AID / ISERST / VITA

ENERGY INITIATIVES PROJECT

Contract n° 683 - 0013 - C - 00 - 2001 - 00

THIRD PROJECT QUARTERLY REPORT

April - June 1983

Submitted to : AID/Djibouti

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Summary of Important Third Quarter Events

The emphasis during the third project quarter was on advancing the construction of the ISERST building and data gathering/analysis through the use of the Climatronics units. In order to accomplish the above, as well as continue other ongoing activities, two new staff members were hired by ISERST for the Project to assist with the Climatronics data analysis.

Land clearing and fill operations for the ISERST building were completed and a contract signed between Touzet International Djibouti and VITA for the actual construction ($552,566). The estimated completion date for the building is mid February, 1984.

Technician Rob Fraser began his four month consultancy for VITA and will be overseeing the project during the Chief of Party's R and R.

ISERST assigned a temporary counterpart, Mohamed Ismael, to the project. It is anticipated that Mohamed will continue until September when it is hoped a permanent counterpart will be identified.

Building Engineer Judy Hirsch left Djibouti on combined R and R/ maternity leave.

Three additional Climatronics units were installed in Hol Hol, Yoboki and Tadjourah bringing to seven the number of units now collecting energy-related meteorological data.

1. Informational and Analytical Base

- The last three Climatronics units arrived. The units were installed by technicians Rob Fraser and Abdoulkarim Moussa. We presently have 7 Climatronics stations that are collecting wind speed, direction, solar radiation and temperature data around the country.

Following the installation of the initial 4 units it was realized that data collection/analysis and equipment maintenance and calibration would require much more staff time than had been originally envisioned. As a result, ISERST hired 2 vocational school graduates on a full time basis to process the raw incoming data and calculate daily and monthly averages for the solar, wind and temperature readings.

- In order to eventually propose energy conserving measures and policies to the GROD in relation to the public sector, contact was made with the Ministry of Finance to obtain an overview of GROD expenditures for electrical energy consumption in the public domaine.

It was found that at present no such overview exists nor is there any control or evaluation of such expenditures. There is, however, a high level of interest on the part of Ministry officials to monitor and, hopefully, reduce expenses in this area. As a result, our office secretary, Chantal Carpentier, has begun to review the energy consumption and costs in the schools located in Djibouti town over the past 10 years. Since electricity costs in Djibouti are among the highest in the world. (26 ¢ per KWH as compared to an average of 6.6 ¢ in the U.S.), it is expected that considerable savings can be achieved in this area.

- Contact was made with the National Census Bureau to obtain relevant information and assistance in relation to the energy assessment scheduled for November. The Census Bureau indicated that it could provide us with detailed maps of the country as well as access to trained census takers should we need them to perform a nation wide energy assessment.

Energy-related information they have already collected has not yet been collated and, owing to other priorities (i.e. the November donor's conference), the Census Bureau could not indicate when this information would be available.

- The Chief of Party attended a 5 day workshop on meteorological data collection/analysis for solar/wind energy purposes hosted by the British Commonwealth Science Council in the Seychelles Islands from June 20-25. Representatives from 18 African countries attended and the Chief of Party presented a paper and speech on Djibouti's efforts in this area. A number of suggestions were made by the workshop participants as to how we could improve the meteorological portion of our project, but the general feeling was that the equipment we are using and data analysis procedures we have developed are appropriate to our needs. A complete list of workshop recommendations for the Djibouti project is available as part of a 6/29 Seychelles trip report.

- At the request of AID/Djibouti the Chief of Party developed terms of reference and a tentative time table for the Djibouti Energy Assessment. The TOR's were approved by AID/Djibouti and are presently being used by VITA/Rosslyn and the field to prepar for the start of the assessment in November, 1983.

2. Pilot Interventions/Prototype Research

- The technical advisor to the Minister of Education assured the Chief of Party that the Ministry intended to go ahead with the Lycee photovoltaic installation but that certain internal personnel problems would probably delay further action on this until September, 1983.

- The Aramadoule windmill is now fully operational. VITA/Djibouti has received test equipment for the wind powered pump and is in the process of installing it on site.

- A 300 W Solar Electric International Sunpump prototype was purchased as a test and demonstration model. The purchase was made through a local entrepreneur who, as a result of information and assistance provided by ISERST/VITA, has become the first solar hardware dealer in Djibouti.

Two public demonstrations of the pump's capabilities were held that were each attended by between 30-50 people including students, private merchants and ministry officials. Twenty minutes of evening T.V. time were devoted to publicizing the solar pump and the ISERST/VITA/USAID Energy Project.

