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AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON, D. C. 20521  
BIBLIOGRAPHIC INPUT SHEET

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Batch 98

1. SUBJECT CLASSIFICATION	A. PRIMARY Serials	Y-AP10-0000-G100
	B. SECONDARY Food production and nutrition--Water resources and management--Africa	

2. TITLE AND SUBTITLE  
Savanna regional water resources and land use project; progress report, July-Dec. 1978

3. AUTHOR(S)

(101) Tippetts-Abbett-McCarthy-Stratton, Engineers and Architects, New York

4. DOCUMENT DATE 1979	22p	5. NUMBER OF PAGES 22p.	6. ARC NUMBER ARC
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7. REFERENCE ORGANIZATION NAME AND ADDRESS

TAMS

8. SUPPLEMENTARY NOTES (Sponsoring Organization, Publisher, Availability)

(Activity summary)

9. ABSTRACT

10. CONTROL NUMBER PN-AAG-343	11. PRICE OF DOCUMENT
12. DESCRIPTORS Central Africa Hydrology Land use West Africa	13. PROJECT 625071200
	14. CONTRACT NUMBER AID/afr-C-1041
	15. TYPE OF DOCUMENT

PN-AAG-343

**SEMI-ANNUAL REPORT NO. 11**

**July 1 – December 31, 1978**

**CONTRACT AID/afr-C-1041**

**Technical Assistance to**

**INTERAFRICAN COMMITTEE FOR  
HYDRAULIC STUDIES (C.I.E.H.)**

**B.P. 369**

**OUAGADOUGOU, UPPER VOLTA**

**SAVANNA REGIONAL WATER RESOURCES  
AND LAND USE PROJECT**

**Project No. 698-0415**

**(formerly 625-0712)**

**and Project No. 625-0926**

**TAMS**

**Agricultural  
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## INTRODUCTION

## PROJECT GOAL

The over-all goal to which this project is to contribute is

"the rational development of water resources in the West African Savanna region as required for agricultural development, human and animal consumption, and with due consideration for the ecological effects of such development".

(From: USAID Noncapital Project Paper (PROP),  
submitted March 17, 1972)

## PROJECT PURPOSE

The purpose of this project is

"to assist CIEH, an African organization based in Ouagadougou, concerned with water resource development, to develop the capacity to analyse regional water requirements and formulate an action program to meet them, and to serve as central dissemination agent for water related information."

(From: Amendment No. 4 to the Grant Agreement  
between USAID and CIEH, May 14, 1976)

## SCOPE OF WORK

The scope of work charged to TAMS calls for this firm

"to provide the professional staff and related services to assist CIEH establish at its headquarters:

1. A documentation center, by providing:
  - a. assistance with the planning of, and procurement of equipment for said center;
  - b. for the institution of systems to acquire, process and disseminate documents pertaining to hydrology, land use, and other directly related information;
  - c. on-the-job and overseas training for CIEH staff, including programming and arrangements for the Participant Training of two documentalists, to be provided by CIEH, in either the United States or Canada for approximately eighteen months of service each.
2. A planning office, by providing:
  - a. assistance with the planning of and procurement of equipment for said office;
  - b. for the development of techniques to obtain, evaluate and synthesize documents and information for the Savanna region in order to identify gaps in information and specify proposals for further studies;

- c. detailed studies of regional surface and ground water resources and land use/cover maps upon which CIEH and member states can develop future action plans and specific project proposals for submission to donor organizations;
- d. on-the-job and overseas training for CIEH staff; including the programming and arrangements for the Participant Training of two hydrologists, an assistant hydrologist, and a land-use specialist, to be provided by CIEH, in either the United States or Canada for approximately twelve months service each".

