



U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

JUL 20 1993

Robert D. Havener
President
Winrock International
1611 Kent Street
Arlington, VA 22209

Subject: Cooperative Agreement No. LAG-5737-A-00-3018-00

Dear Mr. Havener:

Pursuant to the authority contained in the Foreign Assistance Act of 1961 and the Federal Grant and Cooperative Agreement Act of 1982, as amended, the Agency for International Development (hereinafter referred to as "A.I.D.") hereby provides to Winrock International (hereinafter referred to as "Recipient") the sum set forth in Section 1C.2. of Attachment 1 of this Cooperative Agreement to provide financial support for the program described in Attachment 2 of this Cooperative Agreement entitled "Program Description."

This Cooperative Agreement is effective as of the date of this letter and funds obligated hereunder shall be used to reimburse the Recipient for allowable program expenditures for the period set forth in Section 1B. of Attachment 1 of this Cooperative Agreement.

This Cooperative Agreement is made to the Recipient on the condition that the funds will be administered in accordance with the terms and conditions as set forth in the attachments listed under my signature below, which together constitute the entire Cooperative Agreement document and have been agreed to by your organization.

Please acknowledge receipt and acceptance of this Cooperative Agreement by signing all copies of this Cover Letter, retaining one copy for your files, and returning the remaining copies to the undersigned.

If you have any questions, please contact Ms. Angelique Crumbly of my staff at (703) 875-1220.

Sincerely yours,



Jay M. Bergman
Agreement Officer
Chief, LA Branch
Division B
Office of Procurement

Attachments:

1. Schedule
2. Program Description
3. Standard Provisions
4. Special Provision entitled "Restrictions on Lobbying"
5. A.I.D. Eligibility Rules

ACKNOWLEDGED:

BY: HT Murphy
TYPED NAME: HUGH T. MURPHY
TITLE: Vice President
DATE: 7/26/93

FISCAL DATA

A. GENERAL

- A.1. Total Estimated A.I.D. Amount: \$397,853
- A.2. Total Obligated A.I.D. Amount: \$397,853
- A.3. Cost-Sharing Amount (Non-Federal): \$0
- A.4. Other Contributions (Federal): \$0
- A.5. Project No.: 598-0784
- A.6. A.I.D. Project Office: R&D/E&I, Shirley Toth
- A.7. Funding Source: LAC Regional
- A.8. Tax I.D. No.: 71-0603560
- A.9. CEC No.: 14822895J
- A.10. LOC No.: 72-00-1375

B. SPECIFIC

- B.1.(a) PIO/T No.: 598-0784-3-3652600
- B.1.(b) Appropriation: 72-112/31021.6
- B.1.(c) Allotment: 266-65-598-01-69-31
- B.1.(d) BPC: LDS2-93-35598-IG12
- B.1.(e) Amount: \$397,853

ATTACHMENT 1

1A. PURPOSE OF COOPERATIVE AGREEMENT

The purpose of this Cooperative Agreement is to provide financial support for the program described in Attachment 2 of this Cooperative Agreement entitled "Program Description."

1B. PERIOD OF COOPERATIVE AGREEMENT

The effective date of this Cooperative Agreement is the date of the Cover Letter and the estimated completion date is July 31, 1995. Funds obligated hereunder (see Section 1C.2. below) shall be used to reimburse the Recipient for allowable program expenditures incurred by the Recipient in pursuit of program objectives during such period. Funds obligated hereunder are anticipated to be sufficient for completion by the Recipient of the program described in Attachment 2 of this Cooperative Agreement by the estimated completion date.

1C. AMOUNT OF COOPERATIVE AGREEMENT AND PAYMENT

1C.1. The total estimated amount of this Cooperative Agreement for its full period, as set forth in Section 1B. above, is \$397,853.

1C.2. A.I.D. hereby obligates the amount of \$397,853 for the purposes of this Cooperative Agreement during the indicated period set forth in Section 1B. above, thereby fulfilling A.I.D.'s funding requirements. A.I.D. shall not be liable for reimbursing the Recipient for any costs in excess of the obligated amount, except as specified in paragraph (f) of the Standard Provision of this Cooperative Agreement entitled "Revision of Grant Budget."

1C.3. Payment shall be made to the Recipient in accordance with procedures set forth in the Standard Provision of this Cooperative Agreement entitled "Payment - Letter of Credit," as shown in Attachment 3.

1D. COOPERATIVE AGREEMENT BUDGET

1D.1. The following is the Budget for the total estimated amount of this Cooperative Agreement (see Section 1C.1. above) for its full period (see Section 1B. above). The Recipient may not exceed the total estimated amount or the obligated amount of this Cooperative Agreement, whichever is less (see Sections 1C.1. and 1C.2., respectively, above). Except as specified in the Standard Provision of this Cooperative Agreement entitled "Revision of Grant Budget," as shown in Attachment 3, the Recipient may adjust line item amounts as may be reasonably necessary for the attainment of program objectives.

1D.2. Budget

<u>Cost Element</u>	<u>Total</u>
Salaries	\$ 26,099
Fringe	\$ 11,191
Travel	\$ 45,284
Consultants	\$ 71,388
Other Direct Costs	\$ 6,930
Subagreements	\$160,000
Overhead	\$ 59,773
G & A	\$ 12,388
Subcontract Admin. Fee	\$ 4,800
	\$397,853

1D.3. Inclusion of any cost in the budget of this Cooperative Agreement does not obviate the requirement for prior approval by the Agreement Officer of cost items designated as requiring prior approval by the applicable cost principles (see the Standard Provision of this Cooperative Agreement set forth in Attachment 3 entitled "Allowable Costs") and other terms and conditions of this Cooperative Agreement, unless specifically stated in Section 1I. below.

1E. REPORTING

1E.1. Financial Reporting

1E.1.(a) Financial reporting requirements shall be in accordance with the Standard Provision of this Cooperative Agreement entitled "Payment - Letter of Credit," as shown in Attachment 3. If a Standard Form 269 is required by the aforesaid Standard Provision, the "Long Form" of said form shall be used.

1E.1.(b) All financial reports shall be submitted to A.I.D., Office of Financial Management, FA/FM/CMPD/DCB, Room 700 SA-2, Washington, D.C. 20523-0209. In addition, three copies of all financial reports shall be submitted to the A.I.D. Project Office specified in the Cover Letter of this Cooperative Agreement, concurrently with submission of the Quarterly Technical Reports (See Section 1E.2. below).

1E.1.(c) The frequency of financial reporting and the due dates of reports shall be as specified in the Standard Provision of this Cooperative Agreement referred to in Section 1E.1.(a) above.

1E.2. Program Performance Planning and Reporting

1E.2. (a) Project Implementation Plan

Not later than sixty (60) days from the effective date of this Cooperative Agreement (see Section 1B. above), the Recipient shall prepare and submit to the A.I.D. Project Officer specified in the Cover Letter of this Cooperative Agreement five (5) copies of a project implementation plan, with critical path indicators (as described in Appendix 9A of A.I.D. Handbook 3), for the full term of this Cooperative Agreement.

1E.2. (b) Annual Workplans

1E.2. (b) (1) The Recipient shall submit annual workplans for this Cooperative Agreement. Each annual workplan shall contain the following:

1E.2. (b) (1) (A) An action-oriented workplan describing planned activities during the next year, delineated by calendar quarter, and linked to the project goals and objectives, which describes the individuals to be involved, the activities to be conducted, and where and when they will be conducted. Planned activities shall be grouped by subject category, and then related to project objectives;

1E.2. (b) (1) (B) A projected budget, utilizing the same budget line items as are set forth in the budget of this Cooperative Agreement, for each calendar quarter, corresponding to the workplan; and

1E.2. (b) (1) (C) Publications, reports, workshops, seminars, and other information dissemination activities planned, by calendar quarter.

1E.2. (b) (2) The Recipient may develop the annual workplans in consultation with the A.I.D. Project Officer for this Cooperative Agreement.

1E.2. (b) (3) Five (5) copies of each annual workplan will be submitted to the designated A.I.D. Project Officer for this Cooperative Agreement and one copy submitted to the Agreement Officer. The first annual workplan covering the first year of this Cooperative Agreement shall be submitted by the Recipient not later than sixty (60) days from the effective date of this Cooperative Agreement (see Section 1B. above). Thereafter, the annual workplan for each successive year of this Cooperative Agreement shall be submitted by the Recipient not later than sixty (60) days prior to the beginning of each year.

1E.2. (c) Quarterly Reports

The Recipient shall submit five (5) copies of brief quarterly program performance reports, which coincide with the financial reporting periods described in Section 1E.1. above, to the A.I.D. Project Office specified in the Cover Letter of this Cooperative Agreement. In addition, two copies shall be

submitted to A.I.D., POL/CDIE/DI, Washington, DC 20523-1802. These reports shall be submitted within 30 days following the end of the reporting period, and shall briefly present the following information:

1E.2.(c)(1) A comparison of actual accomplishments with the goals established for the period, the findings of the investigator, or both. If the output of programs can be readily quantified, such quantitative data should be related to cost data for computation of unit costs.

