

AIO 1350-1X (7-71) PIO/T	DEPARTMENT STATE AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT IMPLEMENTATION ORDER/TECHNICAL SERVICES	1. Cooperating Country TAB <i>316 8934</i>	Page 1 of 4 Pages
		2. PIO/T No. <i>931-11-995-234-73</i>	3. <input checked="" type="checkbox"/> Original or Amendment No. <i>8</i>
		4. Project/Activity No. and Title <i>316 8934</i> Studies of Energy Needs in Food System	

DISTRIBUTION	5. Appropriation Symbol <i>72-11X1026</i>	6.A. Allotment Symbol and Charge <i>426-31-099-00-20-61</i>	6.B. Funds Allotted to: <input type="checkbox"/> A.I.D./W <input type="checkbox"/> Mission																																			
	7. Obligation Status <input checked="" type="checkbox"/> Administrative Reservation <input type="checkbox"/> Implementing Document		8. Funding Period (Mo., Day, Yr.) From <i>6/30/76</i> To <i>6/30/77</i>																																			
	9.A. Services to Start (Mo., Day, Yr.) Between <i>July 1, 1976</i> and <i>July 15, 1976</i>		9.B. Completion date of Services (Mo., Day, Yr.) <i>May 15, 1977</i>																																			
	10.A. Type of Action <input checked="" type="checkbox"/> A.I.D. Contract <input type="checkbox"/> Cooperating Country Contract <input type="checkbox"/> Participating Agency Service Agreement <input type="checkbox"/> Other																																					
	10.B. Authorized Agent																																					
	<table border="1"> <thead> <tr> <th colspan="2">Estimated Financing</th> <th>(1) Previous Total</th> <th>(2) Increase</th> <th>(3) Decrease</th> <th>(4) Total to Date</th> </tr> </thead> <tbody> <tr> <td colspan="2">\$1.00=</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="2">11. Maximum A.I.D. Financing</td> <td>A. Dollars</td> <td></td> <td>39,000</td> <td></td> <td>39,000</td> </tr> <tr> <td>B. U.S.-Owned Local Currency</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="2">12. Cooperating Country Contributions</td> <td>A. Counterpart</td> <td></td> <td></td> <td><i>1005</i></td> <td></td> </tr> <tr> <td>B. Other</td> <td></td> <td></td> <td><i>5/28/76</i></td> <td></td> </tr> </tbody> </table>					Estimated Financing		(1) Previous Total	(2) Increase	(3) Decrease	(4) Total to Date	\$1.00=						11. Maximum A.I.D. Financing	A. Dollars		39,000		39,000	B. U.S.-Owned Local Currency					12. Cooperating Country Contributions	A. Counterpart			<i>1005</i>		B. Other			<i>5/28/76</i>
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	B. U.S.-Owned Local Currency																																					
12. Cooperating Country Contributions	A. Counterpart			<i>1005</i>																																		
	B. Other			<i>5/28/76</i>																																		

13. Mission References	14. Instructions to Authorized Agent Negotiate a contract with Florida Institute of Technology to perform a study entitled "Solar Cookers for Haiti: A Feasibility Study." The justification for awarding a sole source contract to this institution is attached. The effort will be fully funded in FY 76 (\$39,000). The principal investigator is to be Professor Thomas E. Bowman. The proposed budget is attached.
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15. Clearances - Show Office Symbol, Signature and Date for all Necessary Clearances.		
A. The specifications in the scope of work are technically adequate <i>Jerome J. Bosker</i> 2/17/76 TA/OST, Jerome J. Bosker	B. Funds for the services requested are available <i>Robert Mills</i> 5/20/76 TA/PPU, Robert Mills	
C. The scope of work lies within the purview of the initiating approved Agency Program <i>Henry A. Arnold</i> 5/21/76 TA/OST, Henry A. Arnold	D. <i>Mary Mozynski</i> 5/25/76 TA/PPU, Mary Mozynski	
E. <i>Stanley Applegate</i> 5/21/76 LA/DR, Stanley Applegate	F. <i>William Rhodes</i> 5-21-76 LAXCAR, William Rhodes	
16. For the cooperating country: The terms and conditions set forth herein are hereby agreed to	17. For the Agency for International Development <i>John Gunning</i> Signature: John Gunning Title: Chief, Program Div., TA/PPU	18. Date of Signature <i>5/27/76</i>

AID 138U-4X (B-70) PIO/T	Cooperating Country TAB	PIO/T No.	Page 2 of 4 Pages
	Project/Activity No. and Title Studies of Energy Needs in Food System		

SCOPE OF WORK

19. Scope of Technical Services

A. Objective for which the Technical Services are to be Used

To assess the feasibility of applying solar cookers extensively in rural Haiti and to present a preliminary design for a solar cooker based on Haitian requirements.

B. Description

The work will consist of a survey of existing solar cooking equipment and designs, a study of Haitian cooking conditions including cultural and climatological aspects, test and evaluation of existing solar cooking systems both those purchased and those constructed from acquired designs, design criteria for a family of Haitian solar cookers and finally specific design configuration and design parameters for a Haitian solar cooker. In addition to the particular Haitian cooking conditions, the specific design to result from the study will be based on considerations of economic aspects, ease of manufacture and assembly and suitability for mass production.

C. Technicians

(1) (e) Number	(b) Specialized Field	(c) Grade and/or Salary	(d) Duration of Assignment (Man-Months)
3	Mechanical Engineering/Physics (Faculty)	\$1800/man mo.	6.0
2	Mechanical Engineering/Physics (Grad Asst)	\$593/man mo.	7.5
1	Mechanical Engineering (Undergrad)	\$366/man mo.	2.5

(2) Duty Post and Duration of Technicians' Services

Melbourne, Florida
Haiti (field trip; 4 day duration)
Washington, D.C. (Consultation, report presentation; as necessary)

(3) Language Requirements

The contractor team that will participate in the field trip to Haiti is expected to be self-sufficient in French.

(4) Access to Classified Information

None

(5) Dependents Will Will Not Be Permitted to Accompany Technician

D. Financing of Technical Services

(1) By AID - \$ 39,000

(2) By Cooperating Country - None

AID 1980-1X (9-70) PIO/T	Cooperating Country TAB	PIO/T No.	Page 3 of 4 Pages
Project/Activity No. and Title Studies of Energy Needs in Food System			

20. Equipment and Supplies (Related to the services described in Block 19 and to be procured outside the Cooperating Country by the supplier of these services)

A. (1) Quantity	(2) Description	(3) Estimated Cost	(4) Special Instructions
	As appropriate, commercial cookers	750	
	As appropriate, commercial collectors	800	
	As appropriate, plans and materials for cooker construction	1250	
	As needed, office and drafting supplies	150	
	As needed, meteorological data	<u>300</u>	
	Total	3250	

B. Financing of Equipment and Supplies

(1) By AID - \$ 3250

(2) By Cooperating Country -

21. Special Provisions

- A. This PIO/T is subject to AID (contracting) ~~XXXXXXXXXXXX~~ regulations.
- B. Except as specifically authorized by AID, or when local hire is authorized under the terms of a contract with a U.S. Supplier, services authorized under this PIO/T must be obtained from U.S. sources.
- C. Except as specifically authorized by AID/W, the purchase of commodities authorized under this PIO/T will be limited to the U.S. under Geographic Code 000.
- D. Other (specify): Prior to trip to Haiti, contractor will obtain concurrence of AID/W TA/OST) who will clear such travel with country desk officer and Haiti mission.

AID 1350-1X (9-79)	Cooperating Country TAB	PID/T No.	Page 4 of 4 Pages
PIO/T	Project/Activity No. and Title Studies of Energy Needs in Food System		

22. Reports by Contractor or Participating Agency (Indicate type, content and format of reports required, including language to be used if other than English, frequency or timing of reports, and any special requirements)

- 1) Interim report (3 copies) to summarize first phase of project. To be submitted 22 weeks after project initiation. To include four items:
 - a) complete and concise descriptions of all commercial solar cookers and plans surveyed with information on cost and availability.
 - b) Summary of Haitian conditions considered to affect the possible applications of solar cookers.
 - c) Description of the process to be used in evaluating the cookers.
 - d) Results of selected evaluations.
- 2) Final report (10 copies) to be submitted 44 weeks after project initiation. To include preliminary design of one or more solar cookers specifically intended for Haitian conditions with all appropriate engineering drawings, charts and graphs. Contractor will structure his report along the guidelines given in AID document "Preparation and Submission of Reports from Research Contractors", July 14, 1975. (CM/COD is requested that a copy of these guidelines be attached to the contract.)

23. Background Information (Additional information useful to Authorized Agent and Prospective Contractors or Participating Agency; if necessary cross reference Block 19.C(4) above.)

24. Relationship of Contractor ~~XXXXXXXXXX~~ to Cooperating Country and to AID

A. Relationships and Responsibilities

Contractor will be monitored by TA/OST.

B. Cooperating Country Liaison Official

C. AID Liaison Officials

The USAID representative in Haiti will provide appropriate assistance in Haiti in arranging hotel accommodations and interviews with appropriate Haitian officials.

Non-Competitive Procurement Justification

The Florida Institute of Technology (FIT) possesses an unusual combination of capabilities that make the organization especially well-qualified to perform the desired work in a timely fashion and at a low cost.

The Institute itself emphasizes application-oriented research and has had considerable experience responding to the needs of the State of Florida, private organizations and businesses in the area and such U.S. agencies as the NASA-Kennedy Space Center. An integral part of the Institute is the Center for Research on Energy Alternatives, a multidisciplinary group which can focus a wide diversity of technical talent on the energy related problems under study.

The desired task, a feasibility study and preliminary design of a solar cooker for Haiti, will be undertaken by this Center. The effort will be managed by Dr. Thomas Bowman, Professor of Mechanical Engineering and Chairman of the Center. Two other faculty participants will come from the Department of Physics and Space Science. The research experience of these investigators encompasses thermodynamics, heat transfer, applied optics, solar energy applications including feasibility studies of solar heated buildings.

These technical skills will be supplemented in an important way by a special understanding of Haitian conditions that will be supplied by one of the student assistants who is himself a native of Haiti. This student, in addition to providing technical assistance, will contribute first-hand knowledge of the environment and culture of Haiti and will assist in the field trip to Haiti that will be undertaken as an integral part of the study effort.

The FIT proposal was submitted in response to initial conversations held between several universities and LA/DR. These organizations were sounded out to ascertain their desire and ability to undertake the proposed task. Included were the University of Houston, McGill University and FIT. With the exception of FIT, the costs quoted were viewed as excessively high and not warranted by any special expertise possessed by the organization.

Independent of this activity, TA/OST has received unsolicited proposals to conduct similar efforts. In particular Northrup, Inc. and the University of Delaware have submitted such proposals. These were judged inadequate due to high cost and limited scope of work. For example Northrup asked for \$120,000 just to develop one cooker design without any examination of particular LDC conditions and cooking needs. The University of Delaware proposed a joint solar cooker--solar crop dryer project for a total cost of \$70,000. Neither group offered to survey available cookers, rather both intended to concentrate on only one approach to the problem.

Although various designs for solar cookers have been available for many years, there has been no truly successful implementation of these designs. One of the fundamental reasons for this is that the design of a solar cooker has been considered more of a technical problem than a cultural one. FIT has recognized this and it alone, of all the organizations mentioned above, has emphasized the need for a thorough understanding of the cultural aspects of cooking. The inclusion of the Haitian student assistant on the study team and the proposed field trip to Haiti to study this aspect of the problem give FIT both an institutional capability and an appreciation of LDC conditions that would be difficult to match at the desired low cost for the study effort.

In summary FIT is especially well-qualified to conduct the desired study due to the institutional structure of the Institute and its Energy Center, the related research experience of its faculty investigators to be assigned to the study and the full appreciation of Haitian conditions supplied by the Haitian student researcher.