Specifically, during the extension period to December 31, 1978, the Contractor shall assist the CIEH Technical Planning Office and Documentation Center as follows:

(1) Assist the Technical Planning Office in completing, verifying, publishing and distributing remaining project baseline water resources studies which are needed for the 16 member and observer states to plan future water development program with on-going activities. These studies are Volume 4, Study Proposals (to identify further work needed to eliminate gaps in the regional data base); Volume 5, Existing Water Use in the Savanna Region; Volume 6, Existing Land Use in the Savanna Region; and Volume 7, Water Requirements in the Savanna Region. (Estimated long-term need for the next 25 years.)

(2) Assist the Documentation Center in completing the indexing of approximately 8,000 supporting water resources documents for the region by author and geographic area; establishing a third complementary subject matter index to fulfill the indexing system for the Center to complete and maintain on a current basis in the continuing CIEH acquisition program.

(From: Modification No. 13 of the Contract between USAID and TAMS,

PROJECT PROGRESS

## PROJECT FUNDING

During the report period the following Amendments to the Grant Agreement between USAID and CIEH were signed:

Amendment No. 11 (September 27, 1978) to extend the termination date of the Grant itself to December 31, 1979 and the termination date of the technical assistance contract (TAMS) to December 31, 1978. Funds were made available for 1979 salaries of 8 CIEH personnel previously engaged by TAMS.

Amendment No. 12 (December 22, 1978) to extend the termination date of the technical assistance contract (TAMS) to March 31, 1979.

The following Modifications of the Contract between USAID and TAMS were signed:

Modification No. 12 (September 29, 1978) to extend technical services to October 31, 1978.

Modification No. 13 (October 31, 1978) to extend technical services to December 31, 1978 and increase total funding to \$2,277,849.

Modification No. 14 (December 29, 1978) to extend technical services to March 31, 1979.

## STAFF

### TAMS staff permanently assigned to the project:

Dr. John Buursink, Project Manager	July 1 - Dec. 31
Mr. James Robertson, Hydrologist Planner	July 1 - Dec. 31

### CIEH counterpart staff assigned to the project:

Mr. Ali Krissiamba, Documentalist	July 1 - Dec. 31
Mr. Kodjo Ativon, Hydraulics Engineer (in training in USA)	July 1 - Aug. 15 Aug. 15 - Sept. 30
Mr. Georges Sola, Assistant Hydrologist (in training in USA)	July 1 - Aug. 1
Mr. Francis Paré, Draftsman (in training in Holland)	July 1 - Oct. 31 as of Nov. 1

### TAMS staff supporting the project in New York on part-time basis:

Ms. Sara Guthrie, Project Coordinator	July 1 - Dec. 31
Mr. Robert Koester, Documentalist	July 1 - Dec. 31
Mr. Domingo Isasi-Diaz, Chief Draftsman	July 1 - Dec. 31

### EarthSat staff carrying out project work (no. 625-0926) in Washington, D.C.:

Mr. David Thibault, Officer-in-Charge	July 1 - Dec. 8
Mr. Donald Garofalo, Project Manager	July 1 - Dec. 8

### TAMS staff participating in the project in Ouagadougou on TDY basis:

Mr. Robert F. Heins, Partner-in-Charge	Nov. 29 - Nov. 30
Mr. Gordon Williams, Hydrologist Planner	Nov. 3 - Nov. 15
Mr. Jean Claude Henry, Hydrologist Planner	Dec. 29 - Dec. 31
Ms. Emily Candelmo, Documentalist	July 1 - Sept. 9 Sept. 30 - Dec. 19

### Cooperating Country Nationals permanently assigned to the project:

Ms. Bintou Maïga, Secretary	July 1 - Dec. 31
Mr. H.B. Minoungou, Equipment Operator	July 1 - Dec. 31
Ms. G.A. Ouédraogo, Library Assistant	July 1 - Dec. 31
Ms. A.W. Ouattara, Library Assistant	July 1 - Dec. 31
Mr. Y.J. Azoungoungou, Chauffeur/Messenger	July 1 - Dec. 31

### Other personnel assigned by TAMS for specific project tasks in Ouagadougou:

Mr. Peter Wright, Technical Assistant	July 1 - July 21 Oct. 16 - Dec. 31
Mr. Christopher Lewis, Technical Assistant	July 1 - Sept. 30
Mr. Daniel M. Hirsch, Technical Assistant	Sept. 28 - Dec. 31
Ms. W. Luché, English language tutor for Mr. K. Ativon	July 1 - Dec. 31

## WORK PROGRESS

Below is a list of Project Reports thought necessary to achieve the objectives set for the CIEH Planning Office in its work on the Savanna Region of West and Central Africa.