1E.2.(c)(2) Reasons why established goals were not met, if applicable.

1E.2.(c)(3) Other pertinent information including the status of finances and expenditures and, when appropriate, analysis and explanation of cost overruns or high unit costs.

1E.2.(d) Special Reports

Between the required program performance reporting dates, events may occur that have significant impact upon the program. In such instances, the Recipient shall inform the A.I.D. Project Officer as soon as the following types of conditions become known:

1E.2.(d)(1) Problems, delays, or adverse conditions that will materially affect the ability to attain program objectives, prevent the meeting of time schedules and goals, or preclude the attainment of work units by established time periods. This disclosure shall be accompanied by a statement of the action taken, or contemplated, and any A.I.D. assistance needed to resolve the situation.

1E.2.(d)(2) Favorable developments or events that enable time schedules to be met sooner than anticipated or more work units to be produced than originally projected.

1E.2.(d)(3) If any performance review conducted by the Recipient discloses the need for change in the budget estimates in accordance with the criteria established in the Standard Provision of this Cooperative Agreement entitled "Revision of Grant Budget," the Recipient shall submit a request for budget revision to the Agreement Officer and the A.I.D. Project Officer specified in the Cover Letter of this Cooperative Agreement.

1E.2.(e) Annual Activity Reports

Within thirty (30) days following the annual anniversary date of this Cooperative Agreement, the Recipient shall submit to the A.I.D. Project Office specified in the cover letter of this Cooperative Agreement five (5) copies of an annual technical progress report which will be a description of the past year's activities, including technical, scientific, managerial, and fiscal information. The report shall include, both for each

field site or subcontractor/subrecipient individually and for project activities as a whole, a review of program and problem to date, and a discussion of technical and managerial issues significant to the success or failure of this Cooperative Agreement. The report will also address regulatory issues related to the project. Although principally a technical document, it nevertheless must include pertinent statistics or quantitative information regarding the project and its activities. An Impact Analysis Report will be appended to this report, which will be considered an instrument for Technology Transfer. The Impact Analysis Report will summarize and provide a feedback system for measurement and evaluation of the impact of the Recipient's activities in the public and private sector. The impact analysis will generally be qualitative in nature, and quantified only as appropriate. The Annual Activity Report shall also include an annual expenditure report corresponding to each annual workplan (see Section 1E.2.[b] above). These expenditure reports will cover A.I.D. and, if applicable, cost-sharing amounts by budget line item (see Section 1D.2. above) and by estimated distribution amongst project components, e.g., research, training, technical assistance, technology transfer, information dissemination, or networking.

1E.2. (f) Technical and Research Reports and Publications

The Recipient shall summarize technical and research activities of the project in reports, and distribute such reports to the appropriate USAID Missions, LDCs, and host country and international institutions in order to encourage use of the technology developed. Such reports will be completed within 60 days after completion of the activity. Journal articles and other publications are encouraged. See also Section 1I. of this Cooperative Agreement pertaining to publications.

1E.2. (g) Trip Reports

Within 30 days following the completion of each international trip, the Recipient shall submit 3 copies of a trip report summarizing the accomplishments of the trip to the A.I.D. Project Officer specified in the cover letter of this Cooperative Agreement. If several individuals are travelling together to one site, a single report representing the group will suffice. The report shall include the purpose of the trip, technical observations, suggestions and recommendations, overall impressions of the site situation (if appropriate), and a list of persons visited with their title and organization affiliation.

1E.2. (h) Final Report

Within 90 days following the estimated completion date of this Cooperative Agreement (see Section 1B. above), the Recipient shall submit five (5) copies of a final report to the A.I.D. Project Office specified in the cover letter of this Cooperative Agreement. In addition, two copies shall be

submitted to A.I.D., POL/CDIE/DI, Washington, DC 20523-1802. It will cover the entire period of the Cooperative Agreement and include all information shown in Sections 1E.2.(b) through 1E.2.(f) above.

1F. SUBSTANTIAL INVOLVEMENT UNDERSTANDINGS

It is understood and agreed that A.I.D. will be substantially involved during performance of this Cooperative Agreement as follows:

The Recipient, USAID/Mexico, and R&D/EI will work closely in achieving the objectives under the program description and coordinate all activities with other ongoing USAID/Mexico activities. The Recipient may choose to create new relationships between and among government, project developers, and private companies that permit joint funding of development and project implementation. However, all technical directions and communications with the government shall be coordinated through the USAID Representative in Mexico. R&D/EI will have overall A.I.D. Project Management for this activity and will be substantially involved in all phases. The R&D/EI Project Officer will coordinate activities with USAID/Mexico and the Latin American Bureau and keep them fully informed of all activities and progress.

1F.1. Annual Workplan - The A.I.D. Project Officer will be consulted during the development of the annual workplans and have the right of final approval of all areas of the workplan where A.I.D. funds are included.

1F.2. Workplan Revisions - The A.I.D. Project Officer will be consulted and have the right of approval for revisions of the annual workplan which involves the use of A.I.D. funds.

1F.3. Field Visits - Pursuant to the standard provision of this Cooperative Agreement entitled "Air Travel and Transportation," the Recipient must provide advance notification to the A.I.D. Project Officer for all international travel.

1F.4. Field Activities - The A.I.D. Project Officer will be involved in, and must approve, the selection of sites, methodologies and strategies to be used in field activities funded under this Cooperative Agreement.

1F.5. Consultants - The A.I.D. Project Officer must approve, in advance, the selection of consultants retained by the Recipient.

1F.6. Pre Workshop Agenda - At the end of the first six-month period, the Recipient should prepare report(s) of a pre-workshop agenda, including proposed topics, speakers, and participants.

1F.7. Post-Workshop Agenda - To be included in this report should be the highlights from the workshop(s), including any problems encountered, and the minutes.

1F.8. Pre-Investment Studies - These studies should consist of appropriate financial, technical, and institutional information necessary in order to estimate costs and risks involved at specific or representative sites.

1F.9. Contracts and Subagreements - The A.I.D. Agreement Officer must approve, in advance, the terms of reference or scope of work of all contracts and subagreements awarded by the Recipient.

1G. PROCUREMENT AND (SUB)CONTRACTING

1G.1. Applicability

This Section 1G. applies to the procurement of goods and services by the Recipient (i.e., contracts, purchase orders, etc.) from a supplier of goods and services (see the Standard Provisions of this Grant entitled "Air Travel and Transportation," "Ocean Shipment of Goods," "Procurement of Goods and Services," "AID Eligibility Rules for Goods and Services," and "Local Cost Financing"), and not to assistance provided by the Recipient (i.e., a subgrant or [sub]agreement) to a subrecipient (see the Standard Provision of this Grant entitled "Subagreements").

1G.2. Requirements

In addition to other applicable provisions of this Agreement, the Recipient shall comply with paragraph (b)(2) of the Standard Provision of this Agreement entitled "AID Eligibility Rules for Goods and Services," concerning total procurement value of more than \$250,000 under this Agreement. Further thereto, the following are the Authorized Geographic Codes for this Agreement:

1G.2.(a) Source, Origin, and Componentry of Goods and Commodities/Nationality of Suppliers of Goods or Services/Eligibility of Commodity-Related Services

1G.2.(a)(1) Source, Origin, and Componentry of Goods and Commodities

Except as specified in Section 1G.2.(b) below, all goods/commodities shall have their source and origin in _____ (Geographic Code ____), and shall meet A.I.D.'s componentry requirements, except as the Agreement Officer may otherwise agree in writing.

1G.2.(a)(2) Nationality of Suppliers

1G.2. (a) (2) (A) Suppliers of Goods and Commodities

Except as specified in Section 1G.2.(b) below, the suppliers of goods and commodities shall have their nationality in _____ (Geographic Code ____), except as the Agreement Officer may otherwise agree in writing.

1G.2. (a) (2) (B) Suppliers of Services (Other Than Commodity-Related Services)

Except as specified in Section 1G.2.(b) below, the suppliers of services (other than commodity-related services, as described in Section 1G.2.[a][3] below) shall have their nationality in _____ (Geographic Code ____), except as the Agreement Officer may otherwise agree in writing.

1G.2. (a) (2) (C) Government-Owned Organizations

Notwithstanding any other provision of this Agreement, a Government-Owned Organization, i.e., a firm operated as a commercial company or other organizations (including nonprofit organizations other than public educational institutions) which are wholly or partially owned by governments or agencies thereof, are not eligible as suppliers of goods or services, except as the Agreement Officer may otherwise agree in writing.

