

U N C L A S S I F I E D

POCBI 728

AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D. C. 20523

EGYPT
UNIVERSITY LINKAGES II
(263-0211)

PROJECT PAPER

U N C L A S S I F I E D

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE

A A = Add
C = Change
D = Delete

Amendment Number

DOCUMENT CODE

3

2. COUNTRY/ENTITY

EGYPT

3. PROJECT NUMBER

263-0211

4. BUREAU/OFFICE

ENE

03

5. PROJECT TITLE (maximum 40 characters)

University Linkages II

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY

7. ESTIMATED DATE OF OBLIGATION
(Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 91

B. Quarter 3

C. Final FY 93

8. COSTS (\$000 OR EQUIVALENT \$1 =)

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(3,500)	(1,500)	(5,000)	(14,900)	(5,100)	(20,000)
(Loan)	()	()	()	()	()	()
Other U.S.						
1.						
2.						
Host Country					4,000	4,000
Other Donor(s)						
TOTALS	3,500	1,500	5,000	14,900	9,100	24,000

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1)									
(2)						20,000		20,000	
(3)									
(4)									
TOTALS						20,000		20,000	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

11. SECONDARY PURPOSE CODE

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code

B. Amount

13. PROJECT PURPOSE (maximum 480 characters).

To improve and increase the utilization of Egyptian universities in the solution to developmental and technological problems.

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY
06 93 06 96

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000 941 Local Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a page PP Amendment)

Mission Controller has reviewed and concurs in the methods of implementation and financing included herein.

Douglas L. Franklin
Mission Controller

17. APPROVED BY

Signature

Title

Acting Mission Director

Date Signed

MM DD YY

06 96

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY



UNITED STATES AGENCY for INTERNATIONAL DEVELOPMENT

CAIRO, EGYPT

PROJECT AUTHORIZATION

Name of Country: Arab Republic
of Egypt

Name of Project: University
Linkages II

Number of Project: 263-0211

1. Pursuant to Section 531 of the Foreign Assistance Act of 1961, as amended (the "Act"), I hereby authorize the University Linkages II Project for the Arab Republic of Egypt (the "Cooperating Country") involving planned obligations of not to exceed \$20,000,000 (Twenty Million Dollars) in grant funds over a three-year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project. The planned life of the project is six years from the date of initial obligation.

2. The project consists of assistance to the Cooperating Country in establishing three-way linkages among Egyptian and U.S. universities and end-users to solve development problems. The three-way linkages will be financed by small medium and large grants.

3. The Project Agreement which may be negotiated and executed by the officers to whom such authority is delegated in accordance with A.I.D. regulations and delegations of authority shall be subject to the following essential terms and conditions, together with such other terms and conditions as A.I.D. may deem appropriate:

(a) Except as otherwise provided in paragraph (b) below, and except as A.I.D. may otherwise agree in writing, (i) commodities financed by A.I.D. under the project shall have their source and origin in the United States; (ii) the suppliers of commodities or services (other than ocean and air shipping) shall have the United States as their place of nationality; and (iii) ocean and air shipping financed by A.I.D. under the project shall be financed on flag vessels of the United States.

(b) Based on the justification stated in the Procurement Plan set forth in Section 3.3 of the Project Paper, up to the Egyptian pound equivalent of \$5,100,000 in commodities and services may have their source, origin and nationality in the Cooperating Country.

4. I hereby determine, in accordance with Section 612(b) of the Act, that the expenditure of United States dollars for the procurement of goods and services in the Cooperating Country is required to fulfill the purposes of this project; the purposes of this project cannot be met effectively through the expenditure of U.S.-owned local currencies for such procurement; and the administrative official approving local cost vouchers may use this determination as the basis for the certification required by Section 612(b) of the Act.


George A. Wachtenheim
Acting Director

8/6/91
Date

Clearances:

- OD/HRDC/ET, PKresge
- AD/HRDC, WGelabert
- AD/PDS, CCrowley
- AD/FM, DFranklin
- OD/PDS/PS, RJordan

Wachtenheim 7/2/91
WJG 8/5/91
CC 8/5/91
SF 9/4/91

Drafted: LEG:  Sullivan:mf: (7/17/91):Path0211


Executive Summary

I. Introduction:

The University Linkages II Project (ULP/II) is a follow-on to the University Linkages I Project (ULP/I) which was initiated in 1980. The purpose of the ULP/I was to increase the contribution of Egyptian universities to the solution of Egypt's development problems. Over the decade during which it has been implemented ULP/I has had a significant impact in addressing some of the constraints to achievement of this purpose. Major constraints included: lack of experience in applied research which was manifested both in a lack of knowledge of end-user demands for applied research and a lack of technical skills to carry out such research; a bias within the university system toward theoretical research and teaching; and a lack of an inter-disciplinary approach to solving applied research problems.

The ULP/I has made significant progress in alleviating some of these constraints. Out of over 30,000 faculty members within Egypt's university system, approximately 2,400 Egyptian researchers have participated in applied research under approximately 460 research grants. Researchers have gained experience in planning and executing applied research and achieved valuable benefits for end-users of the research. Strong relations between Egyptian and U.S. scholars have been established. In addition, some new respect for, and confidence in the ability of Egyptian university scholars to solve development problems has been created in the applied research end-user community. Nevertheless, Egyptian faculties still probably represent the largest untapped development skill resource bank in Egypt.

An assessment of the ULP/I was conducted in April 1989 to determine its impact and to guide the design of a possible follow-on project. The impact assessment's principal conclusion was that there were enough successful research projects to consider the ULP/I justified as a whole. The assessment concluded that "... even in the small number of projects included in the sample, a few were found whose benefits to the Egyptian economy seem large enough to yield a rate of return on the total AID investment in ULP well in excess of what can be expected from infrastructure (fixed assets) investments".

The impact assessment concluded that a follow-on project was desirable in order to consolidate the progress which had been made under ULP/I. The PID for ULP II was approved by AID/W on July 19, 1990.

II. Project Description:

Essentially, the proposed University Linkages II Project (ULP/II) is a grant mechanism to produce applied research by Egyptian and U.S. universities to solve development problems. The goal of the project is to make the Egyptian higher education system more responsive to Egypt's development needs. Its purpose is to improve and increase the utilization of Egyptian universities in the solution of Egypt's

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developmental problems with particular attention to problems related to the restructuring of the economy.

This will be a six year project. Three types of research grants will be financed under the project, providing varying degrees of flexibility and scope in addressing development problems. The three classes of grants: micro, mini and maxi-linkages represent a flexible categorization of research activities into small, medium and large grants. This division will be used flexibly with the actual needs of each activity dictating the level of funding.

The major outputs of the project will be the completion of approximately 70 collaborative applied research activities to solve various development problems. The following conditions are expected to exist at the end of the project:

- 1) Approximately 750 researchers have increased their ability to plan and execute applied research to solve development problems.
- 2) Strengthened and expanded cooperative relationships between Egyptian universities and end-users resulting in better problem identification and more practical solution strategies as judged by the peer review process and by end-users.
- 3) Research results are utilized by end-users to solve development problems.
- 4) An increase in the degree of local currency cost sharing by end-users (public and private) from 35% in the first year of the project to 60% in its last year.
- 5) The bases for longer-term relationships between U.S. and Egyptian universities established.

All of the ULP/I Impact Assessment recommendations have been incorporated into this Phase II project. The phase II project will be easier to manage as approximately 70 research grants will be financed over the life of the project compared to approximately 460 under Phase I. This second phase will focus on two broad problem areas: sector specific problems and the private sector. In addition, highest priority will be accorded to private sector end-user problems constraining the growth and development of this sector.

Funding criteria for research proposals under phase II are designed to increase the project's impact and give priority to activities with private sector end-users. These criteria include the following requirements:

- 1) research must respond to specific end-user problems;
- 2) end-users must be actively involved throughout the process;

- 3) research proposals must have the potential for achieving tangible results in the short-term; and
- 4) proposals must present a multidisciplinary (especially economics) approach to problem solving. In addition, acceptable proposals must have one of the economic goals stated under the funding criteria.

III. Summary Financial Plan:

The total estimated cost of the project is \$24 million broken down as follows:

	<u>USAID</u> <u>(\$000)</u>	<u>GOE</u> <u>(LE 000)*</u>	<u>End-User</u> <u>(LE 000)</u>	<u>Total</u> <u>(\$000)</u>
Egyptian Research Team (Res. Services)	2,600		7,040	4,900
Short-term TA (U.S. Res. Services)	5,900			5,900
Research Endeavors/Exch. Exchange Visits	2,500			2,500
Long-term TA (U.S. Res Services)	1,700			1,700
Equipment and Supplies	2,800		2,560	3,600
FRCU Administration		3,200		
Seed Grants	1,100			1,100
Locator/Facilitator Service & FRCU ST-TA	450			450
Buy-In into UDLP	300			300
Egyptian University Overhead				
Evaluations	150			150
Information Dissemination/ Workshops & Seminars	160			160
Audits & Assessments	240			240
Contingency	2,100			2,100
TOTAL	20,000	3,200	9,600	24,000.**

* LE 3.2/\$. Total host country contribution = LE 4 million.

** Excluding In-Kind Contributions

The AID contribution is estimated at \$20 million. It includes financing for approximately 144 person years (PY) of research by Egyptian research teams (faculty members and graduate students); 323 PM of short-term technical assistance to assist with the various research activities; 8 PY of long-term technical assistance to assist with the maxi linkages; equipment and supplies; and evaluations and audits. The technical assistance consists of U.S. university research services and consultations.

\$5 million will be set-aside for activities between Egyptian universities and Historically Black Colleges and Universities (HBCUs).

\$5 million will be set-aside for activities between Egyptian universities and Historically Black Colleges and Universities (HBCUs). Short-term technical assistance for linkages under the set-aside will be provided by the National Association for Equal Opportunity in Higher Education (NAFEO) and the National Council for Negro Women (NCNW) under a grant from USAID.

The GOE and public and private end-user contributions is estimated at LE12,800,000 in cash (equivalent to \$4 million), in addition to in-kind contributions like the provision of laboratory and other research facilities for the conduct of the research. The cash contribution will finance (1) the administration of the project by the Foreign Relations Coordination Unit (FRCU), and (2) the fraction of local currency costs paid by end-users as match funding (cost-share). The in-kind contribution includes facilities, materials and utilities.

IV. Project Negotiating Status:

The FRCU of the Supreme Council of Universities (SCU) is the GOE implementing agency for this project as it was under the ULP/I. Special considerations such as the Gray Amendment and Women in Development which are addressed through set-asides, conditions precedent and covenants have been discussed with the implementing agency and there is general agreement on them within the FRCU and the SCU. The project has been developed in collaboration with GOE officials and potential beneficiaries.

The report prepared by the PP design team is attached as Annex (G). No attempt was made to make this report conform to the PP. Wherever the PP is at variance with the consultant report, the PP prevails.

V. Recommendation:

The Project Committee recommends that you authorize the University Linkages Project II for \$20,000,000.

0044A:ak

Acronyms and Abbreviations

AAAS	American Association for the Advancement of Science
ABA	Alexandria Businessmen Association.
AID/W	Agency for International Development/Washington, D.C.
ARC	Agriculture Research Center
ASRT	Academy for Scientific Research & Technology
CBD	Commerce Business Daily
CDSS	Country Development Strategy Statement
CET	Continuing Education & Training
DRTPC	Development Research & Technological Planning Center
FRCU	Foreign Relations Coordination Unit
FUP	Followup Person
GOE	Government of Egypt
HBCU	Historically Black Colleges and Universities
HRDC/ET	Directorate for Human Resources and Development Cooperation/Office of Education and Training
IA	Impact Assessment
IESC	International Executive Services Corps
ILC	Industry Liaison Office
LIUC	Local Industry University Committee
MOA	Ministry of Agriculture
MIS	Management Information System
MOE	Ministry of Education
MOHE	Ministry of Higher Education
NAFEO	National Association for Equal Opportunities in Higher Education
NARP	National Agriculture Research Project
NAS	National Academy of Science
NB	Nota Bene
NCNW	National Council for Negro Women
NRC	National Research Center
PC	Priority Committee
PID	Project Identification Document
PM	Person Month
PSC	Personal Service Contract
SCU	Supreme Council of Universities
STC	Science & Technology Cooperation Component of the STDP
STDP	Science & Technology for Development Project
TDY	Temporary Duty
ULP/I	University Linkages Project/Phase I
ULP/II	University Linkages Project/Phase II
USIPO	United States Investment Promotion Office

- (D) B/G Request for Assistance
- (E) 611(a)
- (F) Gray Amendment Certification
- (G) Technical and Administrative Analyses
- (H) Detailed Financial Plan

1.0 PROJECT RATIONALE AND DESCRIPTION

1.1 Perceived Problem

Until the early 1980s, there was no serious attempt to bring the valuable resources of the Egyptian universities to bear upon Egypt's development problems. The major factors which limited such university involvement were:

- (1) The huge expansion in the size of the Egyptian university system that began in the late 1950s created a tremendous demand for teaching and left little time for professional development and research. Most resources were allocated for salaries. Hence little serious applied research took place.
- (2) Faculty promotion relied completely on the publication of academic (theoretical) publications and teaching performance. It did not recognize nor reward applied research efforts involving direct problem solving activities.
- (3) Very little communication or cooperation between faculty members of different departments or of the same faculty existed. The notion of an integrated interdisciplinary research approach, which is necessary for the definition, assessment and solution to development problems was absent.

The University Linkages Project (ULP I) was intended to encourage applied research which would help address Egypt's developmental problems. It has helped to overcome these serious constraints to some degree. Since the early eighties, it has financed 463 applied research projects which have involved 2,400 Egyptian researchers. Researchers have increased their ability to plan and execute applied research. They have also established linkages with end-users of the research and, in some cases, achieved valuable benefits for them. In addition, relations have been established between Egyptian and US scholars.

However, the nature and size of the original objective -- to get Egyptian universities to contribute to the nation's development in proportion to their potential -- has not yet been achieved. At least a generation of assistance is required. This assertion is consistent with a major finding of an AID study on university linkages since the 1950's to the present: **AID and US universities must make a long term commitment to assist effectively host country universities.** (University Linkages in Science and Technology For the Asian and Near East Bureau, AID/Washington, 1988). The study reviewed over 20 evaluations. Most of the evaluations recommend an implementation strategy which will be followed under the proposed project, specifically:

"American university [and host country] researchers ...

tend to produce their best results when presented with long term opportunities for institutional collaboration under conditions of clearly set, incremental objectives, stable funding and a minimum of day-to-day supervision by AID staff. Ideally, such opportunities should start with a collaborative program design effort and continue through several incremental implementation phases with periodic peer review (Quoted from the Impact Evaluation of Kasetsart University, Bangkok, p.12)."

1.2 Rationale for a Second Phase

The University Linkage II Project (ULP II) is proposed to strengthen the system of applied research that was started under ULP I. ULP II will also enhance the capacity for doing applied research in Egyptian universities by establishing stronger institutional linkages with US universities. ULP II will also continue to provide a much needed source of support for university-based applied research allowing closer, more enduring and mutually beneficial relations between university researchers and end-users.

A 1989 impact assessment of the ULP/I concluded that the project was beginning to produce research results responsive to end-user needs. These linkages were effecting benefits to the Egyptian economy and yielding a rate of return on the AID investment well in excess of what could be expected from infrastructure investments. In addition, the Assessment observed that some new respect for, and confidence in the ability of Egyptian university scholars to solve real problems has demonstrably been created in the university community.

ULP II will expand and strengthen the linkage process between universities and end-users by offering more examples of successful linkages and benefits accruing to end-users as a result of these linkages. This will further demonstrate to end-users that university researchers are a cost-effective resource in the solution to development problems. Having witnessed or participated in cost effective, successful problem solving research by university researchers, end-users will start paying an increased proportion of research costs. As observed in the ULP I impact assessment, this has started to occur to a limited extent under ULP I. However, the process needs an additional demonstration period to strengthen it and to allow additional successful examples of linkages to convince more end-users to use this human resource for the solution to their problems.

Egyptian researchers have increased their capacity for problem solving research in their experience with end-users and US researchers. However, there is a need to continue their applied research capacity building by involving them in more high quality, well-designed applied research. ULP I experience found that the most effective capacity building activities were those that

involved direct problem-solving work on real problems. Activities that focused on raising capacity by supplying various inputs to the applied research process (e.g., scientific equipment, resource materials, etc.) without having a direct problem-solving context, were less successful.

In summary, the justification for University Linkages Project (ULP) II is that (i) Egypt continues to face constraints in bringing to bear university expertise to solve development problems; (ii) Egyptian universities with assistance from USAID through ULP I have made some progress in overcoming these constraints by increasing the participation, effectiveness and efficiency of the universities in applied research; and (iii) the universities (through the Supreme Council of Universities) have requested further assistance in this area and are committed to cooperate with US universities to continue to address end-user problems through further applied research.

1.3 Conformity with GOE and AID Strategies

A. GOE Strategy

The Government of Egypt, in an effort to highlight problems with Egypt's educational system, amended the educational section of the current 5-year plan laying out a detailed plan for educational reform for the 1987-1992 period. One of the main goals of the higher education portion of this reform plan is to increase the utilization of the research community within Egyptian universities to enable them to contribute to the solution of Egypt's developmental problems.

This objective began to be operationalized in May 1990 through a declaration by the Supreme Council of Universities which calls for: (a) changing the promotion rules for faculty members to reward them for applied research efforts addressing end-user needs; (b) participation of industry end-users in the management of the relevant colleges and departments to ensure the responsiveness of the training and curricula to end-user needs; (c) sustained budgetary contributions by benefiting industries to the relevant science and technology departments (e.g., 3% annually); (d) encouraging and emphasizing interdisciplinary applied research; and (e) establishing positions within the academic system (professorships & chairs) in specializations relevant to end-users and industries to encourage applied research.

These suggested changes address some of the problems highlighted under the Perceived Problem section and are likely to enhance the attitudinal change toward applied research in the Egyptian academic community.

The proposed project will assist the GOE in meeting its goal by bringing the combined applied research capabilities of Egyptian and U.S. universities to bear on key development problems in Egypt, particularly those which affect productivity of the economy.

B. A.I.D. Strategy

The FY 89-93 CDSS update stated that the long term objectives of USAID/Egypt are to increase economic productivity and stimulate growth. The University Linkages II Project is consistent with these goals and priorities. Egyptian universities will be in a position to directly contribute to increases in productivity and economic growth through their close collaboration with end-users in selecting and designing problem solving, applied research. Through linkages with U.S. universities, Egyptian academic institutions will have a strengthened capacity to conduct practical research relevant to the country's developmental problems. The early and active participation of the end-users in the selection and design of research activities ensures a more pluralistic approach to problem-solving. Similarly, Egyptian universities will participate more actively and substantively within the science and technology community in addressing Egyptian developmental problems. Since the project places a new emphasis on problems related to the private sector, it is fully consistent with the CDSS's updated strategy which calls for increasing productivity and stimulating economic growth by supporting the removal of controls and restrictions on economic incentives and market forces.

This project also conforms with USAID's strategy for education and training, as outlined in the CDSS and the FY 88-89 Action Plan. This strategy seeks to improve technical, managerial and scientific skills through training and practical research and development activities. USAID is the main donor in this area. Other donor assistance in improving and making more relevant the practical research capability of Egyptian universities is minimal.

1.4 Project Description

A. Project Objectives

Goal - The goal of the project is to make the Egyptian higher education system more responsive to Egypt's development needs.

By demonstrating the importance and impact of applied research, ULP II will contribute to changing the research priorities of the university system towards end-user responsive applied research. The project will provide much needed resources to continue the support of university research to develop applied research

capacity and to induce Egyptian faculties and students to become productively involved in resolving Egyptian problems.

Purpose - The purpose of the project is to improve and increase the utilization of Egyptian universities in the solution to key developmental and technological problems.

The project will strengthen and institutionalize the process of utilizing university researchers. It will encourage long term relationships between participating Egyptian and U.S. universities. It will also develop and sustain a strong relationship between Egyptian universities and end-users by 1) initiating and catalyzing a demand-driven research process, and 2) by actively involving these end-users in each stage of the applied research process.

End of Project Status -

- 1) Approximately 750 researchers have increased their ability to plan and execute applied research to solve development problems;
- 2) Strengthened and expanded cooperative relationships exist between Egyptian universities and end-users which result in better problem identification and practical solutions to development problems;
- 3) Research results are utilized by end-users to solve development problems;
- 4) An increase in the degree of cost sharing by end-users over the life of project from 35% of local currency cost in year 1 to 60% in year 6 (the cost share being defined as the portion of the cost burden of the research activity being paid by the end-user and may include such cash contributions as staff salaries and local procurements as well as in-kind contributions like the use of laboratory and industrial facilities and land);
- 5) The bases for longer-term relationships between U.S. and Egyptian universities established.

Outputs

- 1) Collaborative research activities established between Egyptian and American universities as measured by:
 - 1.1 Forty micro-linkage research projects completed over LOP (twenty begun each of the first two years of the project);
 - 1.2 Twenty-six mini-linkage research projects completed over LOP (4, 12, and 10 begun in the first, second and third years of the project, respectively);

1.3 Four maxi-linkage research projects completed over IOP.

2) 200 seed grants completed and having contributed to the establishment of corresponding micro-, mini- or maxi- linkages.

B. THE RESEARCH PROCESS: HOW IT WILL WORK

Essentially this project is a grant mechanism to produce applied research by Egyptian and US universities to solve development problems. The project will use essentially the same review/award process for financing applied research as ULP I.

1. Linkages

A linkage is defined here as planned institutional cooperation and may exist between a university and end-user (external linkage) or between two universities (internal linkage). Egyptian universities need assistance to work with end-users through applied research to address development problems. End-users are institutions in the public and private sectors which have identified development problems that require solution. The use of applied research is end-user driven in terms of problem identification, research objective and methodological approach. What is needed is to strengthen linkages between end-users and universities to solve these problems. In most cases the linkage will be applied research by the university to address end-user problems; in a few cases, however, the linkage will include capacity-building assistance to the Egyptian university to develop applied research for the end-user.

The project will address development problems through applied research by establishing three-party linkages between the Egyptian university and end-user on the one hand (external linkage); and between the Egyptian university and the assisting institution (US university) on the other (internal linkage) so that the latter will support the former. These terms are further defined as follows:

external linkage - refers to relationships between the Egyptian university and a productive institution outside the university in the public or private sector. It is considered external because the linkage connects a university and an institution which has a different purpose than the university such as a ministry or factory.

internal linkage - refers to relationships between the US and Egyptian university because they lie within the boundaries of university operations and activities.

Three types of research grants will operationalize internal-external linkages: micro- (maximum limits of \$50,000 and one year); mini- (limits on an average mini of \$500,000 and 4 years); and maxi- grants (limits of \$2,000,000 and 5 years). They represent a categorization of research activities into small, medium and large grants respectively. This division will be used flexibly with the actual needs of each research problem dictating the type of grant.

Micro-Grants

The micro-grant is basically for data collection and simple short-term research. Forty of these grants will be made over the LOP with 20 being made annually in the first and second years of the project. The objective of the micro-grant is to select a problem area and an issue within that area with the expectation of gaining a better understanding of that issue through research and possibly identifying feasible solutions. It will conduct preliminary investigations of the problem and may identify tentative resolutions. In research "jargon", the micro-grant might best be thought of as exploratory research. It is expected that some of these grants evolve into more extensive research proposals which would be financed under a mini- or maxi-linkage grant.

Micro-grants provide a level of effort and time frame judged suitable for many private sector problems, and for some technical and economic analyses needed to justify a research approach to solving a larger problem. The funding level of a micro-grant will finance one person-month of US university collaboration, about five person months (full time equivalent) of Egyptian researchers services, half a person-month of research for Egyptian researchers (on the topic of the grant) in US counterpart university research facilities, plus international travel and miscellaneous expenses.

Mini-Grants

The mini-grant supports more extensive problem-solving activities and involves considerable applied research to identify solutions to significant development problems. Twenty-six of these grants will be made over the life of the project with 4, 12, and 10 mini-grants being made in the first, second and third years of the project, respectively. This type of grant will recommend feasible alternatives perhaps with the researchers collaborating with end-users to implement the solution at a pilot or demonstration level. The mini-grant will also require more extensive US university involvement than micro-grants.

Mini-linkages may be designed for two, three, or a maximum of four years with average funding expected to be \$ 360,000. Mini-linkages with the private sector will more usually be of the two-year duration, whereas those involving government and public-sector end-users especially dealing with large industries will tend toward the four-year time frame. Various inputs of minis are detailed in the financial section below.

Mini-grants fund about 10-20 PM per year (full time equivalent) of Egyptian researchers services and about 2-4 PM per year of US collaborator efforts (ST-TA). These are the minimum levels of effort required to successfully address many development problems using an interdisciplinary approach.

The ULP/I Impact Assessment strongly recommended that the total number of grants be reduced in any ULP/I follow-on project to permit adequate management and technical oversight. It also recommended increasing the level of funding to restore the purchasing power of a grant by a further 30-50% of the funding levels under ULP I. The average funding level for minis is consistent with this recommendation.

Maxi-Grants The maxi-grant is the largest grant and four will be made during the second and third years of the project. These grants will support research and institutional development addressed at a number of interrelated problems in a particular sector of the economy such as energy or desert development. It could be cross-sectoral as well. An expected result of the maxi-grant is to gain a comprehensive understanding of the problem and to produce an action plan to address it. Maxi-linkages are likely to evolve from successful micro-linkages or mini-linkages (possibly first phase ones) that provide a firm research base upon which this large research effort will build. However, this is not a necessary requirement for acceptable maxi-proposals.

In view of the experience gained under ULP I regarding maxi-grants and the complexity of their management, this category of grant will be funded only if strong justification is presented for supporting its research components collectively under a maxi-grant. Otherwise, funding acceptable activities separately as mini-grants will be the preferred mode.

Mix of Grants

The rationale for the mix of grants is further discussed in the Administrative Analysis. Clearly, any allocation of resources for the mix of grants in advance of concept paper submissions is judgmental. Since the project will be demand driven, the mix of grants is likely to change. The annual internal project evaluations will provide an appropriate mechanism wherein the mix

of grants can be adjusted as necessary during the life of the project.

2. Research Problem Areas

The development problems faced by Egypt are many and diverse in nature and appear in most sectors. Some of these problems are already being addressed by projects which have substantial university research components in them such as NARP for agriculture and STDP for science and technology. Given the flexibility of the internal-external linkage mechanism to bring US and Egyptian expertise to bear on development problems, except for the private sector emphasis, the project adopts the approach of not assigning any priority to specific sectoral problems or research topics. This allows ULP II to address a host of problems which emerge as being urgent and worthy of applied research. However, the project focuses on two broad problem areas: sector specific problems and the private sector. These problem areas, along with illustrative examples of research topics, are described in more detail in the **Technical-Administrative Analysis Annex**. The annex gives a detailed analysis supporting the project's approach of not confining research to a predetermined topic list. Such confinement to a predetermined list of topics is inconsistent with the demand-driven nature of the project. While the project focuses on the two broad areas mentioned, the specific problems under each of the areas described below are illustrative and will be dictated by the end-user demand.

a. Sector Specific Problems

Industry: Corrosion control; analysis and testing techniques and quality control procedures to meet export requirements; analysis of product/process lines to improve productivity and reduce costs; marketing strategies for local and export markets; cost-benefit feasibility studies for new products; improvements in modification of existing technology; processes for indigenous raw materials to replace currently imported raw materials.

Energy: Non-conventional energy generation; renewable energy generation (e.g., agricultural wastes, combustible municipal garbage); industrial conservation of energy; co-utilization of coal deposits to produce electrical energy and produce metallurgical coke for the steel industry; new technologies (e.g., fluidized bed) to produce energy from coal; electricity grid distribution and security analysis; quality control of components for electricity transmission and generation of equipment manufactures.

Pollution prevention and environment studies: Control or neutralization of inorganic and organic effluents discharged into water or air; product recovery and reuse; reduction of chemical losses; development of water/air pollution standards for adoption and enforcement by industry and government; noise pollution; water recycling; analysis of eco-systems which influence agricultural and population use of rivers and bodies of water; water quality systems for small urban areas and newly established municipalities.

Education and Human Resources Development: science curricula needs for rural schools; demonstrations studies on the use of distant learning in primary and secondary schools and of the open university/ continuing education system especially as it pertains to relieving pressure on the formal higher education system; constraints analyses regarding the role of women in university, in applied research, and in industrial development; relative effectiveness of different types of industrial training such as, on-the-job training, apprenticeships, formal training, practica, etc.; relative effectiveness of different types of literacy training for rural adults.

Infrastructure: the most effective mix, staging of inputs and use of water resources, transportation, communication, energy, industry, crop development and housing in new desert areas; improving water and waste water treatment; development of cost-effective transportation and communications.

Agriculture: identification and specification of appropriate standards and quality control procedures of agricultural produce for export markets; applications of biotechnology for food and commodity crops; improved extension services to small agrobusiness farmers in terms of techniques in crop cultivation, mechanization, fertilizers and pesticides, credit availability, and market access for small agrobusiness farmers.
(See Annex (g) for examples of micro- and mini projects).

b. Private Sector

The private sector is a palpable and emerging force in the Egyptian economy, and faces problems which must be overcome if it is to compete with the public sector. Examples might include training needs for Egyptian bankers on how to identify and assess high return investments in their lending portfolios; methodologies which small businessmen from the informal private sector could use to increase their markets and distribution of goods; financial, marketing and management training needs for small businesses in such areas as furniture and carpet production, arts and crafts targeted to the tourist trade (in Upper Egypt particularly), food processing, and fruit and vegetable export. Applied research that deals directly with

private sector businesses may be complemented with more broad-based, but still applied research that analyzes problems in the regulatory/ policy environment.

3. Research Proposal Selection

a. Guidelines for Proposals

The project will solicit short concept papers for micro- and mini-grants to identify the research problem and other information needed for review and selection. It will also solicit more expanded concept papers for maxi-grants which should contain more detail on planned activities. Successful concept papers will be expanded and resubmitted as full-blown proposals to complete a two step selection process. While it is expected that this process will broaden participation of Egyptian researchers in ULP II, the purposes are for quality control and efficient review. The project implementing agency (FRCU) will develop formats with USAID concurrence for both stages to facilitate the selection process without discouraging thoughtful proposer response.

For concept papers and proposals it is understood that two broad guidelines will prevail. First, the research is directed to a specified Egyptian development problem and is compatible with the economic reform policies declared by the GOE, e.g., enhancing the growth of the private sector. Second, the grant will increase the capability of university researchers to do applied research as it relates to economic growth. Given this perspective, the following are more specific guidelines:

Short Concept Papers (micro and mini)

Description of the development problem to be addressed accompanied by a quantitative statement concerning its economic significance;

Identification of the specific end-user of the research results along with his/her signed letter of intent to participate -- particularly regarding cost-sharing;

An outline of the research approach -- particularly the interdisciplinary features in this approach, and the expected results of the research;

Project management structure or related mechanisms needed to implement this research approach;

Role of the US counterpart (identified or unidentified) in terms of justified and efficient participation and possibilities for a long term relationship;

Estimate of the time and resources (Egyptian and U.S. researcher person months, purchased equipment and local expense) required including bases for estimates;

Summary information (name, position, affiliation and **directly applicable** experience) for the project individual or team;

A maximum of ten (10) pages, in addition to the end-user letter, are requested.

Expanded Concept Papers (maxi)

Detailed description of the development problem to be addressed accompanied by a brief analysis (socioeconomic or related disciplinary concerns) of its developmental significance;

Identification of the specific end-user(s) of the research results along with his/her signed letter of intent regarding possible participation in the design and implementation of the research as well as details of cost-sharing;

A research plan with emphasis on a multidisciplinary approach;

Expected results of the research which includes a brief assessment of the likely impact;

Project management structure identifying its component parts or related mechanisms needed to implement this research approach;

Role of the US counterpart in terms of resource contributions and participation in the planning and implementation of the research;

Estimate of the time and resources (Egyptian and U.S. researchers person months, purchased equipment and local expenses) required (including bases of estimates);

Summary information (name, position, affiliation and **directly applicable** experience) for the project individual or team;

A maximum of twenty (20) pages, in addition to the end-user letter, are requested.

Full proposals will be submitted for concept papers which are approved by the FRCU. No page limitations are imposed on proposals though it is expected that their length will correspond to their relative magnitude. Guidelines for the full proposal are:

Proposals (micro, mini and maxi)

A detailed statement of the development problem being addressed;

The desired research outcome(s) with an analysis of the economic impact that could be realized;

A description of the actions needed to implement research findings;

The detailed technical plan and schedule of research activities including US participation, procurement, U.S. research endeavours, etc. and justification for procurement ;

Justification for the choice of US counterparts if acquired through the Locator Service (see below);

Curriculum vitae for all research team members and, in the case of a maxi- grant, the curriculum vitae for the Principal Investigator (PI) will include prior research management experience;

A project management plan in brief form for micro-grants and in detailed form for mini- and maxi- grants;

A formatted resource budget including the bases of cost estimates, and with estimates of quarterly expenditures;

Signed letters of commitment from the end-user and the US counterpart detailing the nature and extent of their involvement and cost sharing.

b. Funding Criteria

Principal Private Sector Criterion

To operationalize the new project emphasis on encouraging the growth and development of the private sector, the following Criterion applies to all proposals.

In reviewing proposals and making grant awards, the FRCU will give higher priority to proposals involving private sector end-users than to those involving public sector companies or governmental end-users. For public sector companies the FRCU will give higher priority to proposals from those end-users who have definite reform and privatization plans and to proposals that demonstrate (to the FRCU and USAID) how they promote private sector growth or assist economic restructuring and liberalization efforts.

Through application of this principal criterion, the project attempts to encourage and assist reform oriented end-users rather than place a categorical prohibition on working with public sector entities that might not be amenable to immediate privatization, e.g., health, education, land development, environmental studies, the power sector, and parts of the transportation sector.

The FRCU will be required to give explicit evidence of satisfying this Principal Criterion, and obtain USAID written concurrence, prior to making any grant award to a public sector or governmental end-user. USAID will not provide funding for any such grant except after the satisfaction of this criterion.

The adequacy of this criterion for ensuring maximal private sector participation and project focus on research relevant to the private sector, will be assessed one year after the award of the first grant award cycle and will be modified, if necessary, to achieve this goal.

Detailed Criteria

The following criteria have been chosen to help ensure proper research design and selection; active and increased end-user participation; attention to developmental considerations; and improved linkages with US universities.

a) An acceptable proposal should present a comprehensive multi-disciplinary approach appropriate to the research problem. Mono-disciplinary proposals, focusing only on the technical and scientific aspects of a problem but failing to deal satisfactorily with the cost/benefit implications of the technological choices to be recommended, will not qualify for funding. Other interdisciplinary inputs, e.g., rural sociology and labor analysis, should also be included where relevant.

b) The proposed projects should have one or more of the following economic objectives:

i) employment generation;

- ii) improved economic efficiency (e.g., higher value added, higher productivity, cost saving);
- iii) net saving of foreign currency;
- iv) export promotion of commodities for which Egypt has a comparative advantage;
- v) quality improvement of existing products;
- vi) economic use of unutilized resources (e.g., land reclamation, fish and marine resources);
- vii) reduction of negative externalities (pollution);
- viii) support of linkages with economically viable industries or companies especially those in which Egypt has a comparative advantage;
- ix) inclusion of commodities or services that are most needed or consumed by low income groups (in order to have a positive impact on income distribution).

c) The proposed research responds to specific end-user problems.

d) The proposed research involves significant participation of the ultimate end-user where such user is identifiable. Joint participation should include the problem definition, setting of the economic objectives and establishment of concomitant research targets. Maximum private sector end-user involvement will raise the priority of proposals submitted .

e) In cases where it is not reasonable to expect the participation of the ultimate end-user (e.g. education projects where the ultimate beneficiary is the student population), the proposal has to demonstrate that the intermediate end-user (e.g., the concerned unit in the MOE) has sufficient interest and capacity to disseminate results to the ultimate end-user.

f) The existence of end-user cost-sharing is a necessary condition. Education, health, and policy research, however, may substitute in-kind contributions for cash contributions. A significant level of cost sharing will be considered a favorable aspect of submitted proposals.

g) The proposed research has the potential for achieving tangible results in a short-term commensurate with the grant duration (e.g., 1 year for micro, and 2, 3, or 4 years for the various types of minis) agreed upon by the end-user or the intermediary.

h) The identified US counterpart university and principal investigator have participated in the project design as evidenced

by a signed ratification of the research plan and a binding commitment for their services.

This criterion will require evidence of the university commitment at the institutional level and not at the individual level. U.S. university commitment will have to be endorsed by the grants office, research foundation, or whatever management unit is responsible for research grants and contracts in that university. A similar requirement will be placed on the Egyptian side of the linkage for a commitment by the relevant management unit (or person) within the Egyptian university system, e.g., college dean, or faculty council.

i) There is evidence of an effort to establish a longer and broader commitment between the two institutions. For example, this might be identification of other research projects related to the one being proposed or curricular or organizational improvements.

j) The grant avoids overlap with other USAID-funded research (e.g., under NARP or STDP projects) or prior Egyptian research. It is recognized that complete avoidance of overlap and duplication with other USAID supported activities will be hard to implement due to the large number of projects and agencies supporting applied research. However, the FRCU will be required to establish a mechanism to minimize the likelihood of such duplication and submit sufficient evidence to USAID of the success of that mechanism in reducing redundancy in research efforts. Furthermore, a report on proposed grant awards will be circulated to all USAID technical offices including TI and ECON.

c. US University Counterpart Selection and Initial Participation

During ULP I selection of the US University counterpart was often achieved through personal contacts, and on occasion the lack of counterpart was due to the lack of being able to identify an individual. This appeared to contribute to an uneven participation by the US counterpart once the linkage was formed, particularly during the early stages. ULP II will attempt to overcome this limitation by developing linkages between Egyptian and U.S. universities in a more systematic fashion -- though personal contacts and preferences will probably be a basis for beginning the selection.

Personal Contacts

One cannot overlook the realities of personal relationships in developing linkages. This can be a natural first step in forming a linkage, but if the linkage is to be lasting, institutionally

based, and capable of producing quality research, additional means should be taken to ensure the match is a good one between both universities. These characteristics will be particularly important for Egyptian researchers who do not know US colleagues in their field, or young researchers who may wish to expand their range of limited contacts.

