

REPORT
ON THE I.D.R.C.
MICROFICHE SURVEY
FOR
LATIN AMERICA

MARCH 1978

Report

on

MICROFICHE SURVEYS

at

IICA - SAN JOSE

LARO - BOGOTA

CIDE - SANTIAGO

for

INTERNATIONAL DEVELOPMENT RESEARCH CENTRE



CONSULTANTS: W.D. Wheeler
K. Davies

OTTAWA, CANADA

MARCH 31, 1978

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CONTENTS

	PAGE
Summary of Report	1
Introduction	3
<u>Part 1</u>	
Instituto Interamericano de Ciencias Agricolas and Turrialba Library <u>San José, Costa Rica</u>	5
1.1 Main Findings	5
1.2 Recommendations	7
1.3 Annexes	
1.3.1 Cost Summary	9
1.3.2 Equipment Cost	10
1.3.3 Supplier Quotation (DIMA)	12
1.3.4 Contacts and Interviews	14
<u>Part 2</u>	
LARO Library <u>Bogota, Colombia</u>	15
2.1 Main Findings	15
2.2 Recommendations	18
2.3 Annexes	
2.3.1 Summary of Service Bureau Costs	19
2.3.2 Contacts and Interviews	20

		PAGE
<u>Part 3</u>	<u>Centro Internacional de Agricultura Tropical Cali, Colombia</u>	21
3.1	Main Findings	21
3.2	Recommendations	22
3.3	Annexes	
	3.3.1 Equipment Cost	23
<u>Part 4</u>	<u>Centro de Investigacion y Desarrollo de Educacion Santiago, Chile</u>	25
4.1	Main Findings	25
4.2	Recommendations	28
4.3	Annexes	
	4.3.1 Cost Summary	29
	4.3.2 Equipment Costs	30
	4.3.3 Proposed Distributors	32
	4.3.4 Contacts and Interviews	35
<u>Part 5</u>	<u>IDRC Library Ottawa</u>	38
5.1	Main Findings	38
5.2	Recommendations	41
5.3	Annexes	
	5.3.1 Cost Summary	42
	5.3.2 Equipment Costs	44
	5.3.3 Contacts and Interviews	46

		PAGE
<u>Part 6</u>	<u>Technical Commentaries</u>	47
6.1	Equipment and Supplies	47
6.2	Staffing and Training	50
6.3	Accommodation and Preparation of Documents for Microfilming	51
6.4	Quality Assurance and Control	52
6.5	Future Requirements	54
6.6	Annexes	
	6.6.1 In-House Inspection Table Layout	55
	6.6.2 In-House Operation Layout	56

SUMMARY OF REPORT

Main Recommendations

1. IICA-San José:

- That an in-house microfiche operation be installed at a cost over the first three years of \$128 000.

Comment: IICA's requirements can be met by either a service bureau or in-house operation. However the latter is more economical. Microfilm storage and reference facilities in Turrialba should be improved. (Ref. Section 1.2)

2. LARO Library - Bogota

- That microfiche services be provided by a commercial service bureau. Costs for the first year are estimated at \$50 000 and \$17 000 for each succeeding year.

Comments: Should CIAT implement an in-house system, then consideration should be given to that operation servicing LARO, which would reduce LARO costs. (Ref. Section 2.2)

3. CIAT - Cali

- That an in-house microfiche operation be installed at an estimated equipment cost of \$35 000.

Comments: Actual production requirements were not identified but the apparent scope and volume indicate that an in-house operation is the only resource. (Ref. Section 3.2)

4. CIDE - Santiago

- That an in-house operation be installed. Estimated cost over 3 years \$68 000..

Comments: At CIDE in particular, increasing costs for paper reproduction and distribution are reaching a critical point. A microfiche information system appears to be the only viable alternative. Commercial facilities are not available locally. (Ref. Section 4.2)

5. IDRC Library - Ottawa

- That an in-house microfiche program be commenced and the present outside services be terminated at that time. Estimated 3 year cost \$114 000.

Comments: (a) The above estimate approximates the cost of equivalent commercial services during the first three years, but thereafter the on-going in-house costs are greatly reduced.

(b) Expertise in Ottawa would be highly useful for providing technical advice and information to the other microfiche centres, and might monitor their activities and progress. (Ref. Section 5.2)

INTRODUCTION

Consultants: K. Davies, Transport Canada
W.D. Wheeler, Public Archives

Dates of Mission: 19 February 1978 - 17 March 1978

Terms of Reference:

- a) to survey the micrographic requirements of the Instituto Interamericano de Ciencias Agrícolas in San José, Costa Rica; the Centro de Investigación y Desarrollo de Educación in Santiago, Chile and the Centre's own requirements both in Ottawa and at the regional office in Bogota;
- b) to review the availability of microfiche equipment in San José, Santiago, Bogota and Ottawa, with special reference to spare parts, and maintenance facilities; to recommend staffing structures and the training programs for technicians in the institutions examined;
- c) to recommend manufacturers and models of equipment suitable for purchase by the various institutions to permit the regular production of high-resolution microfiches according to international standards;
- d) to undertake such other assignments as are agreed upon between the consultants and the Centre.

- e) to submit a detailed report of the work accomplished under this consultancy to the Director, Information Sciences Division of the Centre by 31 March, 1978.

Conducting the Survey

Activities involved in meeting the requirements of the mission were carried out in the following order at each site:

- 1) Meeting with the Director and staff
- 2) Examination of holdings, accommodation and technical facilities.
- 3) Interviewing service company representatives and visiting their establishments where necessary.
- 4) Contacting local persons in micrographic or related organizations.
- 5) End-of-visit review with Director.

In reviewing all the alternatives available to fulfill each of the requirements, consideration was given to:

- 1) Expertise and training facilities.
- 2) Availability of equipment.
- 3) Best type of equipment to suit individual needs.
- 4) Parts and service available.
- 5) Availability of microfiche services from local bureaux and also the reputation and business credibility of each.

Part 1

IICA SAN JOSE

1.1 MAIN FINDINGS

- 1.1.1 The majority of the documents that would be considered for microfilm are generated via offset. Over 90% are 8½x11 in size with the balance either 8½"x14" or 5"x8".
- 1.1.2 The condition of the documents varies from fair to good. The present storage conditions are fair for paper storage, but it is doubtful if they will be adequate for microfilm as humidity and temperatures range beyond those recommended for microfilm storage.
- 1.1.3 Microfilm equipment presently in their possession includes a "Dagmar" step-and-repeat microfiche camera, a manual fiche processor, two "Dagmar" fiche/roll readers and one Bell and Howell fiche reader-printer.
- 1.1.4 In San José there is little expertise in the field of micro-graphics and no activity in the step-and-repeat and micro-publishing field. Banks and hospitals with in-house roll-film operations appear to be the only areas active in microfilm.
- 1.1.5 No service bureau is providing a microfiche service at present. However, one firm, DIMI Industrial y Commercial, S.A., has indicated an interest since it has recently acquired a Bruning Model 800 Microfiche Camera for demonstration purposes. Based on prices quoted by this firm, 3 000 microfiche with 28 diazo copies of each would cost \$294 000!

1.1.6 The original volume figures forecast by IICA for the first three years of a microfilm program were based on commencing with 5 000 documents the first year, 9 000 the second and 15 000 the third, each document averaging 50 pages. Applying these requirement figures to estimated costs of an in-house microfiche operation of a size to provide this volume results in an exorbitant and unrealistic cost (\$285 500). Therefore the budgeted \$100 000 over a 3 year period was the basis used in planning the microfiche installation. The minimum in-house operation which can be considered practical and worthwhile resulted in an estimated cost 8% above the amount budgeted. Readers for distribution sites cannot be provided as originally planned.

1.1.7 TURRIALBA

A visit to this library disclosed a microfilm collection of primarily roll microfilm, both 16 and 35 mm. One Recordak MPE reader is available to view this film. Because the films are in short lengths and tightly rolled they are not easily handled.

The rubber bands on the 100' rolls may result in deterioration of the silver film. The storage conditions are not satisfactory if this film is considered archival microfilm.

1.2 RECOMMENDATIONS (IICA)

1.2.1 IICA In-House Installation

It is recommended that an in-house microfiche operation be installed at IICA at an estimated cost over the first three years of \$128 800. (Refer to Annex 1.3.1). For detailed list of equipment see Annex 1.3.2.

Comment

While IICA's requirements can be provided by either a service bureau or an in-house operation, a cost comparison for both a short-term and long-term indicated that the long-term requirement costs analysis indicated would be more economical. (Refer to Annex 1.3.1).

From a practical technical viewpoint it would be more advantageous for IICA to carry the in-house installation since it has the potential expertise in its reproduction department, whereas the only outside service bureau will have to train personnel for its microfiche service.

Personnel Requirement

In planning for IICA's volume requirements over the three year budgeted period 2½ man-years annually will be required to staff the microfiche operation:

Filming - 1 man-year

Duplicating - 1 man-year

Document preparation and handling activities -
½ man-year

1.2.2 Training

It is recommended that either the key-operator or the staff member appointed by the Centre obtain in-depth training at the equipment manufacturers sites and at successful microfiche operations in the USA and Canada. This is an important requirement since very little training can be provided by vendors.