- Volume 1. Savanna Resources - Report
- Volume 2. Savanna Resources - Mapfolio
- Volume 3. Savanna Resources - Appendices
- Volume 4. Savanna Resources - Study Proposals
- Volume 5. Existing and Planned Water Use
- Volume 6. Existing Land Use
- Volume 7. Water Requirements
- Volume 8. Project Proposals for Water Resource Development

At the end of the report period, Volume 1, 2, 3 and 4 were printed and available for distribution at CIEH. Volume 5 and 6 were being printed in the U.S. Work on Volume 7 was started in August 1978 and is scheduled for completion in early 1979.

The collection of the CIEH Documentation Center increased to more than 10,000 documentary units in the report period. The cataloging backlog was eliminated as far as indexing by author and geographic area is concerned. A subject index system was established. The first 3 issues of a new CIEH Bibliographic Bulletin incorporating documents indexed by subject appeared in print by the end of the report period.

STATUS OF THE WORK

The status of project work is reported upon in this section and accomplishments are discussed under the following two headings:

- Institutional Elements
- Technical Elements

A flow chart of work follows as Figure 1.

## INSTITUTIONAL ELEMENTS

For a comprehensive account of CIEH's organization and program of work, and the institutional requirements necessary to accomplish these tasks, one is referred to a report prepared by Mr. M. Gagara, Secretary General of CIEH in April 1978. This report was presented as Appendix A to semi-annual report no. 10.

### 1. Functions of Planning Office and Documentation Center

In semi-annual report no. 9 three functions were defined for the Planning Office: (1) Synthesis of Information, (2) Project Identification, (3) Project Implementation. During the report period the Planning Office was primarily engaged in Synthesis of Information.

Also in semi-annual report no. 9, three functions were defined for the Documentation Center. During the report period the Documentation Center carried out all three functions: 1) Acquisitions, 2) Processing, and 3) Information Dissemination.

### 2. Staffing Requirements

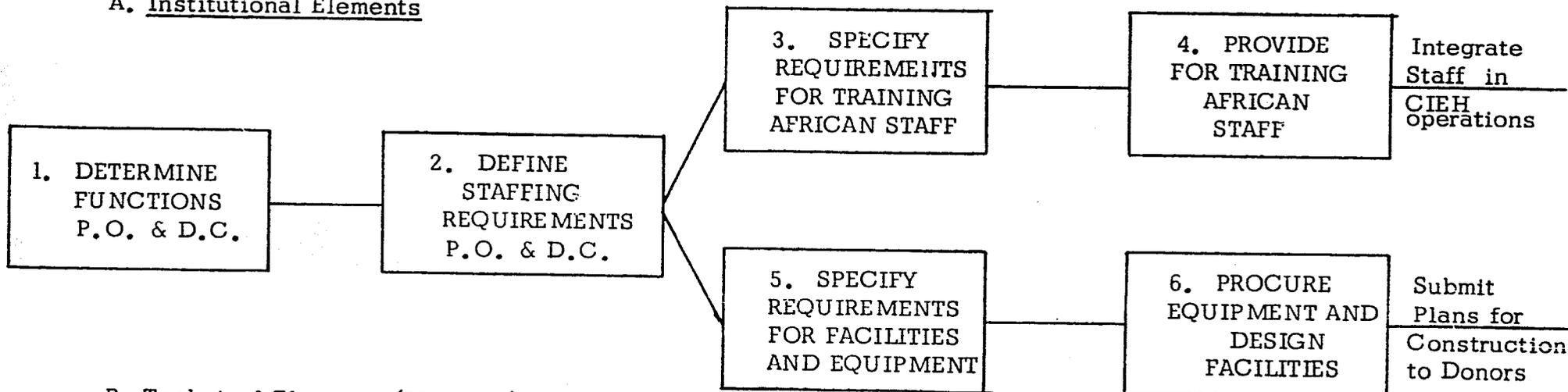
The staffing requirements for CIEH's Planning Office and Documentation Center were set forth in semi-annual report no. 9.