AID Centrally Funded Project (UDLP)

Various strengthening grants and related centrally funded projects fund the development of broad linkages between US and overseas universities covering education, research and extension functions of the university. Such broad linkages can be used to develop Egyptian responses to end-user problems and may - if they meet this criteria, qualify for funding under ULP II. It is proposed that ULP II use these projects through "buy-ins" to develop broad linkages between US and Egyptian universities. For example, currently proposed under the Center for University Cooperation in Development will accept mission "buy-ins" for this purpose, and thus would complement ULP II by assisting US universities to link up with Egyptian universities. These broad linkages could later respond to specific problem-solving requests to be funded under ULP II.

Locator/Facilitator Service

ULP II will establish a Locator service to facilitate making contact for linkages between US and Egyptian researchers who have approved concept papers. The service will identify capable institutions and researchers in the topic(s) suggested for US collaboration in the approved research plans. The interest and potential availability of several US candidates will be established by the Locator with details (affiliation, education, research experience, published papers, etc.) for these candidates supplied to the Egyptian principal investigator (PI) for his review and selection. At most, two iterations of this process per initial grant document will be allowed.

The contractor providing the Locator / Facilitator Service will employ experts, possibly emeritus professors, in those research areas receiving the most attention. These persons will review the technical and scientific merit of the concept papers and relay their judgements to the FRCU. For acceptable concept papers the Locators/Facilitators will search for, contact and recommend several institutions where likely US counterpart researchers operate. They will use existing computerized and other data bases to assist in identifying appropriate US institutions for the Egyptian investigator. The Locator will provide US researchers appropriate documents such as the ULP project announcements, proposal guidelines, funding criteria, etc. The Egyptian investigator will follow up this initial

contact by providing them with capability and research information. Proper screening of Locators will help to ensure unbiased recommendations.

The Locator / Facilitator Service will be obtained from the same contractor providing short-term technical assistance (and possibly PSA assistance) to the FRCU. This will be done through a direct 8(a) set-aside contract. The 8(a) firm might use the assistance of intermediaries such as the National Academy of Sciences, the National Science Foundation, or the Ford Foundation, to find suitable Locators/ Facilitators and concept paper reviewers. These facilitators could also be useful resources for project evaluations. The estimated cost of the Locator/ Facilitator Service would be around \$ 260,000 for the LOP (See the Financial Analysis section for details).

Seed Grants

Once selection of the US university is made, seed grants for travel and communications are designed to assist Egyptian and US faculty members to work together during the early stages of research design and proposal preparation. End-users may also work with them. This is to ensure quality proposals and to establish collegial relations early on in the linkage. Hopefully this will contribute to continued collaboration during and beyond the research grant award. Seed grants -- as part of the initial screening review and approval process -- should allow more concept papers to be included in the design process than will be approved and financed as proposals. The project plan calls for funding three seed grants for each fully funded grant. This should heighten competition so that high quality proposals are the ones finally approved. It could also have a side effect of pairing some of the less fortunate competitors together so that they might have continued interaction for research purposes during another grant award cycle in UPL II -- or in another project.

d. Proposal Solicitation, Review and Award Procedures

Before discussing the procedures, it would be useful to introduce the main organizations involved in project implementation. They are discussed more thoroughly in the Administrative Analysis.

The Supreme Council of Universities (SCU) is above all universities and sets policies, equivalence and promotion standards, coordinates academic programs, and manages university relations with foreign agencies.

The Foreign Relations Coordination Unit (FRCU) of the SCU deals directly with USAID as the main implementing

agency of the ULP II project.

The Priority Committees (Research Priority Policy Committees) review concept papers and proposals and make key recommendations regarding their acceptance or rejection.

The Consulting and Advisory Committee (CAC) consists of the heads of the Priority Committees and major private and public end-user representatives.

The Principal Investigator (PI) refers to the chief researcher who individually or as a team leader manages the research grant (each grant has two PIs a US and an Egyptian one).

There will be seven discrete procedures to select proposals from the point at which they were solicited to when they are awarded funding. The following paragraphs briefly describe these procedures which are described in detail in annex (G).

i. Solicitation

General announcements of the ULP II project will be made in Egypt using printed media appropriate to the target audience which includes end-users as well as the university community. These announcements will contain among other things illustrative problem areas, the project emphasis upon end-user participation, and increased emphasis upon private sector research. Interested researchers, as well as end-users will be able to obtain a more detailed set of guidelines from the FRCU.

After receiving announcements, end-users will be invited to seminars conducted by the FRCU to promote end-user interest in the project and to engender preliminary contacts between them and university faculty members. General project features, submission deadlines, suggested formats, guidelines for concept papers and proposals, and funding criteria will be provided to relevant Egyptian faculty members.

USAID and the FRCU will review the solicitation mechanisms at the end of the first project year. They may be revised depending upon that review. This is to ensure widespread participation by Egyptian and US university communities for the remainder of the funding cycle.

ii. Preparation of Initial Submissions

To participate in ULP II, Egyptian faculty members must select development problems for which an end-user has requested applied

research and has agreed to share the cost of the research. An end-user may also submit a research problem and ask the FRCU to seek qualified university staff willing to undertake the activities needed. Egyptian faculty may also seek end-users provided that the end-user will commit to cost-sharing. Prior or existing linkages between Egyptian and US researchers will also be encouraged to provide new submissions. These initial documents must adhere to the concept paper guidelines outlined above.

iii. Initial Review

The FRCU will screen the concept paper submissions for adherence to guidelines. For concept papers that address acceptable problems and propose a technically valid approach but fail to meet other requirements, the FRCU will have the option of returning the document to the proposer to redress any shortcomings. The FRCU will codify the documents according to the problem area and distribute the documents to the appropriate Priority Committee (or to more than one committee where a multidisciplinary proposal is involved). It will also conduct an "overlap review" to ensure that the proposal does not duplicate other research efforts particularly those funded by other USAID projects. The Committee will then conduct a detailed review of papers which will include technical soundness, research team capability as well as responsiveness to the guidelines. The review will conclude with the acceptance or rejection of concept papers. Letters will be sent to those whose papers were rejected explaining the reason for the rejection.

iv. US Counterpart Locator/Facilitator Service

The accepted concept papers for which an end-user commitment exists and which have a justified US counterpart will be directly eligible for a seed grant. Accepted concept papers not having an identified and justified US counterpart will access, through the FRCU, the Locator service (noted above) to facilitate the connection. The FRCU will forward to the Locator the requested counterpart capabilities and expected activities outlined in the concept paper. He in turn will contact qualified US university researchers or departments and explore their interest in ULP II participation through this particular grant. The Locator will then transmit the details on one or more interested US researchers to the FRCU for review by the Egyptian principal investigator. The principal investigator will then notify the Locator of his preferred US researcher(s). Upon an expression of interest from the latter to participate in the project, the investigator will send him the concept paper and request that he participate in the development of the proposal.

v. Seed Grant Award and Final Proposal Preparation

As was noted above, the seed grants are also to facilitate initial relationships between Egyptian and US researchers to assist them with proposal preparation. Small grants for rapid communication, limited travel and nominal miscellaneous expense (but no remuneration) will be provided to the Egyptian and US authors of proposals. Provisional limits for seed grant amounts and proposed preparation times are: micro-grants - \$3,500 and 45 days; mini-grants - \$7,000 and 60 days; and maxi-grants \$15,000 and 90 days.

vi. Proposal Review

The FRCU will screen proposals for adherence to format and guidelines and for duplication with other research, and may return the proposal to the proposer for the same reasons as with concept papers. It will also codify the screened documents by problem area and assign it for review to the appropriate priority committee which will accept, reject or return proposals for modification. Short-term technical assistance will be provided to the FRCU in reviewing the technical and scientific merit of proposals and their cost reasonableness. This will be done under the same direct 8(a) contract as the Locator/Facilitator service and will be concentrated during the peak periods of proposal review in the first two years of the project. Accepted micro proposals will be sent by the priority committees to the executive director of the FRCU for final approval. Accepted mini proposals will be sent by the Priority Committee to the Consulting and Advisory Committee consisting of major private and public end-user representatives, Heads of Priority Committees, and three University Presidents, for final review and presentation to the Secretary General of the Supreme Council of Universities who will have the authority for approving mini-grants. Accepted maxi proposals will be subject to the same procedure as that of mini proposals, but will require the further approval of the Minister of Higher Education.

vii. Draft and Final Grant Agreement

The FRCU will prepare a draft final agreement for each grant using a standard format approved by USAID. The draft agreement will be provided to the Egyptian and US principal investigators and to the end-user. These parties will agree to accept and sign a final agreement which will be binding on all signatory parties.

e. Special Considerations

i. HBCU Participation in ULP II

Linkages with the Historically Black Colleges and Universities (HBCU) in the US are a desired feature of ULP II. Five million dollars will be set aside under the project for research activities involving HBCUs. In addition to the general announcements about the project to be published during the Solicitation procedures, additional announcements and materials will be directed to the National Association for Equal Opportunities in Higher Education (NAFEO) and to the National Council of Negro Women (NCNW) for dissemination among the HBCUs.

In many situations an Egyptian university and an HBCU have developed a relationship under phase I and may present a jointly prepared concept paper. If the concept paper is acceptable, the proposers will complete the full proposal development under a seed grant. If such cases are not enough to utilize the entire HBCU set-aside, the FRCU will select the most suitable from among the approved concept papers, which do not have a US counterpart, and assign them to the HBCU set-aside. Tentatively 30 concept papers are expected to be assigned to HBCUs the first funding year and 40 the second year. The FRCU will send the initial research plan, funding criteria and proposal guidelines to NAFEO, NCNW and other relevant agencies or institutions.

These agencies will identify one or more researchers and HBCU institutions which have the appropriate research experience, skills and professional interests as possible US counterparts for participation in developing the concept papers into proposals. Their professional background (affiliation, education, research experience, published papers, etc.) together with an expression of interest on the part of the principal investigator and his university department will be sent back to the FRCU and the Egyptian principal investigator for review. Once the FRCU and the investigators have agreed on the appropriate US counterparts from the HBCUs, they will seek from them a commitment to participate. Seed grants will be used for proposal development.

In view of the NAFEO's and NCNW's familiarity with HBCU's and the experience that they have gained with the Egyptian higher education system under phase I, they will carry-out the Locator/Facilitator role for proposals under the set-aside and coordinate the submission of these proposals. This will be done under a grant to NAFEO with a subgrant to the NCNW. These two organizations might also be asked to carry out a follow-up role on awarded grants under the set-aside.

The proposals resulting from HBCU collaboration will be reviewed according to the same proposal guidelines and funding criteria as

all other proposals. Ten grants (5 micro, 5 mini) will be reserved for award to HBCUs in the first funding year. Unless the solicitation, review and award procedures are changed, the process will be repeated for the second funding year with 12 grants (6 micro, 6 mini) reserved for HBCUs. The award of a maxi-grant under the set-aside will reduce the number of micro- and mini-awards in the second year to 2 micro-grants and 2 mini-grants.

ii. Private Sector Emphasis

The project places increased emphasis on the development of, and assistance to, the Egyptian private sector. A Principal Private Sector Criterion ensures adherence to this new emphasis which is in conformity with USAID's and GOE's strategies. This Criterion supercedes all the other funding criteria and makes the implementing agency, the FRCU, responsible for presenting to USAID evidence that proposals involving private sector end-users have been given priority over other proposals. This Criterion also requires USAID's written approval of any linkage grant to public sector or governmental end-user. The adequacy of this criterion in increasing private sector participation will be reviewed one year after the first grant award cycle and revised as needed.

iii. Women In Development

To increase women's participation in the project, the Project Grant Agreement will include a covenant requiring that in the aggregate, at least 20% percent of project researchers will be women.

2.0 Cost Estimates, Financial Plans and Methods of Implementation and Financing:

USAID Contribution

Table 1 depicts the source and application of all project resources, and the suggested methods of implementation and financing. The total project cost is estimated at \$ 24 million. The AID contribution is estimated at \$20 million. The GOE cash contribution is estimated at LE 3.2 million and the end-user contributions are estimated at LE 9.6 million.

The AID contribution will finance approximately 70 linkages which will include 144 PYs of research by Egyptian research teams; 323 PMs of short-term technical assistance (U.S. university research services) to assist with the various research activities; 8 Pys of long-term TA to assist with the maxi-linkages; 216 PMs of professional exchange visits and U.S. research endeavours in the subject matter of the research

undertaken; equipment and supplies; and evaluation and audits.

Table 2 gives the LOP Financial Plan. The detailed budgets which lead to the LOP Financial Plan are given in tables 1 through 9 of annex H.

GOE and End-User Contributions

The GOE, through the participating Egyptian universities, will make in-kind contributions in the form of research facilities, office space, utility expenses and other miscellaneous inputs to the research process. Although there is some difficulty in quantifying these contributions, they are quite significant and necessary for the success of the project. The cash contributions are equivalent to \$4 million i.e. 16 % of total project cost (@ LE 3.2/\$).

The GOE cash contribution will finance the administration of the project by the Foreign Relations Coordination Unit (FRCU). In addition, private and public-sector end-users will pay a total of LE 9.6 million in cost sharing over the LOP. This amount represents an increasing share in the local cost of linkages that goes up from 35% in the first year of project activities, to 60% in the last (N.B. this total cost-sharing figure is based on applying the increasing percentage requirement to all linkage grants). The cost sharing contribution by end-users will be made on a pari-pa. basis.

As in phase I, the source of the GOE cash contribution will be the third chapter (investments) of the GOE Budget "Bab 3". The FRCU is a unit in the SCU that was established in the late seventies to administer donor assistance to the university system. It does not have permanent employees or a permanent GOE line item in the first two chapters (although the project is included in Bab 3 of the Five Year Plan for 87-92). It is staffed on a needs basis from the SCU and the university system through delegations or secondments. GOE budget allocations to the FRCU are made through the SCU by increasing the SCU Bab 3 allocations in those years in which there are project activities requiring such funds. The FRCU is thus considered a service unit for the implementation of the donor projects. The ULP II does not attempt to institutionalize the FRCU itself but rather the applied research process linking universities and end-users for the solution of end-user problem. This GOE method for funding the FRCU during project years is thus compatible with the ULP II project approach. The FRCU will be required to report to USAID periodically on the allocation and expenditure of the GOE cash contributions.

Because of the difficulty in quantifying the in-kind contributions, it is not possible to determine precisely the percentage of total project cost covered by the host country contribution (less or greater than 25%). However, rough estimates of the in-kind contributions lead to the conclusion that total host country contributions are close to (and might exceed) 25% of total project cost. To obtain a more precise estimate of the monetary value of the in-kind contributions, all proposals will be required to indicate explicitly the expected in-kind contributions (e.g. square meters of laboratory space, office space, farm land, or electrical power utilized by project equipment and experiments). This information will be used ex post-facto to quantify the in-kind contributions after the establishment of mission-wide averages for the costs of typical inputs. The FRCU will be required to report to USAID periodically, on the delivery of both in-kind and cash contributions in a timely manner to enable proper project implementation.

Methods of Implementation and Financing

The methods of implementation and financing listed in Table 1 are all in accordance with the methods recommended in the Agency's payment verification guidance. Funds for the linkage grants will be disbursed by AID to the FRCU on a reimbursement basis. Advances for the dollar portions of linkage grants will be financed through PILs. Advances for the local currency portion of the linkage grants will be made from GOE resources held at the NIB in accordance with existing mechanisms under the "Protocol For Cash Advances" dated 9/30/90.

The method of implementation for the Locator/Facilitator Service will be a direct AID 8(a) contract. The method of financing will be direct payment.

AID will use a grant to NAFEO (with a subgrant to the NCNW) to assist with the HBCU set-aside. The method of financing will be direct payment. The SOW of the 8(a) contract will include the option of adding the services of a PSA if the results of the assessment indicate the need for this type of assistance.

As early as possible during the first year of project implementation, USAID will conduct an assessment of implementing agency's financial management and internal control systems, contracting capabilities, contract monitoring and invoice examination procedures. Assuming that the assessment is satisfactory, dollar procurements will be financed through FRCU letters of credit using the funds made available under the PILs which fund the linkage grants as in ULP/I. If weaknesses or vulnerabilities are disclosed by the assessment, they will be addressed through short-term technical assistance supplied under

the Locator/Facilitator Service contract. Sufficient funds are budgeted (under the contingency line item) for this purpose. If the weakness is in the area of commodity procurement, the services of a procurement service agent will be obtained under the direct AID 8(a) contract, to procure all U.S. source commodities.

Under Phase I, administrative procedures; implementation guidelines; and financial and administrative bylaws, acceptable to AID, were established as a prerequisite for funding grants under the project, and are available in HRDC/ET.

The PP design team analyzed the proposal review, award, and implementation procedures and found them adequate with some modifications. A summary of the modified procedures, administrative arrangements and staffing requirements of the FRCU are given in section 5.2 of the PP; and on pages 27-31 and Figures F-1 to F-5 of Annex (G).

Bases of Cost Estimates

Micro-Linkages

(a) Egyptian Research Services:

A micro-linkage supports the research efforts of a team of 3 senior faculty members (professors and associate professors), 3 mid-level and junior faculty members (assistant professors, graduate students, and research assistants) and one lab technician, for 10 hours a month for one year. Although members of the research teams will be working on projects for more time, the project will pay for only this fraction of time worked, in order to comply with the Presidential Decree limiting the payments received by university staff from foreign funded projects to 200% of their basic salaries. This gives a \$10,600 annual cost to the project for Egyptian Research Team (ERT) efforts under a micro-linkage as follows

$$\begin{aligned}
 &= \text{LE } 2 \times [3 \times 288 + 3 \times 158 + 1 \times 94] \times 12 \\
 &= \text{LE } 34,368 \qquad = \$10,414.55 \\
 &\qquad\qquad\qquad = \$10,400 \qquad\qquad\qquad (\text{using LE } 3.3 / \$1)
 \end{aligned}$$

Each micro will thus provide a level of effort = (7 persons) X (12 months) X 10/160 of a month
 = 5.25 person-months (PMs)

The 40 linkages to be funded by the project will thus provide a level of effort = 5.25 PMs x 40 micros
 = 210 PMs for all micros
 = 17.5 person-years (Pys)

(b) U.S. Short-Term Technical Assistance or Research Services (ST-TA)

This consists of the equivalent of one person-month (PM) of consulting services by one or more U.S. university-counterparts. Typically this would be delivered during two-week trips to Egypt at a daily rate of \$275.

Cost of US/ST-TA for each micro:

= 2 X 3,000	(air travel)
+ 26 x \$275	(consulting fees)
+ 30 x \$115	(per diem)
= \$16,600	

(c) Professional Exchanges/ U.S. Research Endeavours:

This consists of short research endeavours and professional exchange visits to be spent in U.S. counterpart university laboratories and research facilities or in other research institutes. Through this channel Egyptian researchers consult with their U.S. counterparts and pursue the joint research program in U.S. universities or research institutes. Each micro-linkage provides for one two-week research visit to the U.S. i.e., 0.5 person-month of research work in the U.S. The cost per micro of these research endeavours, assuming \$3000 for air travel and \$2000 for other costs including Per Diem and some laboratory fees is \$5,000.

(d) Equipment & Supplies and Other Miscellaneous Expenses:

A small amount of \$10,000 is provided under each micro for the procurement of small lab equipment needed to carry out the research plan of the micro-linkage. This line item could also be used to purchase needed supplies like chemicals and cover other miscellaneous research costs like computer time.

(e) Flexibility to Move Funds Between Line Items:

It is important to recognize that the research costs will vary greatly with problem area and topic. The cost allocations between line items presented under item (f) below are mainly illustrative. Proposals will be allowed to deviate from these allocations between line items and between the FX and LC parts

of each line item, provided that a reasonable balance be maintained between the portions of the budget going to the Egyptian and U.S. universities. This condition is made to ensure significant institutional participation by U.S. universities to guarantee the developmental and technology transfer benefits targeted by the project and obtained through the participation of the U.S. counterparts. Satisfaction of this condition for all projects will be a CP for continued funding. FRCU semi-annual reports will have to give evidence of adherence to this guideline.

(f) Summary Budget for a First-Year Micro (\$000)

	FX	LC	TL	LOE
(i) Egyptian Res. Serv.		10.4	10.4	5.25 PM
(ii) U.S. Res. Serv.	16.6		16.6	1 PM
(iii) U.S. Research Endeavours/Exchange Visits	5.0		5.0	.5 PM
(iv) Equip., Supplies and Miscellaneous Expenses	5.0	5.0	10.0	
Total	<u>26.6</u>	<u>14.4</u>	<u>42.0</u>	

The dollar costs of a micro funded under the second year grant cycle (a second-year micro) is budgeted at 5.3% more than the first year to account for inflation (this was the dollar inflation rate up to February 1991). The LE inflation rate used is 20% annually to account for inflation and LE devaluation). This gives a cost of \$44,600 for a second-year micro.

Mini-Linkages

Mini- linkages are expected to vary in duration from two to four years, with each grant providing similar total levels of ST-TA and Egyptian Research Team (ERT) efforts , but proportionate amounts of other inputs according to the grant's duration . These levels of ST-TA are estimated at (a) 4 PMS per year for 2-year minis; (b) 2.5 PMS per year for 3-year minis; and (c) 2 PMS per year, for 4-year minis. This gives totals of 8 PMS , 7.5 PMS and 8 PMS for minis with durations of one, two, and three years respectively. The ERT levels are 42 PMS per mini-linkage equivalent to (a) 21 PMS per year for 2-year minis; (b) 14 PMS per year for 3-year minis; and (c) 10.5 PMS per year, for 4-year minis. The average funding of a first-year mini is \$ 360,000.

Similarly to micros, minis provide for two-week research endeavors to U.S. counterpart universities, research institutes and relevant industrial sites. Each of the minis provide for 2

Pms per year (4 exchange visits) of short-term research endeavours in U.S. universities, giving a total of 4 PMS, 6 PMS, and 8 Pms for minis with durations of one, two, and three years, respectively.

Budgets for the three types of first-year minis and for an average first year mini are given in annex (H). A 5.3% U.S. dollar inflation rate and a 20% rate for combined LE inflation and devaluation yield average second- and third-year mini-linkage funding levels of approximately \$400,000 and \$450,000 respectively.

The same flexibility of moving funds between the line items of micro linkages applies also to mini-linkages with a similar condition requiring a balanced allocation of resources between Egyptian and U.S. universities. The amounts of \$40,000 ; \$60,000 ; and \$80,000 are allocated to lab equipment and supplies for the three varieties of first-year minis.

Maxi-Linkages

Maxi-linkages provide 21 PMS per year of ERT efforts, 4 PMS per year of ST-TA, 2.5 PMS per year of U.S. short-term research endeavours (5 U.S. exchange visits per year) , in addition to 1 PY of Long Term TA (LT-TA) per year for the first two years of the maxi . This gives the total of 8.8 PYS of ERT efforts, 20 PMS of ST-TA, 12.5 PMS of U.S. short-term research endeavours , and 2 PYS of LT-TA for each maxi over its five year duration. The same flexibility on reallocation of funds between line items applies to maxis, with a similar requirement for a balanced allocation of resources between Egyptian and U.S. universities.

Seed Grants, Locator/Facilitator Service, and FRCU Short-Term Technical Assistance

The cost of seed grants is estimated at \$1,100,000. This figure is based on the assumption that (a) 2 micro-seed-grants will be made for each micro-grant, 3 mini-seed-grants for each mini-grant , and 4 maxi-seed-grants for each maxi-grant; and (b) the cost of a micro-seed grant is \$3,500, the cost of a mini-seed grant is \$7,500, and the cost of a maxi-seed-grant is \$ 15,000. This service will be obtained (together with the short-term technical assistance to the FRCU) under a direct USAID contract with an 8(a) firm.

The Locator / Facilitator Service will cost \$ 260,000. This estimate is based on a daily consultant rate of \$ 275; an overhead rate of 100%; and on the assumption that the location service for an accepted micro-concept paper needs the equivalent

of 2 Person-Days (PDs) of the Locator's time, a mini-concept paper 3 PDs, and a maxi-concept paper 4 PDs.

Short-Term Technical Assistance will be supplied to the FRCU during the peak periods of proposal review. The assistance will concentrate on helping the FRCU in assessing the technical and scientific merit and cost reasonableness of the full-blown proposals and proposal adherence to project requirements. This assistance may be supplied by the same professors emeritus that are supplying the Locator/Service and the concept paper review service. Assistance will also be provided under the 8(a) contract for handling some of the U.S. support needed for the project (e.g., placing announcements and responding to queries about the project from U.S. universities).

Assuming delivery of this assistance in one-month trips to Egypt, the cost of 1 PM of this assistance is \$ 20,750. The U.S. part of this assistance costs \$ 14,300 per PM (assuming an overhead rate of 100%). The technical assistance to be delivered in Cairo will consist of 3 PMs in the first project year, 2 PMs in the second, and 1 PM in the third. Assistance in the U.S. in handling the activities taking place there like project advertisements and responding to U.S. university queries will amount to 2 PMs in the first project year, 1 PM in the second, and 1 PM in the third. The total cost of the short-term technical assistance to the FRCU is estimated at \$ 450,000.

Tables 10 and 11 of annex (H) give the details of the budget estimates for seed grants, the Locator/ Facilitator Service, and the short-term technical assistance to the FRCU.

Contingency

A contingency of 10% is included in the budget to cover unexpected cost-overruns and uncertainties in the estimation of the cost of the applied research activities as well as additional FRCU technical assistance in areas of weakness that might be revealed by the USAID assessment.

Tables 1-8 of annex (H) give: LOP budgets for all linkages combined; separate LOP budgets for maxis, minis, and micros; budgets for first and second year micros; budgets for first-, second-, and third-year minis; and budgets for first- and second-year maxis. The GOE and end-user cost sharing contributions are given as an increasing percentage of local currency costs rising from 35% of year one to 60% in year 6. As pointed out earlier these figures are based on the assumption that the cash cost sharing requirement will apply to all linkages under the project. The size of cash cost share will actually depend on the mix of grants approved and on the fraction of the approved grants that are subject to this requirement.

Table (1)
Summary Financial Plan

	USAID (\$000)		TL	GOE Cont. (LE 000)	End-User Cont. (LE 000)	TL Budget (\$000) (USAID, GOE & End-users)	Output	Suggested Methods of Implementation & Financing
	FX	LC						
<u>Type of Linkage:</u>								
<u>(a) Micro-linkages</u>								
40 linkages @ an average cost of \$40,000								
Egyptian Research Teams (research services)	-0-	200	200		640	500	17.5 PY	Reimbursement under PIL w/advance for \$ portion of grants and direct payment under PIL w/advance using the NIB Cash Advance Protocol for the LE portion of the grants. FRCU letter of credit for \$ procurements.
Short-Term TA (U.S. Res. services)	700	-0-	700			700	40 PM	
U.S. Research Endeavors	200	-0-	200			200	20 PM	
Equipment & Supplies	200	100	300		320	400		
<u>Sub-total</u>	<u>1,100</u>	<u>300</u>	<u>1,400</u>		<u>960</u>	<u>1,700</u>		
<u>(b) Mini-linkages</u>								
26 linkages @ an average cost of \$360,000								
Egyptian Research teams (Research services)	-0-	1,700	1,700		4,160	3,000	91 PY	Reimbursement under PIL w/advance for \$ portion of grant and direct payment under PIL w/advance under the NIB Cash Advance Protocol for the LE portion of the grants. FRCU letter of credit for \$ procurements.
Short-Term TA (U.S. Res. services)	3,700	-0-	3,700			3,700	203 PM	
U.S. Research Endeavors	1,700	-0-	1,700			1,700	156 PM	
Equip. & Supplies	800	500	1,300		1,280	1,700		
<u>Sub-total</u>	<u>6,200</u>	<u>2,200</u>	<u>8,400</u>		<u>5,440</u>	<u>10,100</u>		

Average ceilings for linkages (i.e., \$40,000; 360,000; and 1,600,000 for micros, minis, and maxis respectively) are for the first year of project. These have been properly adjusted for \$ and LE annual inflation for successive years of the same linkage and for linkages started in following years of project. N.B.: Summary budget is based on the detailed budgets given in Annex (H). Figures have been rounded for convenience.

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Table 1 (cont'd)
Summary Financial Plan

	USAID (\$000)		TL	GOE CONT. (LE 000)	End-User Cont. (LE 000)	TL Budget (\$000) (USAID, GOE & End-users)	Output	Suggested Methods of Implementation & Financing
	FX	LC						
(c) Maxi-linkages								
4 Maxis @ an average cost of \$1,600,000								
Egyptian Research teams (Research services)	-0-	700	700		2,240	1,400	35 PY	Reimbursement under PIL w/advance for \$ portion of grant and direct payment under PIL w/advance using the NIB Cash Advance Protocol for the LE portion of the grants. FRCU letter of credit for \$ procurements.
Short-Term TA (U.S. Res. services)	1,500	-0-	1,500			1,500	80 PM	
U.S. Research Endeavors	600	-0-	600			600	40 PM	
Long-Term TA	1,700	-0-	1,700			1,700		
Equip. & supplies	800	400	1,200		960	1,500		
<u>Sub-total</u>	<u>4,600</u>	<u>1,100</u>	<u>5,700</u>		<u>3,200</u>	<u>6,700</u>		
<u>Total for All Linkages</u>	<u>11,900</u>	<u>3,600</u>	<u>15,500</u>		<u>9,600</u>	<u>18,500</u>		
FRCU Administration				3,200		1,000		
Seed Grants	550	550	1,100			1,100		
Locator/Facilitator & FRCU ST-TA	450	-0-	450			450		Direct payment under AID direct 8(a) contract.
Buy-In into central UDLP	150	150	300			300		
Evaluations	100	50	150			150		Direct payment under PSC or IQC.
Information Dissemination/								
Workshops & Seminars	90	70	160			160		PIL
Assessments & Audits	120	120	240			240		
Contingencies	1,550	550	2,100			2,100		
<u>Total</u>	<u>14,910</u>	<u>5,090</u>	<u>20,000</u>	<u>3,200</u>	<u>9,600</u>	<u>24,000</u>		

Average ceilings for linkages (i.e., \$42,000; 362,000; and 1,578,000 for micros, minis, and maxis respectively) are for the first year of project. These have been properly adjusted for \$ and LE annual inflation for successive years of the same linkage and for linkages started in following years of project. N.B.: Summary budget is based on the detailed budgets given in Annex (H). Figures have been rounded for convenience.

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LOP BUDGET FOR ULP/II (\$000)

	YR 1		YR 2		YR 3		YR 4		YR 5		YR 6		FX	LC	TOTAL
	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC			
TOTAL BUDGET FOR LINKAGES	2,500	1,200	4,000	2,000	2,700	1,500	1,500	1,000	900	600	300	300	11,900	6,600	18,500
USAID CONTRIBUTION TO LINKAGES	2,500	700	4,000	1,200	2,700	800	1,500	500	900	300	300	100	11,900	3,600	15,500
GOE & END-USER MATCH FUNDING		500		800		700		500		300		200	0	3,000	3,000
SEED GRANTS	250	250	250	250	50	50							550	550	1,100
LOCATOR/FACILITATOR SERVICE & FRCU ST-TA	200		200		50								450	0	450
INF. DISSEMINATION (SEMINARS, WOKSHOPS, and ADVERTISEMENTS)	40	20	10	10	10	10	10	10	10	10	10	10	90	70	160
UDLP BUY-IN	150	150											150	150	300
EVALUATIONS					40	20			60	30			100	50	150
FRCU ADMINISTRATION (GOE)		200		200		200		200		100		100	0	1,000	1,000
ASSESSMENTS & AUDITS			30	30			40	40			50	50	120	120	240
CONTINGENCY	400	100	500	200	300	100	200	100	100	50	50		1,550	550	2,100
PROJECT TOTAL	3,540	1,920	4,990	2,690	3,150	1,880	1,750	1,350	1,070	790	410	460	14,910	9,090	24,000
USAID CONTRIBUTION	3,540	1,220	4,990	1,690	3,150	980	1,750	650	1,070	390	410	160	14,910	5,090	20,000
GOE & END-USER CONTRIBUTIONS	0	700	0	1,000	0	900	0	700	0	400	0	300	0	4,000	4,000

* This LOP BUDGET is based on Table 13 of Annex (H). All figures have been rounded.

3.0 IMPLEMENTATION PLAN

USAID will conduct an internal review of project progress at the end of the second year of the project. Assuming PP approval in May 1991, an internal review of project progress will be initiated not later than March 1993.

The scope of the review will not include an assessment of the technical or economic results or impacts of the applied research activities funded under the project, but will focus on the research process including the extent of end-user participation; success in increasing private-sector participation and in addressing problems significant to the growth and development of the private sector; increase in women's participation in the project; the utilization of the HBCU set-aside; and extent of participation of U.S. counterparts and the effect of this participation on the quality of proposals and grant work.

The review will also identify the causes of lack of progress on any of the above and recommend steps for resolving any problems, or changing design assumptions and grant guidelines.

It is anticipated that a positive review would result in a recommendation to amend the project authorization to allow additional obligations of grant funds. The review will preferably be concluded by May of 1993, to allow the FRCU grant award process to reflect the amended authorization in its third grant-award cycle. Changes in the scheduling of this review and the possible resulting authorization amendment might necessitate a PACD extension.

3.1 Administrative Arrangements

1. Government of the Arab Republic of Egypt (GOE). The Ministry of International Cooperation will represent the GOE as the Grantee.

2. Implementing Agency. The Foreign Relations Coordination Unit (FRCU) of the Supreme Council of Universities (SCU), will be the implementing agency.

3.2 Project Management

A. Foreign Relations Coordination Unit. Clearly, the Egyptian and American researchers, departments or faculties from the participating universities are the implementing agents or agencies for this project. The FRCU, however, will manage the grant development process and relationships between the two sets of universities. The FRCU is lodged within the Supreme Council of Universities and was created under ULP I to administer AID-financed grants.

The FRCU will continue using the same administrative procedures developed under ULP/I, with some modifications aimed at simplifying the review/award grant process. The Impact Assessment and the PP design team concluded that the review, award and monitoring processes were sound. USAID's approval of the modified procedures will be a condition precedent to linkage funding.

The FRCU's responsibilities are described in detail throughout the description of the research process and how the project works. They are summarized here as follows:

- a) Market university research capabilities to potential end-users and seek end-user involvement in the research process and grant funding;
- b) Announce, solicit and collect research proposals having special characteristics (funding criteria and guidelines) which address designated problem areas;
- c) Conduct development, technical and fiscal reviews and evaluations of proposals;
- d) Approve selected research submissions and fund seed grants or final grants as appropriate;
- e) Assist in the identification of capable, interested U.S. universities to collaborate in research design and grant execution;
- f) Procure equipment and arrange U.S. short-term professional exchange visits and research endeavours as requested by individual grants;
- g) Maintain accurate and accessible records of all proposal/grant actions and their current status;
- h) Make periodic grant performance reviews and take corrective actions as needed;
- i) Monitor and evaluate overall grant management performance providing progress and financial reports as required;
- j) Disseminate research results and encourage their further utilization;
- k) Conduct an assessment of the impact made by the research grants and of the benefits derived from Egyptian and U.S. collaboration;
- l) Support external evaluations and assessments;

m) Manage the grants system in accordance with project requirements, e.g., observe the timely satisfaction of CP's and Covenants, monitor the HBCU set aside, and ensure that overall grant awards do not jeopardize this requirement. It will also ensure the accomplishment of the increased emphasis on private sector related to research; including the application of the private sector principal criterion.

n) Ensure adherence to the WID requirements set forth in the Social Soundness Analysis, Section 5.4.

o) Establish and maintain a data base, desegregated by gender, on ongoing and new research activities and on participants to enable the assessment of project impact on all parties, especially the university research community.

B. USAID Management

Project Management will be the responsibility of the Office of Education and Training (HRDC/ET). An HRDC/ET Project Officer, supported by the project committee, will be responsible for coordinating all the USAID actions necessary to carry out project implementation.

The project officer will be responsible for advising the GOE on AID regulations. Generally this will be done through Project Implementation Letters (PIL) providing detailed guidance on such matters as the satisfaction of conditions precedent, purchasing procedures, source and origin rules, disbursement procedures, reporting requirements, the bases for reviewing proposals especially for reasonableness of costs, WID and private sector requirements, implementation of grants under the HBCU set-aside, etc. The project officer will also document USAID approvals through PILs. USAID approvals required during the life of the project will include: (1) the form of grant announcements to be advertised in the U.S. and Egypt; (2) the guidelines and format for concept papers and expanded proposals; (3) the standard grant agreement between Egyptian and U.S. principal investigators and the end-user; (4) the grant awards to public sector or governmental end-users; (5) environmental clearance decision for any grant which exceeds \$50,000; (6) the composition of committees involved in the research process; and (7) reporting requirements.

USAID will review the FRCU approval/rejection process to ensure as wide a distribution as possible of the grants to universities and end-users. USAID will monitor the adherence to WID and Private Sector requirements and criteria. USAID will also continuously review approved proposals and progress reports to ensure that they are targeted for developmental significance.

Finally, it will also play a proactive role in linking HBCU's and Egyptian universities.

HRDC/ET has successfully implemented predecessor projects over the last 10 years. The office has the capability to carry out ULP/II management responsibilities as well as the monitoring functions described under Monitoring and Evaluation Arrangements. No additional staff will be required.

3.3 Procurement Plan

Commodity procurements under this project will be mainly for scientific and laboratory equipment, and supplies needed to fulfill the research goals of the specific grant and/or to build the research capacity of the Egyptian research team/department in that area of research. It is estimated that \$ 1.8 million will be used for dollar commodity procurement and the equivalent of \$ 1.0 million for LC commodity procurement.

A host country contracting capability assessment will be conducted early in the project. If the FRCU's capability is found to be adequate, it will handle U.S. dollar and large Egyptian pound procurements for the linkage grants (i.e. larger than \$500), using the procurement procedures established under ULP/I (detailed in the Financial and Administrative Bylaws of the FRCU and The Policies, Procedures and Guidelines Manual of the ULP/I) and modified as required by the recent "Buy America" guidance. Assistance from U.S. counterparts to obtain quotes and or prepare specifications for equipment will be solicited for U.S. dollar procurements if needed.

The FRCU has been responsible for procuring commodities for the whole university system over the past 11 years both under the ULP/I and for the university set-aside of successive CIP grants. The FRCU has gained the necessary experience for handling project procurement. Small local currency procurement (i.e. less than the equivalent of \$500) will be handled by grant PI's. Grantees will be reimbursed for costs on a monthly basis, subject to certification by the principal investigator that grant progress is on schedule, as verified by the grant monitor (as described in section 4.1 B below).