1.2.3 Turrialba

It is recommended that all short lengths of film be cut and inserted into 4"x6" micro-jackets for protection, and indexed for easier access. This will both protect the film and facilitate reference and handling.

1.2.4 It is recommended that a good microfiche reader-printer be provided to this library to accommodate its future needs which are predicted to grow with the implementation of the microfiche information network.

IICA
SAN JOSE, COSTA RICA
 Three Year Microfiche Program
 In-House Cost Summary

ANNEX
 1.3.1

	YR. 1 <u>U.S.\$</u>	YR. 2 <u>U.S.\$</u>	YR. 3 <u>U.S.\$</u>
<u>Capital Investment</u>			
See Appendix	35,800.	--	--
<u>Labour</u>			
2½ Man Years Consisting of 2 Full Time Operators and 1 Part Time Clerk	--	25,000.	25,000.
<u>Material</u>			
Silver Film and Chemistry: - 5000/yr. @ \$1.50 each =	7,500.	7,500.	
Diazo Film = 65,000/yr @ 0.15 each =	9,750.	9,750.	
<u>Training Expenses: Travel and Courses</u> Available only in U.S. and Canada	<u>5,000.</u> <u>58,050.</u>	<u>2,000.</u> <u>44,250.</u>	<u>2,000.</u> <u>27,000.</u>
3 Year Total Cost			<u>\$129,300.</u>

Service Bureaux Cost Summary

	YR. 1 <u>U.S.\$</u>	YR. 2 <u>U.S.\$</u>	YR. 3 <u>U.S.\$</u>
To Providing 5000 Silver Original Microfiche @ \$4.15 each =	--	20,750.	20,750.
To Providing 50,000 Diazo Duplicates @ 0.75 each =	--	37,500.	37,500.
To Purchasing the Required Inspection, Reading and Hard Copy Printing Equipment =	25,800.	--	--
To Staffing the Functional Activity Related to Sending, Receiving, Inspecting and Filing Work for Service Bureau =	--	6,000.	6,000.
	<u>25,800.</u>	<u>64,250.</u>	<u>64,250.</u>
3 Yr. Total Cost			<u>\$154,300.</u>

3 APR 78 - K

IICA
SAN JOSE, COSTA RICA
Recommended Microfiche Operational Equipment

ANNEX
1.3.2

<u>EQUIPMENT</u>	<u>MFG.</u>	<u>MODEL</u>	<u>EST. COST</u> <u>U.S. DOLLARS</u>	<u>LOCAL</u> <u>DISTRIBUTOR</u>
1. Microfiche Camera and Required Accessories	Bruning	801	15000.	DIMA Industrial Y Commercial, S.A.
2. Fiche Processor and Required Accessories	Bruning	240	4000.	"
3. Fiche Duplicator	3M		5000.	3M
4. Densitometer	Macbeth	TD-500	2000.	*
5. Microscope	Olympus	MIC	200.	*
6. Inspection Table	Local	See Sketch	500.	Local Carpenter
7. Fiche Reader- Printer	Xerox	740	6000.	Xerox
8. Fiche Reader	Xerox	340	400.	Xerox
9. Fiche Storage Cabinet	*	*	1000.	*
10. Refrigerator	Sears	8 cu. ft.	500.	Sears
11. Fiche Readers - 3	Realist	Viking	<u>1200.</u> <u>35,800.</u>	3M

* Information to follow.

3 APR 78 - KD

.../11

SAN JOSE, COSTA RICA

LOCAL DISTRIBUTORS

Microfiche Camera and Processor	- Dima Industrial Y Commercial, S.A. Apartado 871 Ave. Central, Calles 3a.Y 5a. San Jose, Costa Rica Telefonos: 22-39-69 -- 23-04-62 Senor Dieter Marschatz
Microfiche Duplicator and Realist Readers	- 3M Centro America, S.A. Apartado Postal 10119 San Jose, Costa Rica, Telefonos: 37-50-33 Senor Juan l'Escarre Castro
Densitometer	- IFSA Industrias Fotoraficas, S.A. Apartado 10126 San Jose, Costa Rica Telefono: 23-14-44 Senor Jamie Pfaeffle
Microscope	- C & H Steenworth Ltd. Apartado 10109 San Jose, Costa Rica
Inspection Table	- Local Carpenter (as per sketch)
Fiche Reader-Printer	- Xerox of Panama 3400 Eldorado Edif. Diego Avenida Balboa Panama Senor Oswaldo Liang
Refrigerator	- Sears Ltd.
Fiche Storage Cabinet	- *

* Information To Follow

3 APR 78 - KD

... /12

DIMA**DIMA INDUSTRIAL Y COMERCIAL, S.A.**

Mr. K. Davies
Mr. B. Wheeler
San José
Costa Rica

SAN JOSE, COSTA RICA
APARTADO 871
TELEFONOS: 22-39-69 -- 23-04-62
AV. CENTRAL, CALLES 3a. Y 5a.
TELEX No. 2576 DIMIND
CABLES MARATZ, SAN JOSE
BANCO ANGLO COSTARRICENSE

February 22, 1978

Dear Sirs:

During your visit to my office we discussed your program to develop a microfilm system for the ICCA. Following is the information you requested:

Equipment and supplies:

1 camera BRUNING model 801, cat. no. 90-8125, format 2498, reduction 24X	\$ 13.200,--
Accessories for camera:	
1 exposure switch foot operated	\$ 45,--
1 dust cover	\$ 42,--
1 cassette (film receiver)	\$ 225,--
1 film processor model 240	\$ 2.500,--
Accessories for processor:	
1 daylight loading magazine	\$ 195,--
1 replenishment system	\$ 485,--
1 thermostatically controlled water blander	\$ 300,--
1 water inlet/drain set	\$ 35,--
1 BRUNING model DP-10 table top fiche duplicator cat. no. 90-410	\$ 1.700,--
TOTAL price fob factory EQUIPMENT	\$ 18.727,--
+ charges for packing, inland freight, airfreight insurance, etc. approx. EQUIPMENT	\$ 900,--
TOTAL price cif San José EQUIPMENT	\$ 19.627,--

First year supplies are computed on the output of 3.000 original microfiche and 84.000 diazo duplicates:

60 boxes of 50 packets each type 90 Fichapak Film	\$ 2.970,--
10 cases of 4 1gal. units developer conc. ITI *	\$ 624,--
10 cases of 4 1gal. units fixer conc. ITI *	\$ 466,50
168 boxes of 500 each diazo duplicating film, 5 MIL 105 X 148,75 mm. MC blue	\$ 3.964,80
TOTAL price fob factory SUPPLIES	\$ 8.025,30
+charges for inland freight, airfreight, ins. approx.	\$ 2.675,--
TOTAL price cif San José SUPPLIES	\$ 10.700,30
TOTAL price EQUIPMENT + SUPPLIES for first year	\$ 30.327,30

* may not be shipped by air

Our charge for microfilming and processing in archival quality of 3.000 microfiches in format 2498 (excluding cost for preparing file data suitable for microfilming) would be US\$ 12.540,--

For your information, the prices on equipment for manual and/or automatic retrieval are as follows:

BRUNING model 95
automated microfiche retrieval/display,
format 2498, magn. 24X fas. \$ 2.700,--
BRUNING model 96
automated microfiche reader/printer,
format 2498, magn. 24X fas. \$ 5.850,--
1 cartridge loader fas. \$ 120,--
1 cartridge complete with 30 carriers coded 1 thru 30 \$ 21,--
BELL & HOWELL model REPORTER
microfiche reader/printer, magn. 24Xfas. \$ 2.575,--
BELL & HOWELL (Micro Design)
manual readers models at prices
between
\$ 185,-- and
\$ 310,--

Please call on me for any further information desired. I shall look forward to being of service to you in the near future.

Very truly yours,

DIMA INDUSTRIAL Y COMERCIAL S.A.

Dieter Marschatz

DM/gmc.
enclosures

1.3.4 CONTACTS AND INTERVIEWS

- IICA: Maria Dolores Malugani, Directora, CIDIA
Finn Damtoft, Information and Documentation
Specialist, CIDIA
- Companies:
- 1) 3M Centroamerica S.A.
Juan I. Escarre Castro
Graphic Systems Supervisor

Julius C. Molnar
Manager Microfilm Products
3M International Operations
St. Paul, Minnesota
 - 2) Dima Industrial y Comercial, S.A.
Dieter Marschatz Alpers
President
(Agent for Addressograph-Multigraph
Bruning Division, Bell & Howell Corp.)

A/M Bruning, San Diego California
Mr. William Bearinger
Latin America Export Manager
 - 3) Industrias Fotograficas, S.A.
Jaime Pfaeffle M.
Microfilm Products Manager
(Eastman Kodak Distributors)
 - 4) Xerox de Costa Rica, S.A.
Horacio A. Guevara Q.
Sales Manager
- Organizations: Costa Rica Microfilm Association
Roberto L. Villarreal
President

Part 2

LARO LIBRARY - BOGOTA

2.1 MAIN FINDINGS

- 2.1.1 Dr. Henrique Tono stated that only a limited requirement for information dissemination exists at the present time and that no funds are available to even consider a micro-publishing program. The library is maintained to provide for the needs of the researchers who are located in this IDRC Centre.
- 2.1.2 It was estimated by the librarian that 20 of the approximately 50 documents received monthly are the only ones in existence.
- 2.1.3 The condition of the documents ranges from very poor to good. The majority are 8½"x11" in size with a small percentage 5"x8". There are some fold-outs and double size pages.