1G.2. (a) (3) Eligibility of Commodity-Related Services

The eligibility of the various types of commodity-related services is described in Attachment 5 of this Agreement. Further thereto:

1G.2. (a) (3) (A) Ocean Transportation

Notwithstanding the Standard Provision of this Agreement entitled "Ocean Shipment of Goods," ocean shipping financed hereunder shall, except as the Agreement Officer may otherwise agree in writing, be financed only on flag vessels of the United States (A.I.D. Geographic Code 000). If the Agreement Officer approves the use of non-U.S. flag vessels, the Standard Provision of this Agreement entitled "Ocean Shipment of Goods" will apply. See also paragraphs A.4. and B.1. of Attachment 5 of this Agreement.

1G.2. (a) (3) (B) Marine Insurance

The Authorized Geographic Code for marine insurance is the same as is set forth in Section 1G.2.(a)(2)(B) above. Paragraph (c) of the Standard Provision of this Agreement entitled "AID Eligibility Rules for Goods and Services" applies. See also paragraph B.5. of Attachment 5 of this Agreement.

1G.2. (b) Exceptions

1G.2.(b)(1) Construction and Engineering Services

Notwithstanding Section 1G.2.(a)(2)(B) above, unless otherwise approved in advance and in writing by the Agreement Officer:

1G.2.(b)(1)(A) Construction services estimated to be in excess of \$5,000,000 shall be limited to firms whose nationality is in the United States (Geographic Code 000);

1G.2.(b)(1)(B) Construction implemented by U.S. firms, regardless of dollar value, will require that at least 50% of the supervisors and other specified key personnel working at the project site must be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the United States; and

1G.2.(b)(1)(C) Engineering services, regardless of dollar value, shall be limited to the United States (Geographic Code 000).

1G.2.(b)(2) Purchase/Procurement Transactions not Exceeding \$5,000

If the proposed purchase/procurement transaction does not exceed \$5,000 excluding transportation costs, paragraph (b)(1) of the Standard Provision of this Agreement entitled "AID Eligibility Rules for Goods and Services" shall apply in lieu of Sections 1G.2.(a)(1) and 1G.2.(a)(2) above, except as specified in Section 1G.2.(b)(3) below.

1G.2.(b)(3) Restricted Goods

Notwithstanding Sections 1G.2.(a)(1) and 1G.2.(b)(2) above, the restricted goods listed in paragraph (a)(3) of the Standard Provision of this Agreement entitled "AID Eligibility Rules for Goods and Services" must be specifically approved by the Agreement Officer regardless of dollar value and source, origin, and componentry, except to the extent that such approval may be provided in Section 1I.3. below.

1G.2.(b)(4) Development Fund for Africa (DFA)

Notwithstanding Sections 1G.2.(a)(1) and 1G.2.(a)(2) above, and unless otherwise specified in a Project Agreement between A.I.D. and the host government, commodities and services financed under the Development Fund for Africa (DFA) shall be in accordance with paragraph (b)(1) of the Standard Provision of this Agreement entitled "AID Eligibility Rules for Goods and Services," except that if the total amount of non-U.S. procurement exceeds \$5,000,000, such procurement must be approved in advance and in writing by the Agreement Officer. However, U.S. procurement is still to be maximized to the maximum extent practicable, and, except in emergencies, timing shall not be deemed a factor to justify non-U.S. procurement.

1G.2. (b) (5) Local Procurement

Notwithstanding Sections 1G.2.(a)(1) and 1G.2.(a)(2) above, local procurement of goods and services, as described in paragraph (b) of the Standard Provision of this Agreement entitled "Local Cost Financing" is authorized. However, if required by the Standard Provision of this Agreement entitled "Revision of Grant Budget" or the applicable federal cost principles as described in the Standard Provision of this Agreement entitled "Allowable Costs," the Recipient must still obtain the approval of the A.I.D. Agreement Officer for procurement/(sub)contracts and subagreements, regardless of dollar value or the source, origin, componentry, or supplier nationality.

1G.2. (c) Definitions

1G.2. (c) (1) Source, Origin, Componentry, and Nationality of Supplier

Source, origin, componentry requirements, and supplier nationality are defined in Chapter 5 of A.I.D. Handbook 1, Supplement B, which, as may be amended from time to time, is incorporated herein as a part of this Agreement by reference (see also Attachment 5 of this Agreement which reflects the substance of Chapter 5 of A.I.D. Handbook 1, Supplement B as of the effective date of this Agreement).

1G.2. (c) (2) A.I.D. Geographic Codes

A.I.D. Geographic Codes are defined in Appendix D of A.I.D. Handbook 18, which, as may be amended from time to time, is incorporated herein as a part of this Agreement by reference (see also Attachment 5 of this Agreement which reflects the substance of Appendix D of A.I.D. Handbook 18 as of the effective date of this Agreement).

1G.3. Approvals

Inclusion of costs in the budget of this Agreement for the purchase of nonexpendable equipment obviates neither the requirement of Section J.13. of OMB Circular A-21 (for educational institutions) or Section 13 of Attachment B of OMB Circular A-122 (for nonprofit organizations other than educational institutions) for prior approval of such purchases by the Agreement Officer, nor any other terms and conditions of this Agreement, unless specifically stated in Section 1I.2. below.

1G.4. Title to Property

See Section 1F. above.

1H. INDIRECT COST RATES

1H.1. Pursuant to the Standard Provision of this Cooperative Agreement entitled "Negotiated Indirect Cost Rates - Provisional," an indirect cost rate or rates shall be established for each of the Recipient's accounting periods which apply to this Cooperative Agreement. Pending establishment of final or revised provisional indirect cost rates, provisional payments on account of allowable indirect costs shall be made on the basis of the following negotiated provisional rate(s) applied to the base(s) which is (are) set forth below:

<u>Type</u>	<u>Rate</u>	<u>Base</u>
Overhead	55.00%	<u>1/</u>
G & A	7.70%	<u>2/</u>
Subcontract	3.00%	<u>3/</u>

- 1/ Base of Application: Staff salaries and benefits and consultant fees.
2/ Base of Application: Direct costs excluding subcontracts.
3/ Base of Application: Administration cost/charge.

1I. SPECIAL PROVISIONS

1I.1. Limitations on Reimbursement of Costs of Compensation for Personal Services and Professional Service Costs

1I.1.(a) Employee Salaries

Except as the Agreement Officer may otherwise agree in writing, A.I.D. shall not be liable for reimbursing the Recipient for any costs allocable to the salary portion of direct compensation paid by the Recipient to its employees for personal services which exceed the highest salary level for a Foreign Service Officer, Class 1 (FS-1), as periodically amended.

1I.1.(b) Consultant Fees

Compensation for consultants retained by the Recipient hereunder shall not exceed, without specific approval of the rate by the Agreement Officer: either the highest rate of annual compensation received by the consultant during any full year of the immediately preceding three years; or the maximum rate of a Foreign Service Officer, Class 1 (FS-1) (as periodically amended), whichever is less. A daily rate is derived by dividing the annual compensation by 2,087 and multiplying the result by 8.

1I.2. Equipment Purchases

1I.2.(a) Requirement for Prior Approval

Pursuant to Sections 1D.3. and 1G.3. above and the Standard Provisions of this Cooperative Agreement entitled "Allowable Costs" and "Revision of Grant Budget," and by extension, Section 13 of Attachment B of OMB Circular A-122, the Recipient must obtain A.I.D. Agreement Officer approval for purchases of the following:

1I.2.(a)(1) General Purpose Equipment, which is defined as an article of nonexpendable tangible personal property which is usable for other than research, medical, scientific or technical activities, whether or not special modifications are needed to make them suitable for a particular purpose (e.g., office equipment and furnishings, air conditioning equipment, reproduction and printing equipment, motor vehicles, and automatic data processing equipment), having a useful life of more than two years and an acquisition cost of \$500 or more per unit); and

1I.2.(a)(2) Special Purpose Equipment, which is defined as an article of nonexpendable tangible personal property, which is used only for research, medical, scientific, or technical activities (e.g., microscopes, x-ray machines, surgical instruments, and spectrometers), and which has a useful life of more than two years and an acquisition cost of \$1,000 or more per unit).

1I.2.(b) Approvals

In furtherance of the foregoing, the Agreement Officer does hereby provide approval for the following purchases, which shall not be construed as authorization to exceed the total estimated amount or the obligated amount of this Cooperative Agreement, whichever is less (see Section 1C. above):

N/A

1I.2.(c) Exception for Automation Equipment

Any approval for the purchase of automation equipment which may be provided in Section 1I.4.(b) above or subsequently provided by the Agreement Officer is not valid if the total cost of purchases of automation equipment (e.g., computers, word processors, etc.), software, or related services made hereunder will exceed \$100,000. The Recipient must, under such circumstances, obtain the approval of the Agreement Officer for the total planned system of any automation equipment, software, or related services.