BUDGET

A. SALARIES AND WAGES ^{1*}

COST

1. Senior Personnel

Time
Commitment

a. Professor of Mechanical
Engineering

~~25%~~ ~ 23%

b. Associate Professor of Physics
and Space Sciences

~~15%~~ ~ 13%

c. Assistant Professor of Physics
and Space Sciences

~~25%~~ ~ 22%

~~\$ 11,121~~ 10796

2. Other Personnel

Hours

a. Two Graduate Student Assistants

1320

~~\$ 4,200~~ 4450

b. Undergraduate Student Assistants

430

~~\$ 860~~ 915

c. Secretarial

160

~~\$ 360~~ 380

Total Salaries and Wages

\$ 16,541 16,541

B. EQUIPMENT AND SUPPLIES

1. Meteorological data compilations

\$ 300

2. Commercially available solar cookers

\$ 750

3. Commercially available focusing collectors

\$ 800

4. Materials for fabricating solar cookers from plans

\$ 1,250

5. Office and drafting supplies

\$ 150

Total Equipment and Supplies

\$ 3,250

C. G.S.A. TUITION REMISSION

Six Quarters at an average of 9.6 hours per quarter

\$ 3,456

BUDGET (CONT'D)

D. TRAVEL²

COST

1. Domestic

a. Air fare	\$ 767
b. Local transportation	\$ 40
c. Meals and accommodations	<u>\$ 280</u>
Total Domestic Travel	
	\$ 1,087

2. Foreign

a. Air fare	\$ 630
b. Local transportation	\$ 253
c. Meals and accommodations	<u>\$ 560</u>
Total Foreign Travel	
	\$ 1,443

E. INDIRECT COSTS:³ 79.95% of \$16,541 **\$ 13,225**

TOTAL COST **\$ 39,002**

Notes:

1. Based on actual wages and salaries of the individuals performing the study, as of November 15, 1975.*
2. Based on: one four-man, four-day trip to Haiti
 one three-man, two-day trip to Washington, D.C.
 two one-man, one-day trips to Washington, D.C.
 Meals and accommodations estimated on the basis of \$35 per person, per day.
 Local transportation in Haiti includes car rental estimated at \$16.99/day for four days plus 17¢/mile for 1000 miles.
3. Negotiated Overhead Rate, July 1, 1974 (Dept. of Health, Education and Welfare).

* CHANGES REFLECT 6% SALARY INCREASE PUT INTO EFFECT
 AFTER SUBMISSION OF PROPOSAL.

20

AID 1350-1X (7-71)

DEPARTMENT OF STATE
AGENCY FOR
INTERNATIONAL DEVELOPMENT

1. Cooperating Country
TAB 4118909

2. PID/T No.
931-11-994-234-73

3. Original or
Amendment No. _____

4. Project/Activity and Title
Studies of Energy Needs in Food System Sp

PIO/T

PROJECT IMPLEMENTATION
ORDER/TECHNICAL
SERVICES

DISTRIBUTION

5. Appropriation Symbol
72-11X1026

6.A. Allotment Symbol and Charge
426-31-099-00-20-51

6.B. Funds Allotted to:
 A.I.D./W Mission

7. Obligation Status
 Administrative Reservation Implementing Document

8. Funding Period (Mo., Day, Yr.)
From 9/1/76 To 1/31/79

9.A. Services to Start (Mo., Day, Yr.)
Between 9/1/76 and 9/15/76

9.B. Completion date of Services
(Mo./Day, Yr.) 1/31/79

10.A. Type of Action
 A.I.D. Contract Cooperating Country Contract Participating Agency Service Agreement Other

10.B. Authorized Agent

Estimated Financing		(1) Previous Total	(2) Increase	(3) Decrease	(4) Total to Date
\$1.00=					
11. Maximum A.I.D. Financing	A. Dollars		150,000		150,000
	B. U.S.-Owned Local Currency				
12. Cooperating Country Contributions	A. Counterpart			FUNDS RESERVED BY	
	B. Other			POSTED 9/10/76	

13. Mission References

14. Instructions to Authorized Agent
SER/EM/CSD

Through a PASA with ERDA, arrange for Brookhaven National Laboratory (BNL) to provide the services explained in the Scope of Work. BNL, as ERDA's contractor, will be the lead agent in a consortium of institutions, the other members being the State University of New York at Stony Brook, Cornell University and Tufts University. These university members will be subcontractors to Brookhaven. The activity will initiate in the Transitional Quarter and terminate in FY 1979. It will be fully funded in the TQ. The Principal Investigator is to be Dr. Philip F. Palmedo, Head, Energy Policy Analysis Division of BNL's National Center for

(Cont'd on p 5 of 5)

15. Clearances - Show Office Symbol, Signature and Date for all Necessary Clearances.

A. The specifications in the scope of work are technically adequate
TA/OST, Jerome J. Bosken

B. Funds for the services requested are available

C. The scope of work lies within the purview of the initiating and approved Agency Programs
TA/OST, Henry A. Arnold

D. TA/PPU, Robert Mills

E. TA/PPU, Mary Mozynski 9/3/76

16. For the cooperating country: The terms and conditions set forth herein are hereby agreed to

Signature and date:

17. For the Agency for International Development
Signature: John N. Gunning
Title: Chief, TA/PPU/PDA

18. Date of Signature
7/10/76

AID 1350-1X (9-70)	Cooperating Country TAB	PIO/T No.	Page 2 of 5 Pages
PIO/T	Project/Activity No. and Title Studies of Enegy Needs in Food System		

SCOPE OF WORK

19. Scope of Technical Services

A. Objective for which the Technical Services are to be Used To provide overall analytic framework for the country-specific studies of the project, to perform technical monitoring of the conduct of these studies and to integrate the results of the individual studies into project summary reports.

B. Description

The contracted consortium will provide the technical overview necessary to assure that the various country-specific studies provide the type and quality of data that will permit reaching general conclusions from country-specific results. In this role it will perform three basic tasks:

- (1) Structuring of the³⁻⁴ country-specific studies,
- (2) Technical monitoring of the conduct of the studies,
- (3) Preparing project summary reports.

The first task will consist of formulating the initial design of an analytic framework for the individual studies, assisting AID in preparing the Request for Proposals for these studies, assisting in the review and evaluation of these

(Cont'd on p 5 of 5)

C. Technicians

(1) (a) Number	(b) Specialized Field	(c) Grade and/or Salary	(d) Duration of Assignment (Man-Months)
1	Systems Analyst	2500/month	6
1	Economist	1666/month	12
1	Systems Analyst	1666/month	12

Consultants - See attached Budget.

(2) Duty Post and Duration of Technicians' Services

USA and overseas travel to individual countries under study as required and with prior approval of TA/OST.

(3) Language requirements

None

(4) Access to Classified Information

None

(5) Dependents Will Will Not Be Permitted to Accompany Technician

D. Financing of Technical Services

(1) By AID - \$ 150,000

(2) By Cooperating Country - None

AID 1350-1X (9-70) PIO/T	Cooperating Country TAB	PIO/T No.	Page 3 of 5 Pages
	Project/Activity No. and Title Studies of Energy Needs in Food System		

20. Equipment and Supplies (Related to the services described in Block 19 and to be procured outside the Cooperating Country by the supplier of these services)

A. (1) Quantity	(2) Description	(3) Estimated Cost	(4) Special Instructions
	None		

B. Financing of Equipment and Supplies
(1) By AID - \$

(2) By Cooperating Country -

21. Special Provisions

- A. This PIO/T is subject to AID (contracting) ~~(KSA) (AID) (AID)~~ regulations.
- B. Except as specifically authorized by AID, or when local hire is authorized under the terms of a contract with a U.S. Supplier, services authorized under this PIO/T must be obtained from U.S. sources.
- C. Except as specifically authorized by AID/W, the purchase of commodities authorized under this PIO/T will be limited to the U.S. under Geographic Code 000.
- D. Other (specify):
 1. All travel will be in accordance with U.S. Government travel regulations and AID procedures.
 2. Prior to making visits to LDCs, the contractor will review his plans with TA/OST. He will clear visits to host countries with TA/OST at least 30 days in advance. TA/OST will then obtain country concurrence of the visit prior to commencement of travel. He will call on AID Missions upon arrival, keep mission personnel fully informed, ask them to participate in discussions if they desire and will inform Missions of the outcome of consultation. Normally he will make his own appointments and logistical arrangements.

AID 1350-1X (9-79)	Cooperating Country TAB	PIO/T No.	Page 4 of 5 Pages
PIO/T	Project/Activity No. and Title Studies of Energy Needs in Food System		

22. Reports by Contractor or Participating Agency (Indicate type, content and format of reports required, including language to be used if other than English, frequency or timing of reports, and any special requirements)

- (1) Initial report containing draft RFP for country-specific studies to be completed by Oct. 15, 1976.
- (2) Progress report with final framework for studies (5 copies) by Nov. 30, 1976.
- (3) Progress reports on interim results of country studies: Summarize and synthesize results and recommend adjustments to studies (5 copies), June 1, 1977; Dec. 1, 1977; June 1, 1978.
- (4) Final report on project, general conclusions reached from country-specific studies, policy recommendations to AID(100 copies) Jan 31, 1979.

These reports relate to the tasks as described in the attached BNL proposal:

- (1) Initial report, Oct. 15, 1976 - Task 1 (A,B)
- (2) Progress report, Nov. 30, 1976 - Task 1 (D)
- (3) Progress reports, June 1977 to June 1978 - Task 2 (A,B,C)
- (4) Final report, Jan. 21, 1979 - Task 4 (A,part of B)

23. Background Information (Additional information useful to Authorized Agent and Prospective Contractors or Participating Agency; if necessary cross reference Block 19.C(4) above.)

Brookhaven is a federally funded contract research center under the administrative control of ERDA, Office of the Assistant Administrator for Field Operations. The contract should be a "reimbursable services contract" with payment going to ERDA for the work done by Brookhaven and its partners.

24. Relationship of Contractor or Participating Agency to Cooperating Country and to AID

A. Relationships and Responsibilities

Contractor will report to TA/OST. Recommendations on conduct of related studies will be made to TA/OST.

B. Cooperating Country Liaison Official

C. AID Liaison Officials

On TDY overseas travel, AID officials will provide assistance in arranging interviews and facilitating in-country travel.

CONTINUATION SHEET	DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT	<input checked="" type="checkbox"/> Worksheet	ISSUANCE	PAGE 5 OF 5 PAGES
		1. Cooperating County TAB	2.a. Code No.	
		2.b. Effective Date	2.c. <input checked="" type="checkbox"/> Original OR Amendment No. _____	
		3. Project/Activity No. and Title Studies of Energy Needs in Food System		
FORM SYMBOL PIO/T	TITLE OF FORM PROJECT IMPLEMENTATION ORDER/TECHNICAL SERVICES			

Indicate block numbers. Use this form to complete the information required in any block of a PIO or PA/PR form.

14.
(Cont'd)

Analysis of Energy Systems. A copy of BNL's proposal for this work is attached along with descriptive material on the National Center. Technical and management control of the project will remain with AID, ERDA will provide minimum administrative control.

19.B.
(Cont'd)

proposals and refining the overall analytic framework to reflect the needs of the country studies.

The second task will include reviewing interim reports from the country study contractors and assisting AID in determining the progress and direction of the studies. To properly complete this task, field trips to the countries under study will be required.

The third task will be the preparation of overall project summary reports. These will include project progress reports to be provided on a regular basis and a final project summary report to be provided at the conclusion of all the activities of the total project. The progress reports will contain appropriate recommendations to AID for adjustments in the country studies where necessary.

The Brookhaven proposal attached contains a final task which will not be funded under this scope of work and PIO/T. That task is shown in the proposal as Review and Analysis of Other Data (Task III).

BUDGET

Direct Costs:

<u>Salaries:</u>		
Senior Staff	(6 man months)	15,000
Technical Support Staff	(24 man months)	40,000
Fringe Benefits (23.5%)		12,925
Consultants	(approx 5 man months)	20,000
Supplies		2,000
<u>Travel:</u>		
Foreign		12,000
Domestic		2,500
<u>Administration:</u>		
Department of Applied Sciences		2,000

Overhead:

General & Administrative Expenses (40% of direct costs)		<u>43,000</u>
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\$149,425

AID 1350-1X (7-71)	DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT	1. Cooperating Country TAB	Page 1 of 4 Pages
		2. PIO/T No. 981-0234-8178939	3. <input checked="" type="checkbox"/> Original or Amendment No. _____
PIO/T	PROJECT IMPLEMENTATION ORDER/TECHNICAL SERVICES	4. Project/Activity No. and Title Studies of Energy Needs in Food System	

4p

DISTRIBUTION	5. Appropriation Symbol 72-11X1026	6.A. Allotment Symbol and Charge 426-31-099-00-20-71	6.B. Funds Allotted to: <input checked="" type="checkbox"/> A.I.D./W <input type="checkbox"/> Mission
	7. Obligation Status <input checked="" type="checkbox"/> Administrative Reservation <input type="checkbox"/> Implementing Document		8. Funding Period (Mo., Day, Yr.) From 9/1/76 To 1/31/79
	9.A. Services to Start (Mo., Day, Yr.) Between 9/1/76 and 9/15/76		9.B. Completion date of Services (Mo., Day, Yr.) 1/31/79
	10.A. Type of Action <input checked="" type="checkbox"/> A.I.D. Contract <input type="checkbox"/> Cooperating Country Contract <input type="checkbox"/> Participating Agency Service Agreement <input type="checkbox"/> Other		
10.B. Authorized Agent			

Estimated Financing		(1)	(2)	(3)	(4)
\$1,000=		Previous Total	Increase	Decrease	Total to Date
11. Maximum A.I.D. Financing	A. Dollars		796,000		796,000
	B. U.S.-Owned Local Currency				
12. Cooperating Country Contributions	A. Counterpart				
	B. Other				

FUNDS RESERVED BY:
[Signature]
 POSTED **8/18/77**
 P/FM/CSD

13. Mission References	14. Instructions to Authorized Agent SER/CM/SOD is authorized to amend PASA ERDA/TAB-995-18-76 to include the responsibility of arranging for the conduct of the individual country-specific studies of the project. Brookhaven National Laboratory (BNL) will be given full responsibility for the selection and management of the contractors. A competitive process will be used to select the contractors. AID will select the countries and participate in the contractor selection process. Each individual country study will be a complete report in itself but will also provide the necessary general data which will form the basis of the overview and summary BNL will produce under the terms of the existing arrangements. This amendment to the PASA will give BNL greater control than they now have over the (cont)
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15. Clearances - Show Office Symbol, Signature and Date for all Necessary Clearances.	
A. The specifications in the scope of work are technically adequate TA/OST, Jerome J. Basken <i>[Signature]</i> Aug 8, 1977	B. Funds for the services requested are available TA/PPU, Robert Mills <i>[Signature]</i> 8/15/77
C. The scope of work lies within the purview of the initiating and approved Agency Programs TA/OST, Henry A. Arnold <i>[Signature]</i> 8/16/77	D. TA/PPU, Mary Mozynski
E. TA/OST, Ruth Flynn <i>[Signature]</i> 8/9/77	F. TA/OST, William D. Roseborough <i>[Signature]</i>

16. For the cooperating country: The terms and conditions set forth herein are hereby agreed to	17. For the Agency for International Development Signature: Robert Simpson <i>[Signature]</i> Title: TA/PPU, Director	18. Date of Signature 8/17/77
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CONTINUATION SHEET FORM SYMBOL TITLE OF FORM	DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT	<input checked="" type="checkbox"/> Worksheet <input type="checkbox"/> Issuance	PAGE 2 OF 4 PAGES
		1. Cooperating Country TAB	2.a. Code No.
		2.b. Effective Date	2.c. Amendment <input type="checkbox"/> Original OR No: _____
		3. Project/Activity No. and Title Studies of Energy Needs in Food System	

Use this form to complete the information required in any block of a PAS or PAA form.

