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VITA

SIX MONTH MANAGEMENT REVIEW

LOW COST ENERGY TECHNOLOGIES FOR RURAL AND URBAN POOR

(NO. AID/DSAN-CA-0182)

(PROJECT NO. 936-5701)

April 14, 1980

TABLE OF CONTENTS

	PAGE
I. PROJECT DESCRIPTION	1
II. PERSONNEL	6
III. SERVICE DELIVERY COMPONENTS	14
IV. INTERNATIONAL ALTERNATIVE ENERGY NETWORK	24
V. PROJECT IMPLEMENTATION FUND	26
VI. FINANCES	28

ATTACHMENTS

PERSONNEL STAFFING PATTERN

ORGANIZATION CHART

ENERGY PROGRAM ORGANIZATION CHART BY OBJECTIVE AND FUNCTION

IMPLEMENTATION SCHEDULE

BENCHMARKS

FUNDED PROJECTS

VITA BUDGET PROJECTIONS AND EXPENDITURES

I. Program Description

A. Purpose of Cooperative Agreement

The purpose of this agreement is to make effective use of the broad experience and demonstrated competency of the Volunteers in Technical Assistance (VITA) in the field of alternative energy technologies. It is to enable VITA to enhance its ability to extend appropriate energy technologies to the LDCs and to provide material, information, financial and human resources for the support and advancement of low cost energy technologies based on renewable resources. The recipient will develop and implement alternative energy technology activities and programs, including related information, education and training activities, provide technical manuals and demonstration equipment; develop and demonstrate new and improved alternative energy technologies for acceptance and practice; support small scale alternative energy activities already in operation; encourage the development of international cooperation and information exchange by initiating regional centers and an international network of information and experience exchange; and support other appropriate programs which may be mutually acceptable in a broad field of alternative energy technology.

B. AID-VITA Cooperation

The cognizant AID Technical Office and recipient will establish a close cooperative and collaborative relationship in the development of this program. To this end VITA will submit to the Project Manager in the Office of Energy a quarterly report which will review the program activities of the previous three months and also project a work plan for the following three months which will be mutually agreeable to the parties and in conformity with the criteria for project proposals stated in paragraph E below. Consultations between the parties on this and other matters considered appropriate by either party may be initiated and will be conducted by the Project Manager of the AID Office of Energy and the Director of Research and Development, the VITA person responsible for this program. The AID Project Manager will participate as AID's representative in VITA sponsored conferences/meetings on development and implementation of the alternative energy program and in other ways serve as liaison to and evaluator of project activities.

C. Specific Objectives

(1) Technology Transfer Services: To expand VITA's existing technical assistance mechanisms to include outreach capability in following activities:

- a. The provision of on-site consultations by expert volunteers and staff to promote and facilitate use of alternative energy technologies.

- b. The provision of technical documentation on alternative energy technologies to LDCs which is most relevant, up to date and can be delivered most rapidly.
 - c. The provision of by-mail technical and consulting services to enable volunteer and staff expertise to address LDC energy problems and efforts effectively and rapidly including use of expert panels in key technical areas, conferences to promote close-collaboration between university-based research and development and in-country programs, construction and adaptation of prototypes to test technologies and use of multidisciplinary advisory panels to monitor and evaluate these energy activities.
 - d. The provision of alternative energy publications including technical manuals, technology-specific bulletins and resource directories, in appropriate languages (English, Spanish, French, Arabic, and as appropriate major third world languages) for the LDCs, to make alternative energy technologies understandable to, available to and used by the widest possible audience.
 - e. The provision of education and training in alternative energy technologies through use of in-country training involving audio-visual materials, seminars, workshops and training sessions to encourage and facilitate the initiation, continuation and expansion of alternative energy technologies usage.
- (2) International Alternative Energy Network: To establish an alternative energy network including all those working to solve rural energy problems to serve as a primary mechanism to facilitate the transfer and broadest diffusion of such technologies.
- a. The establishment of a global energy information network to provide local institutions with access to current activities in the area of alternative renewable energy programs and projects.
 - b. The promotion, strengthening and development of the information base and the research and development capabilities of the local LDC institutions.
 - c. The direct access of the global energy network to VITA's computerized documentation center and volunteer expert capabilities to provide a focal resource point for those working on alternative energies everywhere in the world.
 - d. The support of appropriate LDC organizations to develop the capability to serve as regional energy technology transfer and diffusion centers, each with their own energy data bases and outreach capabilities to strengthen LDC capabilities in alternative energy.

- (3) Program Implementation Fund: To establish a program implementation fund to support the ability of local implementing organizations to carry out activities in the following areas of low cost energy technology based on renewable resources:
- a. The demonstration of alternative energy technologies to show the utility, effectiveness, low operating cost and reliability of these technologies to wide LDC audiences.
 - b. The practical application of alternative energy technologies to demonstrate their ability to perform specific tasks with energy based on renewable resources.
 - c. The provision of training in low cost technologies to rural extension agents and others who will disseminate this expertise to rural and urban poor.
 - d. The support of local LDC institutions to improve their ability to promote, support, identify, select and implement their own alternative energy projects.
 - e. The support of applied or adaptive research and development to produce alternative energy technology equipment or processes which can be successfully replicated in broad sectors of the country.
 - f. The development and conduct of activities which will bring to the attention of the leadership and/or the population the benefits and advantages of alternative energy technologies based on renewable resources.

D. Implementation of Program Implementation Fund Projects

The recipient will make three types of subgrants: Travel/Training Subgrants; Equipment Subgrants; and Project Subgrants. These subgrants will be developed in a variety of ways but would generally include PVOs and LDC institutions, organizations and individuals whose capabilities are already known to VITA or about whom VITA is able to judge that such capabilities exist by reason of reference by USAID Missions, AID Geographic Bureaus and the Energy Office; others may be developed in other acceptable ways to meet targets of opportunity as these arise.

In all cases subgrants will be based on the criteria set forth in paragraph E below.

- (1) Travel/Training Subgrants: These subgrants would be made to LDCs and other selected (non-VITA) individuals important to the advancement of alternative energy programs in their countries to attend conferences, seminars, workshops, orientation courses and similar events (site visits) which will perceptively and significantly improve their ability to advance the objectives of this project in-country, regionally, or worldwide. The subgrants are made to cover the costs of specific travel and/or training for specific individuals involved in energy programs in the LDCs. It is understood that AID may nominate individuals for travel awards for consideration by the recipient.

(2) Equipment Subgrants

These subgrants would be made to LDC individuals and other selected (non-VITA) individuals, organizations and institutions for specific equipment and supplies and involve funds only for procurement and shipping. The equipment would be restricted to relatively low cost technology for demonstration, pilot programs, testing or use to advance the objectives of low cost energy technology based on renewable energy resources, and would include such items as Stirling engines, cooking stoves, hydraulic rams et al. Responsibility for maintenance and replacement parts for duration of subgrant will be determined on a case by case basis.

(3) Project Subgrants

These subgrants would be made to other PVOs and selected individuals or organizations working in the LDCs on alternative energy related programs and to LDC individuals, organizations and institutions to advance the objectives of this project which involve increased use of appropriate low cost energy technology based on renewable energy resources through small activities facilitating the flow or interchange of reliable technology to the largest groups of people in the rural areas, small activities to demonstrate or test the low cost reliability, safety, and acceptance of appropriate alternative energy technology, small pilot projects to encourage wider acceptance of these technologies and other activities which improve and accelerate the adoption of these technologies. These subgrants may include travel, training, equipment and/or supplies but will always include financial support for other purposes.

E. Criteria for AID Approval in Project Proposals

Projects selected for funding by VITA will be described in the quarterly report projection according to the format agreed to by the parties. It is understood that projects up to \$10,000 may be committed by designated senior VITA personnel in the field. All projects will conform to the following criteria:

- (1) Consistency with AID's energy strategy for the proposed country or region as determined through consultation with appropriate country or regional AID officials.
- (2) The training, demonstrated ability, and general competence of subgrantees to undertake proposed sub-project activities.
- (3) The adequacy of facilities and support personnel identified as project subgrantees, or identified as support elements to project subgrantees.

- (4) Other work underway (sponsored by AID, other agencies or host governments) on the proposed activity, which might result in undesirable overlap and duplication.
- (5) The suitability of proposed technology or procedures to the needs, attitudes, and alternative energy activities in less developed countries.
- (6) Such other factors as the parties may deem appropriate for consideration.

II. PERSONNEL

Overview

This section describes VITA's hiring of personnel listed in Section B of the Cost Proposal, the organization's success in obtaining qualified staff, and the status of recruitment against vacancies.

The Cost Proposal (B1 & B2) lists a total of 27 new, full-time positions to be filled during the life of the grant, and 18 of these are to be filled in the first grant year. The status of recruitment against these vacancies is the following:

To date, VITA has filled 15 (83%) of the positions scheduled in the first grant year. Included in this number is the Project Director, who will assume full-time duties in late June. The three remaining vacancies are those of Senior Advisors. VITA expects to fill these positions by the end of July. Once VITA fills these positions, all those listed in the Cost Proposal for the first grant year will have been filled.

The Latin American Field Representative position, scheduled in the second grant year, was filled in March, 1980.

The Africa Field Representative position was originally scheduled to be filled in grant year two, but VITA expects to fill this position in June.

Three positions, not originally envisioned in the Cost Proposal, have been established. Two Desk Officers will provide administrative and program support to Field Representatives. One Energy Network Coordinator will coordinate in-house networking activities with other information providers and LDC information users. The Asia/Latin American Desk Officer and Network Coordinator positions have been filled. Positions for a Training Coordinator and an Administrative Assistant are under consideration.