1I.2.(d) Compliance with A.I.D. Eligibility Rules

Any approvals provided in Section 1I.4.(b) above or subsequently provided by the Agreement Officer shall not serve to waive the A.I.D. eligibility rules described in Section 1G. of this Cooperative Agreement, unless specifically stated.

1I.3. Restricted Goods

Pursuant to Section 1G. above, paragraph (a)(3) of the Standard Provisions of this Cooperative Agreement entitled "AID Eligibility Rules for Goods and Services," and, if applicable (see Section 1K. below for applicability), paragraph (e) of the Standard Provision of this Cooperative Agreement entitled "Local Cost Financing," the Agreement Officer's approval is required for purchase of the restricted goods described therein. In furtherance thereof, the Agreement Officer does hereby provide such approval to the extent set forth below. The Agreement Officer's approval is required for purchases of such restricted goods if all of the conditions set forth below are not met by the Recipient. Any approval provided below or subsequently provided by the Agreement Officer shall not serve to waive any terms and conditions of this Cooperative Agreement unless specifically stated.

1I.3.(a) Agricultural Commodities

Agricultural commodities may be purchased provided that they are of U.S. source (generally, the country from which the commodities are shipped) and origin (generally, the country in which the commodities are mined, grown, or produced) and purchased from a U.S. supplier, except that wheat, rice, corn, soybeans, sorghums, flour, meal, beans, peas, tobacco, hides and skins, cotton, vegetable oils, and animal fats and oils cannot be purchased under any circumstances without the prior written approval of the Agreement Officer.

1I.3.(b) Motor Vehicles

Motor vehicles, if approved for purchase under Section 1I.4.(b) above or subsequently approved by the Agreement Officer, must be of U.S. manufacture and must be of at least 51% U.S. componentry. The source of the motor vehicles, and the nationality of the supplier of the vehicles, must be in accordance with Section 1G.2. above. Motor vehicles are defined as self-propelled vehicles with passenger carriage capacity, such as highway trucks, passenger cars and busses, motorcycles, scooters, motorized bicycles, and utility vehicles. Excluded from this definition are industrial vehicles for materials handling and earthmoving, such as lift trucks, tractors, graders, scrapers, and off-the-highway trucks.

1I.3.(c) Pharmaceuticals

Pharmaceuticals may be purchased provided that all of the following conditions are met: (1) the pharmaceuticals must be safe and efficacious; (2) the pharmaceuticals must be of U.S. source and origin (see Section 1G. above); (3) the pharmaceuticals must be of at least 51% U.S. componentry (see Section 1G. above); (4) the pharmaceuticals must be purchased from a supplier whose nationality is in the U.S. (see Section

1G. above); (5) the pharmaceuticals must be in compliance with U.S. Food and Drug Administration (FDA) (or other controlling U.S. authority) regulations governing United States interstate shipment of pharmaceuticals; (6) the manufacturer of the pharmaceuticals must not infringe on U.S. patents; and (7) the pharmaceuticals must be competitively procured in accordance with the procurement policies and procedures of the Recipient and the Standard Provision of this Cooperative Agreement entitled "Procurement of Goods and Services."

1I.3.(d) Pesticides

Pesticides may only be purchased if the purchase and/or use of such pesticides is for research or limited field evaluation by or under the supervision of project personnel. Pesticides are defined as substances or mixtures of substances: intended for preventing, destroying, repelling, or mitigating any unwanted insects, rodents, nematodes, fungi, weeds, and other forms of plant or animal life or viruses, bacteria, or other micro-organisms (except viruses, bacteria, or other micro-organisms on or living in man or other living animals); or intended for use as a plant regulator, defoliant, or dessicant.

1I.3.(e) Rubber Compounding Chemicals and Plasticizers

Rubber compounding chemicals and plasticizers may only be purchased with the prior written approval of the Agreement Officer.

1I.3.(f) Used Equipment

Used equipment may only be purchased with the prior written approval of the Agreement Officer.

1I.3.(g) Fertilizer

Fertilizer may be purchased if it is either purchased in the U.S. and used in the U.S., or if it is purchased in the cooperating country with local currency for use in the cooperating country. Any fertilizer purchases which do not comply with these limitations must be approved in advance by the Agreement Officer.

1I.4. Limitation on Use of Funds

1I.4.(a) The Recipient shall not utilize funds provided by A.I.D. for any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference or training in connection with the growth or production in countries other than the United States of an agricultural commodity for export which would compete with a similar commodity grown or produced in the United States.

1I.4.(b) The reports described in Section 1E.2. shall contain a statement indicating the projects or activities to which United States funds have been attributed, together with a brief description of the activities adequate to show that United States funds have not been used for the purpose in Section 1I.6.(a) above.

1I.4.(c) The Recipient agrees to refund to A.I.D. upon request an amount equal to any United States funds used for the purposes prohibited by Section 1I.6.(a) above.

1I.4.(d) No funds provided by A.I.D. under this Cooperative Agreement shall be used to provide assistance, either directly or indirectly, to any country ineligible to receive assistance pursuant to the Foreign Assistance Act as amended, related appropriations acts, or other statutes and Executive Orders of the United States (also see the Standard Provision of this Cooperative Agreement entitled "Ineligible Countries").

1J. RESOLUTION OF CONFLICTS

Conflicts between any of the Attachments of this Cooperative Agreement shall be resolved by applying the following descending order of precedence:

- Attachment 1 - Schedule
- Attachment 3 - Standard Provisions
- Attachment 4 - Special Provision entitled "Restrictions on Lobbying"
- Attachment 5 - A.I.D. Eligibility Rules
- Attachment 2 - Program Description

1K. STANDARD PROVISIONS

The Standard Provisions set forth as Attachment 3 of this Cooperative Agreement consist of the following Standard Provisions denoted by an "X" which are attached hereto and made a part of this Cooperative Agreement:

**1K.1. Mandatory Standard Provisions For U.S.,
Nongovernmental Grantees**

- (X) Allowable Costs (November 1985)
- (X) Accounting, Audit, and Records (August 1992)
- (X) Refunds (September 1990)
- (X) Revision of Grant Budget (November 1985)
- (X) Termination and Suspension (August 1992)
- (X) Disputes (August 1992)
- (X) Ineligible Countries (May 1986)
- (X) Debarment, Suspension, and Other Responsibility Matters (August 1992)
- (X) Nondiscrimination (May 1986)
- (X) U.S. Officials Not to Benefit (November 1985)
- (X) Nonliability (November 1985)
- (X) Amendment (November 1985)
- (X) Notices (November 1985)
- (X) Metric System of Measurement (August 1992)

**1K.2. Additional Standard Provisions For U.S.,
Nongovernmental Grantees**

- (X) OMB Approval Under the Paperwork Reduction Act (August 1992)
- (X) Payment - Letter of Credit (August 1992)
- () Payment - Periodic Advance (January 1988)
- () Payment - Cost Reimbursement (August 1992)
- (X) Air Travel and Transportation (August 1992)
- (X) Ocean Shipment of Goods (August 1992)
- (X) Procurement of Goods and Services (November 1985)
- (X) AID Eligibility Rules for Goods and Services (August 1992)
- (X) Subagreements (August 1992)
- (X) Local Cost Financing (August 1992)
- (X) Patent Rights (August 1992)
- (X) Publications (August 1992)
- () Negotiated Indirect Cost Rates - Predetermined (August 1992)
- (X) Negotiated Indirect Cost Rates - Provisional (Nonprofits) (August 1992)
- () Negotiated Indirect Cost Rates - Provisional (Profits) (August 1992)
- (X) Regulations Governing Employees (August 1992)
- () Participant Training (August 1992)
- () Voluntary Population Planning (August 1986)
- () Protection of the Individual as a Research Subject (August 1992)

- () Care of Laboratory Animals (November 1985)
- (X) Title To and Use of Property (Grantee Title)
(November 1985)
- () Title To and Care of Property (U.S. Government
Title) (November 1985)
- () Title To and Care of Property (Cooperating
Country Title) (November 1985)
- () Cost Sharing (Matching) (August 1992)
- (X) Use of Pouch Facilities (August 1992)
- (X) Conversion of United States Dollars to Local
Currency (November 1985)
- (X) Public Notices (August 1992)
- (X) Rights in Data (August 1992)

ATTACHMENT 2

PROGRAM DESCRIPTION

The Recipient's proposal entitled "Biomass Cogeneration Development Project - Mexico" and dated February 12, 1993 is attached hereto as the Program Description (Attachment 2) and is made a part of this Cooperative Agreement.

