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November 1971

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THE CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH

Second Meeting, Washington, December 3rd, 1971

PROPOSAL FOR A "PILOT PROJECT"

COMPUTERIZED AGRICULTURAL RESEARCH INFORMATION SYSTEM (CARIS)

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

ROME, November 1971

## A. Introduction

1. A proposal for a Computerized Agricultural Research Information System (CARIS) was presented to the Technical Advisory Committee for consideration at its first meeting on 23 June 1971. The project background and description, including a provisional budget is described in document PAB: IAR/71/... This proposal was discussed by the first TAC meeting which supported it in principle, subject to scrutiny by computer staff of certain members. At its second meeting, the TAC, taking into consideration some reservations regarding users' demand and the feasibility of collecting some of the data proposed, suggested that a pilot project be carried out to serve as a test, on which to base a decision for full project implementation.

## B. Proposal for a CARIS "Pilot project"

### a) Coverage

1. The choice of a "coverage" for a pilot project has been guided by the following criteria:

- First, the coverage had to be sufficiently large and diverse to permit a meaningful regrouping of data according to the listings and indexes shown in para. 8: this is essential for a proper analysis of the usefulness of CARIS as an information tool. It demands an adequate quantity of research institutions and projects, covering a large variety of subjectmatter fields, commodities and disciplines, and preferably involving a range of ecological conditions.
- Secondly, it had to include other characteristics (such as different languages of input, and a reasonable geographical distribution) so as to permit - together with the variety of substantive input data - a valid test of the proposed methodology in all its aspects: data collecting, data processing (including indexing and translation), and finally data presentation.
- Finally, it appeared also desirable to take advantage of such a pilot project to obtain, if possible, not only a sufficiency of essential data for testing the value and methodological validity of CARIS, but, at the same time, an "ensemble" of information immediately useful to a given geographical area and community of research workers.

For these reasons, it is proposed to adopt, for the pilot project, a coverage which includes 14 countries of West Africa and which meets the criteria mentioned above in the following ways:

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1  
Gambia, Ghana, Guinea, Ivory Coast, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo, Upper Volta.

- (a) the number of research stations and centres, including university faculties of Agriculture will be around 200. The overall network to be covered by the pilot project also includes two international research institutes, the International Rice Research Institute (IRRI) and the International Institute of Tropical Agriculture (IITA).
- (b) The number of main lines of research activities, broken down into research themes or projects, is estimated to be between 1,500 and 2,000.
- (c) All main agricultural research activities will be covered, including a variety of subjectmatter fields, main commodities, and disciplines within a diverse ecological range (see map attached).
- (d) The sample will cover a large geographical area and two major languages: English and French.
- (e) Essential information on rice research activities, derived from the pilot project, will be of great value to the group of countries covered, all of which are interested in rice production as members of the West African Rice Development Association, with which IRRI and IITA are cooperating, and in which the TAC has shown considerable interest. This information would constitute a useful complement to the activities of the proposed WARDA Documentation Centre, devoted mainly to existing documents. Other data which may be of direct interest to the TAC and the Consultative Group, on such items as grain legumes, rainfed cereals, industrial and export crops, animal production and health, and other subjectmatter fields of research in West Africa, can also be derived from the proposed pilot project.

(b) Limitations

1. As indicated earlier, the coverage of the pilot project has been selected according to three main criteria: (a) representativeness in substance, (b) testing validity, (c) immediate usefulness. However, it should be pointed out that, for various reasons - and particularly with a view to limiting expenditures and producing results within an acceptable time limit - it will not be possible to follow entirely, in this pilot project, the procedures and methodology which had been envisaged for the complete CARIS Project.
2. Thus, and although all efforts will be made - with the assistance of FAO field staff - to maximize returns from questionnaires sent to research stations, a cut-off date will have to be established, beyond which it will not be possible to accept further data, if output deadlines are to be met. (In the wider CARIS proposal, the longer collecting and processing period will permit the returns to be spread more evenly and reminders

to be sent out as necessary). The input quality checking will also have to be less comprehensive, since this is a task which, in the full range project, would be performed mainly by a team of special consultants, which is not foreseen in the pilot project, for reasons of economy. For the time being, therefore, the study will have to be limited to those aspects which are essential to evaluate the usefulness of the CARIS proposal, and to provide a basis for further improvement of the methodology, particularly in respect to processing and output format, taking into account the comments of users and any further guidance from TAC.