In summary, there are currently 18 full-time staff devoted to the VITA Renewable Energy Program (fifteen of the original year one positions, one accelerated hiring, and two newly created positions). The following sections describe in more detail VITA's hiring activities in the Energy Division, Communications/Publications, and The Technical Resource Program, and Energy Documentation Center.

Technical Resource Program and Energy Documentation Center

The VITA Energy program allows the organization to expand its capabilities to focus on energy related services as they relate primarily to: inquiry responses and documentation center requests; expanded acquisitions, increased recruitment and utilization of volunteer and consultant services, information systems training; energy networking contacts; and in the future, computerized information storage and retrieval.

All positions--with the exception of a computer operator to be hired in 1981--have been filled since the beginning of the program. These include:

- 2 Technical Inquiry Coordinators
- 1 Bilingual Secretary
- 1 Librarian
- 1 Library Clerk
- 1 Secretary

Communications/Publications

VITA Communications/Publications Division has developed an expanded capacity to produce published materials in renewable energy subjects through VITA publications, energy fact sheets and bulletins, and the VITA News. These activities are functioning smoothly as a result of filling the following positions during the first 3 months of the program:

- 1 Editor
- 1 Technical Writer
- 1 Translator
- 1 Layout Typist

Energy Program

The creation of an Energy Program in VITA constitutes a new programmatic direction and challenge to (a) develop in-house staff technical expertise in renewable energy technologies to serve as a resource to staff, LDC organizations and international development institutions, (b) establish institutional relationships for a global renewable energy network and (c) develop a small grants project funding capability. To carry out these functions, the original proposal listed a total of 15 new positions (excluding 1/5 time of the Executive Director):

- 1 Director of Research and Program Development
- 8 Senior Advisors
- 4 Field Representatives
- 1 Administrative Assistant
- 1 Secretary

Director of Research and Program Development

Steve Hirsch, Director of Training and Operations, has been acting Director of the Energy Program. The Director designee, Dr. William Gross, Dean of Engineering at the University of New Mexico, will assume full duties in July. He has however, made three working visits to VITA to formulate initial program directions and guidance in hiring other staff. Dr. Gross has seventeen years of industrial experience, was Director of Research and Vice President of Ampex. He has taught Mechanical and Electrical Engineering, Computer Science and The Impact of Technology on Society since 1948. Dr. Gross has been active with the American Friends Service Committee, and with technical and societal aspects of energy and resources relating to conservation, wind and solar application, with a focus upon New Mexico's developing country problems. Dr. Gross brings to VITA a solid managerial competence and a sensitive third world focus to energy-related development needs. Dr. Gross holds a M.A. and Ph.D. in applied Mechanics from the University of California, Berkeley.

Senior Advisors

Senior Advisors in the Energy Program will play a new and key role for VITA. Their primary functions include:

- (a) Providing technical advice and assistance to VITA departments (improving technical quality of inquiry responses, reviewing technical documentation files, preparing energy related publications, coordinating technical advisory panels and consultancies, among others).
- (b) Overseeing the Small Grants Project Implementation Fund (reviewing and analyzing grant applications, evaluating project progress, evaluating performance and providing technical assistance to implementing organizations, and developing mechanisms to disseminate project information to others).
- (c) Travelling up to 3 months per year as part of their R&D effort to establish conditions for, and trigger replicability of low cost renewable energy developments among rural and urban poor.

These new functions will provide a vastly improved in-house technical capability and a quick overseas response capability to technological and program needs of international and LDC institutions. The original proposal envisions 8 Senior Advisors. To date, VITA has hired one Advisor, Dr. Gary Garriott. Dr. Garriott received his Ph.D. in Social Technology/Technology Transfer from the Union Graduate School, a Master of Environmental Arts and Sciences from the University of Wisconsin, and a B.S. in Electrical Engineering from Valparaiso University (Indiana). Dr. Garriott has consulted for AID in Nicaragua and served in Ecuador as a Peace Corps Volunteer.

VITA has received approximately 150 resumes for the other Senior Advisor positions. VITA has conducted 40 interviews thus far and expects to hire an economist and social-anthropologist by June.

To acquire the skills for these remaining positions, ads have been placed in specialized journals (Spectrum, IEEE; Mechanical Engineering, ASME; and Alternative Sources of Energy). VITA staff is also actively reviewing its own roster for specialized skills in the following technological areas:

- Solar Energy
- Wind Energy
- Bio-Mass Conversion
- Small Industry Development/Industrial Engineering
- Combustion Engineering
- Micro-hydro power and Human/Animal power

Field Representatives

Four Field Representatives are to be hired under the Energy Program. These staff members will be based in LDC countries, to carry out the following functions:

- Representing and promoting VITA services and interests.
- Maintaining liaison with local, national and regional development organizations.
- Facilitating through networks the exchange of resources between local and international organizations.
- Promoting the development and dissemination of renewable energy technologies through interaction with policy makers, planners, researchers and end users.
- Assisting organizations in the planning, design, and submission of small grants applications in renewable energy.
- Coordinating renewable energy technology activities with AID, Peace Corps, and indigenous organizations.

--Monitoring and evaluating projects.

--Arranging site consultations by VITA Senior Advisors
and consultants.

VITA has hired two Field Representatives. The Latin American Field Representative, Richard J. Fera, is a past VITA employee (Chief of Program Development), and most recently a consultant to AID and other institutions in rural technologies, small-scale entrepreneurial/agricultural development, and technical information systems. Mr. Fera pursued doctoral studies in Ibero-American Studies at the University of New Mexico. Because of the need to provide continuity and assistance in VITA's organizational development, Mr. Fera plans to relocate to Latin America in January, 1981, although periodic travels will take place in the meantime.

Marcus Sherman, the VITA Field Representative for Asia, will soon complete his two month orientation at VITA and relocate in Thailand. Mr. Sherman holds a degree in biology from Beloit College (Wisconsin). Since 1970 Mr. Sherman has undertaken a large number of consultancies in wind energy applications both in the U.S. and abroad, including India for 8 months and Thailand for 12 months. Most recently Mr. Sherman had consulted with VITA on the design, fabrication and testing of a wind powered water pump in Mexico. Mr. Sherman is considered an expert in wind energy applications.

By the end of June, VITA expects to have hired its Africa Field Representative who will take up residence in Upper Volta. A fourth field representative is to be hired in 1981 although the exact LDC location for this person is still under discussion.

New Staff Additions

In addition to staff originally listed in the Cost Proposal, VITA has allocated funds to cover the costs of a Desk Officer, Linda Yangas, who is responsible for overseas administrative and program operations. Eventually, this

position will serve primarily to support two Field Representatives' administrative and program requirements. (in Asia and Latin America).

As mentioned in the Overview, VITA will require one additional Desk Officer to support the two other Field Representative.

While individual staff members are currently developing the basis for the energy information network, it has been necessary to have a network coordinator whose functions are to coordinate in-house network activities, "backward linkages" with outside information providers and "forward linkages" with program development and operations staff. These duties have been formalized in March, 1980. Eric Lipsett is VITA's Information Network Coordinator. Mr. Lipsett has a B.A. in Social Delivery Systems from Antioch College and a M.H.S. in Comprehensive Health Planning. Mr. Lipsett has headed health information network programs and worked in Sri Lanka. Most recently at VITA, he was Project Manager for the AT Network Survey.

In the event that training (a component of the small grants program) becomes a sustained interest of LDC organizations, VITA may also have to hire a training coordinator who will coordinate and develop specific training modules for LDC leaders who come to VITA for 2-3 week periods. A bilingual secretary may also be required. Decisions on these new positions must await further budgeting and program planning analysis; and by July, VITA will have a better idea on these personnel matters.

CONCLUSION

VITA believes it has made substantial progress in filling the positions called for in the original proposal. Since the Senior Advisor positions are a new direction for VITA, the organization is filling these vacancies at a pace which ensures that specific skill requirements are obtained. VITA is confident it will achieve this goal during the first grant year.

The qualifications of current energy program staff are excellent and those at the Senior Advisor and Field Representative slots, have a proper mix of LDC experience, technical and programmatic orientations, and language capabilities. These same standards will prevail in filling remaining vacancies.

III. SERVICE DELIVERY COMPONENTS

The implementation of the VITA/AID Energy Program has proceeded on schedule during the initial six month start up phase. Of the 47 steps listed out on pp.34-37 of the Technical Proposal, 34 were met on time, 8 were met prior to what had been projected and only 5 were delayed in being accomplished. Of these 5, 1 has since been met (the hiring of Bill Gross as Energy Program Director) and the remaining four which deal with the hiring and overseas travel for four Senior Advisors, will be met within the next three months.

However, according to the original plan, the first field representative was to have been hired in month 7 and the second field representative during the second year of the program. As of today, however, two field representatives are currently on board, which has enabled us to move ahead with the Program as rapidly as we had originally planned.

As mentioned in the Technical Proposal, VITA's Technology Transfer Services are based on three VITA resources:

- (a) the technical expertise of close to 5,000 VITA Volunteers, over 500 of whom have energy related skills.
- (b) a technical information collection which consists of over 75,000 documents dealing mainly with small scale technology and 10% of which deals with generating and using energy.
- (c) an informal but extensive network of organizations and individuals with whom VITA collaborates and exchanges information on small scale technology.

Each of the above mentioned resources are vital to the achievement of VITA's goals and as such, are being strengthened and expanded to handle the increased flow of information under the Energy Program.

VOLUNTEER RESOURCES DIVISION

The Volunteer Resources Division has three basic functions -

- (a) coordinating volunteer recruiting efforts
- (b) maintaining the volunteer data bank in up-to-date computerized form.
- (c) retrieving information on volunteers so that the proper individuals can be asked to assist in the broad variety of activities undertaken by VITA.