**MEXICO BIOMASS COGENERATION
DEVELOPMENT PROGRAM**

Technical Proposal

to

U.S. Agency for International Development

by

Winrock International Institute for Agricultural Development

1611 North Kent Street

Suite 600

Arlington, Virginia 22209-2134

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February 12, 1993

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MEXICO BIOMASS COGENERATION DEVELOPMENT PROGRAM

BACKGROUND:

The Biomass Cogeneration Development Program is proposed as an integral part of the Bureau for Latin America and the Caribbean's Environment and Global Climate Change project (E/GCC), through a parallel cooperative agreement to the Biomass Energy Systems and Technology (BEST) Cooperative Agreement with Winrock International Institute for Agricultural Development (Winrock). The activities under the proposed Biomass Cogeneration Development Program address Congressional concerns in regard to renewable energy and global climate change.

The E/GCC is a five-year program, initiated in 1990 and aimed at reducing net emissions of greenhouse gases in Mexico, Brazil, and Central America. E/GCC targets two of the most important causes of increased emissions -- deforestation and the burning of fossil fuels. The aim of E/GCC is to assist in the development and adaptation of policy reforms, technologies and practices that result in the sustainable and efficient use of forest and energy resources.

Directly reducing greenhouse gas emissions is significantly beyond the financial resources and time frame of E/GCC. Its strategy is to develop pilot demonstration activities and to promote policy reforms and host-country capabilities. The impact of these activities and reforms is significant because those policies and technologies fostered by E/GCC reach beyond the specific sites, institutions, and communities directly affected.

To reduce the burning of fossil fuels in Mexico, the E/GCC is focusing on encouraging increased use of renewable energy and increased efficiency in the electric power sector. During the 1990s, Mexico's published generation expansion plan projects an increase in dependency on fossil fuels for power generation from 63.4 percent to 69.8 percent. When the projected growth in total capacity is taken into account, this signifies a 92 percent increase in fossil fuels in absolute terms, which implies significantly higher emissions of CO₂. Fortunately, Mexican authorities have shown a willingness to consider alternatives to the published expansion plan.

Renewable energy resources exist in abundance in Mexico. The national electric utility has already started to develop geothermal resources, and a national rural electrification program is using solar and wind technologies. Until recently, resources such as the agricultural and forestry processing industries were ignored with respect to generation for the national electric grid, but the Comisión Federal de Electricidad has begun to examine these resources as well.

Mexico is the third largest sugarcane producer in the Western Hemisphere. Sugarcane processing produces residues (bagasse) that are currently being burned in very inefficient cogeneration facilities that provide only for on-site steam and mechanical power needs. (The term cogeneration refers to the simultaneous production of useful

heat and electrical energy.) Sugarcane residues are available in abundance approximately four to six months in a given year, and the cogeneration technology can use other fuels, like cane field trash, to produce electricity the balance of the year. In addition to cane, Mexico has a large sawmill industry whose woodwastes apparently are not being used for the production of any useful energy.

The use of state-of-the-art cogeneration equipment permits not only the production of electricity and heat needed for the sugarcane and timber processing, but also (especially in the sugarcane industry) allows the production of a significant amount of surplus electricity that can be sold to the power grid. Judging from the data on total sugarcane production in Mexico, a very rough approximation of the power generation that the residues could support is 3,000 megawatts. The entire Mexican power system comprises about 26,000 megawatts.

The use of biomass for energy adds no net CO₂ to the atmosphere, as long as the crops are harvested on a sustainable-yield basis. That is, the quantity of CO₂ emitted during energy conversion must equal the quantity of CO₂ absorbed by the replacement plant growth. Burning agriculture residues and forest products industry wastes, which eventually degenerate to form CO₂ after disposal in any case, offers an opportunity to generate useful energy with no added CO₂ emissions, even if the production methods are not sustainable. Whenever the production of electricity from these fuels displaces generation based on fossil fuels, a net CO₂ reduction occurs. Cogeneration based on process residues in agricultural and forestry processing industries would improve internal economics and increase employment opportunities while reducing fossil fuel emissions.

In addition to the environmental objective, another general objective of A.I.D. is shifting investments in services such as electricity from the public sector to the private sector. This type of shift from the public-sector investment to private-investment would occur as a result of implementing the Biomass Cogeneration Development Program. Finally, much of the appropriate technology for biomass cogeneration, including multiple extraction steam turbines and associated controls, is available in the US.

Obstacles in the path of using these biomass resources for reducing existing or planned burning of fossil fuels include the following: (1) a lack of understanding on the part of agricultural and forestry processing companies regarding the potential of cogeneration; (2) a lack of understanding regarding the appropriate technologies; (3) a lack of knowledge of the value of the power on the part of the national utility; (4) a lack of knowledge regarding the types of contractual arrangements and incentive structures that would encourage this category of "independent" power generation; and (5) a lack of knowledge regarding appropriate access to capital markets.

OBJECTIVES:

The primary objective of the proposed Biomass Cogeneration Development program is to promote innovation in the form of investment in the construction of specific new biomass energy conversion facilities where the technologies involved are

both economically attractive and environmentally sound. A secondary objective is to facilitate policy reforms that will enable the orderly shift from public-sector investment to private-sector investment of electricity services more generally. Another secondary objective of the proposed program is to identify and create opportunities for US. trade and investment in Mexico. To accomplish these objectives Winrock will provide guidance, based on sound research and analysis, to agricultural and forestry processing companies, the Mexican national utility, Mexican government regulatory and planning agencies, and financing institutions (and project developers when appropriate) with regard to the potential for, and ways to accomplish, the use of renewable agricultural and forestry processing wastes as an alternative energy resource to fossil fuels. Winrock will also support, both technically and financially, the high-risk early development of selected specific biomass energy projects that show promise of leading, with help, to financing and construction.

STATEMENT OF WORK:

INTRODUCTION:

Winrock has conducted cogeneration activities in a number of countries. For example, Winrock has prepared national overviews of the energy potential from cogeneration of wastes in the sawmill industry in Honduras and the palm oil industry in Indonesia. In addition, Winrock is about to begin an overview of the sugarcane industry in Honduras.

Winrock has also worked closely with sugar mills in Costa Rica, Jamaica, Thailand, Egypt, India, the Philippines, and other countries to identify technological options and to conduct preinvestment studies. In most of the countries above, Winrock has also worked on the institutional issues that must be addressed when a private electricity producer wishes to sell to the national grid.

In addition to these past and present cogeneration activities, in the past year Winrock has been exchanging information with Mexican sugarcane producers and with the national utility with regard to cogeneration possibilities in that country.

The purpose of this program will be to assist in overcoming the five obstacles in Mexico listed in the final paragraph of the "Background" section above. This will involve research and analysis on technical, financial, economic, and institutional issues relevant to the target industries, the national utility, and investors and developers. It will also require effective information dissemination to the target institutions and decision-makers, as well as direct financial and technical support of specific projects at the pre-investment stage. This program will build upon work that Winrock has already done in other A.I.D.-assisted countries under the BEST Cooperative Agreement.

SCOPE:

Based on Winrock's previous experience with research and analysis on these subjects, the first phase of this two-year program will entail conducting overall surveys that develop the following information:

- The magnitude of energy resources that are practically available in the form of residues in the Mexican sugarcane and sawmill industries (and other agricultural and forestry processing industries, if deemed appropriate by Winrock)
- The technologies that are available in Mexico or in the US. that would convert those resources efficiently into usable heat and electricity
- The approximate quantity of surplus electricity that could be made available at processing facilities for sale to the national grid
- The contractual mechanisms and incentive structures that might be made available by the national utility for the latter's purchase of the electricity
- An approximation of the costs and benefits to the target industry and to the utility that would result from the application of these technologies
- The extent to which the use of fossil fuels would be displaced by these activities and therefore the extent to which emissions of CO₂ would be avoided
- The state of capital markets in Mexico with regard to potential investment in these technologies
- The impact that cogeneration will have on the economic levels of Mexican society
- The names of all groups with whom the Grantee will be working, including government officials, manufacturers, private investors, project developers, and individuals
- The potential trade relationship between the US. and Mexico, especially in regard to the proposed North American Free Trade Agreement

Some of this information will be available in existing documents or obtainable as a result of long-distance communication. Much of the research and analysis, however, will depend on a team of appropriately qualified experts making two or three visits to Mexico to meet with key representatives of the target industries, the utility, technology vendors, and the financial community.

The results of this first phase of research and analysis with respect to the issues listed above will be compiled in an assessment document. Also, Winrock will hold at least one workshop to disseminate such information to interested parties.

In the second phase of the program, which will build upon the information generated during the first phase, Winrock will identify and support, on a shared-cost

basis with the developers, 3-5 pre-investment (prefeasibility and feasibility) studies for site-specific applications of these technologies. The aim will be to offset the financial risk to early adoption of technologies not in common use locally. The studies are intended to assess the site-specific application of the technologies and will produce the engineering, financial, legal, and environmental analysis necessary to obtain the necessary government regulatory permits, power sale contracts, and financial investments. The resulting documentation of costs and benefits that would accrue to the particular agricultural or forestry processing companies should serve as a set of models for catalyzing more widespread adoption of the technologies.