5. Notwithstanding the restrictions imposed by time and resources limitations, it is intended however to keep the pilot project, in all its aspects (contents, procedures and methodology) as close as possible to the overall CARIS proposal, as outlined in document PAB: IAR/71/3. For instance, particular attention will be paid to ensuring that the input data collected can be, later on, incorporated into the full scale CARIS project, without having to collect them again. Similarly, the provisional collecting and processing methodology for the pilot project will constitute the basis for future developments and improvements for the full-scale CARIS project.

c) Project description and objectives

7. Within the limits indicated above, the project will consist in collecting, and processing for retrieval and dissemination, the following data:
  - (1) on research institutions and stations: country, name and address, languages used, geographic coordinates, major sources of financial support, special facilities (laboratories, equipment, etc.), names and field of specialization of research staff, major regular publications, - as well as the minimum essential agrometeorological and soil data, supported by references of major recent publications on climate, soil, vegetation and other environmental conditions, or recent surveys and cartographic documents;
  - (2) on research activities (main lines of activity, research themes, research projects): specific information defining research disciplines and sub-disciplines, key commodities, species and other particular key aspects and objectives.
8. The data recorded through questionnaires will be processed and the computer programmed so as to produce a document consisting of a Directory containing the collected data and indexes by country, research institution or station, research personnel, disciplines, subject matters, commodities, etc. (in English and French).

(c) Implementation

9. The pilot project will be implemented according to the main phasing pattern as proposed for the full scale CARIS project:

- Phase 1: Methodology and preparatory operations (5 months): basic methodology, system design, classification and indexing standards, programming, coding system, design of questionnaires and input forms to be sent to countries, research stations and FAO field staff through official FAO channels.
- Phase 2: Data collection and checking (4 months) in the field, supplemented by consultations with developed country donors supporting research activities in the countries being covered.
- Phase 3: Data processing (5 months): data preparation, coding and classifying, indexing, translation, editing, transcription, computer processing, directory preparation, printing and distribution.
- Phase 4: Evaluation (3 months), through questionnaires and interviews of recipients of the directory, to collect comments and observations on content form of presentation and usefulness.

