

I. PROJECT IDENTIFICATION

PD-AAC-823-B1

1. PROJECT TITLE  
 Information as a Tool for Development

APPENDIX ATTACHED  
 YES  NO

2. PROJECT NO. (M.O. 1025.2)  
 931-11-999-232

3. RECIPIENT (specify)  
 COUNTRY \_\_\_\_\_  
 REGIONAL \_\_\_\_\_  INTERREGIONAL TAB

4. LIFE OF PROJECT  
 BEGINS FY 76\*  
 ENDS FY Continuing

5. SUBMISSION  
 ORIGINAL Nov. 1975  
 REV. NO. \_\_\_\_\_ DATE \_\_\_\_\_  
 CONTR./PASA NO. 27A

II. FUNDING (\$000) AND MAN MONTHS (MM) REQUIREMENTS

A. FUNDING BY FISCAL YEAR	B. TOTAL \$	C. PERSONNEL		D. PARTICIPANTS		E. COMMOD- ITIES \$	F. OTHER COSTS \$	G. PASA/CONTR.		H. LOCAL EXCHANGE CURRENCY RATE: \$ US _____ (U.S. OWNED)			
		(1) \$	(2) MM	(1) \$	(2) MM			(1) \$	(2) MM	(1) U.S. GRANT LOAN	(2) COOP COUNTRY		
										(A) JOINT	(B) BUDGET		
1. PRIOR THRU ACTUAL FY	*												
2. OPRN FY 76	435						435	435					
3. BUDGET FY 77	170						170	170					
4. BUDGET +1 FY 77	630						630	630					
5. BUDGET +2 FY 78	615						615	615					
6. BUDGET +3 FY													
7. ALL SUBQ. FY													
8. GRAND TOTAL	1850						1850						

9. OTHER DONOR CONTRIBUTIONS

(A) NAME OF DONOR	(B) KIND OF GOODS/SERVICES	(C) AMOUNT

III. ORIGINATING OFFICE CLEARANCE

1. DRAFTER C. Dove/J. Hafenrichter	TITLE	DATE
2. CLEARANCE OFFICER D.T. Myren TA/PPU/EUI	TITLE	DATE

IV. PROJECT AUTHORIZATION

1. CONDITIONS OF APPROVAL

The proposal was reviewed by the R & DC and endorsed by the Committee at its' November 18th meeting.

2. CLEARANCES

BUR/OFF.	SIGNATURE	DATE	BUR/OFF.	SIGNATURE	DATE
TA/PPU	Carl Fritz	12/15/75			

3. APPROVAL AAS OR OFFICE DIRECTORS

SIGNATURE	DATE	SIGNATURE	DATE
<i>[Signature]</i>	12/9/75	Kenneth S. Levick	

4. APPROVAL A/AID (See A.I.O. 1025.1 VI C)

SIGNATURE	DATE

ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT

JILL  
 Acting DAA/TA

Initial phases begun as part of utilization and evaluation project under which \$398,136 obligated.

Information as a Tool in Development

PROJECT PAPER

TA/PPU/EUI

October 23, 1975

## Introductory Note

The following Paper has been prepared in line with instructions given in TA/PPU guidance-memo dated August 25, 1975, entitled: Implementation of FY 1976 TA Program--Guidance 76-1. The discussion has been organized and presented according to the outline given in the referenced memo. It describes an on-going, field support project for which PROP approvals are not current

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I. Contribution of, and need for information support services developed under KPA #24: World-wide Technical Assistance and Research

I.1 PROJECT SCOPE

- A. This support project seeks to design and to implement in close sequence a TAB information system able to respond to the two needs expressed in the following questions:
1. How can R&D materials produced throughout the range of key problem areas (KPAs) in TAB's program be organized for maximum use?
  2. How can this range of R&D materials be brought into developing world use-situations for which they were prepared?
- B. Project design and implementation which speak to the first question involve information management strategies. The specific mass of information to be "managed" consists of R&D materials produced under the following funding mechanisms:
1. Centrally funded research and GTS contracts. These date to 1962, and they continue to be used by TAB in discovering responses and approaches appropriate to all substantive thrusts made in KPAs
  2. 211(d) institutional grants. These date to 1966, and they also continue to be used for developing special competencies relevant to KPA activities within American academic institutions
  3. During FY 1976 a new funding source will be used: Title XII grants to land-grant institutions. Informational outputs will doubtless begin to emerge from R&D activities instigated in this manner
- C. Project design and implementation undertaken in response to the second question involve information networking strategies. The major proportion of use-situations for TAB-generated R&D materials exists in the developing world. Networking functions are thus required to bring these materials into positions where they can be used to impact on the problems researched and investigated
- D. Both levels of operations are interdependent and interrelated. Information management design and implementation have been emphasized during FY 1974-1975. Information networking design and implementation will be highlighted during the years FY 1976-1978

