

AID/VITA

RENEWABLE ENERGY COOPERATIVE AGREEMENT
AID/DSAN-CA-0182

ELEVENTH PROJECT QUARTER REPORT

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Submitted to:

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I. BACKGROUND

Volunteers in Technical Assistance (VITA) is a private, non-profit organization that offers information, technical assistance, and other services to people in developing countries, with the goal of helping individuals and groups use resources in ways appropriate to their needs and objectives.

In August 1979, VITA and AID(DS/EY) signed a Cooperative Agreement for a five-year program in "Low Cost Energy Technologies for the Rural and Urban Poor," which would "provide material, information, and human resources for the support and advancement of low cost energy technologies based on renewable resources."

This Renewable Energy Program (REP) was designed to make full use of VITA's Volunteers, technical information resources, and extensive network of individuals and organizations worldwide. The program was also designed to strengthen, expand, and improve the delivery of VITA's services. These include technology transfer (both by-mail and in person), publications, training, and a small grants fund to help local groups in developing countries carry out renewable energy demonstration projects.

II. INTRODUCTION

The past quarter, the 11th of the REP, marked the passing of the halfway point in the program. The first half of the REP saw a strengthening of VITA resources in the field of renewable energy, evidenced by an increase in requests for assistance from private requesters overseas in that area, and, notably, increased requests from governments, regional organizations, and international institutions. In addition, AID Mission requests to VITA have increased dramatically. For example, Missions in Africa having requested information include Cape Verde, Tunisia, Morocco, Guinea, Somalia, Rwanda, Sudan, and Burundi.

Despite the interruption encountered as a result of the REP funding cutback, the small grants program has proved to be a valuable asset to VITA's overall program. Among other things, it has enabled VITA to develop programmatic relationships with organizations with whom only a by-mail relationship previously existed.

The key aspect of the program that has become evident during its first half is that with relatively limited resources, a technically-oriented private voluntary organization can respond rapidly and effectively to development problems at the governmental/planning, intermediate/entrepreneurial, and village levels with a variety of assistance to address individual development needs. With a modest input of capital, the organization built on the strong base it had established over a 20 year period and increased its effectiveness dramatically. The REP demonstrated that large sums of money are not necessary for high impact.

During the 11th quarter of the REP, several themes have emerged:

- * VITA has made use of the skills of an increasing number of technical Volunteers in a variety of capacities, including advisory panels, overseas consultancies, and as interns at VITA. In addition, long-term program plans indicate that this intensified use of volunteer resources will continue to increase.
- * New efforts in developing small industries in windpower generation mark the program focus on enterprise development.
- * Evaluation methodologies are being developed and used in several aspects of VITA's work, for example in the small grants portion of the REP, in an organization-wide effort to make available to AID and others valuable information on the successes of that and other program efforts.

Specific activities under these and other program focus areas are briefly discussed in the following pages.

III. VOLUNTEER INVOLVEMENT

1. Mali solar evaluation. VITA Volunteer Dick Graham completed a 30-day consultancy as the head of a four-person team evaluating the Mali Solar Energy Project. He is now working with VITA staff in preparing the final report, which will be submitted to AID/Washington and Mali within the next few weeks. Graham also reviewed the work of two small grant recipients in Mali, and travelled to Tunis to assist the AID Mission there at an AT/renewable energy conference.
2. Somalia consultancy. VITA Volunteer and new staff member Hank Cauley completed his three-month volunteer consultancy in Somalia and, as a result of his accomplishments, was

asked by both VITA and USAID/Somalia to extend his stay an additional four months. His accomplishments include: development of two types of fuel-efficient stoves using local materials; training of five Somali stove construction trainers; approximately 700 stoves in use in the Ali Matan region; and initiation of stove programs in six other Somali refugee camps.