Indicate block numbers.
14.

type and quality of the individual reports. The funds authorized in this amendment are expected to support four country-specific studies. If additional funding is necessary for the fourth and final study, that funding will be provided by a future amendment to the PASA.

Suggested specific wording changes to the existing PASA follow:

I. Summary Description

Add a final sentence: "In addition to these tasks and to strengthen their control over the quality of the country-specific studies, BNL will arrange for competitively-selected contractors to conduct the several country studies, to be funded by the funds in the PASA."

II. Service to be Provided

Add a final passage:

"The individual country-specific studies will be arranged for and funded by BNL using part of the funds in the PASA. A competitive process will be used to select the contractors. AID will specify the countries to be studied. TA/OST will participate in the contractor review and selection process. If required by the AID Missions in the countries selected, copies of proposals received from prospective contractors will be provided to the Missions and the Host Countries for their review prior to final contractor selection."

V. Special Provisions

(4) Replace "BNL technicians" by "all potential travelers supported by this PASA". Replace "Technicians" with "Travelers".

(5) Senegal will be the first country to be considered for study. A request for proposals will be prepared and published as soon as practicable. Both French and English versions of the proposals will be provided to USAID/Senegal for their review prior to final contractor selection. A second country will be specified by TA/OST prior to the end of 1977. Two final countries will be named by TA/OST in 1978.

CONTINUATION SHEET	DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT	<input checked="" type="checkbox"/> Worksheet <input type="checkbox"/> Issuance	PAGE 3 OF 4 PAGES
		1. Cooperative Country TAB	2.a. Code No.
		2.b. Effective Date	2.c. <input type="checkbox"/> Original <input type="checkbox"/> Amendment CR No.:
FORM SYMBOL	TITLE OF FORM	3. Project/Activity No. and Title Studies of Energy Needs in Food System	

Indicate block numbers. Use this form to complete the information required in any block of a PIO or PAA form.

The estimated budget for a typical country study breaks down as follows:

Senior Staff:	25 man months @ \$4,170/month (\$50,000/year, including overhead)	\$104,250
Junior Staff:	13 man months @ \$2,085/month (\$25,000/year, including overhead)	27,105
Per diem:	20 man months @ 30 days/mo. and \$40/day (would appear to be maximum)	36,000
Travel:	5 Round Trips @ \$1,200/trip	6,000
Extra Expenses (including travel within country):		<u>16,000</u>
	Total	\$189,355
Cost of four (4) Country Studies		\$757,420
Estimated Cost to ENL for Management of Four Contracts (5.09%)		<u>38,580</u>
	Total estimated cost of four studies	\$796,000

Scope of Work for Country Specific Studies:

Each such study has four objectives:

- 1) To collect and assemble field data and information which will provide a comprehensive description of the physical, economic and social structural elements in the food system that are related to energy consumption.
- 2) To identify specific actions that will encourage the adoption of alternative processes, procedures, and technologies that would improve the efficiency of the food system and yet be compatible with structural elements identified under 1) above.

CONTINUATION SHEET

FORM SYMBOL

DEPARTMENT OF STATE
AGENCY FOR
INTERNATIONAL DEVELOPMENT

TITLE OF FORM

Worksheet Issuance

PAGE 4 OF 4 PAGES

1. Cooperating Country
TAB

2.a. Code No.

2.b. Effective Date

2.c. Original OR Amendment No. _____

3. Project/Activity No. and Title

Studies of Energy Needs in Food System

Indicate block numbers.

Use this form to complete the information required in any block of a PIO or PAA form.

3) To identify what specific research and demonstration projects should be undertaken by AID in order to encourage the use of alternative technologies and practices that will help raise food production levels, improve the level of nutrition of the poor, and reduce dependence on high priced fuels.

4) To provide an analytical base for providing inter-country comparison of results and for evaluating initiatives that are likely to be of general applicability to many developing countries.

To achieve these objectives, each study will involve three broadly defined tasks:

1) To provide a general overview of the energy system of the nation and its role in the nation's economy;

2) To collect and assemble data documenting the detailed structure of the food system and the use of energy in that system; and,

3) To identify what actions AID should take to enhance the opportunities within this structure for utilizing conventional energy resources more efficiently or employing new technologies to provide energy from alternative sources.

We anticipate that the major effort in the country studies will be devoted to the second of these tasks.

AID 1350-1X (7-71)	DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT	1. Cooperating Country TAB	Page 1 of 6 Pages
		2. PIO/T No. 931-0234-3178939	3. Original or Amendment No. <u>1</u>
PIO/T	PROJECT IMPLEMENTATION ORDER/TECHNICAL SERVICES	4. Project/Activity No. and Title Studies of Energy Needs in Food System <i>6p</i>	

DISTRIBUTION	5. Appropriation Symbol 72-11X1026	6.A. Allotment Symbol and Charge 426-31-099-00-20-98	6.B. Funds Allotted to: <input checked="" type="checkbox"/> A.I.D./W <input type="checkbox"/> Mission	
	7. Obligation Status <input checked="" type="checkbox"/> Administrative Reservation <input type="checkbox"/> Implementing Document		8. Funding Period (Mo., Day, Yr.) From 9/1/76 To 1/31/79	
	9.A. Services to Start (Mo., Day, Yr.) continuing		9.B. Completion date of Services (Mo., Day, Yr.) 1/31/79	
	10.A. Type of Action <input type="checkbox"/> A.I.D. Contract <input type="checkbox"/> Cooperating Country Contract <input checked="" type="checkbox"/> Participating Agency Service Agreement <input type="checkbox"/> Other			
	10.B. Authorized Agent			

Estimated Financing		(1)	(2)	(3)	(4)
\$1.00=		Previous Total	Increase	Decrease	Total to Date
11. Maximum A.I.D. Financing	A. Dollars	796,000			796,000
	B. U.S.-Owned Local Currency				
12. Cooperating Country Contributions	A. Counterpart				
	B. Other				

13. Mission References

14. Instructions to Authorized Agent

SER/CM/SOD is authorized to amend PASA ERDA/TAB-955-18-76 to include the responsibility for completion of an additional study as described in the Scope of Work. This additional study, a study of energy needs, uses and resources in LDCs, will replace one of the country studies specified in the current PASA. No new funds are being added to the PASA at this time. The amended PASA will now include three country studies (of energy use in the food system), an overview analysis (of energy use in the food system) and the additional study authorized by this amendment (of energy needs, uses and resources in LDCs).

Cont. on Page 5

15. Clearances - Show Office Symbol, Signature and Date for all Necessary Clearances.

A. The specifications in the scope of work are technically adequate <i>Jerome J. Bosken</i> TA/OST, Jerome J. Bosken Nov 17, 1977	B. Funds for the services requested are available TA/PPU, Mary Mozynski
C. The scope of work lies within the purview of the initiating and approved Agency Programs <i>Henry A. Arnold</i> TA/OST, Henry A. Arnold	D. <i>William D. Rosebrough</i> TA/OST, William D. Rosebrough 11/7/77
E. <i>Ruth E. Flynn</i> TA/OST, Ruth E. Flynn 11/23/77	F. <i>Mac Prosser</i> TA/PPU, Mac Prosser

16. For the cooperating country: The terms and conditions set forth herein are hereby agreed to Signature and date: _____ Title: _____	17. For the Agency for International Development <i>Robert Simpson</i> Signature: Robert Simpson Title: Director, PPU	18. Date of Signature 11/25/77
--	--	---------------------------------------

PIO/T

Project/Activity No. and Title

#931-0234 Studies of Energy Needs in Food System

SCOPE OF WORK

19. Scope of Technical Services

A. Objective for which the Technical Services are to be Used

Prepare reports on energy needs, uses and resources in LDCs.

B. Description

Through a coordinated set of analyses and reviews, workshops and commissioned papers, the contractor will conduct a study and prepare a report to Congress on the energy needs, uses and resources in LDCs. The complete study shall include the following specific tasks:

- I. A. An overview of the global energy situation and an analysis of the energy needs of the lesser developed countries.
- B. A review of existing information sources on rural energy needs in LDCs - synopsis and analysis.
- C. Critical reviews of past international workshops and literature of international donors.

C. Technicians

(a) Number	(b) Specialized Field	(c) Grade and/or Salary	(d) Duration of Assignment (Man-Months)
24	Energy Analysts	\$30,000/year	72
8	Secretary & Support	\$15,000/year	24
4	Program Managers	\$40,000/year	12

(2) Duty Post and Duration of Technicians' Services

Washington, D.C. and elsewhere in US

(3) Language requirements

None

(4) Access to Classified Information

None

(5) Dependents

Will

Will Not

Be Permitted to Accompany Technicians

D. Financing of Technical Services

(1) By AID - \$270,000

(2) By Cooperating Country -

AID 1980-1X
(B.70)

Cooperating Country

PIO/T No.

Page 3 of 6 Pages

PIO/T

Project/Activity No. and Title

#931-0234

Studies of Energy Needs in Food System

20. Equipment and Supplies (Related to the services described in Block 19 and to be procured outside the Cooperating Country by the supplier of these services)

A. (1) Quantity (2) Description

(3) Estimated Cost

(4) Special Instructions

B. Financing of Equipment and Supplies

(1) By AID - \$

(2) By Cooperating Country -

21. Special Provisions

- A. This PIO/T is subject to AID (REGULATIONS) (PASA implementation) regulations.
- B. Except as specifically authorized by AID, or when local hire is authorized under the terms of a contract with a U.S. Supplier, services authorized under this PIO/T must be obtained from U.S. sources.
- C. Except as specifically authorized by AID/W, the purchase of commodities authorized under this PIO/T will be limited to the U.S. under Geographic Code 000.
- D. Other (specify):

AID 1250-1X (9-70)	Cooperating Country	PIO/T No.	Page 4 of 6 Pages
PIO/T	Project/Activity No. and Title #931-0234 Studies of Energy Needs in Food System		

22. Reports by Contractor or Participating Agency (Indicate type, content and format of reports required, including language to be used if other than English, frequency or timing of reports, and any special requirements)

Two types of reports will be presented to AID: a report containing the factual material to be presented to Congress and a report outlining tentative programs of energy assistance to be used by AID in formulating and defining assistance programs.

These reports will be presented to TA/OST according to the following schedule.

February 1, 1978 - Draft Report to Congress incorporating Task I and Task III and a preliminary progress report on Task II (10 copies)

February 10, 1978 - Final Report to Congress including the complete analyses of Task I, the finished papers of Task III and the structure and attendees of the workshops of Task II (20 copies)

March 15, 1978 - Final Report to AID including the complete reports of the individual workshops of Task II with the recommendations for programs of energy assistance (20 copies)

Contractor shall submit three copies of all reports listed as being a product of the contract (administrative, progress, final and technical reports containing R&D findings) to the Documentation Coordinator, TA/PPU/RUI, Technical Assistance Bureau,

Cont. on Page 5

23. Background Information (Additional information useful to Authorized Agent and Prospective Contractors or Participating Agency; if necessary cross reference Block 19.C(4) above.)

