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THE WORLD BANK

Washington, D.C.

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The World Bank

1818 H Street NW

Washington DC 20433

Telephone: 202-473-1000

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P&S - Water

Vol. VI

The World Bank Group
Archives



30036209

A1994-042 Other #: 48 Box # 184147B
Projects and Studies - Water - General - Volume 6

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WBG Archives

RETURN TO
CENTRAL FILES



TO RE-ORDER SPECIFY
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RETURN TO
GENERAL FILES

Studies
Water
Vol. VI

Mr. Jennings	8/17/67	8/21/67
Mr. Shapiro	12/6/67	12/7/67

THIS FILE IS CLOSED AS OF
DECEMBER 1968.
FOR FURTHER CORRESPONDENCE SEE:
1969 - 1971.

RECORDS MANAGEMENT SECTION
February 1969

P+S - Water
Sadove / Geolat
12/31
Bo

HARZA ENGINEERING COMPANY
CONSULTING ENGINEERS
RIVER PROJECTS

CABLE ADDRESS: HARZENG CHICAGO
TELETYPE: 910-221-0296

400 WEST MADISON STREET
CHICAGO, ILLINOIS 60606

TELEPHONE: (312) 726-3451

December 26, 1968

Air Mail

Mr. Robert Sadove
International Bank for Reconstruction
and Development
1818 H. Street, N. W.
Washington, D. C. 20433

DEC 30 1968

Projects Dept. Correspondence

ANS'D BY *no reply*

DATE *1/19/69*

Subject: ASCE National Meeting
New Orleans

Dear Mr. Sadove:

We are enclosing the registration forms to attend the above-mentioned meeting.

Although our participation is not mentioned in the Program, the papers will be presented as scheduled on February 5.

Merry Christmas and a Happy New Year.

Very truly yours,

HARZA ENGINEERING COMPANY

K. E. Sorensen
K. E. Sorensen
Vice President

Enc: As noted

5 - water

Mr. L. Perinbam

December 19, 1968

A. David Knox *ADK*

Request of Water Resources Section, UN for Basic
Information on Bank's Activity in Water

The letter of December 3 from the U.N. requests us to provide basic information on the aims of present and future work programs, legislative authority, and arrangements for coordination with each agency of the UN family concerned with water supply. I should like to propose a possible approach in replying to the request based upon information which Mr. Shipman obtained while attending the ACC Sub-Committee meeting on Water Resources Development in Paris last Spring.

I understand that the reason for the recommendation of the Sub-Committee to collect this information was that at the meeting next year, the entire question of overlap and conflict in responsibilities between agencies of the UN family in the water resources field will be discussed. This discussion is prompted, as you are well aware, by the continuing disagreement and differences of view between the agencies as to which agency has competence and responsibility for various types of work in water stemming from the broad definition of responsibilities carried in the charters of each agency. Mr. Shipman informs me that on none of the matters under discussion at the last meeting was there any question of the Bank's sphere of activity and interests, nor did anyone appear to question the functions which the Bank carries out associated with its lending programs. Consequently, I am of the opinion that it would be neither productive nor meaningful for us to ask each of the Departments of the Bank to fill out the rather extensive forms covering its particular sector.

I would propose that a letter be sent referring broadly to the Bank's activity in water resources and stating that our activities are well known and understood by all of the other agencies and that there appears to be no need to supply the type of information requested of the other agencies. It may be appropriate should you feel desirable to refer to the formal agreements with FAO, and UNESCO and to the informal arrangements with WHO which surround project development and UNDP projects. It may also be appropriate to mention that in a limited number of instances where multi-purpose projects have been developed or where for other reasons the UNDP has asked the Bank to be the Executing Agency, the Bank does carry responsibility for project development in the water resources field. So far as I am aware, we have not had problems with other agencies on this but you will know whether this point requires any elaboration.

I am inclined to believe that if the UN has a letter from the Bank of this type, it would prove ample for the general discussions. The additional information provided, were we to fill out the forms, would add little if anything to the discussion of the main issues.

HRShipman/pbf *Hz*

*Letter of December 3 + attachments
returned to Mr. Perinbam*

Morse



~~James J. Shipman~~
Callyas

15 Dec 1968
RFD 3
McKinney, Texas 75069

International Bank for Reconstruction & Development
1818 H Street, N.W.
Washington, D.C. 20433

Attention: Mr. Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

Dear Mr. Shipman:

This year the area study project for our unit is on Argentina. The study on Guatemala, for which you so kindly sent me much valuable information, is ready for printing.

Therefore I am writing to you again to see if you can once again assist by furnishing data on the water, sewerage, and garbage disposal for Argentina. Any and all information on these or public health subjects in general would be of great aid

Thank you so much for your assistance.

Yours very truly,

Frank E. Keefe, Jr.
(Major - Govt. Section
362nd Civil Affairs Area B
10631 East Northwest Hwy
Dallas, Texas 75238)

ack Jan 2/69

December 10, 1968

Mr. Orlando Gonzales
Executive Director
Puerto Rico Water and Sewerage Authority
P.O. Box 7066
Santurce
Puerto Rico 00916

Dear Mr. Gonzales:

During January, I expect to be attending a meeting at Mayaguez convened jointly by the University of Puerto Rico and the Water for Peace Office of the United States Government. The Conference will be concerned with the question of water resources. According to my schedule, I would be finished with the meetings in Mayaguez on the 18th or 19th of January and will then proceed to San Juan. I should like to inquire whether it may be possible for me to spend Monday and Tuesday, January 20 and 21 with your authority, to discuss a number of points related to your operations.

Over the past ten years, I have had opportunity to know a number of the people connected with your Authority, and have a rather broad understanding of its policies and operations based on discussions with them. However, there are a few specific questions on which I would desire additional information, and I would like to take advantage of my stay in Puerto Rico to meet you or your staff, and to discuss some of these questions.

Thank you for the favor of considering my request.

Very truly yours,



Harold R. Shipman
Chief, Water Supply Division
Public Utilities Projects Department

HRShipman:pbfb:bc

December 9, 1968

Mr. W. R. Edmonds
Chief, Public Health Engineering Div.
Department of National Health & Welfare
Room 318, 45 Spencer Street
Ottawa, Ontario

Dear Bill:

It seems a long time since I have seen you or heard much about your division. I am writing now, to find out what you know about French Speaking Consulting Engineers in Water Supply and Sewerage. We have good information on English Speaking Consultants from Canada, but very little on French Speaking ones.

We do not have any specific jobs in mind, but there is a lot of activity in countries whose business language is French. Any information you could give us would be appreciated.

Yours sincerely,

Reginald Bowering
Sanitary Engineer

RBowering/err *RB*

S - Water

MR. SADOVE
11/20 mdr

HARZA ENGINEERING COMPANY

CONSULTING ENGINEERS

RIVER PROJECTS

400 WEST MADISON STREET

CHICAGO, ILLINOIS 60606

CABLE ADDRESS "HARZENG CHICAGO"

TELEPHONE RANDOLPH 6 3451

November 15, 1968

Mr. Robert Sadove
International Bank for Reconstruction
and Development
1818 H. Street
Washington, D. C.

NOV 20 1968
Projects Dept. Correspondence

ANS'D BY ms reply

DATE _____

Subject: ASCE Meeting
New Orleans

Dear Bob:

// A time has now been set for our session in New Orleans. Your paper is scheduled for the afternoon of February 5, 1969. I enclose instructions concerning the preparation and presentation of ASCE papers.

// The title I am submitting for your paper is "World Bank Analyses of Water Resource Development", which I believe was one that you found acceptable.

The emphasis we are seeking is given in paragraph B-2 of the enclosed memorandum.

You will note the good international "mix" we are seeking for the two half-day sessions. Hopefully we can stimulate some interesting and enlightening discussions.

If the paper can be submitted about two months in advance, ASCE will preprint the paper and have copies available at the meeting. Otherwise, many authors arrange for copies of their own paper (about 100 copies) for distribution. In this manner, the author can include more detailed information than may be possible to present orally in the time allowed. Slides are usually very effective, if charts, or photographs are required.

COMMUNICATIONS

1968 NOV 19 AM 10:14

Mr. Robert Sadove

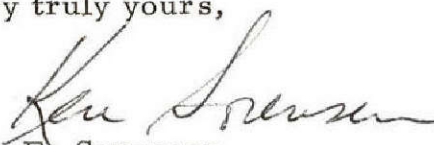
-2-

November 15, 1968

Soon you will receive from the Program Chairman the necessary registration forms, information concerning hotel reservations, social functions, etc.

Our Committee is most appreciative of your participation in this session, which we believe will be of great interest. If there are any unanswered questions, please advise me.

Very truly yours,



K. E. Sorensen

Enc: Authors guides

ASCE National Meeting
February 3-7, 1969
New Orleans, Louisiana

Theme: Water Resource Engineering

- A. Papers to be sponsored by the
Water Resources Planning Committee
during two half-day sessions.

February 5, 1969 - AM

1. One half-day session - three papers

- (a) Topic: International Water Resources Development
(b) Suggested subjects and authors

1. "The Cauca Valley Development in Colombia"
by present or former officials of CVG, or by
Colombian consulting engineer.
2. Puerto Rico, by present or former officials of
PRWRA.
3. "The Rio Dulce Development in Argentina"
by Ing. Roberto M. Lazarte.

February 5, 1969 - PM

2. One half-day session - three papers

- (a) Topic: Water Resources Project Evaluation
Resources Development

- (b) Suggested subjects and sources

1. World Bank Analyses of Water Resource Developments
by Robert Sadove, Economist.
2. "Mexican Policies for Water Resource Evaluation"
by official of Secretaría de Recursos Hidráulicos.

- (3) Susquehanna River development
evaluation, USA, by member of study team.

B. Emphasis of Papers.

1. Regional Planning Experiences

These papers should not detail the physical solutions adopted. Instead, they should emphasize the regional problems, any previously abortive plans, the scope of successful studies, and the organizational structure that led to financing and execution of the regional development. If possible, these papers should relate the regional development to national water policy and programs.

2. Criteria and Procedures for Evaluation

These papers should emphasize the economic principles, the influence of social factors, and the considerations of under-employment and area rehabilitation, as elements in the evaluation of water resource development. If applicable, the papers should include any considerations of investment priorities within national development programs that are used in the evaluation criteria.

C. Presentation of Papers

Usually a 30 minute interval is scheduled for each paper, including introductions. We are limiting each half-day session to three papers in the expectation of a useful discussion period. A 20 to 25 minute presentation time will help to reserve ample opportunity for audience participation.

The ASCE central office will send each author specific instructions and suggestions concerning presentation, preprints, etc.



DEPARTMENT OF CIVIL ENGINEERING
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA 70118

JOHN W. ROACH, JR.
PRESIDENT

SAMUEL M. MURPHY
SECRETARY-TREASURER

Water Resources Engineering Conference

November 8, 1968

CONFERENCE COMMITTEE

GENERAL CHAIRMAN
WALTER E. BLESSEY

ASSISTANTS TO GENERAL CHAIRMAN
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D.P.A. SESSIONS
JOHN F. MARSHALL

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LARRY W. CANTER
WILLIAM H. SEWELL, JR.

ACTIVITIES
EDWARD J. MCNAMARA
JOHN L. NIKLAUS
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WILLIAM H. FRENCH
MAITLAND A. STEELE
MRS. WALTER E. BLESSEY

OPERATIONS
FRANK C. FROMHERZ
WALDEMAR S. NELSON
WILLIAM CONWAY
CURTIS L. LUNDSTROM
ROY CAPPEL

ARRANGEMENTS
ROBERT H. KUHLMAN
DAVID A. HUNTER
ALFRED J. DIAMOND
JOSEPH G. STASSI
MICHAEL J. RUCK
JOHN B. GIDDENS

Mr. John C. Guillou
Chief Waterway Engineer
State of Illinois
201 West Monroe Street
Springfield, Illinois 62706

Dear Mr. Guillou:

In accordance with our telephone conversation of this date,
I am including two sessions for the Water Resources Plann-
ing Committee in the 1969 New Orleans Conference.

The sessions will be scheduled as follows:

Wednesday, February 5, 8:45 a.m. - 10:45 a.m.
International Water Resources Development

Wednesday, February 5, 2:30 p.m. - 4:30 p.m.
Water Resource Project Evaluation

It would be greatly appreciated if you would supply me with the
details of these sessions.

I have enclosed a time schedule for the necessary actions
between this date and the convention.

Sincerely,

Larry Canter

Larry Canter
Technical Program

LC:cb

cc: V.H. Scott
E.M. Chatry

RECEIVED
DIVISION OF WATERWAYS
Springfield, Illinois

JCG.....FM.....
JA.....ER.....
NOV 12 1968 3Z
Chg. Dist. Nrn. Dist.
ACT R/P
C/O T.A.
ENG W.R.

Dworsky - 2
Sorenson - 1

Sorenson - 2

TO: MEMBERS OF ASCE TECHNICAL PROGRAM COMMITTEE

FROM: L. W. CANTER

RE: TECHNICAL PROGRAM

Enclosed please find a copy of the final program as submitted to National on October 14, 1968. I would like to express my appreciation for your efforts in the compilation of this program.

The following schedule remains prior to the Convention:

Schedule	Target Dates	Item
1. 3 months before	Oct. 30, 1968	Attendance promotion flyer distribution by this date.
2. 2 months before	Dec. 1968	Complete program to appear in December CIVIL ENGINEERING, (deadline for changes, November 1)
3. 1 1/2 months before	Dec. 15, 1968	Deadline for program modifications submitted to headquarters for "pocket" program printers' deadline.
4. 1 1/2 months before	Dec. 15, 1968	Deadline for copies of authors papers to be submitted to headquarters for preprinting.
5. 1 week before	Jan. 30, 1969	Meeting of all local committee chairmen with the Meetings Manager to review and coordinate all arrangements.

The Technical Program Committee is only concerned with schedule items 3 and 4 above. Please send any program modifications to me no later than December 12, 1968.

American Society of Civil Engineers

NEW ORLEANS WATER RESOURCES ENGINEERING MEETING

February 3-7, 1969

PROVISIONS FOR PREPRINTING PAPERS

Preprints will be prepared from camera-ready copy as received from authors. These will be available for sale at the Publications Center at the Meeting. Twenty-five complimentary copies of each paper can be delivered to the authors at the Meeting. If ordered when a paper is submitted, extra copies can be made for the authors to purchase. Preprints and extra copies will not be available before the Conference. Manuscripts should conform to the following style:

1. All copy should be typewritten clearly, double-spaced, one side only, on 8 1/2 inch by 11 inch white bond paper. Original copy only will duplicate well. Black type is essential. In addition to the original, two copies should be provided for publicity and editorial purposes.
2. Each page (both text and illustrations) should be numbered consecutively, with the number placed at the center bottom of each page.
3. Titles of papers should be no longer than fifty (50) characters and spaces.
4. Any mathematics included in the text should have typed characters with hand-written symbols added with black ink.
5. On the first page, the author's full name, and Society membership grade should be given, and current employment should be stated in a footnote.
6. Illustrations should be originals, drawn in black ink, placed on a numbered page where they are to appear in the text. Lettering must be large enough to be legible when the illustrations are reduced from 8 1/2 inch size to fit in a 4 1/2 inch by 7 inch area.
7. Photographs, if necessary for illustrations of the text, should be submitted as glossy prints, mounted on a numbered page with a typewritten caption, and placed where they will appear in the text.
8. All papers should be checked for accuracy prior to submission. After receipt, it will not be possible to make revisions or corrections in the copy to be printed.
9. No more than forty-six (46) pages of text, tables and illustrations can be considered for a single preprint. Papers in excess of this length will not be preprinted.

Subsequent Use of Papers -- Manuscripts for papers already under review for publication in the Division Journals cannot be used for preprinting; new manuscripts must, therefore, be submitted. The preprinting of papers will not assure acceptance for other Society publications. Papers will be reviewed for consideration for other media only if the author requests it.

PREPARED MANUSCRIPTS SHOULD REACH ASCE
HEADQUARTERS BY DECEMBER 13, 1968
MAIL TO: ASCE Technical Publications Dept.
345 East 47 Street
New York, N. Y. 10017



AMERICAN SOCIETY OF CIVIL ENGINEERS

UNITED ENGINEERING CENTER

345 EAST FORTY-SEVENTH STREET • NEW YORK, N. Y. 10017

October 31, 1968

File: M-2-2.69.3

TO: SPEAKERS, MODERATORS, AND PRESIDING OFFICERS
ASCE NATIONAL MEETING ON WATER RESOURCES ENGINEERING
NEW ORLEANS, LOUISIANA
FEBRUARY 3-7, 1969

Gentlemen:

Your willingness to take part in the program of the ASCE National Meeting on Water Resources Engineering in New Orleans is appreciated.

In order to assure full coordination of the program, we ask that you follow this procedure:

Before arrival in New Orleans

- 1) ~~Each speaker send original and four copies of his paper before December 13, 1968 to:~~

~~Technical Publications Department
American Society of Civil Engineers
345 East 47th Street
New York, N. Y. 10017~~

- 2) Each speaker send a copy of his paper and biographical information before ~~December 13, 1968, to:~~

~~Presiding Officer
Division local representative (see attached list)~~

- 3) Before January 5, 1969, send request for hotel reservation to:

Jung Hotel
1500 Canal Street
New Orleans, Louisiana 70140

- 4) Each speaker send visual aid request form before January 5, 1969, to:

Mr. John B. Giddens, Jr.
P. O. Box 60046
New Orleans, Louisiana 70160

- 5) Check your listing in the program as it will appear in the December 1968 issue of CIVIL ENGINEERING Magazine, as well as the relationship of your part to that of others who are participating.

October 31, 1968

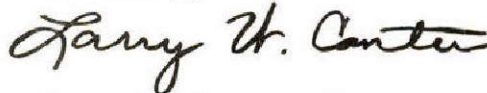
Upon arrival in New Orleans

- 1) Check the final program for the time and place of the session for which you are scheduled.
- 2) Report to the "Speakers Room," which will be open daily during hours of registration. Doing so will enable you to indicate your presence and verify the audio-visual equipment and other arrangements made for your session.
- 3) Plan to be in the meeting room for your presentation at least fifteen minutes before the session opens. This will give you an opportunity to discuss last minute arrangements with the presiding officer and session assistant.

To assist you in your presentation, a number of suggestions are offered in the enclosures to this letter.

Your cooperation with regard to following this procedure will be appreciated. Should you have any questions, please direct inquiries to my attention at Department of Civil Engineering, Tulane University, New Orleans, Louisiana 70118.

Sincerely,



Larry W. Canter, Chairman
Program Committee

Enclosures

Information for Speakers
Information for Presiding Officers
~~Provisions for Preprinting Papers~~
ASCE Policy on the Rights to Publication of Meeting Papers
Visual Aid Request Form
List of Technical Division Local Representatives
Hotel Reservation Form
~~Copy of a preprint from an earlier meeting~~
"So You're Going to Present a Paper"
"Notes on Preparation and Use of Slides"
"Authors' Guide to the Publications of the
American Society of Civil Engineers"

cc: Members, Meeting Program Committee
Chairman, Housing Committee

American Society of Civil Engineers

INFORMATION FOR SPEAKERS

PREPRINTING OF PAPERS

Papers to be presented at this conference will be preprinted, if made available. Please read carefully the enclosed statement of the procedure to be followed.

ADVANCE COPIES OF PAPERS

As soon as possible, but not later than the deadline for preprinting, please send to ASCE Headquarters, an original and two copies of the paper which you have prepared. These will be used for preprinting and general editorial review.

Another copy of your paper should be sent to the division official who has arranged with you for your presentation. With this copy to the division, you should include a brief biographical sketch to be used by the presiding officer for adequate introduction of your part of the program.

PAPER FOR PUBLICATION

If you wish to present a paper for publication, amplifying the verbal presentation, there are certain requirements with which you should be familiar. These are summarized on the inside front cover of division journals, and are stated in full in the "Authors Guide to the Publications of ASCE," which is enclosed. It is not a requirement of ASCE that all papers for verbal presentation be amplified and presented for publication, although it is encouraged.

PRESENTATION

As you prepare your presentation, you may find the enclosed leaflet, "So You're Going to Present a Paper," helpful. Although guilty of making light of a serious subject, this can help oral presentation of information.

VISUAL AIDS

Effective illustrations are an important part of your verbal presentation. Charts, slides, films or maps are very helpful to understanding the information you will present. It is the responsibility of each participant to supply his own illustrative materials. Thoughtful consideration and use of the enclosed pamphlet, "Notes on Preparation and Use of Slides," may prove to be of real benefit to you, and to those who will be viewing your slides. Facilities for the use of such material will be supplied if requested. Any standard type of slide or movie projection equipment, blackboards, screens, will be provided if requested in advance. Please indicate your requirements on the enclosed "Visual Aid Request Form".

(over)

HOTEL RESERVATION

Please make your hotel reservations early. The form contained in the conference flyer, as well as in the printed program, will facilitate your reservation.

COSTS INVOLVED

It is recognized that substantial costs are incurred by participants in the program of a conference. However, ASCE has no provisions for reimbursement of such costs, either for the preparation of materials or for travel involved in presentation of papers at the conference.

AMERICAN SOCIETY OF CIVIL ENGINEERS

INFORMATION FOR PRESIDING OFFICERS

TO: All Presiding Officers and Moderators of the 1969 ASCE National Meeting on Water Resources Engineering, New Orleans, February 3-7, 1969.

Gentlemen:

Here are guidelines for session management and the part you play:

- 1) Adherence to the time schedule is a most important factor. Not only must the session start on time but each paper also must start on schedule. This timing is essential if we are to make it possible for a listener to move from one session to another for selective listening. It is the presiding officer's responsibility to do his best to maintain the schedule.
- 2) Presiding Officers introduce all speakers. Introduction should be brief. Biographical information for the speakers can be obtained from the local program representative of the respective divisions.
- 3) The time allotment per paper is generally 30 minutes. This includes both the introduction and discussion. Presiding Officers should know the total time allotment per paper before the session starts.
- 4) At the beginning of the session, the Presiding Officer should announce the rules in line with the above, for the benefit of the speakers and the audience. Request all speakers to sit "down front" to lessen the time it takes them to reach the speakers' platform.
- 5) If a speaker requests additional time, Presiding Officers may, at their discretion, grant him a few extra minutes, providing the time is available. If not, in fairness to following speakers, the request should be refused.
- 6) The Presiding Officer is expected to moderate the floor discussion unless a special Moderator has been appointed. Presiding Officers should do their best to stimulate discussion.
- 7) As presentation of the papers near an end, the Presiding Officer should warn the speaker of available time left for presentation; say at 5 minutes and 2 minutes before the time is up, and at the end of the allotted time. Do not hesitate to tell the speaker his time is up.
- 8) Panel leaders must develop their own time schedule.



AMERICAN SOCIETY OF CIVIL ENGINEERS

UNITED ENGINEERING CENTER

345 EAST FORTY-SEVENTH STREET • NEW YORK, N. Y. 10017

1968-489

ASCE Policy on THE RIGHTS TO PUBLICATION OF MEETING PAPERS

1. Upon presentation of a written paper to an ASCE National Meeting or Division Specialty Conference, the first right to publication lies with ASCE. In the case of joint meetings, the sponsoring agencies will jointly determine the publication rights for papers.
2. All manuscripts received at ASCE Headquarters will be considered for publication in an appropriate Division Journal or in CIVIL ENGINEERING.
3. Authors shall obtain a waiver of first rights to publication from Society Headquarters before they submit meeting papers to non-Society publishers. Society Headquarters will obtain the consent of the appropriate Technical Division or other sponsoring group before a paper is released.
4. The Society does not restrict publishers or reporters who wish to quote, in part, from a paper presented to or published by the Society provided that full credit to the source of the published or presented material is given.
5. The Society will permit authors to publish meeting papers through other outlets at the same time or after the date of publication by the Society. The publication of meeting papers in the name of ASCE in a manner other than the conventional publication procedures of the Society shall be authorized only by specific action by the Society's Committee on Publications.
6. The Society does not permit its publications to be reprinted and offered for sale by other agencies, in competition with ASCE.

October, 1967

Return this form before
January 5, 1969 to:

John B. Giddens, Jr.
P. O. Box 60046
New Orleans, Louisiana 70160

ASCE NEW ORLEANS NATIONAL MEETING ON WATER RESOURCES ENGINEERING

FEBRUARY 3-7, 1969

VISUAL AID REQUEST FORM

Name of author (s) _____

Date of session _____ Approximate time of presentation _____

Division session _____

I shall _____ shall not _____ require projection equipment.

I shall need the following projection equipment:

Slide projector (specify size) _____

Remote control ----- Yes _____ No _____

Motion picture projector (specify size) _____

Sound ----- Yes _____ No _____

Screen ----- Yes _____ No _____

Electric pointer ----- Yes _____ No _____

Blackboard ----- Yes _____ No _____

Other (describe) _____

I shall need the following public address system arrangements:

Fixed microphone on lectern ----- Yes _____ No _____

Neck microphone at speakers platform ----- Yes _____ No _____

Roving hand microphone ----- Yes _____ No _____

DIVISION LOCAL REPRESENTATIVES
NEW ORLEANS NATIONAL MEETING ON WATER RESOURCES ENGINEERING

Construction Division

Frank M. Denton
c/o Landis Construction Company
7410 Prytania Street
New Orleans, La. 70118

Engineering Mechanics Division

George Bugliarello
Department of Civil Engineering
Carnegie-Mellon University
Schenley Park
Pittsburgh, Pa. 15213

Hydraulics Division

Frederick M. Chatry
U. S. Corps of Engineers
P. O. Box 60267
New Orleans, La. 70160

Irrigation and Drainage Division

John C. Stephens
USDA
P. O. Box 469
Athens, Georgia 30601

Pipeline Division

Francis J. Stastny
Commonwealth Associates, Inc.
209 E. Washington Avenue
Jackson, Michigan 49201

Power Division

Leonce P. Waguespack
c/o New Orleans Public Service, Inc.
317 Baronne St.
New Orleans, La. 70112

Sanitary Engineering Division

Donald R. Rowe
Department of Civil Engineering
Tulane University
New Orleans, La. 70118

Soil Mechanics and Foundations Division

Edward R. Morphy
c/o A. W. Thompson & Associates
635 Commercial Place
New Orleans, La. 70130

Structural Division

Barney M. Dornblatt
826 Lafayette Street
New Orleans, La. 70113

Urban Planning and Development Division

Robert Anderson
245 So. Tamiac Boulevard
Avondale, La. 70094

Waterways and Harbors Division

Otis M. Jernigan
7704 Jeannette St.
New Orleans, La. 70118

Ocean Engineering Council

Myles K. Mashburn
c/o J. Ray McDermott Company
2nd Floor, Saratoga Building
New Orleans, La. 70112

Department of Professional Activities

John F. Marshall
c/o J. J. Krebs & Sons, Inc.
P. O. Box 19384
New Orleans, La. 70119

HOTEL RESERVATION FORM

Mail with Ticket List to: The Jung Hotel
Housing Department
1500 Canal Street
New Orleans, La. 70140

ARRIVAL DATE _____ at _____ M. DEPARTURE DATE _____ at _____ M.

NAME _____

ADDRESS _____

TO BE ACCOMPANIED BY _____

REMARKS _____

Please reserve _____ room(s) of type circled below:
Indicate Rate Desired

SINGLES	\$13	\$15	\$17	\$19	\$21	\$ _____
DOUBLES	\$19	\$20	\$22	\$24	\$26	\$ _____
TWINS	\$19	\$20	\$22	\$24	\$26	\$ _____
SUITES	\$40	\$55	\$70	\$85		\$ _____

To help your National Meeting Committee make final plans, an indication of your plans to attend the activities for which tickets will be issued would be appreciated.

Tickets will be available for purchase at the Registration Desk until the time shown in the program.

PLEASE DO NOT SEND MONEY IN ADVANCE.

NO. TICKETS _____

LUNCHEONS:

Monday-Keynote Luncheon _____

Tuesday-General Membership Luncheon _____

Wednesday-General Membership-Student Luncheon _____

Thursday-General Membership Luncheon _____

SOCIAL EVENTS:

Monday-Icebreaker Party _____

Tuesday-Section & Branch Officers Breakfast _____

Wednesday-Student Chapter Advisers Breakfast _____

Wednesday-Dinner-Dance _____

Thursday-ECPD Ad Hoc Visitors Committee Breakfast _____

FIELD TRIPS:

Tuesday-Fabrication Yard _____

Thursday-Harbor Tour _____

LADIES ACTIVITIES:

Monday-McGehee Private School Tour _____

Tuesday-Breakfast & Walking Tour _____

Wednesday-Mardi Gras Luncheon _____

November 12, 1968

Mr. Richard V. Ford
Vice President and Export Manager
The Ford Meter Box Company Inc.
Wabash
Indiana

Dear Dick:

In reply to your letter of November 8 addressed to Peter Callejas and myself, I regret that neither one of us will be in Washington on the 19th and 20th. I will be in New York at the American Water Resources Association meeting and Pete is presently on a trip to Pakistan, Thailand and Singapore.

Charlie Morse will be here if you feel he can be of any assistance to you.

Regards,



Harold R. Shipman
Chief, Water Supply Division
Public Utilities Projects Department

HRShipman/bc

CROSS REFERENCE SHEET

COMMUNICATION: Letter

DATED: November 6, 1968

TO: Mr. Alfred C. Wolfe
Inter-American Development Bank

FROM: Mr. Shipman

FILED UNDER: LIAISON _ - IDB

SUMMARY: Re: In accordance with his request attaching a few paragraphs which discuss benefit-cost analysis on water projects.

DECLASSIFIED

SEP 25 2025

WBG ARCHIVES

October 25, 1968

PERSONAL

Mr. John G. Copley
Chairman
Committee on International Affairs
Elmira Water Board
261 West Water Street
Elmira
New York 14901

Dear John:

While going through the recent issue of "Willing Water" and noting the announcement on the AWWA Management Seminar Scholarship Award, the thought occurred to me that it might be of interest to consider whether or not AWWA could provide a similar scholarship for foreign personnel. I expect that there would be a very limited number of people able to take advantage of it but believe that it would be one means whereby AWWA could obtain some publicity through the IWWA publication and other means. At the same time, it would offer something worthwhile to water-works people who might be coming to the United States for other reasons and who are not on regular fellowships or stipends paid by US AID, WHO, etc. I would feel that the latter group could be eliminated from consideration since attendance at the seminar could normally be covered out of the allocations surrounding the fellowship.

The foregoing is only an idea but is passed on to you for whatever it is worth.

Please accept my best regards.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

October 24, 1968

Dr. Abel Wolman
3213 North Charles Street
Baltimore
Maryland 21218

Dear Abel:

This is to confirm our telephone conversation of this morning concerning the proposed assignment to review our water and sewerage operation.

After referring to the points which you forwarded and after discussion within the Bank, I have put together five points which we feel require study. These are as follows:

- i) In the next five years, how much investment is required in the developing countries of the Bank's membership for water supply and which, if available, could be used effectively, taking into account the existing restraints of manpower and material common to these countries? Of this, investment, how much should the World Bank do?
- ii) Is the Bank's present policy of water first, sewerage second one which should be continued. What are the implications of this policy to the future?
- iii) What should be the role of the Bank in the general problem of water resource allocation? With increasing competition for use of water particularly in the water scarce countries between the irrigation, urban and hydroelectric fields, should the Bank play a more active role in this problem and if so, how might this be done?
- iv) Are the Bank's policies and criteria relative to institution building in the water sector correct? Can the Bank approach be improved?

Dr. Abel Wolman

October 24, 1968

- v) Are the present WHO-UNDP-Bank arrangements on project development, sector studies, training, etc., satisfactory or should some changes be considered?

We will, of course, wish to discuss each of these points with you and perhaps clarify and expand those where it appears desirable. We would propose to do this with you during the meeting at the Bank following your return from Europe and the Far East in late November. As per your suggestion, we look forward to hearing from you at that time.

Please accept my best regards.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

5. water

October 23, 1968

Mr. Raymond O. Agbanobi
The Department of Civil Engineering
University of Kansas
Lawrence
Kansas 66044

Dear Mr. Agbanobi:

This will acknowledge your letter of October 15 in which you indicate that as a part of your work in the Ph.D program of the University, you are considering an intensive study of the problems in water supply and sewerage services in some developing countries. I am forwarding herewith certain information which I hope may be of some help to you.

The Water Supply Questionnaire which is attached, relates to the type of data which the World Bank would like to have on any water system which is financed. We realize that in many of the developing countries, all of the information is not available to permit completion of the questionnaire. Where this is the case, our engineers and financial analysts attempt to answer the questions at the time of appraising the project in the country,

There has been a study made by the US Public Health Service in conjunction with the US AID and a report covering that study is now under preparation. A number of teams visited certain of the developing countries during the past year and a half and reviewed the water supply situation. I would suggest that it might be worthwhile for you to request a copy of the report which could probably be obtained by writing to Mr. Robert Harris whose address is US Public Health Service, Balston Centre, Tower 2, Room 1207, 801, North Randolph Street, Arlington, Virginia.

Aside from the foregoing, I am unable to provide you immediately with additional information. However, as you get into your studies, if you have any questions or need any specific information on which you think we might be able to help, please do not hesitate to write me.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

(Attachments)

HRShipman/pbf

October 23, 1968

Mr. Raymond O. Agbaroff
The Department of Civil Engineering
University of Kansas
Lawrence
Kansas 66044

Dear Mr. Agbaroff:

This will acknowledge your letter of October 15 in which you indicate that as a part of your work in the Ph.D. program of the University, you are considering an intensive study of the problems in water supply and sewerage services in some developing countries. I am forwarding herewith certain information which I hope may be of some help to you.

The Water Supply Questionnaire which is attached, relates to the type of data which the World Bank would like to have on any water system which is financed. We realize that in many of the developing countries, all of the information is not available to permit completion of the questionnaire. Where this is the case, our engineers and financial analysts attempt to answer the questions at the time of appraising the project in the country.

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Abside from the foregoing, I am unable to provide you immediately with additional information. However, as you get into your studies, if you have any questions or need any specific information on which you think we might be able to help, please do not hesitate to write me.

Yours very truly,

Harold R. Shipman
Chief, Water Supply Section
Projects Department, Public Utilities
1968 OCT 27 PM 4:26

COMMUNICATIONS
SECTION
RECEIVED

(Attachments)
HRS:Shipman/pdt

October 22, 1968

Professor George J. Halasi-Kun
Columbia University in the
City of New York
306 Dodge
New York, N.Y. 10027

Dear Professor Halasi-Kun,

I was prevented from getting away from Washington in time to attend the Seminar Meeting on Water Resources last Wednesday evening.

I am very sorry I missed this meeting and look forward to seeing you at the next seminar.

With best wishes,

Yours sincerely,

(signed) H. B. Ripman

H. B. Ripman
Director of Administration

HB Ripman:pgn

Mr. A. David Knox

October 21, 1968

Harold R. Shipman *HS*

Review of Existing Operations and Proposals for Future
Activities of the Water Supply and Sewerage Section

1. In recent weeks, we have had numerous conversations in connection with the Five Year Program of the Bank and the implications on activities such as those of this Section. We have also had occasion to discuss some of the problems which exist both with regard to increasing the rate of lending and with the criteria to be employed in the financing of water and sewerage projects.

2. Over the past two or three years during brief encounters with Dr. Abel Wolman, Professor Emeritus of Sanitary Engineering at Johns Hopkins University, Dr. Wolman has expressed some concern with the rate at which the water supply program at the international level is going forward. On these occasions, he has been somewhat critical on what he feels are the procedures being followed by the Bank and other financing institutions to cope with the problem. Approximately once a year for the past five years, he has travelled to Geneva to review with a WHO Committee the progress being made in the world water programs. He is planning to make a similar review for this year during November. Since Dr. Wolman has been one of the leading figures in the world to draw attention to the urban water problems of the developing countries and has also been a firm advocate of the sound utility approach, it is my feeling that we might benefit from a review of our activities and an analysis of future approaches which might be considered. It is suggested that at least the following points should be included in the terms-of-reference for this review:

- i) In the next five years, how much investment is required in the developing countries of the Bank's membership for water supply and which, if available, could be used effectively, taking into account the existing restraints of manpower and material common to these countries? Of this investment, how much should the World Bank do?
- ii) Is the Bank's present policy of water first, sewerage second, one which should be continued? What are the implications of this policy to the future?
- iii) What should be the role of the Bank in the general problem of water resource allocation? With increasing competition for use of water particularly in the water scarce countries between the irrigation, urban and hydroelectric fields, should the Bank play a more active role in this problem and if so, how might this be done?

Mr. A. David Knox

October 21, 1968

- iv) Are the Bank's policies and criteria relative to institution building in the water sector correct? Can the Bank approach be improved?
- v) Are the present WHO-UNDP-Bank arrangements on project development, sector studies, training, etc., satisfactory or should some changes be considered?

3. It is suggested that should this approach appear to have merit, Dr. Wolman be engaged for a period of approximately one month during which time he might spend whatever periods as are necessary within the Bank for discussions and review of policies and procedures, and to spend the balance of the time at a site of his own choosing in preparation of a report and for presentation to the Bank of his views.

I would appreciate knowing your reaction to this proposal.

HRShipman/pbf

Swath

✓ *W. J. Brown, UN*

IDA		IBRD		IFC	
FORM NO. 92 (4-68)					
CORRESPONDENCE RECORD FORM					
FROM				DATED	
P. de Seynes UN New York, New York				Oct. 16, 1968	
SUBJECT					
Invitation to send delegate to convention of Panel of Experts on the Legal & Institutional Implications of International Water Resources Development to be held in Vienna from 2-9 Dec. 1968. Encl. draft agenda.					
ADDRESSED TO		ROUTED TO		DATE RECEIVED	
Mr. McNamara		Mr. Denuth		10/21/68 jgv	

Raymond O, Agbanobi M S C E,
The Dept of Civil Engineering,
University of Kansas,
Lawrence. Kansas 66044.
Oct 15, 1968.

Mr, H R. Shipman, Chief,
Water Supply Section
I B R & D
Washington D C.

Dear Sir,

I am a student from one of the developing Countries on a PH.D program at this University. My major is Water Resources and Environmental Health Engineering

For my research purpose I am considering an intensive study of the problems of water supply and sewage services in some Developing Countries, As you know that your support and cooperation will be essential to us in such study, I will like to have your opinion about it, and necessary advice will be very much appreciated.

The main objective is to find some solutions that might be be usefull to various Government Agencies. And also to develop some design criteria.

Yours Very Sincerely,

Raymond O. Agbanobi M.Sc. (Civil Eng)

Oct 15, 1968

Department of Health
Washington, D.C.
October 18, 1968

Mr. H. R. Hines, Chief
Federal Bureau of Investigation
Washington, D.C.

Dear Sir:

I am a student from one of the developing countries of the world, and I am writing to you to request your assistance in obtaining a visa to the United States for a study trip. I am currently a student at the University of [Country] and I am studying [Subject]. I have been selected to participate in a study trip to the United States, and I need a visa to travel there. I have been unable to obtain a visa from the United States Consulate in [Country], and I am hoping that you can help me in this regard. I have been told that you have the authority to issue visas, and I am hoping that you can issue me a visa for my study trip. I am very grateful for your assistance, and I am sure that you will be able to help me in this regard. I am looking forward to your response.

Yours very sincerely,
[Signature]

1968 OCT 18 PM 8:45
RECEIVED
GENERAL FILES
COMMUNICATIONS

Mr. A. David Knox

October 10, 1968

Harold R. Shipman *HZ*

Review of Existing Operations and Proposals for Future Activities
of the Water Supply and Sewerage Section

1. In recent weeks, we have had numerous conversations in connection with the Five Year Program of the Bank and the implications on activities such as those of this Section. We have also had occasion to discuss some of the problems which exist both with regard to increasing the rate of lending and with the criteria to be employed in the financing of water and sewerage projects.

2. Over the past two or three years during brief encounters with Dr. Abel Wolman, Professor Emeritus of Sanitary Engineering at Johns Hopkins University, Dr. Wolman has expressed some concern with the rate at which the water supply program at the international level is going forward. On these occasions, he has been somewhat critical on what he feels are the procedures being followed by the Bank and other financing institutions to cope with the problem. Approximately once a year for the past five years, he has travelled to Geneva to review with a WHO Committee the progress being made in the world water programs. He is planning to make a similar review for this year during November. Since Dr. Wolman has been one of the leading figures in the world to draw attention to the urban water problems of the developing countries and has also been a firm advocate of the sound utility approach, it is my feeling that we might benefit from a review of our activities and an analysis of future approaches which might be considered. In addition to a review of the chronology of water investment by Bank/IDA and of the procedures employed by this Section, it is suggested that the following additional review would prove desirable together with proposals which we might consider and which could affect the approach which we might employ in the next five years. These items could include the following:

- i) Global requirements - recorded ^{and} estimated requirement, including estimates of investment needs with possible identification of external and internal requirements;
- ii) At present rate of installation, estimated time to meet 25, 50 and 75 percent of requirements;
- iii) Obstacles to increased rate of installation:
 - a) within the Bank - procedural, principles of finance, staff members, processing and supervision;

Mr. A. David Knox

October 10, 1968

- b) external to the Bank - institutional, management, technical, manpower, investment, resources.
- iv) Proposals for modification of Bank practices:
 - a) Principles
 - b) Practices - static or dynamic

3. It is suggested that should this approach appear to have merit, Dr. Wolman be engaged for a period of approximately one month during which time he might spend whatever periods as are necessary within the Bank for discussions and review of policies and procedures, and to spend the balance of the time at a site of his own choosing in preparation of a report and for presentation to the Bank of his views.

I would appreciate knowing your reaction to this proposal.

HRShipman/pbf

Mr. A. David Knox

October 1, 1968

Harold R. Shipman *RS*

Projects for Appraisal fiscal 1968 for loans in 1969
Water Supply Section

A review of projects which may be appraised between January and July 1969, but which will not involve Board action until after July, shows the following:

<u>Project</u>	<u>Earliest possible date of appraisal</u>	<u>Status</u>
Kenya	March	Reasonably certain
Ceylon	March	Highly uncertain
Bombay	April	Highly uncertain
Thailand (Sewerage)	April	Uncertain
Ethiopia	April	Highly uncertain

I should expect that out of the above, we might have two for appraisal.

HRShipman/bc

Mr. Harold R. Shipman

September 30, 1968

James H. Jennings

The draft "Water Supply Manual" of the U.S. Government

1. Following our conversation with Mr. Harris on the above, I have re-read Chapter VII (Project Development) with a view to making suggestions for improving the focus on better techniques for making investment decisions. Actually, most of the desirable points are touched on in this chapter, but they tend to be obscured in broader discussions of things like the various stages of engineering reports and administrative procedures. Perhaps a separate section within the chapter along the following lines would serve to emphasize the importance of good investment decisions.
2. There are three important aspects of investment decisions in the water supply field:
 - a. Definition of the need;
 - b. An exhaustive exploration and comparison of alternative ways of meeting the need; and,
 - c. Calculation of the financial and economic consequences of the investment.
3. There is a paradox in thinking about water supply investments. On one hand, it is universally considered to be desirable, if not imperative, to have an adequate piped supply of pure water in urban areas. On the other hand, planners hard pressed to find capital for a variety of projects, most of them more glamorous than water, usually decide in the end that water projects can be postponed without much apparent damage to the economy. This paradox arises from the evident, but frequently unspoken, fact, that demand for water can be defined in many ways. At one end of the scale there is the need for two quarts per capita per day to sustain life; at the other, is the need (?) for water to wash cars, irrigate lawns, and air condition movie theatres. The first step in an investment decision is to establish a point on this scale to represent the objective of the investment. In other words, how much of the theoretical demand is it reasonable to supply, given the physical and economic facts of the situation. It is at this point that investment decisions in developing countries frequently begin to go wrong. Standards of consumption familiar to consultants from more developed countries are sometimes applied without consideration of wide differences in social and cultural factors, not to mention the difference in the ability to pay. Reliable consumption statistics are rarely available to provide a check on such assumptions. It is extremely difficult to establish demand where there are unmetered and illegal connections, huge losses in the distribution system, lack of production records, etc. Unfortunately, these conditions are common in developing countries.

4. When faced with this problem, it is not satisfactory to simply apply a rule of thumb target and go ahead. The answer is to make a strenuous effort to gather from all sources whatever consumption data is available and to supplement this with spot checks with temporary meters, house to house surveys, canvassing of large consumers (industry, hotels, hospitals, universities), etc. Time and money spent at this stage to sharpen demand estimates can be the most productive part of the investment. For the future, full metering and a good statistics gathering system should be mandatory.

5. Once the demand has been established as well as possible, it is useful even at this early stage to begin to establish a financial frame of reference for the project. One crude, but often revealing, way to do this is to think in terms of a typical domestic connection - say a skilled laborer with a family of six and average per capita consumption of water. Suppose he will spend 2% of family income for water. Divide the monthly payment by the estimated consumption and take the result as the overall average rate per unit of water to be sold by the organization. Multiply this rate by total projected consumption and you have an idea of the total revenues which will be available to meet the operating and capital costs of the organization. In a typical system, about 60% of these revenues will be needed for operating costs, including depreciation. The remaining 40% can be applied to interest payments, normal extensions and renewals, increases in working capital, and all other cash needs of the organization. (This assumes that depreciation covers amortization of debt, which may or may not be the case.) If the financial objective is to earn an 8% rate of return on net fixed assets, the 40% represents this return. Therefore, $\frac{40}{8} = 5$, and you can think in terms of a total investment (existing plus the proposed project) of about five times the total estimated revenues. This is admittedly a very rough calculation, since all of the elements are subject to fairly wide variation, depending on the local situation. It does, however, give some clue about a realistic size of the project, particularly when a new system is being built.

6. The next step is to find the best way to meet the estimated demand, keeping in mind the restraints on the size of the project. At this point, engineers (including consultants) frequently begin to think in terms of big visible, modern, complex (and costly) works. This is understandable but not excusable in areas desperately short of capital. What is needed is a thorough investigation of all possible sources, means of conveyance, methods of treatment, and distribution system layouts, using discounting techniques so that alternatives having different investment and operating cost patterns can be compared fairly. It is also necessary to use imagination in choosing materials, methods, and specifications in order to produce a "lean" project that will do the job at least cost. This may involve lowering quality standards used as a matter of course in developed countries, but which are not necessarily vital to the functioning and safety of the system.