- As a result of the above demonstrations, Rural Engineering (Genie Rural) and ISERST/VITA have prepared a joint plan for a series of solar pump demonstrations in the interior of the country. Included in this plan is Rural Engineering's providing a part-time technician to, initially assist with the solar pump demonstrations and, afterward, take responsibility for installing and monitoring a number of test installations.

- M. Syad, of the Ministry of Industry, Commerce and Tourisme and head of the Djibouti Pottery Cooperative, successfully completed a week long training visit with VV Ali Sheriff in Arusha, Tanzania. The visit was arranged so that M. Syad could study the waste oil heating technique developed and used by Sheriff. M. Syad carried with him a 5 liter sample of E.D.D. (Electricité de Djibouti) waste oil for test purposes.

The visit was extremely successful with both Sheriff and Syad concluding that the Djibouti waste oil is a viable fuel for industrial heating purposes and that the technology itself is appropriate for Djibouti.

Immediately upon his return from Tanzania, M. Syad himself collect the necessary material and built a 1 m3 demonstration waste oil stove and h plans for the construction of a larger model this fall.

As a result of the above, the Ministry of Transport, Commerce and Tourism is now prepared to actively support further work in Djibouti on this technology is collaboration with ISERST/VITA.

- Two Cinva Ram presses were received as part of the project's energy conservation construction component. The machines were requested by Travaux Publics, which is the GROD institution with responsibility for building construction. It is anticipated that a collaborative ISERST/VITA/ T.P. cinva ram test and demonstration program will be begun in the near future. At present, T.P. is having staffing problems which, it is hoped, will be resolved shortly.

- Two French Volontaires du Progres (equivalent to U.S. Peace Corps volunteers) have begun assessing the suitability of a VITA-provided Sparco windmill in Ali Adde, a town of about 6.000 population. ISERST/ VITA has assisted with establishing the test program and will analyze the results together with the two volunteers.

- CIDR (Centre International de Developement et de Recherches), a French NGO, will also soon begin testing a similar ISERST/VITA-provided windmill in Tadjourah.

- The Minister of Agriculture has decided that a solar refrigerator presently operating outside of Djibouti town in Atar should remain there for use by a soon-to-be-established agricultural cooperative. It had been tentatively planned for ISERST/VITA to move the refrigerator system to a Djibouti-town location for test and demonstration purposes.

3. Assessment and Dissemination of Research Results

- Work on the English version of Dan Dunham's architectural design manual for Djibouti has been completed by VITA/Rosslyn and a French translation is now being prepared.

- Extensive solar and wind pumping information was provided by the project to Genie Rural at their request. Genie Rural hopes for financing for a considerable amount of solar/wind equipment from the upcoming November Djibouti Donors Conference. Genie Rural has been cautioned by ISERST/VITA to carefully investigate each potential installation site to ensure it's suitability for use of solar/wind energy. When the data collection phase of our project has been operational one year, this information will be made available to both government and private services to assist them with such assessments.

- As T.P. (Travaux Publics) has committed to actively participating in the upcoming energy building audit, information on the technical aspect of performing such audits was provided to them, at their request. It was agreed that 3 T.P. engineers and/or architects will take part in the audit which begins in September, 1983.

4. Energy Conservation Practices

- The ISERST building

Land clearing and fill operations were completed by the GROD as called for in the GROD-USAID Project Agreement. Travaux Publics arranged the actual clearing/fill operations on behalf of ISERST and did an excellent job.

Technical specifications for the ISERST building photovoltaic installation were prepared by the Chief of Party and sent to VITA/Rosslyn for distribution to U.S. photovoltaic manufacturiers for bids.

A description of the installation procedures for the P.V. system was prepared by engineer Judy Hirsch and included in the bid package that was distributed to local building contractors.

Seven Djibouti contractors received the Request-for-Bid package and six of the seven responded with proposals.

Representatives from ISERST, VITA, T.P., AID/Djibouti and REDSO/Nairobi reviewed the six proposals and the choice was made to select Touzet International Djibouti as the builder.

On June 14, 1983, the Chief of Party signed the $552,566 contract with Touzet. Construction has begun on the building and it is anticipated that it will finish in mid-February, 1984. Local subcontractor E.G.E. (Entreprise Générale d'Electricité) will install the photovoltaic system.

5. Policy and Planning Recommendations to Government

- With the support of ISERST Director, Anis Abdallah, the Chief of Party submitted a request to the GROD to consider allowing renewable energy equipment and material to be imported tax-free for a limited period of time for sale to the general public. This would serve to make renewable energy technologies more financially attractive during their introducgiory period and allow the Djiboutien private sector to develop familiarity with maintenance requirements and the spare parts they must stock.