Congress has required that a survey of energy needs, uses and resources in LDCs be prepared and a report submitted to Congress by March 1, 1978. This BNL study will be the central element in that report.

24. Relationship of Contractor or Participating Agency to Cooperating Country and to AID

A. Relationships and Responsibilities

☑ Already in PASA - No Change

B. Cooperating Country Liaison Official

C. AID Liaison Officials

CONTINUATION
SHEET

FORM SYMBOL

TITLE OF FORM

DEPARTMENT OF STATE
AGENCY FOR
INTERNATIONAL DEVELOPMENT Worksheet Issuance

PAGE 5 OF 6 PAGES

1. Cooperating Country
TAB

2.a. Code No.

2.b. Effective Date

2.c. Original OR Amendment
No: _____

3. Project/Activity No. and Title

#931-0234

Studies of Energy Needs in Food System

Indicate block
numbers.

Use this form to complete the information required in any block of a PIO or PA/PR form.

4. cont

The participating agency ERDA, (now officially the Department of Energy, (DOE), will arrange for the services of its contractor Brookhaven National Laboratory (BNL) for the conduct of the full range of studies called for in the PASA as amended. As appropriate to the individual tasks, BNL shall arrange for the completion of those individual tasks through subcontractors or consultants in accordance with BNL's previously established procedures. PASA contract officer authorized to amend original PASA budget by reducing estimates for three country studies and adding the estimate for this task.

19. cont.

II. A series of three workshops of two to three days each on energy and development: (US and LDC representation is expected.)

- A. Energy and the food system.
- B. Rural energy uses and needs.
- C. Energy related resources management.

These workshops will result in recommendations to A.I.D. for development assistance programs in energy.

III. A set of three commissioned papers on issues concerning:

- A. Transportation and liquid fuels.
- B. Urbanization
- C. Energy delivery infrastructure.

These tasks will be completed by contractors and consultants selected by and operating under the management of Brookhaven National Laboratory which has final responsibility for the conduct of the study.

22. cont.

Agency for International Development, Washington, D.C. 20523, or his designee. Such reports shall include a title page showing the title of the report, project title as set forth in this contract (or grant) and the contract number. One copy of each report shall be clearly typed or printed on white paper so that it may be photographed to produce a microfilm master. Technical reports shall be accompanied by an author-prepared abstract.

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CONTINUATION SHEET

FORM SYMBOL

TITLE OF FORM

DEPARTMENT OF STATE
AGENCY FOR
INTERNATIONAL DEVELOPMENT

Worksheet

Iss

Co

PAGE 6 OF 6 PAGES

1. Cooperating Country

2.a. Code No.

2.b. Effective Date

2.c.

Original OR Amendment No. _____

3. Project/Activity No. and Title

#931-0234

Studies of Energy Needs in Food System

Indicate block numbers.

Use this form to complete the information required in any block of a PIO or PA/PR form.

Budget: The budget for the study is presented below:

<u>Tasks</u>	<u>Item</u>	<u>Estimated Cost</u>
IA	Global overview and analysis	\$15,000
B	Rural <u>energy uses and needs:</u>	
	Synopsis of reports	\$20,000
	Analysis of situation	\$20,000
C	Reviews of workshops, papers, and other donors	\$30,000
II	Three workshops on energy and food, rural needs, and resource management	\$75,000
III	Three commissioned papers on transportation and liquid fuels, urbanization, and economic and energy planning	\$30,000
IV	<u>Management and Fees</u>	\$60,000
	Contingency (BNL)	<u>\$20,000</u>
	TOTAL	\$270,000

Tasks IA, IB, IC, II and III are to be contracted out to contractors and consultants selected and managed by BNL. The budget figures given for these tasks include all costs to contractors. Task IV is the management task assigned to BNL. The contingency budget element will be controlled by BNL. The cost of the separate element of the study can be adjusted by BNL so long as the total budget is not exceeded.

Incorporated into these individual budget figures are travel costs necessary to complete the individual tasks. These costs cannot be specified at this date. Domestic travel only is anticipated with the only exception being the international travel of participants from LDCs at the three workshops.

AMG-30-1X
(7-71)

PIO/T

DEPARTMENT OF STATE
AGENCY FOR
INTERNATIONAL DEVELOPMENT

PROJECT IMPLEMENTATION
ORDER/TECHNICAL
SERVICES

1. Cooperating Country
~~Opposition~~
2. PIO/T No.
931-0234-3168939
4. Project/Activity No. and Title
Studies of Energy Needs in Food Systems
(931-0234)

Page 1 of 5 Pages
3. Original or
Amendment No. 1

Sp

DISTRIBUTION

5. Appropriation Symbol
72-11x1026

6. Allotment Symbol or Charge
426-31-099-00-20-83

6.B. Funds Allotted to:
 A.I.D./W Mission

7. Obligation Status
 Administrative Reservation Implementing Document

8. Funding Period (Mo., Day, Yr.)
From 03/1/78 To 09/1/78

9.A. Services to Start (Mo., Day, Yr.)
Between Issuance and

9.B. Completion date of Services
(Mo., Day, Yr.)
09/1/78

10.A. Type of Action
 A.I.D. Contract Cooperating Country Contract Participating Agency Service Agreement Other

10.B. Authorized Agent
CDO/Ouagadougou

Estimated Financing		(1)	(2)	(3)	(4)
		Previous Total	Increase	Decrease	Total to Date
\$1.00=					
11. Maximum A.I.D. Financing	A. Dollars	55,000	17,060		72,060
	B. U.S.-Owned Local Currency				
12. Cooperating Country Contributions	A. Counterpart				
	B. Other				

13. Mission References
Project Agreement dated 6/24/76

14. Instructions to Authorized Agent
a base-line survey
This PIO/T authorizes the procurement of the services of an anthropologist for a period of N. T. E. seven (7) months.
and analysis of the social structure necessary to operate the mill and mill.
This PIO/T relates to FY-72 Project Agreement signed 6/24/76.
NOTED
FUNDS ~~FORWARDED~~ BY *JMM*
POSTED SER/EN/USD

15. Clearances - Show Office Symbol, Signature and Date for all Necessary Clearances.

A. The specifications in the scope of work are technically adequate
William D. Roseborough, DS/SO

B. Funds for the services requested are available
Jack [Signature], DS/PO

C. The scope of work lies within the purview of the initiating and approved Agency Programs

D. *[Signature]*
E. M. Prosser, DS/PO

E. *[Signature]*

F. *John Haskins, CDO Ouagadougou*

16. For the cooperating country: The terms and conditions set forth herein are hereby agreed to

Signature and date:

Title:

17. For US Agency for International Development
Kenneth A. Milow
Signature: Ken Milow, DS/PO

Title:

18. Date of Signature
3/6/78

AID 1350-1X (9-70)	Cooperating Country <u>Upper Volta</u> <i>DSB</i>	PIO/T No. <u>931-1234-37</u> <i>311 439</i>	Page 2 of 5 Pages
PIO/T	Project/Activity No. and Title Studies of Energy Needs in Food Systems (931-0234) <u>931-11-995-0234-73-3168939</u>		

SCOPE OF WORK

19. Scope of Technical Services

A. Objective for which the Technical Services are to be Used To conduct a study to find out what organizational structures, traditional or otherwise, (e.g. cooperatives and extension services) exist within villages that may support the use of solar energy for water pumping and cereal grinding.

B. Description

The study will address itself to the management of water pumps and cereal grinding mills and the economic and social implications of operating solar energy powered units. The management aspects will deal with what infrastructure, traditional or otherwise, exists in the village, that may lend itself to operating solar units. If no such infrastructure exists, the potential for developing a capability within the village will be explored. Economic and social implications will also be studied to determine their impact on the local community.

C. Technicians

(1) (a) Number	(b) Specialized Field	(c) Grade and/or Salary	(d) Duration of Assignment (Man-Months)
1	Anthropology	FSR-5 or equivalent	NTE 7 person mont

b. Number of minorities and women

1	FSR-5 or equivalent	NTE 7 person mont
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(2) Duty Post and Duration of Technicians' Services

Tangaye, Upper Volta

(3) Language requirements

French S-3, R-3

(4) Access to Classified Information

None

(5) Dependents Will Will Not Be Permitted to Accompany Technicians

D. Financing of Technical Services

(1) By AID - \$ 17,060.

(2) By Cooperating Country -

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AID 1880-1X (9-70)	Cooperating Country Upper Volta - DSA	PIO/T No. 3168939 931-0234-3188657	Page 3 of 5 Pages
PIO/T	Project/Activity No. and Title Studies of Energy Needs in Food Systems (931-0234) 931-11-995-0234-73-3168939		

20. Equipment and Supplies (Related to the services described in Block 19 and to be procured outside the Cooperating Country by the supplier of these services)

A. (1) Quantity (2) Description (3) Estimated Cost (4) Special Instructions

None

B. Financing of Equipment and Supplies

(1) By AID - \$

(2) By Cooperating Country -

21. Special Provisions

- A. This PIO/T is subject to AID (contracting) (PASA implementation) regulations.
- B. Except as specifically authorized by AID, or when local hire is authorized under the terms of a contract with a U.S. Supplier, services authorized under this PIO/T must be obtained from U.S. sources.
- C. Except as specifically authorized by AID/W, the purchase of commodities authorized under this PIO/T will be limited to the U.S. under Geographic Code 000.
- D. Other (specify): The Africa Bureau, AID, strongly encourages the use in this activity of minorities and women both as contracting or sub-contracting firms and institutions and as individuals. Thus, the contractor is expected to carry out a positive program to identify and use such firms and persons to the fullest possible extent.

AID 196-1X 19-702 PIO/T	Cooperating Country Upper Volta DSB	PID/T No. 3168939 931-0234-SF 559	Page 4 of 5 Pages
	Project/Activity No. and title Studies of Energy Needs in Food Systems (931-0234) 931-11-995-0234-73-3168939		

22. Reports by Contractor or Participating Agency (Indicate type, content and format of reports required, including language to be used if other than English, frequency or timing of reports, and any special requirements).

1. The contractor will submit to the CDO, Ouagadougou, a preliminary report in English, approximately 30 days after signing his/her PSC.
2. After three months of field work, the contractor will submit to the CDO, Ouagadougou, an interim report (in English).
3. A final report in English will be submitted to the CDO, Ouagadougou, in ten (10) copies prior to July 1, 1978. The CDO will make distribution of this report to AID/W. In conjunction with the final report, the contractor or grantee will submit a special report summarizing the extent to which minorities and women were used in carrying out the activities and the extent to which they were used as members of teams which were sent to the field.

23. Background information (Additional information useful to Authorized Agent and Prospective Contractors or Participating Agency; if necessary cross reference Block 19.C(4) above.)

Background information is available in AID/Ouagadougou.

24. Relationship of Contractor or Participating Agency to Cooperating Country and to AID

A. Relationships and Responsibilities

The Anthropologist will maintain close liaison with USAID/Ouagadougou and will work closely with officials of the Eastern ORD.

B. Cooperating Country Liaison Officials

Eastern ORD Director or his designee

C. AID Liaison Officials

Eastern ORD Project Manager

DSB

931-0234-3188657

PIOT

Project/Activity No. and Title

Studies of Energy Needs in Food Systems (931-0234)
931-11-995-0234-73-3168939

LOGISTIC SUPPORT

25. Provisions for Logistic Support

A. Specific Items (Insert "X" in applicable column as right. If entry needs qualification, insert asterisk and explain below in C. Comments.)

	IN KIND SUPPLIED BY		FROM LOCAL CURRENCY SUPPLIED BY		TO BE PROVIDED OR ARRANGED BY SUPPLIER
	AID	COOPERATING COUNTRY	AID	COOPERATING COUNTRY	
(1) Office Space					X
(2) Office Equipment					X
(3) Housing and Utilities					X
(4) Furniture					X
(5) Household Equipment (Stoves, Refrig., etc.)					X
(6) Transportation in Cooperating Country					X
(7) Transportation To and From Country					X
(8) Interpreter Services/Secretarial					X
(9) Medical Facilities					X
(10) Vehicles (official)					X
(11) Travel Arrangements/Tickets					X
Other (specify)					
(12)					
(13)					
(14)					
(15)					

B. Additional Facilities Available From Other Sources

APO

PX

COMMISSARY

OTHER (specify, e.g., duty free entry, tax exemption)

C. Comments

ILLUSTRATIVE BUDGET

Anthropologist Fee.....	11,500.
Transportation (including purchase of bicycles).....	500.
Secretarial Assistance.....	300.
Commodities.....	750.
Data Processing.....	1,000.
Other Costs (cables, telephone, etc.).....	2,000.
Field Research Assistance (16 person-months).....	2,000.
TOTAL:	17,060.

The contractor will be authorized to hire local field research assistants to assist in the collection of data for this study.