VITA volunteers come from over 60 countries and over 12% (500) have energy related skills. During the first half year of the Energy Program we have increased the Energy Volunteer pool by 64 people. It is anticipated that the pool of Energy-specific volunteers will be increased by at least 40% (or 200 volunteers) during the first year of the Program. This will be accomplished by targeting our recruiting efforts to enlist volunteers with energy specialties which are specifically in short supply or for whom a greater need is projected. As present, we are recruiting additional volunteers with micro-hydro and woodstove expertise.

The Senior Advisors and Field Reps being hired under the Energy Program create substantial new opportunities for the recruitment of new technical volunteers. Since the Senior Advisors will be travelling considerably and the Field Reps will be resident reps on 4 continents, foreign volunteer recruitment should increase considerably.

Information about VITA Volunteer Energy activities is being disseminated through a variety of means. A 17 minute slide show has been produced explaining VITA in general and the Energy Program in particular. Ads have been ordered or placed in the following periodicals:

- Science
- Mother Earth News
- Appropriate Technology
- VITA Energy Bulletin
- RAIN Magazine
- Peace Corps Hot-Line
- New Transcentury Job Bulletin
- Outlook/Acorn
- Wind Power Digest
- Alternate Sources or Energy
- Design News
- IEEE Spectrum
- Mechanical Engineering
- Chemical Engineering

VITA Executive Director Henry Norman has recorded a program for the Voice of America describing VITA and the Energy Program for overseas listeners. In the months to come VITA plans to provide material to the VOA's Science Division.

VITA has also attended selected conferences with the specific objective of recruiting needed volunteers. These include that of the American Society of Mechanical Engineers, the Atlantic Bio-Energy Conference and the New England Seminar on Alternative Energy Sources.

INQUIRY SERVICE

The main use to which VITA Volunteer talent is usually applied is the resolution of technical problems sent to VITA from both Third World organizations and individuals by mail. This mechanism provides a means to transfer technical know-how from a location at which it exists to another at which it is needed as well as to enable technicians in developed countries to contribute to and become involved in projects and problems they might never have otherwise become aware of.

Approximately 40% of all the requests VITA receives for information are answered through the use of VITA Volunteers. This amounts to approximately 1100 requests per year, about 12% of which are Energy related. Requests are generally worked on until the requestor is satisfied with the answer. After a case is closed, an evaluation form is sent to the requestor so that comments, criticisms, test results and photos can be obtained at a later date for possible use to answer subsequent inquiries on the same or a related subject.

In the last year, major progress has been made in improving the efficiency of the Inquiry Service. Response time is down from an average of 6 weeks to three. Inquiry coordinators now will also be developing specialized areas of technical expertise and thus become more familiar with outside resources. Access to the Senior Advisors and Field Representatives will also provide 2 other powerful tools by which Inquiry coordinators can supply technical information.

Plans for the upcoming year also include improved evaluation of inquiry service through revised feedback forms and use of the Energy Information Network to provide names and addresses of U.S. and of overseas organizations with specific experience in small scale renewable energy projects and prototypes.

DOCUMENTATION CENTER

Sixty percent of VITA's inquiries are answered directly from materials contained in VITA's Technical Documentation Center. The Documentation Center is that part of the Organization responsible for the development, storage, retrieval, and quality of VITA's written technical information, and for the delivery of this information to internal and external users.

The Documentation Center is the store house of approximately 75,000 documents, books, industrial reports etc., related almost exclusively to small and medium scale technologies in subjects from agriculture to wind power. This information is a major resource in responding to inquiries received at VITA from all over the world.

VITA has its own "Classification System" and "The Thesaurus" which were developed based on internal needs and are constantly being updated as needs change. These systems are also used to provide training for Third World Nationals to set up appropriate Technology Information Centers overseas.

In the past 6 months the Documentation Center has acquired 1,800 energy related documents and classified 2,000 documents for computer access. To make available documents which are technically accurate and of good quality, 25 VITA Volunteers reviewed approximately 2,000 documents. To improve the manual retrieval system' catalog cards for 2,500 documents were prepared.

In the next six months the acquisitions program will involve setting up exchange arrangements with organizations in 3rd World countries (approx. 30). Five bibliographies will be prepared on 'Renewable Energy Technologies". The program for technical review of material and the acquisition of new energy related documents will be expanded through the participation of the Senior Advisors and Field Representatives. Classification of energy-related documents for computer access will continue at the pace of the first 6 months.

PUBLICATIONS

One of the most important features of VITA's Energy Program is its emphasis on technology transfer and diffusion. One of the key means for implementing this is the production of a variety of publications, newsletters, bulletins, handbooks, directories. To be further assured of reaching the widest possible audience, the publications will be printed in Spanish and French, and in some cases Arabic. In all, some 81 separate publications are specified.

It is the responsibility of VITA's Department of Publications and Communications to produce these various publications. Department staff are involved in all stages of production--research, writing, editing, graphics, typesetting, layout, and pasteup. In addition to the production processes, department staff facilitate the flow of information between other sections within VITA. Home office translation capability rounds out the team effort.

The most important activities within the department during the first 6 months of the Energy Program have been the recruiting and molding of the staff. In its present form, the publications department did not exist prior to the energy program.

In just a few months the widely disparate individuals in the department have molded themselves into a closely knit team. They have produced--on schedule--all of the publications targeted for the first half, and set up mechanisms for meeting deadlines for the remainder of the year. In addition, they have implemented procedures that will ultimately have a direct impact on the quality of the energy related publications.

Specifically, the publications department produced the first two bi-monthly Energy Bulletins and the first two monthly Energy Fact Sheets. Four existing Technical Bulletins were translated. An overall, on-going technical review by VITA volunteers of all VITA publications was begun. Simple language

readability standards were investigated to make the energy publications (and all of VITA's work) as easy as possible to understand.

Access to the Senior Advisors and Field Reps have already had a notable effect on the activities of the department. Another important activity was an assessment of word processing needs and equipment to facilitate production of the materials.

For the next 6 months, the department will continue the systems set up for the smooth production of the periodical publications, Energy Bulletins and Energy Fact Sheets. It will produce a special energy focus edition of VITA News during the fourth quarter. Two appropriate technology resource directories will be published during the half with the help of the Documentation Center. A variety of case studies, panel reports, and conference proceedings will be published in connection with the activities of the operations sections.

By virtue of the quality and relevancy of the publications produced, it is hoped that they will serve as resource for Third World development efforts as well as a medium for the communication of ideas and experiences.

COMPUTERIZATION

Computerization at VITA is a process that involves all departments, as each department must describe its needs in order to develop the correct computerization configuration. The development of such a configuration will lead to the efficient and effective development of publications, processing of invoices and other financial transactions, and allow for the rapid retrieval of information in response to requests for technical assistance. As the VITA Energy Program calls for such developments, computerization assumes a critical role in VITA's development.

The past six months have been devoted to planning, and deciding which of VITA's operations lend themselves to computerization and which are more appropriately handled in a manual fashion. Using input cards from a major appropriate technology information network (Socially Appropriate Technology Information System), all of VITA's original energy documentation collection was abstracted and prepared for computer input. The updating of these cards, and the abstracting of the new additions, will be input activities for the remainder of this first year.

The next six months will be active for the computerization program, as implementation of hardware utilization will begin during that period. VITA has asked USAID for permission to purchase a word processor, in order to facilitate publications development. VITA is also currently exploring which of several financial computers would be appropriate, given the volume of bookkeeping that VITA anticipates under the Energy Program. Thus, for the next six months, abstracting of new additions will continue, word processing capability will be added and assimilated into VITA's day-to-day activities, on-line retrieval will be tested, and a final computer configuration will be developed.

OPERATIONS AND TRAINING

The Training and Operations section of VITA is the portion of the organization charged with the implementation of overseas projects and training programs. While VITA's core activity is responding to by-mail requests for information from developing countries, it has been our experience that, in certain cases, a by-mail response or a VITA Volunteers' visit to the site was not sufficient to develop a solution to the problem posed. In these cases, a proposal is prepared and, when the required funding can be secured, a desk officer is assigned to coordinate the various activities and individuals that are involved in the implementation of the project. Typical project duration is between one and two years.

Under the Energy Program, the Senior Advisors and Field Reps will be identifying and assessing various potential renewable energy activities for funding under the Project Implementation Fund as well as through other sources. Once a proposal is finalized and funding secured (from whatever source) the Training and Operations Division personnel will assume implementation and on-going supervision of the project. Two desk officers are assigned to the Operations and Training Division to support such Energy Program funded activities.

During the past six months, the Operations and Training Division has assumed responsibility for the gearing up of VITA's systems for the increased work load of the Energy Program as well as for the implementation of various Energy Program activities planned for this period. This had included quarterly reporting, job description definition, new staff hiring and training, Project Implementation Fund procedure definition, etc. as well as the coordination of the various consultancies and panel meetings that have taken place since last October 1 and this six month report.

During the upcoming six months, it is anticipated that Bill Gross and the Senior Advisors will assume overall responsibility for the continued gearing up of VITA's systems as well as for the coordination of activities called for in the Program. This will be a gradual process and as it occurs, the Operations and Training Division will phase itself out of program planning and development activities and concentrate on the administration aspects of energy related overseas projects.

IV. INTERNATIONAL ALTERNATIVE ENERGY NETWORK

Networking involves the active participation of groups working together and to have common activities, so that the groups can learn from each other's experience. Based on the results of a separately funded VITA survey on the establishment of an appropriate technology network, VITA has developed a network strategy, relying on indigenous institutions to contact and facilitate communication among those organizations and individuals involved with alternative energy technologies. VITA would support this indigenous networking through part of its small grants program. In this manner, through national and regional focal points, the thousands of people working with alternative energy technologies would be in contact with their local and regional colleagues, the best sources of information.