### 3/4. Training of CIEH staff

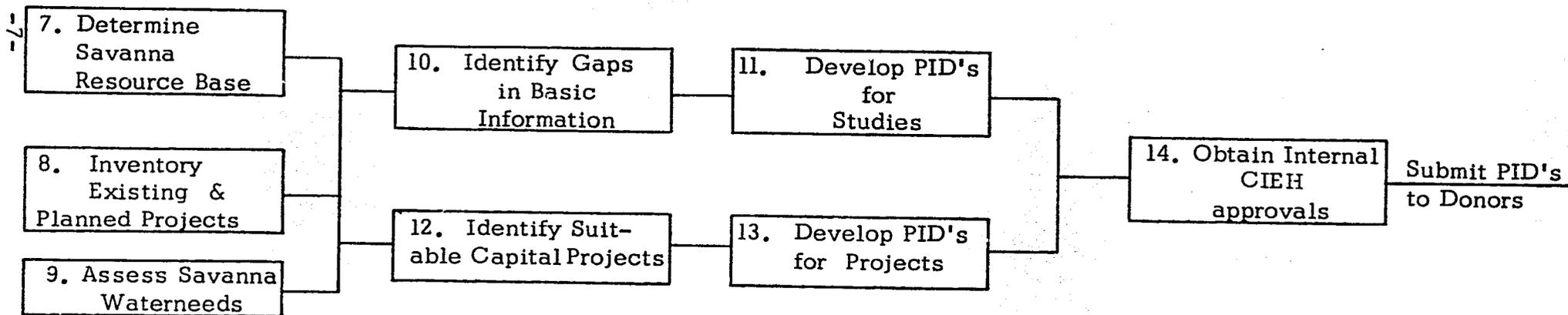
The CIEH assistant hydrologist, M. Georges Sola, continued his training program in the United States. In the period from June 5 to July 14, 1978, Mr. Sola took part in a training and observation program organized by the Engineering and Research Center of the Bureau of Reclamation, United States Department of the Interior, Denver, Col., to study hydrologic aspects of irrigation development in the Western United States.

Figure 1. Flow Chart of Work for Assisting CIEH to establish a Planning Office (P.O.) and Documentation Center (D.C.)

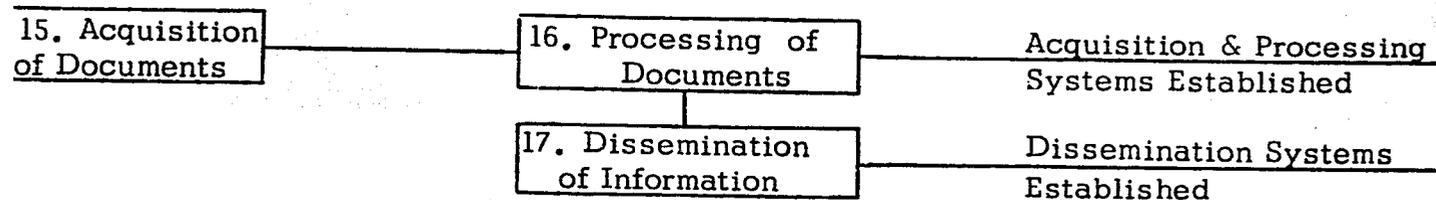
A. Institutional Elements



B. Technical Elements (Planning)



C. Technical Elements (Documentation)



M. Kodjo Ativon, CIEH hydraulic engineer, undertook six weeks of training in the United States. He completed a one-month program of instruction in Landsat remote sensing concepts and applications provided by Earth Satellite Corporation in Washington, D.C., followed by consultations with senior TAMS water resources personnel in New York.

