous loan-sharks at enormous interest rates.

The not-for-profit SKDRDP promotes development through a network of self-help-groups which meet weekly in rural Karnataka. The programme helps group members to plan their household needs, save money, and gradually take out affordable loans for domestic and agricultural needs. SKDRDP recognises the many benefits of access to electricity and clean cooking, so a key part of its programme is to provide information and loans for renewable energy systems, in particular solar homes systems and biogas plants.

Key information

- Each self-help-group member makes a five-year-plan for their household or farm, and saves an agreed amount each week.
- SKDRDP starts with small loans to members of a group, and increases the amount when a track record of repayment is established.
- Loans are used for many different purposes, including sanitation, agricultural inputs, school fees and weddings.
- Energy loans are available after two years. Loan is for the full system cost of around US\$350, paid back in 150 weekly instalments of around US\$3.
- In February 2012, SKDRDP had 169,000 self-help-groups involving 1.8 million households (about 20% of rural families in Karnataka).
- About US\$200 million was on loan to group members, of which US\$3.2 million was for renewable energy systems. Excellent track record on repayment.
- 10,538 biogas plants, 8,379 solar home systems, 624 cookstoves and 176 pico-hydro plants financed since 1999.
- About 18,000 of these currently in use in 16,500 households, bringing benefits to about 82,500 people.
- Biogas plants provide cleaner and faster cooking, and save on the cost of fuelwood or the time to collect it.
- Solar-home-systems replace smoky kerosene lamps with clean, bright light, enabling study, social activities and increase hours for productive work.
- Greenhouse gas savings of about 50,000 tonnes/year CO₂e through replacing fuelwood and kerosene.

Future plans

- SKDRDP is increasing energy lending within its portfolio: within the next year a further 70,000 self-help-groups will become eligible for energy loans.
- Operations are expanding to cover all parts of rural Karnataka, with plans to start working in other states too.

SKDRDP is a charitable trust and rural development programme, founded in 1982 by the head of the Hindu spiritual centre at Dharmasthala. Its support and micro-credit programmes are funded mainly through commercial bank loans (US\$170 million on loan in 2011) and also donations. It has over 4,500 staff.

2012 Ashden Award winner

Supported by



India statistics 2007 -11

(World Bank)

GDP: US\$1,475/year per person

CO₂ emission: 1.5tonnes/year per person

69% of people live on less than US\$2/day

44% of people lack grid electricity

Location



"I'm a farmer, and I've been a member of a self-help-group for 17 years. At first I was worried about taking on loans, but they've been really useful. I've built a good house, put in a well, and installed a biogas plant."

Girija Devadiga, Nittade village



Girija Devadiga, Nittade village, stirs sambar on biogas

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Case study

Shri Kshethra Dharmasthala Rural Development Project (SKDRDP), India

Background

Households with low incomes find it difficult to plan their spending. Money gets used for immediate needs, rather than for purchases that might save money or improve life in the longer term. Saving is often a low priority, particularly for those without access to banks. Credit, which could help spread the cost of purchases, is often unavailable because people have no collateral. This may drive households to borrow more than they can afford from unscrupulous 'loan sharks' at enormous interest rates.

Access to electricity and clean cooking can provide great benefits to poor households in India and elsewhere, but many are put off by the up-front costs and unfamiliarity. The not-for-profit SKDRDP therefore offers information and affordable loans for energy access technologies (solar home systems, biogas and pico-hydro). These are available for members of its self-help groups in rural Karnataka. The long-term support that SKDRDP provides to the groups means that members plan their spending and don't take on more loan finance than they can afford.

The organisation

The Shri Kshethra Dharmasthala Rural Development Project (SKDRDP) is a charitable trust and rural development programme, founded in 1982 by The Heggade, who is the head of the Hindu spiritual centre at Dharmasthala in the state of Karnataka.

SKDRDP promotes development through a network of 169,000 self-help-groups which now includes 1.8 million families, about 20% of rural households in Karnataka. The programme provides advice and information to help group members make long-term plans for their household needs and to save money. It also provides loans for domestic and agricultural expenses, through one of the largest micro-credit programmes in India. SKDRDP recognises the value of energy access as a key component of development, so since 1999 has provided information and loans for sustainable energy technologies.