7. When the best alternative has been selected, and cost estimates made, it is necessary to consider more precisely the financial and economic consequences of the proposed investment. This may (and frequently should) send the engineers back to the drawing board to look again for a cheaper alternative. To obtain a detailed understanding of the financial aspects of the proposed project, it is necessary to construct pro-forma income statements, cash flow statements and balance sheets. The many assumptions required should be considered carefully and written down so that readers can make a judgement about the validity of the statements. Operations of the existing systems, if any, will, of course, form a part of these statements. The completed statements can then be analyzed by conventional financial analysis techniques.
8. It will have been necessary to arrive at an average rate per unit of water sold in order to make up the income statements. It is useful to consider the rate structure which would produce this average. The guiding principle should be to insure that there are no gross differences between the cost of service and rate charged for each class of consumer. It is also revealing to turn again to the typical domestic consumer to see what impact the proposed domestic rate would have on his expenditure pattern.
9. A feeling for the economic consequences of the investment can be gained by calculating the internal rate of return (the discount rate which equalized the present worth of the future streams of cash income and outflow which can be attributed to the investment itself) on the proposed project, as contrasted to the financial rate of return for the whole organization. (If it is a new system, total revenues and cash outflow would be considered, but the two kinds of rate of return should be calculated nevertheless since they represent different concepts of return on the investment.) If the internal rate of return is significantly lower than the returns available from other kinds of investments, it may be desirable to reconsider the scope of the project, the rate structure, etc.
10. When this kind of calculation is made and it results in a price which seems high, the usual response is to think of ways to subsidize the operation. It should be noted that subsidies do not change the cost to the economy but simply transfer the cost from one group to another (and since water consumers are usually tax payers as well, it doesn't make much difference). The important thing to remember is that, once an investment has been made, its economic and financial consequences are largely fixed. The only question left at that time is who pays the bill. Good management can keep costs at a minimum but there is a limit to what good management can do. Furthermore, the sunk capital is no longer available for alternative investments no matter how attractive. It is for these reasons that time and money spent on preliminary study of the optimum scope of the project can be very worthwhile.

Mr. A. David Knox

September 27, 1968

Harold R. Shipman *HR*

Major Policy Considerations which may be involved in future
Projects and Organizational Changes - Water Supply

In accordance with your request for suggestions on major policy questions which may arise on projects on which we are now working, the following comments are offered:

1. The question of retroactive financing does not seem to have been clearly resolved and it would prove helpful if a firm position could be taken which would allow such financing in those instances where considerable inconvenience and loss will result to the borrower if delay is experienced after appraisal but before the loan is signed.
2. It is possible that on projects such as Ceylon Water Supply, great difficulties will be experienced in obtaining financial performance by the various communities if present policies and criteria are closely adhered to. On projects where a clearly defined need exists for water and where the income of the people is so low as to preclude the collection of charges for water which are established by conventional methods, a more flexible position should be considered by the Bank. About all we can do at this stage is alert the administration that some policy changes may be requested after further study.
3. In countries where Sector studies show a broad need for water supply and sewerage construction, is there any merit in considering as a part of program financing, the inclusion of an element for financing such facilities as an asbestos cement pipe factory? If bids were asked for pipe to be fabricated in the country with some provision for the company to write-off a fair amount of start-up costs on the first order, long range benefits to the country should accrue. This would likely affect our policy. This is only a rough idea and a number of questions would require answers before it could be seriously considered.

Organizational Changes

4. Aside from normal staff expansion, I have one or two proposals which might be considered. These are as follows:
 1. If urban affairs and urban public works are considered of sufficient importance to justify more intensive activity by the Bank, there would seem to be a need for a considerable expansion of the expertise now brought to bear. One could argue the need for a separate Division devoted to this activity.

Mr. A. David Knox

September 27, 1968

2. Water resources activities are now scattered in three Divisions. Although most projects have not encountered insoluble problems on coordination, I have the feeling that as time goes on, the competition for water and the need for greater attention to multiple and competing uses will demand more attention. At the moment, under our present structure, I do not believe we can expect too much in this direction. I have no proposal as to how we might proceed. I believe it should be studied.
3. In the field of management of our borrower's agencies, since this is not only our number one problem but our number one opportunity, we need to be doing more about it. As a very preliminary proposal, I suggest that we set up within the Division a unit devoted to this activity. This unit would be mobile to the extent that we would arrange for assignment of staff to borrower organizations for periods of a year or two for assistance in management improvement. I believe Bank staff would be better accepted and would be more effective than consultants. We could draw on this resource for short time trips to other projects in preparation, etc., as the requirements demand. If effective, this unit could be expanded to any number. The above is not thought out in detail but I believe it could be a more constructive approach than those now being employed.

HRShipman/pbf

September 26, 1968

Prof. Paul R. DeCicco
Polytechnic Institute of Brooklyn
333 Jay Street
Brooklyn, New York 11201

Dear Paul:

✓
Thank you for your letter of September 20, 1968 with which you sent a reprint on the use of computers in the design of sanitary sewer systems. I read the article and found it to be very interesting.

I turned the pamphlet over to Mr. Harold R. Shipman who is the chief of the Bank's Water Supply Section. This section also handles sewerage. I also pointed out to Mr. Shipman that you and Hank would be interested in doing further work of this type should the opportunity arise.

I hope I am in town the next time you get to Washington so I can take you up on your lunch offer. Best regards.

Sincerely yours,

Richard H. Sheehan
Projects Department - Public Utilities


RHSheehan: cab
IBRD

cc: Mr. Shipman

POLYTECHNIC INSTITUTE of BROOKLYN

333 JAY STREET • BROOKLYN, NEW YORK 11201

September 20, 1968

Mr. Richard Sheahan
The World Bank
1818 8th Street, N.W.
Washington, D.C.

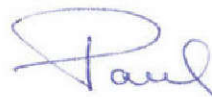
Dear Dick:

The attached clip is from a recent Water Pollution Control Federation Newsletter (August 1968). I thought you might be interested in some of the details of our work which might relate to the activities of the World Bank in such areas.

As I mentioned to you when we last met, we are consultants to a number of municipalities and consulting engineers in the United States in connection with sewerage planning and design and are now attempting to get involved on an international basis.

I hope you and your family are well. I will try to call in advance of any future visit to Washington, D.C. (I'll buy lunch.)

Regards,



Paul R. DeCicco

PRD:se
Enc.

aca. 9/26/68

1968 SEP 23 PM 1:06

World Bank Makes Loan to Singapore

A \$6 million loan by the World Bank will assist in financing expansion and improvement of the sewerage system in Singapore.

The project being assisted by the Bank loan comprises most of the expansion planned for the period 1968 through mid-1972. It consists of the construction of branch sewers and pumping stations to serve urban renewal areas, new housing developments, and the Jurong industrial estate; and expansion and improvement of plants and miscellaneous extensions. The total cost is estimated at the equivalent of \$22 million.

Dick Sheehan

September 4, 1968

Professor P. Zusman
Department of Economics
University of California
Berkeley
C A L I F O R N I A

Dear Pinchas:

I was looking forward to meet with you in Montana. This not having materialized, could you please send me a copy of your paper, "Optimal Programs for Water Development in a Framework of Growth and Trade Models". The topic sounds exciting and is right along the lines of my own interests. If after reading the paper, I should find it advisable to pursue discussion with you and some people at the World Bank on the subject, would you be available for a day-long session or so here in Washington?

Yours sincerely,

Shlomo Reutlinger
Economics Department

S.R.
SReutlinger:bsc

1203 2EB -2 0010:20

COMMUNICATIONS
RECEIVED
10/10/68

September 11, 1968

Professor P. Zeman
Department of Economics
University of California
Berkeley
CALIFORNIA

Dear Pinchas:

I was looking forward to meet with you in
Montana. This not having materialized, could you please
send me a copy of your paper, "Optimal Programs for
Water Development in a Framework of Growth and Trade
Models". The topic sounds exciting and is right along
the lines of my own interests. If after reading the
paper, I should find it advisable to pursue discussion
with you and some people at the World Bank on the sub-
ject, would you be available for a day-long session or
so here in Washington?

Yours sincerely,

Shlomo Reutlinger
Economics Department

Reutlinger:psa

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COMMUNICATIONS

September 4, 1968

Professor Emery Castle
Department of Economics
Oregon State University
Corvallis
O R E G A N

Dear Professor Castle:

Would it be possible to get a copy of your paper, "Economics in Regional Water Research and Policy", presented at the AAEA meetings in Montana? We would like to determine whether some of the ideas presented in your paper could be applied or further developed for application in our irrigation project appraisal work.

Sincerely yours,

Shlomo Reutlinger
Economics Department

SR
SReutlinger:bsc

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September 11, 1968

O R E G O N
Corvallis
Oregon State University
Department of Economics
Professor Henry Castle

Dear Professor Castle:

Would it be possible to get a copy of your paper, "Economics in Regional Water Research and Policy", presented at the AAEA meetings in Montana? We would like to determine whether some of the ideas presented in your paper could be applied or further developed for application in our irrigation project appraisal work.

Sincerely yours,

Shelmo Reutlinger
Economics Department

Shelmo Reutlinger:psa

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September 4, 1968

Professor R. L. Anderson
Department of Economics
Colorado State University
Fort Collins
C O L O R A D O

Dear Professor Anderson:

Would it be possible to get a copy of your paper, "A Simulation Program to Establish Optimum Crop Patterns on Irrigated Farms Based on Pre-Season Estimate of Water Supply", presented at the AAEA meetings in Montana? We would like to determine whether some of the ideas presented in your paper could be applied or further developed for application in our irrigation project appraisal work.

Sincerely yours,

Shlomo Reutlinger
Economics Department

SR
SReutlinger:bsc

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COMMUNICATIONS
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OFFICE

September 11, 1968

COLORADO
Fort Collins
Colorado State University
Department of Economics
Professor R. L. Anderson

Dear Professor Anderson:

Would it be possible to get a copy of your paper, "Aggregation Problem to Establish Optimum Crop Patterns on Irrigated Farms Based on Pre-Season Estimate of Water Supply", presented at the AAEA meetings in Montana? We would like to determine whether some of the ideas presented in your paper could be applied or further developed for application in our irrigation project appraisal work.

Sincerely yours,

Shlomo Reutlinger
Economics Department

Reutlinger:psa

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GENERAL FILES
COMMUNICATIONS

Mr. Harold R. Shipman

September 3, 1968

James H. Jennings *JHJ*

Draft "Manual" on Water Supply Operations
in Developing Countries

1. In general, this is a more realistic document than we have seen before from this source. It is pretty general to be called a "manual", but is a step in the right direction.
2. My main objection to the draft is that it continues to view water supply activities primarily in technical terms. Chapters IV and X touches on some of the financial aspects but the emphasis is clearly on the technical side. My limited experience suggests that technical problems and solutions are much more universally recognized and understood than economic and financial problems, which are equally, if not more, important in the framework of economic development.
3. For example, I would suggest much more discussion of the techniques of making good (in the economic and financial sense) investment decisions. If you don't get this right, good technical execution and management can only make the best of a bad situation. Also, I would like to see more emphasis on operating cost control. This can be a much more important factor in the final price than interest rates, which are given a good deal of emphasis.
4. The discussion of a "revolving loan fund" in Chapter IV is rather confused. Furthermore, it seems to be presented as a more effective solution to the shortage of capital than is justified. The "revolving" aspect of a fund where repayments are over a 20-year period is not very effective under conditions where a large unsatisfied demand already exists and is increasing at compound rates grouped around 5% per year. Better investment decisions and a rate structure which provides for a reasonable amount of internal financing are likely to be more effective in overcoming a shortage of capital under these conditions. It is also clear that, even with these mechanisms and others in full flower, vast amounts of outside capital would be needed to meet the Alliance for Progress goals.
5. Finally, I would like to plug for a personal idea that would fit into this kind of document. The draft touches on a very serious and universal problem - lack of good management. In many countries, the major water supply systems are among the most important economic activities in terms of invested capital, employment, and operating revenues and costs. The kind of management skills needed to deal with activities of this size and complexity are obviously in great demand in private enterprise and the more glamorous areas of government, where rewards of money and prestige are usually much greater. Govern-

Mr. Harold R. Shipman

- 2 -

September 3, 1968

ments need to be persuaded that large water supply operations deserve a high priority claim on the management talent available (and not only technical talent). They also need to be persuaded that appropriate rewards to this talent are necessary to inspire maximum effort. I would like to see the Bank and other institutions consider ways whereby outstanding management performance can be rewarded immediately and directly (with money) so that management with abilities more in line with the economic importance of water supply operations can be attracted, particularly during periods when a major reorganization and large projects are being undertaken at the same time.

JHJennings:cdd
IBRD/IDA

OFFICE MEMORANDUM

✓ x 1 + S. D. 112

TO: Mr. L.J.C. Evans

DATE: August 21, 1968

FROM: T.C. Greyke

SUBJECT: Eighth Regional Conference on Water Resources Development

Attached hereto is the final version of our paper for the above Conference. This incorporates suggestions which you made together with those of Mr. Demuth and Lars Lind. The paper has now been despatched to ECATE. Copies have been given to Mr. Demuth, Mr. Lind and Mr. Bell.

Attachment

TCCreyke:cm

APPROVED FOR
TO THE DIRECTOR
FROM T.C. CREYKE
Date Aug 21, 1968
per [signature]

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL DEVELOPMENT ASSOCIATION

THE FINANCING OF WATER RESOURCE DEVELOPMENT

with particular reference to the role of
the World Bank Group in the ECAFE Region

* * * * *

Paper to be presented at the ECAFE Eighth Regional Conference
on Water Resources Development in Bangkok in November, 1968

by

T.C. CREYKE
Advisor - Agricultural Development
Projects Department - Agriculture.

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I. INTRODUCTION

The International Bank for Reconstruction and Development -- The World Bank -- was founded at the Bretton Woods Monetary and Finance Conference in July 1944, for the purpose of meeting the pressing need for international capital to finance both the postwar reconstruction of productive facilities and also the economic development of less developed countries of the world. It is an international cooperative institution with 107 ^{1/} member countries and is associated with the United Nations as a specialized agency. Bank loans are made either to member governments or, under government guarantee, to public or private enterprises in their countries or territories.

The initial emphasis of Bank activity was on the urgent problems of reconstruction of the war-damaged economies in Western Europe, for which it made loans totalling \$497 million in 1947. When Marshall Aid came into operation in 1948, the Bank turned its attention to its other major responsibility, that of financing development. To date the Bank has made 545 individual loans and has committed \$11.2 billion, of which nearly \$8.8 billion has been disbursed and \$2.9 billion has been repaid. The distribution of this total lending between sectors is as follows:

	<u>Percent</u>
Electric power	34
Transportation	32
Industry and mining	16
Agriculture	8
Postwar reconstruction	4
Others ^{2/}	<u>6</u>
	<u>100</u>

In recent years the emphasis on agriculture has been increasing and in 1967/68 17 percent of Bank loans went for agriculture. The emphasis on industry has also risen, and 23 percent of Bank commitments in 1967/68 were for this purpose.

The rapid buildup of external debt liabilities in some less developed countries, long before their needs for external capital were satisfied, led in 1960 to the creation of the International Development Association (IDA) as an affiliate of the World Bank, with the responsibility for making multilateral development loans on terms more flexible and bearing less heavily on the balance of payments than those of conventional loans. The creation of IDA increased the volume of funds available and widened the range of countries with which the Bank Group could do business. It also brought about a substantial increase in the number of staff working on agricultural projects. Between May 1961 and the end of June 1968 total

^{1/} All figures refer to the situation as at June 30, 1968, unless otherwise stated.

^{2/} Education, water supply and development financing.

credits of \$1.8 billion had been committed by IDA for 126 separate operations. While transportation took about the same share of IDA credits as of Bank loans, the share of agriculture was doubled to 17 percent on average and to over 25 percent in 1967/68. Only a minor share of IDA resources have gone to power and telecommunications.

The ECAFE Region alone has received over 70 percent of all IDA credits, virtually all of which have gone to India and Pakistan. The region, however, has only received about 36 percent of all Bank lending.

II. THE IMPORTANCE OF THE INTERNATIONAL CAPITAL MARKET FOR ECONOMIC DEVELOPMENT

a) Sources of Capital for Bank and IDA

The authorised capital of the Bank amounts to \$24 billion of which \$22.9 billion has been subscribed. Of this, \$20.6 billion remains uncalled, although available if and when required to meet the obligations of the Bank created by borrowing or guaranteeing loans. The paid-up part of members' capital was the main source of investment funds up till 1951 but since then the Bank has increasingly relied on borrowings and sales of loans out of its loan portfolio as the main sources of funds. Total sources of funds for all loans to date is as follows:-

	<u>Percent</u>
Borrowings	35
Sales of loans out of portfolio	21
Usable capital subscriptions	20
Repayments of principal	15
Net income from operations	9
Total	<u>100</u>

The annual increase in total Bank resources has averaged 13 percent with borrowings actually rising at 15 percent per annum between 1948 and 1967. This rate of increase of borrowings has slowed appreciably in recent years and has averaged only about six percent over the past five years, but is now expected to rise significantly. Although the United States has been the largest single source for borrowings the Bank, in order both to avoid undue dependence on a single source as well as to broaden its international character, has consistently sought to develop new sources in other capital markets. The Bank is, for instance, by far the largest single outside borrower in the German market and has recently begun to borrow money in Kuwait. Close to 60 percent of the Bank's funded debt is now outside the United States.

Receipts from portfolio sales have slowed appreciably in recent years, from a high of US\$319 million in the fiscal year 1961/62 to US\$69 million in the fiscal year 1966/67. This decrease has resulted from a general scarcity of capital, from the Bank's difficulty in offering yields on portfolio sales as attractive as those available on other investments and from restrictions placed on overseas investments by some capital-exporting countries. In 1967/68 these sales rose again for the first time since 1961/62 to \$107 million.

Unlike the Bank, IDA is dependant on capital provided by Governments. Members of IDA fall into two groups: the 18 Part I, or economically more advanced countries, whose entire subscriptions are in convertible form and usable by the Association for development credits; and the 80 Part II, or less developed countries, only 10 percent of whose subscriptions are in convertible form, the remainder being paid in the members' own currency and usable only with the members' consent. Basic subscriptions provided IDA with US\$794 million for lending. This was supplemented by a first round of

replenishment, contributed entirely by the Part I members, of \$773 million in 1964, by special contributions from Sweden of \$28 million and by annual transfers out of the Bank's net income totalling \$210 by the end of 1966/67. In addition IDA's own net income of \$14 million was also available for lending.

The majority of this total had been committed by the end of 1967. In March 1968 a proposal to replenish IDA resources at the rate of \$400 million per year for three years (compared to the \$250 million per year of the first replenishment), was agreed upon by the Part I member countries, and approved by the Executive Directors of the Association. This agreement is in process of ratification. The second replenishment is designed to finance IDA up to the end of June 1970.

b) Future Trends of Borrowing and Effect on Financing Water Resources Projects

The volume of future Bank lending for water resource projects in developing countries is likely to be determined more by their ability to service the debt so incurred than by the ability of the Bank to borrow additional funds on the open market. While there are certain developing countries in the ECAFE Region, notably Malaysia and Thailand, which have not been troubled by an increase in their debt service payments and where this generalization is not valid, for the majority of the countries debt servicing difficulties are increasing. This difficulty is compounded by the rising cost of borrowing which is facing the Bank as much as any other financial institution. In 1965/66, for instance, the average cost of new Bank borrowings was 4.88 percent; in 1966/67 this rose to 5.52 percent; and in 1967/68 it was necessary on one occasion to offer a yield of over 7.2 percent and the average was 6.17 percent. This adds to the difficulty of most countries of the ECAFE Region to use Bank loans, particularly loans for water resource projects which already tend to suffer from repayment difficulties.

These considerations indicate the importance of enlarging the supply of investment funds available on easier terms if investment in water resource development is to increase. Assuming the second replenishment becomes effective it is likely that an increase in investment in water resource projects will occur over the next few years. An indication of the effect which the availability of IDA funds has on Bank Group lending for water resource projects is shown by the rise in total loans and/or credits for irrigation from \$24 million per year in the four years before IDA began to \$64 million per year in the next four years. In the ECAFE Region as a whole, the rise in loans and credits for water resource development was even more striking, from under \$10 million per year before IDA began, to \$48 million per year over the eight years of IDA's existence.

III. BANK/IDA LENDING POLICIES

a) General Lending Policy

In most major respects the operating policies of the Bank and IDA are identical. Both institutions lend only for projects or programs which are of high priority for the borrowing country's economic development, which are economically and technically sound, and which have satisfactory prospects of being carried out and operated successfully. The two institutions apply the same methods and standards in determining for what purposes loans or credits should be extended and in deciding what conditions need to be established to assure that these purposes will be achieved. In addition, the Bank and IDA try to help borrowing countries to improve their economic management and to increase the productivity of their resources. This objective is sought through analysis of the long-term development problems of a country and its development strategy and through evaluation of the policies being followed and planned.

The fundamental difference in the operating policies of the two institutions is in the terms of their financing. The Bank lends at long term and at more or less conventional rates of interest; IDA lends at still longer term, and levies no interest charge as such. IDA's Articles state that one of the purposes of the Association is to provide finance "on terms which are more flexible and bear less heavily on the balance of payments than those of conventional loans," thereby supplementing the Bank's activities. IDA was set up specifically to assist countries whose balance of payments prospects do not justify the borrowing on conventional terms of as much capital as they can effectively use. Such countries, however, are not regarded as eligible for IDA assistance if their lack of repayment capacity is attributable to their own mismanagement of their economies.

b) Terms of Lending

The Bank normally makes medium or long term loans, with the principal repayments beginning at the end of a period of grace and thereafter spread over the remainder of the life of the loan. In establishing the length of its loan and the grace period, the Bank follows the principle that the terms should be related to the characteristics of the particular project and also to the prospective balance of payments situation of the borrowing country itself. The grace period is designed to run until the project becomes operational and starts to yield economic benefits, while the calculation of the amortization period takes into account the estimated useful life of the project. Both the length of the loan and the grace period may also reflect the borrowing country's debt position. Allowance may be made, for example, for heavy "bunching" of debt service obligations in the country's foreign debt structure.

The rate of interest charged by the Bank on its loans is based on the cost to the Bank of raising money in the world's capital markets; it is kept as low as is compatible with the need to maintain the Bank's financial

strength and reputation. The standard rate for Bank loans was raised from 6 $\frac{1}{4}$ to 6 $\frac{1}{2}$ percent on August 1, 1968.

Interest on Bank loans is charged only on that part of a loan which has actually been disbursed. To compensate the Bank for the cost of holding funds at the disposal of the borrower, and to encourage borrowers to draw down loans promptly, a commitment charge is normally made on the undisbursed portion of a loan. This charge is now $\frac{3}{4}$ of 1 percent and accrues from a date 60 days after the date of the loan agreement.

By contrast IDA's development credits to date have normally been for a term of 50 years and have been interest free. There has been no commitment charge, but a service charge of $\frac{3}{4}$ of 1 percent to meet IDA's administrative costs has been imposed on the principal amount withdrawn and outstanding. The credits have carried grace periods of 10 years before repayment has to begin. Thereafter, one percent of the credit is repayable annually for 10 years and 3 percent annually for the final 30 years.

It is not intended that the concessionary terms of IDA's financing should result in the extension of financial subsidies to the actual projects on which IDA funds are employed, or that IDA funds should be used to finance a project which cannot satisfy normal criteria of economic and financial viability. Accordingly, when IDA finances a revenue producing project the credit is extended to the government, which then relends it for the project on terms customary in the country. This has the effect of providing the government with the balance of payments relief intended from the IDA credit, while avoiding any relaxation of the financial discipline required in the execution and administration of the project itself.

c) Eligibility for IBRD Loans or IDA Credits

In making a loan the Bank is obliged under its Articles of Agreement to pay "due regard to the prospects that the borrower, and, if the borrower is not a member, that the guarantor, will be in a position to meet its obligations under the loan". The Articles further enjoin the Bank to act "prudently" in the interests both of the borrowing country and of the members as a whole. Even apart from this provision of the Articles, it would be implicit in the concept of the Bank as a continuing institution, designed to operate on a sound business basis and with funds borrowed in the private market, that it should make loans only where there are reasonable prospects of repayment.

Service payments on Bank loans, as on IDA credits, are in foreign exchange, not in local currency. The Bank is therefore concerned with the ability of the borrowing country to make foreign exchange available for service payments. Before a loan is provided an appraisal is made of whether the amount contemplated is within the limits which the prospective borrowing country can reasonably be expected to service, taking account not only of its existing and prospective debts to the Bank but to all sources of external finance.

The structure of a country's existing and prospective external debt, as well as its absolute level, is a major element in a creditworthiness assessment. The outstanding external indebtedness of the developing countries has risen rapidly during the past few years, to the point where some countries are now devoting 20 percent or more of their foreign exchange earnings from exports to the servicing of their debts. In some instances serious problems are being created by the peaking of debt service obligations in a short period and by excessive borrowing on short term. When an otherwise creditworthy country confronts an exceptionally heavy debt service burden over a particular period, the Bank may adjust its own terms by granting longer than usual periods of grace or of amortization on its loans.

A country which has not the repayment capacity to borrow all the capital it could effectively use on conventional, or Bank, terms, may nevertheless have good prospects for economic growth if its domestic savings can be supplemented by foreign funds. Such a country is eligible for IDA credits provided its economic performance is satisfactory. However, IDA credits are not confined to countries which have completely exhausted their creditworthiness for conventional loans. In some countries creditworthy by Bank standards, the external capital required to achieve an adequate rate of investment is so large, or the period that the country must be a net importer of capital is so long, that the debt service burden would quickly reach a critical level if the whole of this capital was borrowed on conventional terms. In the circumstances it may be justifiable for IDA or other sources of "soft" funds to provide assistance even while some creditworthiness for conventional borrowing still remains. Bank/IDA "blend" lending may be achieved by joint Bank and IDA financing of the same project or by separate Bank and IDA operations in the same country.

Because of the shortage of its funds in relation to the needs of members, IDA has had to reserve its assistance for countries whose economic problems are exceptionally pressing. Credits have not normally been extended to countries where per capita incomes exceed \$250 a year. In the ECAFE Region five countries fall into this category; Australia, New Zealand, Japan, Singapore and Malaysia. Of these Australia and Japan are Part I or donor members of IDA. This limit has recently been raised to \$300 per capita.

IV. THE BANK'S ROLE IN FINANCING WATER RESOURCES DEVELOPMENT

a) The Bank's Approach through Projects

The Bank's Articles of Agreement require that "loans made or guaranteed by the Bank shall, except in special circumstances, be for the purpose of specific projects of reconstruction or development." The objective of this provision is to assure that loans are used for the most productive purposes. It does not commit the Bank to a single inflexible lending technique; and many different sorts of undertakings are, for the purposes of Bank lending, considered to be projects. In effect, the only requirement imposed by the specific project provision of the Articles is that, before a loan is made, there shall be a clear agreement both on how the proceeds of the loan are to be expended and on what the loan is expected to accomplish. A similar agreement is sought before an IDA credit is provided.

If finance were provided by the Bank or IDA for unspecified purposes or for vague development programs which had not been worked out in terms of the projects by which the objectives of the program were to be achieved, there would be a danger that the resources would be used in ways which would make little or no contribution to the expansion of productive capacity or output. This danger is by no means hypothetical. Many projects presented to the Bank, particularly in the earlier years of its operations, were far from satisfactory. Some were not economically advantageous. In many cases cost estimates were inadequate or incorrect; technical plans or proposed financial or administrative arrangements also frequently were deficient. During the course of discussions with a borrower, it has often been possible to work out modifications of a project to reduce its cost, to increase its efficiency or to improve its financial or organizational features. Sometimes a substitute project or one conceived on a somewhat different scale has been found to be more productive than the one originally proposed.

The available resources of every country have limits. To the extent that resources are devoted to particular investment projects, other projects may have to be abandoned or delayed. Every effort is therefore made to ensure that Bank and IDA financing is devoted to undertakings which will make an important contribution to strengthening the economy of a borrowing country. Accordingly, neither institution would normally consider a project without undertaking a general review of the economy of the country concerned as well as a detailed study of the project or program proposed for financing. This review enables areas of high priority and high potential to be identified and provide guidelines to the types of projects which deserve early attention. It also enables judgments to be formed about the country's economic performance and its eligibility for Bank and IDA financing. The Bank is aware that, if it confined its investigations to ensuring that its own funds are only used for high-priority productive purposes, the provision of finance to a country might in effect simply release other funds available to that country which might be used

inefficiently. For that reason, before providing finance, the Bank seeks to satisfy itself about the effectiveness with which the total resources available to a borrowing country are being employed.

The existence of an effective development program, particularly in countries whose investment requirements are large in relation to their available financial resources, greatly facilitates the task of determining which projects are of the highest priority in the light of their prospective contribution to the program as a whole. The Bank therefore has encouraged its members to formulate long-term development policies and has provided many of them with technical assistance for this purpose.

The procedures followed by the Bank and IDA in investigating a loan or credit application have evolved with time and experience, and have also varied from case to case. Differences in the conditions and experiences of the countries in which the projects are located, in the extent to which the institutions are already familiar with them, and in the projects themselves, all affect the character of the investigation. No two applications are likely to be handled in exactly the same way.

Wherever possible, the Bank and IDA prefer to have informal exploratory discussions with prospective borrowers before a formal loan request is made. These discussions enable the two institutions to determine whether the project to be financed is of a type which they can consider, and to indicate to the prospective borrower what kinds of information are needed concerning the project and economic conditions in the country. If the prospective borrower is not a government, the Bank requires an indication from the government that it would guarantee a loan for the project before starting any serious investigation.

b) Volume of Bank Lending to ECAFE Region

As of 1968 the Bank has made 171 separate loans to the ECAFE Region totalling \$4.1 billion while IDA has made 53 credits totalling \$1.3 billion. Loans for agriculture represent 14 percent of this total. The breakdown of the total by country is shown in Table 1. India has been the largest recipient of both loans and credits, getting 35 percent of the combined total, and no less than 70 percent of the IDA total. IDA credits have only been made so far to six countries in the Region. Every country except Afghanistan, Indonesia, Vietnam and Nepal has received at least one Bank loan.

Over the past eight years, since the creation of IDA, the volume of Bank/IDA lending to the ECAFE Region has averaged \$444 million per year, of which 37 percent has come from IDA and the remaining 63 percent from the Bank. This represents 44 percent of total Bank and IDA lending during that period. While there has been a general downward trend in the proportion of Bank lending to the Region, from 46 percent for the two years 1960/61 down to 29 percent for the two years 1966/67 to 1967/68 there is every prospect that this trend will be reversed in the near future. On the other hand, the Region's share of IDA lending, with the notable exception of 1967/68 when it was only 23 percent, shows no particular trend, fluctuating between 60 and 90 percent of total IDA lending.

As already mentioned 14 percent of lending to the Region has been for agriculture, compared with only eight percent on average for all Bank lending. The following table shows how Bank/IDA lending for agriculture and water resources has increased since the Bank was created, from \$126 million in the first four-year period to \$601 million in the last four years, an average of \$150 million per year. The ECAFE Region has received 55 percent of all lending for agriculture, of which 60 percent has been for water resources development as opposed to 53 percent as an average for Bank/IDA lending as a whole.

Summary of Bank/IDA Loans and Credits for Agriculture^{1/}
(Four-Year Totals)

	Grand Total of Loans for Agri- culture ----- \$ Million -----	Subtotal of Loans for Water Resources	Water Resource Loans as Percent of Total %	Total Loans for Agri- culture in ECAFE Region -- -- \$ Million -- --	Subtotal of Loans for Water Resource in ECAFE Region	Water Resource Loan as Percent of Total ECAFE Loans %
1948/49 to 1951/52	126.1	42.1	33	65.2	18.0	28
1952/53 to 1955/56	118.1	44.8	38	59.6	6.6	11
1956/57 to 1959/60	189.0	96.3	51	86.8	38.9	45
1960/61 to 1963/64	316.6	256.7	81	214.0	187.2	87
1964/65 to 1967/68	601.4	278.5	46	320.1	197.0	62
Total	1,351.2	718.4	53	745.7	447.7	60

^{1/} Initial loan amounts excluding share of multipurpose projects not allocated to agriculture.

It is clear from the table that the creation of IDA in 1961 resulted in a very large increase in the flow of funds to agriculture and in particular for water resource investment, the share of water resources in total agricultural lending reaching a peak in the first four years after the creation of IDA. In 1964 the Bank began a deliberate drive to increase lending to agriculture, the results of which are apparent in the figures for total lending. This meant, however, that the share of agricultural lending going to water resources fell, although the absolute amount remained more or less unchanged. This is true for the ECAFE Region as well as for lending as a whole. A complete list of all Bank/IDA loans for water resource development, including the full cost of multipurpose, hydroelectric and urban water supply schemes, is attached as Table 2. This shows a grand total of \$961.5 million compared with \$447.7 million for agriculture's share of water resource projects alone.

c) Emphasis on Irrigation in Future Lending

This very large share of agricultural investment going to water resources is a reflection of two things: (i) the high dependence of agriculture upon irrigation or flooding of some kind, making this type of project of high priority for the borrowing country; (ii) irrigation projects, in addition to their importance in increasing agricultural output, lend themselves more readily to the type of project preparation required for Bank financing. Their advantages are numerous. They are capital intensive with a relatively high foreign exchange component. Their average size has been more than twice that of other agricultural loans (excluding machinery import loans to Australia). Project areas and works to be financed are readily definable, the expected economic return is possible to quantify, and disbursement periods are relatively short. Many countries have established irrigation departments to prepare and carry out projects, and, if necessary, experienced consultants can readily be found. Finally, the fact that irrigation usually affects a clearly delimited area under centralized direction, and often involves the settlement of new cultivators or a radical change in farming practices, facilitates the introduction of other agricultural improvements that are required to use irrigation water to full advantage. Irrigation, drainage and flood control projects are therefore likely to continue to offer favorable fields for agricultural lending, subject to the availability of suitably prepared projects.

On the other hand the trend of the past four years, of an increasing share of agricultural lending going for purposes other than water resources development, is likely to continue. The emphasis in Bank operations has now shifted more towards making effective use of available resources by the provision of training facilities, extension education, farm credit, crop storage and so on, than towards massive schemes of resource development. While water resource projects will continue to be important their overwhelming dominance as in the period between 1960/61 and 1963/64 is not likely to recur.

V. STANDARDS TO BE MET WHEN SUBMITTING APPLICATIONS
FOR WATER RESOURCES LOANS AND CREDITS

a) Objectives of Project Appraisal

This section of the paper contains an outline of what the Bank looks for in a project when appraising its suitability for Bank or IDA financing.

Project appraisal is carried out for three main reasons. In the first place, to satisfy the Bank's concern as a development institution that the capital which it lends should make the maximum impact on the economy of the borrower, the appraisal examines the economic need the project is designed to meet within the framework of the economy of which it would become a part. In the second place, the appraisal endeavors to see if the project fulfills an economic need in an efficient way in order to fulfill the Bank's duty to its member countries to use its funds to the best effect. The third aim of the appraisal is to examine the technical and economic soundness of the project since the Bank, as a borrowing institution, must maintain its credit standing in the financial markets of the world.

The appraisal is concerned with six different aspects of a project; the economic, the technical, the managerial, the organizational, the commercial, and the financial.

b) Economic Aspects of Project Appraisal

The chief objective of the appraisal of the economic aspects of a project is to determine whether the project is of sufficiently high priority from the viewpoint of the national economy of the country concerned to justify investment in it. This judgment is greatly eased when a general review of the economy of the country has already been carried out. But, whether such a review exists or not, the economic justification of the project needs to be investigated. An important consideration in such an investigation is the project's internal rate of return. This is obtained by discounting the estimated economic costs and benefits of the project to find the rate of discount which equalizes their present worth.

These cost estimates made, in order to analyze the financial merits of the project, may require adjustment before they can be used to test the project's economic justification. For instance, the financial costs should include interest during construction, but this is not properly included in the economic costs. Costs also will include the full initial cost of equipment which may have a salvage value on completion of the project which needs to be taken into account. Again, costs may include customs duties and local taxes which, being merely transfer payments within the economy, are not true economic costs. Further adjustments to the project costs may also be necessary to take account both of supplementary public investment needed for full development, such as improved farm-to-market roads, as well as of private on-farm investment needed to utilize project services. This would usually only cover cash investment costs. The costs of unpaid family labor are usually excluded, provided this labor is substantially underemployed for part of the year.

The appraisal of the project benefits will be concerned with comparing the situation in the project area as it would be with the

investment as against what it would be if the investment were not made. This involved projecting existing conditions into the future on the basis of present trends as well as projecting "with project" conditions. Apart from demanding consideration of physical possibilities of increasing production (a larger area under cultivation, higher yields, higher value crops), this projection requires an investigation of the demand for the goods and services of the project. A study of this kind may be quite narrow in scope, for instance in the case of a project producing a small volume of foodgrains in a foodgrain deficit country, or it may be nation -- or even world-wide as in the case of a project producing a significant share of an important export crop.

Other questions which will normally be examined during the economic investigation are, for instance, the extent to which the project will put to use domestic resources which would otherwise be under/or unused (such as family farm labor); the effects which the project is likely to have on the balance of payments; the relative merits of alternative ways of providing the goods or services required; the extent to which government policies in the sector concerned are likely to lead to uneconomic investment decisions; and the indirect costs and benefits of the project. Alternative calculations of the rate of return on the project investment may be made using various values for labor inputs or alternative values for the foreign exchange costs of the project if the official exchange rate does not reflect the true value of the currency concerned.

c) Technical Aspects of Project Appraisal

The technical aspects of the project which are considered during the appraisal would include the proposed scale of the project, the types of process or equipment to be used, the location of the project, its layout and design and the availability of the various factors of production. The technical staff available to the borrower, both for carrying out the project and for operating it, is evaluated and a judgment reached whether outside help is required.

If this judgment indicates that consulting engineers or other experts should be brought in to assist those responsible for the engineering arrangements of a project, the Bank may assist the borrower in preparing detailed terms of reference.

The appraisal will examine carefully the estimate of capital and operating costs made for the proposed project to ensure that these have been realistically prepared and include sufficient contingencies to take care of unforeseen engineering costs and the risks of inflation.

In agriculture, particularly irrigation, projects, the availability and quality of the physical resources must also be carefully examined. It is necessary to investigate the quantity, quality and reliability of water resources and the appraisal mission may wish to see the original data from which this can be derived. In many projects, hydrological or rainfall records may be inadequate for accurate estimates. Here the assumptions made in determining water supplies must be reviewed and probabilities of water

shortages determined. If hold-over irrigation storage is involved, or if the project includes power production, the Bank normally will wish to see reservoir operational studies.

Comparison of available water supplies, suitably adjusted for conveyance losses, with estimates of crop water requirements for the proposed cropping patterns, will then establish the adequacy of supplies. It is necessary to make this comparison on at least a monthly basis to ensure that seasonal variations are taken into account.

Technical appraisal of the land resources involves an investigation into the capability of the project lands to yield a sustained level of production during the life of the project with at least an adequate return to the farmer. This will usually require some type of soil survey or land classification to recognised international standards, on which to form a judgment about the soils, and their drainage characteristics. Farm studies will also be necessary to provide data on farming practices, the ability of farmers to grow a larger area of crops, the potential for increasing crop yields, farm costs of production and the level of farm incomes. These studies will form the basis for the calculation of project benefits.

d) Management Aspects of Project Appraisal

The Bank and IDA place particular stress upon the assurance of adequate management for a project. In cases where the appraisal indicates that experienced local management is not available, the Bank suggests that the borrowing country should look for qualified organizations or individuals to assist in running the project, at least in its early phases. The Bank frequently helps the borrower to find such an organization or person, and in some agricultural projects, the Bank is even prepared to engage a small number of individual experts, and to second them to the borrower, to help in the organization and management of projects which it is financing. The services of these individuals are made available to the borrower on a reimbursable basis. In East Africa the Bank has established the Agricultural Development Service, attached to its permanent mission in Nairobi, to provide a pool of experts for employment by governments to assist in the execution and management of agricultural projects in that area.

e) Organizational Aspects of Project Appraisal

The appraisal also looks carefully at the organization proposed for the execution of a project, both during the construction and operating phases. In some cases the Bank has conditioned its assistance upon the creation of an autonomous operating authority insulated from political pressures and the rigidities of government administrative procedures. Where established organizations are already available, the appraisal will mainly be concerned with their past record in planning, operating and executing similar projects. In agricultural projects the appraisal is concerned not only with the construction and operation of the project, but also with the auxiliary services essential for the proposed agricultural development; these would include farm extension services and research, farm credit and

marketing organizations and organizations for providing farm inputs such as improved seeds, fertilizers and pesticides. Many of these are provided by government departments not directly related to the organization of the project and it may be difficult to make specific arrangements for their provision in the project area. In these cases, the Bank will either obtain general undertakings from the borrower that the services will be provided, or else it may arrange for them to be provided directly under the project.

In water development projects involving new settlement, the appraisal would also pay particular attention to legislative and administrative arrangements for new settlement and conditions of land tenure. It would investigate the appropriateness of the size of holding selected, the method of selecting settlers, the arrangements for financing the settler to develop his holding and the adequacy of technical assistance in production.

f) Commercial Aspects of Project Appraisal

The commercial aspects of project appraisal entail a review of all arrangements for buying and selling. In the construction phase, this aspect of the appraisal involves an investigation of the proposed arrangements for buying the materials needed to construct the project. The Bank is concerned that the borrower shall obtain the best value for the money spent - an objective normally attained by requiring international competitive bidding for orders. For the operating phase, an investigation is required of the proposed arrangements for obtaining the raw materials, power and labor needed to operate the project, and for marketing its product.

g) Financial Aspects of Project Appraisal

The appraisal of the financial aspects of the project usually falls into two similar categories. The first is concerned with the amount of money required to bring the project into operation and with the sources from which it is to be obtained, since the Bank loan or IDA credit will only cover a part of the investment cost. The appraisal investigates whether the additional funds are available and on what terms.

The second part of the financial appraisal is concerned with operating costs and revenues and the prospective liquidity of the project in the operating phase. Projections of future operating costs and revenues are needed to determine, for a non-revenue earning project such as many flood control projects, what the recurrent financial burden of operation and maintenance will be; and for a revenue-earning project such as an irrigation project, what the financial return on investment will be and whether the borrower has sufficient working capital. In the light of these projections, a judgment has to be made about the soundness of the financing plan and the need, if any, for financial arrangements to protect the Bank's investment.

Particular problems usually arise in irrigation projects over the appropriate level of water charges that should be levied and what other payments towards the cost of the project can be made by farmers. As a rule, the Bank considers that the project should earn revenues at least

sufficient to cover their operation and maintenance costs. Usually it also looks for some contribution towards amortization of capital. These revenues almost always derive from water charges and accordingly the Bank's policy is that water charges should be levied from farmers in order to contribute toward the cost of providing the benefits they receive. Provided the rate of return on the project is reasonable, the beneficiaries should not find too great difficulty in paying charges at this level. The Bank, recognises, however, that this is not always possible. In some cases, the return to the beneficiaries may be relatively low and they may not be capable of meeting the necessary costs. In other cases the beneficiaries may be so unaccustomed to cash expenses that a substantial water charge may frighten them away from using project water, and therefore invalidate the objective of the project; alternatively, the living standards of the beneficiaries may be so low that, even with the benefits of the project, the government may be unwilling to force them into paying water charges. Typically social and political reasons of this nature, either related to general government policies of agricultural subsidization or to the resistance to change of the agricultural sector, cause governments to set up irrigation projects on a non-revenue-earning basis. While the Bank is flexible in its approach and recognises the political imperatives, it usually examines these reasons with care and tries to induce the borrower to consider the possibilities of raising revenue from those who benefit.

VI. GENERAL BANK PROCEDURES FOR LENDING

a) Project Identification and Preparation

The previous sections of this paper discussed the various aspects of a project which were examined during the course of a project appraisal. It often happens, however, that the Bank becomes involved in a project well before it has reached the stage of being appraised. Bank and IDA lending activities in many countries have been limited by a shortage of well-prepared projects, due usually to the difficulties facing these countries in identifying promising projects and studying them further. In such cases the Bank has adopted a policy of assisting governments to identify and prepare projects to the point where they can be appraised, provided there is a good prospect for operations in the country concerned.

By project identification is meant the preliminary determination of the nature and size of potential projects and the establishment of their possible priority in the country's development program. Where countries have their own development programs which relate the main sectors to the development of the economy as a whole and indicate the relative priority of each sector for investment, Bank assistance in making this preliminary determination may well be unnecessary. Where it is needed the Bank may assist the country through a general economic mission, through a specific project identification mission, through a sector study or through resident missions in a particular country. The shortage of projects has been particularly acute in Africa and in 1965 the Bank established permanent missions in eastern and western Africa whose primary purpose is to assist governments in those areas to identify and prepare projects, specifically agricultural and transportation projects, for Bank or IDA financing.

Even when a project is identified, the country may well not be in a position to bring it to the point where the Bank can appraise it. Such preparation consists of the steps needed to bring a project to the point where its economic and technical feasibility can be determined and where its relative priority within a sector or region can be evaluated. It also involves deciding what government or other public sector policy actions are needed to implement the project. The Bank may advise the potential borrower on how to plan a feasibility study which can accomplish this objective. Such advice would probably cover: the specific information to be gathered; the studies needed to obtain such information; the relative urgency of different aspects of these studies; and the best method of organizing and financing such studies. In particular, prospective borrowers often need advice on whether the consultants they have in mind are suitable and help in drafting terms of reference for consultants and negotiating contracts with them, and supervising the work as it is carried out. Assistance may go beyond providing advice on planning a feasibility study and selecting a consultant to carry it out; it may include helping the country approach UNDP to ask for a loan to carry out the study itself or it may go as far as actually financing the study from Bank/IDA funds. In all these cases the Bank always makes clear that its help does not imply any commitment to finance the project once it has been prepared.

b) Project Appraisal Procedure

Once the project is prepared the feasibility study can be appraised in the manner outlined in the previous section. This appraisal is always accompanied by a detailed examination of the project in the field. In addition to inspecting the proposed site of the project, the purpose of this examination is to check the information submitted, to supplement it if necessary by further enquiries, to discuss various aspects of the project with the potential borrower and with those who have prepared the information submitted and to get to know the people responsible for carrying out the project and concerned with its operation, maintenance and financing.