Progress made in developing an international network of organizations and individuals is following the plan set forth in the project proposal. For the first six months of this project, networking activity ran parallel to VITA's work on the separately funded AT network survey project. This survey identified over 200 organizations and individuals working in the field of renewable energy. These groups included third world documentation centers, field users, research and development groups, funding agencies, and extension services. For sampling purposes, 100 of these groups were asked if they were interested in participating in a network to facilitate the exchange of resources: 96% responded positively. The types of resources desired by the groups contacted are (1) information (project experience), (2) expertise, and (3) funding. The strong consensus from these groups indicated that it would be most desirable for these resources to be made available at the local, regional and international level (in that order of priority).

From contacts made during this survey, two groups approached VITA requesting assistance in the development of energy documentation centers. These groups are the National Energy Institute Ecuador and the Caribbean Development Bank. Both of these organizations are viewed as potential networking agents. Representatives of these organizations are at VITA for training during the next six months on documentation center development. During this time, VITA hopes to negotiate an agreement with them to participate in an ongoing fashion and to perform networking activities in their countries and region (if appropriate). In this manner, the many groups working in alternative energy techniques in Ecuador and the Caribbean will be brought into the network.

V. PROJECT IMPLEMENTATION FUND

The third major component of the VITA/AID Energy Program is the Project Implementation Fund. This component, like the other two Service Delivery Components, seeks to identify serious organizations and individuals and enter into problem-solving partnerships with them. VITA does not wish to become a grantor of funds but a collaborative partner with those to whom technical assistance and a small amount of project funds are the outstanding pieces to a successful energy development or dissemination effort. Each funded project will receive the status of VITA collaborative project.

The process was begun with the submission of general funding procedures in VITA's first quarterly report to AID. These were approved and the definition of what constitutes an energy project was submitted and approved in the second quarterly report. At approximately the same time, a flow system was developed for the logging, tracking and evaluation of proposals received. This system is now in use and to date 36 proposals have been received and of these, four have been awarded funding.

The basic criteria against which the proposals submitted to us were and are being evaluated are as follows:

1. Energy Impact
2. Affordability
3. Development Impact
4. Implementability
5. Replicability
6. Importance of VITA's Role

The four projects for which funding has been committed are as follows:

1. The publication and distribution of pamphlets and slide presentation by the Estacion Experimental Choqui of Quezaltenango, Guatemala on the subject of the construction and use of the Lorena Stove. Grant amount - \$5,335.
2. A six month wind energy project under the auspices of the Mandal Agricultural School, Solapur, India to review the performance of 2 prototype Cretan windmills with chainpumps built 2 years ago. This review will be accomplished by William W. Smith who originally worked with students at the school to build the prototypes. As part of this project another prototype sailing windmill with diaphragm pump design will also be built. Grant amount - \$4,100.
3. A six month wind energy dissemination project will evaluate the feasibility of transferring the technology of traditional wind powered salt water pumps of Thailand to the coastal salt industry of Pradesh, India. Under the auspices of the Bhagavatula Charitable Trust, Marcus Sherman and William Smith will help adapt construct and test two ten meter bamboo and cloth rotor wind pumps. Grant amount - \$5,000.
4. The National Energy Institute of Ecuador plans to establish a renewable energy information center in Quito. A travel/training grant has been made to INE to send a representative to VITA for three weeks to study the VITA information system, select appropriate materials to be transferred to INE and visit other technical information centers. Grant amount - \$2,000.

A detailed description of these projects can be found in the attachments.

VI. FINANCES

The original proposal cost estimates for grant year one amount to \$913,865. After six months of program operations, VITA expenditures have totalled \$225,800. Expenditures are on target as they relate to Personnel and Other Direct Costs. As the remaining Senior Advisor positions are filled, expenditures in other cost categories are expected to increase significantly but are within the original cost estimates.

Projected and actual expenditures after six months by major cost center categories follow:

	YEAR 1	
	Projected Expenditures	Actual 6 Month Expenditures
Personnel	\$ 268,057	\$ 96,652
Fees	41,300	19,611
Computerization	50,000	0
Travel	83,850	10,782
Prototype Construction/Shipping	5,000	0
Printing/Audio Visuals	33,870	2,988
Other Direct Costs	89,916	60,682
Field Offices	17,583	0
Grants	200,000	1,138
Administration (overhead)	122,531	33,947
Field Office Overhead	<u>1,750</u>	<u>0</u>
Grand Total	\$913,865	\$225,800

PERSONNEL STAFFING PATTERN

29

Calendar Yr. (Mos.)
Grant Yr. (Mos.)
Project Yr. (Mos.)

	1979				1980												
	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Staff Positions In Original Proposal																	
<u>Technical Resource Program & Energy Documentation Center</u>																	
Tech Asst Off (Tech Inq Coor)																	
Research Asst. (Tech Inq Coor)																	
Bilingual Sec (Bilingual Sec)																	
Research Asst (Librarian)																	
Research Asst (Library Clerk)																	
Secretary																	
CRT OP																	(1981) —
<u>Communications/Publications</u>																	
Editor/Writer (Editor)																	
Writer/Layout (Tech Writer)																	
Bilingual Sec (Translator)																	
Clerk Typist (Layout Typist)																	
<u>Administration</u>																	
Adm. Asst. (Controller)																	

KEY

-----> = Plan
 —————> = Actual
 () = Denotes current job title if different from one in original proposal

PERSONNEL STAFFING PATTERN

05

Calendar Yr. (Mos.)
 Grant Yr. (Mos.)
 Project Yr. (Mos.)

	1979				1980											
	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Executive Director - 1/5 Time	—————→															
Project Director (Dir., Res. & Prgm Development)	—————→ (Acting) —————→															
Senior Advisor #1	—————→															
Senior Advisor #2	-----→															
Senior Advisor #3	-----→															
Senior Advisor #4	-----→															
Senior Advisor #5	-----→															
Senior Advisor #6	-----→															
Senior Advisor #7	-----→															
Senior Advisor #8	-----→															
Field Representative #1	—————→															
Field Representative #2	—————→															
Field Representative #3	-----→															
Field Representative #4	-----→															
Adm Coord (Adm Asst)	-----→															
Secretary (Bilingual Sec)	—————→															

Staff Positions
 In Original Proposal

Energy Division

- Executive Director - 1/5 Time
- Project Director (Dir., Res. & Prgm Development)
- Senior Advisor #1
- Senior Advisor #2
- Senior Advisor #3
- Senior Advisor #4
- Senior Advisor #5
- Senior Advisor #6
- Senior Advisor #7
- Senior Advisor #8
- Field Representative #1
- Field Representative #2
- Field Representative #3
- Field Representative #4
- Adm Coord (Adm Asst)
- Secretary (Bilingual Sec)

KEY

-----→ = Plan

—————→ = Actual

() = Denotes current job title if different from one in original proposal

PERSONNEL STAFFING PATTERN

12

Calendar Yr. (Mos.)
 Grant Yr. (Mos.)
 Project Yr. (Mos.)

	<u>1979</u>					<u>1980</u>															
	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15					
<u>New Staff Positions*</u>																					
Desk Officer																					
Desk Officer																					
Network Coordinator																					
Training Coordinator*																					
Administrative Assistant*																					