Present seasonal temperature and humidity is approximately 70°F and 60% R.H., but during the rainy season, which extends over at least six months, the humidity increases to 80% or more.

- 2.1.4 The librarians could not provide firm figures regarding records which should be put on microfiche and subsequent distribution requirements. Therefore this report will be based on figures supplied by Ottawa, i.e. 3 000 documents backlog and an annual accumulation of 1 000 with distribution to 10 sites.
- 2.1.5 Microfilm holdings in the library consist of approximately 500 microfiche. Included is one edition of the IDRC Ottawa library catalogue received some two years ago, as well as North Carolina population statistics (both 48x). NTIS microfiche in the collection is 24x reduction.

The library has a 3M Consort reader (19x), in poor condition due to dust and dirt, and a Kodak Ektalite reader which has never been used. (It is now operating).

The staff of the library has very limited knowledge of micro-filming and its technicalities, however they are aware of the benefits that might be derived from its use.

2.1.6 Reproduction of holdings:

- Photocopies requested of reports and periodicals amount to only 5 000 annually.
- Occasionally there is a requirement to provide copies from the microfiche collection. The cost of 20¢ per page is considered too expensive.

2.1.7 Enquiries in Bogota revealed that microfiche reading, duplicating and reproduction equipment can be acquired from and serviced by:

- (a) COM de Colombia
- (b) Kodak Colombia
- (c) 3M Colombia
- (d) Xerox (possibly)

Comments on above companies:

- (a) COM de Colombia, although having the most complete line, is reluctant to service equipment not purchased through its office (at a premium price).

- (b) Kodak equipment is limited and more expensive.
The print-put paper is not permanent. Parts and service contracts would be available locally should the equipment be purchased in the USA.
- (c) 3M Colombia has a complete line of equipment. Parts and service are available in Bogota even if equipment is purchased in the USA.

Reference Annex 2.3.1 for list of suppliers, etc. contacted.

2.1.8 Service Bureaux

Contacts with local microfilm equipment distributors revealed that only one in Bogota, (COM de Colombia) now provides a microfiche service. It has the most up-to-date microfiche camera available (TDC-Terminal Data Corporation). Because this firm has cornered the market in Bogota it will not deviate from its unit price of \$8.12 US for each original silver-halide microfiche and \$0.87 US for each diazo duplicate.

2.2 RECOMMENDATIONS (LARO)

- 2.2.1 It is recommended that, if decreed by Ottawa that LARO participate in the information network, that services be provided by COM de Colombia service bureau. Costs of this service for the first year and each additional year are contained in Annex 2.3.1.
- 2.2.2 Should CIAT Cali implement an in-house microfiche system, then consideration should be given to it providing the LARO services at Cali at reduced costs. (Refer to CIAT report, Section 3.2).

LARO LIBRARY

Summary of Service Bureau Costs

Prices quoted by Service Bureau (COM de Colombia)

First Year:

3 000 original silver-halide microfiche	
@\$8.12 US (280 pesos) each:	\$24 360
10 diazo copies of each original microfiche	
(3 000) @\$0.87 each:	\$26 100
	\$50 460

Each Succeeding Year:

1 000 original microfiche @\$8.12 US:	\$ 8 120
10 copies of each original microfiche	
@\$0.87:	\$ 8 700
	<u>\$16 820</u>

2.3.2 CONTACTS AND INTERVIEWS

CIID: Dr. H. Tono, Director
Dr. L.R. Beltran, Mass Communications
Specialist
Guillermo Isaza, Librarian
Susana Amaya, Publications
Elizabeth Fox de Cardona, Information Sciences
Division
Dr. Monge, Director, CIAT, Cali

Companies: 1) Colombo - Brasilena de Microfilmacion Ltda.
José Yasconcellos,
President

2) 3M Colombia S.A.
Alfonso Rivera M.
Supervisor Technical Division

Pedro J. Robayo C.
Microfilming Systems
Graphic Arts Division

3) Kodak
Foto Interamericana de Colombia Ltd.
Carlos Tobon
Commercial Systems Manager

Anthony J. Galioto
Technical Markets Manager

4) COM de Colombia
Alfredo Camacho, President

Organizations: Colombian Microfilm Association
Olga L. Clapatofsky
President

Part 3

CIAT - CALI

Although unable to visit Dr. Monge's operation at CIAT, telephone conversations with him revealed a definite need for a more efficient system for information management and dissemination at Cali.

3.1 MAIN FINDINGS

- 3.1.1 CIAT is commencing to suffer from insufficient space to house present holdings and this situation will become increasingly acute. To alleviate the situation immediately Dr. Monge would like to microfilm his "entire journal division" consisting of documents that are 10 years and older.
- 3.1.2 Present holdings in the journal division are some 10 000 documents, averaging 35 pages each.
- 3.1.3 To satisfy the current demands of requestors, CIAT produces 360 000 copies annually on 5 office copiers. Demands are steadily increasing (rate unknown).
- 3.1.4 Abstracts on 3"x5" cards are distributed quarterly to 1 800 addresses internationally. An accumulative publication is issued annually.

3.2 RECOMMENDATIONS (CIAT Cali)

- 3.2.1 It is recommended that an in-house microfiche operation be installed at CIAT. Estimated equipment cost: \$34 100.
(Ref. Annex 3.3.1)

Comments

Considering the size and scope of the CIAT reprographic requirement, it would be much too costly to contract for microfiche services. The fact that photographic expertise is available on site is an additional reason to install an in-house micropublishing operation.

All necessary equipment and service for a Cali installation is available from Bogota vendors.

The 2½ man-years required to staff the Cali operation has not been included in this estimate.

CIAT
CALI, COLUMBIA
 Recommended Microfiche Operational Equipment

ANNEX
 3.3.1

<u>EQUIPMENT</u>	<u>MFG.</u>	<u>MODEL</u>	<u>EST. COST U.S. DOLLARS</u>	<u>LOCAL DISTRIBUTOR</u>
1. Microfiche Camera and Required Accessories	Bruning	801	15000.	DIMA Industrial Y Commercial, S.A.
2. Fiche Processor and Required Accessories	Bruning	240	4000.	"
3. Fiche Duplicator	3M		5000.	3M
4. Densitometer	Macbeth	TD-500	2000.	*
5. Microscope	Olympus	MIC	200.	*
6. Inspection Table	Local	See Sketch	500.	Local Carpenter
7. Fiche Printer	Xerox	740	6000.	Xerox
8. Fiche Reader	Xerox	340	400.	Xerox
9. Fiche Storage Cabinet	*	*	1000.	*
10. Refrigerator	Sears	8 cu. ft.	<u>500.</u> <u>34,600.</u>	Sears

* Information to follow.

3 APR 78 - KD

BOGOTA, COLUMBIA

LOCAL DISTRIBUTORS

Microfiche Camera and Processor	- COM De Columbia Calle 32 No. 7-04 Oficina 3104 Bogota, Columbia Senor Alfredo Comancho
Microfiche Duplicator and Realist Readers	- 3M Columbia, S.A. Calle 18 No. 6-47-Piso. 8 Apdo. Aerro No. 12693 Bogota, Columbia Telefono: 754875-754816 Senor Pedro J. Robayo
Densitometer	- Foto Interamericana De Columbia Ltd. Apartado Aerro 3919 Bogota, Columbia Senor Anthony Galioto
Microscope	- Max Meyer Apartado Aerro 91785 Bogota, Columbia
Inspection Table	- Local Carpenter (as per sketch)
Fiche Reader-Printer	- Xerox De Columbia Apartado Areo 12044 Bogota, Columbia
Fiche Storage Cabinet	- *
Refrigerator	- Sears Ltd.

* Information to Follow

3 APR 78 - KD

Part 4

CIDE SANTIAGO

IDRC agreed in principle to CIDE developing an information network in the field of education for the dissemination of research reports, both published in CIDE and acquired from other agencies in Latin America, and funds were approved for microfiche equipment and material.*

* Grant to CIDE, July 1977, CIDE File 3-P-77-0014

4.1 FINDINGS

- 4.1.1 The present backlog collection of documents (research reports) consists of approximately 1 200 documents of 100-150 pages each. They are prepared by offset or mimeograph, usually poor in quality, and are all copies of originals. To obtain a replacement copy in the event of loss might be difficult due to distance, reluctance on the part of the donor, or copyright.
- 4.1.2 The anticipated distribution of these documents is approximately 750 annually to 20 priority sites with a future expansion to 30. (Ref. Annex 4.3.3)
- 4.1.3 The Centre produces selective abstracts of the documents at the rate of 240 per year. It would like to increase these to a maximum of 750 (number received per year). The abstracts are mailed quarterly in book form to 200 subscribers throughout the world. This is very costly for printing and mailing and the quality of the offset reproduction is only fair. Cost of the publication is borne by the Centre with the exception of a few subscriptions received from the United States. The arrangement for the balance is mostly on a one-to-one exchange basis.

- 4.1.4 Stack Area; Temperature and humidity in the room at the Centre where the documents are held are judged to be 70°F and 60% maximum in the summer. In the winter the temperature drops and the humidity increases about 10%. The humidity, rather than temperature, becomes a future concern for microfilm storage.