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AID 1350-1X
(7-71)

DEPARTMENT OF STATE
AGENCY FOR
INTERNATIONAL DEVELOPMENT

1. Cooperating Country
SIERRA LEONE

Page 1 of 5 Pages

PIO/T

PROJECT IMPLEMENTATION
ORDER/TECHNICAL
SERVICES

2. PIO/T No. 9314-0234-
3168939

3. Original or
Amendment No. _____

4. Project/Activity No. and Title

Studies of Energy Needs in Food Systems
Project (931-0234) Sp

DISTRIBUTION

5. Appropriation Symbol
72-11X1026

6.A. Allotment Symbol and Charge
426-31-099-00-20-83

6.B. Funds Allotted to:
 A.I.D./W Mission

7. Obligation Status

Administrative Reservation

Implementing Document

8. Funding Period (Mo., Day, Yr.)

From 1/1/78 To 1/31/79

9.A. Services to Start (Mo., Day, Yr.)

Between 1/1/78 and 1/30/78

9.B. Completion date of Services

(Mo., Day, Yr.) 1/31/79

10.A. Type of Action

A.I.D. Contract

Cooperating
Country Contract

Participating Agency
Service Agreement

Other

10.B. Authorized Agent
AID/W

Estimated Financing		(1) Previous Total	(2) Increase	(3) Decrease	(4) Total to Date
\$1.00=					
11. Maximum A.I.D. Financing	A. Dollars		\$55,000		\$55,000
	B. U.S.-Owned Local Currency				
12. Cooperating Country Contributions	A. Counterpart				
	B. Other		See Sec. 19 B.		

13. Mission references

Project Agreement dated 6/24/76

14. Instructions to Authorized Agent

This PIO/T authorizes the procurement of services from the NASA Lewis Research Center under a Participating Agency Services Agreement.

This PIO/T relates to FY-76 Project Agreement Yegor Kotta signed 6/24/76.

NOTED
RECEIVED BY
JRM
POSTED
SER/FM/CSD

15. Clearances - Show Office Symbol, Signature and Date for all Necessary Clearances.

A. The specifications in the scope of work are technically adequate
W.D. Roseborough
William D. Roseborough, DS/ST

B. Funds for the services requested are available
JRM
Jack Ryan, DS/PO

C. The scope of work lies within the purview of the initiating and approved Agency Programs

L.M. Prosser
L.M. Prosser, DS/PO

E.

John Hoskins
John Hoskins, CDO, Ouagadougou

16. For the cooperating country: The terms and conditions set forth herein are hereby agreed to

Signature and date:

Title:

17. For the Agency for International Development

Ken Milow
Signature: Ken Milow, DS/PO

Title:

18. D

AID 1380-1X (8-70)	Cooperating Country UPPER VOLTA DSB	PIO/T No. 3168939 931-0234-3188658	Page 2 of 5 Pages
PIO/T	Project/Activity No. and Title Studies of Energy Needs in Food Systems (931-0234)		

SCOPE OF WORK

19. Scope of Technical Services

A. Objective for which the Technical Services are to be Used To provide assistance to the government of Upper Volta in the area of renewable energy resources & to demonstrate renewable energy technology in the development process.

B. Description

The project consists of the design, procurement, assembly and test in the U.S., and shipment and installation of a solar cell demonstration for grinding grain and pumping water in the village of Tangaye, Upper Volta. The system includes a photovoltaic array of approximately 1.4 Kw peak, wiring, storage batteries, controls, instruments, a water pump and motor, a water storage tank and water dispensing facility, and a cereal grinder and motor.

Tangaye villagers will provide labor and local building materials for the grain grinding facility shelter and labor for assistance for power system and water pumping, storage and dispensing system erection.

C. Technicians

(1) (a) Number	(b) Specialized Field	(c) Grade and/or Salary	(d) Duration of Assignment (Man-Months)
Eighteen (18)	man months of project management & technical support manpower to be provided by NASA at no charge to this PIO/T.		18 man mounths

(2) Duty Post and Duration of Technicians' Services

N/A

(3) Language requirements

N/A

(4) Access to Classified Information

None

(5) Dependents

Will

Will Not

Be Permitted to Accompany Technician

D. Financing of Technical Services

(1) By AID - \$ 55,000

(2) By Cooperating Country -

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AID 1880-1X (9-70)	Cooperating Country UPPER VOLTA DSB	PIO/T No. 3168939 931-0234-3192155	Page 3 of 5 Pages
PIO/T	Project/Activity No. and Title Studies of Energy Needs in Food Systems (931-0234)		

20. Equipment and Supplies (Related to the services described in Block 19 and to be procured outside the Cooperating Country by the supplier of these services)

A. (1) Quantity	(2) Description	(3) Estimated Cost	(4) Special Instructions
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21. Special Provisions

A. This PIO/T is subject to AID (contracting) (PASA implementation) regulations

Prior to making visits to Upper Volta, the NASA representatives shall review their plans with DS/ST. They shall clear visits to host countries with DS/ST at least 30 days in advance. DS/ST will then obtain country concurrence of the visit prior to commencement of travel. Representatives shall contact AID Missions upon arrival, keep Mission personnel fully informed, ask them to participate in discussions and activities if they desire and shall inform Missions of the results.

AID 1250-1X (9-79)	Cooperating Country UPPER VOLTA DSB	PIO/T No. 3168939 931-0234-3183658	Page 4 of 5 Pages
PIO/T	Project/Activity No. and Title Studies of Energy Needs in Food Systems (931-0234)		

22. Reports by Contractor or Participating Agency (Indicate type, content and format of reports required, including language to be used if other than English, frequency or timing of reports, and any special requirements)

Monthly status reports shall be provided to AID/DS/ST from project initiation through start of system operation. Ten copies are required for distribution within AID/Washington and to USAID Ouagadougou.

23. Background Information (Additional information useful to Authorized Agent and Prospective Contractors or Participating Agency; if necessary cross reference Block 19.C(4) above.)

The draft "Project Plan, Solar Cell Power System Demonstration for Upper Volta" dated Dec. 16, 1977 prepared by the NASA Lewis Research Center for the Agency for International Development, but not approved for formal release by NASA Headquarters is the basis upon which this PIO/T has been written. The final Project Plan will be submitted within two weeks following a NASA technical team visit to the proposed installation site to obtain site-dependent design requirements, transportation arrangements, and operational procedures.

24. Relationship of Contractor or Participating Agency to Cooperating Country and to AID

Eastern ORD Director
C. AID Liaison Officials
Country Development Offi
ORD Projects Director

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AID 1380-1X (19-73)	Cooperating Country UPPER-VOLTA DSB	PIO/T No. 3168739 931-0234-3188658	Page 5 of 5 Pages
PIO/T	Project/Activity No. and Title Studies of Energy Needs in Food Systems (931-0234)		

LOGISTIC SUPPORT

25. Provisions for Logistic Support	IN KIND SUPPLIED BY		FROM LOCAL CURRENCY SUPPLIED BY		TO BE PROVIDED OR ARRANGED BY SUPPLIER
	AID	COOPERATING COUNTRY	AID	COOPERATING COUNTRY	
L. Specific Items (Insert "X" in applicable column at right. If entry needs qualification, insert asterisk and explain below in C. "Comments")					
(1) Office Space	X				
(2) Office Equipment	X				
(3) Housing and Utilities					X
(4) Furniture	NA				
(5) Household Equipment (Stoves, Refrig., etc.)	NA				
(6) Transportation in Cooperating Country	X				
(7) Transportation To and From Country					X
(8) Interpreter Services/Secretarial	X				
(9) Medical Facilities	X				
(10) Vehicles (official)	X				
(11) Travel Arrangements/Tickets					X
Other: (specify)					
(12) Transp. Monitoring-Abidjan-Ouaga	X				
(13) Ouaga Storage of Materials	X				
(14) Pre installation on site preparat.	X				
(15)					

Additional Facilities Available From Other Sources

APO

PX

COMMISSA

OTHER (specify, e.g., duty free entry, tax exemption)

C. Comments

ILLUSTRATIVE BUDG

Solar	1 Array	\$30,200
Loads		\$ 4,700
Shippi		\$ 8,900
Travel		\$10,200
Engine	ng Drawings	\$ 1,000
	TOTAL	\$55,000

BEST AVAILABLE COPY

vcp

Date: DEC 22 1975

MEMORANDUM FOR: Members of the Research and Development
Committee

FROM: TA/PPU, Carl R. Fritz *Cy*

SUBJECT: Approved Project Identification Document

Attached is a copy of a Project Identification Document (PID) which has been approved by the Assistant Administrator for Technical Assistance for project design and the drafting of a Project Paper (PP):

Project Title: Energy Training

Project Number: 931-11-995-234

Initial FY: 1976

Responsible Office: TA/OST, J. Bosken

If you have any comments, questions or issues which you would like to see addressed in the PP, please send them directly to the responsible office listed above with a copy to TA/PPU. They should be received by that office within two weeks/~~one month~~, so that the comments can be addressed by the drafter.

The draft PP will be submitted to the Research and Development Committee for review and comment. However, we encourage your comments as early in the design process as feasible so that the project can be responsive to Agency concerns.

Attachment: a/s

cc: TA Technical Office

MEMORANDUM

DATE: December 10, 1975

TO : AA/TA, Mr. Curtis Farrar

FROM : TA/PPU, John N. *Winning*

SUBJECT: PID Clearance

Project Title: Energy Training

Begins FY 1976.

1. The PID complies with the following AA/TA instructions if the appropriate block is checked. Otherwise, comments are attached.

a. Main points of Program Guidance #3 covered.

b. AA/TA budget review comments have been incorporated or adequately appealed in the narrative.

c. Proposed funding is within limits described in TA Bureau FY 76/77 Program Submission to PPC and/or as amended by current OYB. (see attached).

d. Dates of PP development, approval and project initiation are realistic and consistent with the Program Submission. (see attached)

2. This PID has been in TA/PPU and staff work is incomplete because of TA/PPU work pressure, or Tech office work pressure. We recommend you return the PID for further review prior to your final decision.

3. We recommend the following action:

a. Approval

(1) subject to _____

b. Disapproval or delay for reasons specified in attached.

4. AA/TA Action

Approved *AK*

Subject to _____

Disapproved

Curtis Farrar
Signature

12/13/75
Date

The FY 1977 ABS included a GTS proposal Energy Assistance to LDCs to begin in FY 1976. OST has since identified two elements under this umbrella, In Country Energy Studies and Energy Training (this PID). The proposed funding is shown below.

<u>PERIOD</u>	<u>FY77 ABS</u>	<u>STUDIES</u>	<u>TRAINING</u>	<u>BALANCE</u>
FY 76	300	300	150	(-150)
IQ	560	500	50	10
FY 77	1,000	600	200	200
Other	8,140	-	150	7,990
<u>Total</u>	<u>10,000</u>	<u>1,400</u>	<u>550</u>	<u>8,050</u>

FY 1976 fund requirements are therefore \$150,000 higher than the FY 1977 ABS.

If you approve we recommend proceeding with the PP and approval process for funding in FY 1976 if funds become available or in the IQ or FY 1977.

SPECIALIZED ENERGY TRAINING FOR LDCs

I. SUMMARY

The LDCs, imitating the developed countries, have relied largely on central energy generating systems with electrical transmission as the major method of distribution. LDC transportation and mechanization, as in the rest of the world, relies almost exclusively on petroleum based fuels. The education and training of LDC managers, bureaucrats and technicians have, in the past, reflected these energy emphases. LDC skills in energy management, resource utilization, technology selection and implementation are various, but generally limited. Many of the LDCs face difficult long and short term decisions on such matters as improved utilization of conventional energy systems, investment in non-conventional energy sources, and the management of their resources including effective programs of energy conservation.

Increased energy costs have led to changes in the economics of energy, in the philosophy and methods of energy accounting, and in the technological options requiring a reassessment of the role of energy in development; rural and urban, agricultural and industrial. Renewable energy resources have assumed added importance. Utilization of waste from agricultural products becomes increasingly urgent. Techniques for the integration of central energy systems with dispersed energy sources for farms and villages presents a challenge. The environmental impact of alternative energy sources requires attention. The optimum use of increments of energy in food production needs to be established.

The information and skills to address the many, changing facets of energy generation and utilization need to be acquired by the LDCs. The problem is to develop and make available a set of training mechanisms responsive to the demand.

AIDTO CIRC A-461 - AID Strategy for Technical Assistance in the Energy Area - posed as one question to USAIDs--"Do you perceive a need for specialized training for LDC personnel in energy subjects?" Eighteen replies indicated a definite need for training and two replies stated that an answer hinged on further definition or on the outcome of ongoing studies. Several other countries felt the training needs were being met by other donor activities.

Not all of the positive replies suggested a particular training area for emphasis. Of the preferences stated, roughly half were for the assessment, planning and management area with the remainder citing alternative energy technologies as important. A third aspect, cited in one reply, is the need for planning and management skills for the

introduction of alternative energy sources in rural settings on a significant scale. Added to this range of perceived needs is the spectrum of formal training and experience levels which would be the point of departure of specialized training for LDC personnel. No single mechanism is likely to provide an adequate response to these needs and existing capabilities.

