

Electrifying

the Market

SUZANNE MAIA describes an innovative and effective approach to bringing energy to the rural poor

- An estimated 12 to 20 million poor Brazilians have no access to electricity. Yet conventional attempts to provide it have been delayed and provide energy that is limited both in quality and quantity. And they fail to address how the rural poor will pay their electricity bills even at subsidised costs.

- Eleven years ago, the Brazilian Government established a programme to use renewable energy to meet such unmet demand for electricity and to replace costly diesel-fuel generation throughout the country. It wanted to use locally available sources to produce energy in areas beyond the electricity grid, thus meeting its environmental, social and economic development objectives.

- Within three years officials running the programme realised that they could not make their projects sustainable or find a viable way of supporting renewable energy resources, other than the use of photovoltaics in remote areas. Other organisations – whether state, national or international – were faring no better in establishing a viable market base for renewable energy technologies and services.

In mid 2002 a new project – funded by the United Nations Foundation, with co-funding from InWent of Germany, the Brazilian State of Mato Grosso and technical cooperation from UNDP – was launched to jumpstart a key priority of the Government's, the development of Regional Market Managers (RMMs). Under this concept, voluntary consortia of private local organisations, with complementary strengths, work together with others to help consolidate sustainable renewable energy markets in their regions, bridging gaps between supply and demand.

This management model has been one of two critical features in the success of the project, which is executed by the NGO, Brasil Sustentavel (BRASUS) in four rural areas of Mato Grosso, with sparse populations of poor people that need energy to develop economically, socially and in an environmentally sound way. The other has been

its methodology which, though systematic, is extraordinarily flexible in adapting to local needs and characteristics, as interpreted – in a democratic and participatory way – by local stakeholders. It also makes the markets sustainable by ensuring the sustainability of the goods and services that will use the energy, and the local organisational capacity to continue this and other initiatives.

The vital elements that simultaneously weave together the fabric of this sustainability are: collecting, organising, evaluating and disseminating information to market participants; using this information to organise markets; establishing adequate business models and market approaches that give practical, direct support for developing technically and financially viable business plans for both producers and consumers of renewable energy; ensuring appropriate technology transfer;

training and capacity building; setting up a locally adapted financial mechanism that responds to the needs of its rural consumers and the small and micro renewable energy enterprises that supply them; and transferring tools for planning, management, monitoring and supervision, along with the knowledge of how to use them.

The project ensures that its activities have win-win results for all participants. This generally means using technologies, at least initially, to implement or expand viable economic activities that add local value. Each element is integrated to ensure that it has positive, or at least neutral, effects on the others. Thus promoting greater agricultural productivity – through training, technical assistance, monitoring and access to credit – enables poor farmers to follow more environmentally sound practices while increasing productivity and their incomes. This in turn reduces deforestation, better preserves water resources, reduces waste and pollution, improves public health and stabilises families in the region.

The project has already had strong, concrete results besides contributing positively to side benefits such as a sense of community.

- Renewable energy projects, including two small enterprises, have been financed and implemented through a Revolving Fund created by BRASUS with \$200,000 start-up capital from UNF. The first repayment to the fund was made in July 2005;
- 19 private sector organisations are members of RMMs in the four regions. They have been fully supporting the RMM operational costs since January 2005, and are supported in various ways by at least 10 public sector agencies;
- A new environmental and sustainable development institute was created from the RMM in one region, and an existing environmental/sustainable development NGO has adopted the RMM in another;

- Two agricultural cooperatives and a farmers' association were resuscitated, largely thanks to the project's ability to draw supporting organisations together. They now provide critical leadership in their regions, with local partners, in advancing new development initiatives;
- The capacity of RMM members and their partners for building markets, networking for and developing supplementary financial, technical, human and logistical resources has evolved very satisfactorily. After 27 months they were able to operate independently of project resources;
- At least 20 private local commercial enterprises have provided direct financing or credit to farmers in the project, indicating the opportunities it offers them and its impressive impacts in building cooperative efforts to promote local development;
- At least \$100,000 have been mobilised in non-project resources to invest in productive activities applying renewable energy technologies, and an additional \$110,000 business loan from other sources was directed to RE enterprises operating in the market regions;
- The number of local renewable energy enterprises directly involved has increased from three to eight, showing that they have understood both how they can benefit from the awakened market and the need to keep it growing;
- In the project's third year, local RE enterprises sold at least 45 renewable energy systems – valued at around \$50,000 – independently of the project's Revolving Fund, indicating a significant rise in demand, thanks to the way the project's activities have stimulated the market for both suppliers and consumers;
- The four regions reported an estimated 94 potential projects in the pipeline for the year 2005-

2006 – including photovoltaic, solar thermal, and micro hydro-systems, and bio-digesters – and a potential for at least 200 annually beyond then;

- Municipal governments have provided technical assistance to farmers for optimising production practices, improving roads to increase access to markets and for project activities, giving logistical support and helping with operational costs for vehicles and tax payments;
- The renewable energy technologies are mainly replacing or avoiding the burning of diesel – and its emissions of greenhouse gases and other pollutants – with an enormous potential for much greater reductions;
- Over 1,200 rural farmers, local entrepreneurs, technical specialists, municipal and state government representatives, RMM members, and other participants from rural worker unions, academic institutions and NGOs have received training through the project.

The RMM model and project methodology – with their focus on local participation and adaptation – are well suited for replication in other areas that meet their basic criteria. Neighbouring municipalities in

Mato Grosso are showing interest, as is the State Government itself. This year RMM replication occurred in the northeastern state of Piauí, one of the poorest in Brazil, with support from InWEnt, several private entities, and the host municipal government. So far this is succeeding well – and proceeding even faster than in Mato Grosso – with local resources and market participants strongly engaged.

BRASUS estimates that a solid basis for replication in other regions requires approximately \$150,000–200,000 in technical cooperation funds for organisational, market studies and training activities. Mato Grosso's revolving fund becomes self-sustaining with approximately \$450,000 in capital, and can be extended to cover other regions with minimal adaptation. Alternatively, new revolving funds could be established, at a cost of only 5 – 10 per cent of initial fund capital. Though the model is intended for regions with at least minimal market development potential, the effects of implementing it are expected to influence even the poorest or most scattered rural populations ■

Suzanne Maia is founder and President of Brasil Sustentavel (BRASUS), meaning 'sustainable Brazil.'



Mark Edwards/Still Pictures