3. New Sahel woodstoves coordinator. Longtime VITA Volunteer Dr. Sam Baldwin, now a VITA staff member, arrived in Ouagadougou at the beginning of June to take Dr. Tim Wood's place as the Sahel Woodstove Technical Coordinator for two years. Wood finished his tour of duty with very high marks from both CILSS and the local AID mission, and will continue to work with VITA on an as-available basis. Steve Hirsch attended a ceremony at CILSS at which both Wood and VITA were praised for the work of the past two years. CILSS expects to expand its collaboration with VITA into other areas of renewable energy.
4. Zimbabwe Technology Exhibition. VITA Volunteers Ali Sheriff and Bashir Lalji will be participating in the upcoming Zimbabwe Technology Exhibition. The two were recently granted an award by the Government of Tanzania for their innovative work on the use of waste heating oil. VITA has prepared a publication on the technique and will be setting up training programs in its use for African entrepreneurs.
5. Renewable energy seminar in Botswana. It is anticipated that VITA will sponsor a renewable energy seminar in Zimbabwe to publicize the results of two REP small grants. VITA Volunteers Brian McGary and Jeremy Ascough will be setting up the seminar. The seminar may be scheduled to capitalize on the attention focused on the Technology Exhibition mentioned above. VITA is discussing with Appropriate Technology International a possible role for VITA in the exhibition.
6. VITA Fellows Program internships. VITA Volunteers Andrea Love and Robert Reining completed three-week and two-month internships respectively at VITA under the VITA Fellows Program. Love assisted in the development of a VITA private sector initiatives strategy, and Reining has begun evaluating the REP small grants program component. In addition, Reining has begun to organize a panel meeting to be held at VITA on village level applications of remote sensing technology.

7. Meeting of woodstove testers. VITA Volunteer Howard Geller is assisting with the planning of an upcoming meeting of woodstove testers, to be hosted by VITA this fall.
8. Wind electric proposal. VITA Volunteer Jim Sparks has been involved in the development of a proposed project in St. Lucia for the installation of a wind electric and diesel back-up power system for a National Park on the island. Sparks is included in the proposal as the resident project manager, and his presence is considered crucial to the success of the project.
9. Mexico opening. Volunteer Ed Kennell was among several candidates proposed by VITA for a two-year position at the Instituto de Investigaciones Electricas (IIE) at Cuernavaca. He was recently offered the position, which he accepted, and will be starting work in September of this year.
10. Computer windmill simulation. The VITA Volunteer Group on the variable stroke mechanism for the VITA-IIE wind project in Mexico has developed and revised a computer simulation of the variable stroke mechanism.
11. Wind energy consultant. Volunteer William Smith III, who over a one-year period from 1980-81 was involved in consulting work on wind energy in India for VITA, is now preparing a manual with blueprints of his windmill design. VITA plans to publish the manual later this year.
12. Vols attend planning seminar. VITA sent two Volunteers, Richard Mattocks and John Furber, to attend and speak at an environmental planning seminar on San Andres island (Colombia). They were extremely well received. Expenses for travel and per diem will be reimbursed to VITA by the Inter-American Foundation.
13. Poultry panel. VITA hosted a panel meeting convened in cooperation with the U.S. International Communications Agency to discuss design, content, logistics, and support for a travelling poultry technology exhibit. VITA Volunteers were among the participants in the panel.
14. Promising crops panel. Another panel attended by several VITA Volunteers, on "promising crops," was convened to identify and discuss innovative approaches the organization could take to create productive programs in promising energy and other crops. Panel participants were experts from diverse backgrounds, with worldwide experience in both private and public sectors of research, technology, and

extension work. Information and recommendations from the panel have been combined with survey responses from many other VITA Volunteers around the world.

15. Agriculture panel. Nine VITA Volunteers met with program planning staff to brainstorm the framework for a major program in agriculture. Envisioned as spanning five years and costing approximately one million dollars per year, the program will focus on communications and information networks, appropriate resource use, the unique role of women in agriculture, entrepreneurial and small business support, renewable energy technologies and maintenance systems, and dissemination and outreach services.

Dwindling energy resources hit Third World agriculture particularly heavily, and the resources and expertise made available through the REP provide a solid base on which to build the proposed program. The volunteer panelists will serve as an ongoing advisory committee to the program.

16. Volunteer in Pakistan. At the request of a local Pakistani volunteer group, long time VITA Volunteer Steve Allison, presently in Pakistan marketing Solar Irrigation Pumps, went to Chitral to examine practical applications of renewable energy sources in that area.
17. Volunteer consultant referrals. A total of 101 requests for consultant name referrals were received this quarter.
18. New Volunteers. Nearly one hundred new Volunteers were added to the roster during the past quarter. Twenty-one are specialists in renewable energy.