The project goal is to improve the decision making capabilities of LDCs in assessing and managing their energy resources. The selection of appropriate energy technologies and the exploitation of renewable energy resources is an important part of this goal.

The purposes of the project include:

- a.) Provision of training assistance to LDC personnel in the design and adaptation of appropriate, small-scale energy technologies.
- b.) Development, through training, of understanding and capability in techniques for resource assessment, energy planning and energy management and utilization.
- c.) Increase LDC and U.S. insight into the problems in adapting and utilizing alternative energy sources through the use of case studies and local examples in training courses.

Two separate courses are proposed to achieve these purposes and to contribute to the project goal.

a.) Energy Assessment and Planning

The primary objective of the course would be to help create technically qualified energy planning teams in LDCs. The course will provide teams from a number of countries with the basic background needed to initiate serious energy planning activities.

Approximately five or six teams of five or six students each will attend for approximately 7 weeks. The students will be drawn from planning or policy groups within the government or, when appropriate, from university groups or other institutions that have direct ties to governmental planning agencies. Each national team should have a composition roughly as follows:

- 1 or 2 Quantitatively trained economists
- 1 or 2 Engineers or 1 engineer and one physical scientist
- 1 Resource economist or practical geologist
- 1 Planner, familiar with national development plans
- 1 Financial analyst

Topics might include:

1. Overview of world and participating country supply-demand situation.
2. Overview of Energy Planning
3. Modeling
4. Demand estimation and projection
5. Energy technologies
6. Energy resources
7. Energy development financing
8. Case studies

b.) Alternative Energy Technologies

The objective would be to develop in-depth competence in energy technologies and to pursue adaptive research on one or more technologies. Participants would be expected to have a B.S. degree or its equivalent in engineering or physical science. The course would be two semesters long and include formal university courses, special seminars, and adaptive R&D on an energy source appropriate to the student's country situation.

It is estimated that 20 man years of effort will be required to develop the courses and to provide instruction over a three year period. Physical resources would be expected to be provided by the institutions conducting the courses. Travel expenses for LDC participants are more difficult to estimate at this time. Provision has been made in the tentative budget below but further discussion with USAIDs and countries will be required to better specify these costs.

The World Bank has expressed interest in the Energy Assessment and Planning course and may provide funds to develop this particular curriculum. Further discussions with IBRD are planned.

Major assumptions pertinent to the success of the project include:

- a) That sufficient LDC interest exists and the nomination of adequate numbers of qualified participants will ensue. Discussions with AID missions, LDC governments plus circularization of proposed course content and schedule can help to resolve this question.
- b) That some of the participants from each LDC will be associated with institutions which relate to the problems of rural development. Again, discussions with USAIDs and some "pre selection" of qualified institutions is expected to assist in making the assumption a realistic one.

- c) That U.S. institutions can design and conduct training courses that will focus on LDC needs. AID inputs in the project design and the use of international instructors to a reasonable degree should ensure proper perspective on the part of grantees.

Alternatives to the proposed project have been considered. AID could rely on formal training courses in the physical sciences and engineering to adapt new and useful approaches to energy for LDCs. Worldwide awareness of changing energy needs could be the stimulus for both supply and demand for training of this type. The time required for such an approach to become effective appears to be inordinately long, however. Foreign exchange costs could prohibit widespread utilization as well. A check of other donor activities suggests that training in energy skills is not receiving adequate emphasis and does not represent a realistic alternative to AID action. The proposed special courses have been judged to be the most cost effective way in which to provide needed training on a timely basis.

The direct beneficiaries will be the trainees who are expected to represent a cross-section of the middle and upper income classes in the participating countries. The training will emphasize energy for rural development and it is expected that the trainees will be influential in bringing needed increments of energy to the rural poor through local government programs and by providing needed skills to AID development projects.

A number of the countries which expressed interest in energy training have embryonic programs in alternative energy technologies. Training should increase the effectiveness of on-going programs and stimulate the generation of local activities where they do not now exist. In country efforts to adapt energy technologies to local needs have the best prospect for diffusion of the results and the ultimate application of the knowledge. Selective training with subsequent spread effect is proposed.

II. FINANCIAL REQUIREMENTS AND PLANS

Cost estimates are necessarily preliminary at this time. Questions to be resolved in further project design include participation of other donors, numbers of trainees over the life of the project and the apportionment of travel and living expenses to LDC institutions.

For the purposes of this initial estimate the following assumptions have been made:

- a) That other donors will provide 1/2 of the course development costs.

- b) That, on average, LDC institutions will pay for 1/3 of the travel and living expenses.
- c) That the Energy Assessment and Planning course will be given twice a year for three consecutive years with two groups of five personnel from AID countries will participate in each session.
- d) That the Alternative Energy Technology course will be given twice a year for three consecutive years with an average of ten LDC participants in each course.

Total AID grant costs are estimated at \$550,000 over a three year period. Other donor inputs are assumed to be \$180,000 and LDC costs for travel and living expenses are calculated as \$130,000.

Total project costs, not including costs of participation of non-AID countries, are therefore estimated as \$860,000 for the three year project.

AID disbursements are anticipated to follow a pattern of

FY 76	150,000
IQ	50,000
FY 77	200,000
FY 78	150,000

III. DEVELOPMENT OF THE PROJECT

Several consecutive actions are planned to develop the project. Discussions will be held in December in four Central West African countries to assess the demand for each course outlined above. A survey of educational background and prior relevant training will also be conducted in CWA. In late December, 1975 or early January, 1976 talks will be held with IBRD to ascertain their interest in establishing the management course and to establish the form that the instruction might take. One prospectus for a course on Alternative Energy Technologies has been received by AID.

These inputs will be used to develop a tentative description of the courses and prospective schedule to be included in an Airgram to those countries which have expressed an interest in energy training. USAIDs will be asked to indicate local interest in participation, potential financial support from local institutions, existence of qualified applicants, and likely schedule of participation (year one, two or three). These replies will be incorporated in the final project design.

TA/OST staff effort, beyond that expended to date, required to prepare the PP is estimated at two man months. The PP submission is planned for early February, 1976.

IV. ISSUES

No issues have been identified to date.

UNITED STATES GOVERNMENT

Memorandum

PD-AAL-873

9310234 (12)

THE BUREAU endorses
this PP. McElpith's
comments may be of use to
TAB.

TO : NE/TECH/SPHRRD, Mr. James J. Dalton

DATE: March 30, 1976

FROM : NE/TECH/EHR, Andre B. Colpitts

AR/Colpitts

931-234

H. D. [unclear]

3p

SUBJECT: Comments on PP for "Studies of Energy Needs in Food System"

This project proposal is to be recommended for its thoroughness and attention to the reasons behind the sectional requirements for preparation of a Project Paper. If this is a result of TAB convening a Task Force Committee of TA, Regional, and Specialist personnel to develop a project, then the mechanism should be used more often.

I have only one comment, which concerns the extent of the areas to be covered. If it were a matter of including all the relevant items in a study of the cycle of energy use, then I would be less concerned. However, there seems to be some additional topics which could lead to fragmented approaches. For example, the country studies on the application of alternative energy sources--biogas, stoves, solar cooking--can easily become a project in itself, rather than as adjunct information on relative costs and technical and social feasibility of its utilization. Likewise, a study of larger energy supply systems such as tidal and geothermal generated power seem remote from the major questions being pursued by the study of energy utilization in rural areas. The studies on human resources utilization-replacement and alternative time-use by women are important to the energy-use study but only in a connected relation. If the study is not tightly drawn, one will obtain a collection of loosely related papers and studies rather than an interlocking system of energy flow. These same comments apply as one begins to cost relative styles of farming, measure values for mechanization strategies, etc.

My fear is not that too many areas are being touched upon--the problem would seem to dictate such an extent of coverage. Rather it is that the individual parts may become separated from the general theoretical framework of the problem statement.

cc: TA/OST, Mr. Clinton A. Stone



**Informal Minutes of the Research and Development Committee
Meeting, March 30, 1976**

Project: Studies of the Energy Needs in the Food System

Contractor: To be determined

Project Manager: TA/OST, Jerome J. Bosken

Discussion Highlights:

~~OST: For the last year and a half, the agency has been discussing what AID should be doing in energy. Since the problem is so broad, an interbureau working group, formed to assist in writing the project paper, decided that the first major effort of the energy program should be focused on the relationship between energy usage and food production, distribution and consumption. This study would then provide necessary information for follow-on projects.~~

The proposal attempts to look at two things:

- ~~1. studies of the energy needs in the food system and appropriate methods to supply these needs from renewable resources, and~~
2. field studies to investigate sociological and institutional factors involved with selected interventions directed at already identified needs in this area.

A summary of Bureau/Office responses follows:

~~**AFRICA:** The African Bureau feels the topic is interesting and crucial but that a frontal attack on the energy problem is needed. They would like a project of research directly aimed at the development of new energy sources for LDCs, rather than studies of energy needs. They agreed that the three proposed field studies (Haiti, Nepal and Upper Volta) are extremely worthwhile. In energy-poor Africa the problem is in the lack of information on the impact of energy on development since so little energy (besides human and limited animal) is used. It is difficult to analyze what technologies are needed. We need to try different ones and see what happens when we put them in place.~~

LATIN AMERICA: The Latin America Bureau is interested and would like to see a LA country chosen for one of the food studies.

ASIA: The Asian Bureau is lukewarm to the idea but would like to see an Asian country included in the studies.

NENA: The NENA Bureau was absent from this discussion but previously approved the project. A copy of a memo commenting on the project with subsequent bureau endorsement is attached.

SER/ENGR: The Office of Engineering saw the project as a data gathering and sociological study rather than a technical assessment of specific technologies or sources.

CONCLUSION: It was agreed that the PP would be revised to better define the relationship between increased food production and this study and to expand the section regarding the role of "other donor." The project was accepted by the Committee subject to these revisions. In addition, OST agreed to review the possible study countries so that all interest countries are properly considered. The committee was satisfied to know that, as opportunities for appropriate activities regarding new energy sources are identified during the course of the studies, additional projects will be undertaken to implement these findings.

Attachment: a/s

File



UNITED STATES GOVERNMENT

Memorandum

TO : Distribution

DATE: June 9, 1976

FROM : TA/OST, Henry A. Arnold *HA*

4p

SUBJECT: Selection of Countries to be Subjects of "Studies of Energy Needs in the Food System"

1. A recently approved TA/OST project will undertake a study of the use of energy to produce, distribute, market and prepare food in four LDCs. The goal of the effort is to minimize energy constraints to increased food production by identifying steps to more efficient energy use in the food system and pointing out the most promising approaches to providing suitable energy increments in rural areas.

2. Our immediate task is to complete the process of country selection so that the Request for Proposal can be prepared and released. The value of such studies depends in great measure upon which countries are chosen for the project. Although we have prepared a candidate list of countries (list and rationale are attached), we need your suggestions and assistance in this process. As a consequence we wish to meet with you or your representative to discuss what countries in your bureau would be most appropriate for this project. The meeting will be held at 2:00 p.m. on 14 June in Room 3886 NS.

3. Please let us know if you or your designee cannot attend. Contact Jerome G. Bosker, TA/OST (X27071).

Attachment:

List of Candidate Countries

Distribution:

LA/DR, Donor Lion

AFR/DP, Frank Moore

ASIA/DP, Donald Cohen

NE/TECH, Dave Steinberg

✓PPC/DPRE, John Shannon - *Room 3439*



CANDIDATE COUNTRIES FOR ENERGY/FOOD STUDIES

LATIN AMERICA

Chile: A highly urban society with an advanced agricultural system would serve as a good "impedance match" between such studies in the U.S. and in poorer countries. The Mission's position is that the energy use by the rural poor has not been measured, but the cost and supply of energy can have important implications for the cost of agricultural production. The extensive mechanization and the fishing and forestry industries are energy intensive.

Bolivia: The economic and health statistics of Bolivia indicate that it should be given serious consideration--one of the most undernourished LA countries, highest infant mortality in LA, very low per capita energy use and second lowest per capita GDP. Highly rural (69%). The Mission's position is that the small farm sector uses little energy but human and animal labor. As a result a considerable amount of land lies idle since there is not the capability to work more land during the short planting and harvesting periods. If food production by small farmers is to increase, there must be a growing use of energy. Estimates of the impact of such growth have not been made.

The Mission does not recommend an energy study be undertaken in Bolivia now since any energy bottleneck is of a long run nature.

Honduras: Has been identified as a Most Seriously Affected (MSA) country by the food crisis (FAO) and the oil crisis (IMF). Undernourished (94% of caloric requirement met) with a food demand growth that exceeds production growth. Low energy/capita and GDP/capita. Rural country (69%). Highest population growth in LA. The Mission is interested in small water systems for irrigation, flood control and small hydropower units. There are several on-going studies and projects related to hydroelectric (IBRD and IDB). The energy situation, although the energy crisis has increased the cost of producing and marketing agricultural produce, has not been a critical constraint on current AID projects.