When copies of complete reports are requested from subscribers to the abstracts they are presently obtained from a copier service centre at a cost of 27¢ per page. The cost is usually recovered but the volume has increased to the point where a Nashua copier will be procured for the Centre. The future estimated cost per page will be 15¢. To these costs mailing must be added.

- 4.1.5 The only microfilm equipment at CIDE is an IBM microfiche reader Model 2040 provided by an unknown donor. With no microfilm on site, it is not in use.
- 4.1.6 There are no microfiche activities in Chile except for a Fuji microfiche camera-processor in a restricted area in the Ministry of Defence, and there are no commercial microfiche service facilities available. Practically all major suppliers are represented locally (exception: Bell and Howell), several of which can provide microfiche equipment. The major part of Kodak's business, through Foto Interamericana de Chile S.A., is roll microfilm applications with in-house Prostar processing. Kodak will provide roll film processing service only to purchasers of its equipment; otherwise all other microfilm activities are sales. (Ref. Annex 4.3.1 for list of local suppliers and persons contacted).

4.1.7 Technical expertise is practically non-existent and there are no facilities for inspection of microfilm for quality assurance to ensure conformity to international standards necessary for reduplication by recipients of or from microfiche copies. It is not possible to obtain micrographic information or training locally.

4.1.8 Our enquiries disclosed that microfilm equipment in certain sites was purchased directly from the USA at lower prices than those quoted by local distributors. This resulted in no warranties, installations or training being provided by the distributors who stated that, should the purchases have been made through them at a 10-15% increase in cost, the purchasers would have received these very necessary services.

- The alternative microform, jackets, was considered as a substitute for microfiche originals, but was rejected for technical reasons.

4.1.9 Conclusion

To support CIDE in its main objective of developing a network to improve the flow of information among Latin American countries and between Latin America and the rest of the world, micropublications is the only viable method. Costs of present reproduction methods are increasing as are mailing and handling costs. These are restricting access to the information by researchers.

In considering the objectives of CIDE we have concluded that continuing the distribution of information by means of paper is becoming increasingly impractical. An in-house microfiche operation is the only alternative since outside service bureau facilities are not available.

4.2 RECOMMENDATIONS (CIDE)

4.2.1 That an in-house operation be installed in CIDE headquarters Santiago. Estimate of cost over 3 years: \$68 000. (Ref. Annex 4.3.1)

(i) Spare parts and maintenance: available from distributors listed in annex.

(ii) The microfiche operation can be staffed by one key-operator at an annual salary of \$6 000. (included in above total).

4.2.2 That the key operator (or a person appointed by the Centre) be sent to the manufacturer's production centre and selected successful microfiche operations for in-depth training. An allotment of \$5 000 for this requirement is included in the \$68 000 in-house cost.

4.2.3 That the equipment types and models listed in Annex 4.3.2 identified by manufacturer, be procured from the local distributors specified, or, if necessary, from the distributor recommended by the camera manufacturer.

CIDE
SANTIAGO, CHILE

ANNEX
4.3.1

Three Year Microfiche Program

In-House Cost Summary

	YR. 1 <u>U.S.\$</u>	YR.2 <u>U.S.\$</u>	YR.3 <u>U.S.\$</u>
<u>Capital Investment</u>			
See Annex 4.3.2	34,600.	--	--
<u>Labour</u>			
One Key Operator	--	6,000.	6,000.
<u>Material</u>			
To Produce 1500 Silver Original Microfiche @ 1.50/each =	2,250.	2,250.	--
To Produce 20 Diazo Copies of 1500 Originals = 24,000 x 0.15 each =	3,600.	3,600.	--
<u>Training</u>			
For Personnel to Sites in Canada and USA =	<u>5,000.</u>	<u>2,000.</u>	<u>2,000.</u>
	<u>45,450.</u>	<u>13,850.</u>	<u>8,000.</u>
3 Year Total Cost <u>\$ 67,300.</u>			

3 APR 78 - KD

CIDE
SANTIAGO, CHILE
 Recommended Microfiche Operational Equipment

ANNEX
 4.3.2

<u>EQUIPMENT</u>	<u>MFG.</u>	<u>MODEL</u>	<u>EST. COST U.S. DOLLARS</u>	<u>LOCAL DISTRIBUTOR</u>
1. Microfiche Camera and Required Accessories	Bruning	801	15000.	*
2. Fiche Processor and Required Accessories	Bruning	240	4000.	*
3. Fiche Duplicator	3M		5000.	3M
4. Densitometer	Macbeth	TD-500	2000.	*
5. Microscope	Olympus	MIC	200.	*
6. Inspection Table	Local	See Sketch	500.	Local Carpenter
7. Fiche Printer	Xerox	740	6000.	Xerox
8. Fiche Reader	Xerox	340	400.	Xerox
9. Fiche Storage Cabinet	*	*	1000.	*
10. Refrigerator	Sears	8 cu. ft.	500. <u>34,600.</u>	Sears

* Information to follow.

3 APR 78 - KD

SANTIAGO, CHILE

LOCAL DISTRIBUTORS

Microfiche Camera and Processor	- *
Microfiche Duplicator and Realist Readers	- 3M Chile, S.A. Casilla 3068 Santiago, Chile Fono: 576876 Senor Jaime Aviles Guarachi
Densitometer	- Foto Interamericana De Chile, S.A. Casilla 2797 Santiago, Chile Senor L. Dori Laursen
Microscope	- Sirex S.R.L. J.M. De La Barra 508 Santiago, Chile
Inspection Table	- Local Carpenter (as per sketch)
Fiche Reader-Printer	- Xerox De Chile Casilla Postal 14889 Correo 15 Santiago, Chile Senor Juan Carlos De La Jara
Fiche Storage Cabinet	- *
Refrigerator	- Sears Locally

* Information to Follow

3 APR 78 - KD

PROPOSED MICROFICHE DISTRIBUTION

Annex 4.3.3

**CENTROS CONECTADOS CON EL SISTEMA
LATINOAMERICANO DE INFORMACION EN
EDUCACION - SIEDAL**

1. Centros que participan en el sistema.

- 1.1 Centro de Investigación y Desarrollo
de la Educación - CIDE. (1) (*)
Almirante Barroso 22
Santiago - CHILE
- 1.2 Programa Interdisciplinario de Inves
tigaciones en Educación - PIIE
Luis Videla Herrera 2360
Santiago - CHILE.
- 1.3 Centro de Investigaciones Educativas - CIE. (1)
Zabala 2677
1426 Buenos Aires
ARGENTINA
- 1.4 Centro de Investigaciones en Ciencias
de la Educación - CICE.
Instituto Torcuato Di Tella
Freire 1673
1426 Buenos Aires
ARGENTINA
- 1.5 Centro de Investigación y Experimentación (1)
Pedagógica - CIEP.
Rivera 2336
Montevideo - URUGUAY.
- 1.6 Fundación Carlos Chagas (2)
Rua Cardeal Arcoverde 1847
Sao Paulo - BRASIL

- | | | |
|------|---|-----|
| 1.7 | Centro Paraguayo de Estudios Sociológicos.
Eligio Ayala 973
Asunción
PARAGUAY | (2) |
| 1.8 | Centro de Reflexión y Planificación Educativa - CERPE
Apartado 61.393
Caracas 106
VENEZUELA. | (2) |
| 1.9 | Centro de Estudios Educativos - CEE.
Av. Revolución 1291
San Angel
MEXICO 20, D.F. | (1) |
| 1.10 | Universidad Pedagógica Nacional
Calle 72 N° 11 - 86
Bogotá - COLOMBIA | (2) |
| 1.11 | Centro Boliviano de Investigación y Acción Educativas - CEBIAE
Casilla 1479
La Paz - BOLIVIA | (2) |
| 1.12 | Instituto Nacional de Investigación y Desarrollo de la Educación - INIDE
"Augusto Salazar Bondy"
Jr. Cavallini 701, Urb. San Borja
Lima 34
PERU | (2) |

(*) La numeración marginal indica una apreciación sobre incorporación del centro al SIEDAL en una primera o segunda etapa.

2. Centros conectados al sistema

- 2.1 Centro Internacional de Investigaciones
para el Desarrollo - CIID.
Box 8500
Ottawa
CANADA, K1G 3H9
- 2.2 Oficina Regional de Educación para
América Latina y el Caribe - OREALC
Enrique Delpiano 2058
Santiago - CHILE
- 2.3 Oficina Internacional de Educación - OIE
Palais Wilson 1211
Ginebra 14
SUIZA.
- 2.4 Centro Interamericano de Investigación
y Documentación sobre Formación Profesional
CINTERFOR.
San José 1092
Casilla de correo 1761
Montevideo
URUGUAY
- 2.5 Secretariado de Comunicación Social
SEDECOS/CLEA
Avda. Providencia 2093, 2º Piso
Casilla 16243, Correo 9
Santiago - CHILE
- 2.6 Oficina de Educación Iberoamericana - OEI
Ciudad Universitaria
Madrid-3
ESPAÑA.
- 2.7 EUDISED
Council of Europe
67006 Strasbourg - Cedex
Francia.