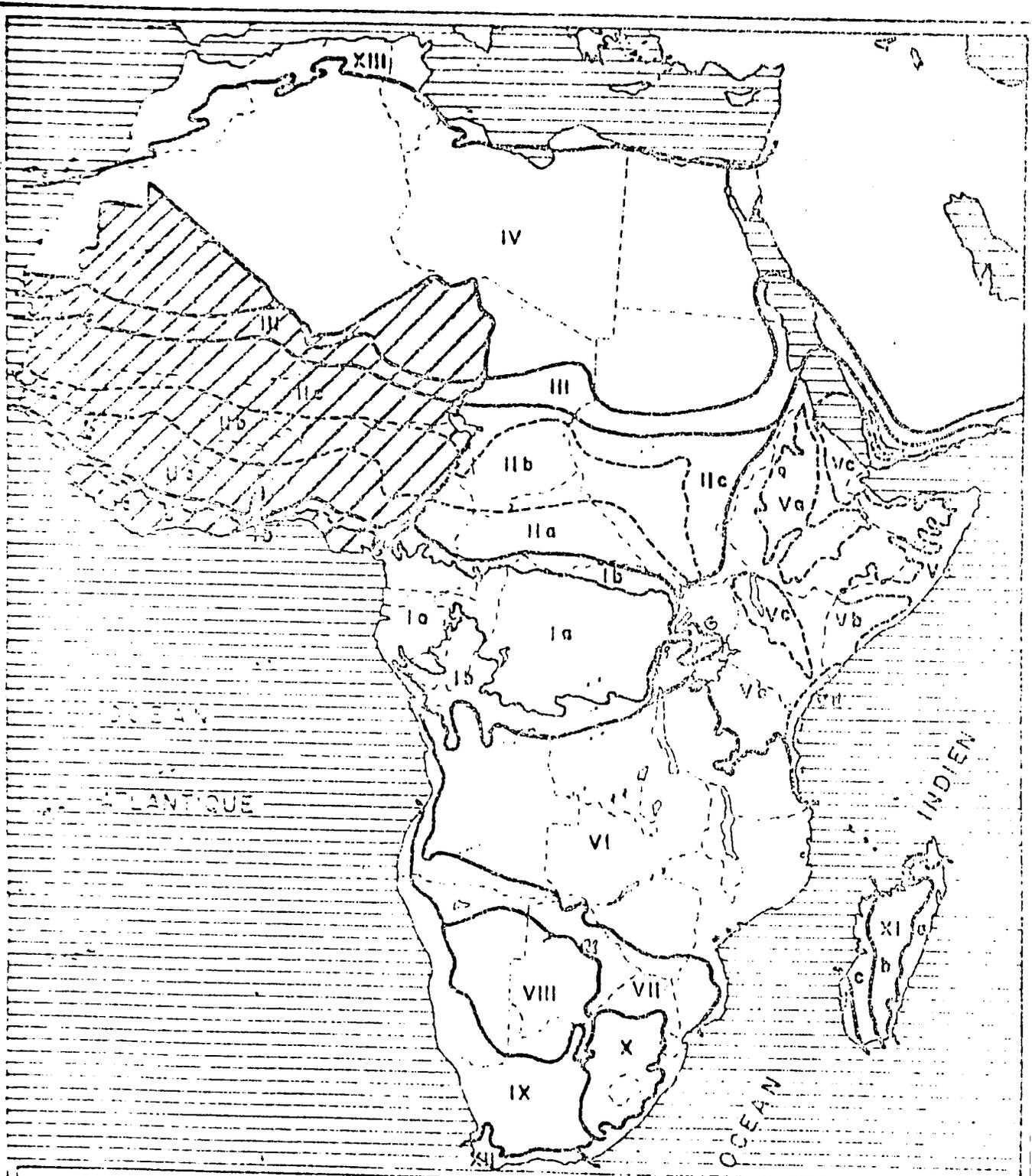
Since some of the phases will be scheduled so as to partly overlap, the total implementation period is not expected to exceed 12 months. The results of the pilot project - if financial support is made available early enough in 1972 - should therefore be available for review by the TAC and the Consultative Group early in 1973. Preliminary information on progress of the pilot project will be given to the TAC during the 1972 autumn sessions.

(e) Resources

11. While FAO intends to make a substantial contribution in kind - in the form of HQ and field staff time - both to ensure overall coordination of the pilot project, and to assist in certain operations (such as data collecting), supplementary resources are required to permit implementation. They amount to \$ 79,000, broken down as follows:

	<u>U.S. \$</u>
- Project staff (Project coordinator, 12 months; Graduate assistant for field collection and evaluation, 6 months). Consultants (agronomy, 1 month; Information specialist methodology and data processing, 3 months)	41,000
- Processing staff (supervisor, bibliographers, indexers, translators, editor, typists)	12,000
- Processing costs (input recording, computer processing, forms printing, directory printing)	15,000
- Travel and per diem	7,000
- Other expenditures (e.g. mail) and contingencies	4,000
	<hr/>
	<u>79,000</u>