A certificate of completion awarded to Mr. Ativon by Earth Satellite Corporation is presented in the Appendix.

#### 5/6. Facilities and Equipment

During the report period a periodical display unit was received by CIEH (AID PO 215-76) as was most of the office furniture requested per AID PO 114-77. (See Figure 2 semi-annual report no. 10.)

### TECHNICAL ELEMENTS - PLANNING

#### 7. Savanna Resource Base\*

Project Reports (Volume 1, 2 and 3) on the Savanna's water, land and human resources were published in both French and English during the previous report period.

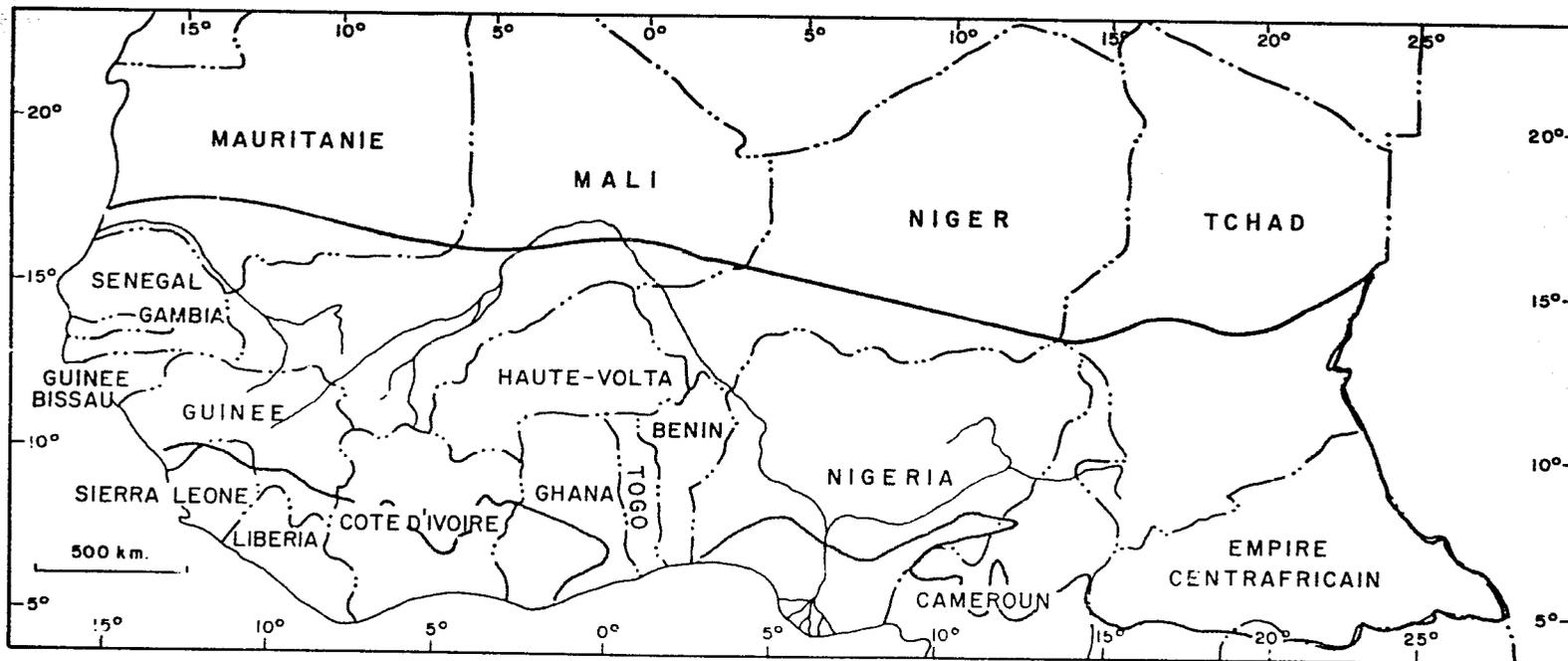
- Volume 1. Savanna Resources - Report
- Volume 2. Savanna Resources - Mapfolio
- Volume 3. Savanna Resources - Appendices