New Staff Positions*

Desk Officer

Desk Officer

Network Coordinator

Training Coordinator*

Administrative Assistant*

*Subject to further analysis

KEY

-----> = Plan

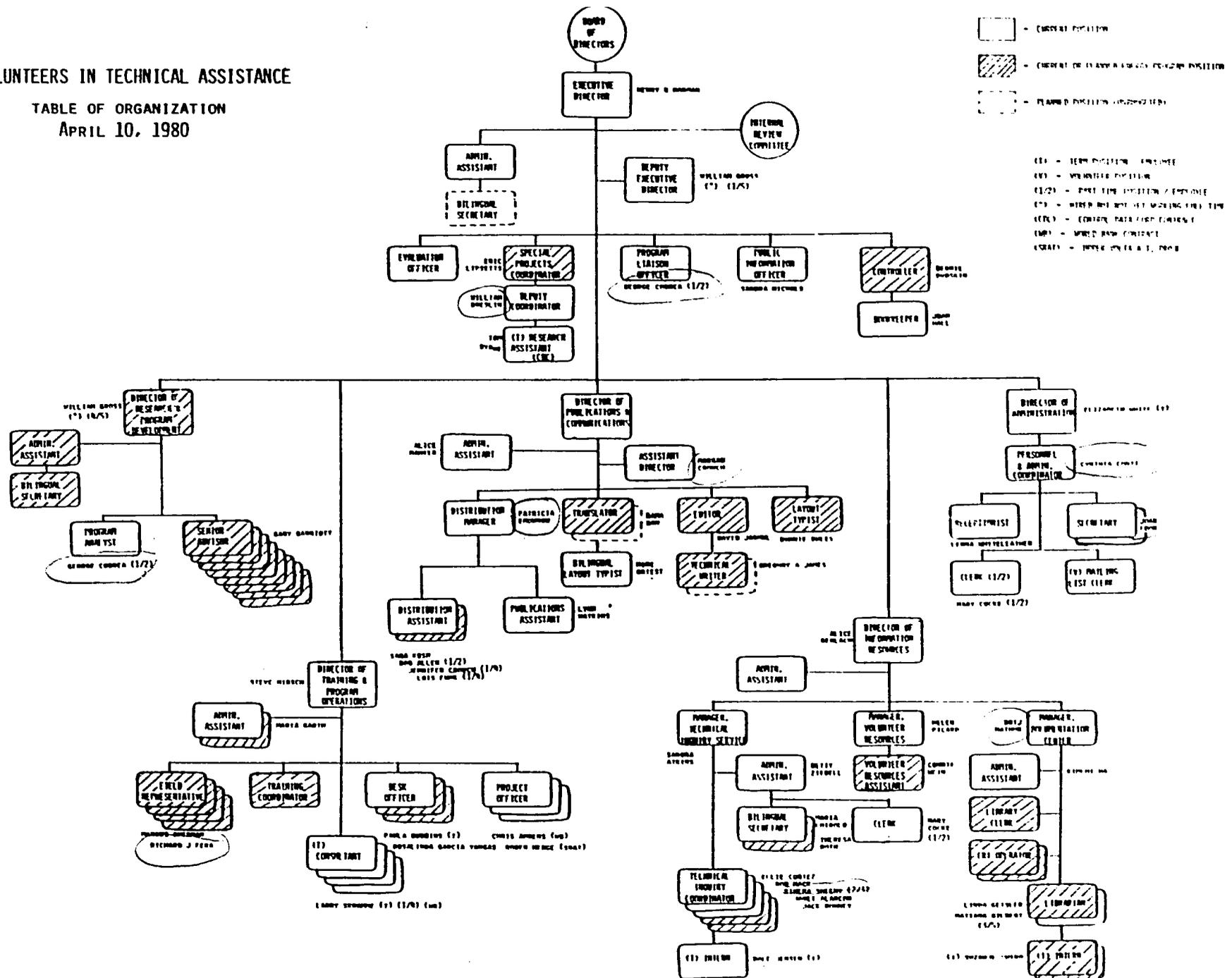
-----> = Actual

() = Denotes current job title if different from one in original proposal

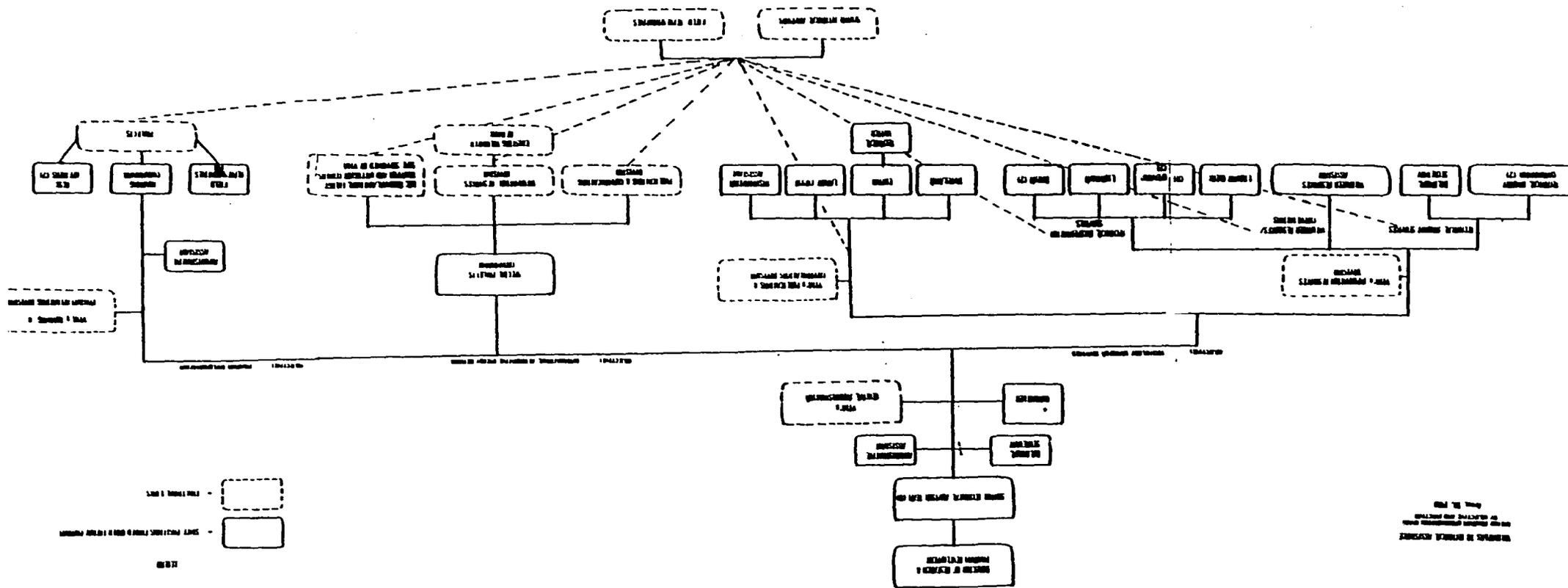
25

VOLUNTEERS IN TECHNICAL ASSISTANCE

TABLE OF ORGANIZATION
APRIL 10, 1980



Best Available Document



53

IMPLEMENTATION SCHEDULE - PHASE ONE (1st YEAR)

MONTH 1

- Met -- Recruitment of Program Director begun.
- Met -- Computer software planning begun.
- Met -- Preparations for transferring retrieval system for Documentation Center data to computer begun.
- Met -- VITA internal structures streamlined and organized to accommodate new program and increased staff.
- Met -- Volunteer roster polled to determine candidates for energy panels, on-site consultancies.
- Met -- Plans for acquisitions program for Documentation Center developed.
- Met -- VITA's in-place technology transfer services maintained.

MONTH 2

- Met -- Recruitment of Program Director continues.
- Met -- Special circular announcing Energy Program services sent to AID Missions, Peace Corps Field Offices, PACT members, other key PVOs and key indigenous organizations.
- Met -- Acquisitions program in effect.
- Met -- Computer software planning continues; includes look at all systems to determine what should or should not be computerized.
- Met -- Energy information in Documentation Center begins to be put on cards for later input to computer.
- Met -- Manual information system streamlined; as cards become available they form a directory to VITA information as a step between present system and computerized access.
- Met -- Volunteer recruitment efforts begin.
- Met -- System set up to insure that ongoing technology transfer mechanisms are yielding information necessary to the formation of the Alternative Energy Information Network and to the location of projects having potential for funding under the Project Implementation funding.

MONTH 3

- Delayed -- Program Director hired.
- Exceeded -- Recruitment of Senior Advisors begins.
- Exceeded -- Support staff for Technical Transfer Services recruited/hired.
- Exceeded -- Training begins for new staff -- introduction to VITA's systems and resources.
- Met -- Project Implementation funding procedures drafted and sent for review.
- Met -- Internal reporting and evaluation system established to track progress of Energy Program.
- Met -- Development of software and in-house preparation for computerized information system continued. Purge of files in preparation begun.

MONTH 4

- Delayed -- Senior Advisors (two) hired and training begins.
- Met -- Project Implementation funding procedures and criteria refined, adopted.
- Met -- Project selection mechanisms adopted.
- Met -- Booklet describing program, including application procedures and selection criteria, published. Special distribution to AID Missions, Peace Corps Country Offices, etc.
- Met -- Subjects for first issues of Alternative Energy Technology Bulletin and Energy Fact Sheet #1 set and researched.
- Met -- Development of and transfer of information into shape for computer input continued.

MONTH 5

- Delayed -- First trips to selected LDCs by Senior Advisors begun.
- Met -- Staff review of first applications for grants begun.
- Exceeded -- First site chosen for field representative.
- Met -- Training of Technology Transfer Component staff completed. Capacity to respond to an increased number of requests for on-site consultants, documentation, and by-mail advisory backstopping is in place and operational, as preparation for computerization continues.

MONTH 5 (cont.)

- Exceeded -- Requests for on-site consultants considered.
- Exceeded -- Arrangements made for three technical advisory panels.
- Met -- Issue #1 of Alternative Energy Technology Bulletin is distributed.
- Met -- Publication of Energy Fact Sheet #1.
- Met -- Preparation for special energy issue of VITA NEWS begun.
- Met -- Preparation of VITA information for transfer from manual to computer set up continued.

MONTH 6

- Delayed -- Senior Advisors continue trips in selected LDCs.
- Delayed -- Senior Advisors (two additional) hired.
- Met -- Approval of first project made.
- Met -- On-going response to requests for program information, technical documentation, and advisory services continued.
- Exceeded -- Special energy issue of VITA News published, mailed to 15,000+.
- Exceeded -- First Technical Bulletin published.
- Met -- Energy Fact Sheet #2 published.
- Met -- Development of and transfer of information continued.
- Met -- Systems for dealing with increased number of acquisitions and much expanded paper flow in place.

VITA ENERGY PROGRAM
OBJECTIVES, INDICATORS, BENCHMARKS

Handwritten numbers at bottom of boxes
indicate 6 month achievements
or first year projection changes.

REPORTING AND EVALUATION - BENCHMARKS

As a basis for periodic reports, VITA established a list of 89 benchmarks against which program progress can be measured. VITA feels this list is an important segment both for reporting purposes as well as for our own internal control system.

During the first six months of the Program, we have examined each of the first year benchmarks and revised some of them in light of additional knowledge and experience.

Any changes made to the benchmarks will be described in subsequent quarterly reports.

Of the 89 benchmarks listed, only ten present levels of achievement to be achieved by the end of the first six months of the Program. Of these ten, seven were met, one was exceeded and two were delayed.

Most of the remainder of the benchmarks present levels of achievement only at the end of the first program year. On these, we are well on the way to achieving what was initially projected or what will be discussed subsequently as revisions.

Benchmark levels beyond the end of year one have not been presented since, in light of the experience of the first six months, a thorough review of these is planned during the third and fourth quarters.