Shaded Area Proposed for CARIS Pilot Project



ZONES ÉCOLOGIQUES DE L'AFRIQUE - ECOLOGICAL ZONES OF AFRICA - R. DEYRER

I. SAHARIENNE - SAHARAN  
 II. SAHÉLIENNE - SAHELIAN  
 III. SAHÉLIENNE - SAHELIAN  
 IV. SAHÉLIENNE - SAHELIAN

V. ORIENTALE EASTERN  
 VI. ZAMBÉZIENNE - ZAMBESIAN  
 VII. TRANSVALIENNE - TRANSVALIAN  
 VIII. KALAHARIENNE - KALAHARIAN

IX. KARIKO-NAMAQUALIENNE - KARIKO-NAMAQUALIAN  
 X. BASUTOIENNE - BASUTOLIAN  
 XI. MALOACHE - MADAGASCAPIAN  
 XII. DU CAP - CAPE  
 XIII. MÉDITERRANÉENNE - MEDITERRANEAN

A COMPUTERIZED AGRICULTURAL RESEARCH INFORMATION SYSTEM (CARIS)

1. Objectives of CARIS

The CARIS project aims at establishing an information system which would collect, organize, and disseminate basic data on agricultural research institutions, programmes, and activities carried out in and on behalf of the developing countries in order:

- (a) to improve communications between institutions and between scientists;
- (b) to assist in the evaluation of the adequacy of existing research effort, and the identification of major gaps and weaknesses, as an aid to decision-making at both the national and international level.

It is not an abstracting service providing summaries of past results (this aspect will be covered eventually by AGRIS: International Information System for the Agricultural Sciences and Technology) but a system aimed at providing and maintaining current awareness of what is going on in agricultural research, where, and with what resources, aimed primarily at assisting the developing countries.

2. Background of the Project

The project was initiated in 1965 and was presented for the first time at the 1968 Abidjan Conference on Agricultural Research Priorities for the Economic Development of Africa.

The need for a research information system covering the developing countries, with appropriate linkages to similar systems in developed countries was recognised at the Bellagio meetings, where a revised form of the CARIS project was discussed. FAO then submitted a more specific proposal for consideration by the Technical Advisory Committee (TAC) to the Consultative Group on International Agricultural Research, and the TAC recommended that the Group support a pilot project to examine the input data required, the methodology proposed for its collection, and the user demand for the information. The Consultative Group endorsed the need for a project along the lines proposed for CARIS, but also considered that a pilot project was essential to test its feasibility.

### 3. The Pilot Project

The Pilot Project, for which support has now been received, covers the fourteen West African countries linked in the West African Rice Development Association (WARDA). This is a large geographical area, covering a wide range of conditions, with some 200 research institutions/stations of varying sizes and types, working in two main languages. Research is carried out in situ, but also, on behalf of the WARDA countries, by institutions in developed countries.

The Pilot project provides therefore a sufficient diversity of input data, and of data collecting and processing problems, to serve as a valid sample on which to test the methodology and evaluate results in terms of users' requirements. Besides immediate value for the WARDA countries (in order to assist these countries to build up their rice research network) the Pilot Project will therefore serve as a test for the shaping of the global CARIS project.

The Pilot project will consist of four phases, to be carried out over a period of 12 months: (a) methodology development and preparatory operations, (b) data collection and checking, (c) data processing, (d) evaluation of results. The results and conclusions of the Pilot project will then be submitted to the Consultative Group on International Agricultural Research, together with recommendations and estimates for the global CARIS project.

### 4. The global CARIS project

Once the results of the pilot project have been evaluated, in terms of methodological approach and of users' requirements, support will be sought for expansion of the project to its global scale, i.e. covering all research lines in or on behalf of developing countries.