If, after these intensive investigations, the Bank or IDA is satisfied that a loan or credit can be made to the country and that a project is suitable for financing, the potential borrower is invited to begin formal negotiations. Since many of the problems should have been settled during the course of the project appraisal, these negotiations can usually be brief. Once agreement has been reached, the loan or credit agreement and all supporting documents, together with the recommendations of the President of the Bank, are presented to the Bank's Executive Directors for their approval.

After approval by the Board the agreement can be signed, but it usually only comes into effect upon the fulfillment of certain prescribed conditions, including furnishing satisfactory evidence to the Bank that the agreement is binding upon the borrower. No funds are disbursed until after the agreement comes into effect.

c) Project Supervision

The interest of the Bank or IDA does not end when the agreement comes into effect; it is equally concerned to ensure that the project is properly carried out. Accordingly it requires records to be kept and regular progress reports to be submitted. Such reports are supplemented by periodic visits to the project by Bank staff. On these visits staff members examine the work being done; scrutinize the accounts of the borrower, observe the use and maintenance of goods and equipment purchased with the loan or credit proceeds, and satisfy themselves that the management and administration of the project are satisfactory.

During these missions it is possible to discuss the problems that have arisen in the course of implementing the project and to explore possible solutions. Changes in project specifications may be found necessary and can be mutually agreed upon; and in general the obstacles to successful accomplishment of the project can be reviewed and steps needed to overcome them can be discussed and decided.

VII. OTHER BANK ARRANGEMENTS FOR SPECIAL AND TECHNICAL ASSISTANCE

a) Sector Studies and UNDP Projects

The use of Bank economic missions for the identification of projects and for the assessment of the relative priorities of projects within sectors and of the relative emphasis that should be accorded to particular sectors, has already been mentioned as one method whereby the Bank assists member countries to select projects for investment. Another method which the Bank is increasingly adopting is the use of sector studies. These are studies of one particular sector of a country's economy aimed at the preparation of a coordinated investment program for that sector and the selection of projects within it. The basic conception in this type of study is that the relationships among the individual production units and elements in the sector are so close and so important that their examination and understanding are essential to the effective selection, planning and appraisal of individual projects. This is well illustrated by the power sector where it is clearly necessary that the size, shape and location of individual projects should be determined in the light of an appreciation of the total system of generating and transmission projects which is likely most efficiently to meet the power demand that can be expected to develop in a region or country.

A characteristic of some of these studies is that, unlike other kinds of technical assistance provided by the Bank, they have been carried out by independent consultants, under Bank supervision. Such studies have been conducted in the Transport and Power sectors of several countries in South America. In agriculture the most comprehensive sector study the Bank has carried out has been in West Pakistan in connection with the Indus Basin Development Plan, which was simultaneously a river basin study as well. Apart from this, thorough studies of agriculture have been carried out, usually in cooperation with FAO and UNDP, in Spain, Greece, Morocco, Tunisia, Chile and Colombia.

The UNDP finances the foreign exchange costs of pre-investment studies, but does not itself carry them out. The Bank's willingness to serve as Executive Agency for UNDP depends upon the role it thinks it can usefully play in the country concerned and upon the availability within the Bank of the knowledge and technical competence required for organizing and supervising the study. The Bank first served as Executing Agency in 1959 and up till the end of June 1968 it had been Executing Agency for 49 UNDP sector and feasibility studies for which UNDP had allocated about \$39 million. Sixteen of these studies have been completed; six of them have led directly to Bank loans or IDA credits totalling nearly \$275 million, primarily for road and power projects. At this same date, the Bank itself had financed 52 sector and feasibility studies at a cost to the Bank of \$20 million. Twenty-nine of these had been completed, of which 12 have thus far led to Bank or IDA financing for a total of \$265 million. The Bank has also financed a few "institutional" studies, involving the examination of the structure and capability of an organization such as a power or a port authority or a transport commission. For UNDP agricultural and

water projects, it is rare for the Bank to agree to be the executing agency, because FAO normally fulfills this function.

The Bank, FAO and UNDP have, however, cooperated closely in a number of studies in the water resources sector in the ECAFE Region. In Afghanistan, for instance, a Bank reconnaissance of the Kunduz-Khanabad River Basin led to a UNDP financed study of its development potential with FAO as the Executing Agency. The Bank has retained a special interest in this study and it is hoped that it will later be possible for the Bank to finance part of the cost of the development. Again the Bank is interested in a UNDP study of the Tarai Plains in Nepal including diversion of the Kosi River, for which FAO is the Executing Agency. This is a project which the Bank expects to appraise in due course to see if it is suitable for financing and where the Bank has assisted in drawing up terms of reference for the study. Similar studies are now under way with the three agencies working together in the Mahaweli Ganga Basin in Ceylon, the Chao Phya Plain in Thailand and the Tanjore-Cauvery Delta in Madras State in India.

b) Regional Studies

Whereas a sector study may either be countrywide, confined to a region within a country or embrace the same sector in several countries, a regional study would cover the relationships of several sectors in a geographically defined area such as a river basin or drainage basin. This may extend beyond the boundaries of a single country.

Regional river basins studies are comparative newcomers to the Bank and the only large-scale study carried out to date is that for the Indus Basin in West Pakistan, which is discussed in more detail in section VIII. The distinguishing feature of such a study is the recognition, first that the water supplies of a given river basin constitute a limited resource for which there are multiple and interrelated uses, and second, that specific projects are best developed in the context of a national system which maximizes the economic value of the scarce water resource. In most of the ECAFE countries the use of water for agricultural production and hydroelectric generation offers important development opportunities and river basin studies there would thus focus attention on these opportunities and the related drainage and flood control requirements.

The only study currently under way with Bank assistance in the ECAFE Region is for the Ganges-Brahmaputra Basin within East Pakistan.

Another regional study financed by the Bank in the ECAFE Region, though not specifically related to water resources, is in the Jengka Triangle in Pahang State of Malaysia. This is an area of 300,000 acres which, at the time of the study was primarily under natural rain forest. A Master Plan for the total development of this area, including agriculture, forests, processing plants, communications and settlement, was drawn up. This split the Triangle into a series of staged projects to be implemented over a period of 12 years. The first stage of this Plan has recently been financed by the Bank and covers 34,500 acres.

c) Projects on International Waters

In the same way that river basin studies reflect the need to reconcile competing uses for a single water resource, so do projects on international waters reflect the need to reconcile competing uses between countries for the same resource. The construction of a project in an upstream country either for navigation, flood control, power, irrigation or water supply often has important repercussions on the availability of water in a downstream country. There are also great economic advantages to be gained from the conception of a river basin as a single investment unit, for instance it may be cheaper to control floods in the lower reaches of a river by storage reservoirs in the head reaches than by embankments in the lower parts. But where the river is shared by more than one country it may require international action to obtain such economies of investment.

The Bank has to date only been actively involved in the settlement of one dispute over the use of international waters, that of the Indus River. A Treaty dividing the waters of this river and its tributaries between India and Pakistan was agreed upon in 1960 after eight years of negotiations between the two governments. Foreign exchange contributions totalling \$1,200 million were committed to a Basin Development Fund by the Bank, the two riparian States and six of the Bank's Part I countries -- Australia, Canada, Germany, New Zealand, the United Kingdom and the United States. While probably not producing the most economic solution the Treaty resolved a dangerous dispute between the two riparian states.

In all projects which the Bank appraises and which involve international waters the Bank has to be satisfied that all international aspects of the project have been considered and that two conditions are fulfilled:

- i) either that any issues involved are covered by appropriate arrangements between the borrower and other riparians, or that the other riparians have stated (to the borrower or the Bank) that they have no objection to the project;
- ii) that the project is not harmful to the interests of other riparians and their absence of express consent is immaterial or their objections are not valid.

d) FAO/IBRD Cooperative Program

When the Bank Group decided, in 1964, to increase its activities in the fields of agriculture and education it entered into agreements with FAO and UNESCO for jointly financed cooperative programs under which these two institutions work with the Bank Group in their respective fields by assisting governments to identify and prepare projects for Bank Group financing. Project appraisal and supervision continue to be the responsibility of the Bank but FAO and UNESCO staff sometimes participate in these

activities. These arrangements have enabled the Bank to draw on the expertise and experience of FAO and UNESCO and, as a result, the number and quality of agricultural and educational projects coming forward for financing has been increased.

A small irrigated land settlement scheme in Ceylon, recently financed by the Bank, is one instance where the Cooperative Program worked jointly with the Bank on a project. Another project presently under consideration is for bringing wet season irrigation to increase the intensity of rice cultivation in Korea. Other projects in which the two agencies have worked together include a flood control and drainage project in the States of Punjab and Haryana in India, the Dez Irrigation project in Iran and the Mahaweli-Ganga project in Ceylon.

e) Other Technical Assistance

The main types of Bank Group assistance to member countries have been outlined in the preceding paragraphs: assistance in project identification and preparation, either through grants and loans or through secondment of personnel or through cooperation with other international agencies; assistance in sector, regional and feasibility studies through these same channels; assistance in specific countries through resident missions; and assistance in project management through consultants or by the secondment of Bank personnel.

The Bank also provides technical assistance of an advisory nature in special circumstances. A specific instance of this type of help was when the Bank undertook, in 1965, to meet the foreign exchange costs of continuing for three years the assistance provided by the Development Advisory Service of Harvard University to the Planning Commission of Pakistan and the East and West Pakistan Planning Departments. Other examples are the provision of Bank staff members to Thailand to advise the National Economic Development Board and the Committee for Development of the North East.

In addition, the Bank is now involved in a major technical assistance effort in East Pakistan. A group has been set up within the Bank whose task is to assist the East Pakistan Government and its agencies in determining priorities, reviewing and advising on development measures, and in identifying, preparing and implementing development projects. Another important task of the Group is to help the Government coordinate the numerous types of multilateral and bilateral assistance which the country is receiving, in order to put it to the most effective use.

Another form of Bank technical assistance is the direct training it provides to senior officials from its member countries. Over the past 10 years some 250 officials from the ECAFE Region have participated in various courses conducted by the Economic Development Institute, the Bank's staff college in Washington, D.C. The Bank has also conducted two training courses within the Region, one in Jaipur, India and the other in Karachi, Pakistan to help meet specific regional needs for training in development planning.

VIII. TWO EXAMPLES OF BANK PROJECTS

The Study of the Water and Power Resources of West Pakistan (The Indus Special Study) and the Dez Multipurpose Project in Iran have been chosen as two examples of the Bank's work in water resources development to illustrate some of the aspects discussed in the preceding chapters.

a) The Indus Special Study

In September 1960 India and Pakistan settled a long-standing dispute on the use of the waters of the Indus River and its main tributaries, by signing the INDUS WATERS TREATY 1960. This agreement was reached through the good offices of the Bank and as a result of the willingness of a number of countries and the Bank to make financial contributions towards the cost of the major works involved in Pakistan. Concurrently, the Indus Basin Development Fund Agreement 1960 was signed by Australia, Canada, Germany, New Zealand, Pakistan, the United Kingdom, the United States and the Bank. Commitments to the Indus Fund, for which the Bank agreed to act as administrator, amounted to the equivalent of US\$895 million.

Under the Treaty, Pakistan will have the use of the waters of the Indus and its two western tributaries, the Jhelum and Chenab, while the waters of the three eastern tributaries, the Ravi, Beas and Sutlej, will be allocated to India. This allocation of waters necessitated the construction of works to transfer water from the Indus, Jhelum and Chenab in the west to meet irrigation requirements in Pakistan hitherto met from the three eastern tributaries. The system of canals and reservoirs to be constructed would also provide substantial irrigation development and develop important hydro-electric potential in Pakistan. In addition to link canals, barrages and associated structures, the program of works contemplated originally included the construction of two large dams, one on the Jhelum (Mangla) and the other on the Indus River (Tarbela). The funds provided were estimated at that time to be sufficient to cover the total cost, foreign exchange and local expenditure, of the program of works to be constructed in Pakistan. Once work was begun, however, it became clear that substantially increased funds, at least double the amounts available, would be needed to complete the works contemplated under the Treaty. Contributing governments were not prepared to subscribe the full amount of additional funds needed but under the Indus Basin Development Fund (Supplemental) Agreement of 1964, an additional amount equivalent to US\$315 was made available by the parties to the 1960 Agreement, to cover the balance of the foreign exchange costs of the works.

Under the terms of the Supplemental Agreement of 1964, first priority was to be given to financing completion of the works included in the original program with the exception of the dam on the Indus River and some tubewells and drainage works. This Agreement also made provision for a Study of the Water and Power Resources of West Pakistan to be carried out by the Bank to establish the justification for a dam on the Indus or some other water project. Any balance of foreign exchange remaining available to the Indus Fund would be used to meet the foreign exchange costs of the

Tarbela project if, on the basis of the Study, Pakistan and the Bank agreed that the Tarbela project was justified, or, if not, some other project in the water and power sector to be agreed between Pakistan and the Bank on the basis of the Study.

The first objective of the Study was to complete an interim report covering the technical feasibility, the construction cost and the economic return of a dam on the Indus at Tarbela by the end of 1964. The broader aspect of the Study, which was expected to take about two years, was to carry out a comprehensive study of the water and power resources of West Pakistan, primarily but not exclusively related to the potential for agricultural development. The Study was to be sufficiently detailed to assist the Pakistan Government in formulating a sound program for the systematic exploitation of the water and power resources of West Pakistan and determine which of the several potential water and power projects were economically viable and feasible of execution in the next two Five Year Plans (1965-1975).

The President of the Bank appointed Dr. Pieter Liefstinck - an Executive Director of the Bank and former Finance Minister of the Netherlands - to head the Study and several senior members of the Bank's technical staff were assigned to assist Dr. Liefstinck in the organization and execution of the Study. This nucleus is referred to collectively as the Bank Group.

To provide the various skills required for the complex and detailed field work involved in carrying out a comprehensive investigation of the water resources of West Pakistan, the Bank Group obtained the services of a number of consulting firms of international repute - three in the field of irrigation and agriculture, one for dam sites and one for the power aspects of the Study. The Bank Group, the Pakistan authorities and the consultants worked in close cooperation throughout the whole of the study. All phases of the work, starting from the consultants' terms of reference, were discussed in detail with the Pakistan authorities. To ensure a regular exchange of views and to guide the investigation along the right lines, coordinating committees were set up with the Pakistan Government for irrigation and agriculture, power and dam sites.

Following a considerable amount of preparatory work, the Study got under way effectively in May 1964 when the consultants began their assignments in the field. The first phase of the Study - the Bank Group's obligation to provide an interim report on the Tarbela project separately - was virtually completed by the end of 1964 although the Bank Group's final report was not submitted until February 1965. The second phase of the Study - which was to result in comprehensive reports on the development of the water and power resources of West Pakistan - took longer than the two years originally anticipated.

The consultants' reports provided the basis for long, penetrating and detailed discussions between the Bank Group and the Government of Pakistan, the Government of West Pakistan and affiliated agencies. Senior members of the consulting firms which had shared in the Study participated

at these discussions. Following discussions with the Government in Pakistan in November 1966 the Bank Group prepared its report based upon the work and findings of the consultants, suggestions made by the Pakistan authorities and on experience and studies carried out by the Bank Group itself. This report, consisting of four volumes and annexures, completed the Study.^{1/}

The first volume of the report is concerned with integrating the results of all the studies and relating these combined results to the context of development and development planning in West Pakistan. The second volume presents in detail the recommended program for the development of irrigation and agriculture in West Pakistan. It deals with the agricultural potential of the Province and the steps needed to realize that potential - not only surface and ground water development projects but also policies and institutional measures to secure improvements in farming standards and wider usage of farm inputs. The third volume treats in detail the several alternative sites for surface water storage which have been identified - in particular Tarbela, Kalabagh and High Mangla - and sets forth a tentative schedule for their development. The fourth volume projects the long-term growth of power loads in West Pakistan and proposes a program for meeting those loads.

The Study reached the conclusion that the Tarbela Project is technically and economically feasible and that in order to meet Pakistan's urgent needs for greater agricultural production and to derive the greatest advantage from the Project when completed, a major effort must be made in the interim to modernize agriculture by improvement of farm practices and wider use of technical inputs such as fertilizer, improved seed and modern technology generally.

The Study deals comprehensively with West Pakistan's water and power resources as a whole. It considers the need for increased supplies of irrigation water, relative to other means of increasing agricultural production, and finds them essential complements to one another. It analyzes in detail the several alternative means of providing more water for irrigation purposes -- enlargement of canals to enable increased diversions from the rivers, storage of flood flows in surface reservoirs for release in winter when river flows are low, and development of West Pakistan's extensive groundwater resources by means of tubewells. Implications of each alternative mode of water development for electric power - both hydro-electric potential at dam sites and requirements of energy for tubewell pumping - have been studied in the context of the long-term development of the entire electric power system of the Province. The potential of each mode of development has been assessed in the light of the contributions it can make, both on the irrigation side and on the power side, to further economic development in West Pakistan.

^{1/} Water and Power Resources of West Pakistan - A Study in Sector Planning - will be published for the World Bank by the John Hopkin's Press in December 1968.

In addition to the Tarbela dam, which is estimated to cost over \$800 million equivalent and will impound some 11 MAF of water, 13 other water development and one major drainage project have been selected for execution in the years before 1975. Their relative priority has been assessed, on the basis of detailed studies of the long-term potential for integrated water resource development, assessment of what part of this potential it may be physically, administratively and financially feasible to realize before 1975, and preliminary studies establishing the technical feasibility of the specific projects, their anticipated investment and operating costs, and the benefits they could yield to the economy of West Pakistan.

Beyond an Action Program proposed for development of agriculture, irrigation and power in the years before 1975, the report also deals with prospects through the remainder of this century but especially with suggested steps for further development of the irrigation and power systems of the Province in the decade 1975-1985. These steps can only be formulated more tentatively than those needed in the early years, but it is intended that they should be a useful guide to future development possibilities. All the proposed programs, whether for the early period or for later years will need continuous revision and updating in the light of new information as it becomes available.

The Tarbela Dam is the biggest single project and forms the centerpiece of the Action Program put forward for the ten year period 1965-75. Tarbela represents about 17 percent of the total public-sector costs of the recommended program. The proposed public sector expenditures on agricultural development - fertilizer, plant protection, seeds, extension, etc. - represents the largest single block, more than 30 percent of the total program costs. Public expenditures on irrigation and drainage (in addition to Tarbela) represents about 23 percent of the total public sector costs. This includes the installation and energizing of some 18,000 public tubewells in 17 different projects and horizontal drainage over some 3.5 million acres. The proposals in the field of electric power - which include generation, transmission and distribution - account for about 28 percent of the public sector cost of the Action Program.

Impressive as the public sector program is, private groundwater exploitation will be clearly dominant amongst the activities increasing water availability for irrigation up to 1970 and will continue to make a very important contribution up to 1975. Success of the total program thus depends heavily on a continued increase of private initiative in tubewell installation, and this should receive every encouragement.

Financial arrangements for the construction of Tarbela have been completed and the contract for its construction has been let.

b) The Dez Multipurpose Project

The Dez multipurpose project is an example of a large water development project covering power, irrigation and flood control in Iran. It illustrates, amongst other things, the long period over which the

development of such an area may extend, the care that is necessary to ensure that the phasing of investment does not outrun the pace of development and the importance and complexity of the supporting services required.

The Dez River is located in Khuzistan in the south west of Iran. Apart from the population centers, extensive oil deposits and the refinery at Abadan, much of the area is bare mountains and desert. There is some agriculture in the project area, mostly dry farming with a small irrigated area using water diverted from the rivers but production is severely limited by water availability.

In the 1950's the Iran Plan Organization engaged a firm of consultants to draw up a long range program of development for the Khuzistan area. The Dez multipurpose project, the first project in this program, was first submitted to the Bank in September 1957, and by October 1958 enough data were assembled for a Bank mission to visit Iran and review it in the field. The mission decided that much of the data needed to be firmed up and it was not until June 1959 that the Bank completed a tentative appraisal of the project.

The main conclusions of the first appraisal were that, while the project was sound from an engineering point of view, a large investment in developing irrigation over the entire area of some 110,000 hectares, could not be justified until experience on a smaller scale had demonstrated that organizational administrative and technical problems could be solved and that crop yields and benefits believed to be attainable could in fact be achieved. The Bank therefore suggested alternative developments involving a pilot scheme to gain experience and reduce the risk of a large misplaced or mistimed investment.

In August 1959 the Plan Organization put up an alternative proposal including a pilot irrigation scheme covering 20,000 hectares on which to develop and try out the proposed project organization and production methods. The required data supporting this alternative scheme were submitted to the Bank in January 1960 and in February the Bank's appraisal report was submitted to the Executive Directors for approval. A Bank loan amounting to \$42 million was signed on February 20, 1960.

In the meantime, work on the site had proceeded. The access road to the dam site and the tunnel to the power house, the construction camp and diversion dam had been completed and contracts for the major items of equipment and the principal civil works had been awarded by means of international competitive bidding. Contrary to the Bank's present general practice the Bank loan of \$42 million included some retroactive financing and covered the foreign exchange cost of all the works so far completed (about 15 percent of the total cost) as well as the cost of the dam, power generation, transmission and distribution facilities, and the pilot irrigation scheme. Agreements reached with the government in association with the loan provided, amongst other things; that the loan would not become effective until a Bank engineering review board had approved the design of the dam; that the borrower would set up an Authority to carry out and operate the project (which became the Khuzistan Water and Power

Authority or KWPA); and that the borrower would not proceed with any other major irrigation works, either inside or outside the original project area, until the initial scheme had been under irrigation for three years.

Construction of the dam, hydroelectric plant and transmission system proceeded virtually on schedule and final project costs were about nine percent above the original estimate. The first generating unit began producing power in May 1963. The Dez Pilot Irrigation Project (DPIP) suffered a number of delays in construction and was about one-and-a-half years behind schedule when it was launched in 1963. Despite difficulties arising out of implementation of the Land Reform Law and failure to level the irrigated area, the gross value of production (at constant prices) on the DPIP has nearly tripled between 1963 and 1968. In the process, KWPA has gained some experience in the construction, organization and management of a controlled irrigation scheme and has laid the foundations of an organization which can be enlarged to serve new areas as they are brought under irrigation.

By July 1966 it was considered that sufficient experience had been gained to warrant proceeding with the development of an additional part of the remaining area. The Government of Iran submitted a feasibility study covering the development of the balance of the project area. An appraisal mission from the Bank, which visited the site in November 1967, was not entirely satisfied with the soil conditions and recommended further investigation by a team of soils experts. The soils experts who visited the site in February 1968 concluded that some of the soils in the project area suffered from slow infiltration and would require careful water management but that the soils on the whole were suitable for sustained irrigation.

In further discussions with the Government and KWPA, agreement was reached to phase the further development of the project area and at the time of writing, the Bank is considering an application from the Government of Iran for a Bank loan to assist in the financing of a further 37,000 hectares. This, when completed - hopefully in 1974 - together with the DPIP will make a total area of 57,000 hectares under controlled irrigation and leave a further 50,000 hectares still to be developed by water from the dam completed in 1963.

In addition to the normal civil works, it is anticipated that this project will make adequate provision for the essential project organization, supporting services and further studies by including in the project and the loan application:-

Organization charts and the physical facilities required for project management. These will include three District centers with workshops and equipment for operation and maintenance of the system as well as houses and facilities for project staff;

The formation of agricultural societies as well as provision for the establishment of some large scale mechanized farms;

Studies to cover and draw up detailed plans for: land redistribution and consolidation, expansion and improvement of marketing services, operation of the project's Agricultural Services Department and agricultural credit. Also some further studies are required to complete detailed planning of some aspects of the project (land drainage) and for the preparation of the next phase;

Provision of the necessary consultant services to cover construction, development of the necessary project facilities and organization and operation of the project.

TABLE 1

BANK AND IDA LENDING TO ECAFE REGION
(Cumulative Total to 30 June, 1966 \$Million Equivalent)

Country	BANK		IDA		TOTAL	
	No.	Net Amount ^{1/}	No.	Net Amount ^{1/}	No.	Net Amount ^{1/}
India	36	1,007.2	21	887.4	57	1,894.6
Japan	31	857.0	-	-	31	857.0
Pakistan	24	459.9	24	331.1	48	791.0
Australia	7	417.7	-	-	7	417.7
Iran	11	334.9	-	-	11	334.9
Thailand	19	292.0	-	-	19	292.0
Malaysia	7	194.5	-	-	7	194.5
Philippines	10	146.3	-	-	10	146.3
China	7	104.2	4	13.1	11	117.3
New Zealand	4	102.1	-	-	4	102.1
Singapore	6	72.2	-	-	6	72.2
Ceylon	4	41.3	1	2.0	5	43.3
Burma	3	33.1	-	-	3	33.1
Korea	1	5.0	2	25.0	3	30.0
Papua and New Guinea	1	7.0	-	-	1	7.0
Afghanistan	1	-	1	3.5	1	3.5
	171	4,074.4	53	1,262.1	224	5,336.5

^{1/} Net of cancellations, refundings and terminations

TABLE 2

Chronological List of Water Resource Development Projects
Financed by Bank/IDA in ECAFE Region 1/

<u>Year</u>	<u>Country</u>	<u>Project Description</u>	<u>Total 2/ Loan/Credit \$ Million</u>
1949/59	India	Damodar Valley Multipurpose project	18.5
1950/51	Thailand	Chao Phya Irrigation project, Phase I	18.0
1952/53	India	Damodar Valley multipurpose project	19.5
1954/55	Ceylon	Aberdeen Laksapana hydroelectric project	19.1
1957/58	Japan	Aichi multipurpose project	7.0
	Philippines	Binga hydroelectric project	21.0
	Thailand	Yanhee Dam multipurpose project	66.0
1958/59	India	Damodar Valley multipurpose project	25.0
	Japan	Hatanagi hydroelectric project	29.0
	Malaysia	Cameron Highlands hydroelectric project	35.6
1959/60	Iran	Dez multipurpose project	42.0
1960/61	Pakistan	Indus Basin Development Fund	90.0
1961/62	Australia	Snowy Mountains hydroelectric project	100.0
	China	Groundwater development Project	3.7 *
	China	Taipei municipal water supply project	4.4 *
	India	Uttar Pradesh tubewell project	6.0 *
	India	Shetrunji irrigation project	4.5 *
	India	Salandi irrigation project	8.0 *
	India	Sone irrigation project	15.0 *
	India	Punjab flood protection and drainage projects	10.0 *
	Pakistan	Dacca-Demra irrigation and flood control project	1.0 *
	Pakistan	Khairpur salinity control and tubewell irrigation project	18.0 *
1962/63	India	Purna River Valley irrigation project	13.0 *
	Pakistan	Brahmaputra flood protection embankment project	5.0 *
	Philippines	Maria Cristina Falls hydroelectric project	3.7
	Thailand	Petchburi irrigation project	3.4
	Thailand	Chao Phya irrigation project, Phase II	5.6
1963/64	Malaysia	Batang Badang hydroelectric project	51.9
	Pakistan	Chandpur irrigation and flood control project	9.0
	Pakistan	Dacca and Chittagong water supply and sewerage projects	50.0 *
1964/65	Pakistan	Indus Basin Development Fund	58.5 *
	Pakistan	Inland Waterways Development	5.3 *
	Philippines	Manila water supply project	20.2
	Singapore	Singapore water supply project, 1st stage	6.8
	Thailand	Yanhee hydroelectric expansion	6.0
	Thailand	Me Klong River multipurpose project	22.0
1965/66	India	Beas multipurpose project	23.0 *
	Malaysia	Muda irrigation project	45.0

Table 2 (continued)

<u>Year</u>	<u>Country</u>	<u>Project Description</u>	<u>Total Loan/Credit \$ Million</u>
1966/67	Malaysia	Kemubu irrigation project	10.0
	Pakistan	Lahore water supply, sewerage and drainage project	1.8 *
	Singapore	Water supply and electric trans- mission project	23.0
1967/68	Thailand	Yanhee hydroelectric expansion	5.0
	Ceylon	Small pump irrigation projects	2.0 *
	Iran	Ghazvin irrigation project	22.0
	Thailand	Phasom Dam project	26.0
<u>Total Bank and IDA Lending</u>			<u>961.5</u>

1/ Including multipurpose, hydroelectric and urban and domestic water supply projects.

2/ Projects marked with * financed through IDA credit, otherwise through Bank loan.

S-Water

August 14, 1968

Mr. Fred Merryfield
Cornell, Howland Hayes & Merryfield
1600 Western Avenue
Corvallis
Oregon 97330

Dear Fred:

Attached is the agenda items which we discussed during our
telephone conversation yesterday.

Please let me know if I can be of further assistance.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

August 11, 1968

Mr. Fred Merryfield
Cornell, Howland Hayes & Merryfield
1600 Western Avenue
Corvallis
Oregon 97330

Dear Fred:

Attached is the agenda items which we discussed during our
telephone conversation yesterday.

Please let me know if I can be of further assistance.

Yours very truly,

Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman\pdt

1968 AUG 12 12:17

INTERNATIONAL WATER SUPPLY CONGRESS - 1969

SUGGESTIONS FOR AGENDA AND PARTICIPANTS

1. PLANNING AND FINANCE

Mr. Harold R. Shipman
World Bank
Washington, D.C.

2. METER READING, BILLING AND COLLECTING

Eng. A. Cajina,
Empresa Aquadora de Managua
3a, Avenida, N.E.
7a Calle,
Managua D.C.
Nicaragua

K. S. Khong
Chief, Water Engineer
Public Utilities Board
City Hall
Singapore 6

3. REDUCTION OF WATER LOSSES

K. S. Khong (See above)

4. MANAGEMENT IMPROVEMENT, TRAINING AND PERSONNEL POLICIES

G. W. Hagen
Ghana Water & Sewer Corporation
P.O.B-M 176
Accra
Ghana

or Clinton Davis
Secretary/Manager
National Water Authority
Kingston
Jamaica

5. DATA COLLECTION

A. Moche
Water Engineer
Nairobi City Council
Nairobi
Kenya

6. PROJECT DEVELOPMENT

Paul Bierstein
World Health Organization
Avenue Appia
1211 Geneva
Switzerland

7. CONSTRUCTION

E. Frazier
Chief Engineer
Kingston Water Commission
Kingston
Jamaica

or Chong Koon Kee
Assistant Director
Water Supply
States of Maylasia
Maxwell Road
Kuala Lumpur
Maylasia

or Domingo Ruiz
Chief
Office of Special Projects
Instituto Nacional de Obras Sanitarias
Caracas
Venezuela

8. EQUIPMENT AND SUPPLIES

Chong Koon Kee (See above)

or Tsu-Suan Chang
Chief Engineer
Bureau of Public Works
Taiwan Prov. Government
Taipei
Republic of China

CROSS REFERENCE SHEET

COMMUNICATION: Memo

DATED: August 8, 1968

TO: Mr. Chadenet

FROM: Mr. Knox

FILED UNDER: LIAISON - WHO

SUMMARY: Re: Possible Collaboration between WHO and the Bank on
Water Supply and Sewerage Secotr Studies.

Mr. Harold R. Shipman

August 8, 1968

Juergen Krombach

SEWERAGE QUESTIONNAIRE

1. As you had suggested in reply to my memo of August 1, (which is attached), I have completed my review of the new draft Sewerage Questionnaire and have drawn up some examples to explain my proposals to
 - a) further shorten the questionnaire text by shortening phrases and avoiding repetitions and unnecessary details;
 - b) replace the present long text with the short Table of Contents by a detailed list of topics (plus explanatory footnotes where necessary).
2. Re a), I am attaching a re-draft of the Introductory Page and of Chapters I and IIa. Notwithstanding my attempt to "shorten", I have subdivided some paragraphs, which cover topics of a different nature or degree, into separate questions. I have also rearranged the introduction to Chapter II by presenting its contents in form of questions rather than as an unstructured text. The exercise reflected in my partial re-draft, could be continued for the remaining part of the questionnaire and would result in saving of space and improving clarity. For example, I fail to see any need to repeat in every question, standard language, such as "explain, describe, provide, indicate, give, discuss, furnish, summarize etc". Another example is Chapter V (the project) where the first phrase of the introduction to Section C "cost estimates" emphasizes clearly enough the need for detailed data and the following questions 11.01, 11.02, 11.03 and 11.06 begin again with "provide detailed estimates for"
3. Re b), I attach a copy of the "detailed table of contents", which I had prepared for the original draft of the Sewerage Questionnaire (1966) and which, therefore, differs somewhat in the sequence of numbers and topics from the new draft. However, I think it shows what I have in mind when I refer to a "detailed list of topics to replace most of the present text". As mentioned in my August 1 memo, and above, this list could be supplemented by explanatory notes, but these need not cover every detail of the present text. I think we should, having established a detailed-enough framework, leave it more to the "applicants" and their consultants to determine how this framework could best be applied to their particular case, and to decide how many ramifications of a certain aspect are important enough to be presented in their reply to the Questionnaire.
4. I admit that I am biased from my experience with the "Bogota Water" and the "Bombay Water" Projects where the even more detailed-Water Supply Projects' Questionnaire has contributed more to confuse the "applicants" than to result in useful information or information presented in a useful manner.

JKrombach/bc

Mr. Harold R. Shipman

August 1, 1968

Juergen Krombach

SEWERAGE QUESTIONNAIRE

1.- Since you requested comments on the draft questionnaire by today, I would like to make the following preliminary remarks, although I have not completed my detailed review of the draft.

2. While I appreciate that the text volume has been reduced compared with the original draft of 1966, my general reaction is still the same as reflected in my comments on that draft (Memo of June 23, 1966 to Mr. Armstrong), from which I quote, "the questionnaire is too long, (the same refers to the Water Supply Questionnaire) for two main reasons;

(a) too detailed questions for our objectives

and (b) too long, often repeated and sometimes unnecessary phrases (a short indication of the information required would be sufficient in many cases).

Instead of the present very short and general Table of Contents on one hand and the long phrase text on the other hand, I would prefer a more detailed Table of Contents with an indication of the subject of each paragraph and an as much as possible reduced text, which could be explanatory foot-notes to the various paragraphs where necessary".

3. In addition, I have a number of (i) questions on the meaning of some details and (ii) suggestions of an editorial nature, which I can pass on to you verbally, or, if you prefer, in writing, after I have completed my review.

JKrombach/bc

August 1, 1968

Mr. Leonard Millis
Secretary General
International Water Supply Congress
and Exhibition
34, Park Street
London, W.1
England

Dear Mr. Millis:

Many thanks for your letter of July 29. I am very happy to note that the committee has not forgotten the developing countries in the Agenda and that provision is being made for discussions at the Vienna meeting.

I do hope to be in attendance at the Vienna meeting next year, work permitting.

Please accept my best regards and thanks for your letter.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

Control No: MISC-8-43

5. water
August 1, 1968

Mr. Philip Cohen
U. S. Geological Survey
1505 Kellum Place
Mineola, N.Y. 11501

Dear Mr. Cohen:

This is to confirm our telephone conversation of today in which I indicated that the tentative title selected for the paper which I am to present at the Water Resources Conference is "Metropolitan Area Water Problems in the Developing Countries". You will note my full name and title below.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

5 Water
July 25, 1968

Mr. Leonard Millis
Secretary General
International Water Supply Association
34, Park Street
London, W.1
England

Dear Mr. Millis:

I have just returned from a trip to the Far East and Europe, where I had the opportunity to discuss with a number of water works officials the forthcoming International Water Supply Congress in Vienna. Some had read an editorial in one of the issues of AQUA and had noted reference to the program planned for the Congress. Each expressed surprise that no mention was made to a place on the program devoted to the specific problems and interests of the developing countries.

I must say that I am personally concerned about this situation and hope that the information thus far provided in connection with the agenda is only preliminary and that full consideration is being given to assigning a reasonable number of spaces on the agenda to specific topics of interest to water works personnel from the less developed areas and to those engineering firms and agencies working in such areas.

I have written to Professor Merryfield inquiring what disposition was made of the resolution passed by the meeting which he chaired in Barcelona and which was devoted to the developing countries. The resolution called for more time and attention to be devoted to the water supply problems in the developing areas of the world at the next Congress and designated WHO as the agency which might best provide the liason with the International Water Works Association in the formulation of appropriate agenda items.

I hope that the program committee will be informed of the need to give appropriate attention to this matter.

Please accept my best regards.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

cc: Mr. Bierstein, WHO

HRShipman/pbf

5. Water
July 25, 1968

Mr. Fred Merryfield
Cornell, Howland Hayes & Merryfield
1600 Western Avenue
Corvallis
Oregon 96330

Dear Fred:

I have just returned from a trip to Europe during which time I had an opportunity to stop for a couple of days in Geneva for a meeting with WHO.

Among other things, I raised the question with WHO as to the program which was being set up for the International Water Works meeting in Vienna next year. I learned with surprise that WHO has not been asked to assist and I have noted from AQUA, the IWWA Quarterly, that no provision is made in the agenda to present the problems of the developing countries. I wonder whether this is being handled in some other way.

You may recall that in the meeting which you chaired in Barcelona, a resolution was passed by the meeting in which not only was it requested that special attention be given on the agenda to problems of the developing countries for the next meeting but that WHO should be designated as the liason group with the Association to ensure that the agenda would reflect the interest of the countries. Professor Krul of the Netherlands made the motion.

You may also recall in Barcelona that at the session devoted to the developing countries, attendance was excellent and there was great interest demonstrated on the part, not only of representatives from the developing countries, but from consulting engineering firms, professors and others from the most developed countries. These were people who have a direct interest in water supply problems of the developing countries. I am therefore very much concerned that the program committee is apparently going ahead with arrangements for the Vienna meeting, completely ignoring that part of the membership which is interested in the developing

Mr. Fred Merryfield

July 25, 1968

areas of the world. I feel that this matter ought to be called to the attention of the committee and steps immediately taken to ensure that at least one full day's program is set aside for the topic.

I am taking the liberty of sending a copy of this letter to John Copley since I believe that the International Activities Committee of the AWWA should do what it can to encourage the International Water Works Association to properly dispose of this matter.

Please accept my best personal regards and my greetings to your wife.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

cc: Mr. John Copley
Mr. Paul Bierstein, WHO

HRShipman/pbf

Mr. E. Lerdau

July 25, 1968

A. Meroz

Your Comments on "Urban Demand for Water in Developing Countries"

Thank you for your comments of July 11, 1968. I'd like to answer them and hopefully to clarify some of the issues. I shall follow your order.

Paragraph 2: I am referring here to the possibility that cultural and religious conditions may change over time even in a given country. You are quite correct by implying that this is not likely to occur rapidly and hence would not bias extrapolations for a few years. However, changes in these variables could occur over say, a 20 year period. Changes in climate (other than unpredictable year to year changes) are indeed unlikely for a given country.

Paragraph 12: I agree that a refined water consumption study should estimate the effect of number of connections per consumptive unit on levels of water consumption. Having established such an effect, the cross price elasticity of price of water and demand for connections, should be looked into.

Regarding your suggested relation between the price of water sold and the quantity of free water consumed (which I understand to be free water consumed through public hydrants), my impression is that more often than not, there would be an effective quantitative constraint on supply of free water, that if your suggested relation holds, it would be revealed by increased excessive quantity demanded of free water at given price of water sold through house connections.

Paragraph 16 (15?): The various weather indices were tried in multiple regressions; regarding the use of simple regression, see footnote 1 on page 6.

Table 3: The sign should be negative (typing error).

Tables 2 and 3: Correlations between price and income variables range from -0.18 to 0.06 in the various samples. Correlations among other variables vary between -0.24 and 0.20, with the exception of the one between "percentage of population served" and income, which is 0.35.

Paragraph 32: The linear equation was preferred to the logarithmic one because of a better fit (to the sample of observations I used). Therefore, in this specific, though limited, case, the relations between price elasticity and income levels hold in the range of values covered by the sample.

Mr. E. Lerda

- 2 -

July 25, 1968

The hypothesis you suggest to test is actually that at very low income (and consumption) levels, the income elasticity of water demand would be zero. I suspect that on a priori grounds this might be the case for such extremely low levels of water consumption, that are outside the scope of being a "case" for a water supply project. However, very little could be said before this hypothesis is tested.

The difficulty of getting a negative consumption is not peculiar to linear formulation. You could find the same difficulty with, say, semilog formulation, although the range of values of independent variables which result in negative consumption might be different.

The range of values of price and income variables which would result in a positive consumption, using the linear equation (1.5) is $Y = 0$ and P up to \$0.63 per 1,000 gallons; Y up to \$49 and P up to \$0.67; Y up to \$100 and P up to \$0.70 and so forth. Obviously, what really matters is the error of forecast, which increases exponentially as values of independent variables move from their mean sample values. But, for any given set of values the forecast error would be smaller when calculated from a better fit equation.

Paragraph 38: I think that the similarity of the estimates is interesting and noteworthy, however, their almost virtual identity is certainly coincidental.

Paragraph 51: The subject of the paper was confined to deal with the demand for water; a discussion of implications to investment decisions in urban water supply obviously extends the subject matter of this paper.

The sentence you quote holds regardless of which particular pricing decision rules are used, since demand reaction to price changes are independent of pricing decision rules.

Three sources may account for variations in consumption not explained by the regression: (a) Ignored explanatory variables, (b) Wrong specification of the included variables and errors in their measurements and (c) Some of the consumption variation is stochastic and not systematically subject to variations in other variables. The unexplained variation is probably accounted for by all three sources. I am unable to estimate the relative share of each of them.

cc: Mr. van der Tak
Mr. Reutlinger

AM
AM:jlh

5- Watey
July 19, 1968

Mr. Harris F. Seidel
Director
Water and Pollution Control
City of Ames
Iowa 50010

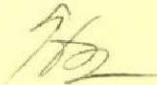
Dear Harris:

Many thanks for your letter of July 12 referring to the recent article in the AWWA Journal. As per your request, I am enclosing six copies of the tear sheet.

I am inclined to believe that the article by Azpurua is the one on which you previously had made comment since this has been going back and forth over approximately one year and if I recall correctly, your name was shown in connection with one of the early reviews. I had initially framed a considerably stronger reply to Azpurua than that which was published, but after second thought, decided that it should be substantially toned down. I had the same problem in trying to frame a reply which confronted you because of the rambling nature of the presentation and the rather obtuse reasoning which he followed.

I note that you will be in Washington on July 29 and 30 and hope that it may be possible for you to stop over and have lunch with us. Many thanks again for your letter and I hope that I will see you at the end of the month.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

5 - water
July 16, 1968

Mr. Eric F. Johnson
Executive Secretary
American Water Works Association
2, Park Avenue
New York, N.Y. 10016

Dear Eric:

Thank you for your letter of June 19 in which you refer to my letter to John Copley concerning news of water supply activities overseas. I will forward to you, at appropriate times, any information which I feel may be of interest to the readers of the AWWA Journal.

I am attaching herewith a press release related to the recent loan on the Bogota Colombia Water Supply.

Please accept my best regards.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

cc: J. G. Copley

(Attachment)

HRShipman/pbf

Control No: MISC-8-37

July 16, 1968

Mr. Eric F. Johnson
Executive Secretary
American Water Works Association
5, Park Avenue
New York, N.Y. 10016

Dear Eric:

Thank you for your letter of June 19 in which you refer to my letter to John Gopley concerning news of water supply activities overseas. I will forward to you, at appropriate times, any information which I feel may be of interest to the readers of the AWWA Journal.

I am attaching herewith a press release related to the recent loan on the Bogota Colombia Water Supply.

Please accept my best regards.

Yours very truly,

Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

cc: J. G. Gopley

(Attachment)

HRShipman/pbl

Control No: MISC-8-37

J. - Water
July 16, 1968

Dr. Ralph E. Fuhrman
Executive Secretary
Water Pollution Control Federation
3900 Wisconsin Avenue
Washington, D.C. 20016

Dear Ralph:

Your attention is called to the attached Press Release related to a recent loan made by the World Bank to Singapore for the carrying out of improvements to the sewerage system in that city.

This may be of interest to the readers of your journal.

Very truly yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

Attachment:

HRShipman/bc

RECEIVED JUL 18 1968

July 16, 1968

Mr. Ralph E. Feinman
Executive Secretary
Water Pollution Control Federation
3900 Wisconsin Avenue
Washington, D.C. 20006

Dear Ralph:

Your attention is called to the attached Press Release related
to a recent loan made by the World Bank to Singapore for the
carrying out of improvements to the sewerage system in that city.
This may be of interest to the readers of your Journal.

Very truly yours,

Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

Attachment:

1968 JUL 17 04:10:56

COMMUNICATIONS

HR:Shipman/dc

3 Water
July 16, 1968

International Association for Water Law
Pza. Crespins, 1
Valencia -3-
Espana

Dear Sirs:

This will acknowledge your letter of June 10 in which you extend an invitation to attend the forthcoming meeting of the International Congress on Water Rights to be convened in Mendoza.

Unfortunately, it will not be possible for me to attend the meeting but I wish to take this means of wishing you and the other members of the Association a most successful congress. Please accept my thanks for the invitation.

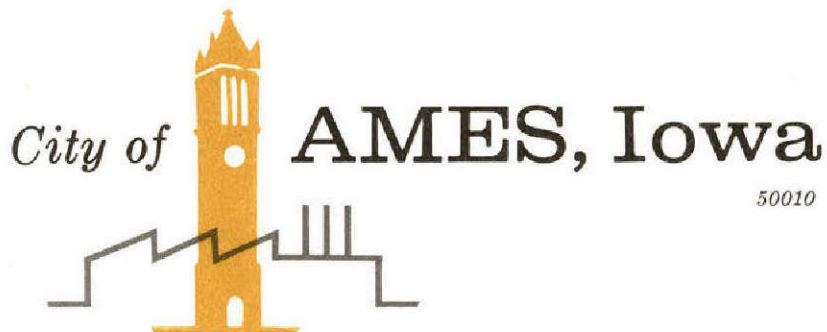
Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

Control No: MISC-8-38



50010

HARRIS F. SEIDEL, P.E.
DIRECTOR, WATER AND POLLUTION CONTROL

July 12, 1968

Harold R. Shipman
Chief Water Supply Section
World Bank
1818 H. Street
Washington D.C. 20433

Dear Harold:

In rapidly scanning the June issue of the Journal I came across Azpurus's response to your article on Water Rate Structures in the January 1967, Journal.