III. ENTERPRISE DEVELOPMENT

1. Entrepreneurial activities initiated. VITA Volunteer Intern Andrea Love initiated a number of private entrepreneurial activities, which she will continue to pursue this quarter. These include:
 - * defining VITA's role, as well as that of Volunteers Sheriff and Lalji, in the upcoming Zimbabwe Trade Exhibition
 - * collaborating with Dow Corning on the testing and use of improved glazing material for solar dryers and water heaters
 - * plans for the training of African entrepreneurs at the Karen Center in Nairobi

- * plans for a renewable energy seminar this fall in Zimbabwe, in collaboration with a number of Zimbabwean VITA Vols.
- 2. Planning study. Under a grant from PACT, VITA will be undertaking a planning study on small enterprise development for Roatan, Honduras. This is an outgrowth of the wind energy water system developed by VITA, local industry, and villagers.
- 3. CBI small business development. A concept paper was submitted to AID in the context of the Caribbean Basin Initiative (CBI), to promote small business development in the private sector. Thus far no response has been received.
- 4. Dominican Republic workshop. VITA Board Chairman Jean Wilkowski represented VITA at the Executive Workshop on Farmer/Agribusiness Joint Ventures, managed by the Fund for Multinational Management Education (FMME) in the Dominican Republic. She identified two prime areas in which VITA might provide assistance. The Hershey Corporation is interested in starting a dialogue on the use of cacao bean pods. South Dominicana, Inc., is interested in pursuing further discussions on a possible VITA survey of water use and pumping for the irrigation of okra crops and an assessment to improve water use in the area.
- 5. Dissemination in Thailand. Asia Field Representative Marcus Sherman, in his first two-year report on his activities in Thailand, proposed a major focus on the dissemination of renewable energy technologies--through a commercial approach. He has determined that disseminating many of the "traditional" appropriate technologies requires an expensive, time-consuming process which frequently has only partial success. Through an intensive survey of local manufacturers and small retail businesses, Sherman plans to promote small-scale renewable energy technologies from the demonstration stage through widespread usage. One of the technologies selected by VITA to be commercialized is a windmill successfully developed in Thailand. A proposal has been submitted to the Dutch Government for help in funding the project. Meanwhile, VITA will provide a small seed grant for initial commercialization efforts.
- 6. Use of U.S.-made technology. VITA is using more U.S.-manufactured technologies which, it is hoped, will lead to the development of distributorships and/or more widespread use of these technologies in developing countries. For example, U.S.-manufactured wind machines are already in use on Roa-

tan Island, Honduras; two types of anemometry equipment have been installed on Roatan; and another in St. Lucia.

IV. EVALUATION EFFORTS

1. Small grants assessment strategy. An effort is underway to establish an evaluation methodology for VITA's small grants program. It will include a summary of small grants activities, an assessment of the impact on the institutional development of the recipient institutions, and conclusions about the development process in general as it relates to VITA's development system. Beyond the technical benefit of the evaluation, the information gained will demonstrate how the tremendously cost-effective program has met its original purposes, such as the grants' contribution to the reduced use of fossil fuels, and to development goals of job creation, improvement in the quality of life, etc. The evaluation will also pave the way for conclusions to be drawn at the end of the program.

It is anticipated that within the next year VITA will have evaluated the grants already awarded and will have developed a revised small grants strategy based on the results of this evaluation. Results of the evaluation will be made available to AID and other development agencies as they are finalized.

2. Fuelwood project evaluation. A VITA team completed an evaluation of the "Fuelwood and Alternative Sources of Energy" project funded by AID/ROCAP in Central America and Panama. A final report on the project will be submitted to USAID shortly.
3. Energy task force workshop. Gary Garriott attended a three-day workshop sponsored by the NGO Task Force on Energy in New York. The meeting brought together energy experts from developed and developing country NGOs and representatives from many of the major assistance agencies. The purpose of the workshop was to develop mechanisms for cooperation and to define suitable projects for implementation based on the Nairobi Programme of Action that arose from last year's UN Conference on New and Renewable Sources of Energy.
4. Windpumper monitoring. As part of its small grants program, VITA has installed monitoring equipment at the community water supply windpumper on Roatan. Anemometers, water meters, and a stroke counter are providing important evalua-

tive data on the wind machine's performance and ability to supply potable water.