Winrock will consult with the interested parties the need for additional research and analysis on model contracts or incentive structures for the sale of privately produced electricity to a public utility. For the latter analysis, Winrock can draw on the extensive experience of the US. with such arrangements in the past dozen years, as well as the more recent experience in developing countries in which Winrock has been involved.

REPORTS:

Winrock will prepare the following reports and submit copies to appropriate USAID officials in Mexico and Washington:

Semiannual Progress Reports: Included in these reports should be highlights and status of activities from the previous period; any problems that have arisen and a proposed plan of action for resolving those problems; and the anticipated activities for the next period.

Six-Month Financial Reports: Included in this report should be the status of accounts to date, including any outstanding obligations; any problems that have arisen and a proposed plan of action for resolving those problems; and the proposed expenditures for the next six-month period.

Pre-Workshop Agenda: During the second six-month period, Winrock will prepare an advance workshop agenda, including proposed topics, speakers, and participants.

Post-Workshop Report: The highlights from the workshop(s), including lists of attendees and presentation materials, will be included in this report.

Assessment Report: This report will include a detailed report of the research and analysis performed on the issues listed in the Statement of Work.

Pre-Investment Studies: These studies will consist of appropriate financial, technical, and institutional information necessary in order to estimate benefits, costs and risks involved at specific or representative sites.

Final Report: This report should be a compilation of all of the activities under the project; problems encountered and recommendations for solutions; and a financial report.

RELATIONSHIPS AND RESPONSIBILITIES:

Winrock, USAID/Mexico, and R&D/ED will work closely in achieving the objectives under this scope of work and coordinate all activities with other ongoing USAID/Mexico activities. Winrock may choose to create new relationships between and among government, project developers, and private companies that permit joint funding of development and project implementation. However, all technical directions and communications with the government shall be coordinated through the USAID Representative in Mexico.

WORK PLAN:

It is anticipated that the desired objectives of this proposed project could be accomplished in approximately two years from the date a cooperative agreement is signed. The work to be performed will consist of the following tasks:

YEAR ONE

Task 1. Initial consultation with USAID and assembly of assessment team - At the outset of the project, Winrock will confer with the USAID representative in Mexico, USAID/R&D/EI, and Mexican sugar industry representatives to confirm details of the work plan and will then formally organize the project team.

Task 2. Preliminary Data Collection - Before traveling to Mexico, the team will gather published information and data available from industry, utility and government sources.

Task 3. Initial Field Activity - During the first visit to Mexico, the utility specialist will visit with CFE officials and government counterparts to identify areas of most acute electric supply shortage, and the sugar and wood industry specialist will meet with Mexican industry organizations and individual firms. In consultation with USAID, the team will identify target regions for field investigation and the industry specialists and the engineer will then visit selected sugar- and sawmill sites. At the same time, the utility specialist will continue gathering utility load and generation data, with appropriate visits to entities charged with local power distribution where target mills are situated.

Task 4. Preliminary Analysis - On return to the US, the team will analyze data, confer on findings and conclusions, and identify gaps to be closed in a second visit to Mexico. Drafting of the assessment report will begin with the findings of each participant.

Task 5. Supplemental Fact Gathering in the Field - A second trip to the field by the project team will serve to answer questions identified in the course of preliminary analysis, to obtain informal Mexican reactions to initial conclusions, and to begin the process of disseminating results. At this stage, the groundwork will be laid for a workshop to follow the drafting of the report.

PERSONNEL AND RESOURCES:

At the outset, Winrock anticipates that the following specialized skills and experience will be needed in the proposed project:

- Project Leader, with technical and management skills to coordinate specialists, communicate with USAID and Mexican officials, and identify realistically promising prospects for biomass project development
- Sugar Industry Specialist, familiar with sugar mill design and operation, sugar production economics, and industry experience with cogeneration worldwide
- Wood Industry Specialist, with expertise analogous to that of the Sugar Industry Specialist, but with additional knowledge of timber supply issues
- Cogeneration System Engineer, with experience designing industrial cogeneration facilities with solid fuel boilers, steam turbine generators, and utility electrical interconnections
- Electric Utility Planning/Economics Specialist, with knowledge required to determine future utility capacity needs and to establish the value of new power supplies (taking into account timing of availability and location within transmission and distribution systems), as well as familiarity with utility power purchase contracts and their implementation
- In-Country Renewable Energy Development Specialist, a Mexican resident with skills in obtaining published data, arranging for US based team member visits, interacting with prospective cogeneration developers, and responding to local inquiries concerning the project

Winrock has on staff or has tentatively identified several of the above individuals, including the Project Leader and possible wood and sugar industry specialists, and has extensive experience in biomass and other renewable energy development through implementation of the BEST project and portions of the REAT project for the USAID Office of Energy and Infrastructure. Winrock also has effective administrative and support capability for overseas development projects, as exemplified by past performance under a variety of other USAID-sponsored programs.

Winrock proposes to subcontract with F. C. Schaffer and Associates, Inc. for portions of the cogeneration engineering and sugar mill operation activities. Schaffer is a respected process engineering firm with extensive experience serving the sugar industry in Mexico and throughout the rest of the world. Collaboration with this firm will provide ready access to existing information on a large number of individual sugar mills in

Mexico, as well as to process flow models to anticipate the impact of cogeneration improvements on mill operations.

Winrock also has ties with the Hawaiian Sugar Planters Association, which has been a world leader in the adaptation of cane field trash collection, transport, storage and handling technology. If the opportunity arises for use of cane trash as a supplemental off-season fuel, Winrock proposes to secure technical expertise through this relationship.

ATTACHMENT 3

STANDARD PROVISIONS

Note: Only those Standard Provisions indicated in Section 1K. of this Cooperative Agreement apply to this Cooperative Agreement.

ATTACHMENT 4

SPECIAL PROVISION

Entitled

RESTRICTIONS ON LOBBYING

ATTACHMENT 4

SPECIAL PROVISION

Entitled

RESTRICTIONS ON LOBBYING

ATTACHMENT 5

A.I.D. ELIGIBILITY RULES FOR GOODS AND COMMODITIES, COMMODITY-RELATED SERVICES, AND FOR SUPPLIERS OF GOODS AND SERVICES (OTHER THAN COMMODITY-RELATED SERVICES)

**AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT IMPLEMENTATION ORDER/TECHNICAL SERVICES (PIO/T)***

1. Cooperating Country LAC Regional	2. PIO/T No. 598-0784-3-3652600	3. PIO/T Amend No. Original
4. Project/Activity No. and Title 598-0784 Environment & Global Climate Change	5. Appropriation Symbol(s) 72-112/31021.6 (266-65-598-01-69-31)	
7. Pro Ag No. or Project Authorization Date	6. Budget Plan Code(s) LDS293-35598-IG12	
9. Project Assistance Completion Date (Month, Day, Year)	8. Obligation Status <input type="checkbox"/> Administrative Reservation <input checked="" type="checkbox"/> Implementing Document	
11. Type of Action and Governing A.I.D. Handbook	10. Authorized Agent FA/OP/B/LA	

11. Type of Action and Governing A.I.D. Handbook [A] A. A.I.D. Contract (HB14) C. PASA/RSSA (HB 12) B. A.I.D. Grant or Cooperative Agreement (HB 13) D. Other	12. Contract/Grant/Cooperative Agreement/Reference Number (if this PIO/T is for an order or a modification to an award) DHR-5737-A-00-9058
--	--

13. A.I.D. Funding (Attach a detailed budget in support of column (2) as Attachment A.)				
	(1) Previous Total	(2) Increase	(3) Decrease	(4) Total to Date
A. Dollars	0	\$400,000	0	\$400,000
B. U.S.-Owned Local Currency				0

14. Mission References

15. Instructions to Authorized Agent **OP/PA/B/PCE** is requested to negotiate a **LAC buy-in** to the Winrock Cooperative Agreement under the Agency's Biomass Energy Systems and Technology Project for the activities described in the attached Scope of Work. An illustrative budget is attached as Article 8.

OFFICE OF FINANCIAL MANAGEMENT
 ACTION: Reserved
 DATE: 12/1/92 INITIALED [Signature]

16. Address of Voucher Paying Office **Agency for International Development, RF/CMPD/DCB, Room 700, SA-2, Washington, D.C. 20523**

17. Clearances - Include typed name, office symbol, and date for all clearances

A. The Project Officer certifies (1) that the specifications in the statement of work or program description are technically adequate, and (2) that (for contract actions only) all program personnel who are defined as procurement officials under 41 U.S.C 423 have signed the Procurement Integrity Certification (OF-333).