The Project Authorization provides for local source procurement of up to \$1 million for research and laboratory equipment and supplies. Under A.I.D.'s new "Buy America" policy, local source procurement for new projects generally must be justified under one or more of the waiver criteria in Section 5B4a of Handbook 1B. Under State 410442 (December 5, 1990), however, several categories of local source procurement are excluded from this

requirement and, therefore, may be authorized without justification. One of the excluded categories is transactions below \$5,000 each. As indicated below, most local source procurement is under \$5,000 per transaction. Therefore, no waivers are necessary at this time. In the event that a transaction of \$5,000 or more should become necessary, and the procurement does not fall within one or more of the other categories of procurement excluded from the Buy America policy, a waiver will be prepared in accordance with that policy.

The amounts allocated for local procurements under the various types of linkages are small and supply a modest source for covering necessary equipment, materials and supplies that are necessary for the implementation of the grant. The USAID funds provided for local procurement lead to expected value per transaction less than \$5,000: USAID's contribution to a micro-linkage provides for \$3,400 of local source procurement per grant (\$ 137,000 / 40 micros), and therefore will automatically satisfy the \$5,000 per transaction limit. The USAID contribution to a mini-linkage funds up to approximately \$7,000 per year of local source procurement (\$1,312,800 / 62 minis/ av.duration of 3 years per mini) . This covers all needed lab. equipment and materials and supplies. These needs are most likely to come under several transactions leading to an average value per transaction less than \$5,000. Similarly, the USAID input into a maxi-linkage, funds up to \$ 20,000 per year of local procurement. This amount covers the equipment and supplies needs of an extensive research activity and is likely to be procured using several small transactions of value less than \$5,000. The assumption that the bulk of local procurements are of value less than \$5,000 per transaction is thus justified.

An 8(a) firm will assist with placing project announcements in the U.S. and responding to information requests from interested U.S. universities. The same firm will be responsible for recruiting and coordinating the Locator/Facilitator consultants who will also review concept papers to assess their technical and scientific merits and the feasibility of the proposed workplans, and providing short-term technical assistance to the FRCU in reviewing full-blown proposals for adherence to project requirements and technical and cost reasonableness and feasibility. These Locator/Facilitator services will be supplied by NAFEO and the NCNW for grants to HBCUs under the set-aside. This will be through a grant to NAFEO with a subgrant from NAFEO to the NCNW.

3.4 U.S. Research Endeavours & Exchange Visits.

The benefits that will accrue from the professional exchange visits, consultations with counterparts, and short-term research endeavours that Egyptian academics will spend in the U.S.

institutions of higher learning are important aspects of the project. This component is one of the main channels through which U.S. universities will contribute to Egyptian development efforts.

These research endeavours will focus primarily on topics and techniques which are specific to the problem being addressed by the linkage grant. These research missions will allow Egyptian faculty members to do applied research using state-of-the-art scientific and technological techniques and thus contribute significantly to the technology transfer role of the project. The exchanges will also help in broadening and strengthening the internal-linkage between the two universities and increase the likelihood of sustaining it after the completion of the grant, since it provides for an additional aspect of the professional relation that transcends the limited problem solving association. It is thus expected to contribute to the problem solving effort as well as improve the general professional quality of the Egyptian faculty members. It is also likely to positively affect university curricula as a result of the exposition of Egyptian faculty to modern curricula and trends in teaching their areas of specialization and the replication of what fits Egyptian institutions.

Some of the needed research endeavours will be known before the award of the grant and will be included in the proposal. The bulk of such research missions will be identified during the linkage implementation. The U.S. counterpart university will be responsible for arranging these research missions. For U.S. professional exchange visits that are identified after grant award, the approval of the Executive Director of the FRCU will be required. U.S. travel that was identified at the grant proposal stage will not require further approvals.

3.5 Implementation Schedule

The schedule of activities holds for most grant related processes. Some of the grants will result from linkage relations that have been developed under phase I and will therefore occur earlier than the time dictated by the schedule below. Such 'accelerated grants' skip some of the steps that apply to the completely new linkages. For example they will not need to pass through the Locator/Facilitator services and their full proposal development efforts will be much shorter than for other proposals. Most of the grants to be awarded in the very early stages of the project will fall within this category.

<u>Action Project</u>	<u>Event</u>	<u>Responsible Party</u>	<u>Month</u>
1.	Project Paper Approval	USAID	-3
2.	Congressional Notification	USAID	-3
3.	Draft ProAg Submitted to MOHE	USAID	-2
4.	ProAg Signed	USAID/MOHE	0
5.	PIL/Initial CP's/FRCU Capability Assessment	USAID	+1
6.	Start of PC & CAC meetings	FRCU	+2
7.	Initial CP's met	USAID/CAC	+2
8.	PIL/approval Grant Announcement	USAID	+3
9.	SOW, U.S. Counterpart Location	USAID/FRCU	+3.5
10.	FRCU First Quarterly Report to USAID	FRCU	+3
11.	Contract with Counterpart Locators	USAID	+5
12.	Grant to NAFEO / subgrant to NCNW	USAID, NAFEO & NCNW	+5
13.	PIL for First Annual Funding	USAID	+5
14.	First Grant Announcement	FRCU	+5
15.	FRCU First Semi-Annual Report to USAID	FRCU	+6
16.	Baseline Data Format Established	FRCU	+7
17.	Continuous Grant Cycle in Operation*	FRCU	+8
18.	FRCU Quarterly Report to USAID	FRCU	+9
19.	Request Locator Response	FRCU	+10
20.	Award Micro Seed Grants	FRCU	+11
21.	Award Micro Seed Grants to HBCU's	FRCU	+11
22.	FRCU Annual Report/Second Yr. Operating Plan/Budget	FRCU	+12
23.	Request Locator Response	FRCU	+12
24.	Award Mini Seed Grants	FRCU	+13
25.	Award Mini Seed Grants to HBCU's	FRCU	+13
26.	PIL Second Annual Funding (Amendments)	USAID	+13
27.	Request Locator Response	FRCU	+14
28.	Award Maxi Seed Grants	FRCU	+15
29.	FRCU Quarterly Report to USAID	FRCU	+15
30.	Micro- Linkage Awards	FRCU	+16
31.	Second Annual Grants Announcement	FRCU	+17
32.	FRCU Second Semi-Annual Report to USAID	FRCU	+18
33.	Mission Internal Review for amending Project Authorization.	USAID	+19
34.	Mini- and Maxi- Linkage Awards	FRCU	+21
35.	FRCU Quarterly Report	FRCU	+21
36.	Request Locator Response	FRCU	+21
37.	Award Micro Seed Grants	FRCU	+22

Varying and continuing activities with different time frames for concept papers, proposals, review process, and linkage awards for micro-, mini-, and maxi- grants, difficult to schedule. See Figure F.2 of annex (g).

38.	Request Locator Response	FRCU	+23
39.	Award Mini Seed Grants	FRCU	+24
40.	FRCU Annual Report/Third Yr. Operating Plan/Budget	FRCU	+24
41.	PIL Third Annual Funding/Amendments	USAID	+25
42.	Request Locator Response	FRCU	+26
43.	Award Maxi Seed Grants	FRCU	+27
44.	Micro- Linkage Awards	FRCU	+27
45.	FRCU Quarterly Report to USAID	FRCU	+27
46.	Third Annual Grants Announcement	FRCU	+29
47.	Mini- Linkage Awards	FRCU	+29
48.	FRCU Semi-Annual Report to USAID	FRCU	+30
49.	Request Locator Response	FRCU	+30
50.	Award Mini Seed Grants	FRCU	+31
51.	Maxi- Linkage Awards	FRCU	+33
52.	FRCU Quarterly Report to USAID	FRCU	+33
53.	Mini- Linkage Awards	FRCU	+34
54.	FRCU Annual Report Fourth Yr. Operating Plan	FRCU	+36
55.	First External Evaluation	USAID	+36
56.	FRCU Quarterly Report to USAID	FRCU	+39
57.	FRCU Semi-Annual Report to USAID	FRCU	+42
58.	FRCU Quarterly Report to USAID	FRCU	+45
59.	FRCU Annual Report/Fifth Yr. Operating Plan	FRCU	+48
60.	FRCU Semi-Annual Report to USAID	FRCU	+52
61.	FRCU Annual Report/Sixth Yr. Operating Plan	FRCU	+58
62.	FRCU Final Report	FRCU	+72
63.	Second External Evaluation	USAID	+72
64.	PACD		+72
65.	TDD		+81

4.0 Monitoring ,Evaluation Arrangements, and Audits

4.1 Monitoring

A. USAID

The HRDC/ET Project Officer, supported by the USAID Project Committee, will be responsible for project monitoring as well as coordinating the USAID approval process. In addition to routine tasks such as monitoring the satisfaction of conditions precedent, compliance with covenants, status of disbursements, allocation and delivery of GOE and end-user contributions etc., the Project Officer will monitor the FRCU's adherence to the following:

- provisions, e.g., increased private sector involvement, cost sharing, increased participation by women, and HBCU set-aside;
- procedures including widespread announcements about project opportunities and will review proposal approval and rejection decisions;
- proper reporting at the project and individual linkage levels;
- adequate and continual involvement of US counterparts in a manner consistent with the establishment of a long term linkage.

The USAID mechanisms for project monitoring will include: (1) the annual preparation and review of project implementation and financial plans; (2) the annual portfolio review; and (3) FRCU quarterly progress reports and the various semi-annual and annual grant progress reports.

The 8(a) contract under which the Locator /Facilitator Service and the FRCU short term TA will be provided, will be audited once over its expected duration of three years. The FRCU will be financially assessed in the third year of the project.

B. GOE Monitoring, Internal Reviews and Audits

A priority committee member or a member of the peer review group will be assigned to monitor each grant on at least a monthly basis to review grant progress, results, adherence to work schedules, and to suggest workplan modifications where necessary to achieve project objectives. The grant monitor will meet monthly with the project end-user and the Egyptian project PI. The results of the monthly reviews will be reported to the priority committee and the FRCU. Grantees will be reimbursed for costs on a monthly basis, subject to certification by the principal investigator that project progress is on schedule.

Two technical progress reports will be required annually for each linkage: an interim semi-annual report and a comprehensive annual report. These reports will conform to detailed report guidelines provided by the FRCU, and, as a minimum, will include the extent of compliance with project implementation plans; extent of end-user and U.S. counterpart involvement; extent to which research results have been used or will be used by the end-user; problems encountered and corrective action as agreed with the grant monitor. The annual report will include completion and/or revision of an experience/skills form for each researcher involved in the grant, so as to update the FRCU capability data base. Continued funding of a mini- or maxi-research grant will

be contingent upon a satisfactory annual technical review. Continued funding of a micro-grant will be contingent on a satisfactory technical review at the end of 6 months.

The FRCU will summarize the information collected from its monthly monitoring activities in semi-annual project progress reports to USAID. These progress reports will focus on: research impact on local, regional, or national development problems; interaction between Egyptian and U.S. universities and end-users; allocation and utilization of GOE cash and in-kind contributions; contributions of end-users to grant activities; effectiveness of grant linkages; contributions of seminars, short courses, and continuing education toward developing effective relationships with potential end-users; implementation of research results; unsolved problems, operational procedures, constraints and issues; effectiveness of FRCU in proposal solicitation, screening, grant monitoring, support services, and coordination among grant activities; and future planning and direction. The FRCU will identify researchers, graduate students and provide an assessment of the success ratio of women researchers in obtaining grants and in participating in wider research teams in which they are not principal investigators. The FRCU will also advise USAID about the number of proposals reviewed, the number accepted, and the reasons for proposal rejection.

The FRCU will conduct annual internal reviews to assess project and grant progress, as a basis for annual work plans and budgets, and subsequent funding requests to the USAID. These annual internal reviews will update and consolidate information obtained from semi-annual internal project reviews. The annual internal evaluations will include an analysis of increased Egyptian university applied research capability and compliance with baseline data inputs.

The FRCU will contract with a local accounting firm acceptable to USAID to conduct periodic audits of a significant sample of linkage grants. This sample has to include at least all maxis, a quarter of the minis (six), and 3 micros annually. These audits will check on the adherence of linkage grants to grant guidelines and USAID regulations and procedures. The FRCU will include a summary of findings and recommendations of these grant audits in its periodic reports to USAID, as well as actions to resolve any problems identified by such audits.

C. Baseline Data

The FRCU is currently preparing a baseline survey of Egyptian faculty which will be completed during FY 91. However, information to date indicates that the baseline survey is based on personal data, publications, travel abroad, and promotions. This baseline survey will be expanded to include the extent of linkage with end-users and with U.S. universities, the extent of

multi-disciplinary and multi-institutional cooperation, and other outreach activities, e.g., consulting. The FRCU will make it obligatory for researchers to complete a standard form, which will include the data above, when submitting a proposal to be considered for ULP/II support. Completion of such a form will be an annual requirement. Progress on this baseline data development should be reported to USAID during the FRCU annual reporting cycle.

As a partial indicator of applied research capacity in the Egyptian university system, it is noted that 1,476 professors, 538 graduate students, and 393 consultants (for a total of 2407) have been involved in 463 ULP/I projects. (See annex g). Of the graduate students, 350 have completed the requirements for MS or PhD degree. A considerable portion of these graduate students are employed in the productive sector, and bring industrial problems for research topics. Seven HBCU's are currently linked with Egyptian universities through 11 mini-grants.

Twenty nine women principal investigators have been identified from the project files (only 1 woman PI was involved in ULP/I in 1981). During the ULP II FRCU will be required to desegregate all data by gender.

4.2 External evaluations

Major external evaluations will be conducted in FY 93 and FY 96 by U.S. and Egyptian consultants to assess progress toward project objectives. Skill requirements will be in areas of applied research, R&D management and administration, economic analysis and human resource development.

The first evaluation will determine if the University Linkages Project II (ULP/II) is progressing as intended, and whether fundamental changes in organizational structure, operational procedures, or implementation guidelines are required.

Using baseline data, researcher interviews, and selected grant reports as reference points, both evaluation teams will assess the following :

- effectiveness of Egyptian -US-end-user linkages in solving techno-economic and socio-economic development problems.
- extent of end-user cost sharing.
- extent of implementation of project results to solve end-user problems especially those of the private sector.
- repeat linkages with the private sector.

-extent to which a multi-disciplinary approach to problem solving has been used.

-assessment of U.S. counterpart contributions for the short-term and on a possible sustainable basis.

-influence of seminars and short courses on creating linkages with end-user.

-estimate of effectiveness of university FRCU liaison/outreach and marketing activities in creating linkages with end-users.

-contribution of HBCU's to capacity building and problem solving.

-increased capacity of regional universities to solve regional problems.

-extent of industry workers involved in graduate research conducted with ULP/II and participation of industry professionals in linked projects.

-analysis of women's participation as researchers (e.g., PI's,).

5.0 Summaries of Analyses

5.1 Technical Analysis Summary

Internal and External Linkages

End-users need technological assistance to solve their developmental problems. They do not have sufficient resources to do the job efficiently themselves. End-users are institutions in the public and private sectors such as Ministries or factories. Development problems are complicated and demand advanced technological assistance. Egyptian universities have some technological expertise in some areas to help end-users address these problems. But this expertise is limited, and needs assistance from foreign universities to be effective. US universities have sufficient expertise in these areas, and can assist Egyptian universities to be more effective with end-users to assist them in solving their problems. The problem is to identify the "most viable means" for US universities to offer this type of assistance.

The technical analysis examines three ways for US universities to

assist the end-user through university linkages: a direct, on-going relationship with an Egyptian university (internal linkage) through "Centers of Excellence"; a research activity-specific relationship; and a direct relationship with an end-user. It also examines the alternative of Egyptian universities working directly and solely with the end-user. The analysis concludes that the "Centers of Excellence" approach is not a desirable alternative because without defined and sustained contact with end-users, such an internal linkage is not likely to address end-user problems in a cost-effective way. Nor is it likely to target research in a problem-solving and applied manner and would probably perpetuate theoretical research without application to development problems. A direct US university relationship with end-users is not a desirable alternative because it would not address the need to assist Egyptian universities in working collaboratively with end-users. Moreover, there would be no capacity building effort in Egyptian universities to strengthen their applied research efforts. While the linkages between Egyptian universities and the end-users are the most direct way to address end-user needs, this approach lacks the added expertise to solve the problems which would be supplied if US universities participated in the problem solving effort.

The technical analysis concludes that each of the above alternatives -- as individual means to address end-user needs -- is less favorable than the combination of internal linkages to support external linkages for end-user problem solving. A three-way linkage between the end-user and the Egyptian university on the one hand, supported by assistance from the US university to the Egyptian university on the other, has the following distinct advantages:

- it builds applied research capacity for solving development problems;
- it is targeted to end-users;
- it has the potential for establishing early on a close and collaborative relationship between all three partners;
- it has the potential for establishing a sustained relationship between the Egyptian and US universities; and between Egyptian universities and end-users.

Demand for Applied Research

Based on the experience gained from the first phase it is expected that there is sufficient end-user demand for applied research. To confirm this expectation the PP design team met with various end-users from the various sectors e.g., industry and agriculture. Since the private sector emphasis is a new feature of the second phase, the PP team also met with several

groups that are considered to have a broad knowledge of private-sector: its end-users, and the typical problems facing them. These included IESC, the ABA, USIPO, and a group of end-users from the Tenth of Ramadan City. Although there was no quantification to the analysis of demand for research by the team, the conclusion of their discussions and analysis is that there is sufficient demand within the private sector for the type of applied research to be conducted under the project.

Because of the lack of a more concrete estimation of the private sector demand for applied research, the funding level for the project was dropped from \$ 35 million to \$ 20 million, with the understanding that if project implementation during the first three years demonstrates the presence of sufficient private sector demand, the project authorization may be amended to allow the additional obligation of funds to respond to that demand for applied research.

Institutional Sustainability

The Technical Analysis indicates that current conditions in the Egyptian university and end-user communities are such that ULP II has the potential to produce sustainable university linkages (N.B. It should be noted that sustainability here is not equivalent to financial viability, where evidence indicates that even the most successful university linkages continue to depend to a decreasing degree on outside financial support. Sustainability here refers mainly to the ability of the participants of the linkage to maintain a broad relation beneficial to the host country university and the end-users beyond the expiration of the narrow problem solving grant under this project). An analysis of AID impact and project evaluations reveals six factors which contribute significantly to sustainable university linkages in third world countries: government support, long-term assistance, autonomy, entrepreneurial approach, quality performance and demand-driven awareness. These factors are emerging as they relate to university-community relations in Egypt. ULP II is designed to build upon these factors. Hence, sustainable linkages between Egyptian and American universities, and between Egyptian universities and the end-user community are feasible.

Sustainability here refers to the ability of an institution or linkage to continue to operate for a long period on its own with **decreasing** assistance from outside sources. "Decreasing" as opposed to "no" assistance is preferred because it is realistic. Few, if any linkage activities, (one might even say development projects) continue to operate on their own resources without some assistance, be it from the government, an interested constituency or a foreign donor. So, sustainability refers to "more or less" rather than a discrete category.

In terms of ULP II, sustainability refers to the capacity of a linkage between an American and an Egyptian university (internal linkage) and between the Egyptian and end-user community (external linkage) to persist throughout the life of the project, and possibly after the project. It also means that this linkage contributes during this period to the capacity of the Egyptian university to meet end-user needs, though not necessarily one end-user only.

Research Problem Areas

The technical analysis addresses the question of whether the establishment of a more specific set of eligible research topics (than the three broad problem areas) would be beneficial or restrictive to the identification of significant research areas and problems. The proposed project adopts a flexible approach of accepting proposals within broadly defined priority problem areas and judging each proposal on its own merits rather than by whether it falls within a predetermined topic list. It is believed that this approach will guarantee a more dynamic response to end-user needs throughout the LOP at a time in which Egypt is undergoing fast economic change that can result in new significant applied research requirements that have not been contemplated in early project design. **The technical analysis supports this rationale for the following reasons:**

Following consultation with universities and public and private sector entities, it was concluded that **specific problems under the two broad problem areas described in the PP are in no way intended to be other than illustrative.** These problem areas are deliberately broad in scope so that application of creative thinking about specific problems will not be constrained, and to provide flexibility in proposal preparation that could be impeded by a more specific set of eligible research topics. It is intended that research conducted in these areas will be multi-disciplinary, including economic and social impact in addition to technological considerations.

5.2 Summary Administrative Analysis

Management Structure

The implementing agency for this project is the Foreign Relations Coordination Unit (FRCU) which is lodged within the Supreme Council of Universities (SCU). As the overall managing agency for public Egyptian universities, the SCU is the logical agency through which foreign donors deal with these universities. The SCU is the highest authority regarding these universities and sets educational and administrative policies for them. It also manages and approves general curricular activities and development. It sets and executes promotion of university

professors. The FRCU and the SCU are portrayed in Figure 3 of annex (g).

The FRCU is a relatively autonomous unit within the SCU. It reports directly to the Secretary General of the SCU, and to the Minister of Higher Education (head of Supreme Council) through the Secretary General. Under ULP II the FRCU will have more autonomy and management authority than it did under ULP I. For example, under ULP II full approval authority for micro- and mini-grants will be given to the FRCU only, whereas this was not the case under ULP I. In addition, the financial and administrative by-laws that control the FRCU will give more authority to the FRCU so that it will not have to gain approval from a higher authority on such matters as travel. This evolved naturally through the development of ULP I.

Two important components within the FRCU are the Research Priority Policy Committee (Priority Committee) and the Consulting and Advisory Committee (CAC). The Priority Committees (PC) set research priorities and review concept papers, proposals and progress reports. There are ten Priority Committees: agriculture and food production, energy, industry, health, infrastructure, land development, human resources development, environmental studies, economic policies, and applied science. They also make funding decisions for the approved grants. The PC's make recommendations on proposal approval and continuation of funding to the executive director of the FRCU in the case of micros, and to the CAC in the case of mini- and maxi- grants. The CAC makes funding recommendations to the Secretary General who can give final approval for mini-grants, but refers maxi- grants to the Minister for final approval. Each committee consists of university professors, Ministry personnel, and private and public end-user representatives. The Executive Director of the FRCU sits on each of the PC's.

The CAC reviews cross-sectoral proposals and reviews the mini- and maxi proposals before these are approved by the SCU secretary general or by the Minister, respectively. Under ULP II the CAC with assistance from the FRCU executive director will monitor project set asides (HBCU), project conditions (cost sharing) and related conditions or problems that crosscut all grants. This is to support and facilitate the liaison efforts between the universities and the end-users that are beginning at this time.

Foreign Relations Coordination Unit (FRCU)

The FRCU, the proposed implementing agency, was established within the Supreme Council of Universities in 1980. The unit received technical assistance, training and commodity support from AID during its formation and has provided grant management and administrative services for ULP I. The 1989 impact assessment concluded that the basic FRCU structure is sound and

that distancing grant decisions from university authority per se led to a laudable peer review process for grant awards.

The organization chart for the FRCU is shown in Figure 4 of annex (g).

The organizational structure of the FRCU is consistent with the activities to be carried out under ULP II. The unit is not now fully staffed given the present level of management and administrative activities required to support ongoing extensions to ULP I. It is anticipated that (similar to what has happened under phase I) sufficient staff will be added to the FRCU to accommodate expected cyclical workload peaks during the initial three project years. As under phase I, such staff is, in most cases, delegated or seconded from the SCU and the university system to the FRCU. The GOE will provide the necessary funds to enable adequate staffing of the FRCU throughout the LOP.

The FRCU has agreed to recommendations made by USAID and the Impact Assessment to improve the administrative efficiency of ULP II. These include:

- the elimination of grant approval by the relevant government ministry which is problematic as representatives of appropriate ministries are members of Priority Committees.
- Changing grant reporting from a quarterly to a semiannual cycle;
- Broadening the membership of the grant review committees to further an interdisciplinary grant review approach;
- To administer seed grant activities to assist improved research design and increased interaction with US counterparts;

Management Activities, Responsibilities and Staff Requirements

Each grant management function summarized under the implementation plan will be accomplished through a set of activities carried out by the management organization staff. The relationship between functions, activities, organizational responsibility and staffing is shown as a matrix in Figure 5 of annex (g).

The estimated 1691 person-months (supported by GOE plus cost sharing funds) are not distributed uniformly over the LOP. A large number of concept paper, seed grants and proposal awards will be processed in the first and second project years. The grant tracking and review activities, while continuing throughout

the project, will peak in the second and third project years. Part time staff can be utilized for management information system (MIS) data entry, extensive mailings and other semi-routine tasks which lend themselves to part time or temporary staff.

There are, however, a sufficient number of activities which require short term responses, in-depth knowledge of procedures, familiarity with grant details and continuity of action(s). Permanent, full time FRCU employees needed for these tasks are estimated to be a minimum of nine. If average grant funding is measurably less than the ceilings, the total number of grants will be increased with a concomitant increase in FRCU workload and in full time staff requirements.

Administrative Adequacy

The project organizational structure with modifications suggested by the Impact Assessment is capable of implementing the necessary procedures and processes to solicit, review and award 100 grants for the LOP across the three grant categories. The structure is also consistent with the performance monitoring task of the grant portfolio. Each organizational entity has identified responsibilities which in total are judged to comprise an effective management plan with adequate oversight provisions.

Further, it is concluded the FRCU should continue to manage and administer ULP II grant activities. The significant investment made in establishing the unit, the increasingly satisfactory performance, and its willingness to undertake changes to further improve grant solicitation, review, award performance tracking all support this conclusion. Transferring these responsibilities to a new entity would jeopardize project performance and would not be cost effective.

5.3 Economic Analysis

In a research type project it is not possible to accurately quantify the costs and benefits involved in implementing the project. The economic analysis is thus mainly descriptive and based on experience from similar projects including the first phase of this project (ULP/I).

As stated in the Economic Analysis section of the ULP/I Project Paper, the economic impact of the project rests upon three critical factors: (1) the choice of development problem areas; (2) the results and conclusions of linkage activities thereon; and (3) the degree to which this information is made known and acted upon by relevant decision makers. Clearly, the economic impact of the proposed project depends on the way the project addresses each of these factors and the likely outcomes of the research efforts.

That the ULP/II, as designed, maximizes the chances of properly addressing these factors in a manner which leads to a project that is economically beneficial to Egypt. Specifically the project guidelines, funding criteria, and procedures are designed so as to: fund a set of problems that are economically significant to the country, maximize the chances of success of the research efforts and maximizes the chances of proper dissemination of results to end-users and utilization of such results by the relevant decision makers.

(1) The Choice of Development Problem Areas: The project purpose is to increase the utilization of universities in the solution to key development and technological problems. The general project emphasis is on assisting the growth and development of the private sector. The funding criteria give priority to research involving private sector end-users (and reform oriented public sector end-users) and to research related to the removal of constraints to the growth of the private sector. This new project emphasis, and the formulation of funding criteria and procedures that reflect this new emphasis, guarantees that the choice of specific research activities will assist Egyptian economic reform efforts and thus have a high likelihood of being economically beneficial.

In addition, the funding criteria require evidence of a multi-disciplinary approach and an economic analysis of the potential return on the research. By requiring evidence of economic benefit and cost efficiency at the individual research proposal level, the chances of the project being economically beneficial at the aggregate level are maximized.

In addition to the above mechanisms for ensuring the general development significance of proposed research topics and the proper addressing of cost-benefit issues in the proposal, the project specifically requires that proposed research activities have at least one of the following economic goals: i) employment generation (ii) improved economic efficiency; (iii) net saving of foreign currency; (iv) export promotion of commodities for which Egypt has a comparative advantage; (v) quality improvement of existing products; (vi) economic use of unutilized resources; (vii) reduction of negative externalities (pollution); (viii) support of linkages with economically viable industries or companies; or (ix) inclusion of commodities or services that are most needed or consumed by low income groups (in order to have a positive impact on income distribution). Having satisfied one or more of the above economic criteria, funded research activities will thus be guaranteed to have economically significant and beneficial targets and results. These economic criteria impose a natural choice of development problems whose solution would be fit Egypt economically and is thus an optimal choice of research topics and problem areas.

(2) Results and Conclusions of Linkage Activities: The economic impact of the project will depend on whether the research activities will be successful in achieving results that are beneficial to end-users and to the whole economy. Although it has to be recognized that "... all research is a risk taking activity and that thus a certain rate of failure must be expected" (ULP/I Impact Assessment, page 5), the general experience with applied scientific and technological research still indicates success rates corresponding to attractively high rates of return.

For example the U.S. National Academy of Sciences (NAS) concludes that basic agricultural research yields a rate of return of 20% and crop research 40%. Industrial research is harder to quantify because of its diverse and decentralized character. However similar conclusions hold about a high return on investment. For example the economic analysis of the Energy Conservation and Efficiency Component of the Science and Technology for Development Project (which is similar in nature to work to be done under the Energy and Industry problem areas of ULP/II) concludes that the payback period on this type of work varies from 0.1 to 6 years (depending on end-user and technology) with an average of 2 years which corresponds to an economic rate of return approaching 50%. This is significantly higher than the 15% required for a project to be considered economically viable (page 22 of the project paper for the Energy Conservation of the STDP). Similarly, and of immediate significance to the economic analysis of the proposed project, the Impact Assessment of the predecessor project, ULP/I, states that "The principal overall conclusion of the assessment is that there are enough successful projects to consider the ULP as a whole justified. Even in the small number of projects included in the sample, a few were found whose benefits to the Egyptian economy seem large enough to yield a rate of return on the total AID Investment in ULP well in excess of what can be expected from infrastructure investments." (ULP/I Impact Assessment Executive Summary page (ii)). "This conclusion is based on the assumption that all research is a risk taking activity and that thus a certain rate of failure must be expected. What a tolerable failure rate is, depends on circumstances and on the objective function of those who finance such research. In any event, a plausible case can be made for the proposition that the benefits to the Egyptian economy from the most successful projects in the sample for which benefits can be roughly quantified, are large enough to yield a very decent return on the whole US \$20.5 million investment. Since they are only a sample, i.e., since it must be presumed that there are some other, similar successes among the projects not studied, the economic rate of return on the investment is likely to be quite high". (Impact Assessment page 5).

In summary experience from ULP/I and other projects indicates that the success rate of applied research is high and yields high

rates of return on investments in research projects.

Further evidence on the productivity of research and development (R&D) is that developed countries spend ten times as much per capita than developing countries and that such R&D spending is closely linked with gains in productivity and profits (see economic analysis of the second phase of the Applied S & T project).

(3) Information Dissemination/Utilization of Results

The third critical factor affecting the impact of the project is the ability to disseminate the information to end-users and their utilization of the results and recommendations.

The project addresses this need by requiring (through the funding criteria) the serious participation of end-users in all stages of research. This includes a cost-sharing requirement. End-users who participate in all stages of the research activity and who share the cost burden, are likely to do so only if they have a serious intention to use the results. In cases where there is an intermediary (rather than an ultimate end-user), the funding criteria and review procedures require evidence of a serious information dissemination plan in the proposal to ensure dissemination of the findings to the ultimate end-users and utilization of such findings.

Effect on the Egyptian Higher Education System

In addition to the direct economic impacts resulting from the problem-solving activities under the project and the improved utilization of a sizeable highly untapped human resource (faculty members), the proposed project has a direct positive impact on the quality of higher education in Egypt. This occurs through upgrading the Egyptian faculty members and updating their knowledge of their fields by bringing them in contact with U.S. counterparts who are at frontiers of their technical fields, in joint research endeavours which will raise their capacity to do applied research. The knowledge and experience gained will also enable them to teach courses that are more applied and more relevant to the needs of their country and their communities. Experience from phase I and similar projects indicates that the engagement of faculty members in applied research activities, re-orientes those faculty members toward more applied work and leads to beneficial curriculum changes. This will lead to an increased capacity of universities to prepare students for the labor market. Although hard to quantify, this effect is a part of the potential positive economic impacts of the project and could not be neglected in any comprehensive analysis.

5.4 SOCIAL SOUNDNESS ANALYSIS

This analysis finds that ULP II is socioculturally feasible. While it is a complex project in terms of its structure, operations and management, it is not socioculturally complex in terms of group interaction and possible tensions among a number of different subcultures. The researcher and end-user communities share similar values, attitudes and behavioral styles. While end-users have different perspectives than the researchers in terms of some of these attitudes and behavioral styles, their relationship with researchers is essentially one of complementarity, not conflict. Moreover, both researchers and end-users are participants in Egypt's modern society, and so are more likely than not to share underlying core values. This analysis will address seven issues regarding the sociocultural feasibility of ULP II, and they cluster around beneficiaries, the role of women, and project implementation.

A. Beneficiaries

The primary, or direct beneficiaries of ULP II will be approximately 1500 university researcher community and the end-users. The secondary, or indirect beneficiaries will be that portion of the Egyptian society at large which benefits from the problem solving activities of researchers and end-users. Secondary beneficiaries, say in the case of a crop production research activity, would be consumers of that crop if it is for local consumption, or participants involved in its export if it is produced for the overseas market.

Primary beneficiaries will benefit from the improved knowledge, skills, or managerial processes developed through the problem solving research undertaken by Egyptian researchers, assisted by American researchers, and for the purpose of helping end-users. Egyptian researchers will benefit through knowledge and skill development or exchange in collaboration with American researchers; and this joint effort will elevate their professional standing and research capabilities. End-Users will benefit through knowledge and skill development or exchange by becoming more productive and efficient in the jobs which they perform.

B. Women's Participation

The following lists the current number and percentages of women faculty in Egyptian public universities:

University	Faculty	Female	%	Assistants	Female	%
Cairo	4053	1005	28%	3010	1097	35
Alexandria	2532	725	29	1844	771	41
Ain Shams	2668	863	32	2277	1061	47
Assiut	1279	178	14	1198	253	21
Tanta	891	175	20	1099	379	35
Mansoura	1238	202	16	798	222	28
Zagazig	1346	286	15	2423	582	24
Helwan	1338	481	36	1304	524	41
Menia	515	68	13	749	126	17
Menoufia	545	66	12	660	156	24
Suez Canal	433	36	8	558	115	21
Total	17336	4085	24	15950	5236	33

Overall, the percentage of women faculty and assistant researchers of 24% and 33%, or 1:4, and 1:3, respectively, is impressive by Third World university standards. There are clear differences, however, between the percentage in the "metropolitan" universities of Cairo, Alexandria, Ain Shams and Helwan, and the other "red brick" or provincial universities, in that the percentage of women faculty members and research assistants is significantly higher in the former than in the latter. And, women are more skewed in the lower status positions of research assistants than they are in faculty positions.

To make any claims about discrimination against women in higher education would mean the disentanglement of prejudices, biases and stereotypes against females that may exist throughout the public education system -- particularly at the primary and secondary levels -- as well as the impact of socioeconomic class upon that system. This analysis is not about to do that. The women professors interviewed repeatedly and unanimously claimed that there was no significant discrimination against women professors, and that promotion and advancement was on the basis of merit and achievement. It was admitted that women professors

had to work harder than men to "prove" themselves, particularly in engineering and the hard sciences; and that women professors were sensitive to resentment among men professors when they could take extended maternity leave during pregnancies. Aside from these problems, however, they held that discrimination against women in higher education was a non-issue.

C. Participant Profile

The participants are the beneficiaries be they direct or indirect. As noted above, the direct beneficiaries are university researchers who are either assistant, associate or full professors; or they are graduate assistants who work with the professors. The end-users are employers and employees in private and public sector companies that collaborate directly with the professors to undertake the research.

D. Implementation Obstacles

There are no significant sociocultural implementation obstacles to the project. It was thought that there might be two obstacles, but field interviews revealed that this was not the case.

First, it was thought that incentives for applied research for faculty members -- particularly younger faculty members -- would not be sufficiently compelling for them to participate in the project. Traditionally, faculty promotion came primarily through the publication of "theoretical or academic" research in addition to substantive and reliable teaching. "Theoretical" refers to creative research where the researcher makes intellectual contributions to his field, and may have to publish in American or European journals. It was believed that young faculty members would not be interested in the project because it emphasized practical, action-oriented, and problem-solving research for end-users. While no one would dispute the merit of this research, the less established, younger faculty members would eschew this type of research for the more theoretical types that are likely to ensure promotion.

To some extent this is true. However, the advantages to be gained from applied research outweigh the disadvantages for both younger and more established faculty. First, there is the opportunity to participate in a path-breaking research activity and to have access to new ideas and modes of conducting research. Second, there is the possibility that this opportunity will produce research results that can lead to new ideas and insights in the theoretical area of one's field. Third, there is the opportunity to establish new social networks, to gain a different and useful experience, and to learn more about one's discipline, even if it is from a practical perspective. Finally, there is an

opportunity for recognition in the university community, be it as an applied researcher, a team leader, or a young faculty member "on the make". Intense discussion with a variety of members reveal that there is high competition among Egyptian faculty to be a part of a linkage, and that there would be no lack of "takers".

More importantly, the research climate in Egyptian universities is changing. The impact of ULP I upon this climate has been substantial, so that applied research has perceived merit and is increasingly a sought after activity. In addition, the Supreme Council has recently recommended that universities encourage applied scientific research and ensure the preparation of the necessary qualified cadres of researchers to implement it (See Annex IV, A.4). Thus, the once compelling attraction of theoretical research for promotion is being diluted to some extent by the increasingly attractive power of applied research.

Second, it was thought that personal contacts and networks would prevail in the choice of US counterparts by Egyptian researchers so that the formation of linkages would be mainly through personal rather than more formal, university criteria. This would result in linkages that would be subject to personal likes (and dislikes), not upon the established achievement and merit of the individual researchers. To a large extent this occurred in ULP I. The three measures built into the project,-- the Locator service, Seed Grants, and the "buy-ins" to the centrally funded UDLP project -- should pre-empt this, and allow more formal measures to facilitate US counterpart selection.

E. Spread Effect - At least 1000 researchers are expected to be involved in grant research, and 350 researchers are likely to be trained in research methods and technical aspects of research. Given the successful reputation and high visibility of ULP I, it is expected that competition for participation in ULP II will be keen. Probably each successful grant will have five competitors. Again, in depth discussion with researchers and end-users reveals no lack of interest in project participation.

6.0 Conditions and Covenants

The following conditions and covenants have been discussed in general terms with, and have been accepted by, the FRCU and SCU. These provisions may be revised, however, in connection with negotiation of the Project Grant Agreement.

6.1 Conditions Precedent to Disbursements

1. Prior to disbursement (or the issuance by A.I.D. of

documentation pursuant to which disbursement will be made) for any grant awards, the Grantee shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D. (1) the form of the grant announcements to be advertised in the U.S. and Egypt; (2) the modified Policies and Procedures Guidelines for preparing concept papers and expanded proposals and for implementing grants; (3) the standard grant agreement among the FRCU, the Egyptian university, the U.S. university, and the end-user; and (4) the composition of the new broadened Research Priority Committees and the Consulting and Advisory Committee containing adequate interdisciplinary and end-user representation.