4.3.1 CONTACTS AND INTERVIEWS

CIDE: Father Patricia Cariola, Director
Sr. Luis Brahm, Sub-Director
Sr. Gonzalo Gutierrez

DOCPAL/CELADE: Sra. Betty Johnson

CLADES: Sra. Luisa Johnson

Companies: Fuji: Alfred Reifschneider y Cia Ltda.
Sr. Dante Superbi, Sales Manager
Sra. Maria Sanchez

Comment:

This firm carries the full line of Fuji equipment and supplies but provides no microfilm services. Its only microfiche involvement has been the sale of Fuji microfiche camera-processor to the Department of Defence, which is in a restricted area.

Kodak: Foto Interamericana de Chile S.A.
Willy E. Surrey
Micrographic Systems

Comment:

The microfilm sales representative informed us that his company (a wholly-owned Kodak subsidiary) is interested primarily in selling equipment for in-house operations. To date there are only roll and jacket applications. Processing is provided only for customers purchasing

Annex 4.3.4 (cont'd)

Kodak equipment. A microfilm quality inspection station, the first in Santiago, is about to be set up by this firm. All Kodak equipment and direction comes from Panama. A Swiss line of readers and reader-printer ("ALOS") is carried in addition to the Kodak products. We are of the opinion that this is reliable equipment. Sr. Surrey has been with Foto Interamericana only one year and has not had previous microfilm experience.

DIMICOFY: Carlos Rodriguez
Microfilm Sales

Comment:

This reproduction company carries the Canon line of microfilm equipment as well as the Molex rollfilm-to-fiche conversion system (a strip-up method). There is no microfilm service nor technically knowledgeable persons on the microfilm sales staff.

Equipment prices:

Canon 16mm camera processor \$3 000 US
FOB Panama - 20% import duty

Molex slitter \$1 514

Molex Strip-uo unit \$1 200

3M Chile S.A.: Jorge Rodriguez Donoso
Sales Manager

Jaime Aviles Guarachi
Microfilm Systems (Sales)

Annex 4.3.4 (cont'd)

Elliot Associates: Business systems consultants
Mr. Stanley M. Elliot

Comment:

Mr. Elliot is acknowledged to be the most informed man in micrographics in Santiago. His information regarding installations was the most useful that we obtained and his unbiased information regarding the absence of services, training and quality assurance facilities in Chile was most useful in our contacts with all suppliers.

We consider it worth noting that there is no microfilm association in Chile. Mr. Elliot has endeavoured for several years to organize one but has been unsuccessful, due (we are of the opinion) to apathy among the suppliers. There appears to be no change for the better in the foreseeable future.

Part 5

IDRC LIBRARY, OTTAWA

5.1 MAIN FINDINGS

- 5.1.1 The library uses the services of Bell and Howell, Toronto to obtain microfiche of all IDRC publications and certain other material such as NRC Technical Briefs, The Health Care Bibliography and miscellaneous other documents. The volume of fiche on hand can be best described as "significant".

The number of pages of each original varies and all sizes and types of bindings are found throughout the collections.

There is no formal distribution of the microfiche at this time. On demand requests for microfiche copies can be filled from the 25 diazo positive copies of each held for such requests. However, we are informed that requests for microfiche are practically non-existent and paper copies made from the originals other than IDRC publications are issued normally.

- 5.1.2 The Bell and Howell price for each 98 frame silver microfiche is \$6.70 plus 47¢ provincial tax, total \$7.17 (retained by B & H although IDRC property). 25 diazo positive copies are supplied from each original microfiche at a cost of 35¢ plus tax each ... \$9.36. Thus 1 set consisting of a silver microfiche and 25 diazo copies costs \$16.53.

Expenditure for the microfiche service for the 1976/77 fiscal year amounted to \$4 012 exclusive of the microfiche purchased for the Health Care Bibliography project at a cost of approximately \$25 000. The 1977/78 budget for microfilming was \$10 000.

- 5.1.3 A miscellaneous collection of microfiche received from many sources outside IDRC is held in the library. Roll microfilm (35 mm) is also received but to a lesser extent. These holdings are only occasionally referenced by the staff and researchers and the library has on hand one reader (3M "400") and two reader-printers, 3M "500" and a B & H "Spacemaster", which can copy from either negative or positive microfilm. Other readers and reader-printers are located in the Centre outside the library.
- 5.1.4 Although the Centre has computer facilities which it uses in the library for listing all holdings, computer facilities are for subject matter searchers both in IDRC and other libraries. In order to determine if a COM installation would be beneficial a study should be made of production, distribution and costs.
- 5.1.5 Only one person on the library staff is knowledgeable about microforms and microfilm equipment and processes. Should accommodation be required in the future for an in-house operation, space is available in the air-conditioned building.
- 5.1.6 Since the library does not have an information distribution system using the microfiche it presently obtains from Bell and Howell, the outside service arrangement provides for current needs.

The future microfiche operation envisaged by the Information Sciences Branch would have the following source document input:

	<u>DOC.</u>	<u>IMAGES</u>
Indigenous Material From Developing Countries	300	22 500
Health Care Bibliography	700*	26 500
Reported in Devindex Can.	300	13 000
Only Bibliographies	2 900	67 000
NRC Technical Briefs	240*	24 000
Selected AGRIS Items	35	2 600
	<u>4 475</u>	<u>155 600</u>

* DIAZO COPIES

700 x 10	=	7 000
240 x 55	=	13 200
		<u>20 200</u>

Based on the above information, the anticipated micro-publishing program at the IDRC Library would involve producing 4 475 original microfiche and approximately 20 000 diazo copies.

- 5.1.7 The proposed budget prepared February 7, 1978 provided \$92 000 for Year 1 and \$59 000 for Year 2 for the microfiche program. The estimate of staff to accommodate the forecasted requirements is considered adequate, but any substantial increase in production would require that the program be reassessed with regard to the need for additional staff or higher speed equipment.

5.2 RECOMMENDATIONS (Ottawa)

It is recommended that IDRC implement an in-house microfiche program rather than secure the services of an outside contractor. This recommendation is based on the following rationale:

- (a) Although the potential for an annual production of 4 500 original microfiche and 22 500 diazo copies were identified at this time, the library would appear to have all the earmarks of an ever-increasing volume.
- (b) The cost-comparison between the two alternatives (in-house vs service bureau) quite obviously reflects in favour of an in-house program beyond the initial 3 year period, since service bureau costs remain constant. (Ref. Annex 5.3.1)
- (c) The benefits to be derived from developing expertise from within would be more advantageous in assisting other outlying areas, not only implementing their in-house programs but conveying to them new techniques in the technology.
- (d) Since Ottawa is in a geographical location where new equipment advances are always made known because of the high density of micrographic activity, it could act as the hub for notifying all units in the network of the latest developments.

Details of costs are listed in Annex 5.3.1 (Page 1: Service Bureau), (Page 2: In-House Cost Summary).

Equipment costs are listed in Annex 5.3.2.

IDRC
LIBRARY, OTTAWA
Three Year Microfiche Program

ANNEX
5.3.1
Page 1 of 2

Service Bureaux Cost Summary

	<u>YR.1</u> <u>CAN.\$</u>	<u>YR.2</u> <u>CAN.\$</u>	<u>YR.3</u> <u>CAN.\$</u>
To Producing 4500 Silver Original Microfiche @ \$7.17 each =	--	32,265.	32,265.
To Producing an Average of 5 copies of 4500 Microfiche @ 0.35 each =	--	8,750.	8,750.
To Purchasing the Required Reading, Printing & Inspection Equipment =	11,400.	--	--
To Staffing the Functional Activities Related to Sending, Receiving and Inspecting Work from Service Bureau =	--	10,000.	10,000.
	<u>11,400.</u>	<u>51,015.</u>	<u>51,015.</u>
	3 Yr. Total Cost		<u>\$113,430.</u>

3 APR 78 - KD

IDRC
LIBRARY, OTTAWA
Three Year Microfiche Program

ANNEX
5.3.1
Page 2 of 2

In-House Cost Summary

	YR. 1 <u>CAN.\$</u>	YR.2 <u>CAN.\$</u>	YR.3 <u>CAN.\$</u>
<u>Capital Investment</u> See Annex 5.3.2	34,600.	--	--
<u>Labour</u> Two Operators for Filming, Duplicating and Clerical Effort =	--	26,000.	26,000.
<u>Material</u> To Produce 5000 Original Silver Microfiche @ 1.50/each =	7,500.	7,500.	--
To Produce An Average of 5 Copies of 5000 Microfiche = 25,000 x 0.15 each =	3,750.	3,750.	--
<u>Training</u> For Staff in Visit Sites in Canada and USA =	<u>3,000.</u>	<u>1,000.</u>	<u>1,000.</u>
	<u>48,850.</u>	<u>38,250.</u>	<u>27,000.</u>

3 Year Total Cost \$114,100.

3 APR 78 - KD

IDRC
OTTAWA-LIBRARY

ANNEX
5.3.2

Recommended Microfiche Operational Equipment

<u>EQUIPMENT</u>	<u>MFG.</u>	<u>MODEL</u>	<u>EST. COST</u> <u>U.S. DOLLARS</u>	<u>LOCAL</u> <u>DISTRIBUTOR</u>
1. Microfiche Camera and Required Accessories	Bruning	801	15000.	Bruning
2. Fiche Processor and Required Accessories	Bruning	240	4000.	"
3. Fiche Duplicator	3M		5000.	3M
4. Densitometer	Macbeth	TD-500	2000.	J.E. McCutcheon
5. Microscope	Olympus	MIC	200.	W. Carson Co.
6. Inspection Table	Photoquip		500.	Photoquip
7. Fiche Printer	Xerox	740	6000.	Xerox
8. Fiche Reader	Xerox	340	400.	Xerox
9. Fiche Storage Cabinet	TAB	*	1000.	TAB Products
10. Refrigerator	Sears	8 cu. ft.	<u>500.</u> <u>34,600.</u>	Sears

* Information to follow.