V. SPECIFIC RENEWABLE ENERGY TECHNOLOGY ACTIVITIES

1. Two wind systems for Roatan. PACT awarded a \$69,000 grant to VITA for the first year of a three-year \$200,000 program in Roatan, Honduras. Two wind-powered community water systems will be installed this year. In addition, planning studies will take place on agriculture potential, small enterprise development, and sanitation for the island.
2. Third wind system for Roatan. Anita de Villegas, representing a Belgian foundation, accompanied Richard Fera and Alan Wyatt to Roatan, and has agreed to make a \$35,000 grant to VITA for a third wind-powered community water system.
3. AID project windmills. As part of the trip to Roatan, VITA staff held discussions with USAID in Tegucigalpa on the instrumentation and installation of 25 windmills that are part of an AID rural water supply project with the Ministry of Health. Discussions are continuing.
4. St. Lucia wind electric proposal. VITA, PRIDE Foundation, and the National Development Corporation of St. Lucia are completing a proposal for the installation of a wind electric and diesel back-up power system for a national park on the island. The Energy Office of the AID Latin America Bureau is expected to fund the US manufactured technology for approximately \$60,000 in July. VITA and PRIDE are providing technical assistance on system design, installation, and evaluation.
5. Computer for wind data analysis. The Rockefeller Brothers Fund has given VITA the go-ahead to purchase a computer to be used, primarily, in analyzing wind data from the data-logging anemometers VITA is installing at specific sites, and for the design of wind systems.
6. Congressional testimony cites VITA. VITA was favorably cited in Congressional testimony by AID on our use of U.S.-manufactured wind technology in the Caribbean.
7. VITA News renewable energy articles. VITA News featured a number of articles on renewable energy in its April issue:
 - * renewable energy planning in China
 - * biogas systems in China
 - * a bamboo blade windmill from Thailand

- * improved cookstoves for Cambodian refugees
- * making fuel logs from rice husks
- * a multi-purpose hydropower unit from Nepal
- * an update on an improved sailing windmill in India

In addition, the entire Energy Bulletin section of VITA News was devoted to a long but practical analytical piece on the best ways to disseminate wind power in developing countries.

8. CEVER windmill progress. Verbal reports have been received on the progress of the windmill erected at CEVER with VITA assistance in late 1980/early 1981. The sailing windmill is continuing to perform well. It was purchased by a local farmer and is providing water both for homes and farm animals. CEVER is continuing to build windmills of a different design under a separate contract as a result of this initial VITA prototype assistance effort.
9. Charcoal kiln replicated. The Instituto Tecnologico in Costa Rica has indicated that a charcoal kiln built under a VITA small grant has twice been successfully tested and replicated and efforts will be continued towards wider scale commercialization efforts in Costa Rica. The same kiln has been built by CEVER in Honduras and is undergoing testing.
10. Montserrat charcoal project. The Government of Montserrat has selected VITA to manage an eight-person-month project in Montserrat for research, development, and promotion of charcoal kilns, charcoal burning coal pots, and wood burning stoves. The project will also have Caribbean-wide implications. Recruitment of candidates is now beginning, for project start-up in September 1982. VITA will negotiate the contract with the Government in July. Funds to the Government come from the Caribbean Development Bank.
11. Fluidized bed gasifier. VITA has renewed its grant support for the development of a prototype fluidized bed gasifier in Iowa, in connection with AID/Honduras and CEVER program activities.
12. Peanut information packet. An information packet, entitled The Peanut Guide Book, has been developed for use in responding to technical inquiries. The guide is in five volumes: Introduction to Peanuts, The Peanut Market; Cultivation of Peanuts, Equipment and Implements for Peanuts, and, Peanut Processing and Products.