El Salvador: Both oil and food MSA, national undernourishment with food demand growth exceeding production growth, low energy/capita and GDP/capita. Rural population 60%, high population growth rate. The Mission was against including El Salvador in the small number of countries to be studied since UNDP/ECLA and SIECA are studying the energy needs of the CACM, IBRD and IDB have hydro and geothermal projects.

Costa Rica: A small country with a high GDP/capita and moderate energy use/capita. Still mostly rural (60%) but its urban growth is greater than average. The Mission is in favor of energy project - designed for small community energy needs, provision of low cost energy in rural areas, studies of cost/benefits of rural electrification and cost/benefits of alternative energy in small communities. Lack of energy in rural areas constrains population in economic, social and agricultural aspects especially.

AFRICA

Kenya: An oil MSA. With the highest population growth in Africa, it also has the highest food demand growth (4.7%) but the food production growth is low (2.6%). Although the caloric requirement is being met (102%), this still means that roughly 50% of the people are below this average value and are hence under-nourished.

The Mission interest is expected to be high. Their response to the airgram indicated that the current barriers to expanded agricultural production are manpower and economic policy constraints, lack of access to services and "appropriate" technologies and the lack of mechanization and energy related technologies is less important. However after Kissinger's Nairobi speech, the Mission wanted assistance in agri-business area, citing the need and ability to expand food production. (With proper agri-business set up, Kenya might become food exporter.)

Senegal: An oil and a food MSA, moderate population growth and a growth in food production that exceeds demand, high GNP/capita and energy/capita. The Mission is very interested in taking part in any energy study. There exists strong institutional capability in Senegal to support such a study. Government policy is to upgrade village conditions. UNEP model village (village energy center) will be located in Senegal.

Ethiopia: Food and oil MSA, low GNP/capita and low energy/capita (in both Ethiopia exceeds only various Sahelian countries, malnutrition, food demand growth exceeds production growth. The Mission interest is low. They do not believe energy is a serious constraint because of hydroelectric potential. Yet the Mission was very interested in OST's wind study and requested additional copies. The on-going war with Eritrean guerillas will pose problems in data collection.

ASIA

Pakistan: Oil and food MSA, food demand exceeds production, undernourishment, low GDP/capita, moderate energy/capita. The Mission is interested in alternative energy technology and intermediate technologies (for energy system) e.g. biogas, solar and wind.

Bangladesh: Oil and food MSA, lowest GDP/capita in area, very low energy use/capita. Food demand growth far exceeds production growth. Severe undernourishment. The Mission's interest is difficult to ascertain. The country is the subject of a recent ADB financed energy survey and the Mission seems to want to await the final report before committing itself to energy related projects.

NEAR EAST

Egypt: Oil and food MSA, second lowest GDP/capita and lowest energy/capita. Food demand exceeds production growth. The Mission interest is low. Although some work underway in solar and wind, a lot of potential in the country for commercial energy production - recovery of the Sinai oil fields, local gas and oil, produces own nitrogen fertilizer from its own natural gas deposits.

UNITED STATES GOVERNMENT

*Memorandum***URGENT**

TO : DS/PO, Mr. Ken Milow

DATE: 3 March 1978

FROM : DS/ST, William D. Roseborough *WR*

SUBJECT: PIO/Ts for Implementing the Project Agreement dated 6/24/76 between AID and the Government of Upper Volta

Two PIO/Ts for implementing subject Project Agreement are attached for your approval. One is to procure the services of the NASA Lewis Research Center by a PASA to design, procure, test and install a solar cell power system, a water pumping, storage and dispensing system, and a cereal grinding facility in the village of Tangaye, Upper Volta. The other authorizes the CDO, Ouagadougou to procure locally a base line survey and analysis of the social structure necessary to operate and maintain this facility.

These PIO/Ts were prepared by the CDO, Ouagadougou, with my assistance during my visit there in February, and the scope of work in the one for the PASA with NASA was agreed to by the NASA representatives who accompanied me for the installation site inspection. The CDO requested me to try to expedite the approval of these PIO/Ts so that this excessively long delayed project which has proved so embarrassing to him in his relations with the government of Upper Volta could be implemented as soon as practicable.

The funds for these two PIO/Ts are available in the approved Project Agreement although the individual line items in Annex B thereof are slightly different. These changes are acceptable to the government of Upper Volta and the CDO will revise the PROAG to reflect them. A copy of the PROAG is attached.

During a conference on 30 November 1977 between John Hoskins - CDO Ouagadougou, John Blumgart - AFR/DR, and William Roseborough, DS/OST, it was stated that the only funds presently available for this approved demonstration project are the \$75,000 in the Project Agreement dated 6/24/76. Mr. Hoskins agreed that \$55,000 of the funds included in the PROAG would be made available for implementing this installation by a PASA with NASA as described in the PIO/T. This agreement and additional details of the proposed installation are covered in a 14 December cable, State 298368, copy attached.

In a cable dated 27 January 1978, Ouagadougou 0375 (copy attached), the CDO authorized DS/ST to issue a PIO/T for \$55,000 for a PASA with NASA and requested that we proceed with the PIO/T issuance and PASA execution to expedite the project.



Additional background on this overly long delayed project are included in my Memorandum Report of Travel to Upper Volta. Additional backup information, if necessary, can be provided.

I have agreed to cable Mr. Hoskins, CDO Ouagadougou, as soon as these PIO/Ts have been approved, to air pouch the one covering the procurement of the base line social survey to him for negotiating that contract locally, and to work with our PASA office on the NASA one.

Earliest practicable action on these will be appreciated. Please call me when approved or if additional information is required.

Attachments: a/s

MEMORANDUM REPORT OF TRAVEL

2/24/78

TO : DS/ST, Mr. Henry A. Arnold

FROM : DS/ST, William D. Roseborough

SUBJECT: Solar Cell Power System Demonstration for Upper Volta

I. Introduction

ST Project 931-0234, Studies of Energy Needs in the Food System, includes a sub-project for subject solar energy demonstration. The primary purpose of this sub-project is to determine the socio-economic effects of reducing the time required by the women of a village in Upper Volta, one of the poorest of the LDCs, to draw water and grind cereal grain, their primary source of food. This daily chore occupies several hours a day. The time and labor saved by providing power for these laborous tasks could be used for other activities which would raise their quality of life above the bare subsistence level of much of the rural population (92% rural) - \$90 per capita per year.) Examples might be expansion of the relatively small cottage craft industry, additional food production for income generation and improved nutrition through vegetable gardens and increased livestock, all of which are AID primary goals.

II. Background

This sub-project was initiated with the negotiation of a Project Agreement (PROAG) with the government of Upper Volta in June 1976. In August 1976, ST contacted the NASA Lewis Research Center (LeRC) regarding participation in the ERDA/NASA Photovoltaic Test and Demonstration Project. NASA LeRC responded expressing interest in joint project. In January 1977, a joint ST/NASA LeRC project, inspect existing French installed solar systems, and select an appropriate village in Upper Volta for subject demonstration. The village of Tangaye located near the main highway to Niamey about 200 km east of Ouagadougou (the capital of Upper Volta) was selected as the test demonstration site.

Several discussions with ERDA's International Affairs Division had encouraged AID that ERDA could and would provide the funding and technical assistance for the hardware of the system while AID would fund the socio-economic studies and installation, test and evaluation in Upper Volta. Discussions with ERDA's Solar Energy Division in May 1977 revealed that they would not support the project due to limited staff available to manage the activities and to the lack of authority to engage in international demonstrations.

In July 1977, ST advised NASA LeRC that it was still very interested in testing photovoltaic solar energy systems in developing countries and requested technical assistance in this project. NASA LeRC responded with a Project Development Plan, dated 1 August 1977, covering design, procurement and installation of a 5 to 6 Kw village solar power system and a 500 watt solar educational demonstrator for training at the Interstate School of Rural Engineering in Ouagadougou. This Project Development Plan called for NASA-LeRC to provide management and technical direction of the project at an estimated cost of \$120,000, and to have the work accomplished through competitive contracts with appropriate industrial sources estimated at \$430,000 for a total project estimated cost of \$550,000.

ST airpouched a copy of this proposal to USAID-Ouagadougou, stated that we considered the cost excessive, and that we were proceeding along two lines (1) to incorporate this project into a new and broader energy technology demonstration project (being designed for later in 1978) and (2) to seek NASA and/or DOE support for costs of U.S. government personnel technical assistance due to relation of this project to domestic photovoltaic program.

Since this estimated cost was far in excess of the amount budgetted by ST (\$75,000 in the PROAG), NASA-LeRC was requested to make a study of a small photovoltaic system, 1 to 2 Kw peak, based on Tangaye village insolation, and to estimate the amount of grain which could be ground, the volume of water which could be pumped from the Tangaye well, and the estimated cost of the system. NASA-LeRC responded to this request by letter dated October 26, 1977 with estimates based upon a 1 Kw peak solar cell array.

Mr. John Hoskins, CDO Upper Volta, sent a telegram on 15 November stating that he and the government of Upper Volta were eager to begin this long-delayed project and requested current schedule for implementation. On 30 November I met with Mr. Hoskins and John Blumgart, AFR/DR, to discuss how this project could be expedited. I advised that the only funds available to ST for this demonstration under this approved project are the \$75,000 in the PROAG. It was agreed that \$55,000 of the funds included in the PROAG would be made available for the procurement, installation and testing of a solar cell power demonstration system for grinding and pumping water in the village of Tangaye and that the remaining \$20,000 in the PROAG would be used by the CDO for studies to determine the behavior patterns of the villagers before and after the installation.

I immediately contacted NASA-LeRC and obtained their agreement to develop a Project Plan for the optimum solar cell power system demonstration for Upper Volta possible with the limited funds (\$55,000) available. They also agreed to absorb the costs of their personnel to design, procure, assemble and test the system in the U.S., ship, install, and check out in Upper Volta. Two weeks later they submitted

a revised Project Plan (dated 16 December 1977) to provide a 1.4 Kw solar cell power system for the village of Tangaye including a storage battery, grain grinder, water pump and water storage tank. This system would provide a cereal grinding capacity of 125 kg/day of finely ground millet and a water pumping capability of 13,115 liters/day, and estimated that the system could be operational in Upper Volta within 28 weeks after receipt of funding authority from AID. These estimates were based upon incomplete information obtained during the site visit in 1977. The additional information needed to finalize the design could only be obtained by a site visit to determine the well capacity, fineness of acceptable ground grain, and availability of local labor and material for installation.

In order to expedite this project NASA-LeRC agreed to send a site-inspection team to Upper Volta as soon as practicable after confirmation was received from the CDO that the Project Plan was acceptable, and even in advance of receiving a PASA from AID. Such confirmation was received on February 1. I departed on 8 February to accompany two NASA-LeRC engineers to make the site inspection in Upper Volta, and to obtain related information on a similar project in two villages in Senegal by the National Center for Agricultural Research (CNRA) under funding by the Canadian International Development Research Center. We also wanted to inspect the latest Solar Energy Water pumping installations being installed by the French who have taken the lead in this field in West Africa. The remainder of this report will be a summary of that trip.

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APPROVED BY DS/OST: WEILERS

AFR/DR: JBLUNGART (PHONE)

AFR/DR: JDIBBLE (PHONE)

AFR/SFVA: KJ BURKE (PHONE)

Kevin - 632-9531

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TAGS:

SUBJECT: SOLAR ENERGY VILLAGE DEMONSTRATION UNDER OST PRO-
JECT 931-0234, STUDIES OF ENERGY NEEDS IN THE FOOD SYSTEM

REFERENCE: (A) STATE 250373 (B) OUAGADOUGOU 4336
(C) NASA/LEVIS COMMERCIAL CABLE DATED 2 DEC. TO THOMAS
LUCKE/USAID UPPER VOLTA

1. REF (A) ADVISED THAT NASA PROPOSAL FOR PHOTOVOLTAIC
DEMONSTRATION UNITS IN UPPER VOLTA HAD BEEN RECEIVED AND
COSTS WERE CONSIDERED EXCESSIVE. (COPY OF PROPOSAL AIR
POUCHED.) REY (A) ALSO ADVISED THAT AID/V WAS PURSUING
TWO APPROACHES: (1) TO INCORPORATE THE UPPER VOLTA DEMON-
STRATION INTO A NEW AND BROADER ENERGY TECHNOLOGY DEMON-
STRATION PROJECT (BEING DESIGNED FOR LATER IN 1978) AND
(2) TO SEEK NASA AND/OR DOE SUPPORT FOR COSTS OF USG PER-
SONNEL TECHNICAL ASSISTANCE DUE TO RELATION OF THIS PROJECT
TO DOMESTIC PHOTOVOLTAIC PROGRAM.

2. REF (B) REQUESTED CURRENT STATUS OF PROJECT.

3. RECENT DISCUSSIONS WITH NASA HAVE ACHIEVED TENTATIVE
COMMITMENT TO ABSORB COSTS OF USG TECHNICAL ASSISTANCE FOR
A SMALL (APPROXIMATELY 1.6 KW PEAK) DEMONSTRATION UNIT.