2. Prior to any disbursement to the FRCU, USAID will conduct an assessment of the implementing agency's financial and management systems. No disbursements action with respect to FRCU will take place until an assessment satisfactory to AID, inclusive of corrective actions if any, have been undertaken. Disbursements action for the AID direct 8(a) contract and the grant to NAFEO (with sub-grant to NCNW) will not be subject to this CP.

3. Prior to any further disbursements after each anniversary of the date on which a grant was first awarded under the project (or prior to the issuance by A.I.D. of documentation pursuant to which any such disbursements will be made), the Grantee shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D. evidence, in form and substance satisfactory to A.I.D., that the Grantee has complied with each of the covenants contained in the Project Grant Agreement (see below).

6.2 Covenants

a. The GOE will provide the FRCU with the needed staff for the implementation of the project. All compensation of FRCU staff from the beginning of the project shall be paid by the Grantee from its own budget resources, cost sharing, or other resources available to the Grantee.

b. The Grantee shall obtain A.I.D.'s environmental approval of any proposed grant exceeding \$50,000 before making a final award.

c. No grant may be awarded to a public sector or governmental end-user without A.I.D.'s prior written approval.

d. The Grantee shall adhere to the Principal Private Sector Criterion described in Section 1.4.B of the project paper (Funding Criteria), shall take steps to promote increased participation in the project by private sector end-users, and shall ensure that a significant portion of the research grants are devoted to problems affecting the growth and development of the private sector.

e. Not less than 20 % of the concept papers, seed grants, and grant awards for micro- , mini-, and maxi-grants shall be set aside for linkage awards involving HBCUs.

f. Not fewer than 20% of the researchers involved in the project shall be women.

g. The budget for any particular linkage grant shall represent a balanced allocation of resources between the Egyptian and U.S. universities participating in the linkage.

h. The cost sharing requirement shall be imposed on accepted proposals and shall be fulfilled for research grants under implementation.

i. Prior to final approval of any grant related to Agriculture the FRCU will coordinate such approval with the Director of the University Research component of NARP to avoid overlap and duplication with research efforts supported under that component.

j. The FRCU shall establish procedures acceptable to A.I.D. for ensuring the intellectual property rights of the Egyptian and U.S. investigators for work done under the project without unduly impeding information dissemination under the project or utilization of the results of the work done under the project.

Response to PID Approval Cable, State 274264 dated 8/17/90

1. The objectives stated in paragraphs 3A-C will be monitored throughout the project as described under Monitoring and Evaluation Arrangements. The monitoring of paragraph 3A-B objectives will help to measure progress toward one of the project's EOPS, namely: The bases established for longer-term linkages between Egyptian and American universities.

The project will help achieve the objective stated in paragraph 3C directly by solving private sector end-user problems, and indirectly by conducting research to address policies constraining private sector growth.

2. Paragraph 3D is a project requirement based on a ULP I impact assessment recommendation. The formation of broad committees acceptable to USAID will be a CP for disbursement. The multi-disciplinary approach is a requirement for the FRCU committees as well as a funding criterion.

3. The PP addresses paragraph 3E by limiting funding to proposals which involve early and significant end-user participation. This will be done through five of the nine funding criteria, which not only require the proposal to be responsive to specific end-user problems, but also requires end-user cost sharing.

4. The objective stated in paragraph 3F is proposed as an example of research eligible for project funding.

5. The PP addresses paragraph 3G through funding criteria which encourage:

- (1) Export promotion of commodities for which Egypt has a comparative advantage; and
- (2) Support of linkages with economically viable industries or companies which have a comparative or a potential comparative advantage.

6. The project conforms with the suggestion in paragraph 3H as these areas are proposed as examples of research eligible for project funding.

7. The WID recommendations in paragraphs 4A and B will be addressed as follows:

To increase women's participation in the project, the PP includes a covenant requiring that in the aggregate, at least 20 percent of project researchers will be women. This percentage will be raised or lowered based on the results of a survey of women faculty and assistant researchers conducted by the FRCU during the first year

of the project.

8. A covenant is included in the project assuring that the current policy of intellectual property rights is accommodated.

9. Concerning the environmental decision in paragraph 7, any grant award exceeding \$50,000 will require USAID environmental clearance. In addition, sufficient funds have been budgeted for technical assistance to address any environmental concerns.

The problem areas stated in paragraph 7A and B have been included as examples of research eligible for project funding.

of the project.

8. A covenant is included in the project assuring that the current policy of intellectual property rights is accommodated.

9. Concerning the environmental decision in paragraph 7, any grant award exceeding \$50,000 will require USAID environmental clearance. In addition, sufficient funds have been budgeted for technical assistance to address any environmental concerns.

The problem areas stated in paragraph 7A and B have been included as examples of research eligible for project funding.

of the project.

- (b) Five micro-grants will be reserved for gender-related analyses of the factors related to policies constraining the growth and development of the private sector including the current roles of males and females and the constraints and opportunities they face.

8. A covenant is included in the project assuring that the current policy of intellectual property rights is accommodated.

9. Concerning the environmental decision in paragraph 7, any grant award exceeding \$50,000 will require USAID environmental clearance. In addition, sufficient funds have been budgeted for technical assistance to address any environmental concerns.

The problem areas stated in paragraph 7A and B have been included as examples of research eligible for project funding.

EDU

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ACTION NO	HRDC	PDS
ACTION VALUE		SUB DATE 8/21
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F.O. 12356: N/A
TAGS:

SUBJECT: UNIVERSITY LINKAGES II PROJECT (263-0211) - PID

1. THE PROJECT REVIEW COMMITTEE (PRC) MET JULY 19, 1992 TO REVIEW THE SUBJECT PID. AFTER REVIEW, BUREAU STAFF RECOMMENDED APPROVAL OF PID WITHOUT FORMAL ANPAC REVIEW. AA/ANE HAS DECIDED TO AUTHORIZE MISSION TO PROCEED WITH PROJECT PAPER (PP) PREPARATION IN ACCORDANCE WITH COMMENTS/GUIDANCE SET FORTH BELOW AND TO PROCEED WITH SUBSEQUENT AUTHORIZATION/OBLIGATION OF PROJECT PURSUANT TO DELEGATED AUTHORITIES AND FUNDING AVAILABILITIES.

2. MISSION IS HEREBY COMMENDED ON ITS SUBMITTAL OF A ~~VERY CLEAR AND READABLE PID~~ ~~BUREAU~~ CONCURS WITH MISSION POSITION, AS ARTICULATED BY MISSION REPRESENTATIVE JERRY WOOD, THAT UNIVERSITY LINKAGES II (ULD II) PROJECT REPRESENTS A MEANS TO ENCOURAGE EGYPTIAN UNIVERSITIES TO BECOME INVOLVED WITH LOCAL COMMUNITIES, PROMOTE ECONOMIC DEVELOPMENT THROUGH STUDIES/RESEARCH ON CONSTRAINTS TO SUCH DEVELOPMENT. ALSO, THE PROJECT WILL FURTHER ENCOURAGE GOVERNMENT OF EGYPT (COE) RECEPTIVENESS TO U.S. INVOLVEMENT IN THE EGYPTIAN EDUCATION SECTOR AND WILL SERVE AS A MAJOR CHANNEL FOR U.S. UNIVERSITIES, INCLUDING THE PRC, TO BECOME DIRECTLY INVOLVED IN EGYPT. BUREAU ALSO APPLAUDS PROJECT'S ATTEMPTS MORE DIRECTLY AND INDIRECTLY TO INVOLVE THE PRIVATE SECTOR IN THE RESEARCH/STUDIES SELECTION PROCESS, AS A PARTICIPANT IN THE RESEARCH, AND AS A DIRECT BENEFICIARY OF RESEARCH/STUDIES. HOWEVER, PP DESIGN WILL NEED TO PAY PARTICULAR ATTENTION ON HOW TO INVOLVE AND STIMULATE GREATER PRIVATE SECTOR PARTICIPATION.

3. BUREAU NOTES THAT SEVERAL MISSION GOALS AND OBJECTIVES FOR THE PROJECT, AS ARTICULATED AT THE PRC REVIEW, ARE NOT CLEARLY SET FORTH AS SUCH IN THE PID OR IN THE PROJECT'S LOG-FRAME, NAMELY:

4. TO ASSURE THAT THE CLOSER LINKAGES WITH U.S. UNIVERSITIES TO BE BUILT UP UNDER THE PROJECT WILL BE

AND BEYOND PROJECT PACT;

TO STRENGTHEN COLLABORATIVE, LASTING RELATIONSHIPS WITH U.S. UNIVERSITIES AS OPPOSED TO THE PROJECT PROVIDING TA, PER SE;

C. TO ASSIST THE GOV IN SETTING ITS DEVELOPMENT PRIORITIES THROUGH CHANGING ITS ORIENTATION, I.F., THROUGH GREATER PRIVATE SECTOR INVOLVEMENT;

D. TO STRENGTHEN THE MULTI-DISCIPLINARY APPROACH TO RESEARCH BY INCLUDING PRIVATE SECTOR REPRESENTATION, AS WELL AS ECONOMISTS AND/OR OTHER SOCIO-ECONOMIC DISCIPLINES, AS APPROPRIATE, IN THE PRIORITY REVIEW COMMITTEE AND IN THE PEER REVIEW PROCESS;

E. TO ENCOURAGE GREATER RECOGNITION BOTH WITHIN AND OUTSIDE THE UNIVERSITY COMMUNITIES OF THE DESIRABILITY OF RESEARCH TO MEET END-USER NEEDS, AS OPPOSED TO BASIC RESEARCH, BY PROVIDING OPPORTUNITIES FOR PROMOTION, ETC.

F. TO ENCOURAGE THE STUDY OF THE INFORMAL SECTOR OF THE ECONOMY AND THE CONSTRAINTS TO ITS DEVELOPMENT AND GROWTH OPPORTUNITIES;

G. TO ENCOURAGE THE RESTRUCTURING OF THE EGYPTIAN ECONOMY TOWARD THE PRODUCTION OF THOSE GOODS AND SERVICES IN WHICH IT HAS A COMPARATIVE OR A POTENTIAL COMPARATIVE ADVANTAGE;

H. ALTHOUGH NOT YET THOUGHT OF AS A NEWLY INDUSTRIALIZED COUNTRY, EGYPT SHOULD OVER TIME BE ENCOURAGED TO SHIFT ITS RESEARCH CONCENTRATION TOWARD APPLIED SCIENCES INCLUDING CHEMISTRY, PHYSICS, ENGINEERING AND MATH/COMPUTER SCIENCE.

IF THESE GOALS AND OBJECTIVES ARE INDEED THOSE OF THE MISSION, THE PP DESIGN SHOULD RECOGNIZE THEM EXPLICITLY AND ASSURE THEY ARE SET FORTH CLEARLY AND CONSISTENTLY IN IMPLEMENTATION AND EVALUATION PLANS, AND TO INCLUDE THEM, WHERE APPROPRIATE WITHIN THE GUIDANCE AND FUNDING CRITERIA FOR PROPOSED RESEARCH ACTIVITIES.

4. PP SHOULD TAKE A MORE PRO-ACTIVE POSITION THAN THAT SET FORTH IN THE PID REGARDING THE ROLE OF WOMEN. THE PROJECT SHOULD, AT A MINIMUM, INTEGRATE GENDER AT TWO LEVELS:

A. DESIGN EFFORTS SHOULD FIND WAYS TO ASSURE THAT THIS PROJECT SPECIFICALLY PROMOTES WOMEN UNIVERSITY RESEARCHERS' FULL PARTICIPATION AND EQUAL TRAINING IN

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APPLIED DEVELOPMENT-RELATED RESEARCH LINKED TO RESTRUCTURING AND LIBERALIZATION. STEPS SHOULD BE TAKEN TO ASSURE THAT WOMEN ARE INCORPORATED APPROPRIATELY IN THE THREE TYPES OF RESEARCH GRANT ACTIVITIES (MICRO, MINT AND MAXI) AND THE PRIVATE SECTOR END-USER GRANTS.

B. THE PROJECT SHOULD INCLUDE WAYS TO ASSURE THAT THE RESEARCH AGENDA WILL INCLUDE GENDER-RELATED ANALYSIS OF THE FACTORS AND POLICIES CONSTRAINING GROWTH AND DEVELOPMENT OF THE PRIVATE SECTOR. THIS ANALYSIS COULD INCLUDE COMPREHENSIVE RESEARCH ON THE CURRENT ROLES OF MALES AND FEMALES IN THE EGYPTIAN PRIVATE SECTOR AND THE CONSTRAINTS AND OPPORTUNITIES OF EACH. SET ASIDES OF FUNDS TO ENCOURAGE SUBMISSION OF PROPOSALS IN THIS AREA MAY BE A WORKABLE APPROACH.

C. ILLUSTRATIONS SHOWING HOW GENDER COULD BE APPROPRIATELY LINKED INTO THE PROJECT'S QUOTE PROBLEM AREAS UNQUOTE AND POSSIBLE ALTERNATIVE LANGUAGE TO CURRENT WORDING WERE MADE AVAILABLE TO JERRY WOOD FOR USE BY THE PROJECT DESIGNERS.

5. PP SHOULD ASSURE THAT CURRENT POLICY ON INTELLECTUAL PROPERTY RIGHTS IS ADEQUATELY ACCOMMODATED. IT IS EVOLVING CONTINUOUSLY, AND MISSION NEEDS TO KEEP CURRENT. AGAIN, COPIES OF APPROPRIATE LANGUAGE AND OF A.I.D. RECENTLY APPROVED IPR AGREEMENTS WERE PROVIDED JERRY WOOD.

6. BUREAU NOTES THAT PROJECT WILL BE MANAGED BY FULL-TIME SERVICES OF A SINGLE WELL-QUALIFIED AND EXPERIENCED PSN. PART-TIME SERVICES OF SENIOR A.I.D. DIRECT-HIRE SUPERVISOR IS PRIMARILY REQUIRED ONLY DURING THE PROJECT DESIGN AND AT THE NEGOTIATION STAGES. THUS, PROJECT IS NOT CONSIDERED STAFF INTENSIVE. SINCE PURPOSE OF THE PROJECT IS NOT TO ESTABLISH OR ENHANCE AN INSTITUTION OR INSTITUTIONAL FRAMEWORK PER SE, THE PROJECT DOES NOT INTEND TO SET UP OR CREATION OF AN ENDOWMENT OR FOUNDATION NOR DOES IT INTEND ITSELF TO PERFORM OPERATED DISBURSEMENTS. PROJECT IS INSTEAD TO INSTALL THE PRINCIPLE OF INCREASING THE ROLE OF APPLIED RESEARCH AND APPRECIATION OF OTHERS, INCLUDING THE PRIVATE SECTOR, AND EGYPTIAN UNIVERSITIES.

7. NAME/PO/ENVY HAS REVIEWED THE BID AND HAS RECOMMENDED ENVIRONMENTAL PURCHASE DECISION DATED JUNE 28, 1997. THE BUREAU ENVIRONMENTAL COORDINATOR AGREES WITH THE ENVIRONMENTAL PURCHASE DECISION AND AGREES THAT THE PROJECT MEETS THE CRITERIA FOR AWARD OF (M) (M) FOR A CATEGORY M. AWARDS ABOVE \$100,000 SHOULD BE RECORDED THAT CLEARANCE FROM THE ENVIRONMENTAL COORDINATOR AND AWARD SHOULD BE SUFFICIENT FUNDS TO BE AWARDED TO THE CONTRACTOR. ENVIRONMENTAL

IT IS RECOMMENDED THAT THE FOLLOWING BE ADDED TO THE

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LIST OF PROBLEM AREAS TO WHICH PRIORITY CONSIDERATION SHOULD BE GIVEN:

A. POLLUTION PREVENTION: RESEARCH AND TRAINING THAT WILL ASSIST INDUSTRY IDENTIFY IN-PLANT CONTROLS AND MANAGEMENT PRACTICES THAT WILL IMPROVE EFFICIENCY AND PROFITABILITY (EVEN FOR PUBLIC INDUSTRIES) WHILE ALSO REDUCING POLLUTION. EXAMPLES ARE IMPROVED PACKAGING OPERATIONS, INTERMEDIATE PRODUCT RECOVERY AND REUSE, WATER REUSE, REDUCTION OF CHEMICAL LOSSES FROM SPILLS AND POOR PERSONNEL TRAINING.

B. ENVIRONMENTAL STUDIES: RESEARCH IN INDUSTRIAL FACILITIES TO IDENTIFY PLANT-SPECIFIC POLLUTION REDUCTION TECHNIQUES BASED IN PART ON POLLUTION PREVENTION RESEARCH AND TRAINING.

THERE ARE UNIVERSITIES IN EGYPT THAT CAN PROVIDE THE INDUSTRIAL RESEARCH AND TRAINING SUGGESTED ABOVE. FOR EXAMPLE, USEPA HAS WORKED FOR MORE THAN 12 YEARS WITH ALEXANDRIA UNIVERSITY ON SIMILAR PROJECTS.

B. BUREAU NOTES THAT WITH PROJECT STRESS ON GREATER INVOLVEMENT OF U.S. UNIVERSITIES, NEARLY 96 PERCENT OF THE AID PROJECT DOLLARS WILL BE RETURNED TO THE UNITED STATES FOR PROCUREMENT OF SERVICES AND GOODS. THIS IS COMMENDABLE AND TO BE ENCOURAGED. BOTH HILL AND BUREAU INTERESTS ARE TO MAXIMIZE THE OPPORTUNITY TO BUY AMERICA.

C. BUREAU IS SATISFIED THAT THE PROJECT SUPPORTS THE ADMINISTRATION'S QUOTE FOREIGN POLICY CHALLENGES UNQUOTE AS IDENTIFIED IN SECRETARY BAKER'S FY 1991 BUDGET TESTIMONY IN THAT IT PROMOTES DEMOCRATIC VALUES, FOSTERS MARKET FORCES AND STRENGTHENS OUR ALLIANCES IN A TIME OF FAR-REACHING CHANGE. PROJECT ALSO ALIGNS WITH THE SIX AND BUREAU CORE CONCERNS OF PROMOTING DEMOCRATIC PLURALISM, ECONOMIC FREEDOM, EQUITY OF PUBLIC POLICIES, INTERNATIONAL INVESTMENT AND TRADE, SOCIAL SERVICE REFORM AND ENERGY, ENVIRONMENT AND NATURAL RESOURCES.

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10. FINALLY, FURMAN NOTES THAT THE PROJECT POSTULATES AN INCREASE IN THE DEGREE OF LOCAL CURRENCY COST-SHARING/MATCH FUNDING BY END-USERS FROM 35 PERCENT IN THE FIRST YEAR OF THE PROJECT TO 60 PERCENT IN ITS LAST YEAR. WHILE WE WOULD LIKE TO SEE A CONCOMITANT INCREASE IN UNIVERSITIES' OWN BUDGETING FOR APPLIED RESEARCH, WE ARE PLEASED TO SEE THAT FRCU STAFF IS NOW BEING PAID FROM GOV BUDGETED RESOURCES AND ARE NOW RECOGNIZED AS AN INTEGRAL PART OF THE RESEARCH STRUCTURE. BAKER

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May 29, 1990

OD/PDS/PS, Frank Miller

University Linkages II PID (263-0211)

See Distribution

The Executive Committee reviewed the subject PID on May 16, 1990, and the following decisions were made:

1. The PID will be revised to take into account the recent dialogue with AID/Washington which led to the May 3, 1990 letter from AA/ANE to the Mission Director. The revised PID should be completed within four weeks.
2. The PID should describe how Phase I has been relatively successful in changing university research from theoretical to practical problem solving and how Phase II will focus more on problems related to liberalizing the productive sectors of the economy.
3. The project purpose should be modified to reflect more focus on problems related to restructuring the economy. While the problems areas set forth in the PID were judged to be adequate, highest priority will be given to private sector, informal sector and industrial reform problems. These priorities should be reflected in the funding criteria.

Practical problem solving and research in other areas which improve productivity will be encouraged as there are other areas where we want to bring about change. Regarding desert development, only research directly linked to private sector end users will be eligible for funding. The end users would be expected to make a substantial contribution to the costs of these demand driven practical applications and be involved in the selection process.

A representative from the Trade and Investment Office will be added to the project committee to assist in focusing the project on private sector and industrial reforms.

4. To enhance long term sustainability, end users should participate throughout the process including, selection, design and cost sharing.
5. The major emphasis of the project will be on mini-linkages given the modified focus of supporting the liberalization of the economy. The financial plan including technical assistance and commodity procurement will be reviewed and revised accordingly.

Logical Framework

6. Care will be taken to not overstate the conclusions of the impact assessment.
7. PDS/E will revise the Economic Considerations section of the PID.
8. The LOP will be six years and funding for the project will not exceed \$35 million.

Distribution:

DIR, Marshall Brown
AD/AGR, Edwin Stains
A/AD/EM, Nimalka Wijesooriya
AD/IS, Gregory Huger
AD/PDS, Vivikka Molldrem
OD/PDS, Christopher Crowley

DD, Charles Weden
AD/DR, Paul Thorn
AD/HRDC, William Gelabert
AD/LEG, Brian Miller
PDS/E, Paul O'Farrell
HRDC/ET, Adel Gohar

Clearance:

AD/PDS, Vivikka Molldrem _____
AD/HRDC, William Gelabert _____

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project
From FY 91 to FY 97
Total U.S. Funding \$20 million
Date Prepared: 6/3/91

Project Title & Number: The University Linkages II 263-0211

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATIONS	MEANS OF VERIFICATIONS	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goals: The broader objective to which this project contributes: To make the Egyptian higher education system more responsive to Egypt's development needs.</p>	<p>Measures of Goal Achievement: 1. More applied research by universities geared toward solving development problems. 2. Increased end-user demand for university research services.</p>	<p>1. Baseline and follow-up surveys.</p>	<p>Assumption for achieving goal targets: Resources provided by the project are sufficient to continue to motivate faculties to conduct development problem solving research.</p>
<p>Project Purpose: To improve and increase the utilization of university research in the solution to Egypt's development problems with particular attention to problems related the restructuring of the economy.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status. 1. Universities including approx. 750 researchers have increased their ability to plan and execute applied research to solve development problems. 2. Strengthened & expanded cooperative relationships between Egyptian universities & end users result in better problem identification and more practical solution strategies as judged by the peer review process and end-users. 3. Research results are distributed by the project and end-users are applying results to solve development problems.</p>	<p>1. Project monitoring and evaluation system. 2. Baseline Study and follow-up surveys.</p>	<p>Assumption for achieving purpose: 1. Research efforts are successful. 2. Research results disseminated and acted upon.</p>
	<p>4. An increase in local currency cost sharing from 35% to 60% over the LOP. 5. An increase in efficiency productivity, quality, employment creation, cost saving, net saving of foreign currency, etc., depending upon the nature of the research undertaken and its successful completion and application. The bases for longer term relationships between U.S. and Egyptian universities established.</p>		

NARRATIVE SUMMARY	OBJECTIVE VERIFIABLE INDICATIONS	MEANS OF VERIFICATIONS	IMPORTANT ASSUMPTIONS																						
Outputs: 1. Collaborative research activities between Egyptian and American universities. 2. Seed grants awarded. 3. Researchers trained in the subject matter of the research undertaken.	Magnitude of Outputs: 1A. Forty mini-linkage research activities over LOP (twenty in each of the first two years of the project). 1B. Twenty-six mini-linkage research activities over LOP (12, 10, & 4 minis in the first, second, & third years of project, respectively). 1C. Four maxi-linkage research projects over LOP beginning the first year of project. 2. Approximately 200 grants awarded over LOP. 3. Approximately 500 research endeavours in U.S. universities and research institutes.	Assumptions for achieving outputs: Sufficient qualified personnel will be made available to the FRCU by the MOHE. FRCU manages to attract private sector end-users and respond to their specific needs. U.S. universities willing to participate without overhead.	Assumptions for achieving outputs: Sufficient qualified personnel will be made available to the FRCU by the MOHE. MOHE will delegate sufficient autonomy to the FRCU to enable it to manage the grant fund on a timely basis. FRCU manages to attract private sector end-users and																						
Inputs: 1. Egyptian Research Teams 2. Short-Term TA 3. Research Endeavors/Visits 4. Long-Term TA 5. Equipment & supplies. 6. FRCU Administration. 7. Egyp. Univ In-Kind Cont. 8. Evaluations 9. Information Dissemination & End-user Outreach Activities 10. Assessments & Audits	Implementation Target (Type & Quantity): <table border="1"> <thead> <tr> <th>USAID (\$000)</th> <th>MOE & END-USERS (LE000)</th> </tr> </thead> <tbody> <tr> <td>1. 2,637</td> <td>7,034</td> </tr> <tr> <td>2. 5,893</td> <td>323PM</td> </tr> <tr> <td>3. 2,492</td> <td>216 PM</td> </tr> <tr> <td>4. 1,686</td> <td>8 PY</td> </tr> <tr> <td>5. 2,893</td> <td>2,291</td> </tr> <tr> <td>6.</td> <td>4,766</td> </tr> <tr> <td>7.</td> <td>11,088</td> </tr> <tr> <td>8. 200</td> <td></td> </tr> <tr> <td>9. 203</td> <td></td> </tr> <tr> <td>10. 240</td> <td></td> </tr> </tbody> </table>	USAID (\$000)	MOE & END-USERS (LE000)	1. 2,637	7,034	2. 5,893	323PM	3. 2,492	216 PM	4. 1,686	8 PY	5. 2,893	2,291	6.	4,766	7.	11,088	8. 200		9. 203		10. 240		1. Grant Agreement 2. Project reviews and reports	Assumptions for providing inputs: 1. CP's met on time 2. Universities and end-users respond to solicitations 3. Match funding by end-users is forthcoming.
USAID (\$000)	MOE & END-USERS (LE000)																								
1. 2,637	7,034																								
2. 5,893	323PM																								
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9. 203																									
10. 240																									

ANNEX C

STATUTORY CHECKLIST

5C(2) - ASSISTANCE CHECKLIST

Listed below are statutory criteria applicable to the assistance resources themselves, rather than the eligibility of a country to receive assistance. This section is divided into three parts. Part A includes criteria applicable to both Development Assistance and Economic Support Fund resources. Part B includes criteria applicable only to Development Assistance resources. Part C includes criteria applicable only to Economic Support Funds.

N.B.: Part B has been omitted because it is inapplicable to this ESF-funded project.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE?

Yes, the Country Checklist is contained in the Project Paper for the International Executive Service Corps Project (No. 263-0229).

A. CRITERIA APPLICABLE TO BOTH DEVELOPMENT ASSISTANCE AND ECONOMIC SUPPORT FUNDS

1. Host Country Development Efforts (FAA Sec. 601(a)): Information and conclusions on whether assistance will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions.
2. U.S. Private Trade and Investment (FAA Sec. 601(b)): Information and conclusions on how assistance will encourage U.S. private trade and investment abroad and encourage private U.S.

(b) Assistance to private end-users is a major emphasis of project. (e) Project expected results have a potential for improving technical efficiency of industry, agriculture, and commerce.

U.S. counterparts who are mostly private play a major role in the project. In addition, U.S. private firms will be utilized as suppliers of technical assistance and commodities

participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

to the maximum extent feasible.

3. Congressional Notification

(a) General requirement (FY 1991 Appropriations Act Secs. 523 and 591; FAA Sec. 634A): If money is to be obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified (unless the notification requirement has been waived because of substantial risk to human health or welfare)?

N/A. Part of The project was included in the ABS and the CP.

(b) Notice of new account Obligation (FY 1991 Appropriations Act Sec. 514): If funds are being obligated under an appropriation account to which they were not appropriated, has the President consulted with and provided a written justification to the House and Senate Appropriations Committees and has such obligation been subject to regular notification procedures?

N/A.

(c) Cash transfers and nonproject sector assistance (FY 1991 Appropriatic Act Sec. 575(b)(3)): If funds are to be made available in the form of cash transfer or nonproject sector assistance, has the Congressional notice included a detailed description of how the funds will be used, with a discussion of U.S. interests to be served and a description of any economic policy reforms to be promoted?

N/A.

4. **Engineering and Financial Plans (FAA Sec. 611(a)):** Prior to an obligation in excess of \$500,000, will there be: (a) engineering, financial or other plans necessary to carry out the assistance; and (b) a reasonably firm estimate of the cost to the U.S. of the assistance? **Yes. Required plans and cost estimates have been prepared at the PP stage.**
5. **Legislative Action (FAA Sec. 611(a)(2)).** If legislative action is required within recipient country, with respect to an obligation in excess of \$500,000, what is the basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance? **No legislative action is required.**
6. **Water Resources (FAA Sec. 611(b); FY 1991 Appropriations Act Sec. 501):** If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.) **N/A.**
7. **Cash Transfer and Sector Assistance (FY 1991 Appropriations Act Sec. 575(b)):** Will cash transfer or nonproject sector assistance be maintained in a separate account and not commingled with other funds (unless such requirements are waived by Congressional notice for nonproject sector assistance)? **N/A.**

8. **Capital Assistance (FAA Sec. 611(e)).** If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed \$1 million, has the Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively?

N/A.

9. **Local Currencies**

(a) **Recipient Contributions (FAA Secs. 612(b), 636(h)).** Describe steps taken to assure that, to the maximum extent possible, the country currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.

Egyptian Universities and end-users will contribute substantially to the local currency costs of the project. CPs and covenants will require evidence of such contributions. U.S.-owned Egyptian currency is not available specifically for this project.

(b) **U.S.-owned Currency (FAA Sec. 612(d)):** Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

No.

(c) **Separate Account (FY 1991 Appropriations Act Sec. 521).** If assistance is furnished to a foreign government under arrangements which result in the generation of local currencies:

There will be no local currency generations within the meaning of Section 575.

(?) **Has A.I.D. (a) required that local currencies be deposited in a separate account established by the recipient government, (b) entered into an agreement with that government providing the amount of local currencies to be generated and the terms**

N/A.

and conditions under which the currencies so deposited may be utilized, and (c) established by agreement the responsibilities of A.I.D. and that government to monitor and account for deposits into and disbursements from the separate account?

(2) Will such local currencies, or an equivalent amount of local currencies, be used only to carry out the purposes of the DA or ESF chapters of the FAA (depending on which chapter is the source of the assistance) or for the administrative requirements of the United States Government? N/A.

(3) Has A.I.D. taken all appropriate steps to ensure that the equivalent of local currencies disbursed from the separate account are used for the agreed purposes? N/A.

(4) If assistance is terminated to a country, will any unencumbered balances of funds remaining in a separate account be disposed of for purposes agreed to by the recipient government and the United States Government? N/A.

10. Trade Restrictions

a. Surplus Commodities (FY 1991 Appropriations Act Sec. 521(a)): If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity? N/A.

- b. Textiles (Lautenberg Amendment) (FY 1991 Appropriations Act Sec. 521(c)):** Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel? **No.**
- 11. Tropical Forests (FY 1991 Appropriations Act Sec. 533(c)(3)):** Will funds be used for any program, project or activity which would (a) result in any significant loss of tropical forests, or (b) involve industrial timber extraction in primary tropical forest areas? **No.**
- 12. Sahel Accounting (FAA Sec. 121(d,)):** If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)? **N/A.**

13. **PVO Assistance**
- a. **Auditing and registration** (FY 1991 Appropriations Act Sec. 537): If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.? **N/A.**
- b. **Funding sources** (FY 1991 Appropriations Act, Title II, under heading "Private and Voluntary Organizations"): If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government? **N/A.**
14. **Project Agreement Documentation** (State Authorization Sec. 139 (as interpreted by conference report)). Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision). **N/A.**
15. **Women in Development** (FY 1991 Appropriations Act, Title II, under heading "Women in Development") Will assistance be designed so **Yes. The PP and CPs require a minimum female participation of 20%.**

that the percentage of women participants will be demonstrably increased?

16. **Regional and Multilateral Assistance (FAA Sec. 209).** No.
Is assistance more efficiently and effectively provided through regional or multilateral organizations? If so, why is assistance not so provided? information and conclusions on whether assistance will encourage developing countries to cooperate in regional development programs.
17. **Abortions (FY 1991 Appropriations Act, Title II, under heading "Population, DA," and Sec. 525):**
- (a) Will assistance be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization? No.
- (b) Will any funds be used to lobby for abortion? No.
18. **Cooperatives (FAA Sec. 111):** No.
Will assistance help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life?
19. **U.S.-owned Foreign Currencies**
a. **Use of currencies (FAA Secs. 612(b), 636(h); FY 1991 Appropriations Act Secs. 507, 509):** Describe steps taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. are utilized in lieu of dollars to meet the cost of contractual and other services. Egyptian Universities and end-users will contribute substantially to the local currency costs of the project. U.S.-owned Egyptian currency is not available specifically for this project.

b. Release of currencies (FAA Sec. 612(d)): Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? No.

20. Procurement

a. Small business (FAA Sec. 602(a)): Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? Yes.

b. U.S. procurement (FAA Sec. 604(a)): Will all procurement be from the U.S. except as otherwise determined by the President or determined under delegation from him? Yes.

c. Marine insurance (FAA Sec. 604(d)): If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company? Egypt is not so discriminate.

d. Non-U.S. agricultural procurement (FAA Sec. 604(e)) If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.) N/A.

e. Construction or engineering services (FAA Sec. 604(g)): Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.)

N/A.

f. Cargo preference shipping (FAA Sec. 603): Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates?

50/50 shipping rules will apply to this project.

g. Technical assistance (FAA Sec. 621(a)): If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the facilities and resources of other Federal agencies be utilized, when they are

U.S. and Egyptian and private firms will be used to the maximum extent feasible. It is not anticipated that facilities or resources of other federal agencies will be utilized.

particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

h. U.S. air carriers (International Air Transportation Fair Competitive Practices Act, 1974): if air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such services is available? **Yes.**

i. Termination for convenience of U.S. Government (FY 1991 Appropriations Act Sec. 504) If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? **Yes.**

j. Consulting services (FY 1991 Appropriations Act Sec. 524): If assistance is for consulting service through procurement contract pursuant to 5 U.S.C. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)? **Yes.**

k. Metric conversion (Omnibus Trade and Competitiveness Act of 1988, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec. 2, and as implemented through A.I.D. policy): Does the assistance program use the metric system of measurement in its procurements **Yes.**

grants and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate? Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?

1. Competitive Selection Procedures (FAA Sec. 601(e)): Will the assistance utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

Yes; however, most of the project assistance will be in the form of grants. Selection of grantees will be based on technical merit and cost reasonableness, but will not involve formal competition.

24. Construction

a. Capital project (FAA Sec. 601(d)): If capital (e.g., construction) project, will U.S. engineering and professional services be used?
b. Construction contract (FAA Sec. 611(c)): If contracts for construction are to be financed will they be let on a competitive basis to maximum extent practicable?

Yes.

N/A.

- c. Large projects, Congressional approval (FAA Sec. 620(k)):** If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million (except for productive enterprises in Egypt that were described in the Congressional Presentation), or does assistance have the express approval of Congress? **N/A.**
- 22. U.S. Audit Rights (FAA Sec. 301(d)):** If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? **N/A.**
- 23. Communist Assistance (FAA Sec. 620(h)).** Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries? **Yes.**
- 24. Narcotics**
- a. Cash reimbursements (FAA Sec. 483):** Will arrangements preclude use of financing to make reimbursements, in the form of cash payments, to persons whose illicit drug crops are eradicated? **N/A.**
- b. Assistance to narcotics traffickers (FAA Sec. 487):** Will arrangements take "all reasonable steps" to preclude use of financing to or through individuals or entities which we know or have reason to believe have either: (1) been convicted of a violation of **Yes.**

any law or regulation of the United States or a foreign country relating to narcotics (or other controlled substances); or (2) been an illicit trafficker in, or otherwise involved in the illicit trafficking of, and such controlled substance?

25. **Expropriation and Land Reform (FAA Sec. 620(g)):** Will assistance preclude use of financing to compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President? **Yes.**
26. **Police and Prisons (FAA Sec. 660):** Will assistance preclude use of financing to provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? **Yes.**
27. **CIA Activities (FAA Sec. 662):** Will assistance preclude use of financing for CIA activities? **Yes.**
28. **Motor Vehicles (FAA Sec. 636(i)):** Will assistance preclude use of financing for purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? **Yes.**
29. **Military Personnel (FY 1991 Appropriations Act Sec. 503):** Will assistance preclude use of financing to pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel? **Yes.**

30. **Payment of U.N. Assessments** Yes.
(FY 1991 Appropriations Act Sec. 505): Will assistance preclude use of financing to pay U.N. assessments, arrearages or dues?
31. **Multilateral Organization Lending** Yes.
(FY 1991 Appropriations Act Sec. 506): Will assistance preclude use of financing to carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)?
32. **Export of Nuclear Resources** Yes.
(FY 1991 Appropriations Act Sec. 510): Will assistance preclude use of financing to finance the export of nuclear equipment, fuel, or technology?
33. **Repression of Population** Yes.
(FY 1991 Appropriations Act Sec. 511): Will assistance preclude use of financing for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country to contrary to the Universal Declaration of Human Rights?
34. **Publicity or Propaganda** No.
(FY 1991 Appropriations Act Sec. 516): Will assistance be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress?

35. **Marine Insurance (FY 1991 Appropriations Act Sec. 563):** Will any A.I.D. contract and solicitation, and subcontract entered into under such contract include a clause requiring that U.S. marine insurance companies have a fair opportunity to bid for marine insurance when such insurance is necessary or appropriate? **Yes.**
36. **Exchange for Prohibited Act (FY 1991 Appropriations Act Sec. 569)** Will any assistance be provided to any foreign government (including any instrumentality or agency thereof), foreign person, or United States person in exchange for that foreign government or person undertaking any action which is, if carried out by the United States Government, a United States official or employees, expressly prohibited by a provision of United States law? **No.**

N.B.: PART B OF THE ASSISTANCE CHECKLIST, "CRITERIA APPLICABLE TO DEVELOPMENT ASSISTANCE ONLY," HAS BEEN OMITTED BECAUSE IT IS INAPPLICABLE TO THIS ESF-FUNDED PROJECT.

