repayments remain around 50%, as the cost of collecting the money is much more than the actual collections due to the low monthly payment. This means that over-subsidizing solar photovoltaics has a negative effect on the dissemination of solar photovoltaics through the business route. This project has demonstrated that solar photovoltaics is an appropriate technology, but the implementing methodology used for the project was not sustainable and as a result was found detrimental to the commercial dissemination process of solar home systems in Sri Lanka.

23.4.6 Water Pumping in the Sahel

The Regional Solar Programme (RSP) was one of the early systematic programs to apply PV technology to solve pressing problems in the Sahel region of sub-Saharan Africa. Financed by a grant of 34 million ECU from the European Commission, to cover the cost of PV equipment and other procedures such as training, information and public awareness activities, regional coordination and technical assistance, this program was launched in 1989. The goal of the RSP was to install almost 1.4 MWp of PV modules (about 3.5% of the world market at that time) in water-pumping systems, vaccine refrigerators, community lighting and battery-charging stations. At the end of the program, a total of 626 pumping systems and 644 community systems had been installed and a wealth of lessons learned.

The principal objectives of the RSP were [55] to improve the accessibility of water in both quantity and quality, to improve the economic condition of the villagers by development of complementary resources through gardening, to reduce the time spent in procuring drinking water, to train personnel for project management, to create management groups for the solar equipment and to develop and adopt a legal framework for operation of the equipment with contractual structure of the relations between users and private companies.

Not all specific goals and objectives originally planned were fully met, but important lessons were derived. The drinking water component of the program took more than 90% of the installed PV power, so the lessons learned apply basically to this application. Solar pumping was found more affordable than diesel motor pumping, by about a factor of two per cubic meter of water. Compared to the per habitant cost of manual water rising pumps (50 ECU), borehole considered, investment on PV pumping systems was slightly higher (55 ECU), but the service quality of PV pumps was superior. Of the total installed cost, 31% was for the supply of the PV system, 11% for installation, 12% for regional activities (including coordination, quality control, tests, monitoring and the like) and 46% for the distribution network, water tower and other reception infrastructure.

One mode of management of the water supply system used in some communities was directly inspired by the management of water points equipped with manual pumps through a village water committee. This management system, however, was not effective owing to a number of difficulties, including an imperfect mastering of the accounting tools and a quasisystematic confusion of the responsibilities assigned to the principal members of the committee. Other communities preferred delegating the management of the entire system to a private-type body on a fee basis or to a communal-type body. These latter forms of management seemed better suited to the local conditions than the water committee scheme.