13. Biogas consultancy. Jack Downey completed a one-week consultancy in Morocco at the request of the Moroccan Center for the Development of Renewable Energy. VITA anticipates following up the consultancy with additional information and technical assistance. Downey received an "outstanding" evaluation of his work in Morocco from the AID/Morocco Energy Officer.
14. Woodstove seminar. Tim Wood, together with Jacqueline Ki-Zerbo, managed a Sahel Regional Woodstove seminar May 5-12 in Ouagadougou. Woodstove technicians from six CILSS countries, as well as from Rwanda, Kenya, and Cape Verde, were present.
15. Peat stove report. VITA submitted a report in English and French to AID/Burundi by consultants Cecile Ouattara (from Upper Volta) and Andre Longmire. Tim Wood is presently in Burundi following up on Cecile and Andre's work toward the development of fuel-efficient peat burning stoves.
16. Training workshop. Hank Cauley conducted a one-week training workshop in Nairobi at the request of UNICEF/Kenya. Representatives from 14 Kenyan organizations attended.
17. Dow Corning glazing material. VITA is working with Dow Corning to develop a plan to test and disseminate in developing countries improved glazing material for solar dryers and water heaters.
18. Egypt energy program. Jack Downey is in Egypt for two months at the request of the Coptic Church, helping them develop a renewable energy/AT program and project activities. Downey returns o/a July 21.
19. Djibouti energy program. VITA was awarded a \$3.3 million AID contract to implement a four year renewable energy program in Djibouti, East Africa. VITA Africa Regional Director Steve Hirsch will be going to Djibouti as the Chief of Party.
21. CRES documentalist training. VITA has been requested by CRES (the West African Regional Solar Energy Center) to set up a six-month training program for the chief CRES documentalist. The program will include VITA doc center training, shipment of VITA documents and publications to the CRES Center in Bamako, English language training, and a tour of U.S. renewable energy facilities.

22. Information resources training. Eight documentalists, from libraries in Ecuador, Honduras, Barbados, Haiti, India, Tunisia, China, and Indonesia, attended the spring session of VITA's Information Resources Training Program.
23. Doc center grows. During the past quarter, 200 new energy-related documents were acquired, and 150 were catalogued. These numbers are lower than anticipated, due to unanticipated installation delays following the organization's move to new quarters. Information exchange agreements (see list enclosed) were established with 30 new organizations, most of them in developing countries.
24. Requests answered. VITA's Technical Inquiry Service responded to 166 energy-related requests for information during the past quarter.

VI. PROJECTED 12TH QUARTER ACTIVITIES

1. Guinea project award. VITA has been assured that it will be awarded a two-year renewable energy grant by USAID/Guinea. The project will include work in woodstoves, biogas, and low-cost construction techniques, and calls for one long-term engineer and a series of short-term consultants. This project has been developed over the past two years, and will come about as a result of the Guinea Appropriate Technology Survey done by VITA in 1980.
2. Peat stove follow-up. The results of the Burundi peat stove follow-up consultancy by Tim Wood will be submitted to AID/Burundi.
3. Projects begin. Work will begin on the Guinea, Somalia, and Djibouti projects.
4. Mali evaluation. The evaluation of the Mali Renewable Energy Project will be submitted to AID/Washington and Mali.
5. Cape Verde visit. A solar energy technician will be sent to Cape Verde, at the request of AID/Cape Verde.
6. New wind adviser. A new French-speaking wind energy technical adviser will be hired.
7. Montserrat project. Negotiations on the charcoal research and development project contract with the Government of Montserrat will take place during the coming quarter.

8. St. Lucia wind project. Implementation will begin on the St. Lucia wind electric project.
9. Small grants proposals. Ten potential grantees have been invited to submit grant applications totalling \$118,000. Proposals will be reviewed for funding as they are received. The technical areas covered are expected to be: solar drying, wind power, commercialization of renewable energy technologies, and biogas, among others.
10. Renewable Energy Dictionary. Final production work is underway on the trilingual Renewable Energy Dictionary, which will be published during the coming quarter. The heavily illustrated guide to renewable energy terms has the support of both the REP and UNESCO.
11. Biogas manual. The last stages of illustration and production work are in progress for VITA Volunteer Rob Lichtman's Biogas Systems in India. It is expected to be published in August.
12. New information packages. Three new information packages will be prepared during the next quarter. They are on the following subjects: raising rabbits, handpumps, and small-scale hydropower.
13. Documentation collection. A projected 300 energy-related documents will be added to the collection and 300 catalogued during the coming quarter. Ten new information exchange agreements will be established.