The request, however, was turned down by the GROD on the grounds that the natinnal budget needed all the tax revenue it could collect on imported equipment.

This policy change will be pursued following the energy economist' consultancy when calculations showing the long term advantages of such an approach can be presented.

6. Private Sector Initiatives

- As a result of information and solar panels made available through ISERST/VITA, a local entrepreneur has begun to develop a photovoltaic refrigerator system that he hopes to market in Djibouti. Support will continue to be provided for this effort under the project.

- Two separate visits to Djibouti by Arco Solar Inc. representatives took place to (a) investigate market potential for photovoltaic systems in Djibouti, (b) assess the feasibility of establishing a warehouse for Arco Solar products in Djibouti's free port, and (c) refine their bid on the ISERST building photovoltaic installation.

During both visits, meetings were arranged between the Arco representatives and local entrepreneurs who have expressed interest in photovoltaic systems.

It is anticipated that Arco Solar equipment will be warehoused in Djibouti's free port in the near future, which will be of help to the photovoltaic work planned under the ISERST/VITA project. Since electricity costs in Djibouti are high, photovoltaics are almost competitive with local grid electricity costs for certain applications.

- The Chief of Party gave a slide presentation and speech on renewable energy at a meeting of the Lion's Club chapter of Djibouti. Attending were approximatety 20 local businessmen and CERD officials. The presentation was arranged by the local electrical contractor who will be instal ing the ISERST building photovoltaic system.

- Five fluorescent photovoltaic lighting units were sold to local entrepreneurs for demonstration purposes. Interest in photovoltaic lighting and fans is high in the Djibouti private sector due to frequent grid power outages. It is expected that a number of local businessmen will soon be marketing photovoltaic equipment and that interest in this area will increase when the ISERST photovoltaic powered building becomes operational.

Problems and Issues

- The lack of a qualified Djiboutian counterpart continues to be a major constraint for the project. Although a temporary counterpart has begun work on the project, his level of interest in energy related matters is low and his usefulness to the project is minimal.

Extensive efforts have been made by ISERST and the Chief of Party to identify a counterpart. It is probable, however, that the lack of trained manpower in Djibouti and the relatively low level of government wages have contributed to the lack of success in the search.

- Due to the lack of skilled labor available to the project at the technician level as well, and the upcoming energy audit/assessment it is felt by VITA that the technician consultant position presently being filled by Rob Fraser should be continued for at least one year. This would allow adequate coverage of the Climatronics data collection, analysis, repair/maintenance and calibration by the consultant technician as well as permit the project to continue the small number of on-going prototype testing and demonstrations activities that have already been initiated.

- The lack of skilled Djiboutian technicians will become an increasingly critical issue when the ISERST building is completed in February, 1984 and equipped office, workshop and laboratory facilities are available for approximately 20 people. The Chief of Party has requested the VITA home office to assist in developing a comprehensive training and staffing plan for the future ISERST laboratory/workshop facility. This plan should be discussed between VITA, AID and ISERST as soon as possible so that appropriate staff and budget allowances can be agreed upon.

- A question has arisen concerning the amount of the GROD financial contribution to the project. While it is stated in a 9/23/82 letter from AAO Amundson to the Ministry of Foreign Affairs that the GROD contribution to the project for the first three years will not exceed 25,000,000 DF ($142,000) (exclusive of the GROD's furnishing land etc. for the ISERST building) and that another 10-15 million DF will be required in 1985 (total 40 million DF or $227,000 for the life of the project), the Amendment #1 to the USAID/GROD Project Agreement indicates that the GROD contribution (excluding building related costs) will be 92 million DF ($520,000).

This issue has been raised by the Chief of Party with AID/Djibouti and ISERST. It is an important point since the level of funding made available by ISERST will have a direct bearing on the quantity and quality of staff ISERST can provide to the project.

The Chief of Party and ISERST will be assessing ISERST's budget needs for the project in September to determine a more precise figure for the actual amount required.

Fourth Quarter Project Projections

- Construction on the ISERST Renewable Energy building will continue under the supervision of Architect Bernard Cazaban and Technician Rob Fraser.

- VITA/Rosslyn will review bids from U.S. manufacturers for the ISERST building protovoltaic system, and place an order for the equipment.

- Meteorological data collection and analysis will continue under the supervision of Mohamed Ismael and Rob Fraser.

- Test equipment will be installed on the Aramadoule windmill.

- The energy audit will begin in mid/late September.

- In collaboration with Rural Engineering (Genie Rural), the SEI photovoltaic pump will be demonstrated in 2-3 interior districts.

- The Chief of Party will be on R and R and will spend 1-2 weeks at VITA/Rosslyn on consultation. He returns to Djibouti at the end of August.