SKDRDP funds the support and micro-credit programme mainly through commercial bank loans (US\$170 million on loan in 2011) and also donations. It had about 3,800 full-time and 900 part-time staff in 2011.

The self-help group and loan programme

Self help groups

US\$1 = Rs 50.6 (Indian Rupees) March 2012

At village level, SKDRDP officers encourage neighbours to come together to form a group of between five and 20 people. Members come from all economic levels and faith groups. Most are agricultural workers, small farmers and traders, 70% of whom have incomes less than US\$2 per day.

The group has to follow set procedures, including meeting each week and keeping detailed records of proceedings and financial transactions. Members have to save a fixed amount (at least US\$0.20) each week. Each group member makes and records a five-year plan for their household or farm, including priorities for spending. The SKDRDP officer and other group members help with support and advice on the plan. Some groups focus particularly on agriculture and have a labour-share day each week, when they work in rotation on each others' farms.

Loans

To become eligible for loans, the group must have been running smoothly and saving for at least three months. Members must also have had training from SKDRDP on handling loans. Initial loans are small (up to US\$200 per member over 100 weeks) and for priority needs identified in the five-year plan. Each loan has to be authorised by the group and then higher up through the SKDRDP financial hierarchy, with detailed records kept at all levels. Repayments are made weekly, and each borrower receives a monthly statement with details of the status of each loan.



SKDRDP animators Suresh and Hemalata cross-check figures: detailed records are kept at all levels of the self-help-group network

"I'm very happy with the biogas plant, I was tired of breathing in all that smoke. And now I don't have to worry about gathering leaves to light a fire if a guest arrives!"

Girija Devadiga, Nittade Village



Ashvini and her neighbour adding water to dung in 3m³ fixed dome biogas plant

Renewable energy information and loans

SKDRDP has developed expertise in renewable energy technologies, and has built up an 'approved list' of reliable suppliers for members who want to have loans. These suppliers must provide good technology and after-sales service, and also handle and pass on any government subsidy associated with their technology, so the individual customers do not have to do this. SKDRDP officers provide information on the different technologies at village meetings, where suppliers are allowed to give short presentations. If there are problems with after sales service, SKDRDP will help in negotiations with the supplier.

SKDRDP has created a loan product for each of the technologies that it supports, currently solar home systems, biogas plants, and very small 'pico' hydroelectric plants. Loans are for 100% of the cost of the system and charged at 18% annual interest rate (well below the government maximum of 26% for microfinance). They have to be paid back in weekly instalments of around US\$3 (see box), over 150 weeks. In the past smaller loans have also been provided for solar lanterns and improved cooking stoves, but these are no longer actively promoted.

Groups get the opportunity of energy loans only after they have been running successfully for two years. Loan approval goes through the standard process, and it is then up to the individual loan recipient to buy from their chosen supplier.

Achievements

By February 2012, SKDRDP had provided loan finance for 10,538 biogas plants, 8,379 solar home systems, 624 cookstoves and 176 pico-hydro plants, a total of nearly 20,000 systems. An estimated 10% have gone out of service, so around 18,000 are in use, in about 16,500 households. With five people per household, these systems are bringing benefits to about 82,500 people.

Currently SKDRDP has loaned out about US\$3.2 million for renewable energy systems, about 1.6% of its overall lending portfolio of nearly US\$200 million.

Environmental benefits

Nearly all the households who use solar home systems and pico-hydro are off-grid, and replace kerosene lamps lighting, saving approximately 140 litres of kerosene per year. This cuts greenhouse gas emissions by an average of 0.35 tonnes/year CO₂e per household, or a total of 2,700 tonnes/year CO₂e.

Biogas systems replace the use of wood for cooking and the indoor air pollution this produces. The liquid effluent (slurry) from biogas plants is used on crops, and can cut fertiliser use and the resultant pollution.