As I read it my corpuscles began to chase each other around faster and faster and I was ready to grab for a pen and begin swinging when I came to the end of his story and saw you had already answered.

I think you have made a beautiful response to him. Actually in perspective it could hardly have been planned better to give you an opportunity to answer some of the notions which pass for rate philosophy down there. I recognize that they feel very strongly they are right and we are wrong, but perhaps the Banks have just a little bit of the edge on it from the stand point of being able to point at a successful experience and also having the money to back up their philosophy.

His paper or rather his name attracted me more than somewhat, because about a year and a half ago I received in a very round about way a paper of his having to do with financing and rates for Bogota. I was asked to make something of this so that it could be published in one of the other U.S. Sanitary Engineering magazines.

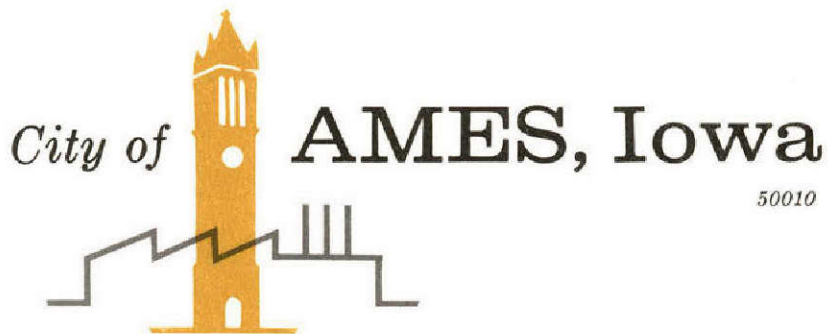
ack July 19

AMER. 1047



1960 JUL 15 PM 12:03

COMMUNICATIONS



50010

Page 2
Harold R. Shipman

HARRIS F. SEIDEL, P.E.
DIRECTOR, WATER AND POLLUTION CONTROL

I spent sometime working with that paper, but finally became so distressed with the circular reasoning and the use of arm waving emotion with which to prove some of the more odd conclusions that I gave the whole thing up and told the editor that I simply could not put it into shape for American publishing without either destroying what the author wanted to say or confusing a lot of people in this country.

Your reply in this case is a very valuable supplement to your original paper. Can I again beg several copies? If not I can simply xerox from the Journal and put those with the paper in my file.

Bob Harris of PHS, has asked me to come to Washington, July 29, 30, to help with the manual, Growing out of the Inspection Trips, sponsored by PHS, last year. This is at their new office, somewhere out in Arlington, so perhaps I will not have a chance to drop in to say "Hello."

Best Wishes,


Harris Seidel

Mr. Avigdor Meroz

July 11, 1968

Enrique Lordau

Urban Demand for Water in Developing Countries

I have read your very interesting paper of June 17. The following observations may be of some use if you intend to revise or expand the paper:

Paragraph 2: Your fourth objection to the "simple requirements technique" - i.e. extrapolating past growth in per capita consumption - seems invalid. What relevance do "different levels of consumption in different climatic, cultural and religious conditions" have to extrapolations of trends in a given country?

Paragraph 12: "Clearly only the rates that depend directly on the amount of water consumed are relevant to the quantity of water demanded; the others cannot have an effect on it because once the flat rate is paid, marginal units of water are free." This is not necessarily true. If the flat rate is per connection, its level may influence the demand for connections and thus for water sold, which is what you are trying to measure. Note that in this case there also could be a significant (positive) relation between the price of water sold and the quantity of free water consumed.

Paragraph 16: Whether weather is or is not a significant variable cannot be determined from its simple correlation with consumption per capita. What is relevant is whether it is significantly correlated with the remaining unexplained residuals. I take it that it is not so correlated; the simple regression then becomes redundant anyway.

Table 3: Equation (ii.1): Is the sign of the price parameter not reversed?

Tables 2 and 3: Both your price and income variables look significant, but no final judgement can be made unless you indicate what their inter-correlation is.

Paragraph 32: "Theoretically we would expect the linear function to be more valid, since we expect the elasticity of demand for water to change at different levels of price and income." The trouble is that with linear relations this implies that the lower income is, the higher will your price elasticity of demand be, ad infinitum. Is it not a more plausible hypothesis that at very low income and consumption levels, the demand becomes irreducible so that variations in the price of water are reflected in variations in the quantity demanded of other, less indispensable, goods? The choice of linear relations may be justified by convenience or goodness of fit, but does not seem to have the theoretical merits which you attribute to it.

Moreover, I think that a linear arithmetic formulation has some difficulties which ^{you} should not ignore. If I understand your preferred equation (1.5)

$$C_t = 46.1 - 72.9P + 0.05Y$$

correctly, it implies that if GDP per capita is US\$150 and the price of water is US\$0.80 per 100 gallons, consumption will be a negative number, since

$$46.1 - (72.9 \times 0.80) + (0.05 \times 150) = -4.7$$

This absurd result is a direct consequence of the form of the equation; quite evidently the range of prices to which your estimated parameters can be applied is limited, but it seems impossible to establish - from the information provided - where the limits lie.

Paragraph 38: If "the virtual identity of the price elasticities yielded by these studies is certainly coincidental", why is it something "interesting to note"? Surely it would only be noteworthy if it were not coincidental.

Paragraph 51: "If, on the other hand, the supply of new water will necessitate a large increase in price, the price effect may reduce the demand for water and the project may end up with excess capacity." This is the only explicit reference to what I would have thought is the most important aspect of the matter: what are the implications of particular price/consumption and income/consumption relations for investment in urban water supply? This would seem worth exploring a little more. The sentence quoted above connotes adherence to a particular pricing decision rule, but does not say what the rule is. Should it be full cost pricing or marginal cost pricing? Is the fact that in this case the distribution of income would seem to co-determine both the level and the slope of the demand curve relevant to your pricing and investment decisions?

Finally what seems missing in the paper is any suggestion as to what may account for the variations in consumption not explained by your estimates (roughly one half of the total). Other variables or flawed data? Since you stress data deficiencies very frankly, is the inference correct that you think that it is these, rather than ignored variables, that make your coefficients of determination relatively low?

cc. Mr. van der Tak

ELordau: tg

CROSS REFERENCE SHEET

COMMUNICATION: Letter

DATED: June 26, 1968

TO: Mr. Knox

FROM: Mr. F. Steuber

FILED UNDER: LIAISON - WHO

SUMMARY: Re: Attaching a progress report by WHO entitled "Community Water Supply Programme".

ans June 27 / 68



American Water Works Association

2 PARK AVENUE, NEW YORK, N.Y. 10016 (212) 684-6686

June 19, 1968

Mr. Harold R. Shipman
International Bank for
Reconstruction & Development
1818 H Street, N. W.
Washington, D. C.

Dear Harold:

In line with the note in John Copley's minutes of the meeting of the Committee on International Affairs, I want to renew my offer to print in the pages of the JOURNAL news of water supply activities overseas. We are anxious to keep our membership aware of what is going on outside of North America and we are anxious too to give recognition to those who are accomplishing things in the water utility field elsewhere.

As fast as you feed the material to us, we will push it out.

Cordially,

Eric F. Johnson
Executive Secretary

EFJ:rmc

cc: Mr. J. G. Copley
Mr. R. Pakansky

Date Rec'd. June 21 68
Date Ack'd. July 16, 1968
Assigned to Mr. Shipman

President, H. C. MEDBERY, San Francisco, Calif.
President-Elect, JOSEPH H. KURANZ, Waukesha, Wis.
Vice-President, T. E. LARSON, Urbana, Ill.
Treasurer, THOMAS T. QUIGLEY, Belleville, N.J.
Executive Secretary, ERIC F. JOHNSON, New York, N.Y.

MISC-8-37

THE UNITED STATES OF AMERICA
DO hereby certify that
[Name] is a citizen of the United States of America
and is entitled to the rights and privileges of citizenship
under the laws of the United States of America.

IN WITNESS WHEREOF, I have hereunto set my hand and the seal of the United States of America at the City of Washington, this [Date] day of [Month], 19[Year].

1969 JUN 21 AM 11:01
COMMUNICATIONS
U.S. AIR FORCE

- water

June 18, 1968

Mr. Jose Alfonso Valdivieso
President
Administracion Nacional de Acueductos
y Alcantarillados
2a, Avenida Norte 512
San Salvador
El Salvador

Dear Engineer Valdivieso: ✓

This will acknowledge your letter of May 25 in which you refer to my article in the July 1967 issue of the AWWA Journal and which, among other things, makes reference to the unaccounted-for water.

In my article, I quote the Seidel and Baumann report which shows the level of unaccounted-for water experienced in American cities. Since it may be that you do not have a copy of the December 1967 issue of the AWWA Journal in which their report is published, I am sending you a copy of the article in order that you might note in Table 5, page 1537, the percent of unaccounted-for water reported for 379 cities covered in their survey.

You state in your letter that some of your local engineers insist that unaccounted-for water should not be more than 5 percent. Based upon our observations in various cities of the world and taking into account the AWWA report, it would appear that although reduction of unaccounted-for water to 5 percent is a highly commendable objective, it will probably be next to impossible to achieve. Such a low figure of course, is common for bulk water suppliers where only transmission is involved. However, where distribution is also involved, it is believed unrealistic to expect this low a loss because, not only would all service lines including public hydrants have to be metered, but also all water used for fire, street cleaning, etc., would have to be metered. It would also assume that the best quality of water meters attainable are installed and repaired as frequently as necessary to keep their accuracy at a very high level. It would also require, as you suggest in your letter, the regular inspection and replacement of all house connections and all other service connections where leakage exists.

The fundamental question which you should ask and answer before establishing your unaccounted-for water level, is how much should be spent to reduce unaccounted-for (non-revenue) water. You suggest that

Mr. Jose Alfonso Valdivieso

June 18, 1968

by changing some 20,000 galvanized iron house connections which are more than 40 years old, you might be able to lower the present unaccounted-for water, from 35 to 20-25 percent. It should not be unduly difficult for you to establish an estimate of the cost of replacing the 20,000 house connections, and to compare this with the cost of the lost water over a period of time. The problem is how to know what amount is being lost from these pipes as against losses from other causes. You may have other causes of lost water of equal importance which should also be considered and which may be eliminated or reduced at less cost or simultaneously with service replacement.

Fundamental to taking decisions on this question is a study which defines the various causes of unaccounted-for water. Having established these with reasonable accuracy, to then evaluate the economics of solving each problem in terms of the water which will be saved. Only through this process, is it possible to establish what the particular percentage of unaccounted-for water ought to be for any one system and the rate at which the system should undertake improvements which would bring about further reduction. I am rather sure, however, that the 5 percent figures which some engineers in San Salvador insist on, is probably not attainable within the range of costs which will prove economic under your circumstances.

It was a pleasure to hear from you and hope that you will write again if I can clarify any further my views on this or any other questions raised in the article. Please accept my best personal regards.

Yours very truly



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

(Attachment)

HRShipman/pbf

Control No: MISC-8-25

2- Water
x T.A. per.

Mr. A. David Knox

June 14, 1968

Harold R. Shipman *HS*

Bank Technical Assistance

On June 14, I discussed with Mr. Rivkin, by phone, certain of the questions raised by you in connection with technical assistance on water and sewerage projects. Mr. Rivkin confirmed that in those instances where the Bank has loans already made or in preparation, procedures exist whereby technical assistance can be provided. These are the fundamental ones known to you, namely, project loan funds, engineering loans and grants.

With respect to projects where construction has been completed, and funds fully utilized, certain complications appear to exist on the means by which technical assistance could be provided without going to high levels in the Bank or to the Board. For example, if WHO were to sponsor a short course for water treatment operators, Mr. Rivkin feels that it would be difficult for us to finance participants to the course even when they are from projects on which we initially provided funds. The same would, of course, apply to participants from water systems where no loans have been made. He repeated that in each instance since there is no clearly defined funds from which assistance money can be drawn, substantial arrangements would have to be made and approval obtained on an ad hoc basis.

He stated again that we should not conclude that our present procedures are necessarily static and that changes could be made if a good case can be developed. He felt that any proposals which WHO might wish to be put forward should be brought back for further discussion.

HRShipman/pbf

S - Water?

June 12, 1968

Professor Robert Dorfman
Harvard Water Program
9 Bow Street
Cambridge, Massachusetts

Dear Bob:

I think we had a very fruitful discussion and we firmed up the role that mathematical models can play during the various phases of major river basin studies. I am attaching a memo introducing you once again to our personnel division as a consultant. Would you please submit an expense statement to cover one day consultation for June 10. We would appreciate it if this could be done before the end of June so that we can still subsume these expenditures under the outgoing budget year.

Yours sincerely,

R.S.

Robert Sadove

Enclosure

HVergin:lcv
IBRD

INTERNATIONAL ASSOCIATION FOR WATER LAW
ASSOCIATION INTERNATIONALE DU DROIT DES EAUX
ASOCIACION INTERNACIONAL DE DERECHO DE AGUAS

Valencia, 10th June, 1968

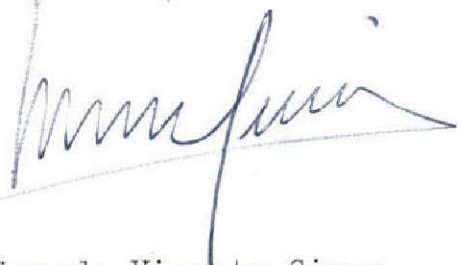
Dear Sir,

In the interest that the International Congress of Water Rights to take place in Mendoza (Argentina) from the 29th August to the 2nd of September, I beg you - to reply, if you are thinking of attending the same and - if we can also count on some of your work which we already esteem in the highest interest.

The presentation date for work is until the 15th of July. Advise us to send you the papers with the - format.

We would like to know as soon as possible - concerning your attendance.

Yours faithfully,



Signed: Vicente Giner
Secretary General

Date Rec'd. June 25 '68

Date Ack'd. _____

Assigned to ~~Mr. Jennings~~
Mr. Shipman

MISC-8-38

ack. July 16, 1968

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COMMUNICATIONS
1968 JUN 25 PM 8:35

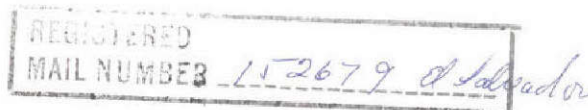


2221

San Salvador, may 25, 1968.

TELEFONOS:
CABLE: ANDA21-4202
21-4204
21-4523
21-8707
21-6788

Mr. Harold R. Shipman,
Project Department Utilities
International Bank For Reconstruction and Development,
Washington, D. C.
U. S. A.



Dear Mr. Shipman:

I have read your very interesting article: -
"Water Supply Problems in Developing Countries", which appeared in the July 1967
issue of the AWWA Journal, specially the paragraph related to "Unaccounted-For -
Water".

In this country we are trying to get through a new
Rate Structure and some local engineers insist that the unaccounted-for water should -
not be more than 5%. According to our records, it is somewhat near 35%. We think that
by changing some 20,000 galvanized iron house connections which are more than 40 -
years old this figure might be lowered down to 20%-25%.

Could it be possible for you to give me more infor-
mation in relation to Seidel and Bauman's report and if possible the name of the cities
which had over 20%.

Thanking you in advance for your interest in this
matter, I remain yours very truly.

José Alfonso Valdivieso,
President of ANDA

Date Rec'd.

May 29/68

Date Ack'd.

June 18, 68

Assigned to

130011452 1110:12

MISC-8-25



ack June 18/1968



54 AVENIDA NORTE 215

SAN SALVADOR, EL SALVADOR

2221

San Salvador, May 25, 1968.

TELEFONOS:
CABLE: ANDA
21-4505
21-4504
21-4523
21-8707
21-8788

MAIL NUMBER 115679 of 115679

U. S. A.
Washington, D. C.
International Bank For Reconstruction and Development
Project Department Utilities
Mr. Harold R. Shipman,

Dear Mr. Shipman:

"Water Supply Problems in Developing Countries", which appeared in the July 1967 issue of the AWWA Journal, specially the paragraph related to "Unaccounted-for Water".

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Could it be possible for you to give me more infor-

Thanking you in advance for your interest in this

matter, I remain yours very truly.

Jose Alfonso Valdivieso,
President of ANDA

ADMINISTRACION NACIONAL DE
ACUEDUCTOS Y ALCANTARILLADOS
A. N. D. A.
PRESIDENCIA
EL SALVADOR, C. A.

1968 MAY 29 AM 10:16

COMMUNICATIONS

MISC - 8-52

Assigned to
Date Ack'd. June 18, 68
Date Rec'd. June 18, 68

Mr. Jochen Schmiedtje

5 - water
May 24, 1968

Harold R. Shipman *HRS*

Draft Study, A Quantitative Analysis of Urban Water
Demand in Developing Countries

1. We have reviewed the above report and noted the conclusions which, in effect, suggest that the present approaches being used for projecting water demand would not be effected by income-pricing considerations unless these are fairly substantial.

2. It is our understanding that the "Working Paper" series of the Economics Department is one where publication and general distribution is not made. These studies, in effect, are maintained in the files for possible future reference. If our understanding is correct, we see no need to comment in detail on the present draft. If, however, our understanding is not correct, we would feel that a number of comments would be required.

HRS/Shipman/pbf

Mr. H. R. Shipman

May 10, 1968

Jochen Schmedtje *JCH*

Draft Study, A Quantitative Analysis of Urban Water Demand in
Developing Countries

I attach a copy of the revised and edited version of the draft study, A Quantitative Analysis of Urban Water Demand in Developing Countries, prepared by Mr. Avigdor Meroz. We regard the present version as the final one and now intend to issue the study in the Economics Department Working Papers series.

Before doing so, we would welcome any comments and suggestions you and your colleagues may wish to make. I would be grateful if written comments (2 copies) could be sent to me not later than May 24.

attachment

cc (with attachment): Messrs. Stevenson
Knox
van der Tak

May 9, 1968

Mr. Phil Cohen, Chairman
Technical Program Committee
Fourth American Water Resources Conference
1505 Kellum Place
Mineola, New York 11501

Dear Mr. Cohen:

Thank you for your letter of May 6. It was my expectation that Mr. Shipman would present the paper, but if this is not possible we will see that there is a suitable substitute. We shall also send the title of the paper as soon as possible.

Am I correct in assuming that the presentation should be approximately 20 minutes in length? Will there be a question and answer period after each individual presentation or will this be concentrated at the end of the session? I should be grateful for any other "ground rules" that you would wish us to observe.

Very truly yours,



W. J. Armstrong
Deputy to the Assistant Director, Public Utilities
Projects Department

cc: Mr. Callejas/Mr. Shipman (with incoming)

WJArmstrong/ejh
IBRD

5 - World Food
+ alpha
+ 1 - RIA

IDA	IBRD	IFC
FORM NO. 92 (10-61)		
CORRESPONDENCE RECORD FORM		
FROM L. G. Wolf AID, Dept. of State Washington, D.C.		DATED May 2, 1968
SUBJECT Writer's appointment as Executive Director of American Freedom from Hunger Foundation & proposal that Foundation contribute to proposed review of the '20 years of organised development', etc. Addressed and		
REFERRED TO Mr. McNamara		DATE RECEIVED May 4, 1968 hl

May 1, 1968

Mr. Philip Cohen
U. S. Geological Survey
1505 Kellum Place
Mineola, N. Y. 11501

Dear Mr. Cohen:

Mr. James Geraghty has enquired about the possibility of having Harold Shipman talk at the Fourth American Water Resources Conference on November 20, 1968. Mr. Shipman is out of the country at present, but I am pleased to accept this kind invitation on his behalf.

It would be helpful if you could indicate as early as possible any particular phases of international operations you might think would be of particular interest to the audience. By this I mean should we stress the role of the foreign consultant or contractor in overseas municipal water projects, the need for sensible design to match the community's ability to pay, management problems, financial aspects, etc.?

Very truly yours,



W. J. Armstrong
Deputy to the Assistant Director, Public Utilities
Projects Department

cc: Mr. James J. Geraghty

cc: Messrs. Callejas/Shipman with incoming letter
Mr. Lind

No.1

April 24, 1968

Dr. Christian R. Klimt
Professor and Director
University of Maryland
Baltimore
Maryland 21201

Dear Dr. Klimt:

This will acknowledge receipt of your letter dated April 19
and the omitted enclosures which we have received today, addressed
to Mr. Shipman.

Mr. Shipman is at present on a mission in the Far East. He
is expected to be away until the third or fourth week of May so
we are sending to him your letter with the enclosure in order that
he may send you his comments directly.

Very truly yours,

Peter Callejas
(Acting Chief)
Water Supply Section
Projects Department - Public Utilities

cc: Mr. Harold Shipman (with incoming)

pbf

April 23, 1968

Mr. Kenneth E. Dixon, President
Preload International, Inc.
101 Newfield Drive
Stamford, Connecticut 06905

Dear Mr. Dixon:

Thank you very much for your letter of April 18, and the attached information on water storage tanks. Thanks also for your offer of assistance if I have further questions.

Very truly yours,

Frank H. Lamson-Scribner
Water Supply Section
Projects Department - Public Utilities

FHK-S:ah

Mr. Roger Chaufournier

April 22, 1968

W. J. Armstrong *WJ*

Comments on Report of the Hudson Institute

4/22
Attached is a note from Mr. Shipman commenting on The Hudson Institute Study which you sent us on March 21, 1968. I agree generally with his conclusions in Para. 2 and wish to emphasize that each case should be studied on its own merits.

While transport of water may well be cheaper than desalination (neither may be cheap enough for irrigation water), it should be considered only after an exhaustive study of all local water resources, including reuse of water.

I am returning the Hudson Institute Study with this note.

Attachment

WJArmstrong:ejh

Mr. W. J. Armstrong

April 22, 1968

Harold R. Shipman

Report of Hudson Institute - Large Volume -
Long Distance Fresh Water Transferrals as an
Alternate to Desalination

Mr. Chauffournier has enquired on how seriously one should take the figures and assumptions set forth in the above report. My views are as follows:

- 1) Both figures and most assumptions are highly suspect. Figures on land costs and evaporation losses are believed too low. Pumping station life is about twice too long. Desalination cost estimates are likely to be too low.
- 2) Because the estimate and assumptions for both schemes are likely to be very far off, it would be unwise to draw any conclusion from this report on the relative economics of water transfer vs. desalination. Sufficient evidence exists from papers of reputable engineering background to show that water can be transported over great distances at costs less than that for desalinated water. The present report although reaching this conclusion does not provide data which will stand examination.
- 3) However interesting as science fiction, the report cannot be considered a responsible engineering report which one could take seriously.

HRShipman:ejh

Mr. Harold R. Shipman

April 17, 1968

F. H. Lamson-Scribner

Optimization of Construction Phasing

Before leaving on our forthcoming mission, I would like to transmit the attached to you for critical review and possible interim use by the staff.

One question which we frequently face during an appraisal is whether a large unit should be constructed or whether a smaller unit should be constructed and duplicated (or added to) at some point in the future. This is a fairly easy calculation to make with an assumed cost of capital, the time before the addition will be needed, and the costs of the initial units and the added unit later. But it can be made an even easier and extremely quick calculation with the attached curve. If this is found useful to the people in the Division, we could have it drawn up in a more attractive manner, and we edit the comments which were drawn up more in haste than in nicely constructed English.

The equation to determine the factor is actually much simpler than it looks. The second part of the equation C_S/C_A compares the cost of a small initial unit with the cost of the added unit. If we were talking pipelines or reservoirs or similar completely duplicated objects this would be one. This part of the equation is appropriate when the initial investment includes part of the cost of the later addition, for example, some larger pipes or a chemical treatment room in a water treatment plant which would handle the flow of increased facilities later. The first part of the equation C_L/C_S is actually the ratio of costs of a large unit to a small unit. For example, if we were talking pipelines, the cost of a large unit is of an order of magnitude 1.5 times the cost of a smaller pipe to handle half the flow. Tables could be drawn up for various types of facilities such as reservoirs, pipes of different sizes or treatment plants based on general engineering cost estimates and those factors could be used with reasonably small error in approximating optimal project phasing. For example, we could go through cost estimates for different sizes of pipes and develop from these the C_L/C_S factor. We could similarly do this for different types of reservoirs or treatment plants.

A word of caution is that this is only a tool and comes out with a proper answer only if care has been used in making the assumptions. This is also only a small part of our work and would not substitute for the work done to develop the proper kind of water treatment, for example.

Mr. Harold R. Shipman

April 17, 1968

It may be that this will point toward very small project increments which might be burdensome for a public utility to carry out. The graph is also useful in determining the cost of convenience of building a larger unit and not having to bother with a smaller unit later. If the factor for a water treatment plant, for example, were 0.8, and the time until an initial unit would have to be duplicated were 4 years, then this would indicate that the effective return on the increased investment was about 6%. Comparing this with the actual cost of the capital in the country involved will allow the calculation of the economic cost penalty which then can be compared with increased convenience or other tangible or intangible benefits.

Basically, this graph only covers investment cost aspects. Differences in operating costs are not noted but frequently the operating cost differences are quite small as compared with the investment cost aspects. The graph is also useful in that if the intersection of cost of capital and time is relatively far from the factor line, one can be reasonably sure of which way to decide. On the other hand, if it is reasonably close, one would know he should sharpen his pencil and go into as much detail as possible.

This is only the first step. The next step would be to develop C_1/C_2 factors for the different types of facilities for water projects. If there is some one in the Division who has extra time, this information could be developed while we are away. I might say also that this might be used for other types of projects than water supply projects, and if we find it useful, it might be passed on to others.

PHLanson-Scribner/phf

cc: Mr. Armstrong

Project Optimization

Question - Should one large unit be constructed initially or should a smaller be constructed and added to at some point in time?

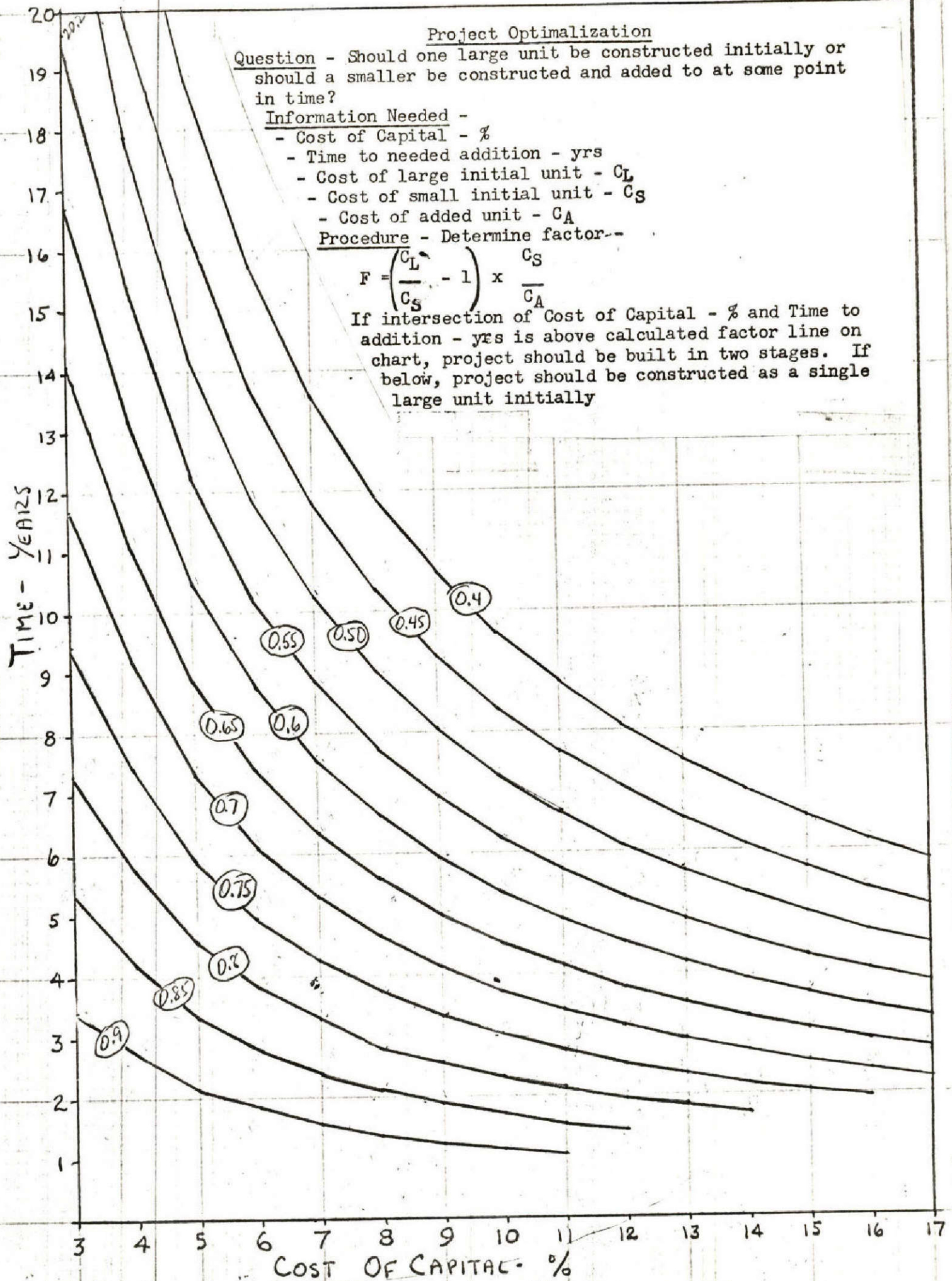
Information Needed -

- Cost of Capital - %
- Time to needed addition - yrs
- Cost of large initial unit - C_L
- Cost of small initial unit - C_S
- Cost of added unit - C_A

Procedure - Determine factor--

$$F = \left(\frac{C_L}{C_S} - 1 \right) \times \frac{C_S}{C_A}$$

If intersection of Cost of Capital - % and Time to addition - yrs is above calculated factor line on chart, project should be built in two stages. If below, project should be constructed as a single large unit initially



5-0410
April 17, 1968

Mr. Roy Pakansky
Director of Publications
American Water Works Association, Inc.,
2, Park Avenue
New York, N.Y. 10016

Dear Sir:

Please refer to your letter dated April 9, 1968 forwarding a paper entitled "Brazilian National Water and Sewer Plan" for an opinion as to its suitability for publication in the AWWA Journal.

I have read the paper with interest and feel that with some modifications the paper would be suitable for publication as it focuses attention on the financing and management aspects, two of the main problems in this sector in most countries. The Brazilian experience in this regard should be of value to many of the readers of the Journal. I would like to make the following suggestions on the paper:

- (1) The title of the paper - "Brazilian National Water and Sewer Plan" - is likely to create the impression that an official Brazilian plan is discussed. In 1967, the Government of Brazil, did bring out a draft ten year plan for this sector and as the paper under consideration does not discuss that plan, the title of the paper is misleading.
- (2) As several estimates for population growth are available in Brazil, it would be desirable to identify the source for the population data given in the paper and also the definition for urban population. (Page 1 of paper.)
- (3) The IDB loans listed in page 4 of the paper could perhaps be summarized in a sentence giving the number of cities, population and the loan amount. It would be useful to give the total cost of the projects for which loans have been given.
- (4) The paragraphs following the list of cities for which IDB loans have been made, seem to require considerable editing. The main points to be brought out here are local participation in financing, and the municipalities' potential for borrowing capital and repaying it. The

Mr. Roy Pakansky

April 17, 1968

municipalities are willing to make the necessary organizational changes and institute financial disciplinary measures needed for borrowing money. The municipalities are also able to raise local resources up to 1/3 the cost of the project (examples should be given of cities that have had to raise taxes to do this) in order to qualify for the loan. In this context, external loans have a definite role to play in giving a fillip to the program and this aspect could be brought out in the paper.

- (5) The role of the training program in collaboration with IBAM could be stressed more as this program is somewhat unique involving as it does mayors, municipal councilors, and public officials.

I hope the foregoing comments will be of some value.

Very truly yours,

for Peter Calligas

for Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

VR
VRajagopalan/pbf

(encls.)

April 10, 1968

Mr. D. B. Redfern
Proctor and Redfern International Ltd.
Consulting Engineers
75 Eglinton Avenue East
Toronto 12, Canada

Dear Mr. Redfern:

In your letter of April 5, 1968, you enquire whether a Bank questionnaire exists for sewerage projects. We are in the process of preparing such a questionnaire but as yet it is not ready for distribution.

We believe that if the general sense of the questionnaire on water is followed for sewerage, the data which will be prepared should satisfy most of our requirements. In the event that you have any specific questions, do not hesitate to write us.

Very truly yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/ah



American Water Works Association, INC.

2 Park Avenue, New York, N. Y. 10016

WASHINGTON OFFICE: 1042 NATIONAL PRESS BLDG., WASHINGTON, D.C. 20004

(212) 684-6686

(202) 628-8303

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Thomas T. Quigley, Belleville, N.J.
Eric F. Johnson, New York, N.Y.

April 9, 1968

Mr. Harold R. Shipman,
Sanitation Engineer
International Bank for
Reconstruction & Development
1818 H Street, N. W.
Washington, D. C.

Dear Mr. Shipman:

Enclosed is a paper entitled "Brazilian National Water and Sewer Plan" by William S. Staub. We would appreciate your opinion as to its suitability for publication in the JOURNAL.

A stamped, self-addressed envelope is enclosed for your convenience in returning the manuscript. Your cooperation is sincerely appreciated.

Cordially,

Roy Pakansky
Roy Pakansky
Director of Publications

RP:ls

ENC.

*Schaft letters
attached.*

*VP
15/4/68*

*Ray - could you look at this
and prepare a reply?*

VP

Adm. April 17



RECEIVED
GENERAL FILES
COMMUNICATIONS

1968 APR 12 AM 9:11

TO: DIRECTOR, FBI
FROM: SAC, NEW YORK
SUBJECT: [illegible]

RE: NEW YORK TELETYPE TO BUREAU, APRIL 11, 1968.

FOR INFORMATION OF THE BUREAU, THE FOLLOWING IS A SUMMARY OF THE MATTER:

ON APRIL 11, 1968,

THE NEW YORK OFFICE RECEIVED A TELEPHONE CALL FROM AN INDIVIDUAL WHO STATED THAT HE HAD INFORMATION CONCERNING THE ACTIVITY OF A CERTAIN GROUP.

ENCLOSURE

REVIEWER'S REPORT ON PAPER FOR JOURNAL AMERICAN WATER WORKS ASSN.

(Author) _____

William S. Staub

(Title) _____

"Brazilian National Water &
Sewer Plan"

Section West Virginia

- | | |
|-------------------------------------|--|
| ☐ | Do not publish. |
| ☐ | Publish only if nothing better is available. |
| ☒ | OK to publish; will make an average paper. |
| ☐ | Good--well worth publishing. |
| ☐ | A must--don't miss this. |

If you have recommended publishing, your comments, particularly suggesting improvements or possible illustrative material, will be appreciated (Use back of form for comments.)

If you have recommended against publishing, please check below the reason(s) and let us have your comments on the back of the form.

- ☐ Contains no ideas or information not already well known.
- ☐ Topic insufficiently developed, as noted on back of form.
- ☐ Supporting data are inadequate.
- ☐ Facts or interpretations are inaccurate.
- ☐ Subject matter is not sufficiently pertinent to the field.
- ☐ Too much detail or too many words.
- ☐ Too broad in scope--i.e., too many subjects are covered.
- ☐ Poorly written or badly organized.
- ☐ Other, as noted on back of form.

If you have recommended against publishing and you feel that the paper included worth-while material, can you suggest what should be done to make it worth publishing?

(Signed)

USE BACK OF FORM FOR COMMENTS

DIRECTORS:

G. E. M. PROCTOR, PRES.
D. B. REDFERN, VICE PRES.
R. G. TREDGETT, SEC. TREAS.
W. T. ROBINSON

PROCTOR & REDFERN
INTERNATIONAL LIMITED
CONSULTING ENGINEERS

HEAD OFFICE:

75 EGLINTON AVENUE EAST
TORONTO 12, CANADA
TELEPHONE: 416-487-1171
CABLE: "PRORED" TORONTO

April 5, 1968

Mr. Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities
INTERNATIONAL BANK FOR RECONSTRUCTION
AND DEVELOPMENT
1818 H Street N.W.
WASHINGTON, D.C. 20433
U.S.A.

Dear Mr. Shipman:

Many thanks for your prompt attention in forwarding two copies of the Bank's questionnaire for waterworks projects that I recently requested of you.

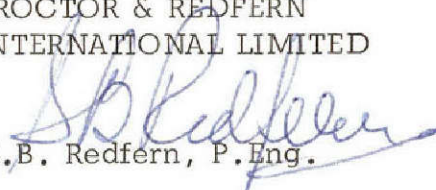
I did not have any detailed questions on this form but I note that Section III dealing with sewage disposal covered items in connection with sewerage only as it relates to a proposed waterworks scheme.

I was wondering whether the Bank has a questionnaire for sewerage projects in more detail, similar to the questionnaire for waterworks projects and if so, I would be pleased to receive two copies of this.

Thank you again.

Yours very truly,

PROCTOR & REDFERN
INTERNATIONAL LIMITED


D. B. Redfern, P. Eng.

DBR/cmm

acc April 10/68

April 2, 1968

Mr. R. F. Koken
Project Coordinator
The Ralph M. Parsons Company
617 West 7th Street
Los Angeles 17, California

Re: a) Your Job No. 3822 - Sewerage Project
Guayaquil, Ecuador
Inter-American Development Bank Loan
b) Dacca Water Supply and Sewerage
Project, East Pakistan

Dear Mr. Koken:

Thank you for your letter dated March 8, 1968 and the separate package containing copies of your report, specifications and construction drawings on the Guayaquil, Ecuador project.

This is an interesting set of documents which should be of valuable addition to our collection of information on how things have been handled on other projects. We appreciate your sending them to us and are glad to note that you consider this a successful undertaking.

I also acknowledge with thanks your letter dated March 28, 1968 enclosing a copy of Mr. Salam's message and paper on "Ten Years of Progress" in Dacca.

Very truly yours,



Peter Callejas
Water Supply Section
Projects Department - Public Utilities

PCallejas:aca

Control No. EC-8-3
EC-8-4

DECLASSIFIED

OCT 14 2025

WBG ARCHIVES

March 25, 1968

PERSONAL

Mr. John G. Copely
Elmira Water Board
261 West Water Street
Elmira
New York 14901

Dear John:

This is a rather late acknowledgement of your letter of February 12 to members of the committee on international affairs of AWWA.

As of the moment, I have hopes to attend the meeting in Cleveland and therefore the few ideas I have on activities with which the committee might be concerned will be held for discussion at that time. In the event that I am not able to attend, I will forward them by mail prior to the meeting.

Please accept my best regards.

Yours very truly,

Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

CROSS REFERENCE SHEET

COMMUNICATION: Memo

DATED: March 19, 1968

TO: Mr. B. Chadenet

FROM: Mr. Shipman(through A.D. Knox)

FILED UNDER: LIAISON - WHO

SUMMARY: Re: Coordination Meeting - WHO-Bank

Arrangements were made on the occasion of the 1964 meeting between WHO and the Bank, for periodic meetings of staff to exchange views and resolve problems related to collaboration of the two institutions in the field of Water Supply and Sewerage....."

March 11, 1968

Dr. Mark Hollis
Chief
Environmental Health and Sanitation Branch
Pan American Health Organization
525, 23rd Street, N.W.
Washington D.C.

Dear Mark:

This will acknowledge receipt of the bound copies of the report covering the seminar on water rates, convened in Quito, Ecuador last October.

Thank you for making these available.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

OP Files
P. & S. Water
& Sewerage

The Ralph M. Parsons Company

Engineers • Constructors

617 WEST SEVENTH STREET, LOS ANGELES 17, CALIFORNIA

March 8, 1968

Date Rec'd. *Mar 11/68*

Date Ack'd. *April 2, 1968*

Assigned to *Shufman*
Callejas

Mr. Peter Callejas
Water Supply Division
Projects Department
International Development Association
1818 H Street, Northwest
Washington, D. C. 20433

EC-8-3
and EC-8-4
(a copy sent
separately
and destroyed)

SUBJECT Our Job No. 3822 - Sanitary Sewerage Project
(Guayaquil, Ecuador)
Final Report

Dear Pete:

As per our telephone conversation with you early this week, we are sending you under separate cover one three-volume set of the Final Report on our Job 3822, the Sanitary Sewerage Project for Guayaquil, Ecuador, along with a copy of the specifications and construction drawings prepared.

As previously mentioned, this job was financed by IADB; but it is a good example of a sewerage project which we have completed successfully and which both the client and the financing institution are quite happy with. We sincerely hope you find these of value.

Very truly yours,

THE RALPH M. PARSONS COMPANY

By

R. F. Koken

R. F. Koken

Project Coordinator

RFK:cn

Separate Cover

As above

Ack. April 2

March 8, 1968

American Society for Testing Materials
1916 Rate Street
Philadelphia, Pa. 19103

Dear Sirs,

I should like to receive your standard specifications
for pressure pipes

LA06 and A53

I understand from Mr. Palmer of U.S. Steel whom I
contacted here in Washington, D.C. that these are the specification
numbers for water pipes as used in ordinary housing construction,
in which I am interested.

Looking forward to receiving those specifications soon,

I am,

Very truly yours,

Erica L. Wolf

No yellow file copy required

CROSS REFERENCE SHEET

COMMUNICATION: Letter

DATED: February 26, 1968

TO: Mr. Bernard Chadenet

FROM: Mr. M. Gordon Wolman
The John Hopkins University

FILED UNDER: Liaison - School for International Studies

SUMMARY: Re: Expressing his thanks to him and the World Bank for making it possible for Mr. Shipman to present a seminar to their group in water sciences and management.

S. Dates

Columbia University
in the City of New York

NEW YORK, N.Y. 10027

PRESIDENT'S ROOM

February 20, 1968

Dear Mr. Ripman:

Over the years the University Seminars have become a valued and distinctive feature of our intellectual life on Morningside, and for this reason I am particularly pleased to note your own appointment to the University Seminar on Problems in Water Resources. I am sure you will bring much that is worthwhile to your Seminar, and I am equally confident that you will derive both profit and pleasure therefrom.

With appreciation for your willingness to join in this undertaking and all best wishes, I am

Sincerely,



Grayson Kirk
President

Mr. Hugh Brockwill Ripman
Director of Administration
International Bank for Reconstruction
and Development
1818 H Street, N. W.
Washington, D. C. 20007

mb

February 16, 1968

Mr. Harris Seidel
Director
Water and Pollution Control
City of Ames
Iowa 50010

Dear Harris:

In reply to your letter of February 9, I have asked our Publications Unit to forward a number of the items which you had requested. Certain of those specifically listed are no longer in print and therefore, I have taken the liberty of making some substitutions. You did not indicate whether you have an adequate supply of the questionnaires or even whether you wish these, therefore I have not sent them and will await your advice.

Please let me know after you have received the documents, whether there are some gaps in the information desired and if so, I will see what else I can find.

Please accept my best regards.

Yours sincerely,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman:cb

February 16, 1968

Mr. Harris Seibel
Director
Water and Pollution Control
City of Ames
Iowa 50010

Dear Harris:

In reply to your letter of February 9, I have asked our
Publications Unit to forward a number of the items which you had
requested. Certain of those specifically listed are no longer
in print and therefore, I have taken the liberty of making some
substitutions. You did not indicate whether you have an adequate
supply of the questionnaires or even whether you wish these,
therefore I have not sent them and will await your advice.

Please let me know after you have received the documents,
whether there are some gaps in the information desired and if so,
I will see what else I can find.

Please accept my best regards.

Yours sincerely,

Herold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman:ep

RECEIVED FEB 22 1968

Columbia University
in the City of New York

February 12, 1968

Hugh Brockwill Ripman

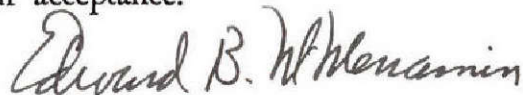
By direction of the President of Columbia University,

I have the honor to inform you of your appointment as

Associate in the University Seminar on
Problems in Water Resources

in Columbia University. This appointment is made in
accordance with the provisions of the Statutes and
under the terms noted below.

Please signify your acceptance.



Secretary of the University

Salary at annual rate of: no salary
(payable monthly)

Effective date: July 1, 1967 to June 30, 1970

February 7, 1968

Mr. Pedro Pablo Azpurua Q,
Quinta Las Adjuntas
Calle El Jaguar
Uab. Valle Arriba
Caracas
Venezuela

Dear Pedro:

Thank you for your letter of January 25 which I believe also has crossed my last one in the mail. In my letter, I indicate the acceptability of your translation and of my agreement for publication in whatever periodicals you see fit.

Many thanks for the supplementary information which you forwarded to me, I have found it most interesting. I expect that you will receive this after your departure for Georgetown. I therefore take this means of wishing you "buen viaje".

Sincerely yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

Control No: MISC-8-6

February 7, 1968

Mr. Pedro Pablo Kuczynski
Quinta Las Adjuntas
Calle El Jaguar
Urb. Valle Arriba
Caracas
Venezuela

Dear Pedro:

Thank you for your letter of January 25 which I believe also has crossed my last one in the mail. In my letter, I indicate the acceptability of your translation and of my agreement for publication in whatever periodicals you see fit.

Many thanks for the supplementary information which you forwarded to me, I have found it most interesting. I expect that you will receive this after your departure for Georgetown. I therefore take this means of wishing you "buen viaje".

Sincerely yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

1968-2-11:63

Control No: MISC-8-6

REGISTERED
MAIL NUMBER 451

Caracas: January 25, 1968.

Date Rec'd. Feb 2/68

Date Ack'd. Feb 7/68

Assigned to Shipman

Mr. Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities
International Bank for Reconstruction and Development
1818 H Street, N. W., Washington, D. C. 20433
U. S. A.

MISC-8-6

My dear friend:

Thank you for your letter of January 15. So far no news about publication of our comments with regard to your article "Water Rate Structures in Latin America".

In your letter in reference you do not authorize the local publication of your article and your comments to my letter of April 4, in English and Spanish, as requested in my letter of December 5.

Attached to my letter of January 15 I sent you a Spanish version of your comments, trusting we have kept the spirit of the English text. I am now sending you herewith a Spanish version of the article on water rates in Latin America. Kindly review and authorize its local publication.

Today I am finishing my report on the future administration of the Caracas water supply system, to be delivered to INOS. I trust that Morse and Renger - who are said to be coming down for the inauguration of the works - will receive copies. It would be appreciated if you would review it and comment thereon. I am sure there is little difference with your views and aims to attain a good administration.