COMPONENT: TECHNOLOGY TRANSFER SERVICES

TECHNICAL RESOURCES PROGRAM

28

OBJECTIVES	INDICATORS	1970	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF								
Increase the pool of volunteers available to consult in energy-related fields	# of volunteers recruited (Cumulative)	500	564	700		1,000		1,200		1,400		1,600
Increase Volunteer involvement in ways which channel collective technical expertise more directly to problems	# of Technical Panels, Working Groups, Advisory Groups, etc.	3	5	10		15		20		25		25
Provide Access to volunteer roster to organizations requiring short-term consultants..	# of consultant name referrals handled	15	15	20		50		75		100		125
Expand capability to respond to by-mail requests	# of energy requests answered	200	135	300		450		600		750		900

COMPONENT: TECHNOLOGY TRANSFER SERVICES
ENERGY DOCUMENTATION CENTER

OBJECTIVES	INDICATORS	1978	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF
Support the expanded response capability through expanded acquisitions program.	# of energy-related documents acquired (cumulative)	5,000	1800	8,000		14,000		20,000		25,000		30,000
Prepare for computerization in order to provide response more quickly and effectively	# of energy-related documents classified for computer access	0	2,500 2,000	5,000 4,600								
Computerize the Documentation Center	# of energy-related documents available on computer				5,000	ONGOING	INPUT	RECIPIENT				
	on-line hookups to other data bases	0	23	25								
	Response time down by 2/3	6 weeks	3	4 weeks 2.5	2 weeks							
Respond to expanded demand created by energy program	# of requests handled	250	275	500 575				1,200				1,600
Produce from this improved data base compendiums of important materials.	# of bibliographies, directories, resource lists made available.	0	0	1		50		100		150		300
Support the building of an Int'l Network (Component 2) and host country institution capability by providing access to worldwide energy information.	Transfer of major portions of energy collection to # of key institutions (cumulative)	1	0	2		7		10		15		20
	# of institutions contacted for networking purposes through Doc. Center operations	0	514	50 580		250		350		500		500
Provide support for the subgrant component through outreach	# of organizations, small projects, etc. coming in as requestors & recommended for followup	0	5	10		50		75		100		125
Provide opportunities for volunteer involvement in technical materials preparation	# of volunteers involved in review & preparation of	25	425	50		75		100		125		150

4/0

COMPONENT: TECHNOLOGY TRANSFER SERVICES

ENERGY DOCUMENTATION CENTER

34

OBJECTIVES	INDICATORS	1970	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF								
Determine feasibility of developing self-sustaining mechanisms for ongoing VITA Energy effort	# of requests for fee handled	25	25	50		150		300		600		900

-52-

COMPONENT: TECHNOLOGY TRANSFER SERVICES

ON-SITE CONSULTING

OBJECTIVES	INDICATORS	1978	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF
Make available a large # of consultants from VITA's Volunteer pool	# of on-site consultancies	5	4	10 8		20		30		30		30
Use Consultancies to support other Energy Program components	# of consultants provided to help information centers	—	0	2		5		5		5		5
	# of potential, additional programs defined by consultants	0	1	2 3		4		6		6		6
Extended capability all kinds of organizations through use of consultants	# of types of organizations assisted	4	4	10 7		10		10		10		10

- 5 -

COMPONENT: TECHNOLOGY TRANSFER SERVICES

COMMUNICATIONS

OBJECTIVES	INDICATORS	1970	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF								
Expand communications activities to inform the development community of program activities	Production of Energy Bulletin	0	3	3	3	3	3	3	3	3	3	3
	Expanded specialized mailing list (cumulative)	300	404	600				1,200				1,600
	Special issues of VITA News	0	0	1		1		1		1		1
	Publication of Energy Fact Sheets	0	1	6	6	6		6	6	6	6	6

25

COMMITMENT: TECHNOLOGY TRANSFER SERVICES

EDUCATION/TRAINING

OBJECTIVES	INDICATORS	1978	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF
Produce specialized materials to educate public to possibilities for low-cost energy technologies	# of technical manuals/bulletins produced	0	groups 1st sheet 1/2	2/3 4/3		2/6		2/6		2/6		2/6
Support ability of local institutions to sustain energy efforts by providing training programs	# of training programs conducted	3	1	5 3		10		10		10		10
Investigate avenues for education and training through other-than-print media.	# of groups contacted to determine feasibility of and interest in use of audio-visuals, films, etc.	10	14	25		REPLANNING BASED ON		ON		FINDINGS OF		YEAR ONE
Support efforts to overcome constraints on diffusion by providing conceptual models.	# of manuals/case studies published which detail such (conceptual)	0	0	2		5		5		5		5
	# of conferences, workshops, seminars sponsored	3	0	3 2		5		5		5		5

44

COMPONENT: INT'L ALTERNATIVE ENERGY NETWORK

OBJECTIVES	INDICATORS	1978	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF
Provide local organizations in developing countries with access to current energy information	# of organizations assisted	200	195	250 415		500		750		1,000		1,500
	# of collaborative relationships established	4	2	7		15		15		20		30
	# of ongoing exchange agreements	25 8	0	50 25		75		100		100		100
	# of requestors referred to other VITA resources	25	50	100		150		200		250		300
Computerize VITA's Information Resources as base for global energy information system	# of documents prepared for input to computer	0	3,000 2,000	2,000 4,400								
	# of documents available by computer	0	0	0	5,000 0	5,000	ONGOING		MAINTENANCE			
	Input of 15,000 case files 3,000	0	0	0	2,000 0	3,000 1,000	5,000	5,000				
	# of US on-line data bases available	0	23	25	25	CONTINUAL	CONTACT					200
	new acquisitions input approx. 20-30 per month 200	0	800	200 1,200	30							
Support Ability of local institutes involved in energy diffusion by providing funds	# of institutions receiving grant support	0	0	8 4		15		20		25		30
	# of key regional information centers	0	0	2		2		2		2		2

-57-

24

COMPONENT: INT'L ALTERNATIVE ENERGY NETWORK

8

OBJECTIVES	INDICATORS	1978 BASE PERIOD	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
			1st HALF	2nd HALF								
Create models for technology transfer and diffusion	# of training programs	—	1	2		5		5		5		5
	# of on-site consultations	—	0	2		7		7		7		7
	# of information centers involved in exchanges	—	0	5 2		10		10		10		10
Support project implementation funding program	# of local prospects/programs recommended for funding through network	—	0	10		50		75		100		150
Support information flow among developing countries	# of organizations involved in such -- particularly due to network	—	0	10		15		20		25		30

-5-

4/9

COMPONENT: VITA SMALL GRANTS PROGRAM

OBJECTIVES	INDICATORS	1970	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF								
Establish, based on AI philosophy and knowledge of technology transfer mechanisms, criteria for project funding	Project funding criteria developed	—	✓									
Make program available to organizations working directly with and through low-income people	# of organizations which fit criteria	—	4	5 10		10		20		25		30
Fund efforts designed specifically to overcome the diffusion problem	# of projects funded	—	0	8 10		16		32		37		37
	# of specific, different initiatives	—	2	5		10		20		20		20
Establish a flexible, but effective program selection committee	# of members and vigor of meetings	—	✓									
Support emergence of organizations strong enough to become collaborative efforts	# information center components	—	0	1 2		2		4		6		8
Leverage other funds through wise use of VITA efforts	# projects referred to other, more appropriate funding sources and/or able to find matching funds	—	3	4 8		10		20		25		30
Enlarge the existing body of knowledge of energy technology utilization and transfer/diffusion experiences	# documented experiences inputted to energy information component	—	0	10		25		100		250		500
Provide the most appropriate funding at certain stages of project progress (appropriate mgt & program support)	# applications received for funding for one phase of project but approved for a different phase based on info available.	—	1	8 3		5		5		5		5
Ensure that efforts rec'd for funding do not duplicate similar efforts being done elsewhere.	# applications rejected, but applicant provided linkages to other existing efforts.	—	0	4		8		16		16		16

41

OVERALL

OBJECTIVES	INDICATORS	1978	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF
Receive, distill, provide info on tested alternative energy technologies.	Improve manual system and prepare documents for computer	2,000	2,500	2,500								
	Input Energy-related info to computer	—	—	—	5,000		AS	NEEDED		ONGOING	PERMANENT	
Identify Energy alternatives most relevant to needs and most possible to diffuse	# of local organizations contacted	200 0	500	400 550		600				800		1,000
	# of small businesses contacted	5	10	10 15		20		25		50		75
	# of funders contacted to determine what is "FUNDABLE"	5	6	10		20		25		50		75
	Computerization of VITA's complete collection	—	0	10,000 4400		20,000		30,000		40,000		50,000
	Completion of internal program to make sure data is funneled to computer	—		✓								
Develop a series of technology transfer models	# of case studies published	—	0	2		4		4		4		4
Support diffusion by funding efforts showing clear focus on achieving that goal.	Guidelines for funding established based on objectives published	—	✓									
	# of Grant Applications received showing focus	—	36	42 50		20		4		45		50

-62-

SP

COMPONENT: VITA ENERGY PROGRAM

OVERALL

OBJECTIVES	INDICATORS	1978	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF
Provide appropriate management and program supports to local institutions	# of volunteers identified and recruited to serve as consultants	—	64	250		300		300		300		300
	# of programs requesting such assistance	—	5	2 6		6		10		10		10
Involve small business expertise in overcoming technology transfer/diffusion constraints	# of small businesses identified and contacted	—	2	4 5		6		8		8		8
	# of initiatives developed for transfer based on small business models	—	0	1		2		4		4		4
Promote collaborative activities	# of collaborative programs evolved	—	4	3 10		5		8		10		12
	# of programs receiving other funds as a result of VITA grants	—	0	1		3		5		8		12
Support ability of institutions to leverage other funds	# of programs receiving access to funding information and expanded program possibilities	—	6	8 15		16		32		48		60
	# of technical panels, working groups, advisory committees	3	5	10		15		20		25		25
Provide channels for volunteer involvement	# Volunteers recruited	500	64	800 250		1,000		1,200		1,400		1,600
	# of on-site consultancies	5	3	10 8		20		30		30		30
	# of consultant name referrals	15	10	20		60		75		100		125