## I.2 NEED WITHIN TAB FOR PROJECT FUNCTIONS

The project aims to design and implement four categories of Bureau-wide support services:

- A. Assistance in designing information components in contracts and grants. This input is needed to maximize the developing world focus implicit in the Agency's award of the contract/grant; and it underlays aspects below which point implementation activities toward developing world impact:
  1. Establishing information management responsibility within the contract/grant scope of work
  2. Planning for information networking strategies designed to function during and subsequent to contract/grant implementation
  3. Developing utilization strategies for R&D results, and their integration into network planning
  4. Planning for evaluation of impact achieved through use of R&D materials made over time in the developing world
- B. Information management within TAB. This project function applies to R&D materials produced by projects throughout the range of KPAs
  1. Monitorship of materials produced in contracts/grants and in-house by the technical offices
  2. Acquisition of materials for processing and for ultimate deposit in the Agency's central point of reference
  3. Announcement world-wide, targeted especially on developing world research and education/extension units; national-level offices concerned with planning; AID missions; and international agencies involved with development. This service offers:
    - a. Bibliographic descriptions and subject analysis of R&D materials
    - b. Identification of competencies available as a result of R&D projects
  4. Processing and analysis of TAB-generated materials so that they are readily retrievable and available for Agency use, but especially for developing world target clientele

C. Information networking services

1. The project identifies key regional and international information outlets which possess actual or potential capability to utilize TAB R&D materials in the following contexts:
  - a. In R&D programs undertaken by and within key units themselves
  - b. In regional/area information networks developed by key units as a means of outreach subscribed to in their programs; national-level institutions reached in this manner located in regions/areas served are of interest to this project
2. The project seeks to upgrade and reinforce information management competence within key regional and international information outlets in the following ways:
  - a. Consultations, in conjunction with TAB technical offices and regional bureau staff, focused on deposit, utilization, and onward relay of TAB-generated R&D materials
  - b. Formulation of a focus on informational problems within the key institutions and in the viewpoints of other donors
  - c. Development of information networking strategies involving TAB-generated materials and resources from additional outlets
  - d. Development of and, where essential, experimentation with linkages needed both in TAB exchange and in the general problem of informational access. The following network connections illustrate the variety of linkages needed:
    - (1) Key developing world units linked with US resources, and vice versa
    - (2) Key developing world units linked with international information systems, and vice versa
    - (3) Key developing world units linked with other related units in the developing world
    - (4) Key developing world units linked with national-level institutions within their respective regional/area networks

- e. Serving developing world interests and needs in the information context generally through cooperative relationships with other USG units, international agencies and organizations, consortia and foundations, and with other American donor entities

D. Evaluation and utilization services:

1. The project participates in evaluations made of informational activities and programs implemented in contracts and grants
2. The project assists both TAB technical offices and contractors/grantees in formulation of utilization strategies and networking efforts targeted on the developing world

I.3 PROJECT ASSUMPTIONS

Methodology used in project design is based on the following assumptions:

- A. Qualitative information management in TAB can best be achieved through designing and developing a centralized information system, to be operated by a central unit
- B. Effective information networking requires that TAB develop "live" linkages with a limited number of key developing world information outlets; an estimated 20-25 institutions need to be identified; their subject specializations need to parallel the range of KPAs
- C. Upgrading competence in information management and networking in key informational outlets can be achieved through the networking relationship with TAB
- D. Key units can demonstrate competence through developing their own regional/area information networks, linking up in this manner with national-level user-institutions
- E. Responsibility for utilization of TAB R&D outputs lies primarily in national-level institutions throughout the developing world, aided directly by key regional units and indirectly by AID/TAB. Responsibility for developing the system in which TAB R&D outputs reach use-situations lies with TAB, aided by collaboration from key developing world information outlets