C. CRITERIA APPLICABLE TO Economic SUPPORT FUNDS ONLY

1. **Economic and Political Stability (FAA Sec. 531(a)):** Will this assistance promote economic and political stability? To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of Part I of the FAA? **Yes, to both questions**
2. **Military Purposes (FAA Sec. 531(e)):** Will this assistance be used for military or paramilitary purposes? **No.**

3. **Commodity Grants/Separate Accounts (FAA Sec. 609):** If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? N/A.
4. **Generation and Use of Local Currencies (FAA Sec. 531(d)):** Will ESF funds made available for commodity import programs or other program assistance be used to generate local currencies? If so, will at least 50 percent such local currencies be available to support activities consistent with the objectives of FAA sections 103 through 106? N/A.
5. **Cash Transfer Requirements (FY 1991 Appropriations Act, Title II, under heading "Economic Support Fund," and Sec. 575(b)).** If assistance is in the form of a cash transfer:
- a. **Separate account:** Are all such cash payments to be maintained by the country in a separate account and not to be commingled with any other funds? N/A.
- b. **Local currencies:** will all local currencies that may be generated with funds provided as a cash transfer to such a country also be deposited in a special account, and has A.I.D. entered into an agreement with that government setting forth the amount of the local currencies to be generated, the terms and conditions under which they are to be used, and the responsibilities of A.I.D. and that government to monitor and account for deposits and disbursements? N/A.

- c. U.S. Government use of local currencies: Will all such local currencies also be used in accordance with FAA Section 609, which requires such local currencies to be made available to the U.S. government as the U.S. determines necessary for the requirements of the U.S. Government, and which requires the remainder to be used for programs agreed to by the U.S. Government to carry out the purposes for which new funds authorized by the FAA would themselves be available? N/A.
- d. Congressional notice: Has Congress received prior notification providing in detail how the funds will be used, including the U.S. interests that will be served by the assistance, and, as appropriate the economic policy reforms that will be promoted by the cash transfer assistance? N/A.

Grantee's Request for Assistance

19 / / 1990

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

جمهورية مصر العربية
وزارة التربية والتعليم

مكتب الوزير

القاهرة في 19 / / 1990

110469

Cairo: May 29, 1990

Mr. Marshall D. Brown
Director
Agency for International Development
Cairo Center Building
106 Kasr El Ainy St.
Garden City, Cairo

705
DD
DIR
HRDC
STICH JABERI
DAVA 6/11
DIVISION 8

Dear Mr. Brown

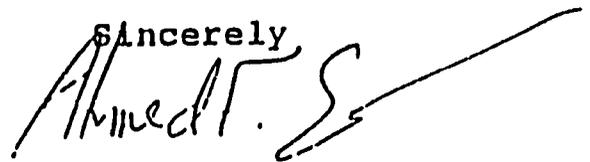
I was pleased with our recent joint review of progress in various areas of cooperation.

We are in agreement on the importance of proceeding with design of follow-on projects for both Basic Education and University Linkages.

May I request that the teams to prepare necessary analysis for design of both projects be mobilized to complete work at the earliest possible date.

I concur in the use of project funds or other funding sources as appropriate to support these design efforts. Let me assure you of the priority which I attach to the continuation of activities in these areas.

Sincerely,



Dr. Ahmed Fathy Sorour
Minister of Education

Best Available Copy

G. 611 (a) STATEMENT

(i) Cost estimates used in developing the project are reasonably firm and may be expected to hold for the life of the project taking into account the contingency factor:

(a) Estimates of the costs of short-term training was obtained from the Training Office (HRDC/ET) and concurred in by FM/FA.

(b) Estimates of the costs of short-term and long-term technical assistance were based on HRDC/ET averages and concurred in by FM/FA.

(c) The cost of the efforts of the Egyptian research teams are based on prevailing rates and the Presidential Decree regulating the participation in research activities by Egyptian faculty members.

(d) It is not possible to obtain firm estimates of the costs of equipment and supplies since the research topics are not known at this stage. However, estimates were based on the ULP/I experience. Actual approvals for procurements under the different linkages will be based on firm estimates which will be known once the research topic and work plan are known. Limited short-term technical assistance will be provided to the FRCU to help with assessing the cost reasonableness of proposals including costs of equipment and supplies.

(f) Two separate inflation rates were used: a U.S. rate of 5.3% based on the most recent available inflation figures (until 2/91); and a 20% rate applied to LC costs (recommended by PDS/E) to account for both LE inflation and devaluation over the LOP.

(g) In addition, plans necessary to carry out the assistance are considered completed for 611 (a) purposes.

(ii) Local currency requirements were based on the available rate at the time of drafting the PP with expected devaluations taken care of in the effective LE inflation rate as discussed under (i)-(f) above.

UNIVERSITY LINKAGES II PROJECT 263-0211

CERTIFICATION PURSUANT TO
GRAY AMENDMENT

As Director and Principal Officer of the Agency for International Development in Egypt, I certify that full consideration has been given to the potential involvement of small and/or economically and socially disadvantaged enterprises, Historically Black Colleges and Universities (HBCUs) and minority controlled private and voluntary organizations covered by the Gray Amendment.

The attached Project Paper discusses the efforts that will be undertaken to maximize the participation of HBCUs under this project. Specifically, \$5 million of the \$29.9 million (or 17 percent) allocated to grant funding, will be set aside for HBCUs.

Marshall D. Brown
Director

WGUIDANC

ANNEX G
ULP II Technical and Administrative
Analysis

This Annex was prepared by a consultant team in December 1990 and is presented as it was prepared. While it serves as a basis for much of the text of the Project Paper, some changes in project design have been made subsequent to its preparation. In the case of divergence in project scope and implementation procedures as well as cost estimation, etc. between the Project Paper text and this Annex, the information presented in the PP text is correct.

0044A

Technical and Administrative
Analysis

ULP II TECHNICAL AND ADMINISTRATIVE ANALYSIS

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- 9.0 Special Considerations**
- 10.0 Institutional Sustainability**

Suggested Definitions

Project - refers to the ULP II project only and not to research "projects" within it.

Linkages - refers to a general concept of institutional cooperation such as the internal-external model used in this project.

Grant - refers to micro, mini and maxi grants which are also linkages. Grant in this project operationalizes the linkage concept.

Research problem - refers to the specific issue to be addressed through a grant. It generates the grant and hopefully will be solved by the grant.

Principal Investigator - refers to the individual Egyptian and American researchers of a research problem or leaders of a team of that problem.

US counterpart - refers to the US researcher who collaborates with the Principal Investigator.

Priority Committee - short cut for the Research Priority Policy Committee.

1.0 Introduction

The purpose of this section is to describe and analyze in detail how the project will work and how it is technically and administratively justified. Essentially, this project is a grant mechanism to produce applied research by Egyptian and US universities to solve development problems. It does not build roads, irrigation schemes, or pollution control systems as outputs; it produces applied research on how to build them better. The thrust of the project is upon the research process which involves a number of actors and procedures. Many different types of research with different levels of magnitude are proposed. The research process is not only complicated, but meshes the technical aspects of research development with institutional mechanisms and relationships necessary to produce that research (and in cases of larger linkages, to implement recommendations). Moreover, the process links end-users (clients) of research in both the private and public sectors with Egyptian and American universities who produce that research. Hence, for a comprehensive and hopefully accurate understanding of the research process, the technical and administrative aspects are combined. They deal with analyzing procedures for proposal solicitation, review, and grant management.

The organization of this analysis begins with a discussion of the linkage concept which includes both general considerations and those specific to this project. It will also include resource requirements necessary to develop linkages. Related to this will be a general discussion of problem areas which the research will focus upon. Then, the mechanics of the research process details guidelines and funding criteria for selection of research proposals. Next, steps to select the US counterpart university will be reviewed. A detailed discussion will then explain how proposals are solicited, reviewed and awarded, followed by a discussion of implementation procedures through reporting, performance review and evaluation. Finally, the management structure and operations of the implementing agency will be discussed.

2.0 Internal- External Linkage

2.1 Organizational Problem

Egyptian universities need assistance to work with end-users through applied research to address development problems. End-users are institutions in the public and private sectors which attempt to solve development problems. These problems may be, for example, when the Ministry of Agriculture uses research to increase crop production in a particular area, or when a chemical industry does the same to control pollution of environmentally deleterious wastes. In these and in other cases, the use of applied research is end-user driven in terms of problem identification, research objective and methodological approach. What is needed is to strengthen linkages between end-users and universities to solve

these problems. In most cases the linkage will be applied research by the university to address end-user problems; in a few cases, however, the linkage will include capacity-building assistance to the Egyptian university to develop applied research for the end-user. The organizational problem then, is to develop a three party linkage between the Egyptian university and end-users on the one hand, and between Egyptian universities and assisting institutions (US universities) on the other.

2.2 Internal-External Linkage

End-users need technological assistance to solve their developmental problems. They do not have sufficient resources to do the job efficiently themselves. End-users are institutions in the public and private sectors such as Ministries or factories. Their problems may be, for example, when the Ministry of Agriculture needs to know how to use research effectively to increase crop production in a particular area, or when a chemical industry needs it to control pollution of environmentally deleterious wastes. These are complicated problems which demand advanced technological assistance. Egyptian universities have some technological expertise in these and other areas to help end-users address these problems. But this expertise is limited, and needs assistance from foreign universities to be effective. US universities have sufficient expertise in these areas, and can assist Egyptian universities to be more effective with end-users to assist them in solving their problems. What is the "most viable means" for US universities to offer this type of assistance?

There are at least two ways for US universities to assist the end-user through university linkages: a direct relationship with an Egyptian university (internal linkage); or a direct relationship with an end user. They could also provide no assistance at all, and the Egyptian university works directly and solely with the end user (external linkage).

Internal linkages - The linkage between Egyptian and American universities is an efficient way to strengthen the capacity of the former to conduct research. A main component is faculty exchange: US faculty are assigned to the Egyptian university for teaching or research purposes anywhere from a few weeks to a few years; and counterpart faculty from Egyptian universities are assigned to the US institution for similar functions during that period. This exchange can strengthen Egyptian faculties. Parallel to this could be training of Egyptian graduate students in the US, curriculum development as part of the faculty exchange, collaborative research between US and Egyptian faculty in key problem areas (ie. crop production or pollution control mentioned above), outreach and extension services - particularly in education and the social services, and commodity inputs in terms of technical or laboratory equipment. The general purpose would be academic improvement of the Egyptian university.

This could be more focused in terms of building "Centers of Excellence" particularly in the hard sciences, engineering and agriculture. This would demand a long term commitment on the part of both participating institutions and on behalf of AID to achieve a focused "university uplift".

The questions are: is the "Centers of Excellence" approach worth the substantial cost and managerial effort, and will it address the above problem - how can the US university assist the Egyptian university to best solve problems of the end-user? First, AID sponsored projects have already addressed the "Centers of Excellence" objective with, for example, the MIT-University of Cairo linkage in the Development Planning Studies project. Evaluations of this are mixed. There have been positive outcomes, such as MIT's technical contributions to applied research, the use of graduate students in applied research, and the introduction of new coursework at the University of Cairo. This was done, however, at considerable cost, time, and effort, and without the project achieving its purpose. Second, there was confusion throughout the project regarding GOE planning, and university and ministry personnel. The project planning center (DRTPC) tended to take over research activities, and did not build research capabilities within various university faculties and departments in Government ministries. There are questionable outcomes of this ten year effort as to whether it transferred technology effectively to end users for problem solving purposes.

Without defined and sustained contact with end-users, such an internal linkage is not likely to address end-user problems in a cost-effective way. Nor is it likely to target research in a problem-solving and applied manner. As a result, internal linkages perpetuate what was once endemic in Egyptian faculty research -- theoretical research without application to development problems.

US external linkage only - Not many US universities if any, provide direct assistance to end users in Egypt. They could, however, be effective to address development problems. Moreover, the contact between end-user and US university personnel could prove productive. Also this contact would probably be useful for specific and discrete problem-solving efforts. In addition, the US university could ally itself with US companies, say in engineering, chemical or pharmaceutical areas to provide with AID assistance in-country and US training in technical and management to upper and mid level personnel in these areas. These and related efforts such as legal and marketing assistance could result in collaborative efforts such as joint ventures and other forms of foreign investment.

It would not, however, address the need to assist Egyptian universities in working collaboratively with end-users. Moreover, there would be no capacity-building effort in Egyptian universities to strengthen their applied research efforts.

Egyptian external linkages only - The linkage between Egyptian universities and the end-users is the most direct way to address end-user problems. In fact, it occurs in Egypt to a limited extent, particularly when industries seek problem-solving research assistance from faculties of science or engineering from the universities. It can be cost-effective in that the end-user pays the bill for the research on a fee-for-service basis. For specific and discrete problems when the economies of scale are low, this way is also cost-effective to address end-user problems. When coupled with outreach training, the Egyptian university is very effective in understanding and meeting end-user needs. For example, the Faculty of Engineering at Alexandria University conducts short term training courses for factory engineers and generates future courses as they understand better the needs of these engineers. In addition, through these courses, faculty members seize problems which the engineers articulate, formulate them into researchable terms, and often develop these terms into lucrative consulting contracts. But, they admit that they need assistance to broaden their expertise to address a wide range of problems.

What is lacking is added expertise to solve the problems which would come if US universities participated in the problem solving effort. In addition, there is likely to be some capacity-building efforts by US universities for Egyptian universities even if this is not an explicit objective of the linkage.

Therefore, each of the above alternatives -- as individual means to address end-user needs -- is less favorable than the combination of internal linkages to support external linkages for end-user problem solving. A three-way linkage between the end-user and the Egyptian university on the one hand, supported by assistance from the US university to the Egyptian university on the other, has the following distinct advantages:

- ♦ it builds applied research capacity for solving development problems;
- ♦ it is targeted to end-users;
- ♦ it has the potential for establishing early on a close and collaborative relationship between all three partners;
- ♦ and it has the potential for establishing a sustained relationship between the Egyptian and US universities; and between Egyptian universities and end-users.

The three way linkage is the best way to strengthen and institutionalize the process of utilizing university researchers. First, it will encourage a long term relationship between the participating universities through requiring evidence of such a relation as an explicit criterion that has to be met by all

proposals. Second it will increase the likelihood of the research to be successful to end-users by encouraging end-users to utilize this resource. It will develop and sustain the external linkages by initiating and catalyzing a demand-driven process by actively involving the end-user in each stage of the applied research process. Not only will the end-user be involved in the planning and implementation of the research, but he is expected to pay an increased portion of the cost of the research. It will also market the successful examples of research projects to encourage end-users to use the resource and pay for the cost of the service, thus reducing or eliminating dependence on the state budget or external resources.

Thus, ULP II will use the internal-external linkage to bring about the following conditions:

- ♦ a long term relationship between US Egyptian universities;
- ♦ a relationship that will promote applied research for problem solving purposes, e.g., an agricultural research project will focus on how to improve fig cultivars, and will not examine the cellular structure of figs per se;
- ♦ a research approach that will be as multi-disciplinary as appropriate so as to bring different research efforts to bear on the problem effectively;
- ♦ end-users collaborating with the cooperating universities early on in the relationship to define the problem, research objectives and methodological approaches; and the end-user will also demonstrate some commitment to the relationship by contributing in kind or cash;
- ♦ an increasing private sector emphasis when this is compared to private sector involvement in University Linkages Project I;
- ♦ an explicit developmental rationale for the research effort. In most cases, this will be economic, but it could include environmental, social or related concerns.

2.3 Micro, Mini and Maxi Research Grants

Three types of research grants will operationalize internal-external linkages: micro (limits of \$50,000 and 12 months), mini (limits of \$500,000 and 4 years), and maxi grants (limits of \$2,000,000 and 4 years). Because these grants are specific types of internal-external linkages, they will be referred to as micro,

mini and maxi grants throughout the rest of the paper. They represent a categorization of research activities into small, medium and large grants respectively.

This division will be used flexibly with the actual needs of each research problem dictating the level of funding. The micro grant is basically data collection and simple short-term research. Forty of these grants will be made over the LOP with 20 being made annually in each of the first two years of the project. The objective of the micro grant is to select a problem area and an issue within that area with the expectation of gaining a better understanding of that issue through research and possibly identifying feasible solutions. It will conduct preliminary investigations of the problem and may identify tentative resolutions. In research "jargon", the micro grant might best thought of as exploratory research, and it is hoped these grants evolve into more extensive research proposals which would be financed under a mini- or maxi-linkage grants.

The mini grant, however, supports more extensive problem-solving activities and involves considerable applied research to identify solutions to significant development problems. Fifty of these grants will be made over the life of the project with 10, 15, and 25 mini grants being made in the first, second and third years of the project, respectively. This grant will also recommend feasible alternatives perhaps with the researchers collaborating with end-users to implement the solution at a pilot or demonstration level. The mini grant will also require more extensive US university involvement than micro-grant.

The maxi grant is the largest grant and four will be made during the second and third years of the project. These grants will support research and institutional development addressed at a number of interrelated problems in a particular sector of the economy such as energy or desert development. It could be cross-sectoral as well. An expected result of the maxi grant is to gain a comprehensive understanding of the problem and to produce an action plan to address it. It is expected that most maxi linkages will evolve from mini linkages that provide a firm research base upon which this large research effort will build. In view of the experience gained under ULP I regarding maxi grants and the complexity of their management, this category of grants will be funded only if strong justification is presented for supporting their research components collectively under a maxi grant. Otherwise, funding acceptable activities separately as mini grants will be the preferred mode.

2.4 Rationale for Mix of Micro, Mini, and Maxi Grants

The Impact Assessment strongly recommends that the total number of grants be reduced in any ULP I follow-on project to permit adequate

management and technical oversight. It also recommends increasing level of funding to restore the purchasing power of a grant by a further 30-50% of the funding levels under ULP I. At a 10% annual inflation rate, this provides \$500,000 for minis. Under ULP I the ratio of the funding levels of a mini to a micro was 5:1. To reflect the increased differences between these two types of grants under ULP II, the micros were reduced to one tenth of a mini so that they would retain their narrower and more specific scope.

The management effort required for proposal solicitation, review, grant award and dissemination of research results is a function of the total number of grants funded. Performance tracking and financial management workloads derive from the total number of grants. ULP II response to this Impact Assessment concern must consider implications of grant numbers and years on the management and oversight capabilities of the implementing agency.

Figure F.5 (section 8.2.1 following) provides an estimate of the manpower needed to adequately perform the tasks required for a successful project implementation. The LOP totals are 141 PY for FRCU and 46 PY for non-FRCU staff (review committees, grant follow up personnel, etc.) assuming 40 micros, 50 minis and 4 maxis. This suggested staffing level approaches the limit of expected GOE funding for this purpose and of FRCU management capability.

The range of grant mixes permissible within an LOP staff limit of less than 200 PY for FRCU (and its consultants), for example, and within the projected budget is extremely wide, varying from 18 maxis only to 131 micros and 15 maxis, with many intermediate combinations possible. The number of linkages will depend upon the nature of end-user response. The number of development problems, small, medium and large, in the Egyptian productive sector exceed the numbers of grants suggested. This is a viable alternative, then, to respond to a large demand for research grants with limited resources. Should the demand shift in another direction in the first year, the mix of micro, mini, and maxi grants will respond accordingly.

2.4.1 Micro Grants

Micro grants provide a level of effort and time frame judged suitable for many private sector problems, for most policy studies and, for data gathering and/or technoeconomic analysis needed to justify a research approach to solving a larger problem. The average grant funding level allows for one person month of US university collaboration, five person months (full time equivalent) of Egyptian researchers plus international travel and miscellaneous expense. All costs have been inflated at an annual rate of 10 percent within the LOP.

It is recommended that the maximum time allowable for micros be increased from 12 to 18 months with no increase in allowed funding. Some data gathering activities, industrial in-plant

measurements or studies of current agricultural crop cycles, for example, may require more than one year for satisfactory completion. Any allocation of resources in advance of initial concept submissions clearly is judgemental. However, a total of 40 problems requiring minimal effort costing five percent of the total linkage funding seems a reasonable allocation, given the expected range of productive sector needs as typified in the illustrative problem area discussion above.

2.4.2 Mini Linkages

Developmental problems exist in Egypt which require research levels in excess of that available under a micro grant. Design and implementation of a total quality scheme (as opposed to simple quality control), design of production equipment to be manufactured locally, and process design for the transformation of local raw materials into manufacturing feedstocks (replacing current imports) are a few such examples. Problems of this scope are probably the largest single category in Egypt.

An average mini grant funds 10 PM (full time equivalent) of Egyptian researcher's time, 2 PM of US collaborator efforts per year for four years. This level of effort is minimal to successfully address many development problems especially if an interdisciplinary approach is required. Fifty grants consuming 73 percent of the linkage funding is believed to be an appropriate allocation of resources.

2.4.3 Maxi Linkages

AID managerial experience of ULP I and the Impact Assessment questions the utility of large (maxi) project for the following reasons:

- ♦ Maxi projects are complex and require a high level of management capability by the implementing agency and participants; it is questionable whether sufficient management capability can be brought to bear for a sizeable number of maxis;

- ♦ Project activities within a maxi have been difficult to integrate and justify under one umbrella; attacking a number of similar but distinct activities can be done more efficiently by mini grants;

- ♦ Maxi projects are not demand-driven by end users; they typically start by faculty to faculty relationships and lack the specificity present in a micro or mini. End users come in at a much later stage, and the most important activities under the maxi pertain to the

internal linkage, and not to the external one which is end user driven;

♦ Maxi projects are more of capacity building activities than of problem solving ones. They are less likely to produce the same type of incremental results expected out of micro and mini project;

♦ Maxi projects -- as applied research addressing complex problems -- should evolve naturally from micro and mini projects; thus they will be few in number.

Experience from the beginning of ULP II implementation may result in adjustments of the numbers of small, medium and large grants awarded in the second cycle and medium grants for the third cycle. Extension of the PACD may be desirable for a more realistic proposal review and award schedule and would allow added flexibility in second and third round decisions for reallocation of resources for micro, mini and maxi grants. Since this project is demand driven, the mix may change. Therefore, it is the best judgment of the HRDC that this mix of 4 maxi, 50 micro, and 40 mini grants is a reasonable choice for the beginning of the project.

2.5 Resource Requirements (Section Incomplete)

The following summarize the resource requirements:

US \$34,597,000

This is the AID LOP contribution and includes financing:

♦ 206 PY of research by Egyptian teams;

♦ 78 PY of US short-term technical assistance from US universities to assist applied research;

♦ 3 PY of US long-term technical assistance to assist maxi linkages;

♦ 38 PY of US short term training in specific research areas;

♦ the balance in equipment, supplies, evaluation and audit.

Most likely, some or all of the US training originally budgeted for the development of short graduate courses on research design and methodology will be used for "seed money", or grants to Egyptian universities to explore, develop and define working linkages with US universities.

The Egyptian funding will come from various sources:

- ♦ GOE cash contribution of LE 3,912,000 to finance project administration by the FRCU;
- ♦ GOE in-kind contribution of LE 12,364,000 for buildings, laboratories and facilities necessary to conduct research;
- ♦ Private and public sector end-user contribution of LE 13,044,000 for match funding of research projects.

3.0 Research Problem Areas

The development problems faced by Egypt are many and diverse in nature and appear in most sectors. Some of these problems are already being addressed by projects which have substantial university linkage components in them such as NARP for agriculture, and STDP for science and technology. Given the flexibility of the internal-external linkage mechanism to bring US and Egyptian expertise to bear on development problems, it was decided not to assign any priority to problem areas by sector. This allows ULP II to address a host of problems which emerge as being urgent and worthy of applied research.

There is a question of whether the establishment of a more specific set of eligible research topics would be beneficial or restrictive to the identification of significant research areas and problems. The PID presents a rationale for keeping the problem areas open:

"The project will adopt a flexible approach of accepting proposals within broadly defined priority problem areas and judging each proposal on its own merits rather than by whether it falls within a predetermined topic list. It is believed that this approach will guarantee a more dynamic response to end-user needs throughout the LOP at a time in which Egypt is undergoing fast economic change that can result in new significant applied research requirements that have not been contemplated in early project design."

The project paper concurs with this rationale for the following reasons:

Following consultation with universities and public and private sector entities, it was concluded that problem areas to be defined in the PP are in no way intended to be other than illustrative. Specific targets of opportunity may occur as economic reform and liberalization affect the productive sectors. These problems are

deliberately broad in scope so that application of creative thinking about specific problems will not be constrained, and to provide flexibility in proposal preparation that could be impeded by a more specific set of eligible research topics. It is intended that research conducted in these areas will be multi-disciplinary, including economic and social impact in addition to technological considerations.

It is anticipated that approximately 100 grants will be initiated during ULP II. Potential end-users, who will be involved in the grant process, from proposal preparation through completion of grant activities, include ministries, large public enterprises, small and medium private sector businesses, and entrepreneurs. The problems confronting these are extremely diverse. Both public and private enterprises are concerned with the need to improve efficiency of operations and increase productivity in order to compete with imported goods and local manufactures, to enter more aggressively into export markets, and to reduce dependency on licensing and/or importing of foreign technologies.

As an example, these enterprises are, or will be, confronted with policies and/or regulatory procedures relating to control or reduction of air and water pollution. Availability and costs of energy in the future, as well as in the near term, are an important consideration both for public enterprises which are under pressure to improve operations, and for private businesses who must be competitive in order to survive. Small, private businesses are particularly in need of assistance in management and administration methodologies, and legal and financial advice. In a similar vein, ministries are faced with as yet undefined problems in infrastructural development of desert lands and new urban centers, which can include a wide variety of needed assistance, including non-conventional energy sources, communications and transportation. In some instances, they cannot yet quantify their problems, and may not be able to define their needs in detail until they can discuss these with a knowledgeable research team.

In view of the mix of possible problem-solving needs, the diversity of potential end-users, and the different sizes of grants to be funded, it is not feasible to establish rigid problem area priorities, or to constrain, in advance of grant proposals, the opportunity to respond to a need which may become clear later but is not yet recognized. Prioritization will occur naturally, as Egyptian-U.S. researchers and end-users collaborate to develop acceptable proposals. Such collaboration thus imposes a logical limitation on areas of research that will be funded, and assures that research which is undertaken has at least a potential for solving real problems having economic importance.

Therefore, emphasis in research development will be given to three broad problem areas: key development sectors; the private sector; and policy development. The broad emphasis conforms well with ULP

II's purpose of assisting Egyptian universities to address development problems with particular attention to problems related to the restructuring of the economy. The specific areas or research topics within each of the three broad areas are, however, illustrative and of course will emerge through research demand during the course of the project.

3.1 Sector Specific Problems

The following are illustrative sectors and problem areas:

Industry: maintenance and repair of equipment and machinery; corrosion control; analysis and testing techniques and quality control procedures to meet export requirements and to improve products for local production; analysis of product/process lines to improve productivity and reduce costs; marketing strategies for local and export markets; cost-benefit feasibility studies for new products; improvements in modification of existing technology; pilot plant or demonstration studies of new technologies; processes for indigenous raw materials to replace currently imported raw materials.

Energy: Non-conventional energy generation; renewable energy generation (e.g., agricultural wastes, combustible municipal garbage); industrial conservation of energy; co-utilization of coal deposits to produce electrical energy and produce metallurgical coke for the steel industry; new technologies (e.g., fluidized bed) to produce energy from coal; electricity grid distribution and security analysis; quality control of components for electricity transmission and generation of equipment manufactures.

Pollution prevention and environment studies: Control or neutralization of inorganic and organic effluents discharged into water or air; product recovery and reuse; reduction of chemical losses; development of water/air pollution standards for adoption and enforcement by industry and government; noise pollution; water recycling; analysis of eco-systems which influence agricultural and population use of rivers and bodies of water; water quality systems for small urban areas and newly established municipalities.

Education and Human Resources Development: science curricula needs for rural schools; demonstrations studies on the use of educational radio and/or TV in primary and secondary schools; constraints analyses regarding the role of women in university, in applied research, and in industrial development; relative effectiveness of different types of industrial training such as, on-the-job training, apprenticeships, formal training, practica, etc.; relative effectiveness of different types of literacy training for rural adults.

Infrastructure: the most effective mix, staging of inputs and use of water resources, transportation, communication, energy, industry, crop development and housing in new desert areas; improving water and waste water treatment; development of cost-effective transportation and communications.

Agriculture: identification and specification of appropriate standards and quality control procedures of agricultural produce for export markets; development of appropriate cultivars to improve and increase citrus fruits for export; applications of biotechnology for food and commodity crops; improved extension services to small agrobusiness farmers in terms of techniques in crop cultivation, mechanization, fertilizers and pesticides, credit availability, and market access for small agrobusiness farmers. (See Annex III for examples of micro and mini projects).

3.2 Private Sector

The private sector is a palpable and emerging force in the Egyptian economy, and faces problems which must be overcome if it is to compete with the public sector. Examples might include training needs for Egyptian bankers on how to identify and assess high return investments in their lending portfolios; an analysis of prevalent accounting practices especially at the small business level and the likely effect of introducing new standards on small businesses in comparison to large industries; methodologies which small businessmen from the informal private sector could use to increase their markets and distribution of goods; or financial, marketing and management training needs for small businesses in such areas as furniture and carpet production, arts and crafts targeted to the tourist trade (in Upper Egypt particularly), food processing, and fruit and vegetable export.

3.3 Policy Development

Applied research that deals directly with private sector businesses must be complemented with more broad-based, but still applied research that analyzes problems in the policy environment. This may include both public and private sector research. This type of research will:

- ♦ analyze factors and policies that have constrained the growth of the private sector and will propose effective ways of removing them;
- ♦ identify main legal and regulatory problems that face the private sector;
- ♦ generate in-depth analyses of viable options to enhance the growth of the private sector; and

♦ assess needed skills for growth of this sector, e.g., finance, administration, and suggest effective ways of supplying them.

Targeted areas of research, then, might be:

excessive regulations: a survey and analysis of the enormous array of rules and regulations as well as their irregular operations that affect nearly all aspects of doing business;

investment approvals: an investigation into the laws and procedures controlling private sector ventures, commercial licenses, utilities connections, land acquisition, etc. and how they create obstacles to the desire of the private sector to engage in new investment opportunities;

trade policies - how restrictive procedures, high tariffs, and limitations on imported machinery or raw materials constrain private sector business;

pricing policies - the non-congruence between price controls on energy, agricultural products, industrial goods and transport services and international market levels so as to restrain export revenues and productivity in the above areas;

preferential treatment for public enterprises - how subsidized inputs, mandated marketing monopolies, and provision of credit at less than market rates of interest preclude private sector activities or deprive private sector businesses from access to markets, foreign exchange or credit.

The above and related areas offer ample opportunities for applied and interdisciplinary research, particularly by Faculties of Commerce at Egyptian Universities. It would be useful to review and codify what recommendations do exist regarding the above problem areas. Examples of US university capabilities which could easily assist this effort include: public policy analysis; business and legal practices for joint ventures; import and export regulations; management and business administration; accounting and inventory control; intellectual property rights, patents and incentives; market strategies; and finance. In addition to research assistance, there could also be training, consultations, and conferences.

4.0 Research Proposal Selection

The purpose of this section is to outline guidelines and criteria

to select proposals. These guidelines and criteria are both broad and specific to accommodate the commonalities of the micro, mini and maxi grants as well as with their substantive differences (See 3.2). They are also designed to allow for proposer creativity and flexibility on the one hand; and for efficiency of selection on the other so as to obtain the best proposals.

4.1 Guidelines for Proposals

The project will solicit short concept papers for micro and mini grants to identify the research problem and other information needed for review and selection. It will also solicit more expanded concept papers for maxi grants which should contain more detail on planned activities. Then successful concept papers will be resubmitted as full blown proposals to complete a two step selection process. While it is expected that this process will broaden participation of Egyptian researchers in ULP II, the purpose is for quality control and efficient review. The project implementing agency (FRCU) will develop formats with USAID concurrence for both stages to facilitate the selection process without discouraging thoughtful proposer response.

For concept papers and proposals it is understood that two broad guidelines will prevail. First, the research is directed to a specified Egyptian development problem and is compatible with the economic reform policies declared by the GOE, e.g., enhancing the growth of the private sector and liberalizing the economy; and with other principal GCE research plans. Second, the grant increases the capability of university researchers to do applied research as it relates to economic growth. Given this perspective, the following are more specific guidelines:

Short Concept Papers (micro and mini)

Description of the development problem to be addressed accompanied by a quantitative statement concerning its economic significance;

Identification of the specific end-user of the research results along with his signed letter of intent to participate -- particularly regarding cost-sharing;

An outline of the research approach -- particularly the interdisciplinary features in this approach, and the expected results of the research;

Project management structure or related mechanisms needed to implement this research approach;

Role of the US counterpart (identified or unidentified) in terms of justified and efficient participation and possibilities for a long term relationship;

Estimate of the time and resources (person months, training, purchased equipment and local expense) required;

Summary information (name, position, affiliation and directly applicable experience) for the project individual or team;

A maximum of ten (10) pages, in addition to the end-user letter, are requested.

Expanded Concept Papers (maxi)

Detailed description of the development problem to be addressed accompanied by a brief analysis (socioeconomic or related disciplinary concerns) of its developmental significance;

Identification of the specific end-user(s) of the research results along with his signed letter of intent regarding possible participation in the design and implementation of the research as well as details of cost-sharing;

A research plan with emphasis on a multidisciplinary approach;

Expected results of the research which includes a brief assessment of the likely impact;

Project management structure identifying its component parts or related mechanisms needed to implement this research approach;

Role of the US counterpart in terms of resource contributions and participation in the planning and implementation of the research;

Estimate of the time and resources (person months, training, purchased equipment and local expense) required;

Summary information (name, position, affiliation and directly applicable experience) for the project individual or team;

A maximum of twenty (20) pages, in addition to the end-user letter, are requested.

All three grants will produce for the second stage of selection a

full blown proposal. No page limitations are imposed on proposals though it is expected that their length will correspond to their relative magnitude. Guidelines for the proposal are:

Proposals (micro, mini and maxi)

A detailed statement of the development problem being addressed;

The desired research outcome(s) with an analysis of the economic impact that could be realized;

A description of the actions needed to implement research findings;

The detailed technical plan and schedule or research activities including US participation, procurement, training, etc.;

Justification for the choice of US counterparts if acquired through the Locator Service (see below);

Curriculum vitae for all research team members and, in the case of a maxi grant, the curriculum vitae for the Principal Investigator (PI) will include prior research management experience;

A project management plan in brief form for micro grants and in detailed form for mini and maxi grants;

A formatted resource budget with estimates of quarterly expenditures;

Signed letters of committment from the end-user and the US counterpart detailing the nature and extent of their involvement and cost sharing.

4.2 Funding Criteria

These criteria have been chosen to help ensure: proper research design and selection; active and increased end-user participation; attention to developmental considerations; and improved linkages with US universities.

a) An acceptable proposal should present a comprehensive multi-disciplinary approach appropriate to the research problem. Mono-disciplinary proposals, focusing only on the technical and scientific aspects of a problem but failing to deal satisfactorily with the cost/benefit implications of the technological choices to

be recommended, will not qualify for funding. Other interdisciplinary inputs, e.g., rural sociology and labor analysis, should also be included where relevant.

b) The proposed projects should have one or more of the following economic objectives:

i) employment generation;

ii) improved economic efficiency (e.g., higher value added, higher productivity, cost saving);

iii) net saving of foreign currency;

iv) export promotion of commodities for which Egypt has a comparative advantage;

v) quality improvement of existing products;

vi) economic use of unutilized resources (e.g., land reclamation, fish and marine resources);

vii) reduction of negative externalities (pollution);

viii) support of linkages with economically viable industries or companies;

ix) Inclusion of commodities or services that are most needed or consumed by low income groups (in order to have a positive impact on income distribution).

c) The proposed research responds to specific end-user problems.

d) The proposed research involves significant participation of the ultimate end-user where such user is identifiable. Joint participation should include the problem definition, setting of the economic objectives and establishment of concomitant research targets. Maximum private sector end-user involvement will be considered a favorable aspect of submitted proposals.

e) In cases where it is not reasonable to expect the participation of the ultimate end-user (e.g. education projects where the ultimate beneficiary is the student population), the proposal has to demonstrate that the intermediate end-user (e.g., the concerned unit in the MOE) has sufficient interest and capacity to disseminate results to the ultimate end-user.

f) The existence of end-user cost-sharing, match funding is a necessary condition. Education and health research, however, may substitute in-kind contributions for match funding. A significant level of cost sharing will be considered a favorable aspect of

submitted proposals.

g) The proposed research has the potential for achieving tangible results in a short term (1-2 years if possible) agreed upon by the end-user of the intermediary.

h) The identified US counterpart university and principal investigator have participated in the project design as evidenced by a signed ratification of the research plan and a binding commitment for their services.

i) There is evidence of an effort to establish a longer and broader commitment between the two institutions. For example, this might be identification of other research projects related to the one being proposed or curricular or organizational improvements.

j) The grant avoids duplication with other USAID-funded research (e.g, NARP or STDP projects) or prior Egyptian research.

5.0 US University Counterpart Selection and Initial Participation

During ULP I selection of the US University counterpart was often achieved through personal contacts and somewhat haphazardly at that. This appeared to contribute to an uneven participation by the US counterpart once the linkage was formed, particularly during the early stages. ULP II will attempt to overcome this limitation by developing linkages in a more systematic fashion -- though personal contacts and preferences will probably be a basis for beginning the selection.

5.1 Personal Contacts

One cannot overlook the realities of personal relationships that may have begun when Egyptian professors were graduate students in the US. Others may have developed over the years as Egyptian professors have sought out through literature searches, personal correspondence or networks, or visits to the US, professors who share similar research interests as the Egyptian professors, but who are more published and renowned internationally. This can be a natural first step in forming a linkage, but if the linkage is to be lasting, institutionally based, and capable of producing quality research, additional means should be taken to ensure the match is a good one between both universities. These will be particularly important for Egyptian researchers who do not know US colleagues in their field, or young researchers who may wish to expand their range of limited contacts.

5.2 AID Centrally Funded Project

Various strengthening grants and related centrally funded projects fund the development of broad linkages between US and overseas

universities covering education, research and extension functions of the university. Such broad linkages can be used to develop Egyptian responses to end user problems and qualify for funding under ULP II. It is proposed that ULP II use these projects through "buy-ins" to develop broad linkages between US and Egyptian universities. For example, the University Development Linkages project (UDLP), currently proposed under the Center for University Cooperation in Development in AID/Washington, is beginning in early 1991 to support such a linkage. It will accept mission "buy-ins" for this purpose, and thus would complement ULP II by assisting US universities to link up with Egyptian universities. Thus it will facilitate the appropriate linkage between Egyptian and American researchers. These broad linkages could later respond to specific problem-solving requests to be funded under ULP II.