-63-

16

COMPONENT: VITA ENERGY PROGRAM

12

5

OBJECTIVES	INDICATORS	1978	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF
	# of request responses receiving volunteer input	60	66	100 132		150		300		400		600
Promote interface between initiatives in US and those in other countries	# and nationality of groups represented in international network	300 0	2	500 500		900		1,200		1,400		1,600
	# of publications developed from developing country experience distributed in US (cumulative)	0	291	150 600		650		1,050		4,350		8,350
Provide mechanisms for education and training	# of projects showing creative involvement of developing and developed country partners	0	2	4		8		16		20		24
	# of new initiatives involving universities, schools	0	0	2		4		6		8		10
	# of training programs conducted	0	1	5 2		5		10		10		10
	# of new directions targeted for education--expanded use of audio visual, films, NFE methods.	0	1	2		4	REPLANNING BASED ON		FINDINGS		OF YEAR ONE	
Support strengthening of developing country institutions to enable increased collaboration within developing areas.	# of programs funded to expand information dissemination capability	0	0	12 3		20		20		20		20
	# of programs funded to expand information dissemination capability		1	1 3		2		4		6		8
	# of programs funded with IDOC components	0	1	1 2		2		4		6		8

-64-

COMPONENT: VITA ENERGY PROGRAM

OVERALL

OBJECTIVES	INDICATORS	1970	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
		BASE PERIOD	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF	1st HALF	2nd HALF
Promote Income Generation, Job Creation through transfer of alternative technologies	# of jobs created, income produced directly attributable to program	0	0	0	PROJECTIONS		TO BE	BASED	ON RE	ANNING	AT	
							END OF	YEAR	ONE			
	# of jobs, amount of income indirectly attributable	0	0	0	PROJECTIONS		TO BE	BASED	ON RE	ANNING	AT	
							END OF	YEAR	ONE			
Alleviate constraints on technology transfer and diffusion	# of programs funded	0	0	8 10		16		32		32		32

WATER PUMPING WINDMILL DEMONSTRATION PROJECT

ABSTRACT

S. WAGI

This six month wind energy project will review the performance of 2 prototype water-pumping Cretan type windmills, with chainpumps built 2 years ago as a demonstration project by the Shri Sawagi Shikshan Prasarak Mandal Agricultural School in the Solapur District of the Maharashtra State, India. This review will be accomplished by William W. Smith III who built the windmills, and who plans to build another prototype sailing windmill (with diaphragm pump design) to complement the machines already in use.

JUSTIFICATION FOR FUNDING

VITA's decision to support project activities with a fund grant was based upon the following considerations:

1. Energy Impact

The project will demonstrate that windpower can be used as an energy source for farm irrigation in the Solapur climate. Under test in 1976 - 1977 the windmill pumps currently in use pumped at an overall efficiency as high as 18%, clearly out performing the conventional all - metal piston-pump type of windmill in pumping water to irrigate the nearby farms. Building a bigger complementary windmill is expected to further increase the amount of energy to be produced for the farming needs of the community.

2. Development Impact

If the windmill technologies successfully established, i.e., if many farmers decide to invest their own money in the construction of such machines there could be more employment openings in Goudgaon Village. The artisans who helped construct the machines in 1977 would be employed to give training to local carpenters, farmers, tailors, and steel-workers. Thus, the employment benefits could be spread to many parts of Solapur District, or further away.

Productivity of the local farms would be greatly enhanced by successful irrigation projects. The land can produce vegetables and fruits in abundance if water is available.

Income distribution could also be favorably affected by successful use of windpower. Presently, only the wealthiest of farmers can afford diesel or electric pumpsets, or the pair of bullocks needed for traditional "moat" irrigation. With competitive capital cost and potentially very low operating costs, windpower could

make irrigation available to many more farmers. In addition, increased irrigation would mean a greater level of employment among the general population, primarily for farm workers. It could also mean improved local diet.

3. Implementability

The two windmills already sited at Goudgaon, and third irrigation machine planned to be built there, constitute a highly visible experiment with the potential for creating a large number of curious inquiries and visits. The people of Goudgaon and the SSSP Mandal are ready to deal with this situation.

For several decades, Goudgaon has been a center of innovative social change. Both the institution and several private farmers have demonstrated the use of high-yield hybrid crops, including wheat, jowar, and cotton. Current SSSP demonstration projects besides the windmills, include high-yield dairy farming, a bio-gas digester for methane production, and a lift-irrigation scheme.

If local farmers are currently able to sustain the costs of diesel and electric they should be able to afford the lower costs of sail replacements in the future. Furthermore, the steel towers and moving parts of these windmills are expected to last for several decades, which should make the pay back calculations extremely favorable. Severe storms which are a part of the Solapur climate should only damage the bamboo arms of the machines. These are easy and inexpensive to replace.

4. Replicability

The windmills currently in use are designed so that they can be fabricated by people with wood and metal working skills. Such skills and materials, are widely dispersed in the rural communities of less developed countries. The design, including detailed drawings will be made publicly available together with the report documenting the construction of the machines.

5. Importance of VITA's role

VITA's role which touches upon the possible success of the project may be, summarized as follows:

1. Provision of a VITA Volunteer wind energy consultant who takes with him the benefit of information gained from several AT sources including ITDG, UNESCAP, New Alchemy Institute and Windpower Digest.
2. Provision of contact with a VITA Volunteer advisory panel on wind energy which reviewed the technical details of the project proposal. Advisory panel will provide back-up support to the project as needed.
3. Provision of access to resources from the VITA documentation Center

53

11. PROJECT REVIEW SHEET

TITLE: DIDACTIC MATERIALS ON LORENA STOVE

REF # 90011

INITIAL X . FINAL ____ . DATE: 3/17/80 . BY: Fara

(PROVIDE A BRIEF DESCRIPTION OF PROJECT AND THE INSTITUTION. STATE GOAL, PURPOSE OUTPUTS, INPUTS. REVIEW PROPOSAL AGAINST PROJECT DESIGN CRITERIA, VITA GRANT CRITERIA, STANDARD GRANT PROVISIONS REQUIREMENTS. EXAMINE OTHER FACTORS OR ISSUES BEARING UPON RECOMMENDATION, INCLUDING VITA'S ROLE AND OBJECTIVES. WHY SHOULD VITA FUND/NOT FUND THIS PROPOSAL?)

INSTITUTIONAL SUMMARY -- ATTACHED

The Choqui Cooperative, located in Quezaltenango, Guatemala, developed the Lorena Stove three years ago. Constructed out of clay and sand, this stove can "heat twice as much with the same quantity of fuel during food preparation than with the traditional open fire," as stated in the proposal.

The Choqui Group provides courses to people wanting to know how to build, use, and maintain the stove. The Choqui group has provided 64 courses to 650 people since Jan. 1979 and has distributed 5,000 copies of construction pamphlets. Demand continues to run high.

A VITA grant of \$5,335 will enable Choqui to disseminate information on the Lorena Stove (purpose). Three pamphlets and slide presentations will be developed (outputs). The first pamphlet and slide presentation will enable people to decide whether the stove is appropriate to their needs. The second pamphlet and slide presentation will demonstrate the construction techniques; and the third pamphlet will show cooking methods and maintenance of the stove.

Choqui will publish and distribute 1,000 copies of the 3 pamphlets and 25 copies of slide presentation. Sales will help the group to self-finance future publications costs. VITA is granted permission to reproduce and distribute the materials and will acknowledge Choqui as the originator of the materials (VITA can sell and retain funds from its sales).

Justification for funding:

- (1) Project is energy-related and will help spread diffusion and adoption of technology.
- (2) Project conforms with intent and spirit of implementation fund criteria.
- (3) VITA will learn from local experiences of Choqui in dissemination techniques; this will have bearing and cross fertilization effect for wood stove Africa project.
- (4) VITA will form closer ties with Choqui and possibly VITA can acquire their skills to provide training/courses elsewhere.
- (5) Cost of stove is between \$5-20 and, based upon past diffusion success, appears very affordable.
- (6) VITA will have a role by acquiring distribution rights for publications and slides.
- (7) There is an estimated 1/3 to 1/2 wood fuel savings for this type of stove.

Recommendation: Fund project for requested amount pending stipulations cited in #13 of Proposal Summary Sheet.

64

SALT WATER PUMPING WINDMILL DISSEMINATION AND DEMONSTRATION PROJECT

ABSTRACT:

This six month wind energy dissemination project will evaluate the feasibility of transferring the technology of traditional wind powered salt water pumps of Thailand to the coastal salt industry of Pradesh, India. \$5,000 of VITA funding and technical consultation from VITA Volunteer William Smith and VITA's Asia Field Representative Marcus Sherman will permit the Bhagavatula Charatible Trust (BCT) to adapt, construct, test and demonstrate two ten meter diameter bamboo and cloth sail-rotor wind pumps for pumping salt water up into evaporating ponds for production of salt for human consumption.

Provision of additional future funding to B.C.T. for demonstration of an irrigation wind pump and implementation of both the salt water and irrigation wind pumps is dependent upon this evaluation.

1. ENERGY IMPACT:

It is anticipated, this project will demonstrate that the traditional salt water windpumps of Thailand can be economically competitive with the small diesel pump sets currently used for pumping brine by 3,000 small producers. If successful in this district, the Thai technology may also find wide application by the salt farmers of western India coast.