3 APR 78 - KD

OTTAWA

LOCAL DISTRIBUTORS

Microfiche Camera and Processor	- Addressograph-Multigraph of Canada Bruning Division 466 Tremblay Road Ottawa, Ontario K1G 3R1 Tel. 745-7193 Mr. Brenden Murphy
Microfiche Duplicator	- 3M Canada Ltd. 1155 Lola Street, Ottawa, Ontario. K1K 4C1 Tel. 741-2007 Mr. Pierre Vachon
Densitometer and Inspection Table (as per sketch)	- Photoquip 1018 Wellington Street Ottawa, Ontario K1Y 2X9 Tel. 725-3368 Mr. Sheppard
Microscope	- W. Carson Co Ltd. 174E Woodridge Crescent Ottawa, Ontario. K2B 7S9 Tel. 828-9462 Mr. R.T. Coombs
Fiche Reader-Printer	- Xerox of Canada Ltd. 785 Carling Ave., Ottawa, Ont. K1S 5A4 Tel. 237-1731 Mr. Gary Thornton
Fiche Storage Cabinet	- Tab Products of Canada Ltd., 880 Lady Ellen Place Ottawa, Ont. K1Z 5L9 Tel. 226-3660 Mr. Foster MacMillan
Fiche Readers	- Albacor Micro Systems Ltd. 365 St. Paul West Montreal, Quebec Tel. 228-1905 Mr. Frank Hofstetter
Refrigerator	- Sears Ltd.

3 APR 78 - KD

5.3.3 CONTACTS AND INTERVIEWS

Library: Mr. J. de Chantal
Chief Librarian

Mr. Robin Derrick
Librarian Assistant

Companies:

- 1) A/M Bruning, Chicago
R.N. Baskin
International Marketing Manager
Bruning Micrographics
- 2) Xerox of Canada, Toronto
J. Gordon,
Marketing Division
- 3) Canon Canada, Toronto
K. Nagahata
General Manager
- 4) Canon S.A., Venezuela
T. Norigoa
General Manager

Part 6

TECHNICAL COMMENTARIES

6.1 EQUIPMENT AND SUPPLIES

6.1.1 Microfiche Camera-Processors

Where service was available locally products of the following companies were considered:

3M
Dietzgen
TDC
Bell and Howell
Bruning

Note: Kodak does not manufacture a microfiche camera-processor.

With the exception of Bruning, equipment of each of the above was ruled for the following reasons:

3M: film lacks archival quality

Dietzgen and Bell and Howell: each camera uses 100' roll microfilm, which would result in processing instability and precision cutting equipment. Cost of the Bell and Howell camera is too high. Service is not available.

TDC: Volume of work does not justify extremely high cost (approx. \$100 000).

Bruning: This is the only unit which fulfills all requirements.

6.1.2 Diazo Duplicators

Only 2 duplicators could be considered for the limited volume requirement at any of the sites surveyed:

1) Bruning OP10

2) 3M Duplifiche Printer

Although there are many other units, they are high speed units and do not fit our requirements. The OP10 and the 3M Duplifiche Printer are about the same price. However the 3M unit has greater speed, requires no ammonia and service is available in all locations.

6.1.3 Inspection Equipment

Densitometer: To ensure a quality microfiche is produced in conformance to specification, it is essential that a specific consistent density of the microimage be maintained. The use of a densitometer is necessary to exercise this control. Densitometry cuts down on waste of film and time assuring the best possible intermediate for subsequent microfiche duplicates and paper copies.

Microscope: This instrument is necessary in quality control to ensure the conformance to ISO specifications on legibility. It also serves to ensure optimum optical performance of the camera and the consistency of the film being used.

Inspection Table: This inspection table is required to use the microscope and densitometer. It is also to be equipped with a light box to inspect the microfiche for visual defects. A grid formatted in the 98-page format should be affixed to the opal glass on the light box to inspect the accuracy of the camera for proper registration of images.

6.1.4 In-House Operation Layout

A suggested layout of the equipment for an efficient operation is provided in Annex 6.6.2.

6.2 STAFFING AND TRAINING

6.2.1 Staffing

It is recommended that at any microfiche installation more than one person be trained in all activities. This is to ensure that a centre is not wholly dependent on only one individual. It is assumed that a senior staff member will be assigned responsibility for overseeing the operation. He too should have an appreciation of the technology and an understanding of the components and the system.

Since it is likely that few candidates with experience will be found, emphasis in selecting individuals for operators must be placed on such personal characteristics as abilities, aptitudes, dependability, technical interests and patience in performing repetitive operations.

6.2.2 Operational Procedures

It will be necessary to prepare a list of procedures, preferably in a manual format, which will cover preparation of documents received, procedures for reporting on the various activities, instructions regarding procurement of supplies, cleaning of accommodation, equipment, maintenance, distribution of duplicate microfiche, etc. Records of activities, technical reference books, quality control reports, instruction manuals, and sources of information should all be maintained in the operations room.

6.2.3 Training

As has been previously stated, in each of the cities visited it was relevant that there is a definite lack of expertise in the micropublishing area of micrographics. This means that

there is no local support of any practical value for the training of personnel in the performance of the many operations necessary for an in-house program.

In the event that an office in any of the Latin American countries receives approval to proceed with its proposed program, training will have to be obtained primarily from the manufacturers of the major pieces of equipment and likely in the cities they specify.

Prior to such instruction by the manufacturers, an understanding of the fundamentals of photography should be obtained as well as a knowledge of micrographic methods, equipment and materials. Ways to obtain this information may prove difficult and undoubtedly will vary from city to city to city. Attendance at the annual conference of the National Microfilm Association in the United States is of inestimable value if properly planned. The conference includes an exhibition of current and new hardware, and the seminars cover all aspects of micrography. It is practically the only way to keep abreast of changes in technology, with the objective of improving the efficiency of an in-house operation.

6.3 Accommodation and Preparation of Documents for Microfilming

If at all possible effort should be made to provide accommodation which conforms to recommended temperature and humidity levels, particularly for the storage of the microfiche. A dust-free working area reduces the number of dirty microfiche and ensures that copies will be acceptable for making additional generations. Envelopes should be used to protect each microfiche, along with proper storage cabinets. Instructions should be prepared for the

handling and preparation of the documents prior to micro-filming. These will vary according to the type and characteristics of the source documents. Procedures for the preparation of index headers and any necessary flash (or identification) cards must be laid down.

6.4 Quality Assurance and Control

6.4.1 Maintaining high standards of quality is vital to any microfilm operation which distributes copies of either film or hard copies within a network. If adequate planning is carried out before and during the implementation period, and management monitors the continuing operation, this subject should never become a problem area.

6.4.2 Archival Quality

Assurance that the silver-halide microfilm is archivally permanent can be obtained by subjecting samples to a chemical test known as the "Methylene Blue Test". It must be carried out precisely and the chemicals are not stable, making it impractical to be performed on site. Therefore it is recommended that this test be done by a commercial film laboratory which can provide this service under contract on a regular basis.

Inspection of processed film in storage should be carried out periodically as directed in ISO standard ISO/DIS 5466.

6.4.3 Preventive Maintenance

Consideration, based on manufacturers' warranties, must be given to regular preventive maintenance for the equipment. A well-trained operator may be able to keep costs in this regard to a minimum. Poorly trained or low-calibre personnel provided by the local distributors would make a maintenance contract

a waste of money.