The enclosures I have been sending you are all copies from my personal files. You can either keep them or throw them away.

Sincerely,

Pedro Pablo Azpurua
Pedro Pablo Azpurua

Pedro Pablo Azpurua
Quinta Las Adjuntas
Calle El Jaguar
Urb. Valle Arriba
Caracas, Venezuela.

P. S. - It is almost a certainty that I shall not continue as consultant to the Caracas water supply: next Tuesday I leave for Georgetown by appointment as consultant to the Joint Venezuela-Guyana Mission.

acc. Feb. 7/68

TARIFAS DE AGUA EN LA AMERICA LATINA

Por Harold R. Shipman

Trabajo presentado al Journal de la AWWA el 25 de Julio de 1966, por Harold R. Shipman, Ingeniero Sanitario, del Departamento de Proyectos de la División de Abastecimiento de Agua, del Banco Internacional para la Reconstrucción y el Desarrollo (Banco Mundial) de Washington, D.C.

En 1959, en una visita que hice a casi todos los países de la América Latina, en compañía de Abel Wolman, estude los programas del sector público para abastecer de agua a esa región. Esa fué la ocasión para hablar con dirigentes de empresas de servicios públicos, destacados ingenieros sanitarios, y ministros de hacienda y de obras públicas. El tema tratado fué el abastecimiento de agua en sus aspectos de financiamiento, administración y estructuración de tarifas.

PUNTOS IMPORTANTES

Preguntábamos con mayor insistencia, entre otras cosas: Porqué no se constrúan abastecimientos de agua a un ritmo igual al del crecimiento de las ciudades? Porqué, con cada año que pasa, aumenta el número de gente que no puede obtener el servicio doméstico de agua? Porqué, con cada año que pasa, el servicio de agua parece empeorar, con menos presión y períodos más largos sin agua? Y porqué seguían tan altos los índices de enfermedades causadas por el agua?

La respuesta era casi idéntica en cada país: "No tenemos dinero". Esta respuesta casi siempre nos movía a preguntar: Qué cobran ustedes por el agua? No hace falta repetir la respuesta. Lo cobrado por el agua, generalmente ni siquiera alcanzaba para cubrir los gastos de operación. Todos los

años había que incluir en el presupuesto nacional, partidas para operación y mantenimiento, además de partidas para nuevas construcciones, con el resultado de que, con cada año, que pasaba, mermaba más el dinero para nuevas construcciones.

Criterios sobre El Servicio de Agua

Es realmente asombrosa la revolución acaecida durante los últimos siete años en el modo de pensar y de obrar de ingenieros, dirigentes de empresas de servicios públicos y funcionarios gubernamentales latinoamericanos. Hace siete años que prevalecía el criterio, no compartido por algunos pocos, de que el agua era un artículo de primera necesidad de tipo social que era menester abastecer sin cobrarla o por lo menos cobrarla a un precio por debajo del costo. Hoy día, es una excepción a la regla encontrar un dirigente de empresa de servicio público que sostenga el antiguo criterio. Sin embargo, aún no todos los funcionarios gubernamentales piensan como los que trabajan con las empresas abastecedoras de agua. Por lo tanto no se debe llegar a la conclusión de que hoy día no son pocos los sistemas abastecedores de agua que cobran precios adecuados por el producto que abastecen.

Este artículo se basa en la premisa, comprobada por la experiencia habida en la América Latina, de que un servicio de agua suministrado por un sistema que hace caso omiso de los principios de solidez económica de las empresas de servicios públicos, será deficiente y no correrá parejo con las necesidades de la gente a la cual presta servicio. De lo cual se deduce que el agua es un artículo de consumo esencial, cuya distribución a todos se lograría en la mejor forma, por medio de mecanismos que imiten el *modus operandi* de una sólida empresa de servicios públicos, a un precio que cubra los costos de producción, venta y administración.

Empresas de Servicios Públicos Económicamente Sólidas

Una empresa económicamente sólida debe tener una sólida base financiera. Esta existe sólo cuando se cobran precios adecuados por el agua vendida. No es difícil hacer una estimación del precio medio que deba cobrarse por unidad de agua. Es mucho más difícil transformar el precio medio en una estructura de tarifa que establece la dotación de las diversas clases de usuarios, con arreglo al volumen consumido en cada caso. Se observará que a base de un estudio de los métodos empleados actualmente en la América Latina, se han usado diversos enfoques para determinar la distribución de costos. Como es corriente en casi todos los otros países del mundo en lo que se refiere a la estructuración de tarifas de agua, en la América Latina usan los costos medios como base para los cálculos.

Estructuración de las Tarifas

Antes de entrar a discutir los tipos de estructuras de tarifas usadas en la América Latina, debemos recalcar que el método, cualquiera que sea, debe contar con los medios para que ingresen los fondos que necesita el acueducto, por concepto de la venta de agua. Aun con el mejor de los sistemas de tarifas, al dejar de leer los medidores, o de hacer una oportuna facturación, o de cobrar las cuentas, no tienen importancia los medios usados para establecer las tarifas.

Parafraseado para darle sentido internacional, el primer aparte del Water Rates Manual (1960) de la AWWA quedaría redactado así:

El tema de las tarifas de agua ha sido asunto polémico durante muchas décadas, y no es posible resolverlo con una simple reglamentación. Además de los divergentes puntos de vista que entran en juego, se deben considerar las diferencias existentes en las condiciones de la región, las leyes, el dominio (público o privado), el control (nacional, estatal o municipal), la cultura, el aspecto social, la filosofía gubernamental, y otros asuntos.

La confusión y la controversia surgen mayormente como resultado de los esfuerzos para igualar los precios y contar con un medio justo para fijar lo que cada consumidor deba pagar como justa contribución para compartir los gastos.

Definición de las Tarifas de Agua

La siguiente definición de las tarifas de agua fué redactada de común acuerdo por el seminario sobre la materia, convocado en 1960 en Montevideo por la Oficina Panamericana de la Salud:

"Una tarifa de agua es la base de un sistema que permite establecer precios por el agua consumida".

Se puede argumentar, con arreglo a esta definición, que cuando no se usan medidores de agua, los precios no se basan, directa o totalmente, en el agua consumida, y, por lo tanto, el sistema de precios no debe ser clasificado como una tarifa de agua. A pesar de eso, la expresión "tarifas de agua" usada en esta exposición, se usa en sentido amplio para incluir todo sistema para cobrar el agua, medida o sin medir.

Otras Fuentes de Ingreso

Antes de discutir las tarifas de agua, valdría la pena mencionar otras fuentes de ingreso que se emplean con provecho para suplementar los ingresos por aplicación de las tarifas. En la América Latina, los impuestos a las mejoras urbanas y los derechos de frente se utilizan muy poco, si acaso, para cubrir los gastos de construcción de sistemas de distribución. Utilizando estos ingresos contribuiría a aliviar la carga que representan las tarifas de agua. Este modo de utilizar esos ingresos es respaldado con amplia argumentación.

Unos pocos países latinoamericanos se valen de impuestos especiales - a las

bebidas y a las nuevas construcciones - para incrementar los ingresos de los acueductos. Otra fuente de ingresos es el cobro de derechos de incorporación. Los impuestos a las nuevas construcciones y los fuertes derechos de incorporación tienen su mérito porque pueden reflejar el costo de la tubería de distribución de agua a la propiedad y hacer las veces de derechos de frente.

Conviene tener presente que los impuestos y los derechos especiales no son tarifas de agua.

Objetivo de las Tarifas de Agua

Por razones de las diferencias inherentes en las filosofías de los gobiernos, sería algo presuntuoso hacer una exposición de lo que es el objetivo de los sistemas de tarifas de agua empleados actualmente en muchos países. No obstante, si somos partidarios de que una empresa abastecedora de agua debe funcionar como todo negocio bien manejado, la deducción es que los ingresos del sistema deben cubrir todos sus compromisos financieros.

Los compromisos financieros comprenden: gastos de operación y mantenimiento, impuestos, interés, depreciación o pago de préstamos (el que sea mayor) y el costo de extensiones y expansiones normales del sistema. Los ingresos son todas las sumas recibidas por el acueducto por concepto de impuestos, contribuciones especiales, derechos de incorporación, derechos de agua, y venta de agua. Por lo tanto, el objetivo de las tarifas de agua debe ser el de producir ingresos adicionales a otros ingresos, para que el acueducto puede cubrir sus gastos. El subsidio gubernamental para cubrir las pérdidas del sistema no es un ingreso.

La Práctica en la América Latina

El método usado para financiar inicialmente casi todos los sistemas de la América Latina es una de las características que influyen en las tarifas. Los gobiernos financiaban las obras con subsidios que cubrían hasta la totalidad de los

costos. Era la regla y no la excepción. A esto nos referiremos más adelante.

Estudiando los sistemas de tarifas empleados, observamos lo siguiente:

1. El nivel económico de los consumidores es reflejado frecuentemente en el sistema de tarifas: Las más altas para los que pueden pagarlas. Esta característica se observa en procedimientos tales como el agrupamiento de consumidores de acuerdo con el valor de sus propiedades; tarifas ascendentes proporcionadas según el volumen de agua consumida; y tarifas básicas más altas para consumidores industriales y comerciales.
2. Aparentemente no existe una norma para las tarifas de agua.
3. Algunas sistemas de tarifas son sumamente complejas y otras muy sencillas; algunos tratan de producir un ingreso que alcance para pagar gastos de operación y mantenimiento y préstamos; otros sólo cubren operación y mantenimiento; mientras que los ingresos de otros ni siquiera alcanzan para pagar los gastos de operación.

Sistemas de Tarifas de Agua

En la América Latina usan dos tipos distintos de sistemas para tarifar el agua, a saber:

1. Los sistemas que no usan medidores y se valen de otros medios para establecer lo que debe cobrarse por el agua.
2. Los sistemas que se basan en el volumen de agua consumido, o sea los que usan medidores.

Cabe mencionar que las ciudades latinoamericanas en su mayoría no están hoy día totalmente equipadas con medidores, y usan por lo tanto, los dos tipos de sistemas generales para tarifar el agua.

Sistemas sin Medidores

Los sistemas de tarifas que no usan medidores, determinan el cobro a base de uno de los siguientes factores:

1. Diámetro de la tubería de servicio.
2. Valor de la propiedad
3. Tipo de establecimiento: Comercial, industrial o doméstico

4. Número de grifos o número y tipo de instalaciones
5. Situación de la propiedad
6. Tamaño de la casa o del establecimiento, incluido el número de cuartos y el número de ventanas.
7. Número de ocupantes.

d Los factores mencionados se usan para tratar de fijar el cobro a base de algo que indique, aproximadamente, el volúmen de agua que cada propiedad podría usar. Evidentemente estas medidas no pueden reflejar el volúmen con exactitud, y por lo tanto, además de desiguales, generalmente le producen pérdidas monetarias al acueducto, ya que como no hay un incentivo para conservar el agua, la gente la desperdicia. Por otra parte, no hay un modo exacto para descubrir la cantidad de pérdidas por fugas en las diversas partes del sistema de distribución.

El número y el tipo de instalaciones sanitarias en una casa o un establecimiento, constituyen probablemente un buen índice del agua usada cuando no se usan medidores. Otro índice secundario podría ser el diámetro de la tubería de servicio, aunque el mismo, al igual que el valor de la propiedad, tiene escaso valor práctico si ha de reflejar el verdadero consumo.

Desde el punto de vista puramente económico, no debe tomarse una decisión, afirmativa o negativa, en cuanto a la instalación de medidores, sin una previo análisis del costo de las pérdidas de agua no medida en comparación con el costo de medidores, instalación y mantenimiento, y los costos adicionales por concepto de lectura y facturación. La proyección en el futuro de este análisis debe comprender por lo menos veinte años, tomando en cuenta, además, el costo de nuevos

medios que el sistema pueda necesitar mientras tanto si no se emplean medidores. El valor de los costos se debe actualizar para fines de comparación, usando una tasa de descuento que refleje el costo del dinero en el país en particular. En muchos países latinoamericanos la tasa de descuento puede sobrepasar holgadamente el 15 por ciento. Mientras más alta la tasa de descuento, mayores las probabilidades de decidirse por los medidores.

TABLA I

Clases de Tarifas de Acuerdo con Grupos de Consumidores

Clase	Grupo	Consumo Mensual m ³	Tarifa \$/m ³
A	Pequeños consumidores en proyectos de viviendas públicas o empleados del acueducto	15	0,026
B	Consumidores residenciales intermedios	≤ 15 > 15	0,026 0,057
C	Consumidores con servicio eléctrico estatal y teléfono	lo que consuman	0,065
D	Industrias, establecimientos comerciales, bancos y empresas estatales	lo que consuman	0,087

Los administradores que tengan que rendir cuenta del agua usada, y adoptar procedimientos que incorporen buena administración, encontrarán que no hay otro medio mejor para enfocar el problema que la instalación de medidores en todo el sistema.

Sistemas con Medidores

En la América Latina se emplean diversos modos para medir el agua abastecida por tubería. El preferido es con un medidor que registra el volumen de agua

que pasa por él. Hay dos tipos en uso general: el de desplazamiento y el dinámico. Con gasto bajo, como el doméstico, y donde existan problemas crónicos de baja presión, que es una característica de muchos sistemas en la América Latina, es preferible usar el tipo de desplazamiento. La decisión de seguir usando el tipo dinámico o reemplazarlo gradualmente, requiere, como casi toda decisión, un previo estudio minucioso y un análisis del aspecto económico del cambio. Se deben considerar, entre otros factores, la diferencia entre los costos de los dos tipos, la capacidad de reparación, las pérdidas anuales por subregistro, la duración útil del medidor antes de necesitar reparación, y las características del agua que pasa por el mismo.

El orificio es otro modo bastante generalizado para medir el agua en algunas partes de la América Latina. Se han estudiado extensivamente las características hidráulicas del flujo del agua por una sección restringida de un tubo, por una sección cónica, y por pequeños orificios, y se sabe que, a una presión determinada, cierto volumen de agua pasará por el orificio. Este es un principio que se usa cuando los acueductos no quieren gastar en medidores registradores pero quieren tener la seguridad de que un servicio en particular no consumirá cantidades ilimitadas de agua.

No es posible discutir este aspecto del control del flujo del agua, en un artículo dedicado a las tarifas. Se menciona sólo para señalar que como no hay tal cosa como un sistema de agua a presión constante y como el orificio usado en el servicio doméstico no registra la cantidad usada, el mismo no puede considerarse como un mecanismo para los acueductos que están interesados en la más alta eficiencia y en conocer donde va a parar toda el agua producida. El uso de orificios en la tubería de servicio, casi siempre es un incentivo para usar tanques en el techo para abastecer la demanda máxima doméstica. Esos tanques son casi siempre

una fuente de preocupación para los encargados de la calidad del agua. Lo tratado más adelante acerca de las tarifas de agua en sistemas con medidores, se basa en que, presumiblemente, se usan medidores que registran el consumo.

El consumo medido, como mecanismo para establecer lo que deba cobrarse, es usado en todos los países latinoamericanos, si bien con variaciones en el empleo. La base para establecer el precio varía considerablemente de un país a otro y entre las ciudades de un país.

Elementos de los Sistemas de Tarifas de Agua Medida.

Ciertos elementos son más o menos comunes en los diversos sistemas de tarifas de agua medida en la América Latina. He aquí unos pocos:

1. Precio mínimo mensual con una dotación fija incluida en el precio mínimo.
2. El exceso sobre la dotación mínima es cobrado a base de una escala ascendente, descendente o fija.

Incluida en la factura al suscriptor, aparecen otros cobros, a saber:

1. Derechos por alquiler del medidor
2. Derechos de servicio
3. Derechos de incorporación
4. Pago a cuenta de costos de instalación de la tubería de servicio y el medidor.

Clasificación de los Sistemas de Tarifas Latinoamericanos

Para diferenciar entre los distintos sistemas de tarifas empleados en la América Latina, los nombres aplicados a cada tipo de sistema se basan en el método general empleado para hacer el cálculo, a saber: clase consumidora, clase propietaria, clase volumétrica, y método uniforme o de tarifa fija.

TABLA 2

Clases de Tarifas en una Ciudad Latinoamericana

Clase	Grupo Consumidor	Precio Mínimo Mensual \$	Volúmen incluido en el precio mínimo m ³	Exceso sobre dotación mínima	Tarifa para el exceso \$/m ³
A	Residencial	2,40	75	16-25 26-40	0,20 0,32
B	Industrial	9,00	30	≥ 41 ≥ 31	0,36 0,28
C	Comercial	6,00	20	≥ 21	0,28

Tarifas para la Clase Consumidora

Estas tarifas establecen un precio básico distinto para el agua vendida a los consumidores residenciales, comerciales e industriales. Una característica de estos últimos puede ser una línea de servicio de mayor diámetro y un medidor más grande, con una tarifa estructurada de acuerdo con la característica indicada, o simplemente una tarifa básica sin hacer caso del diámetro de la tubería de servicio o el tamaño del medidor.

Dos países, por lo menos, clasifican los consumidores en grupos: domestico, comercial, industrial, u otro, y establecen una tarifa mínima por una dotación, facturada mensualmente. En la Tabla 1 aparecen las tarifas aplicada a estos grupos en 1960 en uno de los países. La Tabla 2 es otro ejemplo del mismo sistema adoptado recientemente en una ciudad latinoamericana.

Comentarios sobre los Sistemas de Tarifas de la Clase Consumidora.

1.. Con este tipo de sistema se trata de crear un método de asignación de gastos

del servicio a base de la "capacidad económica" del usuario. Además, tarifas distintas para distintas clases de consumidores pueden reflejar los beneficios recibidos.

2. Al contrario de algunos otros sistemas, es menos difícil cambiar la tarifa, facturar los nuevos suscriptores, y estimar los ingresos, siempre que se lleve una estadística clasificada del consumo.
3. El sistema puede no reflejar con exactitud la proporción de los costos del mismo que deba compartir cada consumidor. Además, es frecuente la falta de una base racional para establecer grupos de tarifas.

Tarifas para la Clase Propietaria

Estas son tarifas que varían de acuerdo con una fórmula que trata de reflejar "la capacidad económica" de diversas clases de consumidores, reflejada por el valor de sus propiedades. La Tabla 3 contiene las tarifas aplicadas en las ciudades de un país que emplea este sistema.

En una clasificación fundada en el valor de la propiedad, pueden emplearse un sinnúmero de grupos.

TABLA 3

Tarifas para la Clase Propietaria como Reflejo del
* Valor de la Propiedad

Clase	Valor de la propiedad	Dotación m3	Factura mínima mensual \$ *
A	4000	40	0,58
B	4001-8000	40	1,00
C	8001-12.000	50	1,45
D	12.001-16.000	60	1,75
E	mas de 16.000	70	2,00

* Exceso facturado a \$ 0,037/m3

Comentarios sobre las Tarifas para la Clase Propietaria.

1. Las tarifas para cubrir el costo del servicio de agua, a base del valor

de la propiedad, como reflejo del ingreso del propietario, imponen una mayor carga económica a los usuarios económicamente más fuertes. Esto tiene sus ventajas desde el punto de vista social.

2. Las tarifas a base del valor de la propiedad en una cuadra, disponen generalmente que un determinado volumen de agua sea vendido por debajo del costo a los consumidores que viven en las cuadras de ingresos más bajos.
3. Estas tarifas son más difíciles de estructurar y aumentan el papeleo, los gastos de administración y las controversias del acueducto.
4. 4. Los cambios en el valor de la propiedad no son siempre reflejados por cambios en la clasificación de las tarifas de agua.
5. El valor de la propiedad ocupada no refleja el consumo.
6. Estos sistemas de tarifas son generalmente complicados y se apartan del principio de sencillez.

Tarifas a Base del Volumen Consumido

Hay muchos sistemas de tarifas en la América Latina, incluidos en sistemas que siguen otras clasificaciones, que tienen disposiciones para crear clases de tarifas separadas, estructuradas de acuerdo con el volumen consumido. La Tabla N° 4 es un ejemplo de este tipo de clasificación

TABLA 4

Clases de Tarifas a Base del Volumen de Agua Consumida

Clase	Consumo Bimensual M3	Tarifa \$/m3
A	≤ 40	0,024
B	41-100	0,028
C	101-150	0,032
D	151-200	0,036
E	201-250	0,040
F	251-500	0,044
G	501-750	0,048
H	751-1001	0,052
I	más de 1001	0,056

Un método similar al precitado es usado en muchos países latinoamericanos, a saber: a medida que aumenta el consumo, aumenta la tarifa por metro cúbico.

En dos países, por lo menos, se sigue una método contrario, o sea que a medida que aumenta el consumo, disminuye la tarifa por metro cúbico. Este es el método corriente usado en los Estados Unidos.

En algunas ciudades de uno de los países, se observó que habían combinado los dos métodos: El precio unitario del agua aumentaba a medida que aumenta el volumen usado, pero al sobrepasar una determinada cifra, el exceso de consumo es cobrado a un precio más bajo por metro cúbico.

Comentarios sobre las Tarifas a Base del Volúmen Consumido.

1. Las tarifas que aumentan el precio unitario a medida que aumenta el volúmen consumido, favorecen a los que consumen poco y tratan desfavorablemente a los grandes consumidores. Un sistema de agua financiado con fuertes subsidios gubernamentales, con tarifas que disminuyen a medida que aumenta el consumo, es discriminatorio para el pequeño consumidor. Una combinación de los dos métodos es discriminatoria para el consumidor intermedio.
2. Es importante observar que los clientes pueden clasificarse de acuerdo con la cantidad media de agua consumida y las tarifas establecidas para cada clasificación, o que pueden usarse otros medios de clasificación para establecer los mínimos y cobrar únicamente el exceso a base de precios escalonados, ascendentes o descendentes, o una combinación de los dos métodos.
3. Una escala descendente de precios se justifica si el sistema tiene capacidad sobrante y si se puede demostrar que la producción de agua para grandes consumidores (incluida la disposición anterior de nuevos abastecimientos por aumento en el consumo) es mucho menos costosa que para pequeños consumidores.

El Derecho de Agua

Hay dos países, por lo menos, en los que clasifican al cliente a base de la posesión de un "derecho de agua" y la dotación del mismo. Un ejemplo típico es la Tabla No. 5.

Si no es propietario de un derecho de agua, el consumidor paga a una tarifa más alta, estructurada de acuerdo con una clasificación a base del volúmen consumido, cuyos precios, por regla general, son iguales a los que pagan los propietarios de derechos por el exceso consumido. Se observará en la Tabla N. 5 que una persona con derecho a 10 m³ pagaría \$0,50 mensual por los 10 m³, mientras que otra, sin derecho, pagaría \$1,00

TABLA No. 5

Clasificación del Clientes

Clase	Dotación del derecho de agua m ³	Costo del derecho de agua \$	Cobro mínimo mensual * \$
A	10	60	0,50
B	30	160	1,00
C	60	300	1,50
* Exceso facturado a \$0,10/m ³ a las tres clases.			

Comentarios sobre Derechos de Agua

La venta de derechos de agua es asunto que no puede discutirse en detalle como parte de un artículo sobre las tarifas de agua, ya que esa modalidad existe principalmente para obtener capital utilizable en nuevas construcciones. Esta modalidad tiene sus méritos si es aplicada para estimular la inversión de fondos locales en los sistemas abastecedores de agua, como es el caso, al parecer, en todos los países. La aplicación de una tarifa más alta a los que no son propietarios de un derecho de agua, contribuirá considerablemente a la compra de derechos.

Tarifas Uniformes

Bajo un sistema de tarifa uniforme (denominada corrientemente tarifa

fija), se hace caso omiso de diversos factores tales como demanda y derechos de capacidad, y el agua es vendida sin hacer caso de las otras variables que distinguen un consumidor del otro. Los derechos de capacidad se reflejan en la tarifa, ya que mientras mayor el consumo mensual, mayor la cantidad que paga el consumidor. En el sistema de tarifa uniforme no existe la categoría de exceso y no se requiere el mínimo. Se puede establecer un precio mensual por servicio, por concepto de gastos de administración y derechos de medidor.

Que se sepa, no hay ningún sistema en la América Latina que emplee un método totalmente fijo para estructurar las tarifas de agua. Tenemos datos que indican que en una ciudad latinoamericana, las tarifas vigentes en 1960, disponían el cobro de una tarifa uniforme de \$0,04/m³ en las zonas urbanas servidas por medidor y en las que es necesario bombear el agua. Por lo tanto, se puede decir que estos clientes son servidos bajo un sistema de tarifa fija. Este es un enfoque usado en otros países del mundo.

Reducción del Precio Unitario

Se alega, como razón para reducir el precio unitario del agua a medida que aumenta el consumo, que los grandes consumidores no deben ser obligados a pagar por los medios de distribución instalados para los consumidores residenciales. Esta posición es defendible si los ingresos del acueducto se usan para pagar toda la construcción del sistema de distribución. En la América Latina, sin embargo, donde casi todos los sistemas han sido construídos, por lo menos parcialmente, con fondos presupuestados por el gobierno central y tomados de los ingresos generales, puede decirse que el público en general ya ha contribuído al costo del sistema de distribución, y hay menos justificación

para una tarifa descendente.

En los sistemas donde escasea el agua y conviene conservarla, la tarifa ascendente tiene validez.

El punto que ha de destacarse en este caso, es que, con los métodos actuales, parece muy difícil distribuir equitativamente entre los consumidores, los costos para satisfacer diversas demandas. Algunas desigualdades que afectan a los grandes consumidores, ya han sido compensadas con el método de pagar los costos del sistema de distribución con fondos provenientes de fuentes distintas a las de los sistemas de tarifas. En consecuencia, parece válido el sistema de tarifa uniforme que incluye todos los costos y los reparte comparativamente a cada unidad de agua al mismo precio, exactamente, por toda el agua usada. Con este proceso no se debe necesariamente descartar el establecimiento de precios diferenciales si se puede demostrar que los mismos pueden fijarse con exactitud.

La demanda máxima es casi siempre tema de discusión en la estructuración de tarifas. Si se emplean medidores "tipo demanda", valdría la pena considerar una diferencia en las tarifas para el consumo normal, ya que la diferencia serviría en incentivo para utilizar la capacidad inactiva de la planta. Sin embargo, según algunos criterios, las tarifas de agua rebajadas, como incentivo para el consumo normal, no se justifican en la misma medida que las tarifas de energía eléctrica, ya que esta, una vez producida, no puede almacenarse. En algunos sistemas de abastecimiento, se llenan los tanques de almacenamiento durante las horas nocturnas, y la capacidad de la planta puede utilizarse con mayor provecho que sería el caso con la energía eléctrica.

Aplicación Uniforme de las Tarifas

En esta exposición, se ha señalado que los costos variables, reflejados casi siempre en los sistemas de tarifas existentes, pueden ser consolidados y repartidos a base de una tarifa uniforme, con un precio fijo por cada metro cúbico de agua vendido, comenzando con el primer metro cúbico consumido. El pequeño consumidor que tiene poco dinero, puede usar la cantidad de agua más pequeña que desee sin tener que pagar por la que no necesita. Pueda que pague aún menos. Si ahora tiene una dotación mínima de 15 m³, el pago mínimo que tiene que hacer debe reflejar siquiera casi la totalidad de los 15 m³, aunque podría arreglarselas con 8m³. Derechos de incorporación, derechos de frente, impuestos a las nuevas construcciones, e impuestos por mejoras a la propiedad, se pueden usar con el sistema de tarifa uniforme cuando se crea conveniente repartir proporcionalmente entre las propiedades los costos de distribución y cuando se puedan establecer estos tipos de impuestos y derechos especiales. El sistema debe incluir un derecho mensual por servicio o alquiler del medidor.

En casi todos los países latinoamericanos, es muy alta la dotación mínima establecida en el precio mínimo mensual. Ya hemos presentado las razones para prescindir de un todo de la dotación mínima mensual. Sin embargo, donde esta existe, se ve a las claras que muchas familias podrían usar y usarían menos agua si eso convendría a sus intereses. Interesa por igual a la empresa abastecedora, porque el agua vendida bajo una dotación mínima, no tiene ahora el mismo precio unitario que la vendida como exceso sobre la dotación mínima. En consecuencia, hay pérdida de ingresos, cuya cantidad es una función del grado de coincidencia entre el precio unitario y el costo de producción y

distribución.

Reduciendo la dotación mínima y aumentando el precio unitario sería una medida efectiva cuando se produzca una fuerte demanda que pueda exceder la capacidad de la fuente de agua o de la planta abastecedora. Este es un recurso usado pocas veces, pero en las ciudades que afronten urgentes problemas de escasez de agua y en las que casi todos los servicios de agua son medidos, un fuerte aumento en el precio del agua es una medida de disuación efectiva contra el desperdicio del agua.

Un sistema simple de tarifas es muy recomendable para las empresas de agua que comienzan a adquirir experiencia. Al cabo de algunos años, después de acumular los datos necesarios, la empresa podría, posiblemente, ver los cambios que puedan efectuarse y que puedan contribuir a una distribución más refinada de los precios entre los usuarios.

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Enero de 1968

Tomado del número de enero de 1968 del
Journal, American Water Works Association

January 22, 1968

Mr. Pedro Pablo AspuruoQ,
Civil Engineer
Quinta "Las Adjuntas"
Valle Arriba Golf Club
Caracas, Venezuela

Dear Mr. Aspuruo: ✓

This will acknowledge your letter of January 15 which has crossed mine in the mail.

You inquire whether I would be agreeable to publication of my original article and reply on Water Rates in Latin America in one of the journals of the Venezuelan Society of Hydraulic Engineers and Venezuelan Association of Sanitary Engineers. I have no objection to this and hope that you will convey to them my willingness for such a publication. I have reviewed the spanish translation of my article and believe that it reasonably conveys my thoughts as conveyed in the english version.

I have passed on your notes to Mr. Morse as per your suggestion.

You inquire about a paper of Engineer Humberto Olivero which I mentioned and which contained a date in 1966. This is a paper published by the Universidad de San Carlos, Imprente Universitaria No. 814, 1966, entitled "Financiamiento de Sistemas de Agua Potable y Alcantarillado en Guatemala". Engineer Olivero was a Faculty Member and this is a reprint of the remarks which Engineer Olivero made at a Seminar convened in Central America, I believe, in 1966. Since Engineer Olivero is about to begin a new assignment with the Inter-American Development Bank in Washington, I would expect that it might be possible to obtain copies of the paper either directly from him or by writing to the Engineering School of the University in Guatemala.

Please accept my best regards.

Very truly yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

Control No: MISC-8-4

January 17, 1968

Professor Frank Tannenbaum
University Seminars
Columbia University
306 Dodge
New York, N.Y. 10027

Dear Professor Tannenbaum,

Thank you very much for your letter of January 15, 1968, advising me that I have been chosen as an Associate by the University Seminar on Problems in Water Resources (Nos. 495-496). I enclose the schedule which you sent me with your letter duly filled in.

Yours sincerely,

(signed) H. B. Ripman

Encl.

H. B. Ripman
Director of Administration

HBRipman:pgn

Columbia University in the City of New York | New York 27, N. Y.

UNIVERSITY SEMINARS

~~XXXXXXXXXXXX~~
306 Dodge

January 15, 1968

Mr. H. B. Ripman
Director of Administration
International Bank for Records & Development
1818 H. Street, N.W.
Washington, D.C. 20433

Dear Mr. Ripman:

It gives me pleasure to be able to tell you that you have been chosen as an Associate by the

University Seminar on PROBLEMS IN WATER RESOURCES (#495-496).

The Columbia University Seminar movement began in 1944 and is based on the theory that knowledge and experience in the work-a-day world get themselves synthesized in "clusters" of organized activities, institutions, "going concerns," perennial issues, areas, historical periods, and the like, rather than disciplines. Some synthesis of both knowledge and experience is a prerequisite for carrying on the activities of the many institutions which constitute our society. To bring to the campus the insight and experience of those who stand at each of the many facets of any one institution and to fuse what the scholars and the men of experience know is the first business of the University Seminars. Time, resources, and opportunity will open fields of research, teaching, publication, and public service which are implicit in this developing movement. But the search for understanding and wisdom must always remain the primary aim as well as the ultimate goal of this endeavor.

Your election carries the honor of official membership in Columbia's academic family and implies the acceptance of responsibilities in an associated effort to unravel the mysteries that perplex our world at every level of activity including the one your collegium is dedicated to.

If you will be kind enough to fill in the attached schedule, it will facilitate my submitting to the President of the University your nomination as a University Seminar Associate.

Sincerely,



Frank Tannenbaum
Director

FT:ahm
Encl.

January 15, 1968

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Mr. Max Lowenthal	-	New York City
Professor Howard A. Meyerhoff	-	Tulsa, Oklahoma
Dr. Nathaniel M. Perlmuter	-	Hydrologist, U.S.G.S.
		Water Resource Division

aw

SEMINAR ON WATER RESOURCES

The opening meeting of the Seminar will be held on Wednesday, January 24, 1968. The meetings as scheduled for the rest of the academic year 1967/68 are on the following dates. Please put them on your calendar.

February 14

April 17

March 6

May 8

March 27

May 29

The tentative list of the speakers at the above meeting will be:

Dr. Luna B. Leopold	Dept. of Interior, U.S.G.S., Washington, D.C.
Mr. Bernard A. Power	President Weather Engineering Corp. of America, Washington, D.C.
Dr. Ernest L. Hendricks	Chief Hydrologist, U.S.G.S., Washington, D.C.
Mr. Chaba Benedek	Consulting Engineer, Wilmington, Delaware
Dr. Charles H. Behre, Jr.	President of the Society of Economic Geologists, N.Y.C.
Mr. Victor T. Stringfield	Consulting Engineer, Florida and Washington, D.C.
Dr. Robert F. Legget	President of Geological Society of America Ottawa, Ontario, Canada

We are looking forward to seeing you.

George J. Halasi-Kun

January 2, 1968

PEDRO PABLO AZPÚRUA O.
INGENIERO CIVIL
QUINTA "LAS ADJUNTAS"
VALLE ARriba GOLF CLUB
CARACAS

TELEFONO 332.060

Jan 19/68
applied
Shipman
Caracas, 15 de enero de 1.968.

Señor Ing°
Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities
International Bank of Reconstruction and Development
18184 H. Street New Washington D. C., 20433
U. S. A.

MISC-8-4

224

Estimado amigo:

Acuso recibo de su carta del 19 de diciembre de 1.967 y de su anexo contestando mis comentarios (carta del 4 de mayo de 1.967) a su trabajo "Water Rates Structure in Latin América", que me han parecido muy interesantes y que estudiaré muy detenidamente -para realizar estudios que sean necesarios, con el objeto de despejar incógnitas y en otros casos para recopilar información- de manera continuar nuestro mutuo cambio de opiniones en el futuro. Doy las gracias por haberse tomado el trabajo de contestarme.

Como le informé en mi última carta, la Sociedad Venezolana de Ingeniería Hidráulica y la Asociación Venezolana de Ingeniería Sanitaria desean publicar su trabajo sobre tarifas para América Latina, así como mi carta-comentarios y su contestación, por cuya razón me pidieron escribirle para que Ud. autorizara hacer dichas publicaciones en español e inglés. Le agradeceríamos contestar a nuestra petición; ya hemos recibido autorización de la A.W.W.A.

Anexo a esta carta le envío una versión en español de sus comentarios, que agradecería revisar para saber si con la traducción no ha perdido el espíritu de lo dicho en inglés.

De nuevo le doy las gracias por todo el interés que le ha merecido mi carta y espero seguir cambiando opinión con Ud. a este respecto, pues son muchas las cosas que aún desconocemos en este campo y que Ud. puede aclararnos.

Soy de Ud. atentamente amigo,

Pedro Aspúrua

P.D.- Con mis mejores saludos para Morse y Rangel. He tenido muy malas noticias de allá. Admitiendo los consejos de ellos, de seguir asesorando al INOS, he preparado un informe sobre lo que hablamos en el aeropuerto, que creo está bastante bien y da a todos los directivos del acueducto una buena orientación y un panorama menos restringido de su administración y a Uds. podría hacerlos meditar en sus decisiones. Muy pronto estará en sus manos. Vale.

cc: Ing° Hugo Fonseca Viso, Sociedad Venezolana de Ingeniería Hidráulica.
Ing° Luis Wannoni L., Asociación Venezolana de Ingeniería Sanitaria.

*Conozco el trabajo del Ing° Humberto Olivieri
de junio de 1962, desearía conocer el trabajo
por el mismo del 66. Vale*
ocm Jan. 22/68

Shapman

Comentando mi artículo "Tarifas de Agua en la América Latina", publicado en el número de enero de 1967 del Journal de la AWWA, el Dr. Azpúrua hizo un poco de historia muy útil acerca de la administración de los abastecimientos de agua en Venezuela. Es fácil coincidir con el Dr. Azpúrua en el sentido de que el tema de la administración de los abastecimientos de agua ha preocupado a muchos ingenieros a lo largo de algunos años, no sólo en la América Latina sino también en diversas partes del mundo. Sin embargo, hace solo unos diez años que comenzó a dedicarsele atención especial, planificando los esfuerzos, al aspecto económico de los sistemas de abastecimiento de agua potable, la estructuración de tarifas adecuadas, etc. El artículo sobre la estructuración de tarifas de agua, al narrar los acontecimientos acaecidos, solo se remonta a 1959, cuando el que esto escribe tuvo la oportunidad de tratar con ingenieros en la América Latina, los problemas de la administración de los abastecimientos de agua y la estructuración de tarifas. El artículo señala los cambios que desde entonces han tenido lugar en la América Latina en la política para el abastecimiento de agua y no tiene por objeto dar la impresión de que fué solo en 1959 cuando se inició el concepto de administrar los abastecimientos de agua de acuerdo con los métodos de solidez económica de las empresas de servicios públicos. Es innegable que en el pasado estas ideas

han sido consideradas tanto por particulares como por organismos, pero el impulso que han recibido data solo de años recientes. Esta conclusión la comparte el ingeniero Humberto Olivero en un trabajo que presentó en 1966 en un Simposio en Guatemala, en el que justifica sus conclusiones con el aporte de una documentada presentación de los acontecimientos acaecidos durante el período 1959-1966.

El Dr. Azpúrua, refiriéndose a la definición usada por mí y que fué redactada por ingenieros de doce países latinoamericanos en 1961, sugiere que la misma debe ser ampliada en el sentido de indicar quién debe pagar las tarifas y qué es el agua esencial estipulada en las estructuras tarifarias. No estoy de acuerdo con la modificación de la definición. La cantidad de agua, si acaso, que deba suministrarse a un precio mínimo, es asunto característico de la estructura tarifaria en sí y no tiene cabida en una definición general de tarifas. Podría agregar que en el grupo que redactó la definición de tarifas de agua usada en mi artículo, Venezuela estaba representada por cinco destacados ingenieros, entre los cuales estaba el Profesor Rivas Mijares, mencionado en la carta del Dr. Azpúrua. La definición no fué redactada por la Oficina Panamericana de la Salud, sino por los ingenieros que asistieron al Seminario.

Como prefacio a mi contestación a la pregunta principal que el

Dr. Azpúrua formula respecto de los aspectos económicos contrapuestos a los aspectos sociales de las tarifas de agua, hay dos puntos que debo enunciar y que pueden contestar, parcialmente, su preocupación por el cobro del agua en su totalidad y que obliga a la gente muy pobre a obtenerla de fuentes peligrosas. En primer lugar, no veo nada de malo si a la gente muy pobre se le suministra agua de hidrantes públicos y el municipio paga el costo de la misma. En segundo lugar, una municipalidad vería con agrado que los ingresos del acueducto se derivén parcialmente de la venta de agua y parcialmente de impuestos a mejoras urbanas (o derechos de frente) destinados para uso de acueducto. Sin embargo, si a los impuestos no se les da destino y van a engrosar los ingresos generales, el acueducto tendrá que competir con otros organismos para participar de los fondos impositivos municipales, con lo que estará en un continuo estado de confusión financiera.

Bajo estas circunstancias, la municipalidad quedaría mejor librada produciendo todos los ingresos con la venta de agua y depositándolos a la cuenta del acueducto para uso exclusivo del mismo.

Toda la argumentación sobre las tarifas de agua, presentada por el Dr. Azpúrua, puede aclararse, a mi modo de ver, si coincidimos en que el acueducto debe producir, con la venta de agua, los

ingresos que requiere para cubrir los costos y crear reservas. Se aplican actualmente varios sistemas tarifarios, muchos de los cuales toman en cuenta el factor social y suministran las primeras unidades de agua a un precio que aparentemente es más bajo que el cobrado por las subsiguientes unidades. Este enfoque es el seguido por los ejemplos venezolanos citados por el Dr. Azpúrua. Como indiqué en mi artículo, esta es una costumbre seguida en la estructuración de muchas tarifas en la América Latina. Aunque este es un enfoque objetado por algunos economistas e ingenieros, no me opuse al mismo en mi artículo, y comenté únicamente que con frecuencia son creadas estructuras sumamente complejas, muy difíciles de administrar, que en la mayoría de los casos no benefician a los pequeños consumidores. Mientras se produzcan los ingresos necesarios, no veo la utilidad de polemizar sobre el aspecto económico contrapuesto al aspecto social.

Los países en desarrollo, escasos de fondos para invertir en una larga lista de medios esenciales, pero deseosos de construir abastecimientos de agua a un ritmo más acelerado que el de hace veinte años, tienen necesariamente que usar los fondos presupuestados por el gobierno nacional para subvencionar la operación y mantenimiento de los sistemas existentes, como préstamos aplicados a las

nuevas construcciones. Esto requiere que los sistemas existentes produzcan ellos mismos el ingreso necesario para cubrir los gastos por préstamo y demás gastos. Produciendo reservas para aplicarlas a extensiones y expansiones, permitirá estirar aún más los fondos centrales para inversiones. A mi modo de ver, esto es más humanitario que el enfoque seguido en tantos países en los que el aumento de población sobrepasa la construcción de abastecimientos de agua, y en los que frecuentemente la gente pobre es obligada a pagar precios exorbitantes por agua peligrosa, suministrada por vendedores particulares, y en los que a medida que pasa el tiempo, aumenta la población que no es abastecida por tubería.

El Dr. Aspúrua ha comentado mi declaración que "un servicio de agua suministrado por un sistema que ignora los principios de solidez económica de las empresas de servicios públicos, será deficiente y no correrá parejo con las necesidades de la gente a la cual presta servicio". Opino que uno de los factores más importantes para crear una administración responsable y la solidez económica de empresa de servicio público, es la capacidad de la empresa para producir sus propios fondos. Nada desmoraliza tanto a un administrador como el tener presente que debe mantener el equipo, extender el sistema y planificar ampliaciones, y al mismo tiempo, darse cuenta que los fondos presupuestados que ha solicitado, han sido

reducidos o eliminados por disputárselos otras dependencias. Creo que para merecer el calificativo de bien manejada, una empresa debe poner en orden sus asuntos financieros. Esto no excluye decisiones Gubernamentales de destinar algunas partidas todos los años como contribución de capital para nuevas construcciones. Países como Venezuela, clasificada en la lista de países (25% del total mundial) cuyo producto territorial bruto arroja las mayores cifras per capita, han hecho y harán más al respecto que los países clasificados en un nivel inferior (75% del total mundial). En este último grupo están los problemas. Son países que debe utilizar con el mayor provecho los escasos recursos de que disponen, para poder aumentar el ritmo de construcción de nuevos sistemas de abastecimiento de agua. Opino que una sólida política fiscal es requisito fundamental para lograr solidez en la administración de las empresas de servicio público y ambas son necesarias para que los países puedan prestar debidamente el servicio a la gente.

Me interesan los comentarios del Dr. Azpúrua sobre la elasticidad del consumo en cuanto se refiere al cobro por el agua. Los estudios que él cita se refieren a lo que llaman consumo "no esencial", o sea el agua para regar la grama y refrescar el ambiente. Cómo definiría uno el agua "no esencial" si trataremos de acomodar lo que

propone el Dr. Azpúrua en una estructura tarifaria?. La cantidad de agua esencial para sostener la vida podría quedar limitada probablemente a una medida insignificante. Algunos países creen en una cifra básica mínima de 4 m³/mes por familia; otros, llegan hasta 35 m³/mes. No hay dos familias con las mismas necesidades, y un volumen considerado esencial hoy, ya no tiene validez al cabo de dos años. Donde hay cloacas, el consumo de agua es invariablemente mayor. El que vive en una casa con excusados interiores, considera como "esencial" el agua para lavar la taza. Si la casa tiene bañera o regadera, el agua para la misma es "esencial". Las personas muy pobres no tienen sistema de cañería interior pero pueda que tengan un grifo en el patio. Lo que es "esencial" para esas personas es distinto de lo que es lo mismo para otras personas. Donde usan el enfoque de tarifa fija y el cobro comienza con el primer metro cúbico usado, el pobre pagaría probablemente menos que ahora en los países que consideran 15 m³ como el volumen mínimo cubierto por el precio básico, aún donde este precio básico es subvencionado por los que consumen mayores volúmenes. Las cifras de 4 m³, 15 m³ y 35 m³ son establecidas generalmente por una persona que cree conocer lo que debe ser la cantidad "esencial". Llego a la conclusión de que cada consumidor debe determinar la cantidad de agua que le es esencial y debe pagar menos si necesita menos. Puedo

citar varios casos en la América Latina, donde la tarifa estructurada bajo el aspecto social, en vigencia actualmente, es la causa de que los consumidores de bajos ingresos paguen más por el metro cúbico de agua que los consumidores de ingresos más altos.

En su carta el Dr. Azpúrua refiere una situación en Venezuela de gente pobre que se vió obligada a usar agua peligrosa cuando se produjo un aumento en la tarifa, con saldo de algunos casos de tifo. Como no existen prácticamente datos sobre estudios epidemiológicos que relacionen el precio del agua con las enfermedades, la publicación de los mismos sería una valiosa contribución.

En resumen, coincido con el Dr. Azpúrua en que muchos ingenieros han contribuido al progreso en el campo del abastecimiento de agua, no solo en Venezuela sino en todos los países latinoamericanos. Esto no altera mi observación de que un cambio de gran significación que se refleja en los planes de acción, ha ocurrido en los últimos siete u ocho años. No estoy de acuerdo con su definición de las tarifas de agua pero considero que eso no tiene importancia porque las consideraciones sociales (que él opte por incluir en la estructuración de tarifas, pueden tener cabida en la definición actual. No tenemos una diferencia básica en lo que respecta a su convencimiento de que una justa distribución de los derechos por suministro de agua, debe tomar en

cuenta la capacidad económica. Sin embargo, es necesario reiterar que los ingresos producidos deben cubrir todos los gastos y crear una reserva que pueda aplicarse para extensiones o expansiones. No es posible una buena administración de un servicio público a menos que se diga una sólida política financiera.