The global project is expected to collect information from some 1,300 research institutions and stations, and to cover some 8,000 research lines (or alternatively some 75,000 research projects, if resources so permit)

Besides providing current information on research in progress, in the form of updated directories and indexes at appropriate intervals, the CARIS global project will also consider the establishment of a "Question and Answer" service, which would provide topical information, on request, on specific project, including full project description from a microfiche memory bank.

The "Question and Answer" service would, at the same time, maintain a liaison with similar research information systems in developed countries (or group of countries) such as the ones existing in the USA and Australia, and the one now being studied for the European Communities. It would thus serve as a "clearing house" between CARIS, the other systems, and the users.

At a later stage, it is envisaged that CARIS will further develop to permit more precise correlation of information related to research projects and their results, with individual or combined environmental data.

At all stages, the CARIS project will progressively take advantage - both for input and output (or services to users) - of the national Documentation Centres in Agriculture which FAO has undertaken to assist establishing in developing countries, as well as of the International Information System for the Agricultural Sciences and Technology (AGRIS) mentioned earlier.

Files - FAO  
 O/C 259 **PI-ADD-219** 9310974(9)

AID 1500-1 (9-70)	DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT	1. Cooperating Country <b>Worldwide</b>	Page 1 of 4 Pages
		2. PIO/T No. <b>931-11-110-974-73-3128616</b>	3. <input checked="" type="checkbox"/> Original or Amendment No. <b>4p</b>
		4. Project/Activity No. and Title <b>Computerized Agricultural Research Information System (CARIS)</b>	

DISTRIBUTION:	5. Appropriation Symbol <b>72-1121004</b>	6.A. Allotment Symbol and Charge <b>254-31-099-00-20-21</b>	6.B. Funds Allotted to: <input checked="" type="checkbox"/> A.I.D./W <input type="checkbox"/> Mission
	7. Obligation Status <input checked="" type="checkbox"/> Administrative Reservation <input type="checkbox"/> Subobligation		8. Funding Period (Mo., Day, Yr.) From <b>6/22/72</b> to <b>6/30/73</b>
	9.A. Service to Start (Mo., Day, Yr.) Between <b>6/15/72</b> and <b>6/30/72</b>		9.B. Completion date of Service (Mo., Day, Yr.) <b>6/30/73</b>

10.A. Type of Action		Cooperating Agency		Participating Agency		Other	
<input type="checkbox"/> A.I.D. Contract	<input type="checkbox"/> Country Contract	<input type="checkbox"/> Service Agreement	<b>AID Grant</b>				
10.B. Authorized Agent <b>AID/W</b>							
Estimated Financing		(1)	(2)	(3)	(4)		
\$1.00 =		Previous Total	Increase	Decrease	Total to Date		
11. Maximum A.I.D. Financing	A. Dollars		<b>\$15,000</b>		<b>\$15,000</b>		
	B. U.S.-Owned Local Currency						
12. Cooperating Country Contributions	A. Counterpart						
	B. Other						

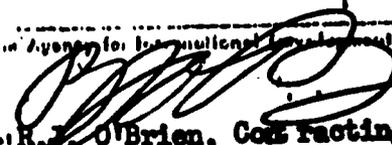
13. Mission References

14. Instructions to Authorized Agent

The purpose of this PIO/T is to request PROC/CSD to negotiate an AID Grant to the FAO to provide partial support to the Computerized Agricultural Research Information System (CARIS) Pilot Project. This contribution is in accord with administrative policy of supporting this project, considered to be a part of the international research network. Such policy is guided by AID's membership in the Consultative Group on International Agricultural Research and its Technical Advisory Committee. Funds granted to FAO for this project's use are to be segregated specifically for the CARIS pilot project.

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

A. The specifications in the scope of work are technically adequate	B. Funds for the services requested are available
C. The scope of work lies within the purview of the initiating office and approved Agency Programs	D.
E.	F.