- F. Funding for information management and networking in key centers will be forthcoming from donor groups/agencies, in response to clearly developed programs put forward by the key units

#### I.4 PROJECTED OVERALL CONTRIBUTIONS FY 1978 OF DESIGN-PHASE ACTIVITIES

- A. An effective and comprehensive information management system will be operational within TAB. Its functional scope will concentrate on technology transfer and the use of information as a tool in the development process
- B. Analytic awareness services for R&D materials and expertise generated by the TAB program will be produced routinely. They will be reaching key developing world information outlets; and increasingly, they will be reaching national-level information centers linked within regional/area networks

The capability developed in key units to relay TAB's awareness services will also function on behalf of similar offerings accessible from other bilateral sources and international systems

- C. A responsive document delivery system supplying TAB-generated materials to key developing world institutions will be operational. Onward on-demand delivery into national-level information centers from key units will be operational

This capability developed in key units will also serve to deliver materials available from other bilateral sources and international systems within the regional/area networks served

- D. Channels and techniques of information networking will have been investigated and tested. Linkages found effective and efficient will increasingly be put into use, facilitating interface between key developing world information outlets and the following:
  1. Other points of informational support and exchange world-wide
  2. National-level institutions served in regional/area networks

II. Services to date:

A. TAB announcement services:

1. Institutional competencies. The titles below were developed in the years 1971-1975 in house:

- a. The AID Research Program, 1962-1971: Project Objectives and Results (xvii,115p.) issued March 1971

This work reviewed the purposes of each research contract giving a brief description of methodology employed; the countries in which research was conducted; and a statement on the participation of personnel and institutions of other countries. Under the category entitled Results were listed important findings, known uses of research products, and efforts of research investigators to induce changes in policy and procedures

- b. A.I.D. Research, 1971-1973 (vi,97p.) issued Dec. 1973

An updating of the survey above covering new projects and those on-going from the earlier work in the period surveyed. Research objectives and results were presented in summary form, with a tabular appendix listing principal investigators from whom additional information could be obtained

- c. A Directory of Institutional Resources Supported by Section 211(d) Grants: U.S. Centers of Competence for International Development (vi,124p.) issued June 1972

- d. An update of this work (vi,163p.) issued with the same title in Jan. 1975

Surveys of grantee institutions as of their respective dates of issue, along with descriptions of resources and services available to the Agency and to the developing world countries and individuals as a result of grant funding

2. AID Research and Development Abstracts (ARDA)

This journal, issued quarterly, announces through abstracts Agency R&D studies and publications. Primarily it covers materials produced by research and GTS contractors and 211(d) grantees funded by TAB and PPC. Where materials produced by R&D activities in regional bureaus and Missions are submitted, these titles are abstracted and announced as well

Microfiche masters are produced as a part of the publishing process; and subsequently from them copies of these R&D materials are reproduced on-demand

ARDA has been developed under the following contracts:

- a. 3 issues: July & Oct. 1973 and Jan. 1974, containing a total of 300 abstracts only; produced by NTIS under contract PPC(GC) 01-72 A-6 for \$50,000\*
- b. 4 issues: April & July & Oct. 1974 and Jan. 1975, containing 450 abstracts and providing for 1,000 master microfiche; produced by Xerox Commercial Microsystems under contract AID/ta-C-1086 for \$44,000\*\*
- c. 4 issues: April & July & Oct. 1975 and Jan. 1976, containing a total of 600 abstracts and providing for 600 master microfiche; produced by Xerox Commercial Microsystems under contract AID/ta-C-1086 for 39,000<sup>+</sup>

B. Development of TA/PPU/EUI distribution services:

1. AID Document Distribution System (ADDS) This automated mailing list was developed in-house through collaboration with SER/DM

Computer tapes for this system contain at present over 5,000 developing world addresses. In addition, the system includes addresses of international organizations, Missions, AID/W staff, centrally funded contractors/grantees, and representative American universities which have asked to be included.