Traducción del inglés: AL
12-1-68

Caracas 17 de Enero de 1968

Señor Harold P Shipman

Se me olvidó enviarle (anexo a cont. de 45)
estos recortes de prensa de hace ya
algunos años sobre la lucha en
el Acueducto de Cumaná que
pueden interesarle

Atte

Pedro

tabilidad el principio de las negociaciones con Rusia los Estados Unidos no deben buscar un acuerdo "por el simple hecho de llegar a un acuerdo". Luego aplicó esta norma a la Conferencia Internacional sobre el Danubio, que se está celebrando en Belgrado.

Sus palabras predijeron abiertamente el fracaso de esta reunión en lograr un acuerdo entre el Este y el Oeste sobre el tráfico futuro por la vital arteria fluvial, a

(Pasa a la página dos)

QUEJAS POR DEFICIENCIAS ALIMENTICIAS DE LA ZONA BERLINESA EN MANOS RUSAS

Berlín, agosto 11. — (AP). — Los rusos hicieron alarde de que han acumulado suficientes alimentos aquí para alimentar a Berlín por 40 días. Pero al mismo tiempo se han tenido noticias sobre quejas por la alimentación en la zona soviética. Repetidamente han llegado noticias, no desmentidas por

fracaso. Cuando se esbozó la idea de crear en Caracas un organismo de esa naturaleza, nosotros fuimos de los primeros en alentarla y abogar por su cristalización, por considerar que con ella se pondría cese a las especulaciones de que se ha venido haciendo víctimas a las clases populares. El mismo gobierno, al anunciar su constitución, aseguró que mediante el funcionamiento del Instituto aludido se harían préstamos hipotecarios

los rusos, de que la escasez de alimentos en su zona se ha agravado. Se cree que la causa principal de esto es la confiscación de víveres para apoyar el proyecto soviético de alimentar a todo Berlín. Incluso los sectores bloqueados. Los rusos han dicho que estos alimentos adicionales los importan de la Unión Soviética.

La agencia de noticias ADN con licencia de los soviéticos, acusó al gobierno municipal anticomunista

(Pasa a la página tres)

franca simpatía pública, por cuanto, como es sabido, nuestros trabajadores, al tener que hacer frente a erogaciones imprevistas o extraordinarias, se ven en la necesidad de acudir a quienes entre nosotros han hecho del aglo su profesión más lucrativa.

Sin embargo, toda el aura de presunta bondad que rodeaba al Instituto de Crédito Popular parece que sólo tuvo por base la más deslumbrante ficción. En efecto, de acuerdo con lo informado, ayer por un diario local, estas son horas en que el austerísimo organismo no ha recibido el capital indispensable para la iniciación de sus actividades prestatarias. Las oficinas, desde luego, existen, y en ellas un personal que consume mensualmente más de treinta mil bolívares, según se asienta en la información en referencia. La contabilidad del Municipio, que ha de

(Pasa a la página tres)

Confirman el Abaleo de Buenavista

Bagotá, agosto 11. (Ar). — La oficina de prensa de la presidencia de la república confirmó la noticia del abaleo efectuado el domingo mientras la población acudía al mercado, en la población de Buenavista, del departamento de Boyacá por un grupo de enmascarados que, dispararon armas de largo alcance contra la población, que estaba reunida pacíficamente en el mercado. La población estaba defendida únicamente por dos policías, de los cuales resultaron ocho muertos y unos siete heridos.

Agrega que el gobierno ha enviado tropas a Buenavista y ordenado una severa investigación.

pag 1

Sobre el Gran Mariscal Antonio José de Sucre

escritores e historiadores de América para prelar la mejor biografía oriental sobre el Gran Mariscal de Ayacucho don Antonio José de Sucre.

2º) Los trabajos deberán ser presentados escritos a máquina, en hojas de tamaño carta a doble espacio, 30 líneas de 70 espacios y escritas de un solo lado. La extensión será de 350 a 400 cuartillas.

(Pasa a la página tres)

Inaugura el Congreso del Ecuador

Quito, agosto 11. (AP). — El presidente de la República Arosemena inauguró oficialmente el congreso ordinario, cuya labor inmediata será la calificación y posesión del presidente electo Galo Plaza para el período 1948-1952. De acuerdo con la ley, el congreso se abre el día 6 de junio, dentro de ocho días.

ARIE GANO SU PRIMERA VICTORIA su Proyecto de Reforma Financiera, con lo Cual el ta con Poderes para Dominar la Crisis en Francia

DE RIOS

residentes conones so-

gabinete nacional; Espectada con e reanunial im-reforma

Paris, agosto 11. — (AP). — El Primer Ministro, André Marie, ganó su tercera victoria en la Asamblea. Los diputados aprobaron por 325 a 215 su proyecto de reforma financiera. Esta aprobación da a Marie y a su gabinete centrista de coalición amplios poderes para manejar la crisis financiera de Francia, incluso el derecho de reducir los gastos gubernamentales y aumentar la producción.

El proyecto de "gobierno por decreto" va ahora a la cámara alta del parlamento, el Concejo de la República, donde se da por segura su aprobación. Al ser aprobado allá, el gobierno de Marie empezará un programa de reorganización gubernamental sin precedentes en los últimos años. Tendrá poderes para reducir los gastos del gobierno pa-

(Pasa a la página dos)

thur en el Japón que la Orden que Prohibe la e Considere como Inexistente

la d Necesita Cooperación

la Prefecto Libertaria serie de podrimos pto de una evitar que

el consumo de malos licores, tóxicos, para ser más exactos, creciere en Caracas en la forma progresiva e indiscriminada como se ha venido registrando en los últimos años.

s Jóvenes

1. (AP). — nov. jefe de , dijo a la nal de la ju se reúne rusos mar-tuación para que 23 millo-éticos están ento técnico

El observador menos ágil podrá constatar cómo se multiplican los ventorillos y cómo, en horas laborables, en ciertos sitios, en días de trabajo, es fácil ver cómo muchos elementos se hallan bajo la férula relajadora, deprimente y degradante del alcoholismo. Mediante esos hechos que vemos con indiferencia, con apatía y sin vestigio de alarma social, se va formando la clientela de los penales, los pensionistas seguros de los establecimientos para inter-

(Pasa a la página tres)

Carta Abierta del Pueblo de Cumaná al Concejo Municipal del Distrito Sucre

Reproducimos a continuación la carta abierta que, autorizada por centenares de firmas representativas de todos los sectores sociales, económicos y políticos de Cumaná, le ha sido dirigida al Concejo Municipal del Distrito Sucre. El número de firmantes, y el de los que no aparecen en el importante documento colectivo, hacen de éste la expresión responsable de todo un pueblo, la exposición meditada y serena de una colectividad de solvencia moral y material que sabe lo que reclama y por qué lo hace.

En el concierto federal de la República el Estado Sucre tiene poca o ninguna suerte en lo que se refiere a gobierno. Para cada gobernante que allí ha sabido realizar obra útil y de bien común, y éstos han sido contados, le han tocado al pueblo sucresino los peores administradores, elementos que para nada han hecho aprecio de los intereses regionales, ni del bienestar y el progreso de una región rica, densamente poblada, donde el espíritu laborioso y la honradez son características de sus hijos.

Durante el régimen derrocado por el golpe militar de octubre se pretendió, contra todas las conveniencias higiénicas y sanitarias de la población de Cumaná, convertir el edificio fabricado expresamente para hospital en sanatorio antituberculoso.

NO SE CREE POSIBLE QUE HAN LLEGADO

Lake Success, agosto 11. — (AP) Por Larry Hauck. — Fuentes informadas dijeron que hay pocas esperanzas en el presente ambiente internacional de romper el punto muerto entre el Este y el Oeste con la creación de un ejército de las Naciones Unidas. Estos informantes sostienen el punto de vista de que tal fuerza sólo puede establecerse después de un arreglo general de las principales diferen-

berculoso. Ahora, en el actual régimen, se proyecta limitarle a esa misma población el servicio de suministro de agua, sin tomar en cuenta lo riguroso del clima, las necesidades de los hogares cumaneses y la salud y la comodidad colectivas en general.

Toca al Concejo Municipal de Cumaná, integrado por elementos nativos del Estado, conocedores de la región, penetrados a cabalidad del conflicto suscitado, resolver éste de la manera que más convenga a los intereses de la comunidad.

Cumaná, 1º de agosto de 1948. — Ciudadano Presidente y demás Miembros del Concejo Municipal del Distrito Sucre. — Ciudad.

Por la prensa de Caracas y hojas volantes profusamente distribuidas en esta ciudad recientemente,

nos imponemos de que la Junta Municipal saliente, dejó a ustedes la triste misión de entregarle al Instituto Nacional de Obras Sanitarias el Acueducto de Cumaná, cedido mediante un contrato que por ningún pretexto tuvo razón de ser. Se obliga con semejante contrato a la ciudadanía a sufrir las consecuencias más deplorables de cuantas pueden infligirse a un pueblo: la limitación del agua. Fuera de esto, observamos cuán oneroso es para la Municipalidad el malhadado pacto, de todo punto descabellado y antipatriótico.

A ustedes, ciudadanos municipales, elegidos por la voluntad popular, nos dirigimos en estos momentos conflictivos, para patentizarles nuestro disgusto, confiados en que ustedes, dignos representantes de la colectividad cumanesa, continuarán actuando en el sentido de que ese contrato no se efectúe; de que ese contrato se rescinda, por ser lesivo a los intereses de la ciudadanía y de la Municipalidad. Bien saben ustedes que, como persona o entidad jurídica, el Concejo que ustedes dignamente integran, puede, en último caso, solicitar un préstamo, y satisfacer al Instituto Nacional de Obras Sanitarias la cantidad que gastó en la reparación del Acueducto, ya que hubo que recurrir

a dicha empresa debido a los errores cometidos por el Magistrado regional anterior, luego de haber gastado fuerte suma de dinero en dichas reparaciones, por utilizar a un empírico, sin el menor conocimiento en la materia. Ustedes, señores municipales, son personas aptas y alentadas por las mejores intenciones de laborar en pro del pueblo. Y he aquí la más brillante manera de proteger a este pueblo, demostrando que la Municipalidad del Distrito sí sabe administrar y si se interesa por el bienestar de la colectividad.

Cuenten ustedes, ciudadanos municipales, con nuestro decidido respaldo. Sepan que todo Cumaná está decidido a no tolerar ningún contrato, cualquiera que sean las modificaciones que se le hagan, con ninguna otra corporación. La Municipalidad del Distrito Sucre, es la que debe seguir administrando el Acueducto. Saben también ustedes, que si no fueron pingües los rendimientos del Acueducto, eso fué debido a una pésima administración; pero ustedes bien pudieran administrarlo con identidad y eficacia, sin tener que ceder ese ramo de su dependencia a ningún extraño. Pruébenle a la colectividad cumanesa, ciudadanos municipales, que ustedes sí saben administrar y son verdaderos patriotas. En ustedes confiamos!

parte de la miga del Proyecto de Ley, a pesar de algunas rectificaciones que, a última hora, han sido iniciadas.

Contra la errónea tesis de que "nuestro país es de una prodigiosa potencialidad agrícola y de que sus suelos son de singular fertilidad", William Larralde estampa la dura, la amarga afirmación realista del sabio Vogt: "Durante casi 20 años que llevo estudiando el aprovechamiento y la conservación de los suelos, en viajes por catorce naciones americanas, desde el Norte del Canadá hasta el Estrecho de Magallanes, jamás se me ha presentado un caso más complicado de desajuste nacional de la tierra ni un caso más difícil de curar que el que he encontrado en Venezuela". Frente a esta realidad implacable hay que iniciar un plan que planee la gran agricultura venezolana, y, de no hacerlo así, estamos comprometiendo el destino de nuestro pueblo. Una ley de aliento clasista, ideada por abundosos apóstoles de reivindicaciones, puede ser todo lo revolucionario que se quiera, pero también ser un factor decisivo en la destrucción del país. Nuevamente insistimos sobre algunos aspectos del macizo trabajo del ingeniero William Larralde.

15 de Agosto 1948

LA OPINION DE AFUERA

La Cuestión del Acueducto de Cumaná

Caracas, 13 de agosto de 1948
Señor don Ramón David León.
Director de "La Esfera". — Ciudad.

Muy apreciado amigo: Me complace dirigirme a usted para presentarle un cordial saludo y solicitar su atención en el asunto que a continuación le expongo:

He leído con todo interés los diversos sueltos editoriales publicados por el diario que usted tan acertadamente dirige, y considero que en los comentarios hechos, no se ha enfocado debidamente el problema planteado al proponer este Instituto a la Municipalidad de Cumaná la modificación de la tarifa plana vigente en el Acueducto, por otra que se adapte más a los requerimientos de una administración eficiente, pero reconozco el sincero propósito de crítica sensata que ha guiado a la redacción de "La Esfera" en su campaña, tratando de defender con vehemencia los derechos de la comunidad.

En el deseo de contribuir al debido esclarecimiento de la situación, me permito anexarle una "Nota Explicativa" en la cual he tratado de presentar en debida forma el problema. No sé si con ella logre cubrir todos los aspectos y desvirtuar las protestas. En caso de que haya algún asunto que no esté suficientemente claro, estaría dispuesto a dar las explicaciones necesarias.

He evitado entrar en explicaciones propiamente técnicas, y he tratado de mantener los razonamientos a base de concepciones lógicas. En espera de conocer su autorizada opinión sobre esta materia, quedo como siempre su afectísimo amigo.

Luis Wannoni L.

Nota explicativa del INOS para "La Esfera": En sueltos editoriales recientes de ese importante diario se han hecho algunos comentarios sobre el acueducto de Cumaná y la protesta con que ha sido recibida la medida del I. N. O. S. de modificar la tarifa existente por otra que se base en el consumo efectivo que haga cada suscriptor del agua, lo cual se controlaría mediante medidores. Lamentablemente el INOS, en el texto del contrato suscrito con la Municipalidad de Cumaná para la administración y operación del servicio público de Acueducto, fue poco explícito y probablemente esto sea la causa del mal entendido surgido. Tratemos de analizar el caso:

En el acueducto de Cumaná, desde que fue puesto en servicio, hace ya varios años, ha venido rigiendo una "tarifa plana" esto es, igual para todos los suscriptores, de Bs. 6, mensuales, sin to-

Este tipo de tarifa es completamente empírico e injusto; sólo es aceptable en poblaciones donde la insuficiencia de la cantidad de agua de que dispone el acueducto y la deficiencia de las instalaciones obliga a prestar servicio intermitente, esto es "por horas". Pero esta clase de servicio, en un acueducto moderno debe rechazarse: la condición normal debe ser el suministro "continuo" de agua durante las 24 horas del día. Las ventajas del suministro "continuo" de agua son evidentes:

1o — Elimina los depósitos de agua en los inmuebles, los cuales por lo general son criaderos de mosquitos y causa de contaminación de agua, por el escaso cuidado que se presta en mantenerlos limpios.

2o — Impide la contaminación de las tuberías de distribución, las cuales cuando el servicio es intermitente, quedan secas por varias horas, sometidas a contra-presiones que pueden causar la infiltración de aguas exteriores.

3o — Garantiza en casos de incendio la utilización inmediata de agua a través de los respectivos hidrantes.

El suministro continuo de agua es, sin embargo, propicio al despilfarro de agua, por lo cual se impone controlarlo mediante medidores. En Cumaná el acueducto existente es capaz para abastecer ampliamente a la población; sin embargo, el uso indiscriminado y desconsiderado del agua, desde hace algunos años, ha sido causa de escasez y de la supresión del servicio continuo.

Ya en 1945, fueron amenazadas las industrias pesqueras de Caguire con suprimirles el servicio de agua por no alcanzar la supida por el acueducto sino para el uso doméstico. En carta fechada en agosto de ese año, dirigida al INOS por un industrial cumanés, manifestaba que el acueducto contaba con 7 000.000 de litros diarios, de los cuales, con 3.000.000 de litros podría abastecerse a todos los suscriptores con largueza, quedando por lo tanto 4.000.000 de litros para nuevos suscriptores y para consumo industrial, y preguntaba: "¿Qué se hacen los 4.000.000 de litros de agua restantes? De esos millones de litros de agua sólo necesitan nuestras fábricas 200.000 litros y por esa ínfima cantidad de agua que nos sirve el acueducto se amenaza con paralizar una industria de esa importancia! Nuestro pueblo todo es testigo de la triste administración del acueducto que permite que haya un tubo de 4 pulgadas abierto día y noche en Puerto Sucre para el servicio de los navegantes que al decir del público está "endulzando al mar". Al transcribir los párrafos anteriores,

En Egipto, la uva tenía para los griegos un sabor de deleite, que se ofrecía por una mujer hermosa. En Roma, las vestales solían expresar su pasión amorosa en el dulce regalo de un cuajado racimo.

La vendimia se celebra en todas partes. En España, probablemente no se viste con las esplendentes galas de otros países. Sin embargo, jamás queda ausente de su cultivo, ni la alegría ni los idilios. En los viñedos de Valdepeñas, de Dómea, de Aranda, de Riscal, de Montilla, de Jerez, de Málaga, de Cataluña, las muchachas intervienen en las faenas de la recolección, torjando sus brazos para un trabajo que es permanente optimismo y un anhelo emotivo que culmina, casi siempre, con la identificación de esa galante aventura, que nace en el viñedo y remata en la Vida.

En cuanto a Francia — clasificada

Como ejemplo puede verse las anécdotas que recalca el doctor Bionet. Ese mito mayor germano por Goethe — según un antiguo drama se cuenta en — había logrado de Polichine un elixir que le extraer de la propiedad de que la asombraba y realidad — cobraban "cues imposibles. Y la dos los amolana, en ese sentido, conseja faust estampar una "sentencia" definitiva: "en la vendimia se ha mejor inspiración para que el armonía y la perfección por la

detengámonos con una localidad — ciudad — donde el momento culminatorio de la parra sirva de escenario palpable o peculiar. Mucho nombres fluyen voluntarios

cia general adscrita a dichos misterios. Canta la estación en las luces del paisaje, en la fragancia de los jardines y en el zumbido de las abejas. La uva ha entrado en sazón y el amor ha madurado también! El aldeano matrimonio va a realizarse bajo el primer de los gallos verdes y color de ciruela. Todo es alegría en el ambiente! Desde el amanecer, desde que el alba inicia la rauda marcha del día, hombres y mujeres de todas las edades han iniciado el adorno de la fachada de la pequeña ermita de la aldea. Una profusión de hojas, cuajados racimos distribuidos convenientemente, clasifican ese extraordinario decorado concebido por la sensibilidad aldeana! Pareciera haberse desbordado el clásico Cuerno de la Abundancia.

La incitante recolección, esa uva berrima cosecha que nos pintara en sus rimas únicas el sentimiento emocional de Horacio, al des-

AGOSTO, AGOSTO 14. (AP). — El novillero venezolano Ali Gómez continúa en el sanatorio de toreros, aunque muy mejorado de la herida recibida en Huelva el tres de este mes, pero sus médicos le aconsejaron que esté unos días más en este sanatorio y que marche después al campo a recuperar las fuerzas perdidas en la pierna herida.

Si no hay retroceso en su convalecencia Ali reaparecerá en la plaza de La Línea el 22 del actual.

CURSO

(Viene de la pág. OCHO)
de la industrialización de los productos agrícolas, excedentes a las necesidades del consumo local, y en pequeños técnicos del enlatado y conservación de legumbres, hortalizas y frutos. Pero aún hay más: El volumen de las enseñanzas les permitirán llegar a la conservación y utilización de carnes, lo que permitirá al campesinado venezolano, utilizar con ventaja económica y beneficio general, la superproducción que en determinadas épocas pudiera ofrecer la ganadería.

Las clases son teórico-prácticas y para tal fin, el I. T. I. C. cuenta con un buen laboratorio y con la instalación de industrialización que permiten realizar todas las prácticas fundamentales de la conservación e industrialización de alimentos objeto del Curso.

Algunos sectores sociales han demostrado interés por participar en el Curso y han sido invitados Organismos estatales y privados, que han mandado sus representantes.

LA CUESTION..

(Viene de la pág. CUATRO)
res que no consumen mensualmente ni 15.000 litros, y eso en poblaciones que ya tienen red de cloacas, les que evidentemente en el caso de Cumaná se benefician con la tarifa diferenciada, pues, pagarían menos de los Bs. 6.

Por ningún respecto se trata de racionar el agua o de limitar su uso, de modo que no puedan gastarse sino 500 litros por día y por casa, como parece que ha sido entendido por algunos, sino por el contrario, el INOS quiere poner el agua a la disposición del suscriptor durante las 24 horas del día, pero con la condición de que pague lo justo, de acuerdo con la cantidad que consuma.

En las tarifas diferenciadas no es conveniente fijar grandes cantidades de agua como derecho del suscriptor por el mínimo de la tarifa (Bs. 2—en Cumaná) pues se anulan las ventajas del sistema diferenciado, ya que continuaría el despilfarro de agua, y por lo tanto se vería imposibilitado el Acueducto para poder sostener el servicio continuo.

Es de advertir que con las nuevas tarifas las recaudaciones del acueducto de Cumaná, serán aproximadamente las mismas que con la tarifa actual, solamente se trata de hacer justicia a los pequeños consumidores por una parte y por otra evitar el desperdicio de agua, a fin de que el acueducto pueda continuar por varios años más, siendo capaz para satisfacer las demandas de la población y por lo tanto atender con los reducidos sobrantes que produzca la administración, a la formación de fondos de reserva para el financiamiento de las mejoras y ampliaciones que requiera, inmediatas o futuras. Y que en todo caso el INOS no es sino un simple administrador-delegado, pues la Municipalidad es quien percibe todos los beneficios de la administración.

(Carta del Director del I.N.O.S. y nota explicativa de "La Esfera", que publica esta en su edición de

Margarita, Pujante y Laboriosa



Con la satisfacción que produce el trabajo cumplido honradamente; con el júbilo espontáneo que abre surcos de contento en el espíritu, este laborioso margariteño, con sonrisa a flor de labios, trabaja solícitamente en la fabricación de mecate, una de las industrias más características de la Isla de las Perlas.

En esta hora de alborozo para el pueblo insular, pujante y valiente, nada más satisfactorio que recordar también a estos modestos obreros de la industria margariteña.

eficiente la operación del acueducto de Cumaná.

Al asumir el INOS por contrato con la Municipalidad de Cumaná, la responsabilidad de prestar servicio de acueducto en las mejores condiciones (el contrato establece el "servicio continuo" en 24 horas) ha considerado que su deber es implantar los métodos administrativos, que ya han sido adoptados desde hace muchos años por naciones que van a la vanguardia del progreso. Es preciso olvidar el concepto colonial de que un acueducto es una acequia que corre por las calles o por los corrales de las casas de donde cada quien toma libremente el agua que necesita.

Las exigencias modernas imponen abastecimientos de agua técnicamente proyectados, donde el agua vaya por tuberías a presión a todos los sitios donde se requiera. El proceso recorrido desde que el agua es tomada en la fuente hasta que el suscriptor la tiene a su disposición con simplemente abrir una llave en su casa es largo y complicado. En todos los sis-

tamientos más o menos completos para suministrarla en condiciones de potabilidad; en otras oportunidades hay que elevar mecánicamente, por bombeo, el agua, pues las fuentes están a más bajo nivel.

Todas estas circunstancias obligan estrechamente la administración de un sistema de acueducto con su operación. La Municipalidad que no ajuste bajo bases económicas solventes la operación de su acueducto va directamente a la bancarrota y lo que es peor, a la destrucción de la obra por la imposibilidad de atender a la conservación de las instalaciones y a la ejecución de las mejoras y en sanches que requieran a medida que vaya creciendo la población. En Cumaná se tiene la suerte grande de contar con un acueducto por gravedad, esto es que no necesita gastos de bombeo; pero no por eso puede darse toda el agua que se quiera por los Bs. 6—de la tarifa actual.

Es propósito del INOS dar "servicio continuo" sin lo cual los medidores no funcionan. Pero una

blezca la "tarifa diferenciada" — es la que estipula que el pago se haga de acuerdo con el consumo. Así, los pequeños consumidores entrarían con un recibo mínimo de Bs. 2—con derecho a cinco mil litros mensuales, y progresivamente se van fijando precios para los consumos acumulados sucesivos.

Las consecuencias inmediatas de esta tarifa serán las de llevar el agua al domicilio de gran número de personas, que actualmente tienen que cargarla de las fuentes públicas, pues no pueden desembolsar los Bs. 6—de la tarifa actual. En cambio, los grandes consumidores, que actualmente gastan agua indiscriminadamente y sólo pagan Bs. 6—se verán obligados a pagar algo más, lo cual es muy lógico.

De acuerdo con las estadísticas del INOS, en los acueductos donde hay medidores instalados y que por lo tanto gozan de servicio continuo, una vez corregidas las filtraciones dominicanas y salvado el suscriptor a no despilfarrar el agua, hay un 45% de los suscri-

January 15, 1968

Engineer Pedro Pablo Azpurua Q,
Quinta "Las Adjuntas"
Valle Arriba Golf Club
Caracas

Dear Mr. Azpurua:

In connection with our exchange of correspondence on the AWWA article, I have not heard anything official~~s~~ from the Journal since sending them my reply to your comments and therefore am not certain what the status is. I expect that as soon as my letter has been reviewed, I will be informed with a copy to you.

I have on hand a number of documents and papers which you so kindly sent to me. Since in your original letter you indicated that some of these were single copies, I am returning all of them to you by separate mail with my thanks. I hope that it will be possible in the not too distant future to have an opportunity of talking with you personally and exchanging views on a number of questions of mutual interest.

Please accept my very best regards and my thanks for your patience in awaiting a reply to your original letter.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department Public Utilities

HRShipman/pbf

Control No: VE 49

ack. Jan. 25/68

January 12, 1968

Engineer Pedro Pablo Aspurua O,
Quinta "Las Adjuntas"
Valle Arriba Golf Club
Caracas

Dear Mr. Aspurua:

In connection with our exchange of correspondence on the ANWA article, I have not heard anything official from the Journal since sending them my reply to your comments and therefore am not certain what the status is. I expect that as soon as my letter has been reviewed, I will be informed with a copy to you.

I have on hand a number of documents and papers which you so kindly sent to me. Since in your original letter you indicated that some of these were single copies, I am returning all of them to you by separate mail with my thanks. I hope that it will be possible in the not too distant future to have an opportunity of talking with you personally and exchanging views on a number of questions of mutual interest.

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Yours very truly,

Harold R. Shipman
Chief, Water Supply Section
Projects Department Public Utilities

HRShipman/pbl

1968 JAN 16 PM 6:10

Control No: VE 12

NO. 21

January 12, 1968

Mr. Leslie Helmers
International Bank for Reconstruction
and Development
Permanent Mission in Western Africa
B. P. 1850
Abidjan
Ivory Coast

Dear Les:

Many thanks for your letter of December 26, 1967 in which you call attention to the "Fontain Rotative", fabricated by the Fonderie Pont a Mousson in Lorraine, France. I am reasonably well acquainted with this particular device since it has been employed in a number of countries in Eastern Europe as well as Africa. It has the advantage, as you point out, that it essentially tamper proof and is well suited for supply from public fountains. It is my impression, although I do not have any current prices, that the unit is considerably more expensive than some of the others which are currently being manufactured, such as, for example, the metering type of faucet employed in Nigeria and manufactured in England. These latter units sell for about \$7.00 or \$8.00 and involve practically no installation costs as contrasted with the rotating units which usually require a fair amount of on site construction. I would expect, therefore, a higher installation as well as first cost for these units.

Nevertheless, I greatly appreciate your keeping the water supply programs in mind and will welcome any observations which you are able to make as a result of your travels in the Western African area.

Please accept our best wishes for a happy New Year.

Yours very truly,

Harold R. Shipman
Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

January 8, 1968

Mr. F.N. Griffiths,
Howard Humphreys & Sons,
Kennet House,
Kings Road,
Reading, Berkshire,
England.

Dear Mr. Griffiths,

In reply to your letter of December 22, 1967, in which you inquired about a questionnaire for sewerage projects, I am enclosing one prepared for a specific project, Singapore, which may be useful to you as a guide.

- A general sewerage questionnaire is under preparation but will not be published for some months. The water works questionnaire is being revised concurrently.

Regardless of the exact nature of the project, the Bank's approach would be similar, following the general format of the Questionnaire for Water Works Projects. The major difficulty you might encounter would be to fit a drainage function, funded out of taxes on a cash requirements basis, into the financial mold of the water works questionnaire.

A combined water and sewerage project could be presented as a single operational and financial function - in fact, this would normally be preferred. We would expect revenues (water fees and sewerage charges) to earn an adequate rate of return on the combined assets.

We would be happy to discuss any problems you may encounter in the preparation of feasibility studies for possible Bank consideration.

Very truly yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

CMorse:cb
Enc:

January 8, 1968

Mr. F. N. Griffiths,
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Harold R. Shipman
1968 JAN 12 10 58 AM
Projects Department - Public Utilities

CMorse:op
Enc:

H-15

HOWARD HUMPHREYS & SONS
CONSULTING ENGINEERS.

8, FRANCIS STREET, WESTMINSTER, S.W.1.

TELEPHONE: 01-834 5875

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SECRETARY

Miss D. M. PASSINGHAM

KENNET HOUSE,
KINGS ROAD,
READING,
BERKSHIRE.

TELEPHONE: READING 57321.

TELEGRAMS: CUTANEAL, READING.

YOUR REF

OUR REF FNG/DJA/jagg

22nd December 1967

The Chief
Water Supply Projects Department,
The International Bank for Reconstruction and Development,
1818 H Street N.W.,
Washington D.C.,
United States of America.

Dear Sir,

As a firm of Consulting Engineers we have been involved in assisting in compiling answers to your "Questionnaire for Water Works Projects" in connection with loan applications for various water supply schemes in Jamaica, Kenya and Ceylon.

In some cases it is desirable to regard a water supply project and a sewerage project as a single public utility expansion, and in such cases we are uncertain as to the form of application you consider most desirable. Could you inform us as to whether you have a pro-forma "Questionnaire for Sewerage Works Projects" similar to the one for Water Works. If so, we would be grateful if you could let us have a copy. If not, we would be glad of any comments you may have regarding your preferences as to the form of submission of information for sewerage projects alone, and combined water and sewerage projects.

Yours faithfully,
HOWARD HUMPHREYS & SONS


F. N. Griffiths.

1968 JAN -3 PM 10:31

ack. Jan 8

COMMUNICATIONS
SECTION
RECEIVED

December 19, 1967

Dr. Pedro Pablo Azpurua
Urb. Valle Arriba
Calle el Jaguar, lote 97
Caracas
Venezuela

Dear Dr. Azpurua:

I expect that your patience has long since been exhausted in waiting for a reply to your comments on my paper. Although less detailed than I should like, the attached reply is being sent to AWWA.

I would have liked to go into more discussions on the elasticity, minimum wage, and epidemiological questions raised in your letter but because of the desire by the Journal for concise presentations, felt that what I have written was about all they would accept.

I am returning by separate mail the documents which you so kindly sent from your personal files.

Please accept my best regards and wishes for a Merry Christmas.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

RECEIVED BY 11:37

December 17, 1967

Dr. Pedro Pablo Kuczynski
Urb. Valle Arriba
Calle el Jazmín, lote 97
Caracas
Venezuela

Dear Dr. Kuczynski:

I expect that your patience has long since been exhausted in waiting for a reply to your comments on my paper. Although less detailed than I should like, the attached reply is being sent to AAAA.

I would have liked to go into more discussions on the elasticity, minimum wage, and epidemiological questions raised in your letter but because of the desire by the Journal for concise presentations, felt that what I have written was about all they would accept.

I am returning by separate mail the documents which you so kindly sent from your personal files.

Please accept my best regards and wishes for a Merry Christmas.

Yours very truly,

Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

1967 DEC 19 PM 4:33

COMMUNICATIONS

ROUTING SLIP

Date

12-12-67

NAME

ROOM NO.

Mrs. Doris R. Eliason

461

Files

233

To Handle

Note and File

Appropriate Disposition

Note and Return

Approval

Prepare Reply

Comment

Per Our Conversation

Full Report

Recommendation

Information
initial

Signature

Send On

REMARKS

Doris

Thanks: I have adjusted my
records.

Bill

From

Mr. W.L. Curtin

December 11, 1967

Doris Eliason

Purchase Order No. 47876

I have just been advised by telephone from the Journal, American Waterworks Association, 2 Park Avenue, New York 16, N.Y., that they misquoted the price of the 500 copies of the reprint of Mr. Shipman's article. Instead of \$33.50, they should have quoted \$53.00.

DRE/ps

DRK 6

DEPARTMENTAL ROUTING SLIP			Date <i>12/5</i>	
INFORMATION DEPARTMENT				
	Bennett	448	Addressograph	123
	Bravo	448	Correspondence	244
	Clements	453	Files-General	233
<i>(2)</i>	Eliason	461	Fund-Editorial	F532
	Fulton	450	Library	F305
	Graves	453	New York Pouch	244
	Grenfell	455	Paris Inf. Pouch	244
	Kinney	448	Prt'g. & Drft'g.	262
	Lightowler	460	Print Shop	117
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	Noone	448		
	O'Brien	446		
	Osborn	446		
	Pryor	452		
	Sankaran	455		
Remarks <i>Reprint - rather than books.</i>				
From <i>DR E</i>				

PURCHASE ORDER

Vendor JOURNAL AMERICAN WATERWORKS ASSOCIATION 2 Park Avenue New York 16, N. Y.		Order No. 47876 The above number must appear on all packages, invoices and shipping receipts.	
Ship To INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT 1818 H Street, N.W. Washington, D.C. 20433		Allocation B.O.	
Date of Order December 4, 1967	Terms Net (delivered)	Delivery Date IMMEDIATE	

Description	Quantity	Unit	Unit Price	Amount
(SR) <u>REPRINT ...</u> <u>Title:</u> "Water Supply Problems in Developing Countries" <u>Author:</u> Harold R. Shipman <u>Date of Issue:</u> July 1967 <u>Reference:</u> Your Letter of November 27, 1967. <u>Plus Shipping Charge</u>	500	lot	<u>Estimate</u> \$33.50 53.00	<u>Estimate</u> \$33.50 53.00
				2.50
Total			<u>Estimate</u> \$36.00 \$ 55.50	

Name and Title of Authorized Representative JOSEPH G. NOTT ASSISTANT CHIEF, OFFICE SERVICES DIVISION (MS)	Signature \$ 55.50
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REQUESTED FOR: MRS. DORIS R. ELIASON

INFORMATION/ROOM 461 (LOT)

OFFICE SERVICES COPY

FORM NO. 51
(1-67)

REQUISITION FOR SUPPLIES, EQUIPMENT AND SERVICES
(ALL REQUISITIONS MUST BE TYPEWRITTEN AND MADE OUT IN DUPLICATE)

INSTRUCTIONS: Prepare separate requisition for each type of service listed below and check the appropriate block.

For Use of Office Service Division

☐ STOCKROOM (Routine Office Supplies)

XX PROCUREMENT SECTION (Purchase of Items not in Stockroom)

☐ RESEARCH FILES (Books and Periodicals, Maps, Newspaper Subscriptions)

BUILDING SERVICES (Furniture, Equipment & Maintenance)

Department

Division

Date Wanted

Information

A.S.A.P.

Stock No.

Quantity

Description

Action Taken I/	
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500

Reprints of "Water Supply Problems in Developing Countries,"
by Harold R. Shipman. July 1967 issue of Journal,
American Water Works Association.

Price - \$33.50

Order from: Journal

American Water Works Association
2 Park Avenue
New York, 16, N. Y.

Attn: Mr. J. S. LaRocco
Reprint Manager

SECRETARIES PLEASE NOTE: If this requisition is submitted to request routine office supplies from the Stockroom, indicate the number of people for whom you order supplies. →

DELIVERY INSTRUCTIONS

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To:

Doris R. Eliason

Room No.

461

Telephone Ext.

2057

Date _____

Nov. 30, 1967

Authorized Signature

S...Will be supplied when available.

C... Cancelled for reason shown.

1...Cannot identify; verify
nomenclature and re-submit.

N...Not Stockroom item. Re-submit requisition to:

John R. Eason

Dr. Pedro Pablo Azpurua
Urb. Valle Arriba
Calle El Jaguar, lote 97
Caracas (Venezuela)

REGISTERED
MAIL NUMBER

5425

Caracas, December 7th 1967 ✓

Mr.
Roy Pakansky
Director of Publications
American Water Works Ass. Inc.
2 Park Ave. New York
N.Y. 10016
U.S.A.

Dear Mr. Pakansky:

I acknowledge receipt of your letter dated November 30, whereby you inform having received by means of my friend William Doyle, copy of my letter of May 4th, already revised in accordance with Mr. Shipman's wishes (letters dated May 26 and 31 for AWWA and Pedro Azpurua, respectively), as well as the work entitled New Water Rates for Caracas (Venezuela) of which I am co-author.

In accordance with your letter, I understand that you prefer to only publish the work in regard to the "New Water Rates for Caracas" instead of "The Letter for Mr. Shipman" and his comments to my letter. In view of Mr. Shipman's decision to answer my letter confirmed in his of November 3rd - you must already have the comments to my letter - and accepted by me by way of letter dated November 8 and then confirm on December 5.

In view of Mr. Shipman's rank as a professional and the position he occupied in the World Bank, I take the liberty of proposing - if it is not asking too much-:

- 1) Publish the letters written by Mr. Shipman as well as mine concerning the work entitled "Water Rates Structures in Latin America"
- 2) and publish also, as a complement the work "New Water Rates for Caracas" (Venezuela)

It will be an honor and I would be most grateful if you both works can be published in our Journal.

Cordially,

Pedro Pablo Azpurua

P.D. As you can observed by the letter of Sociedad Venezolana de Ingenieria Hidráulica it is necessary to give priority to Mr. Shipman's letter commenting mine of May 4th.

Encl.: Letter to the President of AWWA of December addressed to Mr. Harold Shipman and translation of the letter of Sociedad Venezolana de Ingenieria Hidráulica.

Dr. Pedro Pablo Kuczynski
Mr. Valde Ariza
Calle El Jarambo, 97
Caracas (Venezuela)



Caracas, December 7th 1967

Mr.
Mr. Kuczynski
Director of Publications
American Water Works Ass. Inc.
2 Park Ave. New York
N.Y. 10016
U.S.A.

Dear Mr. Kuczynski:

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In accordance with your letter, I understand that you prefer to only publish the work in regard to the "New Water Rates for Caracas" instead of "The Letter for Mr. Shipman" and this comment to my letter. In view of Mr. Shipman's decision to answer my letter contained in his of November 3rd - you must already have the comments to my letter and accepted by me by way of letter dated November 8 and this confirms on December 7.

In view of Mr. Shipman's rank as a professional and the position he occupied in the World Bank, I take the liberty of proposing - if it is not asking too much:

- 1) Publish the letters written by Mr. Shipman as well as mine concerning the work entitled "Water Rates Structures in Latin America"
- 2) and publish also, as a complement the work "New Water Rates for Caracas" (Venezuela)

It will be an honor and I would be most grateful if you both works can be published in our Journal.

Cordially,

Dr. Pedro Pablo Kuczynski
1967 DEC 11 AM 11:52

P.D. As you can observe by the letter of December 7th, Mr. Shipman's letter commenting mine of May 4th, is necessary to give priority to Mr. Shipman's letter to the President of ANWA of December addressed to Mr. Kuczynski and translation of the letter of December 7th, Mr. Shipman and translation of the letter of December 7th, Mr. Shipman.



American Water Works Association, Inc.

2 Park Avenue, New York, N. Y. 10016

WASHINGTON OFFICE: 1042 NATIONAL PRESS BLDG., WASHINGTON, D.C. 20004

(212) 684-6686

(202) 626-8303

PRESIDENT
PRESIDENT-ELECT
VICE-PRESIDENT
TREASURER
EXECUTIVE SECRETARY

Henry J. Graesser, Dallas, Tex.
H. C. Medbery, San Francisco, Calif.
Joseph H. Kuranz, Waukesha, Wis.
Thomas T. Ougley, Belleville, N.J.
Eric F. Johnson, New York, N.Y.

November 30, 1967

Senor Pedro Pablo Azpurua O.
Ingeniero Civil
Quinta "Las Adjuntas"
Valle Arriba Golf Club
Caracas, Venezuela

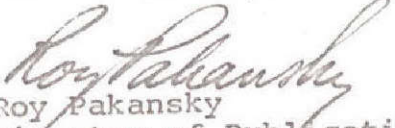
Dear Senor Azpurua:

Mr. William H. Doyle of the Wisconsin Division of Resource Development has forwarded to us the revised copy of your letter of May 4 addressed to Harold Shipman as well as the article by you, Senor Sucre and Senor Ruiz dealing with new water rates for Caracas. Mr. Doyle had submitted this paper to a number of water industry colleagues in Wisconsin as well as several financial officers, and they all reported that the article had considerable merit and should be published in the JOURNAL AWWA. Mr. Doyle then commented to us "I feel that the report on new water rates for Caracas would be a more positive reply to Mr. Shipman's article without referring directly to it, and it would show what Venezuela is doing regarding water rates. I think the consideration could probably be given to publishing the article rather than Senor Azpurua's letter of May 4 to Mr. Shipman."

Having studied both the letter and the article I find myself in agreement with Mr. Doyle's conclusion. Therefore, with your permission, we will proceed to publish the article which will give a much fuller picture of both your water rate philosophy and actual experience.

I would appreciate knowing your reaction to this proposal.

Cordially,


Roy Pakansky
Director of Publications

RP:vh



Improved Water Service—Through Water Works Systems Self-Sustained and Adequate to Meet the Growing Needs of Each Community

November 30, 1967

Dear Mr. LaRocco:

- Mr. Lind has asked me to reply to your letter of November 27. I am asking our Procurement Section to issue a Purchase Order for 500 reprints of "Water Supply Problems in Developing Countries," by Harold R. Shipman, which appeared in the July 1967 issue of Journal American Water Works Association, quoted at \$33.50. You should receive this in the next few days.

Thank you very much for your prompt response to our inquiry.

Sincerely yours,

(Mrs.) Doris R. Eliason
Information Department

Mr. J.S. LaRocco
Journal
American Water Works Association
2 Park Avenue
New York, N.Y.

cc: Mr. Reamy - 719
Mr. Curtin - 110

DRE/ps

DXE

Mr. Walter J. Armstrong

November 29, 1967

Harold R. Shipman 942

Studies on Water Supply - Economics Department

In accordance with your request for information on the studies and work being undertaken by the Economics Department on water supply, the following is provided, based on a recent conversation with Mr. van der Tak.

Studies on Water Consumption and Elasticity

1. These studies have been underway for approximately two years under the responsibility of Mr. Meroz. We had the opportunity to review a rough draft of the report prepared by Mr. Meroz late last Spring. I understand that some additional data has been added and certain changes made, but I have not seen the draft which Mr. van der Tak indicates is shortly to be published as one of the Bank papers (I believe in the technical series). It was indicated that publication would probably occur within the next month or two.

Economic Justification for Water Projects

2. Mr. Schmetdje is currently working on a paper related to the economic justification of water projects. Mr. van der Tak understands that this paper will be completed by around February 1968. I have not discussed this paper with Mr. Schmetdje but I learned of his interest during our meeting at the recent WHO Seminar in Geneva which was concerned with the question of water supply in economic development planning. On that occasion, Mr. Schmetdje indicated he believed that certain approaches could be developed which would provide a means for the economic evaluation of water projects. It is not known exactly what approach he proposes to follow.

HRShipman/pbf

*phone order
500.00*

Journal

AMERICAN WATER WORKS ASSOCIATION

2 PARK AVENUE, NEW YORK 16, N.Y.

Murray Hill 4-6686

November 27, 1967

Mr. Lars J. Lind, Deputy Director of Information
International Bank for Reconstruction and Development
International Development Association
1818 'H' Street, N. W.
Washington, D. C. 20433

Re: Reprints of "Water Supply Problems in
Developing Countries"-Harold R. Shipman-
July '67 Issue

Dear Mr. Lind:

Thank you for your letter of November 17th, regarding the above
article.

Although we do not permit outside reprinting of articles appearing
in the JOURNAL, we can reprint them for you, costing \$24.00 for 100
copies; \$33.50 for 500 copies and \$50.00 for 1,000 copies.

We look forward to hearing from you.

Sincerely,

J. S. LaRocco
J. S. LaROCCO,
Reprint Manager

JSL/kp

*For twice the price of
100 we can get
1,000! maybe
we should.*

Ack. Nov. 30, 1967

November 24, 1967

Mr. George J. Halasi-Kun
Chairman
University Seminar on Water Resources
Columbia University in the City of New York
561 West 116th Street
New York, N.Y. 10027

Dear Mr. Halasi-Kun,

Please forgive me for not answering earlier your letter of September 25, 1967, conveying the invitation to become a member of the Seminar on Water Resources at Columbia University.

I now have pleasure in advising you of my acceptance of your invitation, and look forward to hearing from you any further details I should know. I should add that my duties at the World Bank involve some travel abroad, so that occasionally it might not be possible for me to attend one of the meetings of the Seminar.

Looking forward to hearing from you,

Yours sincerely,

(signed) H. B. Ripman

H. B. Ripman
Director of Administration

HB Ripman:pgn

c.c.--Gen. Files (inc. ltr. retained by Mr. Ripman)

November 20, 1967

Mr. Barclay Jones
Department of City and Regional Planning
Sibley Hall
Cornell University
Ithaca
New York

Dear Mr. Jones:

This will confirm our phone conversation of this morning concerning your letter of November 2 in which you invite me to discuss in your Planning Course, the topic "Financing of Environmental Health Programs and Facilities in Developing Countries".

I am enclosing a few papers, which, if you so decide, could be reproduced and made available to the class for reading prior to my presentation. I should also like to suggest that the following readings may be of interest:

On Estimating Benefit - Cost Ratios for
Water Supply Investments. Pyatt, Journal
APHA, October 1962.