We expect to demonstrate a net energy gain superior to the net energy situation of diesel pumping. This gain will result from decreased use of energy intensive materials, transportation and fabrication, and substitution of petroleum fuels with freely and locally available wind energy.

2. DEVELOPMENT IMPACT:

Successful establishment of this technology in India would result in the creation of additional employment opportunity for semi skilled village carpenters, tailors, small pump fabricators and farmers. The present heavy demand on the limited number of skilled diesel mechanics would be relieved thus freeing them to work on more critical diesel applications.

Use of this appropriate technology may result in the expansion of the salt industry to marginal farmers who are currently unable to afford the high maintenance and operating costs of small diesel pumps in a salt environment.

3. IMPLEMENTABILITY:

Local salt producers will be able to afford the capital and maintenance of wind pumps when they are installed as a replacement for worn out diesel pumps. Currently small diesel pumps have a lifetime of only two years in the corrosive salt environment. The lifetime of the wind pump is expected to be several times the lifetime of an equivalent cost diesel pump, resulting in lower unit cost of water pumped. This factor will be most desirable to salt producers and thus enhance the success of a long term manufacturing and implementation program.

The Bhagavatula Charitable Trust has the demonstrated capability to implement ongoing rural development projects with outside funding. Dr. B.V. Parameshwara Rao has for many years provided the high quality moral and administrative leadership for the B.C.T. to successfully manage the implementation and daily operation of a large dairy cooperative, visiting nurses medical service, village primary schools and agricultural improvement programs in their service area for forty villages.

4. REPLICIBILITY:

The Thai saltwater pumping windmills can easily be built by existing local craftsmen after their experience and training with these first two demonstrators. The materials, skills and organization required for serial production of additional machines are minimal in comparason with other pumping technologies and will result in access to the technology by a large and poorer population than that which has access to those pumps currently in use.

5. THE ROLE OF VITA:

Elements critical to the success of this project which will be provided by VITA include the following:

1. Provision of a VITA Volunteer Wind Technician during construction of the windpumps.
2. Site visit by the VITA Asia Field Representative to provide project oversight, technical guidance and programming assistance for future implementation activity.
3. Provision of detailed engineering drawings of the traditional Thai salt water wind pumping design.
4. Availability of VITA volunteer panel of wind energy experts to evaluate testing results and implementation goals. This panel evaluated the original project proposal. The project as approved by VITA incorporates the recomendations of the panel.
5. Provision of funding for purchase and fabrication of the windpump components and the hiring of a local engineering consultant to be the counterpart of the VITA volunteer consultant/technician.

11. PROJECT REVIEW SHEET

TITLE: Ecuadorian Information Network - Instituto Nacional de Energia

REF # 90025

INITIAL X. FINAL . DATE: 3/4/80. BY: Garriott

(PROVIDE A BRIEF DESCRIPTION OF PROJECT AND THE INSTITUTION. STATE GOAL, PURPOSE OUTPUTS, INPUTS. REVIEW PROPOSAL AGAINST PROJECT DESIGN CRITERIA, VITA GRANT CRITERIA, STANDARD GRANT PROVISIONS REQUIREMENTS. EXAMINE OTHER FACTORS OR ISSUES BEARING UPON RECOMMENDATION, INCLUDING VITA'S ROLE AND OBJECTIVES. WHY SHOULD VITA FUND/NOT FUND THIS PROPOSAL?)

The Instituto Nacional de Energia (INE) is a recently created agency within the Ecuadorian Ministry of Energy whose mandate is to coordinate all conventional and nonconventional energy-related activities in the country, recommend policy, serve as an information source/base, and implement alternative energy projects.

Project goals are to assist INE in establishing a National Energy Information Center on renewable energy technologies appropriate to Ecuador, an information storage/retrieval system, an adequate information base, and discussion of possible VITA funding for energy projects.

Immediate project objectives are to fund a three-week visit to Washington, D.C. by an INE representative in order to:

1. Become better acquainted with VITA and its information systems;
2. Select appropriate materials for INE from VITA's Documentation Center;
3. Discuss project funding for their rural alternative energy efforts;
4. Visit other information centers in order to survey cost-effective means of materials acquisition, including exchanges and donations where possible;
5. Plan, if required, a follow-up consultancy by VITA staff/volunteers in Ecuador.

The proposed project fulfills VITA/Aid Grant Criteria and Standard Provisions. The USAID mission to Ecuador has recognized two major constraints to addressing problems of the Energy sector: 1) present inadequacy of the institutional base since INE is not yet capable of coordinating energy sector activities, and 2) the inadequacy of the technical knowledge base needed for planning and decision-making. In part, USAID/Ecuador plans to respond to these constraints through institutional support to INE consisting of the following strategies:

- A. Assist INE in completing a national energy balance;
- B. Assist INE in carrying out alternative energy resource assessments;
- C. Provide INE and the various implementing institutions with appropriate training, and with communications and library resources;
- D. Assist INE in carrying out feasibility studies and end-use demand assessments for various potential technologies;
- E. Help INE establish a data management system;
- F. Help finance a series of alternative energy research efforts, adaptations, and demonstrations.

11. PROJECT REVIEW SHEET

TITLE: Ecuadorian Information Network - Instituto Nacional de Energia

REF # 90025

INITIAL x . FINAL . DATE: 3/4/80 . BY: Garriott

(PROVIDE A BRIEF DESCRIPTION OF PROJECT AND THE INSTITUTION. STATE GOAL, PURPOSE OUTPUTS, INPUTS. REVIEW PROPOSAL AGAINST PROJECT DESIGN CRITERIA, VITA GRANT CRITERIA, STANDARD GRANT PROVISIONS REQUIREMENTS. EXAMINE OTHER FACTORS OR ISSUES BEARING UPON RECOMMENDATION, INCLUDING VITA'S ROLE AND OBJECTIVES. WHY SHOULD VITA FUND/NOT FUND THIS PROPOSAL?)

Point (C) and (E) are directly addressed by the present VITA project and points (B), (D), and (F) in a more indirect sense. The establishment of an Ecuadorian national alternative energy information exchange is in agreement with VITA's goal of establishing an International Alternative Energy Network through its world-wide energy program (see pages 2 - 3 of AID/VITA project agreement). An unqualified recommendation to fund the project is made.

Note: This project was proposed by the Technical Inquiry Service and approved by the Executive Director before the Interim Proposal Flow Process of the Research and Program Development Division became fully operational.

VITA ENERGY PROGRAM

YEAR 1 BUDGET PROJECTIONS AND EXPENDITURES

COST CENTER PROGRAM - (EXCLUDING FIELD OFFICES)	YEAR 1	
	Projected Expenditures	Actual Expenditures After 6 Months
<u>PERSONNEL</u>		
Salaries	227,167	82,387
Benefits	<u>40,890</u>	<u>14,265</u>
SUB-TOTAL (PERSONNEL)	268,057	96,652
<u>FEES</u>		
Consultants (on-site) - overseas	31,500	5,280
Technical Panel Members	5,000	0
Project Selection Committee	0	0
By-Mail Consultants	0	0
Intern Support	4,800	0
Consultants (USA)	<u>0</u>	<u>14,331</u>
SUB-TOTAL (FEES)	41,300	19,611
<u>COMPUTERIZATION</u>		
Software	50,000	0
Hardware	<u>0</u>	<u>0</u>
SUB-TOTAL (COMPUTERIZATION)	50,000	0
<u>TRAVEL (INCLUDING PER DIEM)</u>		
Staff	39,800	2,511
Consultants (on site)	23,550	5,529
Technical Panel Members	12,500	0
Project Selection Meetings	8,000	0
Consultants (USA)	<u>0</u>	<u>2,742</u>
SUB-TOTAL (TRAVEL/PER DIEM)	83,850	10,782
<u>PROTOTYPE CONSTRUCTION/SHIPPING</u>	5,000	0
<u>PRINTING AND PHOTOGRAPHY</u>		
Printing	31,870	2,988
Photography/Audio Visuals	<u>2,000</u>	<u>0</u>
SUB-TOTAL (PRINTING-PHOTOGRAPHY)	33,870	2,988

60

VITA ENERGY PROGRAM

YEAR 1 BUDGET PROJECTIONS AND EXPENDITURES

COST CENTER	YEAR 1	
	Projected Expenditures	Actual Expenditures After 6 Months
<u>OTHER DIRECT COSTS</u>		
Acquisitions	15,000	3,461
Occupancy/Utilities	14,400	5,023
Maintenance/Repairs	8,000	0
Security System	5,000	978
Furniture/Equipment	16,500	19,436
Office Supplies/Expenses	13,016	2,296
Translations	5,000	0
Recruiting/Relocation	13,000	18,588
Renovations	<u>0</u>	<u>10,900</u>
SUB-TOTAL (OTHER DIRECT COSTS)	89,916	60,682
PROGRAM - FIELD OFFICES		
<u>PERSONNEL</u>		
Salary	8,333	0
Benefits (18%)	<u>1,500</u>	<u>0</u>
SUB-TOTAL (PERSONNEL)	9,833	0
REGIONAL TRAVEL	750	0
FIELD OFFICES EXPENSES	<u>7,000</u>	<u>0</u>
TOTAL PROGRAM	589,576	190,715
GRANTS	200,000	1,138
ADMINISTRATION		
Overhead @ 25% of Direct Costs excluding Printing, Computerization and Field Offices Costs	122,531	33,947
Overhead @ 10% of Field Offices Costs	<u>1,750</u>	<u>0</u>
TOTAL ADMINISTRATION	<u>124,289</u>	<u>33,947</u>
GRAND TOTAL	<u>913,865</u>	<u>225,800</u>