The system is currently maintained and operated in SER/DM under TA/PPU/EUI control. It has undergone constant improvement. Recently, capability to print out address-labels by selected sub-

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\* Figure shown represents contracted rate for production of 4 issues. Actual expenditure amounted to \$37,000 only, since cancellation of the contract was effected prior to production of the final issue contracted for

\*\* Figure includes cost of master microfiche production. It also covers production and printing of 1,000 additional copies of each issue; the size of each issue was increased by 12 additional pages

+ Figure includes production of 600 master microfiche, and the production and printing of issues at the size and levels reached in the previous year

groups has been developed; i.e. only developing world institutions, or only 211(d) grantees, or addresses within only one country, &c. It is thus possible for offices within the Agency to input their own mailing lists; for example, addresses of ca. 300 economists in developing countries have been input for use of PPC, and PHA/PVC is now compiling a list of Volags soon to be input

The major target in the ADDS program still to be tackled is inputting developing world institutional profiles. This effort is now underway in FY 1976 (See para. #3 immediately below)

- 2 Drawing fund for developing world ADDS addresses. This has been set up under contract AID/ta-C-1086 with Xerox Commercial Microsystems; \$60,000 were earmarked in FY 1974 and the same sum in FY 1975

The purpose of this funding device was to underwrite costs of limited free document delivery to developing country recipients of ARDA on-demand. Five hard-copy reproductions per issue of ARDA, or microfiche copies as needed can be requested. Agency staff here or in the Missions may request free copies according to need, and these costs are born by SER/DM

As of June 30, 1975, ca.7,500 hard-copy reproductions had been requested, and ca.4,250 microfiche copies had been supplied on-demand. These figures span the first 12 months during which this service was offered. Agency staff accounted for ca.3,000 orders of the figure for hard-copy reproductions shown above

3. ADDS evaluation. This study is being developed in-house through collaboration with SER/DM

Questionnaires have been sent out to non-Agency addresses in ADDS checking on the accuracy of mailings and requesting a profile of field(s) of interest. Institutional profiles are being input into the program during FY 1976. When this effort has been completed, it will be possible to call up mailing lists by subject specializations

Validation of the addresses in ADDS figures as a major target of the present survey, augmenting comprehensively Mission validations previously requested and carried out in November 1973 and in February 1975

C. Development of comprehensive TAB data base and the program of information retrieval. Efforts here have been undertaken in FY 1974 and 1975 under the contracts shown below:

1. Catalogue of R&D materials produced under research contracts 1962-1972. A two-volume bibliography, produced by NTIS under contract PPC(GC) 01-72 A-6, funded at \$25,000

This listing, issued July 1973 and March 1974, contained ca. 2,000 R&D titles generated by TAB-funded research contracts over a decade. Physical materials were deposited with NTIS where reproduction on-demand can be had on a pre-paid purchase basis

2. Comprehensive automated data base; printed catalogue of all centrally funded R&D; and microfiche files. This sub-project has been undertaken under contract AID/ta-C-1192 with Xerox Commercial Microsystems for \$120,000 in FY 1975

All R&D materials from centrally funded contracts and grants under TAB and PPC are being acquired and input into an automated data base. The comprehensive catalogue to be produced will be computer printed from the data base. Subject coding in the data base is compatible with FAO/AGRIS in the food and nutrition fields; and for the remaining KPAs a system based on DEVSIS-projections is being developed. Where microfiche have not been made in connection with the ARDA operation, materials are now being given this treatment

Initially, the catalogue will serve as basic announcement service to developing country institutions; and the back-up microfiche file will permit efficient and cost-effective document delivery. AID/W will possess query-access to the data base during the course of FY 1976

Ultimately, the flexibility of the system--reproducible magnetic tapes holding the data base and reproducible microfiche back-up files--will serve as a major and unique information networking tool. It can be deposited in key developing world centers where automated capabilities exist; and it can be updated there on a continuing basis. This renders this mass of specially generated R&D materials accessible from a series of points within the developing world, where document delivery can readily take place without direct Agency involvement

D. Application of information technologies:

1. Network linkages. A feasibility contract with MIT, AID/ta-C-1217 funded at \$25,000, negotiated at the end of FY 1975

The study, undertaken in conjunction with the Departments of State and Commerce, and NASA, aims to examine implications of communications via satellite and other advanced technologies in which transmission costs are not affected by distance. A report laying out alternatives and costs involved will be submitted by the contractor midway in FY 1976