16. For the cooperating country: The terms and conditions set forth herein are hereby agreed to	17. For the Agency for International Development	18. Date of Issue <b>6/22/72</b>
Signature and date:	 Signature: <b>R. J. O'Brien, Contracting Officer</b>	

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**SCOPE OF WORK**

**19. Scope of Technical Services**

**A. Objective for which the Technical Services are to be Used** The purposes of the CARIS Project are to develop an information system which would collect, organize and disseminate basic data on (Continued on Pg. 4)

**B. Description**

The pilot project will be implemented over a 12-month period by FAO according to the following phased plan:

Phase 1: Methodology and preparatory operations (5 months):  
 basic methodology, system design, classification and indexing standards, programming, coding system, design of questionnaires and input forms to be sent to countries, research stations and FAO field staff through official FAO channels.

Phase 2: Data collection and checking (4 months) in the field, supplemented by consultations with developed country donors supporting research activities in the countries being covered. (Continued on Pg. 4)

**C. Technicians**

(1) (a) <u>Number</u>	(b) <u>Specialized Field</u>	(c) <u>Grade and/or Salary</u>	(d) <u>Duration of Assignment (Man-Months)</u>
1	Project Coordinator		12
1	Graduate Assistant		6
1	Consultants (Agro-climatology)		1
1	Consultant (Info. Spec. Methodology & Data Processing)		3

**(2) Duty Post and Duration of Technicians' Services**

Rome, 14 African Countries

**(3) Language requirements**

N/A

**(4) Access to Classified Information**

N/A

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

**D. Financing of Technical Services**

(1) By AID - \$ 15,000

(2) By Cooperating Country -

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

The project will produce a Directory in French and English language for distribution to the cooperating countries for use by research institutions and scientists. This Directory will describe on-going and completed research by mainlines of activity, subject matter and disciplines. It will provide data on research institutions, scientists, addresses, language used, major source of research input, facilities, Field of Specialization, publications and other information including agro-climatic and soils data.

The Directory will be evaluated by TAC upon its completion to test the value of the CARIS project and to determine future development of the project on a worldwide basis.

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

This project is described in more detail in the "Proposal for a Pilot Project" (Document PAB: IAR/71/3). The Budget for implementation of the project is included in the proposal. AID's contribution of \$15,000 will be matched by other donors not yet determined. Belgium and the Rockefeller Foundation have indicated agreement to provide financial support to the project.

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

**A. Relationships and Responsibilities** FAO will implement this project supported partially by AID and other donors. AID will have no responsibilities for direction. Outputs of the project will be evaluated by the TAC in late FY 73 for future development of the CARIS project.

**B. Cooperating Country Liaison Official**

FAO Representatives and Field Staff

**C. AID Liaison Officials**

TA/AGR, O. Kelley

AID-1300-1X (7-69) CONTINUATION SHEET	DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT	<input checked="" type="checkbox"/> Worksheet <input type="checkbox"/> Issuance	PAGE <u>4</u> OF <u>4</u> PAGES
		1. Cooperating County Worldwide	2.a. Code No.
		2.b. Effective Date	2.c. <input type="checkbox"/> Original OR Amendment No. _____
FORM SYMBOL	TITLE OF FORM	3. Project/Activity No. and Title Computerized Agricultural Research Information System (CARIS)	

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

Indicate block numbers.

19A  
(Cont'd)

agricultural research institutions, programs and activities carried out in and on behalf of developing countries in Africa in order to improve communications between institutions and between scientists and to assist in the evaluation of the adequacy of existing research effort, and the identification of major gaps and weaknesses as an aid to decision making both at the international and national level.

19B  
(Cont'd)

Phase 3: Data processing (5 months): data preparation, coding and classifying, indexing, translation, editing, transcription, computer processing, directory preparation, printing and distribution.

Phase 4: Evaluation (3 months), through questionnaires and interviews of recipients of the directory, to collect comments and observations on content form of presentation and usefulness.

Since some of the phases will be scheduled so as to partly overlap, the total implementation period is not expected to exceed 12 months.