6.4.4 Microfilming Standards

Wherever possible ISO standards should be followed or referred to. Those relevant to the functions of the microfiche system envisaged in this report are listed:

- | | |
|---------------|---|
| ISO 2707-1976 | Microcopying-transparent
A6 size microfiche of uniform
division. |
| ISO 3334-1976 | Microcopying-ISO Test chart
No.2 - Description and use in
photographic documentary
reproduction. |
| ISO/DIS 5466 | Photocopy - Practice for the
storage of processed
safety photographic
film. |

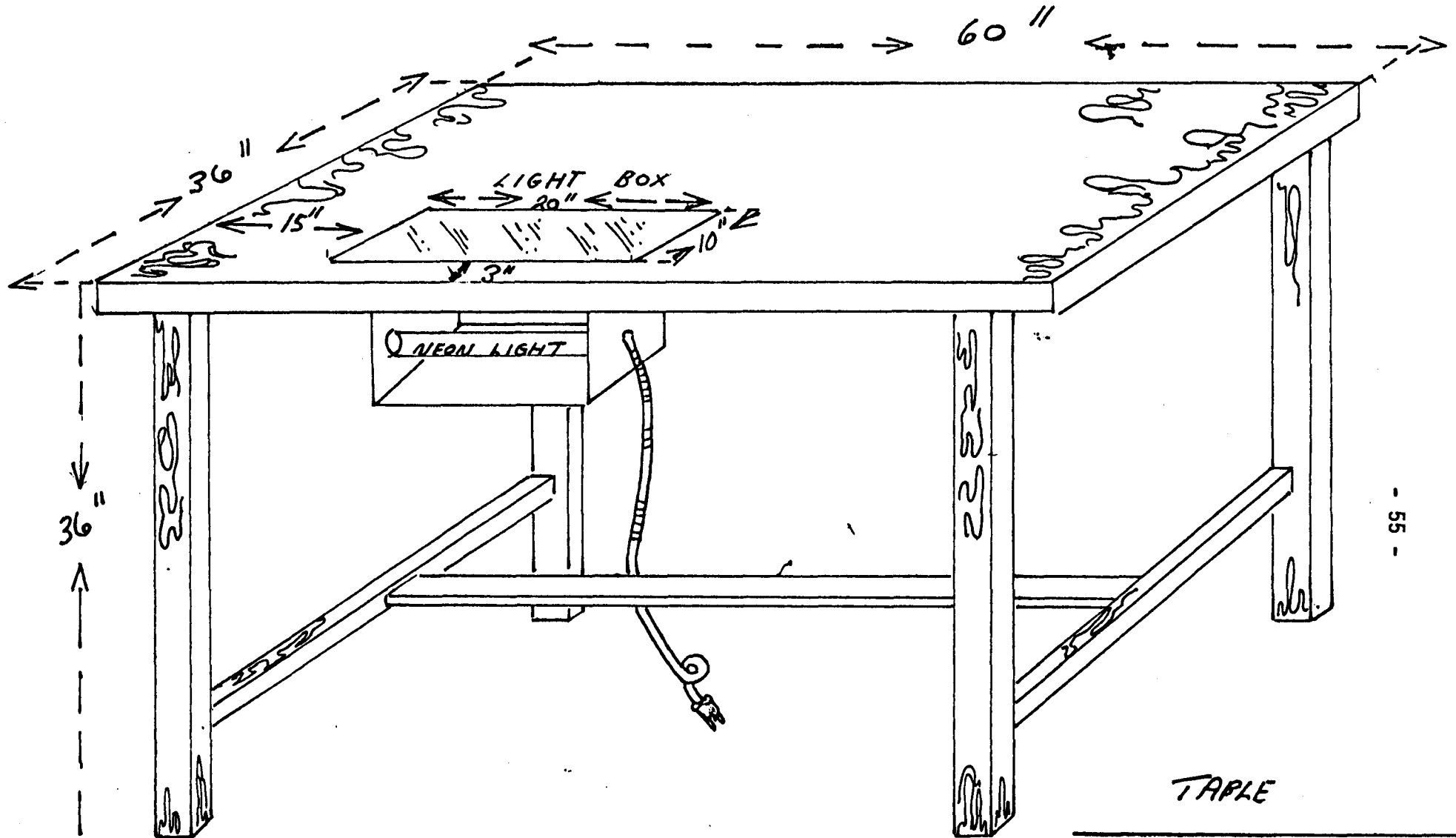
Since national standards are non-existent in the countries surveyed, it is recommended that appropriate standards issued by the American National Standards Institute of the United States be used should an ISO standard not be available on the required subject.

At the time of writing an American standard on "Operational Practices" is in preparation and is expected to be completed within six months. It covers all aspects of microfilming and will be a very useful document for preparing operational procedures for each activity.

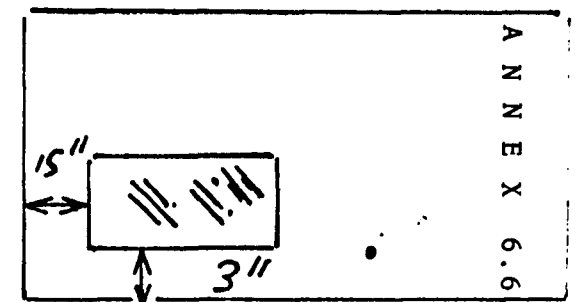
6.5 Future Requirements

Since it is a well-known fact, that projects, once commenced, are all too often left without periodic reviews, it is strongly recommended that an annual report on the current situation in each of the sites covered in this study be prepared for the Director of the Information Sciences Branch. This should be done even though a microfiche operation is not implemented, for such a report will act as an update on the information completed in this survey.

Requirements for updating equipment, revising procedures and budgeting will be forthcoming annually if a periodic review is mandatory. Information on cost and program effectiveness, will be available for close control over efficiency and management.

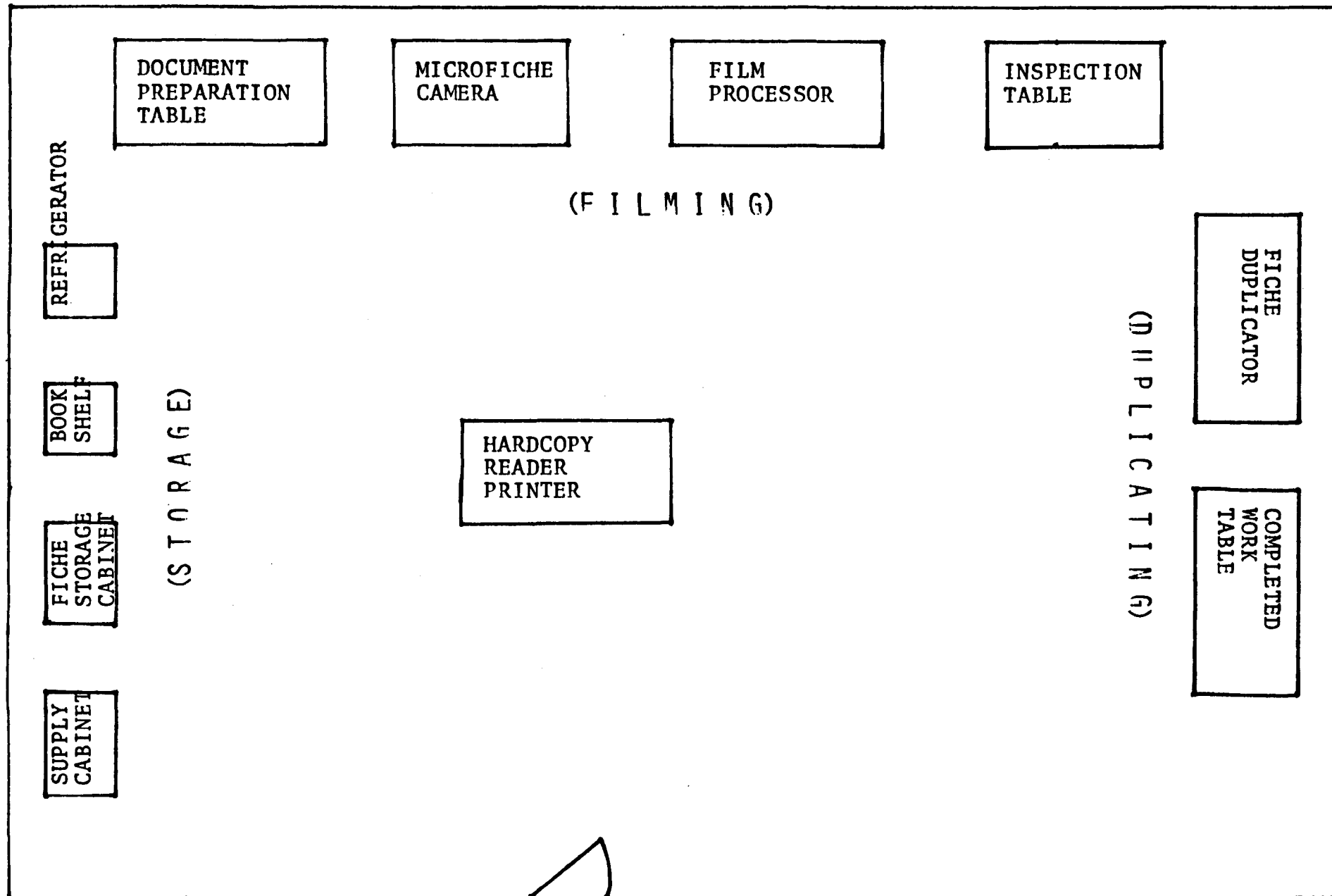


MICROFICHE
INSPECTION TABLE



SUGGESTED LAYOUT
FOR
MICROFICHE IN-HOUSE OPERATION

6.6.2 ANNEX

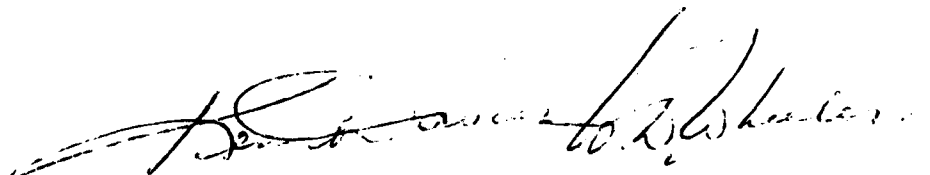


Consultants' Appreciation

We would like to address a final remark to each person with whom we have had contact in the course of this survey.