III. Evaluation of services

- A. A three-year evaluation of the Division's program (Division of Evaluation, Utilization, and Technical Information, TA/PPU) was made May 15, 1975. A consensus emerged in this session that informational thrusts would be better served if broken-out in the documentation from strictly evaluation and utilization efforts reviewed for the period FY 1973-1975. The present Paper responds to this consensus
- B. The TAB system being designed around the functions, services, and outputs discussed in Section I is unique in several respects:
  1. The data base now being developed comprises materials uniquely and completely concerned with developing world problems and solutions proposed and attempted. The range of materials reflected here is not generally available in even the most favored developing world information outlet; nor if it were, does even the most favored developing world unit possess abstracting and analytical tools adequate for minimal access

At the core then of the system design is the aim to collect, process, and package these R&D findings, and to deposit them judiciously in key outlets in the geographical areas for which they were intended. Here the essential reworking--in terms of language, level of presentation, relevance to localized situations, &c.--must take place unhindered by geographical separation and lack of full and basic access to the pieces themselves. Here in the context of regional/area information networking, need and relevance must be matched. And a major portion of prerequisites to utilization can in this manner be addressed

2. Processing given materials provides a level of analysis adequate so that staff in key developing country institutions can determine whether given titles are relevant to specific needs from announcements and descriptions. However, direct access to microfiche back-up files in key centers makes possible positive verification that expressed need is expressly addressed
  3. For developing country clientele announcement services are supported at present by cost-effective and prompt, AID-funded document delivery. By the end of the design phase (FY 1978) key information outlets in the developing world will be undertaking document delivery within regional/area information networks both activated by them and served by them. Insofar as Agency funding will be required in the future to support this process, the project aims to investigate channelling its contributions through international bodies and/or organizations (i.e. CGIAR, &c.)
  4. Stimulation directed at regional/area information networking aims to formalize relay services into the developing world through key institutions, limited in number and already possessing commitment to programs of geographical outreach. Exchange and interface instigated by the project will serve, in effect, to open the door to networking with and to informational resources additional to R&D deposits made by TAB
- C. Measured progress during FY 1974-1975 reflects responsiveness of the contractor currently involved: Xerox Commercial Microsystems. TA/PPU/EUI has been allowed maximum leeway to develop unique project design aimed at developing world clientele/institutions; and at the same time, it has been guided carefully by the contractor's expertise and experience

#### IV. Trends: past and projected

##### A. FY 1974:

1. Development of ARDA and production of the first four issues
2. Development of ADDS to distribute ARDA
3. Preparation and distribution of the catalogue of research contract R&D covering 1962-1972
4. Preparation and distribution of the updated directory of centrally funded research

B. FY 1975:

1. Awareness services:

- a. ARDA continued and expanded in size and scope
- b. Automated data base initiated, containing comprehensive coverage of R&D materials funded by TAB and PPC
- c. Updated 211(d) grant directory issued and distributed

2. Document delivery:

- a. ADDS expanded by 1,000 developing world addresses
- b. Limited free document delivery on-demand funded for developing world recipients of ARDA; unlimited document delivery made available to Agency staff

3. Informational linkages discussed with FAO, Latin America Bureau and feasibility study on advanced communication technologies funded with MIT

4. Information networking activities discussed with 10 key developing world institutions in the agricultural area

C. FY 1976 (Projected):

1. Awareness services:

- a. ARDA maintained and upgraded in analytical content
- b. Automated data base completed for the period 1962 through CY 1975; a total of approximately 7,500 titles input
- c. Query system of the data base operational for AID/W
- d. Computer-printed catalogue of R&D materials in the data base produced and available to developing world institutions
- e. Updated research contract directory issued

2. Document delivery:
  - a. Evaluation of ADDS and validation of the recipient addresses
  - b. Evaluation of drawing fund usage in terms of this validation
  - c. Deposits of food and nutrition R&D materials in microfiche made in four key agricultural information outlets (IICA-CIDIA, IITA, ICRISAT, and CIAT) and in FAO\*
3. Information networking:
  - a. Survey of information management and networking in the international agricultural research centers
  - b. Initiation of West African information networking project under contract; keyed on IITA
  - c. Initiation of linkage study in Latin America; keyed on IICA-CIDIA and the University of the West Indies
  - d. Distribution of the comprehensive catalogue planned in collaboration with IICA-CIDIA, IITA, ICRISAT, and CIAT; aiming to share document delivery on a trial basis with these key units which will link, for purposes of this experiment, with national-level institutions in regional/area networks
4. Information linkages:
  - a. MIT-produced feasibility study submitted; relevance to linkages with international agricultural research centers studied
  - b. Compatibilities of automated systems in IICA-CIDIA and IITA with the TAB system surveyed

\* Institutional names for acronyms used here:

IICA-CIDIA	Instituto de Ciencias Agricolas de la OEA, Centro Interamericano de Documentacion e Informacion Agricola, Turrialba, Costa Rica
IITA	International Institute of Tropical Agriculture, Ibadan, Nigeria
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics, Hyderabad, India
CIAT	Centro Internacional de Agricultura Tropical, Cali, Colombia
FAO	Food and Agricultural Organization of the U.N.