Signature: LAC/DR/E, James S. Hester Date: 10/7/92 Phone No: 7-8093

B. The statement of work or program description lies within the purview of the initiating office and approved agency programs.
 Signature: LAC/DPP, R. Meehan/B. Mangun Date: 10/2/92 C. Signature: R&D/EI, Shirley Toth Date: 12/1/92

D. Funds for the services requested are available
 Signature: LAC/DR, Sue Bugg Date: 10-8-92

E. Signature: LAC/DR, Ken Ellis Date: 23 Nov 92

18. For the Cooperating Country: The terms and conditions set forth herein are hereby agreed to:

Signature: Title: Date:

19. For the Agency for International Development:
 Signature: Peter Bloom Title: Director, LAC/DR Date: 23 Nov 92

FOR CONTRACT ACTIONS ONLY: SOURCE SELECTION INFORMATION--SEE FAR 3.104. THIS DOCUMENT, OR PORTIONS THEREOF, CONTAINS PROPRIETARY OR SOURCE SELECTION INFORMATION RELATED TO THE CONDUCT OF A FEDERAL AGENCY ACQUISITION, THE DISCLOSURE OF WHICH IS RESTRICTED BY LAW (41 U.S.C. 423). UNAUTHORIZED DISCLOSURE OF THIS INFORMATION MAY SUBJECT BOTH THE DISCLOSER AND RECIPIENT TO CONTRACTUAL, CIVIL, AND/OR CRIMINAL PENALTIES AS PROVIDED BY LAW.
FOR OTHER ACTIONS: UNAUTHORIZED DISCLOSURE OF PROPRIETARY OR SOURCE SELECTION INFORMATION MAY SUBJECT AN EMPLOYEE TO DISCIPLINARY ACTION.
 AID 1350-1 (5/91)

PIO/T No. _____

20. Special Provisions

A. Language Requirements (specify) (Include funds in budget for testing, as required.)

Fluency in Spanish is required for one member of the assessment team. Knowledge of Spanish is desirable for the remaining assessment team members.

B. Access to classified information will will not be required by technical specialists. (Indicate level)

C. Duty post(s) and duration of technical specialist(s) services at post(s) (months):
Various

D. Dependents' travel and support will will not be funded by A.I.D.

E. Geographic code applicable to procurement under this PIO/T is: (If other than authorized in Project Authorization, attach waiver(s))
 1. 000 3. 935 5. Other (specify)
 2. 899 4. 941

Salary approval(s) to exceed FS-1 salary ceiling are:
 1. attached 2. in process 3. N/A

G. Cooperating country acceptance of this project:
 1. has been obtained 2. is in process
 3. is not applicable to services required by PIO/T

H. Justification for use of external resources for advisory and assistance services is:
 1. attached 2. N/A

I. clearance for procurement of ADP equipment, software, and services is:
 1. attached 2. in process 3. N/A

J. OMB approval of any report to be completed by ten or more members of the general public under the statement of work is:
 1. attached 2. in process 3. N/A

K. Participant Training is is not being funded as part of this PIO/T.
 (If so, attach Budget Estimate Worksheet, Form AID 1382-10)

L. Requirement (contracts only) is recommended for:
 1. small-business set-aside 2. SBA 8(a) program
 3. disadvantaged-enterprise set-aside 4. No recommendation

M. Other (specify) _____

21. Provisions for Logistic Support

A. Specific Items (Insert "X" in applicable column at right. If entry needs qualification, insert asterisk and explain in C. "Comments")	IN KIND SUPPLIED BY		FROM LOCAL CURRENCY		TO BE PROVIDED OR ARRANGED BY SUPPLIER	N/A
	A.I.D.	COOPERATING COUNTRY	A.I.D.	COOPERATING		
(1) Office Space					X	
(2) Office Equipment					X	
(3) Housing and Utilities					X	
(4) Furniture					X	
(5) Household Appliances (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 (Health Room)					X	
(10) Vehicles (official)					X	
(11) Travel Arrangements/Tickets					X	
(12) Nightwatchman for Living Quarters					X	
(13) #						X
(14) #						
(15) #						
(16) #						

B. Additional Facilities Available From Other Sources:
 1. Diplomatic Pouch 2. PX 3. Commissary
 4. Other (specify, e.g., duty free entry, tax exemptions) N/A

C. Comments: Logistical support will be the responsibility of the contractor.

38

PIO/T No.

22. Relationship of Contractor, Recipient, or Participating Agency to Cooperating Country and to A.I.D.

A. Relationships and Responsibilities: The Contractor will work closely with the Project Officer listed below; the AID Representative in Mexico, or his designee; and LAC/DR/E and LAC/TI.

B. Cooperating Country Liaison Officials:

C. A.I.D. Liaison Officials: The principal liaison is R&D/EI, Ross Pumfrey. Other liaisons include the AID Representative in Mexico, or his designee, and the offices of LAC/DR/E and LAC/TI.

23. Background Information (additional information useful to authorized agent)

24. Summary of attachments that accompany the PIO/T (check applicable boxes)

- A. Detailed budget estimate in support of increased funding (Block 13)
- B. Evaluation criteria for competitive procurement
- C. Justification for procurement by other than full and open competition or noncompetitive assistance
- D. Statement of work or program description
- E. Waiver(s), justification(s), clearance(s), certification(s), approval(s) (specify number)

25. Distribution of PIO/T

BIOMASS COGENERATION DEVELOPMENT PROGRAM

BACKGROUND:

The Biomass Cogeneration Development Program is proposed as an integral part of the Bureau for Latin America and the Caribbean's Environment and Global Climate Change project (E/GCC), through a buy-in to the Biomass Energy Systems and Technology (BEST) Cooperative Agreement with Winrock International Institute for Agricultural Development (Winrock). The activities under the proposed Biomass Cogeneration Development Program address Congressional concerns in regard to renewable energy and global climate change.

The E/GCC is a five-year program, initiated in 1990 and aimed at reducing net emissions of greenhouse gases in Mexico, Brazil, and Central America. E/GCC targets two of the most important causes of increased emissions -- deforestation and the burning of fossil fuels. The aim of E/GCC is to assist in the development and adaptation of policy reforms, technologies, and practices that result in the sustainable and efficient use of forest and energy resources.

Directly reducing greenhouse gas emissions is significantly beyond the financial resources and timeframe of E/GCC. Its strategy is to develop pilot demonstration activities and to promote policy reforms and host-country capabilities. The impact of these activities and reforms is significant because those policies and technologies fostered by E/GCC reach beyond the specific sites, institutions, and communities directly affected.

To reduce the burning of fossil fuels in Mexico, the E/GCC is focusing on encouraging increased use of renewable energy and increased efficiency in the electric power sector. During the 1990s, Mexico's published generation expansion plan projects an increase in dependency on fossil fuels for power generation from 63.4 percent to 69.8 percent. When the projected growth in total capacity is taken into account, this signifies a 92 percent increase in fossil fuels in absolute terms, which implies significantly higher emissions of CO₂. Fortunately, Mexican authorities have shown a willingness to consider alternatives to the published expansion plan.

Renewable energy resources exist in abundance in Mexico. The national electric utility has already started to develop geothermal resources, and a national rural electrification program is using solar and wind technologies. Until recently, resources such as the agricultural and forestry processing industries were ignored with respect to generation for the national electric grid.

Mexico is the third largest sugarcane producer in the Western Hemisphere. Sugarcane processing produces residues (bagasse and field trash) that are currently being burned in very inefficient cogeneration facilities for simple on-site energy needs. (The term cogeneration refers to the simultaneous production of useful heat

and electrical energy.) Sugarcane residues are available in abundance approximately four to six months in a given year, and the cogeneration technology can use other fuels to produce electricity the balance of the year. In addition to cane, Mexico has a large sawmill industry whose woodwastes apparently are not being used for the production of any useful energy.

The use of state-of-the-art cogeneration equipment permits not only the production of electricity and heat needed for the sugarcane and timber processing, but also (especially in the sugarcane industry) allows the production of a significant amount of surplus electricity that can be sold to the power grid. Judging from the data on total sugarcane production in Mexico, a very rough approximation of the power generation that the residues could support is 3,000 megawatts. The entire Mexican power system comprises about 26,000 megawatts.

The use of these residues adds no net CO₂ to the atmosphere as long as the crops are harvested on a sustainable-yield basis. That is, the quantity of CO₂ emitted during energy conversion must equal the quantity of CO₂ absorbed by the replacement plant growth. To the extent that the production of electricity from these fuels displaces generation based on fossil fuels, a net CO₂ reduction occurs. Cogeneration based on process residues in agricultural and forestry processing industries would improve internal economics and increase employment opportunities while reducing fossil fuel emissions.

In addition to the environmental objective, another general objective of A.I.D. is shifting investments in services such as electricity from the public sector to the private sector. This type of shift from public-sector investment to private-sector investment would occur as a result of implementing the Biomass Cogeneration Development Program. Finally, much of the appropriate technology for biomass cogeneration is available in the U.S.