#### 8. Existing and Planned Land and Water Use

During the report period a study of existing land use on the basis of Landsat and corollary data (Volume 6) and a study on existing and planned water use (Volume 5) were completed. Volume 6 was prepared under a sub-contract, by Earth Satellite Corporation, Washington, D.C., and entailed preparation of a map showing types of natural vegetation, intensity of cultivation and major crops, and an accompanying report. Volume 5 presents information on both ground and surface water and includes a map indicating existing and planned dams and barrages throughout the Savanna Region.

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\*See Figure 2 for delineation of project area.



THE PROJECT AREA. THE NORTHERN BOUNDARY OF THE SAVANNA REGION IS THE 250mm. ISOHYET AND TO THE SOUTH IS THE FOREST BOUNDARY.  
 ZONE DU PROJET. LA REGION DE SAVANNE EST LIMITEE AU NORD PAR L'ISOHYETE 250mm. ET AU SUD PAR LA FORET

FIGURE-2

## 9. Water Requirements

A preliminary assessment of water requirements of the Savanna Region for the next twenty-five years was completed, including human consumption, livestock, irrigation and industrial requirements, and hydro-electric demands. The report (Volume 7) is scheduled for completion in early 1979.

## 10/11. Gaps in Information and Study Proposals

A report containing 22 study proposals was published during the report period as Volume 4 of the Savanna Project Reports.

The proposals suggested include studies in the fields of hydrology, hydrogeology, water resource development, climatology and land use.

## 12/14. Capital Projects

It will be possible to develop plans for new capital projects, or determine support for existing plans, based on the results of the work described in the above sections.