ASSISTANCE WOULD INCLUDE DESIGN AND SUPERVISION OF PUR-
CHASE, TEST AND INSTALLATION OF EQUIPMENT, AND ORIENTATION
AND INSTRUCTION IN OPERATION.

4. THE ONLY FUNDS PRESENTLY AVAILABLE FOR THIS DEMONSTRATION
UNIT UNDER THIS APPROVED PROJECT ARE THE 75,000
DOLLARS IN THE PROAG. AS DISCUSSED IN CONFERENCE ON
30 NOVEMBER BETWEEN JOHN HOSKINS, USAID/UPPER VOLTA,
JOHN BLUNGART, AFR/DR AND WILLIAM ROSEBOROUGH, DS/OST,
IT WAS AGREED THAT 35,000 DOLLARS OF THE FUNDS INCLUDED
IN THE PROAG WOULD BE MADE AVAILABLE FOR THE PROCUREMENT,
INSTALLATION AND TESTING OF A SOLAR CELL POWER DEMONSTRATION
SYSTEM FOR GRINDING GRAIN AND PUMPING WATER IN THE
VILLAGE OF TANGAYE AND THAT THE REMAINING 20,000 DOLLARS
IN THE PROAG WOULD BE USED BY THE MISSION TO ARRANGE FOR
STUDIES TO DETERMINE THE BEHAVIOR PATTERNS OF THE VILLAGERS
BEFORE AND AFTER THE INSTALLATION.

5. FURTHER DESIGN REFINEMENT BY AND DISCUSSIONS WITH NASA
LEVIS RESEARCH CENTER REVEALS THAT A DEMONSTRATION PRO-
JECT WITH THE FOLLOWING CHARACTERISTICS CAN BE IMPLEMENTED

WITH THE 55,000 DOLLARS TO BE MADE AVAILABLE FROM PROAG.
SOLAR CELL POWER SYSTEM SIZE, 1.6 KW PEAK, WATER PUMPED
5550 GALLONS PER DAY, WATER STORAGE CAPACITY 6000 GALLONS,
GRAIN GRIND-250 POUNDS PER DAY OF FINE GRIND OR 1500
POUNDS PER DAY OF COARSE GRIND.

6. NASA ESTIMATES THAT SYSTEM CAN BE DESIGNED, PROCURED,
ASSEMBLED AND TESTED IN U.S., SHIPPED, INSTALLED, CHECKED
OUT AND OPERATIONAL WITHIN SEVEN (7) MONTHS AFTER RECEIPT
OF FUNDING AUTHORITY FROM A.I.D. MEETING THIS SCHEDULE
WILL REQUIRE SURFACE SHIPMENT OF READILY AVAILABLE HEAVY
HARDWARE AND AIR SHIPMENT OF LONG LEAD TIME COMPONENTS.
MISSION OR REDSO/VA ASSISTANCE IN ENSURING SAFE AND EX-
PEDITIONOUS PORT CLEARANCE AND RAIL SHIPMENT FROM ABIDJAN
TO OUAGADOUGOU WILL BE REQUIRED, ALTHOUGH TRANSPORTATION
COSTS HAVE BEEN INCLUDED IN PROJECT BUDGET. ARE FACILITIES
AVAILABLE FOR HANDLING "PIGGY BACK" TYPE CONTAINER, APPROX-
IMATELY 8 FEET X 8 FEET X 24 FEET LONG, ONTO AND OFF FLAT
CAR AND TRUCK? CAN SAFE STORAGE, PREFERABLY WITHIN MISSION
PREMISES IN OUAGADOUGOU, BE PROVIDED? ASSUME PROAG IN-
CLUDES EXEMPTION FROM CUSTOMS DUTIES AND ANY OTHER TAXES
ON EQUIPMENT BEING SHIPPED IN FOR THIS PROJECT. PLEASE
CONFIRM.

7. PLEASE ADVISE STATUS OF SHIPMENT OF SAMPLES OF MILLET
AND FLOUR PROMISED DURING ABOVE CONFERENCE. REF (C)
REQUESTED TEN (10) TO TWENTY (20) KILOGRAM SAMPLES OF UN-
GROUND MILLET PLUS SMALL SAMPLES OF MILLET FLOUR BE AIR

SHIPPED DIRECTLY TO NASA/LEVIS, CLEVELAND, OHIO 44135.
URGENTLY NEEDED FOR GRINDER SELECTION TESTS.

8. REVISED PROJECT DEVELOPMENT PLAN INCORPORATING ABOVE
SYSTEM DESCRIPTION WILL BE AIRPOUCHED AS SOON AS RECEIVED
FROM NASA NEXT WEEK. IT WILL CONTAIN ADDITIONAL DETAILS
OF PROPOSED PROJECT AND SHOULD BE ADEQUATE FOR MISSION TO
PREPARE AND ISSUE A PID/T FOR A PASA BETWEEN AID AND NASA
TO IMPLEMENT THIS PROJECT IN AN EXPEDITIOUS MANNER.
WOULD APPRECIATE MISSION AIRPOUCHING ISSUED PID/T TO
DS/OST SLUGGED FOR ROSEBOROUGH ASAP.

9. NASA LEVIS WILL SEND A SITE INSPECTION TEAM TO TANGAYE
AS SOON AS PASA IS SIGNED. PLEASE ADVISE MISSION PERSON
TO BE LIAISON FOR THIS PROJECT. CHRISTOPHER

copy given to Rosenblum
on 12/20



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SECSTATE FOR ROSENBOROUGH DS" OST AND BLUMGART AFR/DR

E. O. 11852: N/A
SUBJ: SOLAR ENERGY DEMONSTRATION UNDER OST PROJECT
931-234 STUDIES OF ENERGY NEEDS IN THE FOOD SYSTEM

REFS: (A) STATE 01822%; (B) STATE 010510; (C) 77 STATE 298368

1. PROJECT PLAN MENTIONED PARA 2, REF (B) AND PARA 8
REF (C) NOT RECEIVED.

2. C F CABLES INDICATE FEBRUARY VISIT OF ROSENBOROUGH AND
NASA TEAM CONTINGENT ON DEVELOPMENT OPERATIONAL PASA
SUBSEQUENT O PIO/T ISSUANCE.

3. SUGGEST TO SPEED PROCESS THAT DS/OST ISSUE PIO/T TO
OUTLINE MAJOR TASKS ETC. AS DESCRIBED REFTELS AND
NASA PLAN. CDO AUTHORIZES DS/OST O ISSUE PIO/T IN AMOUNT
OF DOLS \$5 000 FOR PASA WITH NASA. ADVISE.]

4. AFTER PROJECT TEAM VISIT PROAG AND PIO/T CAN BE REVISED
AS AND IF NECESSARY.

5. IF COMMODITIES CONTAINER SHIPPED VIA U. S. EMBASSY/
OUAGA, ANTICIPATE NO UNDUE HANDLING OR LOSS PROBLEMS.
OUAGA COMMERCIAL FACILITIES CAN HANDLE OFF LOADING
CONTAINER INDICATED SIZE. STORAGE WILL BE MADE AVAILABLE.
HANDLING COSTS SHOULD BE INCLUDED IN PROJECT BUDGET.
IMPORT WILL BE FREE OF CUSTOMS DUTIES AND TAXES. CAN
MANAGE CONTAINERS TO MEASURE PUMPED WATER AS REQUESTED
PARA 5 REF B.

6. SOCIO-ECONOMIC BASE LINE STUDY WHICH WILL ALSO RECOM-
MEND IMPLEMENTING INFRASTRUCTURE FRV73 9! . 8))
-, \$ 07.0 , 92 7, \$342-6. STUDY BEING PERFORMED BY CONTRACT
ANTHROPOLOGIST GRACE HEMMINGS WHO HAS JUST COMPLETED
AASC STUDY IN SAME GENERAL AREA AND THOROUGHLY FAMILIAR LOCAL
PROBLEMS INVOLVED. STUDY WILL BE COMPLETED O/A JUNE 1978.

7. SEE NO PROBLEMS HERE ON ANY OF QUESTIONS RAISED REFTELS.
SUGGEST IT WILL BE EASIER TO WORK OUT OPERATIONAL DETAILS
HERE WHEN ADVANCE NASA DESIGN TEAM ARRIVES. PLEASE PROCEED
WITH PIO/T ISSUANCE PASE EXECUTION AND INFORM WHEN TEAM
MAY BE EXPECTED GRAHAM]

NOTE BY OC/T: REFERENCE C--STATE 298368 BEING RESENT BY
OC/T.

UNCLASSIFIED

march 17, 1976

MEMORANDUM FOR: Research and Development Committee
FROM: TA/PPU, Carl R. Fritz
SUBJECT: Research and Development Committee Meeting of
March 30, 1976

The following project papers will be presented for review at the Research and Development Committee Meeting on March 30, 1976, at 2:00 p.m., in Room 2884, NS:

1. Development and Evaluation of Integrated Delivery Systems, (DEIDS), KPA 11, TA/H, GTS.
2. Standardization In LDC, KPA 19, TA/OST, GTS.
3. Non-Formal Education in Rural Settings, KPA 15, TA/EHR, GTS.
4. Demonstration of 2-Way Audio Networking, KPA 14, TA/EHR, GTS.
5. Utilization of AID Hand Pump, KPA 13, TA/H, GTS.
6. Energy Studies, KPA 20, TA/OST, GTS.

We have tentatively included this project on the agenda even though the PP will not be ready for distribution until the March 24 meeting.

Attached is a memorandum from TA/OST asking that the PP be given special consideration and discussed at the meeting of March 30 in order to obtain R & DC views and to meet Mr. Murphy's request to look at the PP in early April. The project, if approved, will probably require RFP procedures prior to the signature of obligating contracts before the end of June. I expect to raise this at the R & DC meeting of March 24 for your consideration.

This issue was raised at the end of the meeting with only a few members still in attendance. Therefore we ask that you phone your concurrence to TA/OST, J. Bosken or C. Stone, 632-7971.

TA/PPU, Mr. Carl Fritz

March 16, 1976

TA/OST, John Fry, Acting Director

R&DC Review of "Energy Studies" Project Paper

This office is currently preparing a project paper on the studies of energy needs in the food system, originally scheduled for discussion at the R&DC meeting of June 1. Realizing the short time available to you for rescheduling papers for R&DC review, we nevertheless would be greatly appreciative of your consideration in arranging a March 30 date for this process.

Our desire to move up the review date is sparked in large measure by Mr. Murphy's twice-expressed interest in seeing the paper "before it's set in concrete." Since we desire to let the R&DC comment on the project first, we have agreed to provide Mr. Murphy only with the version revised as a result of the R&DC examination. Because of his interest however we would like to send him the revised edition in the early days of April.

The paper is being prepared with the assistance of an interbureau working group organized for this purpose. The members of that group are:

James Mudge, PPC/PDA
Ed Schaefer, LA/DR
John Rixse, SER/ENGR
Whitney Hicks, TA/AGR
Jerome Bosken, TA/OST
Clint Stone, TA/OST

This participation should facilitate the discussion of the PP in the R&DC review.

We can provide you with a copy of the PP for your review not later than Friday March 19 and will be prepared to distribute the PP at or prior to the R&DC meeting of March 23 for the desired discussion on March 30.

This contracted schedule will permit less time than customarily allotted to the review process but we hope that you can satisfy this request.

TA/OST:JBosken:res:3/16/76



RESEARCH AND DEVELOPMENT COMMITTEE
MEETING

Date: 3/24/76

PARTICIPANTS

NAME	OFFICE	NAME	OFFICE
Don Blummett	TA/AGR	John D. Blummett	AFR/DS
G. L. COREY	TA/AGR	Dave B. Bleska	TA/PPD
Vici Yoder	ASIA/TA/HD	Lawrence Posen	PPC/PPD
William M Feldman	LA/DR	Charles A. Brientenbach	LA/DR/RD
Linda Silvester	PPC/PDA	Stanley B. Eymann	TA/AGR/PPD
Bill Mearns	1 1 1	Paula Jean Farley	LA/DR/TA
M. Beckwith	TA/RES	L. H. C. Ho	TA/AGR
W. Schaefer	TA/RES	Kurt Byrnes	TA/AGR
J. C. Smith	TA/RES	M. Belton	AA/TA
R. G. Bickel	NE/DP	E. Long	AA/TA
Earl R. Long	TA/AGR	Jerome J. Booken	TA/OST
Woodrow W. Leake	AFR/DS	John H. Rixse, Jr	SER/ENR
Stella	TA/AGR	CALVIN L. MARTIN	ASIA/TA/RE
W. K. Garrison	TA/AGR	Howard R. Sharlach	PPC/DPRE
J. E. Jarrati	PPAID/WID	John Wetty	PPC
Garry Smucker	LA/DP	Joe B. Cret	PH/AA
Charles Perletto	TA/PPU	Richard M. Combs	PH/POP
R. D. Hanks	TA/AGR		