5.3 Locator Service

ULP II will establish a Locator service to facilitate making contact for a linkage between US researchers and Egyptian researchers who have approved concept papers. The service will identify capable institutions and researchers in the topic(s) suggested for US collaboration in the approved research plans. The interest and potential availability of several US candidates will be established by the Locator with details (affiliation, education, research experience, published papers, etc.) for these candidates supplied to the Egyptian principal investigator (PI) for his review and selection. At most, two iterations of this process per initial grant document will be allowed.

The Locator will be a semi-retired US specialist in the research field, possibly a professor emeritus, and will be engaged for those research areas receiving the most attention. These persons will search for, contact and recommend several institutions where likely US counterpart researchers operate. They will use existing computerized and other data bases to assist in identifying appropriate US institutions for the Egyptian investigator. The Locator will provide to these US researchers appropriate documents such as the ULP project announcement, proposal guidelines, funding criteria, etc. The Egyptian investigator will follow up this initial contact by providing them with capability and research information. Proper screening of Locators will attempt to ensure unbiased recommendations.

A retainer fee and incremental fees for each proposal assisted will be a suitable financial arrangement. PSCs or an IQC arrangement are possible contract instruments. Capable facilitators might best be found through such intermediaries as the National Academy of Sciences, the National Science Foundation, or Ford Foundation. These facilitators could also be useful resources for project evaluations. The estimated costs of the locator/facilitator service including their recruitment, a retainer fee and incremental search fees would be around \$500,000.

5.4 Seed Grants

Once selection of the US university is made, seed grants for travel and communications are designed to assist Egyptian and US faculty members to work together during the early stages of research design and proposal preparation. End users may also work with them. This is to ensure quality proposals and to establish collegial relations early on in the linkage. Hopefully this will contribute to continued collaboration during and beyond the research grant award. Seed grants -- as part of the initial screening review and approval process -- should allow more concept papers to be included in the design process than will be approved and financed as proposals. This should heighten competition so that high quality proposals are the ones finally approved. It could also have a side effect of pairing some of the less fortunate competitors together so that they might have continued interaction for research purposes during another design process in UPL II -- or in another project.

6.0 Proposal Solicitation, Review and Award Procedures

Before discussing the procedures, it would be useful to introduce the main actors in the Supreme Council of Universities (SCU) as these are referred to briefly in this section. They will be discussed more thoroughly in the section on Management Organization.

Supreme Council of Universities is above all universities and sets policies, equivalence and promotion standards, coordinates academic programs, and manages university relations with foreign agencies.

Foreign Relations Coordination Unit (FRCU) deals directly with USAID as the main implementing agency of the ULP II project.

Priority Committees (Research Priority Policy Committees) review concept papers and proposals and make key recommendations regarding their acceptance or rejection.

Principal Investigator refers to the chief researcher who individually or as a team leader manages the research grant.

There will be seven discrete procedures to select proposals from the point at which they were solicited to when they are awarded funding. The following details these procedures, and they are summarized in flow chart in figure 1.

6.1 Solicitation

Solicitation of the end users, and Egyptian and American universities to participate in ULP II begins by making them aware of opportunities, alternatives and procedures for problem solving research. General announcements of the ULP II project will be made in Egypt and the US using printed media appropriate to the target audiences, which in Egypt include end users as well as the university community. These announcements will contain among other things illustrative problem areas, a new project emphasis upon end user participation, and increased emphasis upon private sector research. Interested Egyptian and US researchers as well as end users will be able to obtain a more detailed set of guidelines from the FRCU or in the case of US researchers from the Egyptian Cultural and Education Bureau (ECEB) from the Egyptian Embassy in Washington.

After receiving announcements, end users will be invited to seminars conducted by the FRCU to promote end user interest in the project and to engender preliminary contacts between them and university faculty members. Informal contacts and proposed liaison committees between end users and university faculty will further apprise end users of the opportunities and procedures involved in the project.

For Egyptian universities, a mailing to relevant Egyptian faculty members will include general project features, submission deadlines, suggested formats, guidelines for concept papers and proposals, and funding criteria.

For the US university audience, appropriate media will be used for general project announcements and will include the Commerce Business Daily; professional society journals such as the American Society of Mechanical Engineering, Journal of Agricultural Research, Journal of Higher Education, etc.; and periodicals having broad US university readership such as Science, Scientific American and the Chronical of Higher Education.

USAID and the FRCU will review the solicitation mechanisms at the end of the first project year. They may be revised depending upon that review. This is to ensure widespread participation by Egyptian and US university communities for the remaining of the funding cycle.

6.2 Preparation of Initial Submissions

To participate in ULP II Egyptian faculty members must select development problems for which an end user agrees that it needs applied research and that it warrants cost sharing. An end user may also submit a research problem and ask that FRCU seek qualified university staff willing to undertake the activities needed. Prior or existing linkages between Egyptian and US researchers will also be encouraged to provide new submissions. These initial documents

must adhere to the concept paper guidelines outlined above.

6.3 Initial Review

The FRCU will screen the concept paper submissions for adherence to format and guidelines. After initial screening, FRCU will have the option of returning the document to the proposer for needed format revision should the underlying problem statement and approach appear sound but the format is not adhered to. FRCU will codify the documents according to the problem area and distribute the documents to the appropriate Priority Committee. It will also conduct an "overlap review" to ensure that the paper does not duplicate other research efforts. The Committee will then conduct a detailed review of papers which will include technical soundness, research team capability as well as responsiveness to the guidelines. The review will conclude with the acceptance or rejection of papers. Letters will be sent to those whose papers were rejected explaining why they did not meet the guidelines; or that they duplicated other research efforts.

6.4 US Counterpart Locator/Facilitator Service

The accepted concept papers for which an end-user commitment exists and which have a justified US counterpart will be directly eligible for a seed grant. Accepted concept papers not having an identified and justified US counterpart will access through FRCU the Locator service (noted above) to facilitate the connection. FRCU or the successful principal investigator will forward to the Locator the counterpart capabilities and expected activities outlined in the concept paper to the Locator. He in turn will contact qualified US university researchers or departments and explore their interest to participate in ULP II through this particular grant. The Locator will then transmit details of one or more interested US researchers recommended by the Locator to the FRCU for review by the Egyptian principal investigator. In cases where the recommended candidates are found unacceptable, sufficient supporting reasons and additional information may be necessary to complete the search process. The principal investigator will then notify the Locator of his preferred US researcher(s). Upon acceptance from the latter to participate in the project, the investigator will send him the concept paper and request a reply committing him to participate in the development of the proposal.

6.5 Seed Grant Award and Final Proposal Preparation

As was noted above the seed grants are also to facilitate initial relationships between Egyptian and US researchers to assist them with proposal preparation. Small grants for rapid communication, limited travel and nominal miscellaneous expense (but no remuneration) will be provided to the Egyptian and US authors of proposals. Provisional limits for seed grant amounts and proposed preparation times are: micro grants - \$3,500 and 45 days; mini

grants - \$7,000 and 60 days; and maxi grants \$15,000 and 90 days.

6.6 Proposal Review

Proposals will be submitted to FRCU by a deadline established for each grant. FRCU will screen proposals for adherence to format and guidelines and for duplication with other research, and may return the proposal to the proposer for the same reasons as with concept papers. It will also codify the screened documents by problem area and assign it for review to the appropriate priority committee.

The Committees will accept, reject or return for modification the proposals. Accepted micro proposals will be sent by the priority committees to the executive director for final approval. Accepted mini proposals will be sent by the Priority Committee to the Consulting and Advisory Committee -- Heads of Priority Committees and a three University Presidents -- for final review and presentation to the Secretary General who will have the authority for approving mini grants. Accepted maxi proposals will be subject to the same procedure as that of mini proposals, but will require the further approval of the Minister of Higher Education.

6.7 Draft and Final Grant Agreement

FRCU will prepare, for each grant, a draft of the final agreement using a standard format as agreed by USAID. The draft agreement will be provided to the Egyptian and US principal investigators and to the end user. These parties will agree to accept and sign a final agreement which will be binding on all signatory parties.

7.0 Grant Reporting, Monitoring and Peer Review

Technical progress reports will be submitted semiannually with annual progress reports for grants greater than 12 months duration. A comprehensive final report is required upon grant completion. All reports are to be jointly prepared by the Egyptian and US researchers and should contain a substantive contribution from the US counterpart. All reports should be in English. The US Principal Investigator (USPI) will have editorial responsibility over all progress reports. Accordingly, final drafts will be cleared through him prior to the submission to FRCU. These requirements are consistent with the Impact Assessment recommendations.

The FRCU will assign one individual from the appropriate priority committee to monitor grant progress routinely. The individual will meet with the research team at least once a month to discuss progress and problems. The grant monitor will be expected to meet with members of the US counterpart university during their visits

to Egypt to obtain their views on grant progress as well as to evaluate the US contribution. The findings will be the subject of a very brief monthly report to the appropriate priority committee.

The Committees will utilize the grant technical reports to further evaluate performance on a semiannual and annual basis. Monthly reports from the grant monitor will be used to flag unusual problems and enable FRCU to initiate remedial actions in the interim between semiannual reviews if required. Figure 2 illustrates this performance review as a flow chart.

8.0 Management Structure and Functions

8.1 Management Structure

The implementing agency for this project is the Foreign Relations Coordinating Unit (FRCU) which is lodged within the Supreme Council of Universities (SCU). As the overall managing agency for public Egyptian universities, the SCU is the logical agency through which foreign donors deal with these universities. The SCU is the highest authority regarding these universities and sets educational and administrative policies for them. It also manages and approves general curricular activities and development. It sets and executes promotion of university professor. FRCU and SCU are portrayed in Figure 3.

The FRCU, then, is a relatively autonomous unit within the SCU. It reports directly to the Secretary General of the SCU, and to the Minister of Higher Education (head of Supreme Council) through the Secretary General. Under ULP II the FRCU will have increasing autonomy and management authority than it did under ULP I. For example, in ULP II full approval authority for micro and mini grants will be in the FRCU only, whereas this was not the case under ULP I. In addition, the financial and administrative by-laws that control FRCU will give more authority to FRCU so that it will not have to gain approval from higher authority on such matters as travel. This evolved naturally through the development of ULP I.

Two important components within FRCU are the Research Priority Policy Committee (Priority Committee) and the Consulting and Advisory Committee (CAC). The Policy Committees (PC) set research priorities and review concept paper, proposals and progress reports. There are eleven Policy Committees, one for each research priority area. They also make funding decisions for the approved grants. The PC's make recommendations on proposal approval and continuation of funding to the executive director in the case of micros, and to the CAC in the case of mini and maxi grants. The CAC makes funding recommendations to the Secretary General who can give final approval for mini grants, but refers maxi grants to the Minister for final approval. Each committee consists of university professors, Ministry personnel, and end user representatives. The Executive Director of the FRCU sits on each of the PC's.

The CAC reviews cross-sectoral proposals; and reviews the mini and maxi proposals before these are approved by the SCU secretary general or by the Minister, respectively. Under ULP II the CAC with assistance from the FRCU executive director will monitor project set asides (HBCU), project conditions (match funding) and related conditions or problems that crosscut all grants. This is to support and facilitate the liaison efforts between the universities and the end users that beginning at this time.

The role of USAID under ULP II will be an advising, facilitating and monitoring one. First, it will oversee the FRCU's management of the grant guidelines and funding criteria for concept papers and proposals. When deviations from the guidelines and criteria occur, HRDC advises the FRCU about the necessity to adhere to these guidelines. On other matters, it advises FRCU where appropriate on AID Handbook regulations. Second, it reviews the FRCU approval/rejection process to ensure as wide a distribution as possible of the grants to universities and end users as possible. This proved to be efficacious under ULP I when the HRDC suggested a new class of capacity-building linkages which evened out the then skewed distribution of linkages. Third, it reviews approved proposals and progress reports to ensure that they are targeted for developmental significance. Fourth, it serves, under special cases (HBCUs) an intermediary role to assist in the matching of US and Egyptian universities. Generally, it oversees the fulfillment of the tasks detailed under section 8.2 above.

8.1.1 Foreign Relations Coordination Unit (FRCU)

The FRCU, the proposed implementing agency was established within the Supreme Council of Universities in 1980. The Unit received technical assistance, training and commodity support from AID during its formation and has provided grant management and administrative services for ULP I. The Impact Assessment concluded that the basic FRCU structure is sound and that distancing grant decisions from university authority *per se* led to a laudable peer review process for grant awards.

The organization chart for the FRCU is shown in Figure 4. The organizational structure of the FRCU is consistent with the activities to be carried out under ULP II. The Unit is not now fully staffed given the present level of management and administrative activities required to support ongoing extensions to ULP I. It is anticipated that the GOE will provide sufficient funding for FRCU to enable staff additions as well as the employment of temporary staff to accommodate expected cyclical workloads during the initial three project years. New full time staff and part time employees will require some training. No training estimate is included in this analysis.

FRCU has agreed, in principle, to recommendations made by USAID and the Impact Assessment to improve the administrative efficiency of ULP II. These include:

- ◆ the elimination of grant approval by the relevant government ministry which is problematic as representatives of appropriate ministries are members of Priority Committees.
- ◆ changing grant reporting from a quarterly to a semiannual cycle;
- ◆ broadening the membership of the grant review committees to further an interdisciplinary grant review approach;
- ◆ to administer seed grant activities to assist improved research design and increased interaction with US counterparts.

8.2 Management Functions

Many of the operations covered above regarding proposal development and grant management might be considered overall management functions as well. These and others will be stated in summary fashion as core management functions for which FRCU -- the implementing agency -- will be responsible:

- a) Market university research capabilities to potential end users and seek end user involvement in the research process and grant funding;
- b) Announce, solicit and collect research proposals having special characteristics (funding criteria and guidelines) which address designated problem areas;
- c) Conduct development, technical and fiscal evaluations of proposals;
- d) Approve selected research submissions and fund seed grants or final grants as appropriate;
- e) Assist in the identification of capable, interested US universities to collaborate in research design and grant execution;
- f) Procure equipment and arrange short term training as requested by individual grants;
- g) Maintain accurate and accessible records of all proposal/grant actions and their current status;

h) Make periodic grant performance reviews and take corrective actions as needed;

i) Monitor and evaluate overall grant management performance providing progress and financial reports as required;

j) Disseminate research results and encourage their further utilization;

k) Conduct an assessment of the impact made by the research grants and of the benefits derived from Egyptian and US collaboration;

l) Support external evaluations and assessments.

m) Manage the grants system in accordance with project requirements, e.g., observe the timely satisfaction of CP's and Covenants, monitor the HBCU set aside, and ensure that overall grant awards do not jeopardize this requirement. It will also ensure the accomplishment of the increased emphasis on private sector related to research.

n) Establish and maintain a data base on ongoing and new research activities and on participants to enable the assessment of project impact on all parties, especially the university research community. This data base should disaggregate data by gender.

8.2.1 Management Activities, Responsibilities and Staff Requirements

Each grant management function delineated above will be accomplished through a set of activities carried out by the management organization staff. The relationship between functions, activities, organizational responsibility and staffing is shown as a matrix in Figure 5.

The estimated 26 person years (GOE plus match funding) of FRCU staff time and 13 person years of non-FRCU involvement are not distributed uniformly over the LOP. A large number of concept paper, seed grants and proposal awards will be processed in the first and second project years. The grant tracking and review activities, while continuing throughout the project, will peak in the second and third project years. Part time staff can be utilized for management information system (MIS) data entry, retrieval and organization for report purposes. Preparation of extensive mailings and other semi-routine tasks also lend themselves to part time or temporary staff.

There are, however, a sufficient number of activities which require short term response, in-depth knowledge of procedures, familiarity with grant details and continuity of action(s). Permanent, full time FRCU employees needed for these tasks are estimated to be a minimum of nine. Were average grant funding measurably less than the ceilings, the total number of grants could be increased with a concomitant increase in FRCU workload and in full time staff requirements.

8.3 Administrative Adequacy

The project organizational structure with modifications suggested by the Impact Assessment is capable of implementing the necessary procedures and processes to solicit, review and award 100 grants for the LOP across the three grant categories. The structure is also consistent with the task of performance monitoring of the grant portfolio. Each organizational entity has identified responsibilities which in total are judged to comprise an effective management plan with adequate oversight provisions.

Further, it is concluded that FRCU should continue to manage and administer ULP II grant activities. The significant investment made in establishing the unit, the increasing satisfactory performance, and its willingness to undertake changes to further improve grant solicitation, review, award performance tracking all support this conclusion. Transferring these responsibilities to a new entity would jeopardize project performance and would not be cost effective.

9.0 Special Considerations

9.1 HBCU Participation in ULP II

Linkages with the Historically Black Colleges and Universities (HBCU) in the US are a desired feature of ULP II. In addition to the general announcements about the project during the Solicitation procedure (above), additional announcements and materials about the project will be directed to the National Association for Equal Opportunities in Higher Education (NAFEO) and to the National Council for Negro Women (NCNW) for dissemination among the HBCUs. NAFEO will assume the role of the Locator Service for this group of universities.

FRCU will be enjoined to select the most suitable from among the approved concept papers and which do not yet have a designated or justified US counterpart to be assigned to the HBCU's. Tentatively the total amount will be 30 Concept Papers for the first funding year and 40 for the second year. Then FRCU will send the initial research plan, proposal guidelines, funding criteria and proposal guidelines to NAFEO, NCNW and other relevant agencies or institutions suggested by USAID/HRDC.

These agencies will identify one or more researchers and HBCU institutions which have the appropriate research experience, skills and professional interests as possible US counterparts for participation in developing the concept papers into proposals. Their professional background (affiliation, education, research experience, published papers, etc.) together with an expression of interest on the part of the principal investigator and his university department will be sent back to FRCU and the Egyptian principal investigator for review. Once FRCU and the investigators have agreed on the appropriate US counterparts from the HBCU's, then they will seek from them a commitment to participate. Seed grants will be used for proposal development.

The proposals resulting from HBCU collaboration will be reviewed according to the same proposal guidelines and funding criteria as all other proposals. Eight proposals (4 micro, 4 mini) will be reserved for award to HBCU's in the first funding year. Unless the solicitation, review and award procedures are changed, the process will be repeated for the second funding year with 10 proposals (5 micro, 5 mini) reserved for HBCU's

9.2 End User Cost Sharing

Each grant awarded under ULP II is expected to have an identified end user who has formally agreed to share research costs. The aggregate cash contributions should rise from 35% of total local currency costs of year one of the project to 60 % of that cost in year six. This requirement is a minimum for total cost sharing and will be automatically satisfied if it is requested of all projects. To give management flexibility to the FRCU, this requirement is made on the aggregate to allow some grants to fall below it and others to exceed it. It is thus not a proposal funding criterion, but is a management requirement. Its continued satisfaction could be made into a covenant or CP for disbursements after the first year. In-kind contributions, such as services, equipment, materials or facilities -- properly documented and costed out -- will be considered a favorable aspect of proposals; but they will not substitute for cash contributions except in health and education.

10.0 Institutional Sustainability

This section attempts to demonstrate that current conditions in the Egyptian university and end user communities are such that ULP II can produce sustainable university linkages. An analysis of AID Impact and project evaluations reveal six factors which contribute significantly to sustainable university linkages in Third World countries. It is argued that these factors are emerging as they relate to university-community relations in Egypt, and that the

relative success of ULP I and the changing economic climate in Egypt has contributed to this emergence. ULP II is designed to build upon these factors. Hence, sustainable linkages between Egyptian and American universities, and between Egyptian universities and the end user community are likely to result.

This section is based on over 20 AID evaluations that discuss partly or entirely university linkage or "linkage type" projects. Some are final project evaluations, and others are Impact Evaluations. Five Impact Evaluations in particular were very useful because they focussed on higher education assistance projects which contained linkages in Morocco (Hassan Institute of Agriculture), Dominican Republic (Superior Institute for Agriculture - ISA), India (State Agricultural Universities - SAUs), Thailand (Kasetsart), and four African Universities in Nigeria and Malawi. Impact evaluations of projects provide greater depth and insight into the strengths and weaknesses of projects than do standard final project evaluations. Data were also collected from two intensive field trips to Alexandria University and its environment as well as to Assiut University.

Sustainability here refers to the ability of an institution or linkage to continue to operate for a long period on its own with decreasing assistance from outside sources. "Decreasing" as opposed to "no" assistance is preferred because it is realistic. Few, if any linkage activities, (one might even say development projects) continue to operate on their own resources without some assistance, be it from the government, an interested constituency or a foreign donor. So, sustainability refers to "more or less" rather than a discrete category.

In terms of ULP II, sustainability refers to the capacity of a linkage between an American and Egyptian university (internal linkage) and between the Egyptian and end-user community (external linkage) to persist throughout the life of the project, and possibly after the project. It also means that this linkage contributes during this period to the capacity of the Egyptian university to meet end-user needs, though not necessarily one end-user only.

In the case of the above Impact Evaluations, ISA and the SAUs had more dynamic and sustainable relationships with American universities than did the African universities, because the former had a greater impact on their immediate environment through applied research and consulting services. As their research and consulting performance improved, host government funding and incentives as well as requests for services from clients reinforced their external linkages and contributed to a closer relationship with the partner US university to assist in meeting client needs. This did not happen in the African universities which remained isolated from the farmers and rural development programs, and their relationship with the American partner universities remained a static one.

The six factors are:

1. Government Support - The most effective external linkages occurred in universities which had political support from the central government and were under the control of one ministry. These universities had a strong relationship with their primary bureaucratic constituency, and so had access to policy, funding and institutional forums supportive of their applied research and outreach goals. The least effective linkages were in the African universities which had no explicit bureaucratic constituency as they were under the control of two or more ministries. Of crucial importance also is regular and adequate funding from the host country government to the university to support recurrent costs and needed capital costs for expansion and improvement.

2. Long Term Assistance - Virtually every evaluation subscribes to this assertion, and it has become a truism in the institution building literature. The remarkable success of the Hassan Institute of Agriculture of Morocco is the 15 year relationship between this institution and the University of Minnesota which was marked by trust and mutual understanding. This accumulation of trust, reinforced by commitment and performance enabled both Institute and Minnesota personnel to explore and test a variety of options within a long term planning framework. Within this long term framework, however, project development tended to be incremental, marked by successive short term activities which were quickly reviewed and modified in the next wave. In other cases -- Los Banos and the Indian SAUs -- which had long term relationships with Cornell and the Land Grant Universities, respectively, they have recently (1988) sought to renew or secure new linkage arrangements with US agricultural universities.

3. Autonomy - While the externally effective universities operate with government support, they do so with some independence. This allows for freedom to formulate policies, program objectives, faculty activities, and research agendas.

4. Entrepreneurial Approach - Related to autonomy is the need for an externally effective institution to seek out contracts from public and private sector clients as well as funding from more than one donor. The Hassan Institute, ISA and Kasetsart actively sought and obtained research contracts, while limited government funding prompted ISA to solicit funds from a few donors. In addition, these universities aggressively pursued and obtained the maximum funding that was authorized in their annual budgets.

5. Quality Performance - A commitment to high standards insures that the dynamic institution will continue to attract quality students, will be sought after for research contracts by private sector clients and will be assured of continue government funding. These favorable and postive stimuli from the environment will continue to reinforce the quality performance. This beneficent

cycle in turn contributes to overall sustainability.

6. "Demand-driven" Awareness - The services the externally effective institution offers as well as the more contracts it receives through external linkages, the more it will adapt to and respond to the beneficial market forces. This in turn influences the orientation of the curriculum to be more attuned to preparing students for the world of work. Naturally, this awareness and response must be balanced with a commitment to academic standards, scholarship and the integration of theory with practice.

The six factors in the Egyptian university context are:

1. Government Support - In the case of Egyptian higher education, there is no uncertainty regarding government administrative and financial support. It is the Ministry of Higher Education which operates through the Supreme Council of Universities (SCU). The SCU sets educational and administrative policies, manages and approves general curricular activities and development, and determines and implements promotion criteria of university professors (See Annex IV). In effect it supplies a coherence to a university system without stifling the individual character and operations of each of the 11 universities. Regular and substantial funding is also provided through the Ministry of Higher Education. Unlike the African universities mentioned above, Egyptian universities do not have to worry about which boss to report to, nor where the funding of different activities will be coming from.

2. Long Term Assistance - Like the successful projects of ISA, Hassan Institute of Agriculture, and Kasetsart, ULP I and ULP II will last approximately 15 years. By AID standards for project development, this is indeed an extensive period. However, the dynamics of a three party linkage among US and Egyptian universities and end users is a complicated and extended process in order to develop the essential ingredients of trust and mutual understanding. Like the Hassan Institute case, it can be done through **incremental project development** whereby the universities collaborate on a short term basis to solve end user problems which test out options of an operational plan. As successful projects emerge from the "bottom up", the success of each small, but meaningful activity reinforces in the end users' eyes the credibility of the US and Egyptian university. The satisfactory completion of one research activity after the other accumulates to produce new end user activities and opportunities. This is likely to lead to larger project activities and a commitment for a sustained linkage.

3. Autonomy - While the SCU is the overall coordinating body for universities, and it regulates key activities such as curriculum development and faculty promotion, universities have considerable

autonomy. First, university autonomy is stipulated in Egypt's constitution and is carried out through many rules and regulations unique to each university. Second, each university is self-managing in terms of academic freedom and applying controls and criteria for the evaluation of performance standards. Third, each exercises its responsibility regarding the range and types of research. Fourth, universities in different regions serve different clientele and thus must take on a different character. Rules, regulations and operational styles of Deans and faculty members in Alexandria, for example, are not the same as those in Assiut.

4. Entrepreneurial Approach - Interview data indicated a strong interest among faculty to seek out end user needs and to address them through applied research. They saw tension but no major conflict between applied research which generally does not count for promotion, and theoretical research which is essential for promotion. Participation in an applied research project carries with it opportunities to gain new insights, test out ideas, or to collaborate with distinguished Egyptian or American faculty; and these could lead to further opportunities for more theoretical research.

Some professors have converted this interest into substantial consulting practices, and some universities have developed institutes to direct these efforts institutionally to end user needs. In Alexandria, for example, a research institute has a formal solicitation process to channel public and private sector requests for applied research to the appropriate professor(s) and to negotiate, manage and fulfill contracts to meet these requests through applied research. This same institute also provides short courses in technical areas for chemists, engineers, etc. to address problems which these personnel have articulated to the institute. In addition, the institute uses these courses to seize upon researchable problems, develops them into feasible research activities, and negotiates contracts with the respective firm, plant or company to carry them out as research activities. In Assiut a smaller, less sophisticated and more informal process takes place for agricultural research to address agrobusiness needs. Nevertheless, the desire to conduct applied research is there.

ULP II intends to build upon this entrepreneurial spirit by establishing liaison committees between each university and end users. In some universities these already exist albeit as informal and *ad hoc* activities. FRCU would like to see these committees formalized and operating on a regular basis so as to ensure information exchange between the two communities regarding end user problems and available university expertise to address the problems.

5. Quality Performance - The proof of quality research performance is the return of the client to seek out further applied research, or the arrival of new clients. Limited evidence suggests that a number of clients are satisfied with university research be it in pollution control, maintenance systems or crop production. End users who were interviewed seemed quite satisfied with the research services for which they had to pay a healthy sum; and they were willing to pay it again if the services solved their problems. Clearly, a modest survey of end user satisfaction with university research would be useful to determine the level of satisfaction. ULP II intends to ensure quality performance through appropriate use of interdisciplinary research for complicated problems.

6. Demand Driven - There is little question that the applied research is in response to real problems in the end user marketplace. No doubt this response coincides with a particular research idea which a professor wants to test out or develop, but there appears to be a satisfaction of mutual interests between the researcher and end user through the research activity. Deans and faculty members asserted that end user articulation in problem definition and participation in the research activity was essential if the activity were to be successful. Some research activities were, in fact, market studies to define more precisely the nature of product or service demand. Training courses were end user driven in terms of objectives and content. Interviews indicated that times had changed: 1990 is different from 1980 in that university research must be more responsive to the technical and managerial needs of clients.

USAID IMPACT EVALUATIONS

AID Project Impact Evaluation Report No. 64. Malawi: Bunda Agricultural College. Wash. DC, 1987.

AID Project Impact Evaluation Report No. 65. The Hassan II Institute of Agriculture and Veterinary Medicine in Morocco. Wash. DC, 1987.

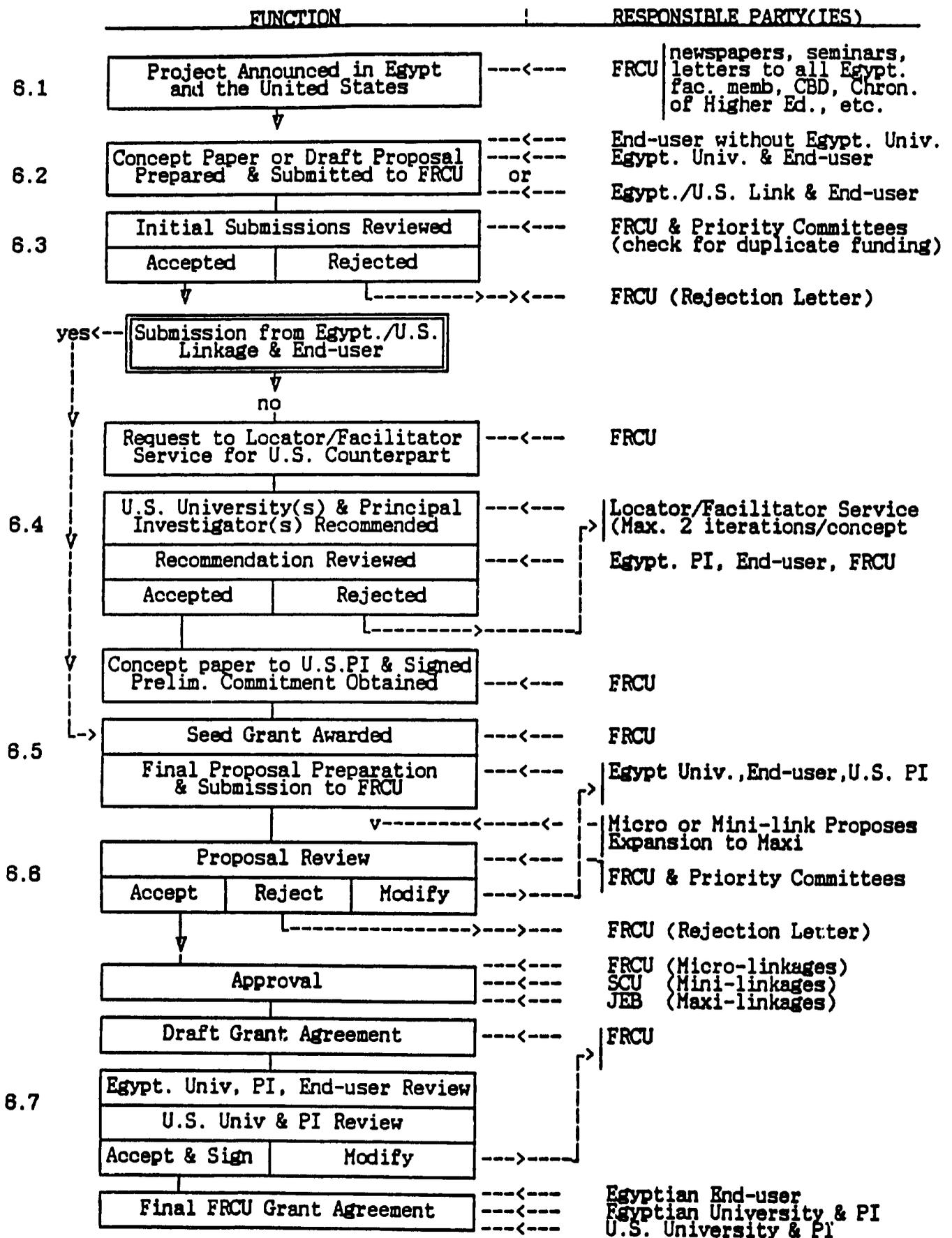
AID Project Impact Evaluation Report No. 66. Three Nigerian Universities and Their Role in Agricultural Development. Wash. DC 1988.

AID Project Impact Evaluation Report No. 67. Dominican Republic: The Superior Institute of Agriculture, Wash, DC, 1988.

AID Project Impact Evaluation (Draft). Universities for Development: Report of the Joint Indo-US Impact Evaluation of the Indian Agricultural Universities. Wash, DC 1988.

AID Project Impact Evaluation (Draft). Kasetsart University in Thailand. Wash, DC 1988.