The Influence of Community Water Supplies
on Health and Social Progress. WHO
Chronicle, Vol. 18, No. 5 - May 1964.

Resources Economics and a Quality Environment -
Monograph No.3 - National Sanitation Foundation -
May 1966.

I advised you that the Bank would cover my expenses for this trip. It would not be appropriate for me to accept an honorarium since we consider that whatever contributions can be made to Universities by this type of presentation is part of our responsibilities to our member governments.

Mr. Barclay Jones

November 20, 1967

I have informed you that I will arrive in Ithaca at about 11:35 on the morning of December 7 and will depart at 0720 the morning of the 8th. You have kindly offered to make a hotel reservation for me and to let me know its name in the event my office wishes to get in touch.

I look forward to meeting you on November 7.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

enclosures:

HRShipman/pbf

Control No:

cc: Mr. Lind

November 9, 1967

Mr. Terence R. Lee
Policy and Planning Branch
Department of Energy, Mines and Resources
Room E-241
No. 8 Temporary Building
Ottawa

Dear Mr. Lee:

Thank you for giving us the opportunity to see your draft dissertation "Water Supply and Economic Development". We have read it with great interest since we feel strongly that more study is needed in this area.

It is clear that you have made a serious study of the factors affecting the demand for water in the limited areas covered and much useful information has been gathered. Unfortunately, the appendix which apparently contains most of the detailed information was not attached. Would it be possible for us to receive a copy?

In response to your request, we are pleased to make a few comments, restricting them to the study itself, and not considering its presentation in the form of a dissertation.

It is our experience that meter readings taken in the kind of area studied can be expected to be quite unreliable in terms of both the accuracy of the meter and the accuracy of the reading. This could lead to significant variations in recorded consumption in the metered households studied unless a representative sample of meters were checked for both kinds of errors. You may have done this, but it is not brought out in the report. There is also the question of whether other water sources were used for certain purposes even in the areas which had house connections. It is also not clear whether, in the "bustees", consumption figures include all water used for all purposes. Although this might be of little importance if the figures obtained are used in areas which have a similar environment, it could be misleading if generalized for use in cities and communities which do not have other sources than the municipal system.

The study does not attempt to relate consumption to the price of water, which would seem to be one of the more interesting questions. If consumption is responsive to price changes, this has important implications for design of the system in terms of the quality of

November 9, 1967

Mr. Terence R. Lee
Policy and Planning Branch
Department of Energy, Mines and Resources
Room E-214
No. 8 Temporary Building
Ottawa

Dear Mr. Lee:

Thank you for giving us the opportunity to see your draft dissertation "Water Supply and Economic Development". We have read it with great interest since we feel strongly that more study is needed in this area.

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Mr. Terence R. Lee

November 9, 1967

service offered to different consumers, and also for pricing policies. You seem to imply (Page 135) that the quality of service offered in a particular community should be decided administratively on the basis of a minimum level "essential for the maintenance of whatever is defined as acceptable standards of public health". We would suggest that in any community there are consumers who want, and are able to pay for, a higher quality of service. In designing a system, one has some responsibility to accomodate all classes of consumers and if the design is based only on a minimum established on public health grounds, there would be a large number of dissatisfied customers. Even the question of minimum allowance for public health is also not easy to define and we have seen figures ranging up to 35m³ per average house of 4 people taken as a monthly minimum by certain Ministries of Health.

You have demonstrated that there are relationships between factors of the economic and cultural environment and the consumption of water, and that these relationships can be described mathematically within limited areas. It would seem, however, that if this information is to be useful in practical applications, these economic and cultural variables must be fixed with accurate parameters obtained from readily available data. We would expect that problems might be encountered on both points. If it is necessary to make surveys to collect the data, one may as well attack the problem directly by making surveys of water consumption.

We are passing your study along to our Economic Department where some thinking has been done in the past along similar lines. Perhaps they will have additional comments. In the meantime, thanks again for letting us see it.

Please accept our best regards.

Very truly yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

JHJennings/pbf

Control No: IN-250

CROSS REFERENCE SHEET

COMMUNICATION: Memo

DATED: November 8, 1967

TO: Mr. Shipman

FROM: Mr. R.F. Robertson

FILED UNDER: Liaison - WHO

SUMMARY: Re: World Health Organization; Monograph Series: Low Cost
Wastewater Treatment. Commenting on the document.



Cornell University

DEPARTMENT OF CITY & REGIONAL PLANNING

November 2, 1967

Mr. Harold Shipman
World Bank
International Bank for Reconstruction
And Development
1818 H Street, N.W.
Washington, D.C.

Dear Mr. Shipman:

I am delighted that you will be able to come and talk to my class and visit Cornell. The purpose of this letter is to confirm the arrangements.

Enclosed you will find a brief description of the course and a course outline. Your presentation entitled "Financing Environmental Health Programs and Facilities in Developing Countries," is scheduled for Thursday, December 7, 1967 from 4:30 to 6:30 p.m. You may use the period in any way you wish; a frequent pattern is to speak for an hour and then use the remaining hour for questions and discussion.

The students are assigned readings prior to each session. The relevancy of the reading material is best insured by requesting the guest lecturer to suggest possible assignments. I would be most grateful if you would forward to me some suggested readings. About 3-4 hours of reading would be appropriate and additional collateral reading might be cited if you so desire. If you intend to use visual aids, please advise us of your equipment needs.

Also, please inform us of your travel plans in order that we may arrange to meet you and book a hotel reservation if you intend to stay overnight. I will try to set up a luncheon with some of the faculty on the 7th. If you can think of anyone at Cornell whom you would particularly like to have invited, please let me know.

As per your telephone conversation of October 30, 1967 with Mr. Riordan, we will, if appropriate, pay your travel expenses and will also give you a modest honorarium.

Again, many thanks for consenting to give this presentation. Very best regards.

Sincerely yours,

Barclay Jones /CR
Barclay Jones

BJ/nh

acc. Nov. 20, 1967

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SUBJECT: [illegible]

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[illegible]

1967 NOV -7 AM 10:22

RECEIVED
COMMUNICATIONS
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DEPARTMENT OF CITY AND REGIONAL PLANNING

With the Cooperation of
The Center for Environmental Quality Management

PLANNING 770 - ENVIRONMENTAL HEALTH PLANNING

2 Credit hours; Thursdays 4:30 - 6:30 p.m.
115 West Sibley. Professor Barclay Jones/Mr.
Courtney Riordan.

The focus this year for this seminar in special topics in Environmental Health Planning will be on environmental health problems in developing countries. The course will seek to investigate the role of environmental health in social and economic development and the special problems associated with establishing and maintaining effective environmental health programs in developing areas. Of particular concern are the problems of allocation of scarce capital resources to investments in environmental and other health facilities vs productive facilities and conflicts which arise as economic development projects contribute to environmental deterioration.

DEPARTMENT OF REGIONAL AND CITY PLANNING

PLANNING 770

COURSE OUTLINE AND LIST OF SPEAKERS

INTRODUCTION:

September 14, 1967 - Dr. Barclay G. Jones, Dept. City & Regional Planning, Cornell University.
"Introduction to the Problem"

GENERAL ISSUES:

September 21, 1967 - Mr. Courtney Riordan, Dept. City & Regional Planning, Cornell University.
"Economic Development: Theory and Practice"

September 28, 1967 - Mr. John Robson, Dept. City & Regional Planning, Cornell University.
"Economic Development and Demographic Forces in Developing Countries"

October 5, 1967 - Dr. Parker Marden, Assistant Professor, International Population Program, Cornell University.
"Population Dynamics and Environmental Health"

CATEGORICAL PROBLEMS:

October 12, 1967 - Dr. Daniel Okun, Professor of Sanitary Engineering, Head, Department of Environmental Sciences and Engineering, School of Public Health, University of North Carolina, Chapel Hill, N.C.

"Environmental Quality Considerations in the Management of Natural Resources in Developing Countries"

October 19, 1967 - Charles S. Pineo, Consultant to Pan American Health Organization, Washington, D.C.

"Water Supply and Sanitation in Developing Countries"

October 26, 1967 - Jose A. Villegas, Assistant Professor of Housing and Design, Cornell University.

"Environmental Health Aspects of Housing in Developing Countries"

November 2, 1967 - Mr. Benjamin Linsky, Professor of Air Pollution Control, University of West Virginia.

"Air Pollution in Developing Countries"

November 9, 1967 - Dr. E. Harold Hinman, Professor of Preventative Medicine, Jefferson Medical College, Philadelphia, Pennsylvania.

"Environmental Control of Infectious Diseases in Developing Countries"

November 16, 1967 - (OPEN)

DEPARTMENT OF CITY & REGIONAL PLANNING

PLANNING 770 - Course Outline & List of Speakers, Continued

CASE STUDY:

November 30, 1967 - Dr. Myron Fiering, Professor of Environmental Engineering, Harvard University.
"Sao Paulo's Struggle to Achieve Acceptable Levels of Environmental Health."

GENERAL PROBLEMS OF PROGRAM IMPLEMENTATION:

December 7, 1967 - Mr. Harold Shipman, Staff Assistant, World Bank, Washington, D.C.
"Financing Environmental Health Programs & Facilities in Developing Countries."

December 14, 1967 - Dr. Conrad Seipp, Professor of Planning and Public Health, Yale University.
"Economic Development and Environmental Health".

CORNELL UNIVERSITY
TRAVEL EXPENSE REIMBURSEMENT VOUCHER

Charge to Account.....No.

Name.....

Date.....

Address.....

Expenses listed below were incurred in my travel

from.....to..... (and return).

Purpose of trip:.....

Time of departure (Ithaca, N. Y.) was..... (AM) (PM) Date.....

Time of return (Ithaca, N. Y.) was..... (AM) (PM) Date.....

Reimbursement requested: Amount

Transportation Expense:

R. R. fare (coach) (Pullman), (one-way) (round-trip) (attach receipts)

Air fare (one-way) (round-trip) (attach receipts)

Privately-owned vehicle.....miles at \$._____per mile

Other (itemize)

Subsistence Expense:

Actual Cost:

Meals.....

Hotel (attach receipt)

Other (itemize)

Per Diem allowance for subsistence in lieu of cost:

(Government Contracts only)

.....Days at.....per day.....

Total Expense

Amount of travel advance.....

Difference (due Cornell) (due traveler).....

Cross out one

Note:

Transportation and Hotel
receipts must be attached.
Attach all other receipts
obtainable

Signature of traveler.....

Approved by.....

Rec'd. Payment If cash is desired, traveler's signature must appear here.

CORNELL UNIVERSITY
TRAVEL EXPENSE REIMBURSEMENT VOUCHER

Charge to Account.....No.

Name.....

Date.....

Address.....

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R. R. fare (coach) (Pullman), (one-way) (round-trip) (attach receipts)

Air fare (one-way) (round-trip) (attach receipts)

Privately-owned vehicle..... miles at \$._____ per mile

Other (itemize)

Subsistence Expense:

Actual Cost:

Meals.....

Hotel (attach receipt)

Other (itemize)

Per Diem allowance for subsistence in lieu of cost:

(Government Contracts only)

..... Days at..... per day.....

Total Expense

Amount of travel advance.....

Difference (due Cornell) (due traveler).....

Cross out one

Note:

Transportation and Hotel
receipts must be attached.
Attach all other receipts
obtainable

Signature of traveler.....

Approved by.....

Rec'd. Payment If cash is desired, traveler's signature must appear here.

Mr. A. David Knox

November 1, 1967

Harold R. Shipman *HR*

Conferences and Professional Meetings

In accordance with your request, the following professional conferences and meetings are believed to be of interest for consideration of attendance by professional staff of this section, depending on the agenda:

American Water Works Association

International Water Supply Association -
meets every two or three years.

Inter-American Association of Sanitary Engineers -
meets every two years.

American Society of Civil Engineers.

American Public Works Association

British Water Works Association

U.S. Water Pollution Control Federation

HRShipman/pbf

S- Water
- Alpin - Teik, Chan Boon

October 31, 1967

Mr. Sulaiman bin Abdullah
Prime Minister's Department
Kuala Lumpur
Malaysia

Dear Mr. bin Abdullah:

✓
Thank you for your letter of October 27, 1967, addressed to Mr. Walter Armstrong and to which I am replying in his absence. You enquire whether it would be possible for Mr. Chan Boon Teik, a senior engineer with the Malaysian Public Works Department to spend one or two weeks working with some technical and financial people at the Bank, to permit an exposure to the procedures and appraisal requirements for water supply projects.

We would be very happy to have Mr. Chan Book Teik spend time with us and I am attaching a letter to him in this regard. In the event that any further questions come up on this matter, I would appreciate it if you will correspond directly with Mr. Harold R. Shipman, Chief, Water Supply Section, Projects Department - Public Utilities.

Very truly yours,



A. David Knox
Assistant Director
Projects Department - Public Utilities

HRShipman/pbf

Cleared with & copy to Van Wageningen

Control No: MISC-216

NOV 1 1967
F: 01
1-0742

October 31, 1967

Mr. Sultan bin Abdullah
Prime Minister's Department
Kuala Lumpur
Malaysia

Dear Mr. bin Abdullah:

Thank you for your letter of October 27, 1967, addressed to Mr. Walter Armstrong and to which I am replying in his absence. You enquire whether it would be possible for Mr. Chan Boon Teik, a senior engineer with the Malaysian Public Works Department to spend one or two weeks working with some technical and financial people at the Bank, to permit an exposure to the procedures and appraisal requirements for water supply projects.

We would be very happy to have Mr. Chan Boon Teik spend time with us and I am attaching a letter to him in this regard. In the event that any further questions come up on this matter, I would appreciate it if you will correspond directly with Mr. Harold R. Shipman, Chief, Water Supply Section, Projects Department - Public Utilities.

Very truly yours,

A. David Knox
Assistant Director
Projects Department - Public Utilities

Control No: MISC-216
COMMUNICATIONS
RECEIVED
1967 OCT 31 PM 4:07
HRShipman\pbf
Cleared with copy 1967 OCT 31 PM 4:07

October 31, 1967

Mr. Chan Boon Teik
Engineer
Malaysian Public Works Department
Kuala Lumpur
Malaysia

Dear Mr. Teik:

10/27/67
We have received a letter from Mr. Sulaiman bin Abdullah in which he enquires as to the convenience of your spending one or two weeks working with the technical and financial people of the Bank to obtain some insight into the procedures and appraisal requirements for water supply projects.

We note that your Fellowship is being arranged through the World Health Organization and based on previous experience, it is usual for that organization to get in touch with us concerning the scheduling of Fellowships. We are sending copies of this letter to WHO in order that they may know that we would welcome your assignment to the Bank sometime in the Spring of 1968. We expect that the exact times would be made known to us sometime in advance in order that we may make the necessary arrangements. We would suggest that you get in touch with WHO for further assistance on your schedule.

Very truly yours,

RRS.

Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

cc: Pan American Health Organization
Attention: Gerda Lewis

World Health Organization
Attention: Fellowships

World Health Organization - Regional Office
Manila, Philippines

Mr. Van Wagenen (Personnel)

October 21, 1967

Mr. Chen Soon Teik
Manager
Malaysian Public Works Department
Kuala Lumpur
Malaysia

Dear Mr. Teik:

We have received a letter from Mr. Sulaiman bin Abdullah in which he expresses his interest in the conveniences of your spending one or two weeks working with the technical and financial people of the Bank to obtain some insight into the procedures and operational requirements for water supply projects.

We note that your Fellowship is being arranged through the World Health Organization and based on previous experience, it is usual for that organization to get in touch with us concerning the scheduling of Fellowships. We are sending copies of this letter to WHO in order that they may know that we would welcome your assignment to the Bank sometime in the Spring of 1968. We expect that the exact time would be made known to us sometime in advance in order that we may make the necessary arrangements. We would suggest that you get in touch with WHO for further assistance on your schedule.

Very truly yours,

Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pk

cc: Pan American Health Organization
Attention: Gerda Lewis

World Health Organization
Attention: Fellowships

World Health Organization - Regional Office
Manila, Philippines

1967 NOV - 1 PM 4:07

Mr. Van Wageningen (Personnel)

COMMUNICATIONS
SECTION
RECEIVED
OCT 23 1967

Telephone: 83144/7

Telegrams:

Our reference: P-1900/24

Your reference:



** Teik, Chan Boon*
PRIME MINISTER'S DEPARTMENT,
KUALA LUMPUR,
MALAYSIA

27th October, 1967.

BY AIR

Mr. Walter Armstrong,
International Bank for Reconstruction & Development,
1818 H Street, N.W.,
Washington D.C. 20433,
U.S.A.

Date Rec'd. *Oct 31/67*

Date Ack'd. *Oct. 31/67*

Assigned to *Shipman*

Dear Mr. Armstrong,

Travel Fellowship with the World Health
Organization

*Set AMSC-
216*

I am writing on behalf of Mr. Chan Boon Teik, a senior engineer with the Malaysian Public Works Department, who has been granted a 6-month travel fellowship by the World Health Organization to study water treatment and related problems. The fellowship allows study attachments to government agencies and other organizations specializing in water supplies.

I feel that some exposure to the Bank's procedures and appraisal requirements for water supply projects would be a great benefit to Mr. Chan as well as the Department itself especially in the light of the observations made in your Report when you were here with Mr. Rajagopalan. I wonder therefore if it is possible for the Bank to arrange for a period of attachment possibly working with the technical and financial people in the Bank for about one to two weeks. It is expected that Mr. Chan will be in Washington either in April or June 1968 and if this should prove possible I will be most grateful if a reply could be sent to him directly. His address is as follows:

Mr. Chan Boon Teik,
Public Works Department, (Headquarters)
Swettenham Road,
Kuala Lumpur.

I have mentioned this possibility to Mr. Rajagopalan who is currently with the appraisal mission for the K.L. water supply project which is proceeding smoothly. If all goes well we hope that it will be possible to conclude the negotiation in early April as there is some urgency in the implementation of the project. I am sorry that you were not able to come personally on this mission with Mr. Rajagopalan.

With best regards,

Yours sincerely,

Sulaiman bin Abdullah
(Sulaiman bin Abdullah)

10 OCT 31 1967 0:58

ack Oct. 31



Our reference: P-1200/24

Your reference:

BY AIR

Mr. Walter Armstrong,
International Bank for Reconstruction & Development,
1818 H Street, N.W.,
Washington D.C. 20432,
U.S.A.

Dear Mr. Armstrong,

Travel Fellowship with the World Health
Organization

I am writing on behalf of Mr. Chan Boon Teik, a senior engineer with the Malaysian Public Works Department, who has been granted a 6-month travel fellowship by the World Health Organization to study water treatment and related problems. The fellowship allows study attachments to government agencies and other organizations specializing in water supplies.

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Public Works Department, (Headquarters)
Seweteham Road,
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With best regards,

Yours sincerely,

(Sulaiman bin Abdullah)

1967 OCT 31 PM 8:26

COMMUNICATIONS
DIVISION
RECEIVED

CROSS REFERENCE SHEET

COMMUNICATION: Letter

DATED: October 18, 1967

TO: Mr. A. David Knox

FROM: Mr. Mauricio Herman
Deputy Director
Training Division
Inter-American Development Bank

FILED UNDER: Liaison - I.D.B.

SUMMARY: Re: Invitation to take part in the Seminar on "Establishment of Water Rate Structures" that is going to be held in Quito, Ecuador on October 16-28, 1967.

Ack. October 25, 1967 re: Mr. Morse will attend.

5 - Water
October 18, 1967

Mr. Walt J. Sonnevile
Corporate Economist
Universal Oil Products Company
30 Algonquin Road
Des Plaines, Illinois 60016

Dear Mr. Sonnevile:

In reply to your letter of October 16, I would be most
happy to receive you at either 11:00 a.m. or 2:00 p.m. on
October 26. Please confirm which time is more convenient for you.

Yours very truly,


Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRS:jfm

S - Water
x Alpha - Sonnevillo, A

October 6, 1967

Mr. Walt J. Sonnevillo
Corporate Economist
Universal Oil Products Company
30, Algonquin Road
Des Plaines
Illinois 60016

Dear Sir:

This will acknowledge your letter of October 2, in which you inquire whether it would be possible for you to spend part of a day about the middle of October with us to discuss certain questions relating to your research on the economics of water systems.

As of the moment, my schedule is rather open for October and I would expect that with a few days notice, a time can be arranged to talk with you.

The Johnson Division of your firm located in St. Paul is well known to me and my associates since it has an extremely well-earned reputation in the field of well-screen manufacture. Jerry Briggs is an old friend of mine and I have been continually impressed with the great contribution he has made to the international water supply industry.

I would appreciate it if you let me know a few days in advance of the time you expect to arrive in Washington.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

Control No: MISC-208

280-2366

Columbia University in the City of New York | New York, N.Y. 10027

UNIVERSITY SEMINARS
on Water Resources

561 West 116th Street

September 25, 1967

*Act'd.
Nov 24
HBR.*

Mr. Hugh B. Ripman,
Deputy Director, Projects Dept.
International Bank for Reconstruction & Development
1701 Pennsylvania Avenue N.W.
Washington, D.C.

Dear Sir:

May we extend our cordial invitation to you to become a member of the Seminar on Water Resources at Columbia University.

During the summer of 1967, Columbia University organized its Seminar to discuss the problems in water resources and to cope with them on an interdisciplinary basis.

Water has physical and chemical properties that make it, in certain ways, peculiar and in other ways amazing. All of these qualities are important to man; without them our planet would be quite a different place. This element influences each phase of our life. Adequate appreciation of this element, especially regarding the increasing demands on water in the near future, and the many folded ways to cope with the foreseeable water shortage stress the importance to the Seminar on Water Resources.

For over twenty years Columbia University has fostered unique interdisciplinary meetings to help focus knowledge from many areas onto specific complex problems which did not fit into a standard academic pattern: The University Seminars.

The mechanics of the seminar's operations are simple, with maximum freedom of choice an important basis of all arrangements. The seminar will meet monthly or biweekly, summer months excepted, at Columbia, for an early dinner and a two-hour working session. Participants will receive University appointments and will be reimbursed for travel expenses up to \$50.00 each meeting, but not for hotels or meals. These arrangements permit members to attend regularly if they are within 400 miles of New York. No speaker or member receives an honorarium. A secretary for the Seminar was provided and, if desired, meeting transcripts would be prepared. Besides these, eventual publications, mimeographing and similar communication expenses of the Seminar will be financed too. A typical seminar consists of from six to perhaps twenty members, elected for three-year renewable appointments. Advanced graduate students (or equivalent) may audit the sessions and may receive travel expenses.

RECEIVED
GENERAL FILES
COMMUNICATIONS
1967 OCT 11 PM 3:36

Finally, about why you have been chosen to join our Seminar: First, you are not simply my choice but rather a unanimous choice of the Seminar's Founding Committee. By accepting the invitation you would contribute substantially to creating the necessary working atmosphere with your achievements and experiences in fostering further successful development of the Seminar on Water Resources. It is natural that everyone can be replaced, but to find replacements would not be so easy!

For further planning purposes, your early confirmation of acceptance to membership would be appreciated.

Sincerely yours,

George J. Halasi-Kun

Chairman

George J. Halasi-Kun

Messrs Schmedtje and van der Tak

September 19, 1967

Shlomo Reutlinger CR

Study Proposal of a Model to Estimate Optimum Water Storage Operations

1. I am attaching a very rough outline of a study proposal for preliminary discussions. I can not say that I am sufficiently familiar with currently practiced project appraisal procedures in the proposed area of study to say for sure that indeed they need to be improved. So in a way, my intent at this time is primarily to provoke some thinking.

2. Parenthetically, I might mention that there are some interesting common features to all investments in structures whose benefits are derived from providing a service on something whose arrival and/or departure can not be known except in a probability sense, be it a port, an irrigation reservoir, a grain silo or a cow on pasture. Mr. Ray and Mr. de Weille of our Division have recently looked into optimizing port construction and it might well be that we could benefit from their results in carrying out the proposed study on water retaining structures.

3. It would obviously be very desirable to work in close co-operation with the Projects Department. I would also think that a Junior Professional could be profitably engaged in the proposed study.

SReutlinger/bsc

S. Reutlinger

September 19, 1967

STUDY PROPOSAL OF A MODEL TO ESTIMATE
OPTIMUM WATER STORAGE OPERATIONS

General Objective of Study

The purpose of this study would be to develop a more or less uniform methodology for determining optimum water retention structures (for flood control and/or irrigation) and the expected as well as the standard deviations of returns from such investments. Specifically, the study should result in guidelines (for general terms of reference) to be given to consultants' firms engaged for the appraisal of irrigation and flood control projects.

Justification

As in the past, the Bank is likely also in the future to be called upon to appraise and to approve loans for the construction of water retaining structures (for flood prevention, and/or irrigation, and/or hydro-electric power generation). Consultants' reports on projects of this kind have been usually quite voluminous and impressive, but rarely is the information collected and presented analyzed in a form which would assist the Bank and the Project management towards a determination of the optimum size and operation of the project. In our opinion the model developed in our study would yield an estimate of the expected net benefits which would be more correct than similar estimates based on the same amount of data. However, in view of the frequently encountered shortages of good data and in view of the fact that projects may have to be approved quite frequently on criteria other than expected economic benefit measures, this may not be so very important. The major justification for investigating

the models described below and for insisting that consultants use them is not so much for leading to the selection of different projects but rather for improving the potential returns from selected projects.

The returns from an investment in a storage facility for water depends generally on the size of the storage facility, the probability distribution and the sequence of water inflow, the value of the water in use depending on amounts and time periods at which available, the value of flood damage prevention also depending on the size of floods and, of course, the cost of constructing and operating the project. Other important variables might be various sources of water losses by evaporation and percolation and the probable rate of sediment deposition in the reservoir.

Our study would be intended to produce models for assessing all these variables in terms of cost-benefits and particularly in terms of the capacity and mode of operation of the project which maximizes the expected net benefits.

Clearly, variations in the nature of individual projects and lack of data would require that changes be introduced in the basic model. However, with fairly uniform terms of reference handed out to consultants the burden of proof if data are unavoidable would be on the consultant. He would also have to show explicitly what assumptions he has substituted for factual data in deriving his conclusions. Besides possible implications for a sensitivity analysis, consultants reports should be more readable, if they all estimate a more or less uniform model given in the terms of reference.

September 13, 1967

Mr. Harris Seidel
P. O. Box 627
City of Ames
Ames
Iowa 50010

Dear Harris:

This will acknowledge your letter of September 2, 1967 in which you request a couple of copies of the AWWA reprint. These are enclosed.

Concerning your inquiry on Raj's report on Brazil, this report is still in preparation and I would expect it may be in grey cover within the next couple of months. On the occasion when you come to Washington, you might call this to my attention when I can give you a current reading of where the report stands. It would certainly be possible for you to take a look at the green cover which I understand is not going to be substantially changed when it goes into final.

I have just returned from a trip which among other places took me to Taiwan. A number of interesting problems have developed in Taiwan, one being that they have not proceeded with construction of the stage 2 works with the result that now they are short of water. Two storage tanks which were built on IDA funds and which you may recall were situated at a reasonably high elevation on the hills bordering the city have never been used. In the first instance, this was because the distribution system could not withstand pressures imposed when these tanks were being filled. After repairing the lines there was insufficient water available to supply the city and at the same time, provide water for storage. Consequently, it will not be until completion of stage 2 that the tanks will be utilized. I hope the Taiwanese will move on the second stage construction immediately. This will provide water only through 1970 and stage 3 which will have to take water from a new intake farther upstream would have to be completed in 1971, meaning that they will have to begin the final engineering on stage 3 during 1968. Stage 3 will take them only to 1975 and the source of water after that is still a big question mark. I have impressed upon them the need for the development of a long range plan and I am hopeful that they will move on this.

Taipei also has problems in operating the present treatment plant. One of these, because of the rather poor quality of lime being used and which on feeding after filtration for pH control, causes heavy deposition in the clear well. They are thinking of going to soda ash for this purpose although they have not established what the cost will be. Floccu-

September 13, 1967

Mr. Harris Seidel
P.O. Box 627
City of Ames
Ames
Iowa 50010

Dear Harris:

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1967 SEP 14 PM 12:12
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Mr. Harris Seidel

September 13, 1967

lation in the sedimentation basins is also poor and there is considerable carry-over on to the filters. This was explained as the result also of poor quality lime although this is more difficult to believe. I have the impression that there is a fair amount of corrosion taking place on the distribution system because the pH adjustment at the end of the plant has been effected by the desire of the operators to reduce the amount of lime settlement in the clear well. All of these matters are being called to the attention of the General Manager and I hope that action will be taken. It is encouraging to note that the Taiwan Water Works will probably have enough reserves from their operations to permit financing of the second stage expansion.

I am happy to note that you are taking on an assignment in Thailand and also an evaluation project for Marion, Indiana. I am sure that in both instances, the sponsors will get their money's worth.

Please accept my best regards and give us a ring when you get to Washington in November.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

encls:

Messrs. George J. Baier and Anthony Churchill

August 28, 1967

H. G. van der Tak

Public Pricing of Utilities: Urban Water Supply

1. I read, belatedly, your memo of July 6, 1967 to Mr. Jennings on public pricing of utilities: urban water supply. You will probably not be surprised that I am in general agreement with the sentiments expressed. I have some quarrels, however, with the specifics.

2. I am not at all certain that in fact the price elasticity of demand for urban water is much larger than that for road services. I see no reason or evidence that this would be so, and I doubt, therefore, whether your suggestion that in many respects urban water supply pricing becomes similar to pricing of a congested road is correct.

3. Contrary to what you say, all costs will not necessarily be covered when the rationing price is on the long-run marginal cost curve. This is only so if long-run marginal costs are constant or rising. Also, I do not think it is a sufficient investment rule for the rationing price to yield total revenues greater than total costs. Even with perfectly divisible investment, this requires not only that the rationing price exceeds the cost of expanding capacity (or of the cost of providing greater output at existing "capacity"), but also that the costs of capacity expansion are constant or rising. Conversely, the absence of "shortages" does not necessarily indicate overinvestment in water supply; this is only so with perfect divisibility of capacity expansion.

4. Your total costs and total revenue curves are drawn (in para. 6) in a diagram with a price and a volume axis, together with the marginal cost and the demand curves. The shape of your total value and total revenue curves suggests that you had in mind a vertical axis representing total revenue and cost, but you cannot have these in the same diagram with a vertical price axis. At any rate your total cost curve would not go through the origin.

5. You may perhaps wish to draw Mr. Jennings' attention to these points. It does not affect your basic conclusion that total revenue tests tell you little if anything about whether an investment is justified. I do not think this holds, however, if a revenue test is applied only to the additional water made available.

1967
HGVIT:zmc

cc: Mr. Fleese, Mr. Collier
Mr. Schmiedtje/Mr. Heron

Mr. A. David Knox

August 24, 1967

J. H. Jennings *JHJ*

Economics of Water Supply

July 11, 1967
1. The attached memo is the result of a luncheon conversation several weeks ago about the economics of water supply. The economists present seemed to be interested and, although we all agreed after lunch that there were questions involved which merited further thought, I didn't request or expect to receive a formal response. However, I found the memo interesting and I thought you might also.

2. As you know, we have had a sporadic dialogue with the Economics Department in the past which has not been very productive. Nevertheless, I would like to see the dialogue continue with the long-term objectives of (a) refining the economic theory; and, (b) integrating practical applications (if any) of it into our daily operations. From experience, (b) will be much more difficult than (a).

JHJennings:cdd
IBRD

July 28, 1967

Arliss D. Ray, PhD
Associate Professor
Department of Civil Engineering
College of Engineering
University of Missouri
Columbia 65201

Dear Professor Ray:

This will acknowledge your letter of July 25, 1967 in which you make known your availability for short time consultation in the general field of Water Resources and more specifically, in water supply and pollution control.

We are placing your name on our Consultants list and on any occasion when we have need of a consultant with your background, we will keep you in mind.

Thank you for expressing an interest in undertaking assignments for the Bank.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

cc: Personnel (with incoming letter)

HRShipman/pbf

July 21, 1967

Mr. John G. Copley
General Manager
Elmire Water Board
261 West Water Street
Elmira
New York 14901

Dear John:

In line with your request, I am returning herewith an initialled copy of the letter from Mr. Leonard Brown to you and which represents my agreement with the proposal which he has made to the International Affairs Committee on the presentation of the Friendship Award in 1968.

I regret that my reply to your letter has been delayed but I have just returned to the office and am getting caught up on my correspondence.

Please accept my best regards.

Yours very truly,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

encl:

HRShipman/pbf

July 21, 1967

Mr. B. P. Thomas
Acting Secretary
Resources Group
Chandos Court
Caxton Street
Westminster
London S.W.1
England.

Dear Mr. Thomas,

In accordance with your recent ^{request} report, we are herewith forwarding
two copies of our Water Supply Questionnaire.

Very truly yours,

Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

encl:

HRShipman/pbf

cc: Mr. Piccagli

July 21, 1967

Mr. B. P. Thomas
Acting Secretary
Resources Group
Chandos Court
Caxton Street
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London S.W.1
England.

Dear Mr. Thomas,

In accordance with your recent report, we are herewith forwarding
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Very truly yours,

Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

encl:

HRShipman\pbf

1967 JUL 24 PM 1:53

cc: Mr. Macgregor

CROSS REFERENCE SHEET

COMMUNICATION: Letter

DATED: July 19, 1967

TO: Mr. Edmund de Rothschild
New Court, St. Swithins' Lane
London

FROM: Mr. Woods

FILED UNDER: Middle East - Desalination

SUMMARY:

Regarding contribution to be made for the solution of the problem of refugees in the Middle East and in other arid parts of the world by desalination.

OFFICE MEMORANDUM

TO: Files

DATE: July 13, 1967

FROM: J. K. Schmedtje *J.K.S.*SUBJECT: WHO Seminar on Integration of Community Water
Supplies into Planning of Economic Development

1. Messrs. Kamarck and Schmedtje met this afternoon to discuss the question of participation by the Economics Department in the seminar referred to above. The seminar is scheduled to take place from September 19 to 28, 1967 in Geneva.

2. The matter was decided as follows:

- i) The Economics Department will send one economist, presumably Mr. Meroz.
- ii) Mr. Meroz will prepare a paper for the seminar presenting the preliminary findings of his current research into the nature and measurement of the benefits of water supply projects. This will be instead of the general paper on economic analysis of water supply projects requested by WHO.

cc: Messrs. Kamarck
Stevenson
Armstrong
J. H. Williams
van der Tak
Meroz

JKS:es

July 11, 1967

Mr. Paul Bierstein
Chief, Community Water Supply
Division of Environmental Health
World Health Organization
Avenue Appia
1211 Geneva
Switzerland

Dear Paul:

As requested in your letter of July 5, 1967, we are sending you, under separate cover, 50 copies of the Bank's "Questionnaire for Water Works Projects".

Very truly yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department, Public Utilities

Mr. Andrew M. Kamarek

July 11, 1967

John A. Holsen

July 6
Attached Memo to Mr. Jennings from Messrs. Beier and Churchill

At the request of Mr. Jennings, Messrs. Beier and Churchill have prepared a brief memo on the pricing of urban water supply services. We would normally send this through Mr. Collier, but we understand he will be away for several weeks. The authors of the comments may well be away when he gets back. Not wanting to delay the response and needed additional discussions until everyone is in town, I am adding it to your surely already overloaded in box.

We're sure there is more to be said on going from economic theory to actual investment decisions; for just that reason we would like to keep the communications going.

Attachment

JAHolsen/gah/mds

c.c: Messrs. Beier & Churchill

July 6, 1967

THROUGH: Mr. James H. Jennings
Mr. J. H. Collier
George J. Baier and Anthony A. Churchill

Pricing of Public Utilities: Urban Water Supply

1. There are really two parts to the urban water supply problem that of the investment decision and that of the pricing of the services provided. Both are inter-related and hinge on the investment criteria used. One of the difficulties most frequently encountered in making an investment decision is the lack of any objective economic criteria as water supply tends to fall into that class of services usually regarded as an end in itself (as, for example, health services in general), and, therefore, not subject to economic analysis. This is, however, a false premise as the provision of water services uses scarce resources that have alternative uses and thus it is still an economic problem.

2. To illustrate the problem let us consider the alternatives available when an investment decision is required. Suppose we start with a criteria that each person in the community should have a consumption of 20 gallons per day because this is the minimum considered "necessary" by the health authorities. If the community has a population of 10,000, this means that the required plant should provide 200,000 gallons per day. This type of decision is, of course, based on the rather arbitrary criteria. It would be useful at this stage to ask what would be the community's desires with respect to additional water services, that is, what is the value to it of, for example, an additional 10 gallons per day per capita. An additional 10 gallons per day will require additional capacity and, therefore, has some positive cost. (If there are economies of scale, costs per gallon may decline but the additional marginal cost will still be positive). The economist's question is then is the cost of the additional capacity less than the value of the services, provided, that is, a simple proposition about consumer surplus.

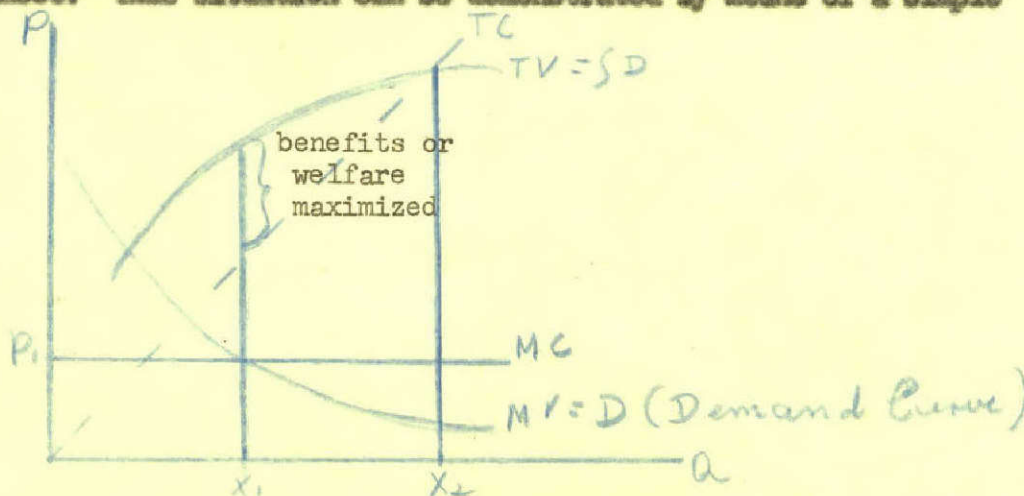
3. It is at this point that it is necessary to say something about price because unless some price information is available we are left with no alternative but to estimate consumer surplus or the demand curve. What price should be charged is not a simple proposition (cover all costs, etc.,) because water services, like roads, tend to have discontinuities, and excess capacity. The marginal cost of providing an extra gallon of water to any consumer is very close to zero so any attempt at marginal cost pricing will effectively make water a free good. But unlike road services the demand for water should be more elastic and at relatively low prices capacity constraints will develop. One reason for the more elastic demand is the fact that there are no private costs related to urban water supply other than perhaps the effort required to turn off the tap while in the case of roads private costs are likely to be the major portion of the cost of a journey. Thus in many respects urban water supply pricing becomes similar to the pricing of a congested road where price is used to ration available supply.

July 6, 1967

4. This, as a first approximation, considerably simplifies the theoretical approach to water supply pricing. The aim of pricing policy is then to ration capacity in such a fashion so as to optimize the use of existing resources. This means that once the capacity has been built it may make no economic sense to charge users amounts sufficient to cover all costs or justify the project on the basis of its rate of return. The only case where all costs will be covered is when the rationing price is on the long run marginal cost curve, that is, when capacity is built to meet demand at a price equal to long run costs. If there is excess capacity because of for example, "lumpiness" of investment the rationing price will be insufficient to cover total costs. Any attempts to recoup total costs by a user charge will mean water flowing over the dam and thus a wasteful use of a resource. Similarly if the rationing price yields revenues greater than total costs it indicates that the community would be willing to pay for the installing of more capacity. The use of this price would then provide a sufficient investment rule if investment does not need to take place in large discrete projects.

5. At this point in the discussion it is useful to focus on what is meant by a user charge. The economic definition of a user charge is one in which the price charged is directly related to the cost-incurring use of the resource. In this case the price charged must be related to the volume of water used, that is, metered consumption. A flat rate on use of water cannot be considered a user charge because the price charged has no relationship to the quantity consumed. If a flat rate charge (for example, a monthly rate) is used it is impossible to relate consumption to any economic variables that would provide a criteria for pricing and investment decisions. Price in this case does not serve as a rationing mechanism and (except in the case of a perfectly inelastic demand curve) if not shortages or physical rationing occur it would indicate an over investment in water supply.

6. The basic difficulty here is that price (the flat rate tariff) provides no measure of benefits and thus no guide for making investment decisions. This holds true even for the usual financial criteria that is used to justify some projects, that is, where "user" charges such as a monthly rate are sufficient to cover all costs of the project. In this type of project what can happen is that the project can pay for itself simply by decreasing the consumer surplus or total benefits to the user because the user is faced with an all or nothing decision, to connect or not to connect. This situation can be demonstrated by means of a simple diagram.



July 7, 1967

In the diagram benefits or welfare are maximized at output x_1 where marginal cost is equal to the value of the marginal unit of water consumed. Net benefits received is measured by the difference between total cost (TC) and total benefits (TV). Any expansion of output between x_1 and x_2 will always be justified by the financial rule of all costs covered by increasing all or nothing charge but it clearly leads to a decrease in welfare of the community. Beyond the point x_2 the financial rule would give unequivocal results because at this point there would be no consumer surplus left and enough consumers would disconnect from the system to make it unprofitable according to the financial rule. The inescapable conclusion is that the financial test is not test at all of the productivity of an increment of capital in cases where charges consist of fixed payments. Similarly the same results are obtained when charges consist of fixed plus variable charges where new investment is financed by means of the fixed charge and the output rationed by means of a user charge if the fixed charge does not absorb the entire consumer surplus.

7. The above discussion has presented the skeletal out of the economics public water supply pricing and investment. In practice the problems encountered are a good deal more complex but these complexities should not be allowed to obscure the economics behind the decision making process. Such problems as peak demand and market differences can be fitted into the basic framework used here. The most difficult problem is not theoretical one but is one of obtaining information principally about the value of the service to the community. The most obvious way of obtaining this information is through use of the price system, price being the user charge or rationing mechanism. In the absence of price data alternative data must be found if economically sound investment decisions are to be made. Such alternatives may result in second or third best solutions but may be better than no criteria at all. An example of such criteria could be the percentage of its total income that a community spends on water services.

8. Regardless of the criteria used it is obvious that the Bank should have available more information than it currently does when it considers such projects. This information may not be currently available but it could probably be obtained at a modest cost in relation to the contemplated investment, or the losses inherent in any misallocation of scarce resources.

cc: Messrs: Collier
Heron
Pleasant

GBelcher/ACHurchill/jc.

**WORLD HEALTH
ORGANIZATION**

Avenue Appia
1211 GENEVA-SWITZERLAND
Telegr.: UNISANTE-Geneva



Tél. 34 60 61 Télex. 22335

**ORGANISATION MONDIALE
DE LA SANTÉ**

Avenue Appia
1211 GENÈVE-SUISSE
Télégr.: UNISANTÉ-Genève

In reply please refer to:

Prière de rappeler la référence:

5 July 1967

Dear Ship,

Our stocks of the "Questionnaire for Water Works Projects" prepared by the Bank are now finished and I wonder if you could let us have a further 50 copies in English.

Yours sincerely,

Paul

P. Bierstein
Chief, Community Water Supply
Division of Environmental Health

Mr Harold R. Shipman
Chief, Water Supply Section
Projects Department -
Public Utilities
International Bank for Reconstruction
and Development
1818 H Street, N.W.
Washington, D.C. 20433
United States of America

Rec'd. *July 10/67*
Ack'd. *July 11 - CAM.*
Assigned to *Shipman/Cattias*
Mr. Morse

MISC 489

ack July 11

Télégr.: UNISANTE-Genève
1211 GENÈVE-SUISSE
Avenue Apollin



TEL. 34 60 61 Telex. 35332

1211 GENEVA - SWITZERLAND
Avenue Apia
Télégr.: UNISANTE-Geneva

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Prérite de rappeler la référence;
In reply please refer to:

Dear Ship,

Our stocks of the "Questionnaire for Water Works Projects" prepared by the Bank are now finished and I wonder if you could let us have a further 50 copies in English.

Yours sincerely,

25

Division of Environmental Health
Chief, Community Water Supply
P. Bierstein

United States of America
Washington, D.C. 20533
1818 H Street, N.W.
and Development
International Bank for Reconstruction
Public Utilities
Projects Department -
Chief, Water Supply Section
Mr. Harold N. Shipman

2012/09 188

11 July 2000

Mr. Alexander Stevenson

June 19, 1967

W. J. Armstrong *WJA*

Seminar on Integration of Community Water Supplies
into Planning of Economic Development

When Mr. Atkins and Mr. Bierstein of WHO came to see me on June 15, I told them that the Bank could not sponsor any participants to the conference, but that we would be willing to have Bank staff participate. As discussed with you, I said that the Economics Department would be interested in sending one person to participate in the seminar, but that we were not sure at this time whether or not you would be willing to prepare a paper.

I also said that one person from the Water Supply Section would participate. I asked Mr. Bierstein to let us know as soon as possible the type of participation he would like to have from us.

WJArmstrong:ejw
cc: Mr. Bell
Mr. Shipman

FORM NO. 75
(2-60)

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL FINANCE
CORPORATION

INTERNATIONAL DEVELOPMENT
ASSOCIATION

ROUTING SLIP

Date

June 23/67

NAME

ROOM NO.

files

231

To Handle

Note and File

Appropriate Disposition

Note and Return

Approval

Prepare Reply

Comment

Per Our Conversation

Full Report

Recommendation

Information

Signature

Initial

Send On

REMARKS

From

B. Chadenet

ROUTING SLIP		Date June 6, 1967	
NAME		ROOM NO.	
Mr. Bell			
Mr. Chodoret			
(I told David to go ahead			
and explore possibilities - that this			
sounded worthwhile to me)			
To Handle	Note and File		
Appropriate Disposition	Note and Return		
Approval	Prepare Reply		
Comment	Per Our Conversation		
Full Report	Recommendation		
Information	Signature		
Initial	Send On		
REMARKS Stop Bell. talked with Mr. Knox about this. I should be glad to have a chance to discuss the attached memorandum with you. Mr. Bell y affec - Bex sur that DSD is not in involved (2C)			
From		A. D. Knox	

OFFICE MEMORANDUM

TO: Mr. A. David Knox

DATE: June 6, 1967

FROM: W. J. Armstrong *WJA*SUBJECT: Seminar on Integration of Community Water Supplies
into Planning of Economic Development

On the afternoon of May 25, 1967, Mr. Paul Bierstein of WHO, visited the Bank to discuss a number of points related to cooperation and collaboration between WHO and the Bank in the field of water supply. Among the items discussed was an informal request for the Bank to co-sponsor with WHO a seminar on the Integration of Community Water Supplies into Planning of Economic Development. This seminar is scheduled for the period September 19-28, 1967 and will likely be held in Geneva. He left with us the attached preliminary Program Outline for the seminar.

