

**RF-SPONSORED IEI PROJECT  
FOR REWSU DISSEMINATION**

- **A.R. Shivakumar**
- **Dr Sudhir Chella Rajan (since August 1996) and V. Balu (up to August 1996)**
- **Professor Amulya K.N. Reddy**



**RF-SPONSORED IEI PROJECT FOR  
REWSU DISSEMINATION**

- **Phase I -- to establish 9 REWSUs in Karnataka**
- **TBOT model**
- **Replication through independent implementing agencies**
- **External financing for capital costs**
- **Training and technical support from ASTRA**
- **Phase I --> to provide inputs to design a larger-scale replication programme**



## PHASE I STEPS

- **Select implementing agencies**
- **Select villages based on Pura-derived criteria involving resource availability and villagers' willingness to participate**
- **Formation of GVS**
- **Motivation, training and construction of REWSUs**
- **Initial period of operation with IEI technical and financial support**
- **Transfer to GVS**



## CHRONOLOGY

- **1993 -- IEI prepared 68-page IMPACK**
- **December '94 -- RF approved IEI proposal & sanctioned US\$ 152,570**
- **February '95 -- IEI presentation of IMPACK to Karnataka Government, NGOs and engineering colleges**



## CHRONOLOGY (Continued)

- **March '95 -- ASTRA Training Programme at UNGRA**
- **April '95 - Meeting for Motivators**
- **February '96, January '97 and May '98 -- Training Programme for operators**
- **July 1998 -- IEI submitted Final Report to RF**



## IMPLEMENTING AGENCIES

- **BAIF Institute of Rural Development (BIRD) -- Basavanahalli and Mavinikere**
- **Rotary Club of Dharwar Central (RCDC) -- Nayakanahoolikatti**
- **Rural Education for Development Society (REDS) -- Kalgudi and Sunkadahalli**



## IMPLEMENTING AGENCIES (Continued)

- **Siddaganga Institute of Technology (SIT) --  
Yeladahalli**
- **Sri Siddhartha Institute of Technology (SSIT) -  
- Mailanahatti**
- **Vivekananda Industrial and Rural  
Development Association (VIRDA) --  
Singonahalli**
- **Tumkur Zilla Parishad (ZP) -- Doddagollahalli**



## IMPLEMENTING AGENCIES

- **NGO**
- **Voluntary Organization**
- **Engineering College**
- **Local Government Body**



## CONSTRUCTION

- **Project Duration -- 41 months vs 18 months in proposal**
- **REWSU construction times -- 3 months to 30 months**
- **Reasons for Delays**
  - Sequential scheduling of second REWSU
  - Project abandonment -- Singonahalli (VIRDA/ZP) and Doddagollahalli (ZP)
  - Disputes re: Use of resources and Construction costs
  - Mistakes in construction



## CAPITAL COSTS (IN 1996 RS) OF 40 CU. M. PLANT FOR 100 HH

- **Rs 6,11,516 (Rs 6,870/HH) vs Rs.5,05,146 in proposal (21% increase in costs)**
- **12% --> Gross underestimate of costs of some items (generator room, sandbed filters, water supply system)**
- **5% --> Well and pump located farther away than estimated**
- **3% --> Mistakes during construction**
- **<1% --> Revision of technical specifications**
- **<1% --> Much longer construction times**



## OPERATING COSTS (IN 1996 RS)

- **Rs 19 + 7 per household for lights and water**



## LESSONS FROM PHASE I

- **ASTRA's experience is replicable by other institutions**
- **Essential --> local stake in village or capability to build local confidence**
- **Democratic & Transparent institutional arrangement at village level**
- **Records, proper accounts, routine GVS meetings crucial**
- **Government involvement in REWSUs essential, but government implementation may not be efficient**
- **Parallel operations by government must not compete with REWSU**



## IMPLEMENTATION CHECKLIST

#1

- **Entire Hardware + Software Packages?**
- **People's participation (resource supply and payment for services) as households and/or community?**
- **Key role for women as users, operators and entrepreneurs?**
- **Immediate, medium-term and long-term time-horizons for technology dissemination?**



## IMPLEMENTATION CHECKLIST

#2

- **Energy Services for direct HDI improvement as necessary (but not sufficient) condition?**
  - **Electrification of homes?**
  - **Eventually, gaseous fuel for homes ?**
- **Energy Services for indirect HDI improvement via income generation ensuring that income is used for HDI improvement?**
- **Least-cost integrated packages of sources and devices?**



## IMPLEMENTATION CHECKLIST

#3

- **Community-based supply of sources if more cost-effective (generation + distribution) than household-level sources?**
- **“Centralized” multi-community supply of sources if more cost-effective (generation + distribution) than community-level sources?**
- **Level playing-field for centralized and decentralized village-level supply?**
- **Level playing-field for supply expansion and efficient end-use devices?**