Figure F-1. PROPOSAL SOLICITATION/REVIEW/GRANT AWARD FUNCTIONAL FLOW



**Figure F-2. GRANT PERFORMANCE TRACKING
FUNCTIONAL FLOW**

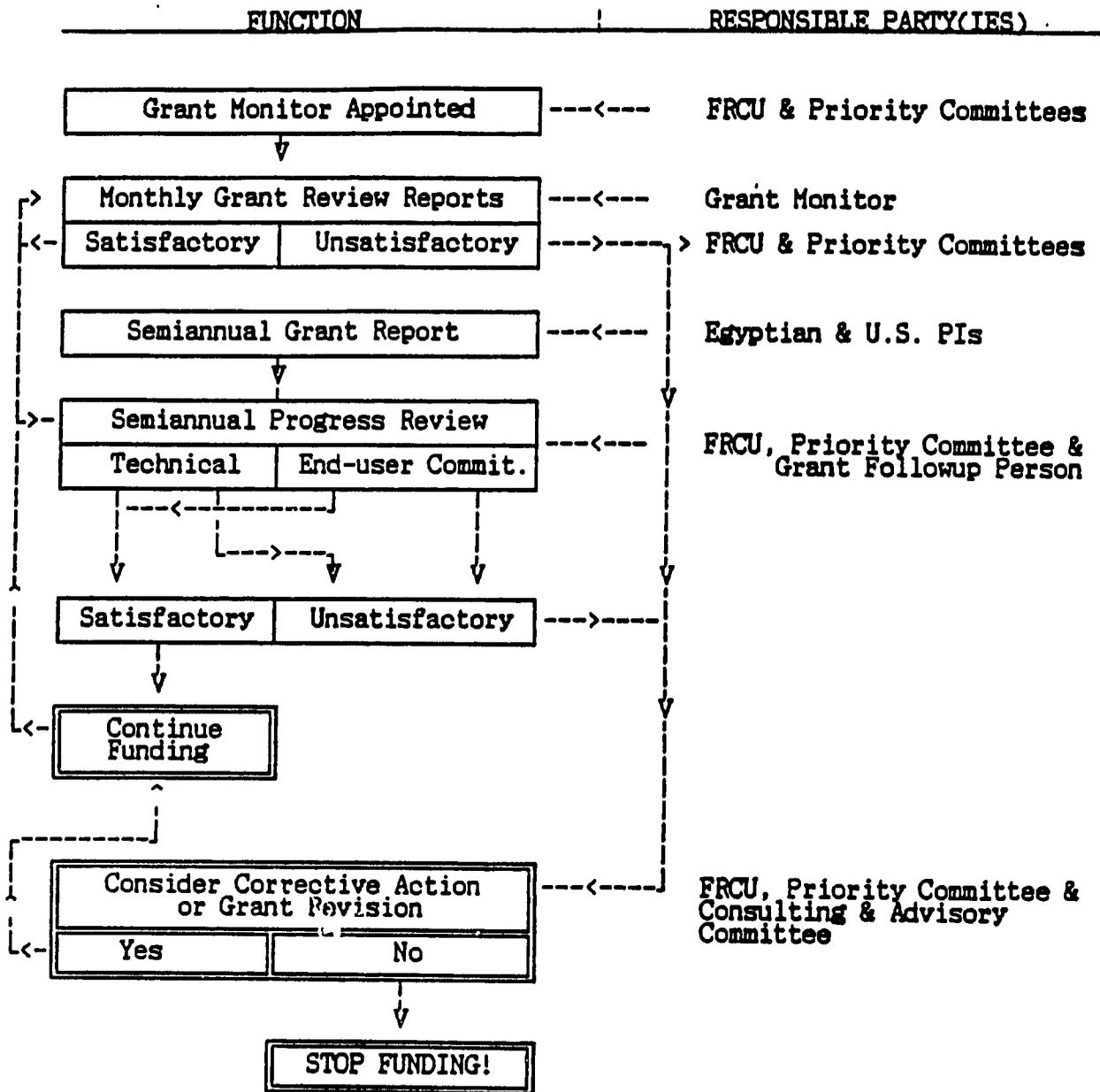


Figure F-3. ULP/II FUNCTIONAL ORGANIZATION CHART

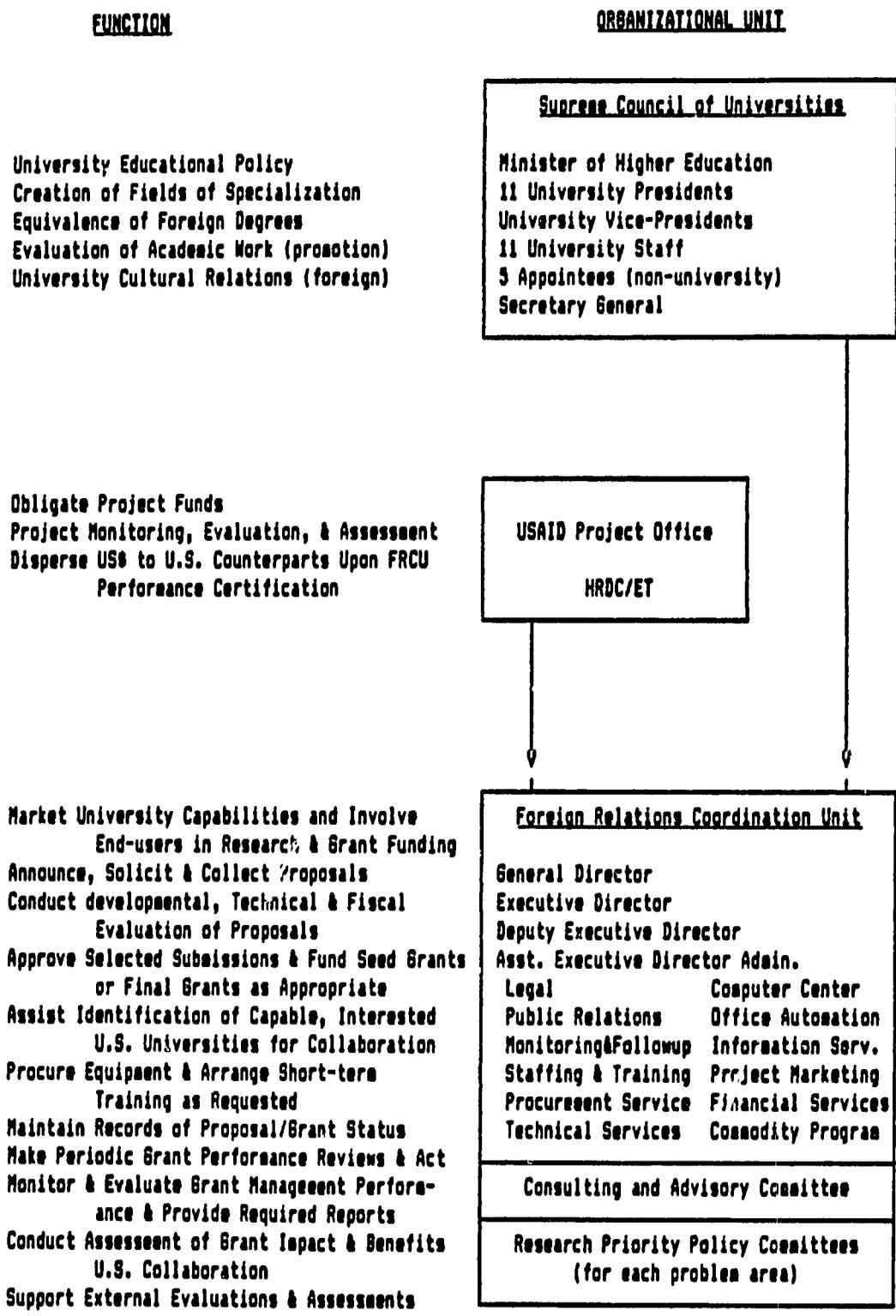


Figure F-4. FRCU ORGANIZATION CHART

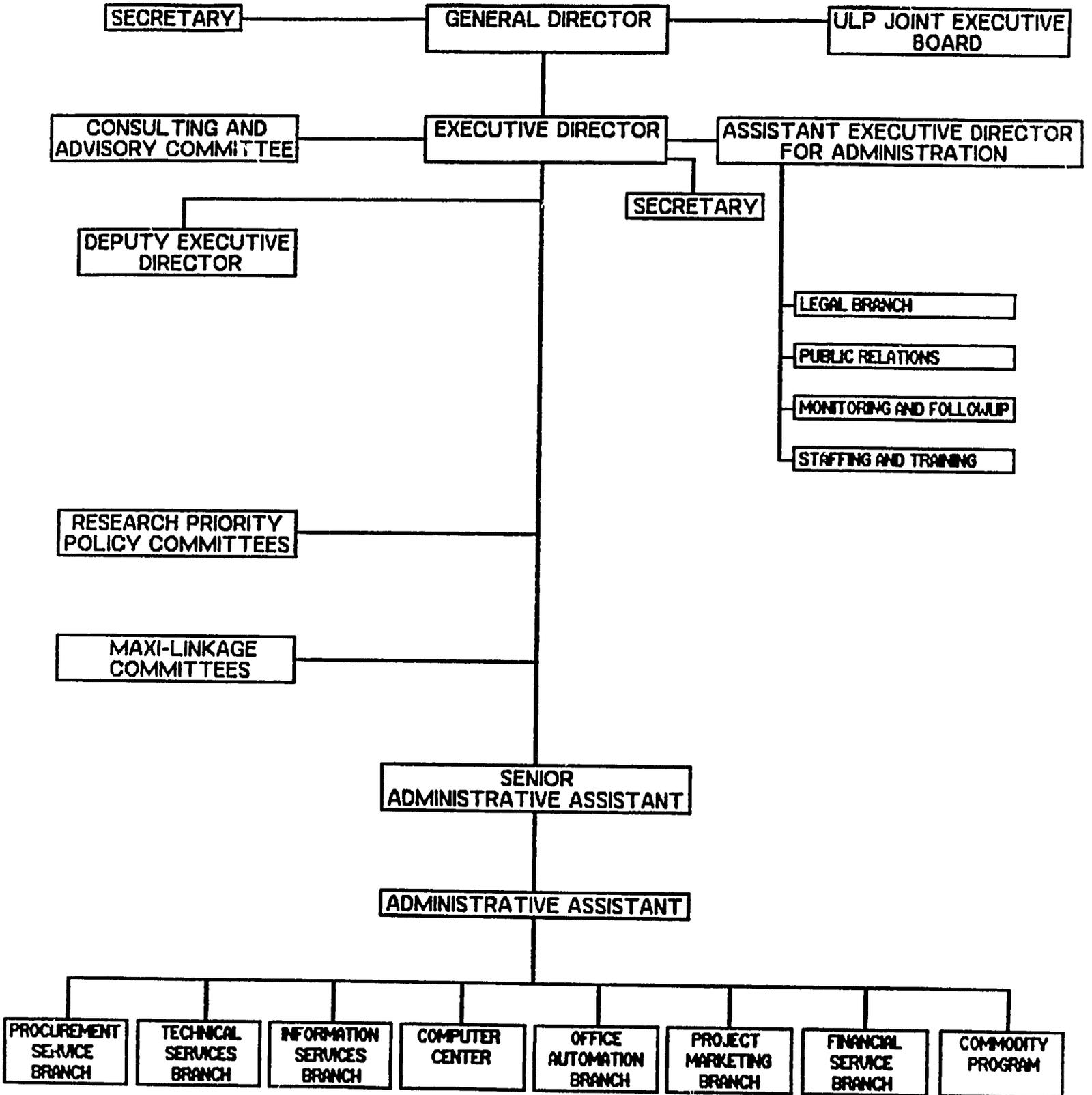


Figure F-5. ORGANIZATIONAL REQUIREMENTS

GRANT MANAGEMENT FUNCTION	ACTIVITY	RESPONSIBLE UNIT ^{1/}	LOP PERSON MONTHS
All	Daily Supervision	FRCU Executive Director	66
Market univ. capability & seek end-user involvement in research & grant funding	Solicit end-user problems	RPPC	12
	Organize/conduct problem oriented seminars	FRCU Asst. Exec. Dir., Sr. Adm. Asst.	180
Announce, solicit & collect research concepts	Gen'l. announcement Egypt media	FRCU Sr. Adm. Asst.	24
	Gen'l. announcement U.S. media	FRCU Sr. Adm. Asst. & ext. editor	24
	Mailing to relevant univ. staff	FRCU Asst. Exec. Dir. & Sr. Adm. Asst.	36
	Receive, codify & register propos.	FRCU Asst. Exec. Dir. & Sr. Adm. Asst.	96
Conduct developmental, technical & fiscal eval. of proposals	Screen concepts for guideline adherence & duplication	FRCU Sr. Adm. Asst.	60
	Evaluate & rank concept papers	RPPC & peer individuals	60
	Concept accept/reject recommend.	RPPC & FRCU Exec. Director	30
	Send rejection letters	FRCU Adm. Asst.	18
	Review and rank final proposals	RPPC & peer individuals	48
	Proposal accept/reject recommend.	RPPC & FRCU Exec. Director	9
	Send rejection letters	FRCU Adm. Asst.	18
Approve grant submissions & fund seed/final grants	Approve concept papers	FRCU Executive Director	6
	Seed grant awards	FRCU Asst. Exec. Dir., & Adm. Asst.	90
	Final grant approval	FRCU Exec. Dir., SCU, JEB	9
	Prepare draft grant agreements	FRCU Asst. Exec. Director	36
	Distribute/monitor draft agrees.	FRCU Sr. Adm. Asst.	18
	Prepare final grant agreements	FRCU Asst. Exec. Director	18
	Distribute/monitor final agrees.	FRCU Sr. Adm. Asst.	18
Assist identification of capable, interested U.S. university collaborators	Initiate search by U.S. Locat. r	FRCU Sr. Adm. Asst.	60
	Facilitate comm. until selection	FRCU Sr. Adm. Asst.	60
Procure equipment	U.S. collaborator recommendation	PI & FRCU Sr. Adm. Asst.	6
	Rcv. specs/prepare bid requests	FRCU Sr. Adm. Asst.	120
	Select bidders & send bid pkg.	PI & FRCU Sr. Adm. Asst.	36
	Receive/evaluate/select vendor	PI & FRCU Sr. Adm. Asst.	36
	Extend letter of credit	FRCU Exec. Dir. & Asst. Exec. Dir.	18
FRCU staff months - Page Total			952
non-FRCU staff months - Page Total			180

^{1/} Italicized responsible units and persons months are activities for which no FRCU staffing is required.

Figure 5. ORGANIZATIONAL REQUIREMENTS (Cont.)

GRANT MANAGEMENT FUNCTION	ACTIVITY	RESPONSIBLE UNIT I/	LOP PERSON MONTHS
Procure equipment (cont.)	Request collaborator assistance	FRCU Exec. Director	9
	Rcv./review/agree specs.	PI & FRCU Exec. Director	9
	Collaborator places bid(s)	Collaborator & FRCU Sr. Adm. Asst.	18
	Bids returned & evaluated	Collaborator & FRCU Exec. Dir.	12
	Vendor selected	PI & collaborator	6
	Request to USAID for US\$ transfer	FRCU Exec. Director	3
Maintain accurate and accessible proposal/grant records	Monitor & record proposal activity	FRCU Sr. Admin. Asst.	120
	Prepare proposal status reports	FRCU Sr. Admin. Asst.	48
	Monitor & record grant activity	FRCU Sr. Admin. Asst.	120
	Prepare grant status reports	FRCU Sr. Admin. Asst.	48
Periodic grant performance reviews & corrective action as necessary	Appoint a followup person (FUP)	RPPC & FRCU Exec. Director	3
	FUP meets with grant team at least monthly & reports to RPPC	FUP	260
	Six month review of semiannual & annual reports	RPPC, FRCU Exec. Director & FUP	72
	Grant progress review if negative finding by FUP or 6 mo. review	PI, RPPC, FRCU Exec. Dir. & FUP	3
	Modify grant/stop funding decision	CAC & FRCU Exec. Director	3
Monitor overall grant management performance with reports as required	Extract grant approval/award info, grant performance data, and financial statistics from MIS	FRCU Exec. Dir., Asst. Exec. Dir., Sr. Admin. Asst.	216
Disseminate research results & encourage utilization	Topical seminars of related grant results	FRCU Exec. Dir., Asst. Exec. Dir., Sr. Admin. Asst.	180
	Visits to potential users	PI & FRCU Asst. Exec. Dir.	18
	News releases of selected results	FRCU Asst. Exec. Director	9
Conduct internal impact assessment	Obtain quantitative data on end-user benefit in success grants	FRCU Asst. Exec. Director	9
	Prepare summary report	FRCU Asst. Exec. Director	9
Support external eval. & assessments	Provide reports & data, arrange meetings & trips as requested	FRCU Exec. Dir., Asst. Exec. Dir., Sr. Admin. Asst.	12
FRCU staff months - Page Total			739
non-FRCU staff months - Page Total			371
FRCU staff months - Project Total			1691
non-FRCU staff months - Project Total			551

IMPLEMENTATION AND MONITORING PLAN

A. Administrative Arrangements:

1. Government of the Arab Republic of Egypt (GOE): The Ministry of International Cooperation will represent the GOE as the Grantee.

2. Implementing Agency: The foreign Relations Coordination Unit (FRCU) of the Supreme Council of Universities (SCU), will be the implementing agency.

B. Project Management. (The organizational structure and functions of the project management is shown in Figure. F.3)

1. Foreign Relations Coordination Unit:

Management of the project will be carried out by the FRCU.

The FRCU will continue using the same administrative procedures developed under ULP/I, with some modifications aimed at simplifying the review/award grant process. These modifications were recommended by the 1989 impact assessment. The impact assessment determined that the FRCU review, award and monitoring processes were sound.

The FRCU will:

- ◆ implement ULP/II criteria and guidelines;
- ◆ market university research capabilities to potential end users;
- ◆ organize and conduct seminars for end users; project announcements and proposed solicitations;
- ◆ initiate search for U.S. counterpart universities;
- ◆ award seed grants;
- ◆ review proposals and award grants;
- ◆ certify grant non-duplication of USAID and other donor projects;
- ◆ disburse and monitor U.S. and GOE funds to Egyptian grantees;

- ♦ monitor and assure adherence to CPs, Covenants and other provisions of the Project Grant Agreement;
- ♦ uphold the HBCU set aside by making the necessary proportionate allocations of acceptable concept papers to HBCU counterparts through NAFEO and NCNW;
- ♦ observe and monitor the accomplishment of the new project emphasis on increased private sector involvement and take necessary actions to insure its occurrence;
- ♦ monitor the increased matched funding requirement to ensure its achievement;
- ♦ conduct periodic grant performance reviews;
- ♦ provide periodic performance reports to USAID;
- ♦ organize and conduct seminars to disseminate research results.

It is anticipated that 11-15 full-time staff members, plus part-time staff as required periodically, will perform FRCU's functions. The FRCU organization chart is shown in Figure F.4.

1.1 Grant Performance, Review, and Evaluation :

The FRCU Priority Committees representing various problem areas, e.g., energy, industry, infrastructure, etc., are the principal decision-making units for research grants. The priority committees include:

- ♦ representatives of the university research community (selected for their professional skills and not for their official positions);
- ♦ public and private sector end users and companies;
- ♦ relevant development ministries.

Since a multi-disciplinary emphasis is being placed on the ULP/II grants, it is desirable for the committees to be expanded to include representation from other disciplines including economics and the social sciences. The priority committees will review and accept or reject proposals and use a peer review system of experts in the

problem area (including researchers, consultants and end users) to review and monitor grant progress, and will make decisions on continuation, modification or suspension of the research grants. See Figure 1.

1.2 FRCU Liaison Office :

An FRCU project marketing and liaison office will assist private sector enterprises in identifying suitable university counterparts, and in cooperation with the university liaison/outreach offices, now being established, market university research capabilities within the private sector community.

1.3 ULP/II Database:

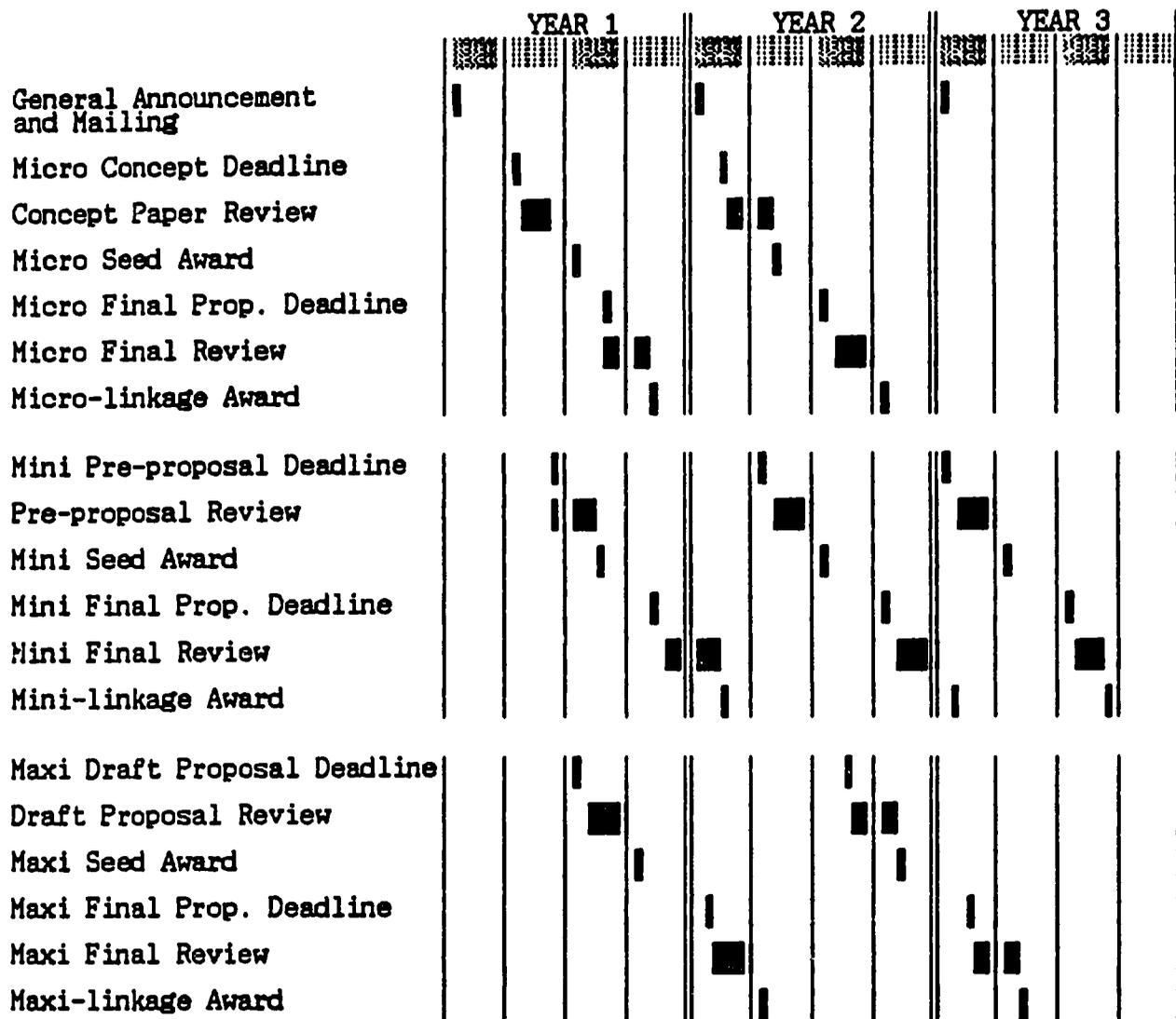
FRCU will up grade its baseline data base of Egyptian faculty linkages, research capabilities, interests, expertise, and relationships with end users, in order to enhance the effectiveness of the FRCU liaison office. FRCU will require completion of an experience/skills form from researchers submitting proposals, and the form will be up dated annually. FRCU will also seek to access similar data bases in other related project implementing agencies, such as ARC and ASRT. The purpose is to avoid duplication of effort, enhance the mechanism for university and non-university researchers to collaborate in R&D of common interest, or to strengthen problem solving capabilities available to an end user.

1.4 End User Orientation Workshops:

FRCU will coordinate a series of seminars and orientation workshops for end users and university researchers over the LOP. The objective of these workshops is to encourage end users to identify their priority problems and to familiarize end users with the problem solving capabilities of Egyptian university researchers. These workshops will also serve to disseminate research results (where no confidentiality is involved). Organizations in Egypt that promote and support the private sector, such as the United States Investment Promotion Office (USIPO), the International Executive Services Corporation (IESC), and the Alexandria Business Association (ABA), will be encouraged to participate in the workshops to assist in identification of private sector problem solving needs.

Many of the universities and the FRCU will present seminars, specific topics workshops, and continuing education courses designed to establish a dialogue between the productive sector and the university, to encourage public and private sector -

Figure 1. GRANT SOLICITATION/REVIEW/AWARD SCHEDULE



university linkages, and to impact on local, regional, and national development problems. See Annex II.

A detailed description of the role of the FRCU in the proposal Solicitation, Review and Award process is in The Technical and Administrative Analysis.

2. USAID Management:

Project management and monitoring will be the responsibility of HRDC/ET. A project Officer will manage the ULP/II project and will be assisted, as needed, in monitoring, evaluating and reviewing all aspects of the project by members of the project committee. The USAID Project Officer will maintain contact with the FRCU Executive Director and with the SCU. USAID will have access to all documents issued by the implementing agency, FRCU, and individual grants. USAID will monitor adherence to:

- ♦ provisions, e.g., increased private sector involvement, match-funding, and HBCU set-aside;
- ♦ procedures including widespread announcements about project opportunities and will review decisions;
- ♦ proposals guidelines, funding criteria, and management guidelines;
- ♦ proper reporting at the project and individual linkage level;
- ♦ adequate and continual involvement of US counterparts in a manner consistent with the establishment of a long term linkage.

In view of the 10 year history of successful implementation by HRDC/ET of predecessor projects, the office has the capability for the monitoring and review functions for ULP/II. No additional staff will be required.

C. Project Disbursements and Procurement:

Disbursement will follow procedures set forth in Project Implementation Letters (PILs) based on ULP/II project performance and estimates of future requirements of FRCU. The FRCU will present an annual plan and analysis which includes a review of the previous year's activities, a description of the overall thrust of the coming years activities, a specific

work plan, and an operating budget. The plan will also address any proposed changes in selection criteria. Annual funding levels within the constraints of FRCU authorization amount, will be determined by ULP/II project progress, as indicated by monitoring, evaluation, and projected annual requirements.

FRCU will handle U.S. dollar and large Egyptian pound procurements for the linkage grant, using the procurement procedures established under ULP/I. Assistance from US counterparts will be solicited in US dollar procurements if needed. Small local currency procurement will be handled by grant PI's. Grantees will be reimbursed for costs on a monthly basis, subject to certification by the principal investigation that grant progress is on schedule, as verified by the grant monitor.

D. Monitoring Plans:

1. FRCU Project Management System:

The primary responsibility for managing UPL/II project activities is vested in the FRCU Executive Director. Overall monitoring will be performed annually by the SCU, including assessment of progress towards the project goal and purposes, project planning, management and performance of FRCU, and adherence to annual budget projections. FRCU will prepare annual progress reports, which will summarize project activities, achievement of objectives, problems and proposed solutions. The reports will include an analysis of increased Egyptian university applied research capability, extent of involvement of women researchers, contributions of U.S. counterparts, including HBCU's, and extent of compliance with the requirement for baseline data inputs. These reports will also include annual work plans and budgets and subsequent funding requests to USAID and SCU.

Grant monitoring will be conducted by the Priority Committees (PC).

A member of the PC or the PC Peer Review Committee will be assigned to monitor each grant on a monthly basis, and to evaluate grant progress, results, adherence to work schedules and budgets, and to suggest changes in direction or modification of the work plan to achieve grant goals. The grant monitor will meet monthly with the Egyptian PI and the end user as well as with the U.S. counterpart when in Egypt. A monthly report of findings, conclusions, and recommendations will be presented to the relevant PC.

2. USAID:

USAID's monitoring responsibility will focus on FRCU'S compliance with policies and procedures as stated in project plans, FRCU financial and progress reports, and effectiveness of the overall implementation process. USAID will continuously review and monitor adherence to project guidelines and funding criteria throughout the LOP. Continuing compliance with the guidelines and funding criteria will be made a necessary condition for continued funding of on-going grants as well as the approval of new grants.

USAID will monitor project progress, in addition to review of reports, by: ongoing examination of linkage progress reports; periodic consultations with FRCU, SCU, MOHE officials, grant PI's, U.S. counterparts and end users; examination of project baseline data; and evaluations.

E. Implementation Schedules:

E. Implementation Schedule:

<u>Action</u>	<u>Event</u>	<u>Responsible Party</u>	<u>Project Month</u>
1.	Project Paper Approval	USAID	-3
2.	Congressional Notification	USAID	-3
3.	Draft ProAg Submitted to MOHE	USAID	-2
4.	ProAg Signed	USAID/MOHE	0
5.	PIL/Initial CP's	USAID	+1
6.	Start of PC & CAC meeting	FRCU	+2
7.	Initial CP's met	USAID/CAC	+2
8.	PIL/Approval Grant Announcement	USAID	+3
9.	SOW, U.S. Counterpart Location	USAID/FRCU	+3.5
10.	FRCU Quarterly Report to USAID	FRCU	+3
11.	Contract with Counterpart Locators	USAID	+5
12.	PIL First Annual Funding	USAID	+5
13.	First Grant Announcements	FRCU	+5
14.	FRCU Semi-Annual Report to USAID	FRCU	+6
15.	Baseline Data Format Established	FRCU	+7
16.	Continuous Grant Cycle in Operation*	FRCU	+8+8
17.	FRCU Quarterly Report to USAID	FRCU	+9
18.	Request Locator Response	FRCU	+10
19.	Award Micro Seed Grants	FRCU	+11
20.	Award Micro Seed Grants to HBCU's	FRCU	+11
21.	FRCU Annual Report/Second Yr. Operating Plan/Budget	FRCU	+12
22.	Request Locator Response	FRCU	+12
23.	Award Mini Seed Grants	FRCU	+13
24.	Award Mini Seed Grants to HBCU's	FRCU	+13
25.	PIL Second Annual Funding (Amendments)	USAID	+13
26.	Request Locator Response	FRCU	+14
27.	Award Maxi Seed Grants	FRCU	+15
28.	FRCU Quarterly Report to USAID	FRCU	+15
29.	Micro Linkage Awards	FRCU	+16
30.	Second Annual Grants Announcement	FRCU	+17
31.	FRCU Semi-Annual Report to USAID	FRCU	+18
32.	Mini Linkage Awards	FRCU	+19
33.	Maxi Linkage Awards	FRCU	+21
34.	FRCU Quarterly Report	FRCU	+21
35.	Request Locator Response	FRCU	+21
36.	Award Micro Seed Grants	FRCU	+22
37.	Request Locator Response	FRCU	+23
38.	Award Mini Seed Grants	FRCU	+24
39.	FRCU Annual Report/Third Yr. Operating Plan/Budget	FRCU	+24
40.	PIL Third Annual Funding/Amendments	USAID	+25
41.	Request Locator Response	FRCU	+26
42.	Award Maxi Seed Grants	FRCU	+27

<u>Action</u>	<u>Event</u>	<u>Responsible Party</u>	<u>Project Month</u>
43.	Micro Linkage Awards	FRCU	+27
44.	FRCU Quarterly Report to USAID	FRCU	+27
45.	Third Annual Grants Announcement	FRCU	+29
46.	Mini Linkage Awards	FRCU	+29
47.	FRCU Semi-Annual Report to USAID	FRCU	+30
48.	Request Locator Response	FRCU	,0
49.	Award Mini Seed Grants	FRCU	+31
50.	Maxi Linkage Awards	FRCU	+33
51.	FRCU Quarterly Report to USAID	FRCU	+33
52.	Mini Linkage Awards	FRCU	+34
53.	FRCU Annual Report Fourth Yr. Operating Plan	FRCU	+36
54.	First External Evaluation	USAID	+36
55.	FRCU Quarterly Report to USAID	FRCU	+39
56.	FRCU Semi-Annual Report to USAID	FRCU	+42
57.	FRCU Quarterly Report to USAID	FRCU	+45
58.	FRCU Annual Report/Fifth Yr. Operating Plan	FRCU	+48
59.	FRCU Semi-Annual Report to USAID	FRCU	+52
60.	FRCU Annual Report/Sixth Yr. Operating Plan	FRCU	+58
61.	FRCU Final Report	FRCU	+72
62.	Second External Evaluation	USAID	+72
63.	PACD		+81

* Varying and continuing activities with different time frames for concept papers, proposals, review process, and linkage awards for micro, mini, and maxi, grants, difficult to schedule. See Figure F.2.

EVALUATION ARRANGEMENTS

A baseline survey of Egyptian faculty was scheduled as a task for FRCU during the first year implementation of ULP/I, but due to changes in management of FRCU, the task was not completed in a usable format. FRCU is currently preparing a new baseline survey, which will be completed during FY' 91. However, information to date indicates that the baseline survey is based on personal data, publications, travel abroad, and promotions, now being compiled for all Egyptian professors. Such data will be of limited use in determining the existing or future capabilities of Egyptian professors involved in ULP/II, unless the data base includes: faculty members' areas of interest and expertise, extent of linkages with end-users and with U.S. universities, extent of multi-disciplinary and multi-institutional cooperation, and other outreach activities, e.g., consulting.

FRCU intends to make it obligatory for a researcher to complete a standard format, which will provide missing data such as the above, when submitting a proposal to be considered for ULP/II support. Completion of such a format should be a necessary condition on an annual basis. Compliance with this baseline data development should be reported to USAID during the FRCU annual reporting cycle.

As a partial indicator of applied research capacity in the Egyptian university system, it is noted that 1,476 professors, 538 graduate students, and 393 consultants (for a total of 2407) have been involved in 463 ULP/I projects. (See annex ~~I~~). Of the graduate students, 350 have completed the requirements for MS or PhD degree. Some of the graduate students (number ?) are employed in the productive sector, and bring industrial problems for a research topic. Seven HBCU's are currently linked with Egyptian universities through 11 mini grants.

Twenty nine women principal investigators have been identified from the project files (only 1 woman PI was involved in ULP/I in 1981). During ULP II FRCU will be required to disaggregate all data by gender.

It should be noted that the scientific establishment in Egypt presents few obstacles to women in attaining professional and executive status. Women will have equal access to project activities in ULP/II because funding awards will be based on proposal soundness and applicability to Egyptian development priorities.

Monitoring and internal evaluation:

A priority committee member or a number of the peer review group will be assigned to each grant, in order to evaluate, on at least

a monthly basis, grant progress, results, adherence to work schedules, and to suggest changes in direction or modification of the work plan to achieve project goals. The grant monitor will meet monthly with the project end user and the project PI. Results of the monthly evaluation will be reported to the priority committee and FRCU. Grantees will be reimbursed for costs on a monthly basis, subject to certification by the principal investigator member that project progress is on schedule.

Two technical progress reports will be required annually for each linkage; an interim semi-annual report and an end-of-year comprehensive report. These reports will conform to detailed report guidelines provided by FRCU, and as a minimum, will include extent of compliance with project implementation plans, extent of end-user and U.S. counterpart involvement; extent to which research results have been used or will be used by the end user; problems encountered, and modification or change in direction as agreed with the priority committee member who is monitoring the grant. The end-of-the-year report will include completion and/or revision of an experience/skills format for each researcher involved in the grant, so as to update the FRCU capability data base. Continued funding of a mini-or maxi- research grant will be contingent upon a satisfactory annual technical review. Continued funding of a micro-grant will be contingent on a satisfactory technical review at the end of 6 months.

The ULP/II project may need periodic readjusting of policies and procedures. Continuing internal evaluation of ULP/II will be required in addition to specific project evaluations.

FRCU will summarize the information collected from its continuing monitoring and evaluation activities in semi-annual evaluation reports of the ULP/II project to USAID. These evaluations will focus on: research impact on local, regional, or national development problems; Egyptian university -U.S. university-end user interaction; contributions of end users to grant activities; effectiveness of grant linkages; contributions of seminars, short courses, and continuing education in developing effective relationships with potential end users; implementation of research results; unsolved problems, operational procedures, constraints and issues; effectiveness of FRCU in proposal solicitation, screening, grant monitoring, support services, coordination among grant activities; and future planning and direction. FRCU will identify the extent of involvement of women in grant activities (as PI's, researchers, graduate students) and provide an assessment of the success ratio of women researchers in obtaining grants. These data will be shared with USAID. FRCU will also advise USAID about the numbers of proposals reviewed, the number accepted, and the reasons for proposal rejection.

FRCU will conduct an annual internal ULP/II evaluation to assess project and grant progress, as a basis for annual work plans and budgets and subsequent funding requests to USAID and SCU. These annual internal evaluations will upgrade and consolidate

information obtained from semi-annual internal project evaluations. The annual internal evaluations will include an analysis of increased Egyptian university applied research capability and compliance with baseline data inputs.

External Evaluations:

Major external evaluations will be conducted in FY 93 and FY 96 by U.S. and Egyptian consultants. Skill requirements will be in areas of applied research, R&D management and administration, economic analysis and human resource development.

The first evaluation will determine if the University Linkages Project II (ULP/II) is progressing as intended, and whether fundamental changes in organizational structure, operational procedures, or implementation guidelines are required.

Using baseline data, researcher interviews, and selected grant reports as a reference point, both evaluation teams will assess the following:

- effectiveness of Egyptian -US-end user linkages in solving techno-economic and socio-economic development problems.
- extent of end user cost sharing.
- extent of implementation of project results to solve end user problems especially those of the private sector.
- repeat linkages with the private sector.
- extent to which a multi-disciplinary approach to problem solving has been used.
- assessment of U.S. counterpart contributions for the short-term and on a possible sustainable basis.
- influence of seminars and short courses on creating linkages with end users.
- estimate of effectiveness of university FRCU liaison/outreach and marketing activities in creating linkages with end users.
- contribution of HBCU's to capacity building and problem solving.
- increased capacity of regional universities to solve regional problems.
- extent of industry workers involved in graduate research connected with ULP/II and participation of industry professionals in linked projects.
- analysis of participation of women researchers(e.g., PI's,

researchers, graduate students) involved in ULP/II.

The final evaluation at project completion will also evaluate success in achieving the project purpose and the overall strategy of the project implementation strategy and will serve as the ULP/II Impact Assessment.

LOGICAL FRAMEWORK

Total U.S. Funding \$34.6 million
Date Prepared: 12/18/90

Project Title & Number UNIVERSITY LINKAGE/II 263-0211

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATIONS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goals</p> <p>To make the Egyptian higher education system more responsive to Egypt's development needs.</p>	<p>Measures of Goal Achievement:</p> <ol style="list-style-type: none"> 1. More applied research by universities geared toward solving development problems. 2. Increased end-user demand for university research services. 	<ol style="list-style-type: none"> 1. Baseline and follow-up surveys. 	<p>Assumption for achieving goal targets:</p> <p>Resources provided by the project are sufficient to continue to motivate faculties to conduct developmental problem solving research.</p>
<p>Project Purposes</p> <p>To increase utilization of university research in the solution to Egypt's development problems with particular attention to productive sector problems related to the restructuring of the economy.</p>	<p>Conditions that will indicate purpose has been achieved:</p> <p>End of project status.</p> <ol style="list-style-type: none"> 1. Universities including approx. 1000 researchers have increased their ability to plan and execute applied research to solve development problems. 2. Strengthened & expanded cooperative relationships between Egyptian universities & end-users result in better problem identification and more practical solution strategies as judged by U.S. counterparts and the peer review process. 3. Research results distributed by the project and end-users are applying results to solve development problems. 4. An increase in private sector utilization of university research. 5. An increase in local currency cost sharing from 35% to 65% over the LOP. 	<ol style="list-style-type: none"> 1. Project monitoring and evaluation system. 2. Baseline study and follow-up surveys. 3. Review of grant proposals and progress reports. 	<p>Assumption for achieving purpose:</p> <ol style="list-style-type: none"> 1. Research efforts have an acceptable proportion of successes. 2. Research results are disseminated and acted upon.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATIONS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	<p>6. An increase in efficiency, productivity, quality, cost saving, employment creation, net saving of foreign currency, etc., depending upon the nature of the research undertaken and its successful completion.</p> <p>7. An interactive and more sustainable relationship between Egyptian universities and the end-user community established and being successfully utilized.</p>		
<p>Outputs:</p> <p>1. Collaborative research activities between Egyptian and American universities.</p> <p>2. Researchers attain experience in practical research design and methodology.</p> <p>3. Researchers trained in the subject matter of the research undertaken.</p> <p>4. Specific development problems solved with economic benefit.</p>	<p>Magnitude of Outputs:</p> <p>1A. Forty micro-linkage research activities over LOP (twenty each in the first two years of the project).</p> <p>B. Fifty mini-linkage research activities over LOP (10, 15 & 25 minis in the 1st, 2nd and 3rd project years respectively).</p> <p>C. Four maxi linkages research grants over LOP beginning in the 2nd project year.</p> <p>2. Approximately 1000 researchers involved in grant research.</p> <p>3. Approximately 350 researchers trained over the LOP</p> <p>4. At least 30 successful research grants have results implemented by the productive sector.</p>	<p>1. Project Reports</p> <p>2. Grant Agreement</p> <p>3. Project Assessments</p>	<p>Assumptions for achieving outputs:</p> <p>Sufficient qualified personnel will be made available to the FRCU by the MOHE.</p> <p>MOHE will delegate sufficient autonomy to the FRCU to enable it to manage the grant fund on a timely basis.</p> <p>FRCU manages to attract productive sector end-users and universities respond to their specific needs.</p>

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATIONS		MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Inputs: 1. Egyptian Researchers 2. Short-term TA 3. Short-term Training 4. Long-term TA 5. Equipment & Supplies 6. FRCU Administraton 7. Egyptian university In-kind Contribution 8. Evaluations 9. Info. Dissemination & End-user Outreach 10. Assessments & Audits	Implementation Targets (Type and Quantity) USAID BOE (\$000) (LE000) 1. 3,636 9,885 220 PY 2. 16,867 78 PY 3. 9,791 38 PY 4. 1,996 3 PY 5. 6,867 3,999 6. 3,192 7. 12,364 8. 298 9. 238 10. 248		1. Grant Agreement 2. Project MIS	Assumptions for providing inputs: 1. CPs set on time. 2. Universities and end-users respond to grant solicitations. 3. Match funding by end-users is forthcoming.

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ANNEX I

Total Number of Researchers Sharing in ULP Projects
According to Different Research Fields
Up To 20/10/1990

Field of Research	Professor	Assistant Professor	Lecturer	Total	Assistant Lecturer	Consultant	Total
Agriculture	168	104	125	397	185	79	661
Energy	127	100	134	361	88	103	552
Economic Policies	10	4	8	22	—	11	33
Land Development	16	—	8	24	12	8	44
Health	102	44	75	221	90	73	38
Industry	56	45	56	157	52	50	259
Infrastructure	20	17	16	53	35	22	110
Human Resources Dev.	37	20	18	75	30	21	126
Environmental Studies	32	27	31	90	18	3	111
Applied Sciences	35	23	18	76	28	13	117
TOTAL	603	384	489	1476	538	383	2397

Percentage of Funded FRCU Projects
Classified According to Fields of Research and Kind of Project
Until 20/10/1990

Field \ Kind	Maxi Project		Mini Project		Micro Project		Capacity Building		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	3	50.0	28	14.6	51	46.3	39	27.9	121	26.1
Energy	1	16.7	42	21.9	37	30.2	17	12.1	97	21.0
Economic Policies	—	—	9	4.7	6	1.9	—	—	15	3.2
Land Development	1	16.7	8	4.2	—	—	2	1.4	11	2.4
Health	1	16.6	39	20.3	4	2.8	25	17.9	69	14.9
Industry	—	—	29	15.1	10	7.5	8	5.7	47	10.2
Infrastructure	—	—	9	4.7	6	2.8	13	9.3	28	6.0
Human Resources Dev.	—	—	10	5.2	2	0.9	11	7.9	23	5.0
Environmental Studies	—	—	12	6.3	3	2.8	6	4.3	21	4.5
Applied Sciences	—	—	6	3.1	6	4.7	19	13.6	31	6.7
TOTAL	6	100.0	192	100.0	125	100.0	140	100.0	463	100.0

Percentage of Funded FRCU Projects
Classified According to Universities and Ratios of Projects
Until 20/10/1990

174X

Kind University	Maxi Project		Mini Project		Micro Project		Capacity Building		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Cairo	2	33.3	88	45.8	49	39.2	16	11.4	155	33.5
Alexandria	1	16.7	27	14.1	16	12.8	15	10.7	59	12.7
Ain Shams	—	—	25	13.0	12	9.6	16	11.4	53	11.4
Assiut	—	—	14	7.3	5	4.0	10	7.1	29	6.3
Tanta	—	—	1	0.5	2	1.6	10	7.1	13	2.8
Mansoura	—	—	3	1.6	7	5.6	11	7.9	21	4.5
Zagazig	—	—	3	1.6	7	5.6	11	7.9	21	4.5
Helwan	—	—	7	3.6	7	5.6	8	5.7	22	4.8
Minia	—	—	2	1.0	3	2.4	7	5.0	12	2.6
Menoufia	1	16.7	7	3.6	11	8.8	21	15.0	40	8.6
Suez Canal	1	16.7	6	3.1	—	—	9	6.4	16	3.5
Al Azhar	—	—	5	2.6	2	1.6	—	—	7	1.5
FRCU	1	16.6	4	2.1	4	3.2	6	4.3	15	3.2
TOTAL	6	100.0	192	100.0	12.5	100.0	140	100.0	463	100.0

ANNEX II

Project 263-0211
12 December 1990
J. Blackledge

Following are examples of end user oriented seminars and short courses specifically directed to the private sector.

