



MICROFINANCING DECENTRALISED SOLAR ENERGY SYSTEMS IN INDIA : INNOVATIVE PRODUCTS THROUGH GROUP APPROACH

SATISH PILLARISETTI

**National Bank for Agriculture and Rural Development
Head Office
Mumbai
India**

Introduction



- **India has a large proportion of people without electricity**
- **Jawaharlal Nehru National Solar Mission : 20,000 MW by 2022**
- **Of which 2,000 MW : off grid applications**
- **Through bank finance: Initiative taken up by a rural bank for solar home lighting systems**
- **Government's subsidised credit scheme with the facilitation of National Bank for Agriculture and Rural Development (NABARD) followed**
- **Scheme undergoes several changes**
- **The central bank (Reserve Bank of India)'s tag of priority sector lending for solar lighting and heating systems**
- **Steady progress: 200,000 units financed**

Innovating products



- **Feedback on the scheme mixed**
- **Isolated communities unable to benefit**
- **Thinking on group based financial products**
- **Umbrella Programme on Natural Resource Management (UPNRM) with Kf W support**
- **Rural Innovation Fund (RIF) with SDC support**
- **Joint Liability Groups (JLGs) of 4-10 members**
- **Self Help Groups (SHGs) of 15-20 members**

Girls Hostels' JLGs -1



- Many islands in estuarine region of Sundarbans in West Bengal outside the grid connectivity
- 3 girls hostels did not have power connection: depended on kerosene lamps
- Local NGO motivated for going in for solar powered LED lights
- But no suitable financial product was available
- Interaction with NABARD provided a clue: Group approach can be tried
- Parent Teacher Committees of hostels organised into JLGs
- JLGs approached NABARD for financial support

Girls Hostels' JLGs -2



- Proposal covered 157 solar powered LEDs in 3 hostels
- NABARD gave 50 % as loan and 30 % as grant from RIF
- Balance of 20 % was shared by NGO and JLGs
- Responsibility for maintenance of system and collection and repayment of loan installments with JLGs
- Per student per month collection linked to number of units in each hostel
- Ranged between Rs 62 and Rs129
- 5 year repayment period given-But
- 2 JLGs opted for shorter period of 2 years

Solar Micro Grids-1



- In the same region of Sundarbans
- Aimed at replacement of kerosene use for lighting
- 13 micro-clusters covered in the project
- Each comprising 7-10 households
- Each household provided with 3 LED lights and 1 mobile charging point
- Each micro-cluster managed by a JLG
- Element of individual and collective ownership and responsibility

Solar Micro Grids-2



- **NABARD sanctioned 50 % of project cost as loan and 50 % as grant from RIF**
- **NGO covered the cost of forming and nurturing JLGs**
- **Repayments based on savings from non-use of kerosene for lighting**
- **Monthly installment collection by JLGs**
- **Repayment period of 4 years**
- **JLG members saving additional amount for battery replacement and panel maintenance**

Charging station model-1



- **Project taken up in remote blocks of Bihar and Jharkhand states**
- **Marginalised tribal communities**
- **Solar home lighting scheme did not take off here**
- **Solar lanterns with charging stations as an alternative**
- **Initiative taken up by an NGO-ASSEFA**
- **Covered under Lighting a Billion Lives (LaBL) scheme of TERI**
- **ASSEFA acts as LaBL associate of TERI**

Charging station model-2



- **Self Help Groups as LaBL franchisees**
- **They set up and manage solar lantern charging stations (SLCS)**
- **Handholding support by LaBL associate (in this case ASSEFA)**
- **Fee for service/rental model**
- **Typical SLCS is with 50 solar lanterns, 5 solar panels and junction boxes**
- **Lantern provides light for 5-6 hours**
- **Rent collected used for operation and management of charging station and partly for battery replacement**

Charging station model-3



- 40 charging stations were to be set up
- 50 families covered by each station-total 2000 families
- 85 % of project cost was given as loan and 10 % as grant by NABARD under UPNRM
- Participant contribution of 5 %
- Each charging station under supervision of SHGs
- Loans and repayment overseen by SHGs
- 1-2 women from each SHG take responsibility for implementation

Charging station model-4



- **Project did not proceed as envisaged**
- **Only 250 families covered instead of 2,000**
- **Community management was diffused as 3 SHGs worked with each station**
- **Community asset management suffered**
- **Dissatisfaction with illumination levels: preference for CFL lamps**
- **ASSEFA approached NABARD for course correction**

Individual panel model



- **Balance 1750 households covered under individual panel with CFL bulbs model**
- **Accordingly loan under UPNRM was revised downwards by 20 %**
- **Though panels for individual households, loan administration through SHGs**
- **Loan monitoring and recovery also through SHGs**
- **Maintenance overseen by SHGs**
- **This model saw a wider acceptance than charging station model**

Conclusions-1



- **93 % of units in working condition**
- **As on date all loans being serviced regularly**
- **No defaults or delays in repayments**
- **Multi-pronged involvement of all stakeholders**
- **Need to expend energy in building up social capital**
- **Effective community participation needed**
- **People's participation aspect neglected initially by NGO in Bihar-Jharkhand project**
- **People ready for a group financial product but not a group physical product**

Conclusions-2



- **Benefits in terms of improved health**
- **Increased academic performances**
- **Better living conditions**
- **Increased livelihood opportunities due to increased working hours**
- **Drudgery reduction**
- **Disprove the need for subsidised interest rates for poor**
- **Market interest rates on loan portion in all projects**
- **Group based financial products needed for lowest economic strata**

Conclusions-3



- **Models basically sustainable: initial costs of social mobilisation and capacity building**
- **Local bank in West Bengal commenced financing JLGs for Solar Home Lighting**
- **NABARD's ability to leverage various types of funds and bring in participation from different entities**
- **However maximising mainstream financing with minimal subsidies is a challenge**
- **These group products can be mainstreamed after studying full impact**
- **Need for further evaluation with detailed field level data**



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AND RURAL DEVELOPMENT**

THANK YOU

satishp99@usa.net
p.satish@nabard.org