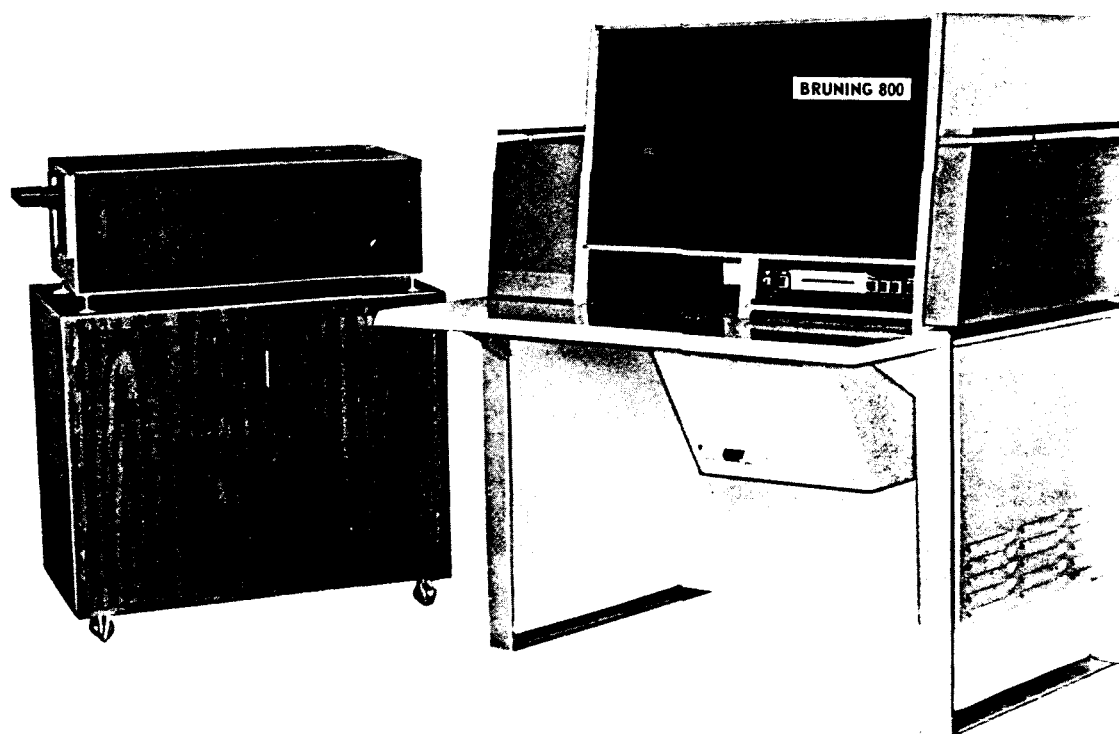
It has proven to be a most interesting project, possibly because each centre visited confronted us with a different set of conditions and requirements, but more likely because we were caught up with the obvious dedication of the staffs to their work which ultimately aids our fellow man.

The generous assistance we received enabled us to conduct our study with minimum effort. We wish to record our appreciation for your obvious and genuine interest in microfilming and in our visits, and particularly for the warm hospitality which we enjoyed.

A handwritten signature in black ink, appearing to read "Ken Davies & William Wheeler". The signature is fluid and cursive, with a long horizontal line extending from the left.

Ken Davies, William Wheeler

Bruning Model 800/240 Microfiche Camera-Processor System



SAMPLES
OF
~~SILVER~~ & DIAZO
MICROFICHE
FROM BRUNING 800 MICROFICHE
CAMERA

3-A-76-4191 POSSIBILITIES FOR A NEW WATER By
SUPPLIES AND SANITATION JOURNAL F. Solomon
FOR DEVELOPING COUNTRIES P. H. Stern



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FOR DEVELOPING COUNTRIES P. H. Stern



3RD GENERATION
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The International Development and
Research Centre, Ottawa, Canada

PRINTS FROM
3rd GENERATION
DIAZO

POSSIBILITIES FOR A NEW
WATER SUPPLIES AND SANITATION JOURNAL
FOR DEVELOPING COUNTRIES

A report by
F. Solomon, M.C., M.A.,
P.H. Stern, M.A., F.I.C.E., M.I.W.E.S.,

April 1977

Intermediate Technology Services Ltd.,
9 King Street,
London WC2E 8HN.

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1. INTRODUCTION

1.1. The Ad Hoc Working Group

In April 1974 a group of international agencies met at Montreal, Canada to co-ordinate their activities in rural water supply and sanitation in developing countries. This resulted in the creation of the Ad Hoc Working Group on Rural Potable Water Supply and Sanitation, with a membership of nine organisations, viz: UNICEF, UNDP, UNEP, IBRD, WHO, FAO, UN Secretariat, IDRC and OECD and with Dr. Myer Cohen (IDRC) as chairman. The Ad Hoc Working Group (AHWG) convened two panels to look into (1) the technical and (2) the institutional aspects of the problems of water supply and sanitation in developing countries. At an early stage in these discussions and meetings, the WHO International Reference Centre at the Hague, Netherlands was selected as the appropriate starting point for co-ordinating information on these matters.

At the second meeting of the AHWG early in 1975 it was agreed that WHO would approach 12 developing countries with a view to inviting them to a meeting to explore with them the problems of rural water supply and sanitation in their countries. All 12 countries invited responded, and participated in a meeting at Geneva in November 1975. This was followed by a workshop in Ouagadougou, Upper Volta in September and October 1976, attended by representatives of the 12 developing countries and members of the AHWG.

The workshop was followed by the setting up of a Task Force composed of representatives of UNICEF, IDRC, WHO, UNEP, IBRD and FAO, with two independent Consultants, and with Mr. Subrahmanyam (WHO) as chairman. The Task Force met at Geneva in January and February 1977 and presented its first progress report to the 5th meeting of the AHWG which was held at New York on 8th March 1977. In its report the Task Force called for much more attention to (a) co-ordination between agencies, and (b) the exchange of information at developing country level, and recommended the setting up of a multi-disciplinary unit for the purpose of achieving these objectives.

1.2. Appointment of Consultants.

One of the ways in which the exchange and communication of information can be promoted is through publications. From time to time during the meetings of the AHWG reference was made to the inadequacy of

information on rural water supply and sanitation, particularly within and between developing countries. The need for a new publication to fill this gap thus became apparent.

In October 1976 IDRC contacted the Intermediate Technology Development Group of London to see if they might be able to assist with a study for such a possible publication. Intermediate Technology Publications Ltd., a subsidiary of the Group, was producing a journal Appropriate Technology, which had been started some three years earlier and which was now approaching the point where it could stand on its own feet financially. It seemed that both its subject material and its readership were similar to those which the new water journal might be expected to serve and that experience gained here would be relevant to the study for the new journal. It was therefore proposed by ITDG that the study should be carried out by their consultancy organisation, Intermediate Technology Services Ltd., and in January 1977 ITS Ltd. was commissioned to undertake this feasibility study.

ITS Ltd. appointed Mr. P.H. Stern, water development consultant, to undertake the study, working in conjunction with Mr. F. Solomon, the Editor of Appropriate Technology. The investigation started on 25th January and was completed by 30th April 1977.

1.3. Terms of Reference.

The terms of reference for this study specified an examination of:

- (a) the content and distribution of existing publications covering the subject of water supplies and sanitation in developing countries;
- (b) the need for communicating information on this subject, the level and type of any new journal required to meet this need, and its place within the range of existing publications of a similar nature;
- (c) the potential readership for such a new journal, e.g. extension workers, development planners, international agencies, voluntary organisations;
- (d) a broad definition of the scope and content to be covered by a new journal and the availability and methods of acquiring a regular supply of articles and other editorial material;
- (e) the extent to which there is a need for any new journal to be published in languages other than English;

C O N T E N T S

1. INTRODUCTION	Page
1.1. The Ad Hoc Working Group	1
1.2. Appointment of Consultants	1
1.3. Terms of Reference	2
1.4. Programme	3
2. EXISTING PERIODICALS	
2.1. Investigation	5
2.2. Review of the Inventory	6
2.3. The Appropriate Technology Journal	6
3. THE NEED FOR COMMUNICATION	
3.1. Consultations	8
3.2. Questionnaire replies	10
4. POSSIBILITIES FOR A NEW JOURNAL	
4.1. Potential Readership	12
4.2. Scope and content	12
4.3. Sources of material	13
4.4. Languages	14
5. PRODUCTION ASPECTS	
5.1. Advisory Committee	15
5.2. Management	15
5.3. Frequency	16
5.4. Independent periodical or supplement?	17
5.5. Language editions	17
5.6. Translation	18
5.7. Advertisements	18

5. PRODUCTION ASPECTS (contd)	Page
5.8. Printing	19
5.9. Distribution	19
5.10. Accounting	19
5.11. Promotion	19
6. FINANCE	
6.1. Basis of the estimates	20
6.2. Estimate for production	21
6.3. Revenue and expenditure	22
6.4. Operating finance	24
6.5. Supplement instead of independent periodical?	25
7. CONCLUSIONS	
7.1. Summary of Conclusions	26
7.2. Acknowledgements	29

APPENDICES

- I. Visits and Meetings
- II. Existing Periodicals
- III. Distribution of Paying Subscribers to 'Appropriate Technology'
- IV. The Questionnaire
- V. Summary of Replies to the Questionnaire
- VI. Approaches made for information regarding translation of proposed Journal
- VII. Estimates for printing costs