Examples of Short Courses Offered to End Users, 1990-1991.

Alexandria University, Institute of Graduate Studies and Research.

- Protection from radiation.
- IR spectroscopy-theory, techniques and applications.
- The first Anglo-Egyptian conference on bioscience and technology.
- Plasmides and gene manipulation.
- Microscopic investigations.
- The institute's seventh winter school-biomaterials.
- Hazards of chemical carcinogens in the industrial environment.
- Microbial toxins.
- Polymer processing (in collaboration with the Plastic Development Center).
- Transportation of dangerous materials (in collaboration with the Arab Maritime Transport Academy).
- Corrosion and selection of materials.
- Application of biotechnology in the field of plant viruses.
- Pollution: sources and methods of treatment.

Cairo University, Faculty of Engineering:

- Electrical power cables.
- Co-generation of energy.
- Steam generation.
- Protection of power systems.

- Maghara coal.
- Use of capacitors in power systems.
- Programmable logical control in industry (for the Iron and Steel Factory).
- Information systems (for Shento Packing Company).
- Automatic controls (for Shento Packing Company).
- Measurement systems (for Shento Packing Company).

ANNEX III

Following are a few examples of Micro and mini linkages that might be eligible for grants.

Typical Micro Projects - Industry

- develop analysis and testing techniques appropriate to meet export standards requirements.
- develop in-plant quality control and quality assurance programs to meet export requirements.
- analyze production/process lines to improve productivity and reduce product/process cost.
- develop worker training programs to increase efficiency of operations.
- evaluation of current utilized technology and suggest acquisition and/or adaptation of alternative appropriate technology.
- conduct techno-economic or cost/benefit feasibility studies.

Typical Mini Projects - Industry

- research on improvements to be obtained by modification of existing technology being utilized.
- techno-economic feasibility studies, followed by pilot plant experiments on new technologies, designed to improve exportable products or products for local consumption.
- research on processes which can produce industrial feed stocks from locally available raw materials to replace currently imported raw materials, e.g., industrial chemicals, paint components, bentonite, Kaolin clays, ceramic clays.

Typical Micro Projects -Energy:

- Conduct energy conservation studies and recommend appropriate procedures and/or modifications for conservation, e.g., retro-fitting, insulation, recycling of water and steam, burner efficiency, use of natural gas, etc.
- Review non-conventional energy generation technologies utilized in other countries and study adaptation of these

technologies to Egyptian climatic and environmental conditions.

- Review renewable energy generation technologies (e.g., agricultural wastes, combustible municipal garbage) in use elsewhere, and develop a techno-economic and socio-economic rationale for adaptation of these technologies to Egyptian conditions.

Typical Mini projects-Energy:

- New technologies (e.g., fluidized bed) to produce energy from coal.
- Co-utilization of coal deposits to produce electrical energy and produce metallurgical coke for the steel industry.

Typical Micro Projects - Environment:

- Adapt existing technologies to problems of corrosion or pollution effluent discharge into water resources or air.
- Product recovery and re-use.

Typical Mini Projects - Environment:

- Develop process/production control procedures and technology to reduce or eliminate effluent released to water sources and air in violation of current or proposed government regulations.
- Analysis of eco-systems which influence agricultural and population use of rivers and bodies of water.
- Development of water-air pollution standards for adoption and enforcement by industry and government.

Typical Micro Projects, Business Administration

- Develop computerized accounting and business management procedures.
- Develop marketing strategies for local and export markets.
- Training, e.g., short courses and specific topic seminars in business management procedures for small businesses.

ANNEX IV

SUPREME COUNCIL OF UNIVERSITIES
CONFERENCE ON UNIVERSITIES & INDUSTRY
(MAY 22-24, 1990)

DRAFT RECOMMENDATIONS

Universities focus on the preparation of specialized and well-trained graduates to satisfy labor market requirements as well as contributing to the solution of community problems through applied research either directly by their faculty members or through educating high quality graduates that are capable of conducting such research. To enhance this applied research role of Egyptian universities, the Supreme Council of Universities (SCU) decided in its meeting on 5/17/1989, to hold annual conferences (starting from 1990) on the role of universities in the solution of the major problems confronting society and solving industrial problems. These conferences aim at improving the responsiveness of universities to the needs and problems of the production and service sectors and agencies. They offer a useful forum for enhancing the interaction between experienced professionals from universities and from various sectors of the economy, especially the industrial sector. The first such conference was held in May 1990 at Cairo University.

The conference started on May 22nd under the directorship of the Minister of Education who gave a talk on the importance of the collaboration between the universities and industry. This was followed by similar talks by the Minister of Industry, the Minister of Scientific Research and Technology, the President of Cairo University, and the Secretary General of the SCU.

The opening session was attended by a wide audience including ministers, university presidents, leading industrial figures, representatives of the specialized committees of the People's Assembly and the Shoura Council, university professors, and representatives of the major specialized research centers in Egypt.

The opening session was followed by five morning and evening sessions on 5/22 and 5/23, and a sixth and final session on 5/24 to declare the recommendations of the conference.

The successive sessions were devoted to the following areas of interest: (1) the role of universities in the development of industry; (2) the role of industry in strengthening the collaboration with universities; (3) training and continuing education; (4) liaison/communication with industry, consulting policies, and contracted research; and (5) case studies on "Universities and Industry".

48 working papers and case studies on the collaboration between universities and industry were presented at the conference. These were discussed by university representatives and leaderships and a large number of managers of industrial agencies and companies.

Several committees consisting of ministers, university presidents, heads of major industrial companies and agencies, technical experts and university professors, were formed to organize the discussions and draft recommendations. Following are these recommendations:

(A) The Role of Universities in Developing Industry

Industry is the most effective area for causing change and improvement in the national economy. The period of industrial development in the national economy leads to an improved allocation and utilization of resources, an increase in productivity, a decrease in costs, an expansion in markets and job

opportunities and consequently in more "industrial concentration" with positive results that are not limited to the industrial sector alone, but spread throughout the whole economy causing further development and growth. Progress toward concrete industrial development based on solid projections and calculated risks will not be achieved unless there is an increased reliance on the scientific approach and university researchers. The following are recommendations for enhancing this role of the university community:

A.1 Establishment of a joint committee between universities and the industrial sector to activate joint applied and technological research between industry and universities, and enhance coordination between the two to allow for a maximal utilization of the scientific and practical resources available. The committee will be responsible for the following activities:

- a. Formulating a short- and long-term strategy for scientific research, development, and training which determines the relation between industry and the educational and research institutes and the role of the latter in assisting and serving the former.
- b. Proposing a plan for R & D and training consistent with available human resources and the country's development plan.

A.2 Establishment of joint development committees at each university (or group of universities in the same region) headed by university presidents and including university vice presidents, professors, applied researchers and representatives of local industrial companies. The role of these committees would be to identify and compile the problems facing local industries, and to work with the representatives of those industries towards the utilization of the research talent available in the universities to solve these problems and recommend innovative improvements in the production processes. These committees will also work on establishing mechanisms,

guidelines, and contracting arrangements for collaboration with industry and will provide interested faculty members and industrial end-users with assistance in identifying funding sources and preparing proposals for obtaining funds.

- A.3 Holding an annual conference for all the above participants and the interested parties to follow-up on progress in the solution of old (previously identified) regional industrial problems, identifying new ones, and planning for future collaborative problem solving efforts.
- A.4 Each university should make the necessary changes in its procedures and programs to encourage and facilitate applied scientific research and ensure the preparation of the necessary qualified cadres of researchers. These research enhancement changes should include the proposing of a new promotion system for faculty members that recognizes and rewards contributions in the solution of industrial problems and the ability of recommending innovative industrial improvements.
- A.5 Encouraging the formation of joint research teams with industry and enabling staff to devote time to work with such teams (e.g., by reducing teaching loads for active participants).
- A.6 Expanding the establishment of Special Purpose Research Units (SPRUs) at the different universities to focus on the applied research that responds to the research demand of the region or locality of the university. Assisting these SPRUs in locating multiple sources of funding for on-going research.
- A.7 Expanding the support of R & D centers in industrial agencies to increase their capacity for effective collaboration with their counterpart research centers in the universities.

- A.8 Expansion of the academic programs aimed at strengthening the interdisciplinary approach in research (and education), as this is the practical approach applicable to industry where a commodity or service is produced with integrated contributions from specialists from different disciplines.
- A.9 Expanding the participation of university professors on the management boards of companies within their specialization, and reciprocally the participation of industry leaderships on the governing committees of counterpart colleges.
- A.10 Utilizing local consulting talents and abilities where possible, while limiting the use of foreign expertise to the narrowest possible extent.
- A.11 Expanding the establishment of technological institutes whose areas of specialization are closely linked to local industries.

(B) The Role of Industry in Strengthening the Collaboration with Universities

The role of universities in developing industry and solving its problems has to be reciprocated by support from industry to strengthen universities and enable them to carry out their support to industry successfully. The reciprocated assistance by industry should attempt to: (a) supply universities with modern equipment and laboratories; (b) open industrial facilities (labs) to university staff and students to carry out needed field studies and practical training; (c) increase the participation by industrial leaders in university committees and governing boards; (d) provide advice to universities on curricula and increase their relevance and responsiveness to industrial labor-needs. In the light of the above, the following recommendations have been made.

- B.1 Increasing the emphasis placed by industry on R & D by devoting a fixed percentage of the annual budget (e.g., 3%) for this purpose.

- B.2 Expanding the efforts to set industrial standards in order to direct industrial agencies to improve quality of production to meet such standards and use R & D and links with universities, to achieve these improvements.
- B.3 Requesting major companies to equip and modernize university labs, since such equipment would eventually produce results (through research or education) which are consistent with the goals of the company.
- B.4 Allowing university staff to carry-out quasi-industrial experiments at factory facilities on a planned basis without disrupting production schedules.
- B.5 Strengthening student training programs in industry in order to raise the level of university graduates.
- B.6 Participation of industry professionals in developing university curricula to increase their responsiveness to industrial labor needs.
- B.7 Increasing grants and donations from industry to establish and improve university libraries.
- B.8 Establishment of centers of patent rights at universities to protect inventors and innovators, provide advice to them before publication, and help them market their research in industry under legal protection.
- B.9 Hold periodic meetings between specialists in industry and universities to follow-up and evaluate progress resulting from collaborative projects.
- B.10 Increase the dependence on local expertise and materials in manufacturing tools of production or some of their components and limiting the importation of such tools or equipment to areas where there is an obvious contribution to technology transfer, adaptation, and initiation (locally).

(C) Continuing Education and Training

Continuing Education and Training (CET) is a basic element of the integration of universities and industry and has great value to each since it achieves one of the basic goals of the educational system, while offering a continuing interaction between the two communities (academic and industrial). The following recommendations were made:

- C.1 The establishment of a council for continuing education to include experts from the education sector, industry, and the professional and scientific syndicates and societies. This council would be responsible for short and long-term planning for continuing education and identifying the necessary executive steps needed to satisfy the national needs in this area.

- C.2 The establishment of a council (or committee) in each university to include its professors and representatives of local industries, to work on suitable curricula and courses for CET for the employees of these industries to update their knowledge of their fields and upgrade their skills. These Local Industry-University Committees (LIUCs) would work on the establishment of evaluation criteria to be used with the CET courses for technicians, to determine the actual return resulting from this type of education to the individual, the industry, and society and its effect on productivity and quality of production. Such evaluation criteria are then to be applied to participating employees to guide future efforts to improve these CET courses and curricula.

- C.3 Utilization of Open Education (OE) programs for CET purposes to deliver educational and training message to the beneficiaries in the productive entities with minimum cost and disruption to the production process.

C.4 Introducing the necessary regulations that would motivate industrial employees to seriously participate in, and benefit from CET opportunities, i.e., making incentives and promotions contingent upon participation and success in these courses.

(D) Liaison/Communication with Industry, Consulting Policies and Contracted Research:

University staff form a valuable human resource which could be used together with university specialized laboratories to offer useful consulting services to industry to increase its productivity and improve the quality of its outputs in accordance with the national development plan. The proper utilization of university resources in this area requires the creation of special instruments capable of linking scientific research and industry, and providing the needed opportunities for applying science and technology to development problems. To achieve these goals the following recommendations were made:

- D.1 Establishment of an Industry Liaison Center (ILC) in each university to be headed by a faculty member with industrial experience. These centers would concentrate on identifying the needs of local industries in research and specialized labor, and would work towards the establishment of suitable linkage projects between the university and industry.
- D.2 Establishment of Academic Liaison Offices (ALOs) in each industrial company to be headed by an industrialist with significant experience in academic life. The function of these ALOs would be similar to those of the ILCs, but originating from industry. Full success in linking industry with universities, could only be achieved with a serious collaboration between ILCs and ALOs.
- D.3 Strengthening the centers that have been established in universities for serving an industry (or group of industries) by making them centers of excellence to enable them to achieve effective collaboration with industry.

- D.4 Encouraging the establishment of joint research groups and teams between different research centers to target strategic areas that are significant for the future development of industry. This type of multi-center projects requires the participation of the government as a funder to invest in scientific research in service of development.
- D.5 Encouraging the establishment of "professorships" in Egyptian universities in certain specializations significant to industry. The academic positions are to be funded out of an endowment (or revolving fund) to be established by the benefiting industries. The incumbents of these positions would be given the opportunity by industry to do on-site industrial research and would also guarantee a teaching approach closely related to industrial interests.
- D.6 Encouraging internships by faculty members in industry for offering consultations and working on research and development.
- D.7 Encouraging the participation of industry personnel in university research teams.

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ANNEX V

Total Number of Faculty Members
in the Egyptian Universities
in the year 1989

Universities	Faculty members & Assistants			Female (2)	%
	Faculty M.	ASS.	Total Both (1) Sexes		
Cairo	4053	3010	7063	2099	29.7
Alexandria	2532	1874	4406	1482	33.6
Ain-Shams	2668	2277	4945	1924	38.8
Assuit	1279	1198	2477	431	17.4
Tanta	891	1099	1990	554	27.8
Mansoura	1238	798	2036	424	20.8
Zagazig	1846	2423	4269	868	20.3
Helwan	1338	1304	2642	1005	38.0
Menia	515	749	1264	194	15.3
Menoufia	545	660	1205	222	18.4
Suez Canal	433	558	991	151	15.2
TOTAL	17338	15950	33288	9354	28.1

BUDGET FOR FIRST AND SECOND-YEAR

MICRO-LINKAGES (\$000)

	Line Item	YEAR 1		YEAR 2		ALL YEARS		TOTAL
		FX	LC	FX	LC	FX	LC	
BUDGET OF A FIRST YEAR MICRO	Res.Teams		10.4				10.4	10.4
	ST-TA	16.6				16.6		16.6
	Exchange Visits	5.0				5.0		5.0
	COMM/SUPPL.	5.0	5.0			5.0	5.0	10.0
	TOTAL	26.6	15.4	0.0	0.0	26.6	15.4	42.0
BUDGET OF A SECOND YEAR MICRO	Res.Teams			0.0	12.5		12.5	12.5
	ST-TA			17.5	0.0	17.5		17.5
	Exchange Visits			5.3	0.0	5.3		5.3
	COMM/SUPPL.			5.3	6.0	5.3	6.0	11.3
	TOTAL	0.0	0.0	28.0	18.5	28.0	18.5	46.5

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ANNEX H

DETAILED FINANCIAL PLAN

Table 3

BUDGET FOR AN AVERAGE FIRST-YEAR

MINI-LINKAGE (\$000)

	Line Item	1		2		3		4		FX	LC	TOTAL
		FX	LC	FX	LC	FX	LC	FX	LC			
AVERAGE BUDGET OF A FIRST YEAR MINI	Res.Teams	0.0	30.0	0.0	36.0	0.0	23.3	0.0	12.0		101.3	101.3
	1ST-TA	47.0	0.0	49.5	0.0	27.6	0.0	12.9	0.0	137.1	0.0	137.1
	Exch Vis.	20.0	0.0	21.1	0.0	14.8	0.0	7.8	0.0	63.6		63.6
	ICOMM/SUPPL.	16.7	16.7	10.0	10.0	3.3	3.3	0.0	0.0	30.0	30.0	60.0
	TOTAL	83.7	46.7	80.6	46.0	45.7	26.6	20.7	12.0	230.7	131.3	362.1
BUDGET OF A FIRST YEAR MINI TYPE 1	Res.Teams		41.6	0.0	49.9						91.5	91.5
	1ST-TA	66.4		69.9						136.3	0.0	136.3
	Exch Vis.	20.0		21.1						41.1		41.1
	ICOMM/SUPPL.	15.0	15.0	5.0	5.0					20.0	20.0	40.0
	TOTAL	101.4	56.6	96.0	54.9					197.4	111.5	308.9
BUDGET OF A FIRST YEAR MINI TYPE 2	Res.Teams		27.7	0.0	33.2	0.0	39.9				100.8	100.8
	1ST-TA	41.5		43.7		46.0				131.2	0.0	131.2
	Exch Vis.	20.0		21.1		22.2				63.2		63.2
	ICOMM/SUPPL.	15.0	15.0	10.0	10.0	5.0	5.0			30.0	30.0	60.0
	TOTAL	76.5	42.7	74.8	43.2	73.2	44.9			224.5	130.8	355.3
BUDGET OF A FIRST YEAR MINI TYPE 3	Res.Teams		20.8	0.0	25.0	0.0	30.0	0.0	35.9		111.7	111.7
	1ST-TA	33.2		35.0		36.8		38.8		143.7	0.0	143.7
	Exch. Vis	20.0		21.1		22.2		23.4		86.6		86.6
	ICOMM/SUPPL.	20.0	20.0	15.0	15.0	5.0	5.0			40.0	40.0	80.0
	TOTAL	73.2	40.8	71.0	40.0	64.0	35.0	62.1	35.9	270.3	151.7	422.0

TYPE 1 MINI DURATION = 2 YEARS, TYPE 2 MINI DURATION = 3 YEARS, TYPE 3 MINI DURATION = 4 YEARS.

Table 2

LOP BUDGET FOR MICRO-LINKAGES(\$000)

No. OF MICROS AWARDED	Line Item	YEAR 1		YEAR 2		ALL YEARS		
		FX	LC	FX	LC	FX	LC	TOTAL
TOTAL BUDGET FOR MICROS	Res.Teams		208.0		249.6		457.6	457.6
	ST-TA	332.0		349.6		681.6		681.6
	Exchange Visits	100.0		105.3		205.3		205.3
	COMM/SUPPL.	100.0	100.0	105.3	120.0	205.3	220.0	425.3
	TOTAL	532.0	308.0	560.2	369.6	1,092.2	677.6	1,769.8
USAID CONTRIBUTION TO MICROS	Res.Teams		135.2		149.8		285.0	285.0
	ST-TA	332.0		349.6		681.6		681.6
	Exchange Visits	100.0		105.3		205.3		205.3
	COMM/SUPPL.	100.0	65.0	105.3	72.0	205.3	137.0	342.3
	TOTAL	532.0	200.2	560.2	221.8	1,092.2	422.0	1,514.2
GOE AND END-USER CONTRIBUTION TO MICROS	Res.Teams		72.8		99.8		172.6	172.6
	ST-TA							
	Exchange Visits							
	COMM/SUPPL.		35.0		48.0		83.0	83.0
	TOTAL		107.8		147.8		255.6	255.6

LOP BUDGET FOR MINI-LINKAGES(\$000)

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NUMBER OF MINI-GRANTS	Line Item	YEAR 1 12		YEAR 2 10		YEAR 3 4		YEAR 4		YEAR 5		YEAR 6		TOTAL ALL YEARS		
		FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	TOTAL
TOTAL BUDGET FOR MINIS	Res.Teams		360.4		792.9		884.8		630.7		277.9		69.0		3,015.7	3,015.7
	ST-TA	564.4		1,089.6		1,061.4		665.4		258.5		57.3		3,696.7		3,696.7
	ST-TRNG	240.0		463.3		487.9		342.5		147.5		34.5		1,715.7		1,715.7
	COMM/SUPPL.	200.0	200.0	295.5	320.0	219.2	256.0	79.5	97.6	14.8	19.2	0.0	0.0	809.0	892.8	1,701.8
TOTAL		1,004.4	560.4	1,848.4	1,112.9	1,768.5	1,140.8	1,087.4	728.3	420.8	297.1	91.8	69.0	6,221.4	3,908.5	10,129.9

CONTRIBUTION:	Line Item	FX		LC		FX		LC		FX		LC		FX		LC		TOTAL
		FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC			
USAID TO MINIS	Res.Teams	0.0	234.3	0.0	475.7	0.0	486.7	0.0	315.4	0.0	125.0	0.0	27.6	0.0	1,664.6		1,664.6	
	ST-TA	564.4	0.0	1,089.6	0.0	1,061.4	0.0	665.4	0.0	258.5	0.0	57.3	0.0	3,696.7	0.0	3,696.7		
	ST-TRNG	240.0	0.0	463.3	0.0	487.9	0.0	342.5	0.0	147.5	0.0	34.5	0.0	1,715.7	0.0	1,715.7		
	COMM/SUPPL.	200.0	130.0	295.5	192.0	219.2	140.8	79.5	48.8	14.8	8.6	0.0	0.0	809.0	520.2	1,329.2		
TOTAL	TOTAL	1,004.4	364.3	1,848.4	667.7	1,768.5	627.5	1,087.4	364.2	420.8	133.7	91.8	27.6	6,221.4	2,184.9	8,406.3		

CONTRIBUTION:	Line Item	FX		LC		FX		LC		FX		LC		FX		LC		TOTAL
		FX	LC	FX	LC	FX	LC											
GOE AND END-USER TO MINIS	Res.Teams		126		317		398		315		153		41		1,351		1,351	
	ST-TA																0	
	ST-TRNG		0														0	
	COMM/SUPPL.		70		128		115		49		11		0		373		373	
TOTAL	TOTAL		196		445		513		364		163		41		1,724		1,724	

Table 4

BUDGETS FOR FIRST, SECOND, AND
THIRD-YEAR MINI-LINKAGES (\$000)

	Line Item	1		2		3		4		5		6		FX	LC	TOTAL
		FX	LC													
BUDGET OF A FIRST YEAR MINI	Res.Teans	0.0	30.0	0.0	36.0	0.0	23.3	0.0	12.0						101.3	101.3
	IST-TA	47.0	0.0	49.5	0.0	27.6	0.0	12.9	0.0					137.1	0.0	137.1
	Exch Vis.	20.0	0.0	21.1	0.0	14.8	0.0	7.8	0.0		0.0		0.0	63.6		63.6
	COMM/SUPPL.	16.7	16.7	10.0	10.0	3.3	3.3	0.0	0.0			0.0	0.0	30.0	30.0	60.0
TOTAL		83.7	46.7	80.6	46.0	45.7	26.6	20.7	12.0	0.0	0.0	0.0	0.0	230.7	131.3	362.1
BUDGET OF A SECOND YEAR MINI	Res.Teans			0.0	36.0	0.0	43.2	0.0	27.9	0.0	14.4	0.0	0.0		121.6	121.6
	IST-TA			49.5	0.0	52.2	0.0	29.1	0.0	13.6	0.0	0.0	0.0	144.4		144.4
	Exch Vis.			21.1	0.0	22.2	0.0	15.6	0.0	8.2	0.0	0.0	0.0	67.0		67.0
	COMM/SUPPL.			17.6	20.0	10.5	12.0	3.5	4.0	0.0	0.0	0.0	0.0	31.6	36.0	67.6
TOTAL		0.0	0.0	88.1	56.0	84.9	55.2	48.2	31.9	21.8	14.4	0.0	0.0	242.9	157.6	400.5
BUDGET OF A THIRD YEAR MINI	Res.Teans					0.0	43.2	0.0	51.9	0.0	33.5	0.0	17.3		145.9	145.9
	IST-TA					52.2	0.0	54.9	0.0	30.6	0.0	14.3	0.0	152.0		152.0
	Exch Vis.					22.2	0.0	23.4	0.0	16.4	0.0	8.6	0.0	70.6		70.6
	COMM/SUPPL.					18.5	24.0	11.1	14.4	3.7	4.8	0.0	0.0	33.3	43.2	76.5
TOTAL		0.0	0.0	0.0	0.0	92.2	67.2	89.4	66.3	50.7	38.3	23.3	17.3	255.8	189.1	444.9

Table 8

Annex H

LOP BUDGET FOR MAXI-LINKAGES (\$000)

	Line Item	YR 1		YR 2		YR 3		YR 4		YR 5		YR 6		FX	LC	TOTAL
		FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC			
TOTAL BUDGET FOR MAXIS	Res.Teams		83.2		199.7		239.6		287.5		345.0		207.0		1,362.1	1,362.1
	ST-TA	132.8		279.7		294.5		310.1		326.5		171.9		1,515.6		1,515.6
	Exch Vis.	50.0		105.3		110.9		116.8		122.9		64.7		570.6		570.6
	LT-TA	400.0		842.4		443.5		0.0		0.0		0.0		1,685.9		1,685.9
	COMM/SUPPL.	300.0	200.0	415.9	340.0	105.3	120.0	0.0	0.0	0.0	0.0	0.0	0.0	821.2	660.0	1,481.2
	TOTAL	882.8	283.2	1,643.3	539.7	954.2	359.6	426.9	287.5	19.5	345.0	236.7	207.0	4,593.3	2,022.1	6,615.4
USAID CONTRIBUTION TO MAXIS	Res.Teams	0.0	54.1	0.0	119.8	0.0	131.8	0.0	143.8	0.0	153.3	0.0	82.8	0.0	687.5	687.5
	ST-TA	132.8	0.0	279.7	0.0	294.5	0.0	310.1	0.0	326.5	0.0	171.9	0.0	1,515.6	0.0	1,515.6
	Exch Vis.	50.0	0.0	105.3	0.0	110.9	0.0	116.8	0.0	122.9	0.0	64.7	0.0	570.6	0.0	570.6
	LT-TA	400.0	0.0	842.4	0.0	443.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,685.9	0.0	1,685.9
	COMM/SUPPL.	300.0	130.0	415.9	204.0	105.3	66.0	0.0	0.0	0.0	0.0	0.0	0.0	821.2	400.0	1,221.2
	TOTAL	882.8	184.1	1,643.3	323.8	954.2	197.8	426.9	143.8	449.5	153.3	236.7	82.8	4,593.3	1,087.5	5,680.8
GOE AND END-USER CONTRIBUTION TO MAXIS	Res.Teams		29.1		79.9		107.8		143.8		189.8		124.2		674.6	674.6
	ST-TA															0.0
	Exch Vis.															0.0
																0.0
	COMM/SUPPL.		70.0		136.0		54.0		0.0		0.0		0.0		260.0	260.0
	TOTAL		99.1		215.9		161.8		143.8		189.8		124.2		934.6	934.6

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BUDGET FOR SEED GRANTS (\$)

	YR 1	YR 2	YR 3	TOTAL
No. OF MICROS	20	20		40
No. OF MICRO-SEEDS	40	40		80
COST OF A MICRO-SEED-GRANT	3,500.0	3,675.0		
TOTAL COST OF MICRO-SEEDS	140,000.0	147,000.0		287,000.0
No. OF MINIS	12	10	4	26
No. OF MINI-SEEDS	36	30	12	78
COST OF A MINI-SEED-GRANT	7,000.0	7,350.0	7,717.5	
TOTAL COST OF MINI-SEEDS	252,000.0	220,500.0	92,610.0	565,110.0
No. OF MAXIS	2	2		4
No. OF MAXI-SEEDS	8	8		
COST OF A MAXI-SEED-GRANT	15,000.0	15,750.0		
TOTAL COST OF MAXI-SEEDS	120,000.0	126,000.0		246,000.0
TOTAL COST OF SEED GRANTS	512,000.0	493,500.0	92,610.0	1,098,110.0

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SUMMARY BUDGET FOR LINKAGES (\$000)

ANNEX H

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	Line Item	YR 1		YR 2		YR 3		YR 4		YR 5		YR 6		FX	LC	TOTAL
		FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC			
TOTAL BUDGET FOR LINKAGES	MICROS	532.0	308.0	560.2	369.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,092.2	677.6	1,769.8
	MINIS	1,004.4	560.4	1,848.4	1,112.9	1,768.5	1,140.8	1,087.4	728.3	420.8	297.1	91.8	69.0	6,221.4	3,908.5	10,129.9
	MAXIS	882.8	283.2	1,643.3	539.7	954.2	359.6	426.9	287.5	449.5	345.0	236.7	207.0	4,593.3	2,022.1	6,615.4
	TOTAL	2,419.2	1,151.6	4,051.9	2,022.2	2,722.7	1,500.4	1,514.2	1,015.9	870.3	642.1	328.5	276.0	11,906.9	6,608.2	18,515.1
USAID CONTRIBUTION TO LINKAGES BUDGET	MICROS	532.0	200.2	560.2	221.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,092.2	422.0	1,514.2
	MINIS	1,004.4	364.3	1,848.4	667.7	1,768.5	627.5	1,087.4	364.2	420.8	133.7	91.8	27.6	6,221.4	2,184.9	8,406.3
	MAXIS	882.8	184.1	1,643.3	323.8	954.2	197.8	426.9	143.8	449.5	155.3	236.7	82.8	4,593.3	1,087.5	5,680.8
	TOTAL	2,419.2	748.5	4,051.9	1,213.3	2,722.7	825.2	1,514.2	507.9	870.3	288.9	328.5	110.4	11,906.9	3,694.4	15,601.2
GOE & END-USER CONTRIBUTION TO LINKAGES BUDGET	MICROS		107.8		147.8		0.0		0.0		0.0		0.0		255.6	255.6
	MINIS		196.1		445.2		513.4		364.2		163.4		41.4		1,723.6	1,723.6
	MAXIS		99.1		215.9		161.8		143.8		189.8		124.2		934.6	934.6
	TOTAL	0.0	403.1	0.0	808.9	0.0	675.2	0.0	507.9	0.0	353.2	0.0	165.6	0.0	2,913.8	2,913.8

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Table 9

ANNEX (H)

TABLE (12)

OBLIGATION SCHEDULE FOR THE ULP/II (\$000)								
Fiscal Year	FY 91	FY 92	FY93	FY 94	FY95	FY 96	FY 97	TOTAL
Projected Expenditures	500	4,230	6,690	4,200	2,365	1,395	620	20,000
Planned Obligations	5,000	10,000	5,000					

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SHORT-TERM TECHNICAL ASSISTANCE TO THE FRCU (\$)

ANNEX H

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LOCATOR/FACILITATOR SERVICE (LS)	YR 1	YR 2	YR 3	TOTAL
No. OF MICROS	20	20		40
No. OF MICRO-SEEDS	40	40		80
LS PER MICRO-SEED	1,100.0	1,155.0		
LS FOR ALL MICROS	44,000.0	43,200.0		90,200.0
No. OF MINIS	12	10	4	26
No. OF MINI-SEEDS	36	30	12	78
LS PER MINI-SEED	1,650.0	1,732.5	1,819.1	
LS FOR ALL MINIS	59,400.0	51,975.0	21,829.5	133,204.5
No. OF MAXIS	2	2		4
No. OF MAXI-SEEDS	8	8		
LS PER MAXI-SEED	2,200.0	2,310.0		
LS FOR ALL MAXIS	17,600.0	18,480.0		36,080.0
LS FOR ALL LINKAGE-GRANTS	121,000.0	116,655.0	21,829.5	259,484.5
LOE CAIRO ST-TA (PM)	3	2	1	6
COST PER PM OF CAIRO ST-TA	20,750.0	21,787.5	22,876.9	
TOTAL COST OF CAIRO ST-TA	62,250.0	43,575.0	22,876.9	128,701.9
LOE HQ ST-TA (PM)	2	1	1	4
COST PER PM OF HQ ST-TA	14,300.0	15,015.0	15,765.8	
TOTAL COST OF HQ ST-TA	28,600.0	15,015.0	15,765.8	59,380.8
TOTAL FRCU ST-TA	90,850.0	58,590.0	38,642.6	188,082.6
TOTAL	211,850.0	175,245.0	60,472.1	447,567.1

Based on 2 micro-seeds per micro-grant, 3 mini-seed grants per mini-grant, and 4 maxi-seeds per maxi-grant; and assuming 2 Person-Days (PDs) for the location service of a micro-seed grant, 3 PDs for a mini-seed-grant, and 4 PDs for a maxi-seed grants.

Table 11

205X

Table 1 (cont'd)

Summary Financial Plan

	USAID (\$000)			GOE CONT. (LE 000)	End-User Cont. (LE 000)	TL Budget (\$000) (USAID, GOE & End-users)	Output	Suggested Methods of Implementation & Financing
	FX	LC	TL					
<u>(c) Maxi-linkages</u>								
4 Maxis @ an average cost of \$1,578,000								
Egyptian Research teams (Research services)	-0-	687.5	687.5		2,158.7	1,362.1	35 FY	Reimbursement under PIL w/advance for \$ portion of grant and direct payment under PIL w/advance using the NIB Cash Advance Protocol for the LE portion of the grants. FRCU letter of credit for \$ procurements.
Short-Term TA (U.S. Res. services)	1,515.6	-0-	1,515.6			1,515.6	80 PM	
U.S. Research Endeavors	570.6	-0-	570.6			570.6	40 PM	
Long-Term TA	1,685.9	-0-	1,685.9			1,685.9		
Equip. & supplies	821.2	400.0	1,221.2		832	1,481.2		
<u>Sub-total</u>	<u>4,593.3</u>	<u>1,087.5</u>	<u>5,680.8</u>		<u>2,990.7</u>	<u>6,615.4</u>		
<u>Total for All Linkages</u>	<u>11,906.8</u>	<u>3,694.4</u>	<u>15,601.2</u>		<u>9,325.4</u>	<u>18,515.1</u>		
FRCU Administration				3,256		1,017.7		Direct payment under AID direct 8(a) contract.
Seed Grants	549.1	549.1	1,098.2			1,098.2		
Locator/Facilitator & FRCU ST-TA	447.6	-0-	447.6			447.6		
Buy-In into central UDLP	150	150	300			300		Direct payment under PSC or IQC.
Evaluations	90.0	50.0	140			140		
Information Dissemination/ Workshops & Seminars	110	93	203			203		PIL
Assessments & Audits	120	120	240			240		
Contingencies	1,469.3	500.7	1,970.0			1,970		
<u>Total</u>	<u>14,842.8</u>	<u>5,157.2</u>	<u>20,000.0</u>	<u>3,256</u>	<u>9,325.4</u>	<u>23,931.6</u>		

Average ceilings for linkages (i.e., \$42,000; 362,000; and 1,578,000 for micros, minis, and maxis respectively) are for the first year of project. These have been properly adjusted for \$ and LE annual inflation for successive years of the same linkage and for linkages started in following years of project. N.B. Numbers in rows and columns might not add up exactly because of rounding to the nearest \$100.

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LOP BUDGET FOR ULP/II (\$000)

	YR 1		YR 2		YR 3		YR 4		YR 5		YR 6		FX	LC	TOTAL
	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC			
TOTAL BUDGET FOR LINKAGES	12,419.2	1,151.6	4,051.9	2,022.2	2,722.7	1,500.4	1,514.2	1,015.9	870.3	642.1	328.5	276.0	11,906.9	6,608.2	18,515.1
USAID CONTRIBUTION TO LINKAGES	12,419.2	748.5	4,051.9	1,213.3	2,722.7	825.2	1,514.2	507.9	870.3	288.9	328.5	110.4	11,906.9	3,694.4	15,601.2
GOE & END-USER MATCH FUNDING		403.1		808.9		675.2		507.9		353.2		165.6		2,913.8	2,913.8
SEED GRANTS	256.0	256.0	246.8	246.8	46.3	46.3							549.1	549.1	1,098.2
LOCATOR/FACILITATOR SERVICE & FRCU ST-TA	211.9		175.2		60.5								447.6		447.6
INF. DISSEMINATION (SEMINARS, WORKSHOPS, and ADVERTISEMENTS)	50.0	30.0	15.0	15.0	10.0	10.0	15.0	15.0	10.0	10.0	10.0	13.0	110.0	93.0	203.0
UDLP BUY-IN	150.0	150.0											150.0	150.0	300.0
EVALUATIONS					40.0	20.0			50.0	30.0			90.0	50.0	140.0
FRCU ADMINISTRATION (GOE)		150.0		180.0		216.0		129.6		155.5		186.6	0.0	1,017.7	1,017.7
ASSESSMENTS & AUDITS			30.0	30.0			40.0	40.0			50.0	50.0	120.0	120.0	240.0
CONTINGENCY	343.0	131.6	502.1	167.2	319.9	100.2	174.4	62.5	103.4	36.5	43.2	19.3	1,469.3	500.7	1,970.0
PROJECT TOTAL	3,430.1	1,869.2	5,021.0	2,661.2	3,199.5	1,892.9	1,743.6	1,263.0	1,033.7	874.2	431.7	544.9	14,842.8	9,088.7	23,931.6
USAID CONTRIBUTION	3,430.1	1,316.2	5,021.0	1,672.3	3,199.5	1,001.7	1,743.6	625.5	1,033.7	365.5	431.7	192.7	14,842.8	5,157.2	20,000.0
GOE & END-USER CONTRIBUTIONS	0.0	553.1	0.0	988.9	0.0	891.2	0.0	637.5	0.0	508.7	0.0	352.2	0.0	3,931.5	3,931.5

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