Obstacles in the path of using these biomass resources for reducing existing or planned burning of fossil fuels include the following: (1) a lack of understanding on the part of agricultural and forestry processing companies regarding the gross potential of cogeneration; (2) a lack of understanding regarding the appropriate technologies; (3) a lack of knowledge of the potential on the part of the national utility; (4) a lack of knowledge regarding the types of contractual arrangements and incentive structures that would encourage this category of "independent" power generation; and (5) a lack of knowledge regarding appropriate access to capital markets.

ARTICLE 1 -- TITLE/NUMBER:

Project Title: Environmental and Global Climate Change.
Project Number: 598-0784.

ARTICLE 2 -- OBJECTIVE:

The primary objective of the proposed Biomass Cogeneration Development program is to perform the research and analysis necessary to provide guidance to agricultural and forestry processing companies, the Mexican national utility, and financing institutions (and project developers when appropriate) with regard to the potential for, and ways to accomplish, the use of renewable agricultural and forestry processing wastes as an alternative energy resource to fossil fuels. One secondary objective involves policy reforms. Some reforms are expected to occur in the shift from public-sector investment to private-sector investment of electricity services. Another secondary objective of the proposed

program is to analyze and build opportunities for U.S. trade and investment in Mexico.

ARTICLE 3 -- STATEMENT OF WORK:

Winrock has conducted cogeneration activities in a number of countries. For example, Winrock has prepared national overviews of the energy potential from cogeneration of wastes in the sawmill industry in Honduras and the palm oil industry in Indonesia. In addition, Winrock is about to begin an overview of the sugarcane industry in Honduras.

Winrock has also worked closely with sugar mills in Costa Rica, Jamaica, Thailand, Egypt, India, the Philippines, and other countries to identify technological options and to conduct pre-investment studies. In most of the countries above, Winrock has also worked on the institutional issues that must be addressed when a private electricity producer wishes to sell to the national grid.

In addition to these past and present cogeneration activities, in the past year Winrock has been exchanging information with Mexican sugarcane producers and with the national utility with regard to cogeneration possibilities in that country.

The purpose of this program will be to perform research and analysis that will assist in overcoming the five obstacles in Mexico listed in the final paragraph of the "Background" section above. Essentially, this would involve developing information on technical, financial, economic, and institutional issues relevant to the target industries, the national utility, and investors and developers. This program will be building upon work that Winrock has already done in other A.I.D.-assisted countries under the BEST Cooperative Agreement.

Based on the grantee's previous experience with research and analysis on these subjects, it is suggested that in the first phase of this two-year program the grantee perform overall surveys that develop the following information:

- o The magnitude of energy resources that are practically available in the form of residues in the Mexican sugarcane and sawmill industries (and other agricultural and forestry processing industries, if deemed appropriate by the grantee)
- o The technologies that are available in Mexico or in the U.S. that would convert those resources efficiently into usable heat and electricity
- o The approximate quantity of surplus electricity that could be made available at processing facilities for sale to the national grid
- o The contractual mechanisms and incentive structures that might be made available by the national utility for the latter's purchase of the electricity
- o An approximation of the costs and benefits to the target industry and to the utility that would result from the application of these technologies
- o The extent to which the use of fossil fuels would be displaced by these activities and therefore the extent to which emissions of CO₂ would be avoided
- o The state of capital markets in Mexico with regard to potential investment in these technologies
- o The impact that cogeneration will have on the economic levels of Mexican society
- o The names of all groups with whom the Grantee will be working, including government officials, manufacturers, private investors, project developers, and individuals
- o The potential trade relationship between the U.S. and Mexico especially in regard to the proposed North American Free Trade Agreement

Some of this information will be available in existing documents or obtainable as a result of long-distance communication. Much of the research and analysis, however, will depend on a team of appropriately qualified experts making two or three visits to Mexico to meet with key representatives of the target industries, the utility, technology vendors, and the financial community.

It is suggested that the results of this first phase of research and analysis with respect to the issues listed above will be compiled in an assessment document. It is further suggested that the grantee hold at least one workshop to disseminate such information to interested parties.

The second phase of the program would occur after this information is disseminated. It is suggested that the grantee consider sharing the costs of 3-5 pre-investment (pre-feasibility and feasibility)

studies for site-specific applications of these technologies. The studies are intended to assess the specific technologies in particular locations and the contracts and financing that would be necessary. The resulting financial costs and benefits that would accrue to the particular agricultural or forestry processing company or companies should also be addressed in the studies. These studies would then serve as models for catalyzing more widespread adoption of the technologies.

The grantee should discuss with appropriate parties the need for any additional research and analysis on model contracts or incentive structures for the sale of privately produced electricity to a public utility. For the latter analysis, the grantee can draw on the extensive experience of the U.S. with such arrangements in the past dozen years, as well as the more recent experience in developing countries in which Winrock has been involved.

ARTICLE 4 -- REPORTS:

It is requested that the Grantee prepare and send a copy of the following reports to Ross Pumfrey, Project Officer, R&D/EI; LAC/DR/E; LAC/TI; and the USAID Representative in Mexico:

Quarterly Reports: Included in these reports should be highlights and status of activities from the previous period; any problems that have arisen and a proposed plan of action for resolving those problems; and the activities for the next quarter.

Six-Month Financial Reports: Included in this report should be the status of accounts to date, including any outstanding debts; any problems that have arisen and a proposed plan of action for resolving those problems; and the proposed expenditures for the next six-month period.

Pre-Workshop Agenda: At the six-month period, the grantee should prepare report(s) of a pre-workshop agenda, including proposed topics, speakers, and participants.

Post-Workshop Report/Minutes: To be included in this report should be the highlights from the workshop(s), including any problems encountered, and the minutes.

Assessment Report: This report should include a detailed report of the research and analysis performed on the issues listed in Article 3.

Pre-Investment Studies: These studies should consist of appropriate financial, technical, and institutional information necessary in order to estimate costs and risks involved at specific or representative sites.

Final Report: This report should be a compilation of all of the activities under the project; problems encountered and recommendations for solutions; and a financial report.

want to be included - approvals, sub. invol.

IE.1(b)

ARTICLE 5 -- RELATIONSHIPS AND RESPONSIBILITIES:

The Grantee, USAID/Mexico, and R&D/EI will work closely in achieving the objectives under this scope of work and coordinate all activities with other ongoing USAID/Mexico activities. The grantee may choose to create new relationships between and among government, project developers, and private companies that permit joint funding of development and project implementation. However, all technical directions and communication with the government shall be coordinated through the USAID Representative in Mexico.

ARTICLE 6 -- PERFORMANCE PERIOD:

It is anticipated that the desired objectives of this proposed project could be accomplished approximately two years, from the date that this delivery order is signed.

ARTICLE 7 -- WORK DAYS ORDERED:

The following positions are anticipated for the assessment team:

<u>Position:</u>	<u>Work Days:</u>
1. Cogeneration Specialist	56
2. Market/Financial Analyst	56
3. Sugar Mills Specialist	91
4. Renewable Energy Analyst	74

The following qualifications would be necessary in order to obtain the most qualified and efficient team. In addition to these qualifications, at least one member of this assessment team must be fluent in Spanish. Some knowledge of Spanish is desirable for the remaining three members.

Cogeneration Specialist

Qualifications: B.S. in Mechanical Engineering or equivalent; minimum of ten years professional experience in biomass energy, including specific experience with agriculture-energy systems; extensive knowledge of industrial co-generation systems; knowledge of woodwastes used in energy production; and, private sector experience preferable.

Market/Financial Analyst

Qualifications: M.S. in Business or Economics or equivalent; minimum of ten years professional experience, including specific experience with renewable or generation energy projects and utility avoided cost analysis; and private sector experience preferable.

Sugar Mills Specialist

Qualifications: B.S. in Mechanical Engineering or equivalent; minimum ten years professional experience in sugar mill operations and specific experience with sugar mills incorporating sugar-energy systems and, private sector experience.

Renewable Energy Analyst

Qualifications: M.S. or Equivalent in Engineering or related field; minimum of 10 years professional experience in renewable energy technology, policy, and economics; and demonstrated project management experience.

ARTICLE 9 -- SPECIAL PROVISIONS:

A. **Duty Post:** The official duty post for the assessment team will be in Washington, D.C.

B. **Language Requirements:** Fluency in Spanish is required for one member of the assessment team. Some knowledge of Spanish is desirable for the remaining three members.

C. **Access to Classified Information:** The contractor/grantee shall not have access to any classified Government materials.

D. **Logistic Support:** The contractor/grantee shall: clear all travel with R&D/EI and USAID/Mexico; make all necessary logistical arrangements; and assure that all individuals sent to Mexico under this PIO/T have the necessary supplies and equipment.

E. **Work Week:** The team is expected to observe a 5-day work week.

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