In many countries wood supply is unsustainable, so biogas plants reduce deforestation and CO₂ emissions. However, Karnataka is well forested, so the wood supply is reasonably sustainable. But biogas is still valuable at replacing non-CO₂ greenhouse gases in the emissions from wood stoves and fires, estimated at around 5 tonnes/year CO₂e per household, or 47,000 tonnes/year CO₂e. Thus in total, the solar homes systems, pico-hydro and biogas plants financed by SKDRDP save about 50,000 tonnes/year CO₂e emissions.

Social benefits

SKDRDP self-help-groups give rural families the practical and financial support to plan and improve their lives and, as part of this, gain the many benefits of access to electricity and clean cooking.

For most households, the main benefit from solar or hydro electricity is clean, bright light instead of smoky, dim kerosene lamps. Working at home or studying in the evenings is easier. Outdoor lights make it safer to go outside at night since snakes and scorpions are easier to spot. Even grid-connected households sometimes buy a stand-alone system, because the grid supply is unreliable.

Biogas burns more cleanly than wood, so women and children no longer have to spend hours each day inhaling smoke. Cooking is easier and quicker, because the biogas stove lights immediately and the flame is easy to control. Collecting firewood is daily drudgery for many women, and puts them at risk of accidents, bites and hassle from forest officials. All this burden is removed by a biogas plant.

Technologies and costs

Solar homes systems (SHS) provide electricity directly from sunlight. Currently the one most frequently financed has a 35 Wp solar module, a rechargeable battery for storage with a charge-controller, four LED or CFL lights, and an inverter so that the system can run small a.c. as well as d.c. appliances. The typical cost of US\$400 (including wiring and labour) requires 150 weekly instalments of US\$3.40.

Biogas plants use bacteria to break cattle or buffalo dung, producing biogas which can be used for cooking and lighting. The main design financed has a digester volume of about 3 m³, which needs dung from at least two animals. SKDRDP has found that plants using fixed concrete domes to collect the biogas are the most reliable, and provides loans of up to US\$300 for such plants, paid back in weekly instalments of US\$2.60. The loan covers the full cost of constructing the plant.

SKDRDP has recently started to finance pico hydroelectric plants, typically with 80 W capacity. These cost around US\$280 and are used to generate electricity from permanent streams, and run lights and other small appliances directly from the output. At present these are produced on an individual basis and not branded.



Vishalakshi and Neelappa have indoor and outdoor lights powered by their pico-hydro plant.

Economic and employment benefits

The renewable energy programme has provided 100 extra jobs in SKDRDP and encouraged new technology providers to the region.

Extra time becomes available for both productive and social activities, because of good quality light in the evenings, and around half a day per week may be saved from gathering wood. Women who work at home making incense sticks and bidi cigarettes can increase their production by about 30%.

Saving the cost of kerosene (about US\$1.2 per week) covers about one third of the repayments on a solar home system. And households who previously paid US\$3 to US\$6 per week to purchase wood can cover all the cost of a biogas loan. However for many households, it is the quality and convenience of these energy supplies, rather than financial savings, that are most important.

Potential for growth and replication

SKDRDP is growing its solar and biogas loan programme, and expects this to become an increasingly large proportion of its overall lending. 70,000 more of the existing self-help groups will be eligible for energy loans in the current financial year (2012-13).

SKDRDP wants to increase the number of groups, so that it covers all parts of Karnataka. One priority for expansion is the north of Karnataka, where there are large numbers of cattle and thus potential for biogas. It would also like to start operating in other states, but will do this gradually to make sure that the right management structure is developed.

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Self-help group meeting, Putthur

“It used to take us a lot of time to gather enough wood for cooking, so we’d pay people to gather it for us – but that wasn’t cheap! Then I saw biogas in my neighbours’ farms and I liked it very much. So we took out a loan for a biogas plant and it’s worked very well for us. The kitchen is a lot cleaner – there isn’t soot everywhere like before.”

Suresh, self-help-group Jeevanjyothi



Many women earn an income by rolling bidis in the evening: using a kerosene lamp to see what you are doing poses a serious fire-risk

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