D. FY 1977 (projected):

1. Awareness services:

- a. ARDA maintained, offering qualitative analytical announcements for significant current R&D outputs
- b. Data base maintained; abstracts for significant retrospective materials input; data base accessible on-line in TAB
- c. Data base tapes exchanged with IICA-CIDIA and IITA, thereby initiating query services into the TAB data base in key centers; which are also evolving regional/area information networking relationships with national-level units
- d. Directories of TAB-supported contracts/grants updated on a biennial basis

2. Document delivery:

- a. Evaluation of ADDS and use made of the drawing fund made semi-annually beginning October, 1976. ADDS addresses validated annually beginning at the same time
- b. Deposit of microfiche decks containing TAB-generated R&D materials in the food and nutrition fields made in remaining key agricultural information outlets
- c. Evaluation study of regional/area document delivery made from TAB materials previously deposited in IICA-CIDIA and IITA

3. Information networking:

- a. Second year of contract activities in West Africa evolving a West African agricultural information network
- b. Second and final year of linkage experiments in Latin America; IICA-CIDIA connected within the hemisphere and with FAO, providing information awareness and some document delivery services
- c. Regional/area networking plans developed with the remaining key agricultural information outlets

- d. Budget support for information management and networking operations being developed in the international agricultural research centers discussed and acted upon by CGIAR during "Centers' Week" 1977
  - e. Identification of key institutions needed for information networking in non-agricultural/nutrition KPAs
4. Information linkages:
- a. Experiments in linkages needed and appropriate in the West African pilot network, connecting:
    - (1) IITA with national-level institutions in West Africa
    - (2) IITA with ICRISAT (in India and its extension operations in Central Africa); and with ILRAD and ILCA
    - (3) IITA with FAO
    - (4) IITA with US information outlets and centers of competence
  - b. Evaluation of the linkage system operating in Latin America
- E. FY 1978 (projected):
- 1. Awareness services:
    - a. ARDA maintained, and computer printed from the data base
    - b. Data base maintained, and abstracts for all significant materials routinely in-put; on-line access to Agency staff through DIS
    - c. Data base tapes exchanged routinely with key developing world institutions collaborating with TAB

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\* Institutional names for acronyms used here:

ILRAD International Laboratory for Research on Animal Diseases, Nairobi, Kenya

ILCA International Livestock Centre for Africa, Addis Ababa, Ethiopia

- d. Key developing world institutions initiate in-house production of data base tapes, thus developing awareness services for materials produced in regions/areas linked through networking operations; these tapes are fed into international systems for world-wide distribution (AGRIS/ DEVSIS/ MEDLARS/ERIC/&c.)
2. Document delivery:
    - a. TAB-processed R&D materials deposited in microfiche formats routinely in key developing world institutions collaborating with the Bureau
    - b. On-demand document delivery of TAB-processed R&D materials handled routinely in key developing world outlets, responsive to information networking needs of national-level units linked through networking operations
    - c. Key developing world centers interface with other information systems in handling document delivery on behalf of national-level units served in regional/area networks
  3. Information networking:
    - a. Evaluation of the West African agricultural information network made
    - b. Evaluations of activities undertaken in non-agricultural/nutrition networks
    - c. Funding for regional/area networking systems developed within support programs formulated by international bodies and/or consortia for key international/regional units
  4. Information linkages:
    - a. Appropriate linkages evaluated and used in promoting interface between key developing world information outlets, their respective networks, and the developed world