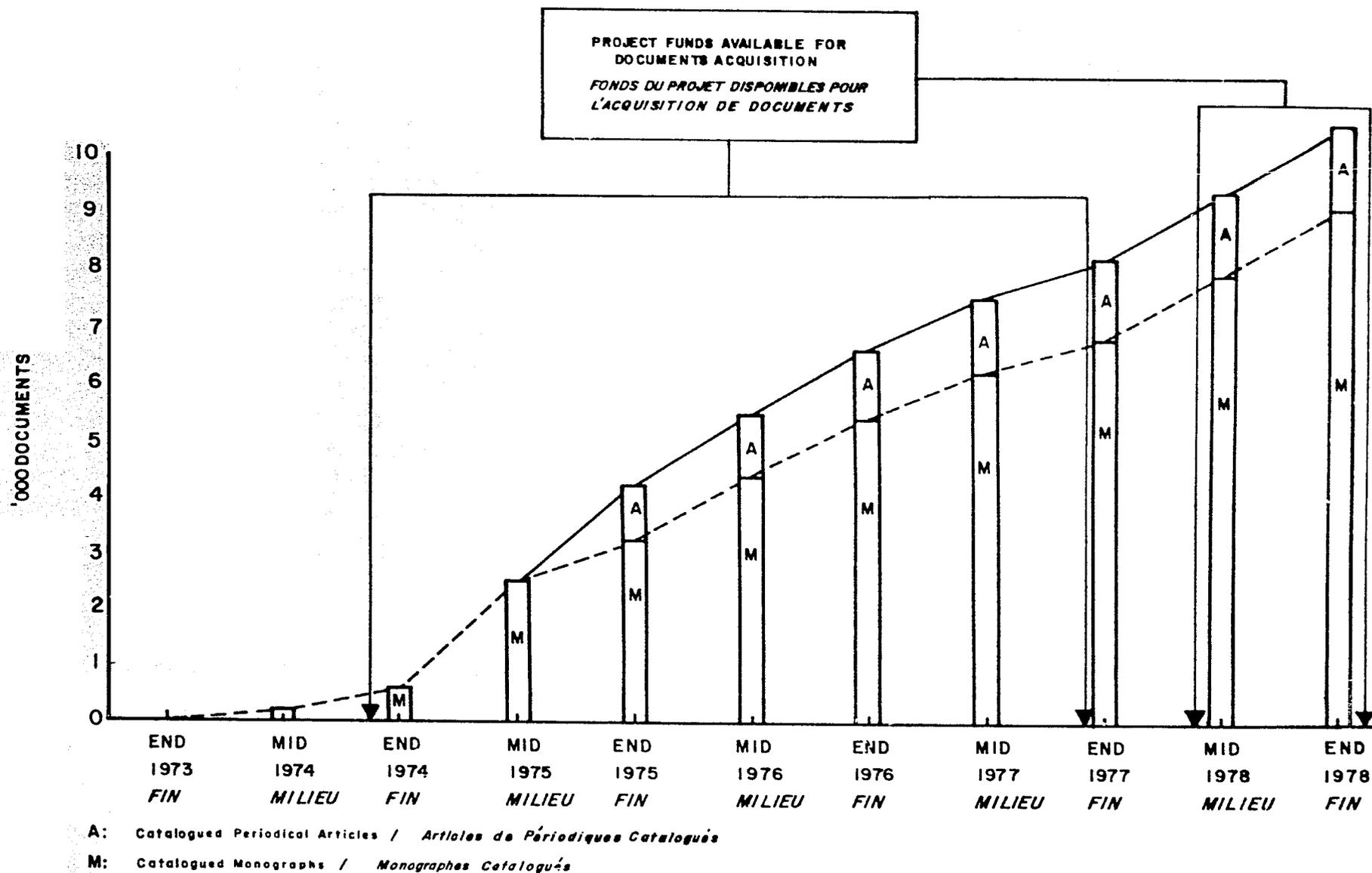
## TECHNICAL ELEMENTS - DOCUMENTATION

### 15. Acquisition of Documents

During the report period, the Documentation Center acquired more than 1,400 new titles. This figure brings the grand total of Documentation Center holdings from 8,800 as of June 30 to 10,200 as of December 31, 1978. Figure 3 shows the increase in documentary units since the beginning of the project through December 31, 1978.

### 16. Processing of Documents

During the report period practically all new documents were given descriptive cataloging and geographic indexing. A subject index system was established in the first half of 1978. During the report period project work at CIEH's Documentation Center was concentrated on subject indexing of the most recent acquisitions. By December 31, 1978 about 2,200 documents had been subject-indexed. The first three issues of the new CIEH Bibliographic Bulletin were published incorporating the first 900 subject indexed documents.



**Fig. 3** Increase of Catalogued Documentary Units Available at the C.I.E.H Documentation Center  
*Accroissement des Documents Catalogués au Centre de Documentation du C.I.E.H*

## 17. Dissemination of Information

For detailed recommendations for a comprehensive CIEH Information Dissemination Program please refer to Appendix B of Semi-Annual Report 9.

During this six months period more than 80 new visitors used the services of the Documentation Center. Figure 4 shows the increase in the number of new visitors since the beginning of the project.

The Bibliographic Bulletins, mentioned in 16. above, will be distributed to inform readers of documents received after the publication of the CIEH Catalog of the Documentation Center (1977). Most of the one hundred copies of the Catalog, published by G.K. Hall, have been distributed by the Center.