V. Alternatives

- A. Plausible options available to TAB in structuring information services can be summarized as follows:
1. Make no concerted effort to manage either the Bureau's information sector or to organize data and materials generated by R&D projects. In studies and audits made at the beginning of this decade, this option was rejected
  2. Make no concerted effort at present to deal with this area, and await the time when major international systems will achieve operational status. This option, like the first, is essentially not applicable. It is also well to note, in this connection, that in the one international system now beginning to function (i.e. FAO's AGRIS) the waiting time here required tends to be excessive
  3. Charge each technical office with developing information programs adequate to get their respective R&D materials announced, delivered, and used. This essentially describes the status quo which the present project seeks to render obsolete. To bring seven separate informational systems (AGR, DA, EHR, H, N, OST, and UD) to levels of efficient organization and effective services in terms of the Agency's present style of operation is an unrealistic target
  4. Charge each contractor/grantee with responsibility for getting R&D production out and into the developing world without reference to TAB's informational efforts. This option would entail a substantial price, and it could not avoid proceeding with very uneven results. Unlike duplication of effort noted in option #3 immediately above, ca.150 informational outreach programs would need to be designed if individual contracts/grants presently funded were to impact within the developing world
  5. Contract out all information functions in the manner presently being done in several offices. Albeit this technique possesses allure in terms of expediency, the option cannot help but defuse developmental aspects of information management and networking processes. All too often contracted activities also become disjointed over time, as serving the developing world's needs is shifted into secondary positions within the contractors' major, pressing preoccupations

6. Develop within TAB a centralized information capability able, first, to monitor R&D informational production, and secondly, to get it effectively and efficiently into developing world use-situations
- B. The sixth option represents the approach discussed throughout this paper; since TA/PPU/EUI is approaching mid-point in developing the organization and outreach therein implied. The following analysis supports selection of the option now in-process of implementation:
1. Developing world focus and priority

Targets of R&D project design, which result in contracts and grants and subsequently in informational outputs, focus squarely on the developing world. Albeit results, findings, data, and all other informational outputs generated through TAB's programs are of interest to Agency staff (often to staff in other development-oriented agencies as well); their targeted destinations of application nonetheless remain in and throughout the developing world

Exchange of materials and communications within such an extended range of developing country contexts are not simple nor automatic processes. This reality also in no way changes the targeted focus of informational thrusts undertaken in the Bureau's R&D projects

The critical problem for this project to address then becomes the design of approaches and methods best able to get products into developing world use-situations for which they were designed despite intervening barriers. And in the same sense that project design requires developmental assistance competence, so does the design of systems of communication and exchange. The focus and the process implicit in the project's scope and program will best be served by implementing activities on a continuing basis in one central unit from within TAB

2. Human resources constraints

Structuring this project in a central position within TAB, on the one hand, and reaching out to a limited number of key developing world informational outlets, on the other, responds to the single most critical constraint characterizing work in the

information sector today: shortages of competent staff able to effect responsive information management systems and dynamic information networking operations

The project seeks to offset staff shortages in three specific ways:

- a. Providing a project program in which staff available can be increasingly concentrated within one unit in TAB. Design elements have been scheduled to achieve phased operational status. As this occurs, staff and functions now scattered through the technical offices can be consolidated
  - b. Augmenting centralized TAB staff efforts by judicious use of inputs such as the following:
    - (1) Mechanical and automated processes able to facilitate organization of information and retrieval
    - (2) Communication technologies able to multiply and extend linkages and outreach
    - (3) Selective use of contract services able to assist in achieving defined segments of program work in a timely sequence
  - c. Enlisting the support and collaboration of a limited number of developing world institutions strategically targeted on the range of KPAs
3. Implications for benefit cost analysis within TAB
- a. Development of project announcement services gives TAB one accurate focus/outreach into the developing world:
    - (1) Directly, through the computerized ADDS
    - (2) Indirectly, through key centers' regional/area services in their respective networks

The project will have rendered obsolete manually maintained and operated distributional systems by FY 1977. One centralized system, built in collaboration with technical offices and largely machine operated, will be available by that date to all units