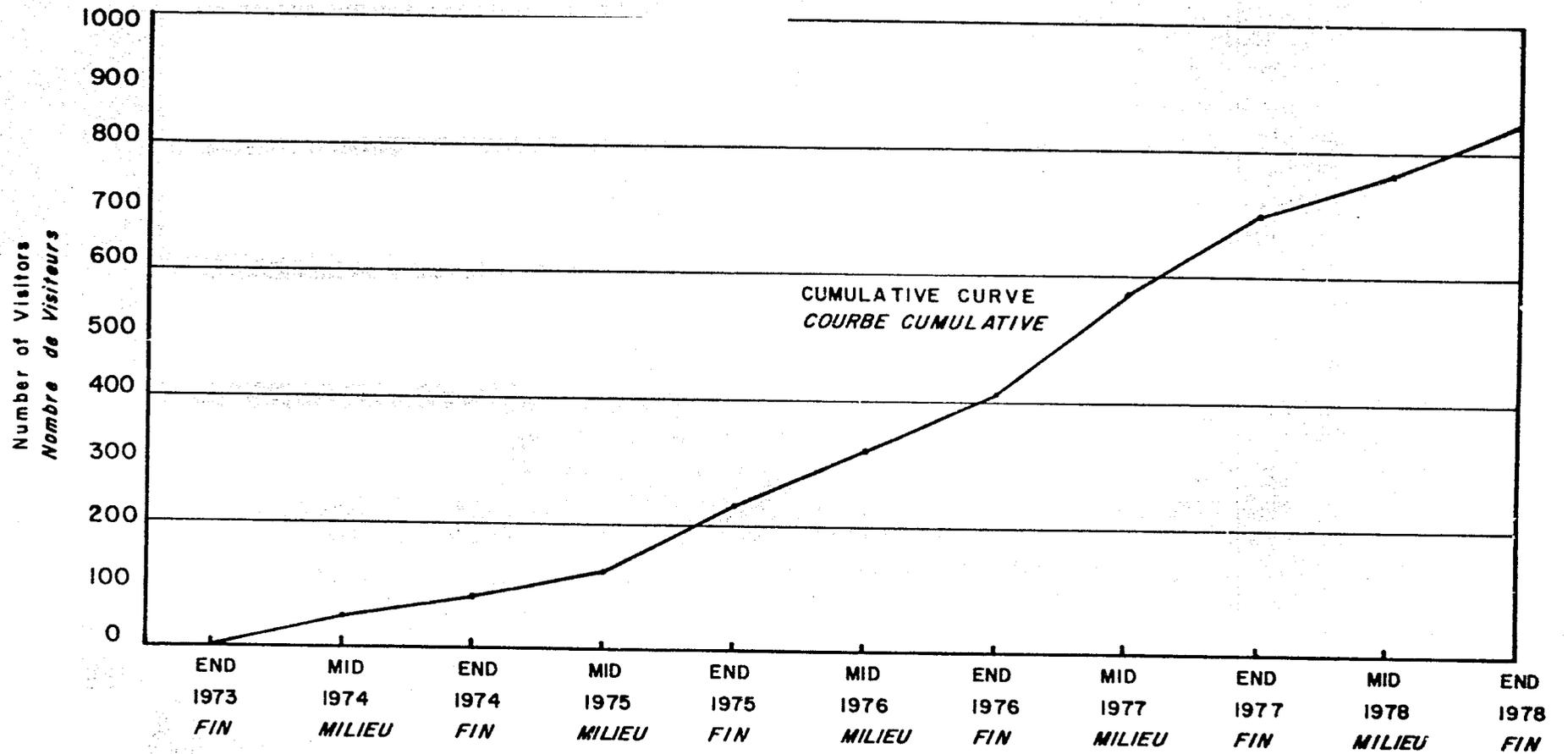
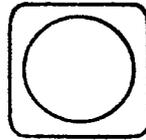


Fig. 4 Increase of Visitors Using the C.I.E.H Documentation Center  
*Accroissement des Visiteurs au Centre de Documentation du C.I.E.H*

## APPENDIX

### Training Results of Kodjo Ativon

# *Earth Satellite Corporation*



This is to certify that

## *Ativon Kodjo*

has completed, with distinction, a 120-hour program of instruction dealing with  
**LANDSAT REMOTE SENSING CONCEPTS AND APPLICATIONS.**

This course was presented under the auspices of Earth Satellite Corporation by a multidisciplinary instructional staff with leadership provided by the undersigned. It is considered equivalent to an intensive seminar course in remote sensing.

*August 14 – September 12, 1978*  
*Washington, D.C., U.S.A.*

*W. J. Broome & Donald Marfalo*