- b. Access to data and information contained in TAB's R&D system will be available to Agency staff and also to developing country clientele as follows:
  - (1) The data base will be queriable on-line within the Agency by FY 1978
  - (2) The data base will be queriable by regional/area network clientele in the key centers identified by the project. The feasibility of on-line interface within regional/area networks will be explored in the Latin American and West African projects undertaken
- c. TAB's system of on-demand document delivery will render obsolete stocking of publications in-house. On-demand delivery from microfiche will render these materials permanently available to Agency staff, and to developing world clientele through regional/area microfiche deposits
- d. Library and reference services offered by TAB technical offices to developing world clientele, which go beyond access and use of R&D materials, are not affected at present by this project. However, as key developing world informational centers develop linkages with international resources (as a result of this project); and as this access begins to be shared within regions/areas served, existing library programs in TAB should be reappraised. An evaluation of continued need for long-distance reference services in the food and nutrition fields should be undertaken in FY 1977; and in other KPAs in FY 1978.
- e. Improvements in cost-effectiveness will result primarily from reducing duplication of effort and overlapping services. Improvements, also, will stem from effective use of informational technologies handled by one central unit in operating a cohesive, focused program. Investments called for in Section VII fund the design phase of the system. Funding requirements thereafter can be estimated at a rate of from two-to-four percent of the total R&D investment made annually by the Bureau. This level of support will maintain one-time, centralized processing of R&D material; getting data base tapes and microfiche into key centers; and handling queries and document delivery on-demand.

VI. Other issues:

- A. Critical events in project implementation need to be addressed for purposes of tracking and evaluation. The targets arranged below under project thrusts, spanning FY 1976-1978, are supplied in this context:
  1. Information management targets:
    - a. Complete design of, and the inputting of retrospective materials into the data base by the end of FY 1976
    - b. Comprehensive catalogue issued by the end of the first quarter of FY 1977
    - c. Data base inputs analyzed through CY 1975; abstracts for significant findings input; data base accessed on-line in TAB by the end of FY 1977
    - d. Data base tapes and operative programs made transferable by end of FY 1977
    - e. Statistical reports covering information management implementation issued semi-annually beginning March 1976 and continuing thereafter throughout the design phase of the project
  2. Document delivery targets:
    - a. Automated program developed to analyze document delivery made operational by the end of FY 1976; thereafter reports on document delivery issued quarterly
    - b. Analysis of document delivery capabilities in key developing world centers made institution-by-institution during the course of the project; evaluations supplied to funding sources/consortia
    - c. Statistical reporting on regional/area document delivery made from key centers instituted as this function is transferred to these outlets
  3. Information networking targets:
    - a. Evaluation of key agricultural centers' capabilities made by end of FY 1976
    - b. Evaluation of key centers' capabilities to serve as networking foci for non-agricultural KPAs made institution-by-institution during the course of the project

- c. West African Association of Agricultural Librarians and Documentalists formalized during FY 1976
  - d. Networking capabilities surveyed for specific compatibility with TAB's system in IICA-CIDIA and IITA during the third quarter of FY 1976
  - e. Contract for information networking assistance in West Africa negotiated during the fourth quarter FY 1976
  - f. Data base tapes exchanged routinely with key agricultural centers by the close of FY 1977; microfiche copies of R&D materials also deposited routinely by the same date
  - g. Funding for informational networking in key agricultural centers channelled through CGIAR beginning with CY 1977
  - h. Data base tapes exchanged routinely with key centers serving non-agricultural KPAs in the developing world by the close of FY 1978; and deposits of microfiche copies of R&D materials by the same date
  - i. Funding for informational networking in the centers noted in "h" above made through international organizations beginning CY 1978, where necessary
4. Networking linkage targets:
- a. MIT feasibility study of advanced communication linkages submitted during the third quarter of FY 1976; implementation of recommendations, if feasible, documented in revised FY 1977 budget
  - b. On-line linkage experiment between IICA-CIDIA, the Caribbean and the U.S. tested in FY 1976-1977
  - c. Linkages for West African regional networking explored by contract in FY 1977; experimentation carried out in FY 1978
  - d. Networking linkages between IITA, ICRISAT, and FAO explored by contract in FY 1977; experimentation carried out in FY 1978

VII. Projected budget: FY 1976-1978

Funding levels below are related specifically to the analysis of "Trends" given in Section IV, and the critical events/targets arranged by functional outputs in Section VI. All figures are given in thousands

	FY 76	IQ	FY 77	FY 78	Totals
Information management & document delivery	325*	50*	400*	400**	1,175
Information networking	110*	45*	180*	165**	500
Information linkages	-	75*	(50)+	50**	175
					<hr/> 1,850

\* Shown in the FY 1977 CP

\*\* Projected

+ Subject to evaluation of MIT feasibility study on applications of advanced communication technologies