The purpose of the meeting appears to be to instruct water supply people on the need to obtain recognition of their problems at the national level and to demonstrate to the national planners the reasons for including water supply projects within national plans. The topics chosen relate to project development, national planning for water, the analysis of projects, financing, and the role of water supply in development planning. One question suggested for discussion is "How much water supply and what standard of health are in line with given levels of development?" The meeting would be highly successful if some meaningful information could be developed on this question alone.

The plan is to bring together senior water supply experts, preferably with experience at the national level, and senior economic development planners.

In view of the need for countries to do more planning in the water supply field and to bring this planning more closely into line with the national planning agencies, it would appear that this seminar would be of considerable value. It is our observation that one of the reasons why our economic missions are not obtaining much, if any, information on national water programs is that the water agencies have not presented to the national planning organizations information to which those organizations could give consideration. It is also known that projects being submitted to the Bank for financing are generally on a one-by-one basis and that greater impact could be made in the resolution of problems and on general improvement of national operations if a closer relation existed within countries between water engineers and those involved in national planning. The seminar could serve as a means to test an approach which could prove useful for this purpose.

Mr. A. David Knox

June 6, 1967

WHO is prepared to support about 15 participants (travel and subsistence) and has asked if the Bank would be willing to co-sponsor the meeting and to support about 10-15 participants, preferably economists and planning officials, because of the Bank's better knowledge in this field. A tentative figure of about \$7,000 has been mentioned as the estimated cost for such Fellowships. WHO has also asked for the participation of Bank staff, both economic and technical, in the seminar, irrespective of whether or not the Bank provides any financial support.

The seminar is planned for a limited number of participants so that the country coverage would be limited. However, this might not be a disadvantage because the subject matter is still largely experimental. A small first meeting might pave the way for a larger meeting for a wider audience at some time in the future.

The seminar is of interest to the Bank and we should give it support. As a minimum, someone from the Water Supply Section and the Economics Department should participate. We should discuss this with Mr. Stevenson to see if the Economics Department could cooperate.

I believe also that the Bank should provide some financial support for the seminar. I suggest that after clearance from Mr. Chadenet, we discuss the matter first with the Economics and Development Services Departments plus one or two Area Departments, say Asia and Western Hemisphere. If there is general agreement that the seminar would be worthwhile, we could then talk to Mr. Williams and Mr. Ripman.

Mr. Bierstein is expecting to be in Washington from June 9-14, and would like to have our preliminary reaction during that period.

WJArmstrong/HRShipman:ejw

PRELIMINARY PROGRAMME OUTLINE

WHO Seminar on Integration of Community Water
Supplies into Planning of Economic Development
Geneva 19-23 September 1967

Opening Meeting

Welcome and introductory statement on the seminar topic - WHO

Outline of seminar aims and objectives

Organizational arrangements

Election of Officers

1. Chairman
2. Rapporteurs

Topic 1: A global perspective (WHO)

A background paper will be prepared to put the problem of community water supply for the developing countries in its global perspective. An attempt will be made to provide a number of estimates as follows:

1. Total population growth for selected developing countries up to 1980.
2. Urban population growth up to 1980.
3. Proportions of urban populations now receiving water from public outlets; water from house connections, and with no access to piped supplies.
4. Per capita cost of providing piped supplies by house connections and by public outlets.
5. Annual cost of meeting specific objectives by 1980 including maintenance of the status quo, (present proportions of house connections and access to piped supply not changed) and elimination of non-piped supplies by providing access to piped supply for all urban populations.
6. Present rate of expenditure from all sources on community water supplies in developing countries.

Suggested discussion questions

Where are the needs greatest and for what kinds of supply?

Is investment now at a satisfactory level?

What are some examples of the consequences of insufficient investment in community water supplies?

How can we ensure that community water supply is given proper consideration and that investment is neither too high nor too low?

Topic 2: Economic analysis of specific projects (Temporary Advisor)

A background paper will be prepared on methods of evaluating specific projects in terms of their economic merit. This paper will describe the present methods of financial evaluation; discuss the application of available economic methods (primarily benefit - cost analysis) to community water supply projects, and the problems that are likely to be encountered in attempting to measure benefits, including the kind of data needed and its availability. The distinction between economic and purely financial analysis will be made. A warning will be emphasized that benefit-cost analysis is designed to play a role in project design and should not be used as a mechanism for justifying projects after design is completed.

Suggested discussion questions

What are the shortcomings of present approaches to the evaluation of community water supply projects?

What are the social benefits of community water supply and can they be measured?

What are the local obstacles to the implementation of community water supply projects that are feasible and desirable?

Considering these obstacles what decisions can be made at the local, state, or regional level and what decisions can be made at the national level?

Topic 3: National programmes for community water supply in developing countries

Several seminar participants will be asked to describe briefly the programmes of their countries at the national level. An effort will be made to obtain a diversity of cases according to geographical area, level of development and kind of planning. Background data will also be available from all countries participating in the seminar.

Suggested discussion questions

Why are national programmes needed?

How are they formulated?

In what ways have national programmes been useful?

Do all countries need a national programme?

How are targets and goals set?

Topic 4: Planning for economic development (Temporary Advisor)

A background paper will be prepared on the formulation of national plans for developing countries. The problems of optimal resource allocation, and the provision for directly productive investment and for social overhead (infrastructure) will be discussed. The paper will briefly describe the problems involved in resource allocation and indicate the extent to which they can be satisfactorily handled. Particular problems and shortcomings will also be described.

The paper will include consideration of community water supply as a social overhead investment.

Suggested discussion questions

What strategies have been adopted by countries participating in the seminar?

How much variation is there in allocations to social overhead capital?

How does allocation to social overhead investments vary with the strategy of economic development adopted?

How important is community water supply compared with other social overhead needs? Can water supply be treated as a commodity like any other?

Topic 5: External financing for community water supplies in developing countries. (Temporary Advisor)

A background paper will be prepared on the views and approaches of external financing agencies. The paper is expected to cover the views of the World Bank and others. It will explain how these institutions view the problems raised in the seminar and in what ways community water supply proposals are now related to the economic development of the country. For example, the World Bank is interested not only in the project itself (can it be operated successfully and can the loan be repayed?) but also in all the circumstances surrounding the project. The manner in which these circumstances enter into decisions or policies will be described. Also the criteria for evaluation of projects will be explained particularly as they relate to the economic, as distinct from the financial, feasibility of projects.

Suggested discussion questions

What is an appropriate strategy for international financing?

Should all countries apply for loans or should some refrain from doing so?

Are all countries equally eligible for loans or on what economic grounds can they be differentiated?

Topic 6: Water supply and the national economy

Part I: The timing of investment in community water supply (Consultant)

A paper will be prepared on the relationship between water use and economic growth of developing countries with specific reference to the scale and timing of investment in relation to GNP per capita and stages of growth. Some general principles will be suggested and their implications for investment and project design outlined.

Suggested discussion questions

How can considerations of level of economic growth be related to loan arrangement or financing CWS within countries?

Can different degrees of project scrutiny be developed?

In what cases should financial tests be rigorously applied?

In what circumstances can less stringent tests of project feasibility be accepted?

Part II: The nature of the benefits of community water supply in their national context (Temporary Advisor)

A background paper will be prepared to examine critically the evidence for the contribution of community water supplies to national economic development. The paper will identify the major sources of progress and development in an economy and suggest the extent to which these are dependant upon water supply. An attempt will also be made to indicate the changing nature of the benefits according to the conditions of the national economy.

Suggested discussion questions

How can a series of increments in water supply be kept in step with levels of economic development as reflected in income, housing and water using devices?

What kinds of economic forecast are needed to permit development of water supply in harmony with the growth of the economy?

How much water supply and what standard of health are in line with given levels of development?

Topic 7: Realistic national water supply programmes for developing countries (Temporary Advisor)

A background paper will be prepared on the principles of formulation of national programmes. Seminar participants will be asked to prepare statements on national programmes for water supply including the following issues:

1. In what way should national programmes be formulated to ensure a reasonable (optimal?) level of investment in community water supply with due consideration for public health needs?
2. What targets or goals should be set for national programmes and how should they be determined?
3. How can national water supply programmes be incorporated into national development plans? What specific data are needed at the national level?

Discussion

The background paper and the statements prepared by participants will form the basis for discussion.

Topic 8: Better decisions in project design (Temporary Advisor)

A background paper prepared on the problem of improving decisions in project design with specific reference to economic criteria.

Seminar participants will be asked to prepare statements on the formulation of community water supply projects including the following issues:

1. How should projects be formulated to adapt the total cost to the benefits to be derived?
2. In what ways can the design of specific community projects be improved to bring them into harmony with the national programmes discussed in Topic 7?
3. How can economic criteria be introduced at the design stage or before design begins?
4. What is an appropriate pattern of interaction between engineering design, public health, and economic constraints?

Discussion

The background paper and the statements prepared by participants will form the basis for discussion.

Closing session: Evaluation and Review

Suggestions of conclusions about major resolved and unresolved questions.

Discussion of problems that need more work and further investigation.

CROSS REFERENCE SHEET

COMMUNICATION: Letter

DATED: June 2, 1967

TO: General Vogel

FROM: Mr. Lawrence H. Clark
Research Associate
Brooks Foundation
Santa Barbara
California

FILED UNDER: INDUS BASIN PROJECT - Inquiries

SUMMARY: Enquiry re the possibilities of using "satellite photography"
in the Indus region and other rivers of special interest to
the World Bank.

Ack. by General Vogel - letter dated June 7, 1967

Other correspondence :-

Letter to Mr. Kirmani - dated June 7, 1967 enclosing a copy of the
of WAPDA, Chief Engineer above letter

5 - Water
May 31, 1967

Mr. John G. Copley
Chairman
Committee on International Affairs
Elmira Water Board
261 West Water Street
Elmira, New York 14901

Dear John:

I have received a note from Ray Faust mentioning the meeting of the International Affairs Committee at the AWWA Convention in Atlantic City. Unfortunately, I am taking off for Africa today and find that it will not be possible for me to attend the Convention this year. I very much regret this conflict in the schedule and hope that you will not consider it as a lack of interest in the work of your important committee.

You will be interested in knowing that the Water Utility Management Seminar which we conducted in Washington two weeks ago was a tremendous success with 43 participants from 30 different countries. I am more enthusiastic than ever that this is a seminar which can be conducted anywhere in the world, language permitting, and which would be of tremendous value for Water Works Managers. Based on the comments received from participants, I would expect that the Michigan Group will be receiving requests to conduct the course within a number of foreign countries during the next year. I believe it will be worthwhile for your committee to give some thought as to how they might give the seminar greater international publicity and as to what steps might be taken to further promote and possibly support a greater use of the seminar in the international field. I am attaching a list of the participants at the Washington course.

Please accept my best regards and convey my greetings to the other members of your committee.

Very truly yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

attachment

cc: Mr. Ray Faust

HRShipman/pbf

May 31, 1967

Senor Pedro Pablo Azpurua
Quinta Las Adjuntas
Calle El Jaguar
Urbanización Valle Arriba
Caracas
Venezeula

Dear Engineer Azpurua:

I wish to acknowledge with appreciation your letter of May 4, 1967 in which you comment extensively on the article which I authored for publication in the Journal of the American Water Works Association. I greatly appreciate the many comments which you have made which I hope to reply to in detail as soon as my work will permit.

I have received a copy of a letter sent to you from Mr. Eric Johnson, of the American Water Works Association in which he expresses an interest in publication of your letter to me and also offering me the opportunity to reply to you in the Journal. You will note in my letter to him acknowledging receipt of his copy that I have no objection to following his proposal, except for one point which I would like to call to your attention with the thought that, should you concur with my observations, you might indicate to Mr. Johnson the minor change in the letter which would be published. I refer to that paragraph on page 3 in which reference is made to the World Bank. You will note in my reply to Mr. Johnson that I believe you have misread what I said in the article. It was never my intention to imply that the "revolution that has taken place during the past seven years" is due to the advice and management restrictions imposed by the World Bank. Although I am thoroughly convinced of the many accomplishments of the Bank in assisting Governments in many areas, I am sure that not even our most enthusiastic public relations man would wish to take credit for the progress which has been made over the past seven years by Latin American engineers in their thinking on the matter of water rates. This is particularly true since it was not until 1962 that IDA made its first credit available to Managua, representing the first activity in the field of water supply of the Bank Group in Latin America. I am completely in agreement with the views expressed in your letter as they relate to the contribution made over the past twenty or thirty years by a great many devoted engineers and educators and to the fact that these men, both Latin American and outsiders, have done far more than any others to contribute to the great changes which are taking place. In this respect, I would certainly feel that the comments relate to all countries of Latin America in addition to Venezuela to which you confine your remarks.

Senor Pedro Pablo Azpurua

May 31, 1967

It is for the foregoing reason that I would hope you might agree to a revision of the paragraph on page 3 and delete reference to the World Bank and perhaps to reframe your understanding of what I actually did say. I believe that this would also strengthen the letter which AWWA would publish.

I have enjoyed seeing a number of people from Venezuela at the Water for Peace Meeting and thank you for sending your greetings through Charles Morse who has recently returned from Caracas. As indicated at the beginning of this letter, I expect to answer you in more detail at a later date directing my comments to the specific points which you have made in your thoughtful letter and which deserve a studied reply.

Very truly yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

HRShipman/pbf

Control No: MISC-157

May 26, 1967

Mr. Eric F. Johnson
Director of Publications
American Water Works Association
2, Park Avenue
New York, N.Y. 10016

Dear Eric:

I wish to acknowledge receipt of the copy of your letter of May 19th, 1967 to Engineer Pedro Pablo Azpurua of Caracas, Venezuela. I have noted your proposal to publish his comments on my paper and your suggestion that I be given the opportunity to reply also by publication in the journal.

I have no objection to this arrangement except for one point which I consider of some importance. Mr. Azpurua has misread what I have said in the article as it relates to the reasons why there has been a change of thinking regarding the adequacy of water rates among Latin American engineers in the last eight to ten years. He states in his letter that I credit the World Bank with this improvement and that I fail to take into account the contributions of the many people who, over the past twenty years and more have contributed to the education, training and thinking of the engineers of Latin America. I did not say nor in any way, imply this. Consequently, I am concerned that in the publication of his letter, as it relates to this particular comment, misconception will develop in the minds of the readers who have not taken the time to read the original article. I am particularly concerned that this misconception might reflect on the World Bank.

The particular paragraph which I find objectionable is on page 3 of the letter in paragraph 2 in which it states "that the revolution that has taken place during the past seven years is not due to the advice and management restrictions imposed by the World Bank, but, fundamentally...etc". I appreciate that it would be desirable from your standpoint to publish the letter in its entirety, but in my concern not to involve the Bank in any way in the article and in my reply, I would prefer to keep both Mr. Azpurua's comments and my own to the substance of his remarks.

Mr. Eric F. Johnson

May 26, 1967

Unfortunately, I am tied up in the Water for Peace Conference as well as my regular work and am leaving for Africa the middle of next week. Consequently, there is some doubt as to whether I will be able to complete my reply to Mr. Azpurua before I leave. This would mean that in all probability, it would be the first part of August before I get around to this. I therefore plan simply to acknowledge his letter now and tell him that I will reply in detail at the earliest opportunity. I will enclose a copy of this letter to Mr. Azpurua that he may know my comments in advance on this matter.

I would greatly appreciate hearing from you as to your views on the foregoing.

Very truly yours,



Harold R. Shipman
Chief - Water Supply Section
Projects Department - Public Utilities

cc: Mr. Azpurua,
Caracas, Venezuela

HRShipman/pbf

Control No: MISC-157

GILBERT ASSOCIATES, INC.



READING
NEW YORK

P. O. BOX 1498
525 LANCASTER AVENUE
READING, PA. 19603

May 22, 1967

Date Rec'd. May 23/67
Date Ack'd. Answered
Assigned to Shipman

Mr. Harold R. Shipman
Sanitary Engineer
Projects Department
Water Supply Division
International Bank for Reconstruction
and Development
Washington, D. C.

MISC-161

Re: Acueductos Grandes
6366-02

Dear Mr. Shipman:

We are presently engaged in preparing a Feasibility Report for portions of four provinces in Argentina. William A. Garlow, our Project Manager in Argentina, noticed your article in the January 1967 issue of AWWA Journal concerning Water Rate Structures in Latin America. He has asked that I contact you to determine if you have any further information relative to Water Rates that could be of some help in our study.

If there is additional information available either through a reference list or some of your own information, I would be happy to come to Washington to determine what might be of use for our study.

Thank you for any help you may be able to give us.

Very truly yours,

R. T. KASE, P. E.
Environmental Engineering
Division

RTK:NFH

For the attention of:

MR. HAROLD SHIPMAN

COPY of a letter from:

AMERICAN WATER WORKS ASSOCIATION

2 PARK AVENUE

NEW YORK, N.Y. 10016

May 19, 1967

Senior Pedro Pablo Azpurua
Quinta Las Adjuntas
Calle El Jaguar
Urbanizacion Valle Arriba
Caracas, Venezuela

Dear Sir:

Thank you very much for the copy of your letter of May 3 addressed to Harold Shipman of the World Bank and relating to his article published in the JOURNAL AWWA. I believe that the remarks that you made concerning his article should be made available to the readers of the JOURNAL and I therefore would like to propose publishing them with the understanding that Mr. Shipman will have the opportunity to make a reply in the same issue to your remarks.

I am sending Mr. Shipman a copy of this letter to you to give him the opportunity.

Meanwhile, I hope that you will authorize our publication of your remarks.

Cordially,

Eric F. Johnson
Director of Publications

EFJ:sar

cc: Mr. Harold Shipman ✓

Date Rec'd. May 27/67

Date Ack'd. May 26

Assigned to Shipman

Misc-157

MR. HAROLD SHIPMAN

COPY of a letter from:

AMERICAN WATER WORKS ASSOCIATION
2 PARK AVENUE
NEW YORK, N.Y. 10018

May 19, 1967

Senior Pedro Pablo Aspru
Quinta Las Adjuntas
Calle El Jaguar
Urbanizacion Valle Arriba
Caracas, Venezuela

Dear Sir:

Thank you very much for the copy of your letter of May 3 addressed to Harold Shipman of the World Bank and relating to his article published in the JOURNAL AWWA. I believe that the remarks that you made concerning his article should be made available to the readers of the JOURNAL and I therefore would like to propose publishing them with the understanding that Mr. Shipman will have the opportunity to make a reply in the same issue to your remarks.

I am sending Mr. Shipman a copy of this letter to you to give him the opportunity.

Meanwhile, I hope that you will authorize our publication of your remarks.

Cordially,

Eric F. Johnson
Director of Publications

Date Rec'd. _____

Date Ack'd. _____

Assigned to _____

EWJ:ear

cc: Mr. Harold Shipman

1967 MAY 22 AM 10:23

COMMUNICATIONS
MAY 22 1967
RECEIVED

1967-12-1

S-Water
x WHO

May 12, 1967

Mr. Calus Atkins
Director
Division of Environmental Health
World Health Organization
Avenue Appia
1211 Geneva
Switzerland

Dear Slim:

This will acknowledge receipt of your letter of May 8 to which you attach the information material which WHO is presenting with respect to Item 5 of the Agenda of the ACC Sub-Committee on Water Resources Development. I believe it may be desirable to comment on one of the items which relates to a possible future UNDP project for Cameroon.

Your information shows that a request has been received from the Government of Cameroon for advice on water supply and sewerage systems for Yaounde and Douala. We have been actively working on both of these cities and expect that an appraisal will be possible around October, since engineering work is either completed or far along on both of these systems. It would therefore seem that some misunderstanding may exist on what type of assistance is required by the Government. Thank you for providing us with this document.

Very truly yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

cc: Mr. Consolo
Mr. Rivkin

HRShipman/pbf

Control No. MISC-152

5 - water
x WHD

May 11, 1967

Mr. Paul Bierstein
Chief
Community Water Supply
Division of Environmental Health
World Health Organization
Avenue Appia
1211 Geneva
Switzerland

Ref: W2/370/4 - Water Data Collection

Dear Paul:

Further to our letter of March 16[✓] in which we presented certain general comments on the report "A Proposed WHO Water Supply Data System" prepared by Mr. Egan, I am attaching comments prepared by Mr. Schmedtje of our Economics Department.

Should you have any questions concerning Mr. Schmedtje's suggestions, please let me know and I will pass them on to him. I am in agreement with Mr. Schmedtje in his various comments. However, the point made in our previous letter that a considerable amount of the data one would like to have and which is represented in Mr. Schmedtje's comments and in Mr. Egan's report, are not available in the water organizations of the developing countries. Maybe through your efforts, at least some of these organizations will make a beginning.

Best regards.

Very truly yours,

Harold R. Shipman
Chief - Water Supply Section
Projects Department - Public Utilities

RECEIVED 15 1711:30

cc: Mr. Schmedtje

HRShipman/pbf

May 11, 1967

Mr. Paul Hirstein
Chief
Community Water Supply
Division of Environmental Health
World Health Organization
Avenue Appia
1211 Geneva
Switzerland

Ref: W/3704 - Water Data Collection

Dear Paul:

Further to our letter of March 10 in which we presented certain general comments on the report "A Proposed WHO Water Supply Data System" prepared by Mr. Hirstein, I am attaching comments prepared by Mr. Schmiedtje of our Economics Department.

Should you have any questions concerning Mr. Schmiedtje's suggestions, please let me know and I will pass them on to him. I am in agreement with Mr. Schmiedtje in his various comments. However, the point made in our previous letter that a considerable amount of the data one would like to have and which is represented in Mr. Schmiedtje's comments and in Mr. Hirstein's report, are not available in the water organizations of the developing countries. Maybe through your efforts, at least some of these organizations will make a beginning.

Best regards.

Very truly yours,

Harold R. Shipman
Chief - Water Supply Section
Projects Department - Public Utilities

1967 MAY 12 PM 11:29

COMMUNICATIONS
DIVISION
MAY 15 1967

cc: Mr. Schmiedtje

HR Shipman/pbl

Mr. H. Shipman

May 9, 1967

J. Schmedtje *Jmm.*

Comments on "Report on Proposed WHO Water Supply Data System"

1. The initiative of WHO to develop a system of data collection regarding community water supply the world over and especially in developing countries is to be welcomed and encouraged. The objectives listed in the Introduction of the present report broadly cover the relevant issues. If properly implemented and conducted on a continuous basis, the proposed data collection system should provide valuable information needed by the Bank in appraising new water supply projects.
2. The proposed draft questionnaires, as presented in exhibits 2 and 3, appear unbalanced, not always clear as to the meaning of the questions asked, and while on the whole too elaborate nevertheless lacking in significant economic detail. Exhibit 2 regards water supply at the community or city level while exhibit 3 aims at nationwide or country data, the latter being largely summaries of the local data. From the standpoint of project analysis, data for individual communities (exhibit 2) are of primary importance, and anyway they are the basis for the country data; exhibit 3 therefore will not be further commented upon.
3. The usefulness of exhibit 2 for purposes of project analysis could be greatly enhanced if Section I (General) and Section IV (Planning, Costs and Capitalization) were expanded as follows (additional items marked by *):

"I. GENERAL

5. Area and population of community

- (a)* Area (total and that covered by water supply undertaking)
- (b) Population
- (c)* Number of houses
- (d)* Number of dwelling units."
-

"IV. PLANNING, COSTS, CAPITALIZATION

11. Total original cost of all property and facilities

- (a)* Breakdown into (1) sources development
(2) transmission mains
(3) treatment plants
(4) distribution system
(5) other (specify)
- (b)* Specification of when and how much was investment in each of the above categories
- (c)* If possible, indicate the relevant price indices since first investment was made.
-

May 9, 1967

15. Total annual cost (operation and maintenance)

(a)* Breakdown into the five categories under 11(a)

(b)* For each of the 11(a) categories breakdown into:
labor, energy, materials (chemicals), etc.

16. Water rates and income

<u>Residential</u>		<u>Industrial</u>		<u>Commercial*</u>		<u>Govt. or Public*</u>		<u>Public Hydrants*3/</u>		<u>Other (specify)</u>	
<u>R1/</u>	<u>C*2/</u>	<u>R</u>	<u>C*</u>	<u>R</u>	<u>C*</u>	<u>R</u>	<u>C*</u>	<u>R</u>	<u>C*</u>	<u>R</u>	<u>C*</u>

Flat rate

Per capita tax

Metered con-
sumption

Other (specify)

1/ Revenue, \$.2/ Consumption, MB.3/ Specify who pays for the water - the consumer or ?
.....21. Total water produced
.....

Other uses - specify*

Unaccounted water - distinguish between losses
and non-revenue water*22. Population within community not served by public
water supply

(a) Number

(b)* Where do they get water from:

illegal connections
private water supply undertakings
other sources (specify)."

4. It would be desirable to get complementary data on sewerage facilities, where those exist, e.g.:

- (a) type of sewerage (septic tanks, public sewers, other)
- (b) number of connections
- (c) population served by sewerage facilities (according to type of sewerage)
- (d) area covered by sewerage facilities.

The sewerage data should be related to the water use data (especially question 21).

5. It should further be useful to collect data at the community level on such determinants of water consumption as climatic conditions (precipitation, temperature and humidity), number and types of industrial and commercial establishments and average income per capita (rough estimates will do). Frequently such information exists without being included in readily available national sources, or else can fairly easily be gathered by local authorities. The logical place for this sort of question in exhibit 2 would be in Section I (General) which then might be renamed "Physical and Economic Characteristics of the Community".

cc: Mr. H. G. van der Tak
Mr. A. Meron

JKS:AM:es

PEDRO PABLO AZPÚRUA Q.
INGENIERO CIVIL
QUINTA "LAS ADJUNTAS"
VALLE ARriba GOLF CLUB
CARACAS

TELEFONO 332.060

Caracas, May 4, 1967

Date Rec'd. June 27/67

Date Ack'd. _____

Assigned to Shipman

Mr. Harold R. Shipman,
Projects Department, Water Supply Division
International Bank of Reconstruction and Development
1818 H Street, N.W., Washington, D.C. 20433
U.S.A. -

Dear Sir:

VE-49.

I have carefully read your article "Water Rate Structures in Latin America", published in the January, 1967 issue of the Journal of the AWWA. Unquestionably, your work is bound to become a good source of information for future historians writing the history of water supply management in Latin America. The policy of the AWWA, I happen to know, is to publish only a resumé of chosen works, and I imagine yours to be more extensive, full of unpublished details.

While you state some facts, your generalizations, due perhaps to an incomplete knowledge of the history of rates imposed upon water services rendered, lead to conclusions which, in the specific case of Venezuela (it may or may not be the case in other countries), are not entirely correct.

I should like to establish first that in Venezuela - and I suppose in all of Latin America as well - water services has been considered as a social service. This is a fact and I believe it shall continue to be so for many years. On the other hand, the water supply service, whether public or private, has always been rendered as an exclusive franchise. Considering that water is essential to life, we feel that there should be an implied policy or philosophy attached to water supply service and management. In addition, the cities have been populated rapidly by waves of almost displaced peasants. In 1941, the rural population was 61% of the country's total of 3,857,000; and in 1961, only 33% of the total population of 7,524,000 remained in its rural environment, by 1980 a population of 15,500,000 inhabitants with only 22% rural population is expected. Our aim then was to establish a sound sanitary policy and therefore it was essential to supply water to the city masses, regardless of their ability to pay; which water had to be potable, following the old adage that an ounce of prevention is worth a pound of cure. This national policy it contained in the various clauses and Articles 5 and 10 of the Decree creating the National Institute of Sanitary Works (INOS) in 1943, and Article 6 of the Regulations thereto (1962), which read as follows:

fb

H. R. S.

- 2 -

-5-4-67

"Article 6 - The studies undertaken for each work must include the required information to classify it in one of the following economic categories:

- a) Those producing sufficient income to return their costs.
- b) Those not producing sufficient income to return their costs.

On the other hand, we have tried to reconcile health and economics, but it was not in 1959, when we had the good fortune to have you and Professor Abel Wolman, of Johns Hopkins, among us, that we began to stress the greater importance of the economic aspects without losing sight of the sanitary aspects. Professor Wolman is well known in local circles, and we met him personally in 1946, at the Regional Inter-American Conference on Sanitary Engineering which met in Caracas (September 26-October 2) which was also attended, among others, by Warrick, of Wisconsin, Earnest Boyce of Michigan, and Clarence Sterling, Jr., who presided. In this connection I am attaching hereto copies of four reports, three of which were prepared while I was head of the Operations Department of the National Institute of Sanitary Works.

Informe al Concejo Municipal del Distrito Libertador (1948)
(Estado Mérida)

Estudio para la Administración de Acueductos por Zonas
en Venezuela (1949)

Informe para la Junta Administradora del Distrito Federal
(1949)

Estudio leído en São Paulo, Brasil (1954).

These reports are from my private files and unfortunately are the only ones I have, but there are many others in the files of INOS.

I would appreciate it, if time allows, if you would make it a point to read the report to the Junta Administradora del Distrito Federal, recommending a change in rates for the water supply system of the port city of La Guaira and its zone of influence, wherein you will notice that ten years before your coming to Venezuela, we - sanitary engineers and government

H. R. S.

- 3 -

5-4-67

officials charged with operation, maintenance and management of the domestic water supply systems - had a very definite idea about the management of these services in Venezuela.

Any opinion to the contrary would belittle the efforts of men who dedicated part of their best years advising us. I especially recall Engineer-Coronel G. O. Bunker (1937-1946); Engineer-Coronel Ernest W. Steel; Edmund Wagner, Sanitary Engineer of the Pan American Sanitary Bureau; and Arthur B. Morril, a highly esteemed engineer, who chose to remain in Venezuela till the end of his days, never going back except on vacation. To the above list we must add the teachers who educated us in U.S. universities, and the names of some graduates, such as Luis Wannoni (Texas A & M); Edmundo Curiel (Harvard), ex-President of the INOS, Diego and Manuel Mejías and Daniel Camejo Octavio (Texas A & M); Elena Quiroba, Félix Briceño Escalona and Gustavo Rivas Mijares (University of Michigan); Juan Francisco Stol, ex-Director of Hydraulic and Sanitary Works of the Ministry of Public Works; José Bernardo Pérez Guerra (MIT); José Antonio Sánchez Mora (Harvard); and J. R. Hurtado (Florida State); and J. M. Soteldo Ramos (Iowa State); Adolfo Yánes (State University of Iowa). The list also includes other capable engineers who never made graduate studies abroad, and who have struggled to improve service and management, such as Carlos Peña Uslar; Angel Graterol Tellería; Andrés Sucre; Mathías Brewer ex-President of INOS; Julio Urbina, President of INOS; Angel Rivera Daza; Francisco Pérez Rodríguez; J. A. Faría; Pedro Arnal; José H. Moreau Meyer; Julio Rosales, etc. in addition to Prof. Ernesto León D. and my work mate Juan B. Fonseca both passed away, I can not leave unmentioned the men trained in operation and maintenance in U.S. cities, Wichita Falls among others, and so many other whose names I cannot recall at the moment.

Out of respect for the teachings of fondly remembered advisors and teachers who cleared the way and taught us discipline, I must say that the revolution that has taken place during the past seven years has not been the result of advices received of recent years programmes but fundamentally, the result of the advice and training given by local and U.S. teachers since 1937, when a great change took place in the thinking of government officials and the public in general, and especially since 1943, when INOS was created.



H. R. S.

- 4 -

5-4-67

It is a long background up to our generation of sanitary engineers, which, in turn, has had to educate politicians and the public in general. You have been spared the sight of mobs sacking water works administration offices (in Valencia, for example, in 1947, for suspending the service of over due accounts; attached hereto is copy of my report at that time), or the experience of being escorted out of town by the police after a public discussion of the subjects (in the city of Mérida), or the threat to kill the manager of the water works (in Maracaibo), or the building up of explosive situation in San Cristóbal, Puerto Cabello, Cumaná, La Victoria, Maturrín, Valle de la Pascua, etc.

For those with little knowledge of what I have outlined above, it is easy to say today that this revolution started seven years ago, and not that it is the result of earlier spadework started in 1936 by local and U. S. consultants and a generation of sanitary engineers, most of whom are U.S. trained. But this revolution is different from the one you have chosen to see, due to its sense of social justice, reconciling the economic and social aspects within sound management principles. This is why I consider your basic premise that potable water services in Latin America are operated ignoring the principles of a sound administration, difficult to accept in the case of Venezuela.

Here is the story of a specific case which will give you an idea of the problem. In the town of Cúa (State of Miranda), monthly water collections amounted to only Bs 4,000, which failed to cover operating and administrative expenses, let alone paying for the cost of depreciation of capital assets. After a year's discussion with the Municipal Council, we were able to get approval on increased rates, which were expected to cover direct expenses and part of capital expenses. Having the desired information on consumer groups, we were able to prepare rational rates. If you have already formed an impression on what the results would be, you would be disappointed to know that the new rates, providing for a 30% increase, failed to live up to expectations, and the system continued to collect about Bs 4,000 every month, but now something very serious had happened, several cases of typhoid fever, which had been eradicated from the region, appeared among the poorer inhabitants, and their children were struck down with gastro-enteritis. An investigation revealed that these poor people, to save money, had turned to the nearby river for their water supply. As a sanitary engineer, I ask what you would have done. This is not an isolated case; it has occurred several times.



H. R. S.

- 5 -

-5-4-67

The question now is whether, jurisdictionally, the Municipalities have a right to oppose rate increases based on pre-established patterns which consider only the economics of the service, or must one also consider the social aspects - the economics of the inhabitants of the town in question - and analyze their ability to pay.

In the face of the foregoing I have given thought to the pattern in countries economically developed where the demand for water is practically inelastic within certain limits, and concluded that such is not the case in our semirural communities and perhaps even in more important urban areas. (In some U.S. cities, as you well know, industrial consumption may account for up to 70% of income, the remaining 30% being provided by about 75% of residential consumers. Such is not case, normally, in our cities where the residential subscribers bear almost all of the financial burden, in Metropolitan Caracas, the capital alone, it amounts to 25% the total), that is the origin of the idea for dividing water consumption into: essential to life, to be supplied to the community at low enough rates to encourage consumption of the full minimum required for health purpose; and nonessential, however necessary it may be to life, to be supplied at higher rates, thus subsidizing the cost of essential consumption; and managing to lower the rates, to encourage the big residential consumers who bear the heaviest financial burden of the system in our environment. This is the philosophy governing rate structures for residential subscribers in Caracas, approved in 1961, and recommended in the aforementioned report (1949) on La Guaira water works (the country's chief seaport located in the Caracas area), approved by the Board of Directors of INOS, but never put into practice because it was rejected by the Municipality of the Federal District at that time.

Recent works by Charles W. Howe, and F.P. Linaweaver, Jr. ("The Impact of Price on Residential Water Demand and its Relation to System and Price Structure", Johns Hopkins University, 1966) seem to confirm the phenomenon observed in the town of Cúa and other small Venezuelan communities, thus upsetting a supposedly rigid demand pattern, although the referred study shows that the demand (inside of buildings) does not alter under any of the studied circumstances, this does not apply to outside demand (mostly sprinkling). This phenomenon has been observed since 1939 when Harold E. Babbitt and James Doland, who wrote: "The rate of water consumption diminishes with increased cost of water (Cost of Water; Water Supply Engineering).



H. R. S.

- 6 -

-5-4-67

The definition of water rates approved in 1969 in Montevideo by the Pan-American Health Organization, to wit: "A water rate is the basis of a system which permits the establishment of charges for water consumed", should be supplemented with a statment to the fact that the burden should be borne by all users of the system, with no tendency to economize on the so called essential water, essential to life. What I now propose has already been forseen - there is nothing new under the sun - to reconcile the rates in question with the minimun wage - in this case we have adopted an index of 7 to 12 minimun daily wages as maximum payment for strictly sanitary consumption. But in Venezuelan cities, what is the minimum wage? How many people are in conditions of sub-employment, particularly newly arrived peasants?

In closing, I wish to tank you for your kind attention to this letter, and to request that you ask the World Bank or the International Water Supply Association, to make an exaust study of rates for water and sewerage services in Latin America, and present their findings at the meeting scheduled to take place in Vienna, Austria, in 1969 where a study of fares is scheduled. The study should take into consideration local peculiarities, analyzing the sanitary policies involved and their effects, unbiased by pre-established patterns, however advisable these may be for the proper technical administration of the services, but which nevertheless can not be applied if we are to avoid health problems which are much more serious that the ones we want to solve.

Yours truly,

Pedro Pablo Azpúrua Q.

Everything stated above is related to the water supplies built, operated and maintained by INOS (which cares for towns of over 5,000 inhabitants). The social aspects become more affecting when dealing with rural supplies which I thought^t convenient to discuss here (Sanitary Engineer Antonio Luis Berti M. of the Dirección de Malariología y Saneamiento Ambiental, Ministerio de Sanidad y Asistencia Social, who also studied in the U.S., is in charge of these water supplies and is able to inform you thereof).

I have unwillingly failed to mention Sanitary Eng. J. A. Jove who also studied in the U.S. and has been one of the most valuable promoter of sanitation in our Country.

PEDRO PABLO AZPÚRUA Q.
INGENIERO CIVIL
QUINTA "LAS ADJUNTAS"
VALLE ARriba GOLF CLUB
CARACAS

TELEFONO 332.060

H. R. S.

- 7 -

5-4-67

c. c. Dr. Florentino Briones, President,
International Water Supply Association

c. c. American Water Works Association

Enc.: As per text. In addition: "Una Política Sanitaria"
by Dr. Arnoldo Gabaldón, ex-Minister of Health
Forum: "Política de Precios en Servicios Públicos (1966), under
the auspices of the Colegio de Ingenieros de Venezuela,
Lecture read by Dr. Julio Urbina, Civil Engineer
President of INOS in the Caracas Chamber of Commerce (1966).

PPA/Ceg.

Reviewed 5-20-67.

Studen - Wale

May 3, 1967

Norconsultants
Consulting Engineers and Architects
Hoff Terrasse 2
Oslo,
NORWAY

Dear Sirs:

Enclosed herewith please find one copy of our Water Works
Questionnaire which our Paris office has asked us to forward
to you.

Very truly yours,



Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

cc: Mr. Faijmans
IBRD
Paris

HRShipman/pbf

Control No: NO-01

*For Shipman
Norway*

INCOMING CABLE

cc alph.

DATE AND TIME
OF CABLE:

MAY 3, 1967

15.15

LOG NO.:

ITT TELEX/3

TO:

SHIPMAN INTBAFRAD

FROM:

PARIS

ROUTING

ACTION COPY: PROJECTS - PUBLIC UTILITIES

INFORMATION

COPY: PROJECTS - 342

DECODED BY:

TEXT:

304

RECEIVED FOLLOWING CABLE FROM OSLO "PLEASE AIRMAIL
ONE COPY IBRD QUESTIONNAIRE FOR WATER SUPPLY PROJECTS
AND INFORM OF OTHER TECHNICAL QUESTIONNAIRES AVAILABLE
NORCONSULT" GRATEFULL YOUR ACTION

PAIJMANS

Date Rec'd. *May 3/67*

Date Ack'd. _____

Assigned to *Shipman*

No - 01

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GENERAL FILES
COMMUNICATIONS

MAY 3 11 58 AM 1967

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307

NAME: LUIS
OF: SHIRAZI KAZEM
FOR: MR. LUIS
OF: MR. LUIS
DATE: MAY 3 1967

SEARCHED BY: [illegible]
INDEXED BY: [illegible]
SERIALIZED BY: [illegible]
FILED BY: [illegible]
MAY 3 1967
FBI - NEW YORK

INFORMATION CENTER

May 2, 1967

International Pipe & Ceramics Corporation
260, Cherry Hill Road
Parsippany, N.J. 07054

Gentlemen:

We note with interest your offer in the 1st Quarterly Cost Roundup dated March 16, 1967 to provide statements on the average current costs of pipelines of various sizes, their anticipated costs 20 years from now and the estimated increase in income which might be earned on the basis of historic increase in demand.

We would like to take advantage of your offer and will appreciate receiving a copy of this data.

Thanking you in advance.

Very truly yours,



Harold R. Shipman
Chief - Water Supply Section
Projects Department - Public Utilities

/pbf

P&S Water

CROSS REFERENCE SHEET

COMMUNICATION:

Correspondance

DATED:

April 1967

TO:

Between Bank and Pan American Health
Organization

FROM:

FILED UNDER:

LIAISON-WORLD HEALTH ORGANIZATION

SUMMARY:

Re: Symposium on River Basin Development
Sao Paulo, June 18-24, 1967

April 28, 1967

United States Department of the Interior
Office of the Secretary
Washington, D.C. 20240

Gentlemen:

I enclose herewith printed material "International Conference on Water for Peace" which was addressed to me personally in Nigeria.

Please note that I left Nigeria in 1962 and, consequently, suggest you address any future material of this kind to the "Chief Executive Officer" instead of to me.

Yours sincerely,

Gavin E. Wyatt

Attachment

G.E. Wyatt:mam
IBRD

cc: Operational file

CROSS REFERENCE SHEET

COMMUNICATION: Memo

DATED: April 27, 1967

TO: Mr. Shipman

FROM: Mr. Meroz

FILED UNDER: Liaison - W.H.O.

SUMMARY:

Comments on Report on Proposed WHO Water Supply Data System.



PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau, Regional Office of the
WORLD HEALTH ORGANIZATION

525 TWENTY-THIRD STREET, N.W., WASHINGTON, D. C. 20037 U.S.A.

CABLE ADDRESS: OFSANPAN

IN REPLY REFER TO: AMRO-2203

TELEPHONE 223-4700

27 April, 1967

Eng. Harold R. Shipman
Chief, Water Supply Section
International Bank for Reconstruction
and Development
Washington D.C.

Dear Mr. Shipman:

Following the recommendations of the XI Meeting of the Ministers of Health of Central America and Panamá in 1966, our Organization, through our Zone Office in Guatemala, is sponsoring a Seminar with the purpose of preparing a report on the progress of water supply programs in those countries. This report will be presented at the next meeting of the Ministers of Health of Central America and Panamá to take place during the second part of this year in El Salvador.

The Seminar will be held in Tegucigalpa, Honduras, from 3 to 5 July, 1967, and we are planning to have the participation of the Chief Engineers of the water authorities of the countries involved. The participants will analyze the data collected in a sopecial survey which is being completed for such purpose, prior to preparing the recommendations to be included in the report.

Our Zone Office in Guatemala will serve as coordinator of all activities connected with this Seminar.

Considering the importance of the themes to be discussed, among which are included financing and loan requests for water supply programs, our Zone Office in Guatemala has suggested the participation of the World Bank in this meeting.

We will greatly appreciate your informing us your views and decision on this matter at your earliest convenience.

Very truly yours,

Efraín Ribeiro
Assistant Chief.

Rel. May 5
(filed liaison - WHO)

*Ref. Calcutta Water Supply
Manila Water Project
UNDP
Consultants

April 26, 1967

Mr. C. H. Atkins, Director
Division of Environmental Health
World Health Organization
Avenue Appia
1211 Geneva
Switzerland

4037

Dear Slim:

Your letter of April 19, 1967 has been received and we note your comments on those consulting firms which you have continued to retain for further consideration on UNDP projects. We understand that you have forwarded to the governments the short list of firms.

We would suggest that in the evaluation of the proposals you take into account in some appropriate way our comments on the doubtful firms which remain on your lists.

Our major concern is for the management assistance to the Calcutta Metropolitan Water and Sanitation Authority. This assistance will be very broad in scope and very difficult in execution. The selected firm must have the experience, be able to provide the expertise required, and have more patience than most mortals possess.

The word "management" is used very loosely in some descriptions of experience. The local representative of SCET-COOP was only able to confirm to us that their management experience in water supply was for small supplies in Algeria. J. G. White Engineering Co. lists some limited management experience, but none of it at all comparable to the Calcutta job. Stanley Engineering, as you have noted, has recently added management to their fields of activity and their experience thus far is limited to small electrical power facilities.

March 9

You will note in our previous letter our reservation on Nihon Suido for a project the size of Manila and our view that they should be affiliated with an experienced firm if selected.

We shall comment by separate letter on the documents related to engineering and management services, Ghana, and engineering services Calcutta.

Very truly yours,

Harold R. Shipman
Chief, Water Supply Section
Projects Department - Public Utilities

cc: Messrs. Riley & Rivkin,
Development Services

CAMorse:mmm

April 21, 1967

Mr. L.J. Mostertman
International Courses in Hydraulic
and Sanitary Engineering, Delft
Oude Delft 95,
Delft, Netherlands

Dear Mr. Mostertman:

Reference is made to your letter dated April 6, 1967, enclosing notes on my lecture and remarks made during the Symposium for Water Resources Development in October of 1966.

I have reviewed the record as submitted and have only one suggestion for revision.

In the section on "Questions and Answers"-in reply to the question by Mr. Nolthenius, I suggest that my reply be revised as follows:

"We normally find preliminary designs with a 15 - 20% estimated accuracy satisfactory for feasibility reports. Thus, we are happy to finance on this basis and proceeding to detailed design before construction is undertaken".

I again wish to express my appreciation for the invitation to attend the Symposium and wish to thank you again for the hospitality extended to my wife and me during our visit to your country. I look forward to seeing you again in the near future.

Sincerely yours,


Donald S. Mitchell
Agriculture Division
Projects Department

DSMitchell:mr
IBRD

Water
x Consultants

April 18, 1967

Dr. Ing. Gunter Bachmann
4 Dusseldorf
Vogelsanger Weg 66
Western Germany

Dear Gunter:

Thank you for your letter dated April 7, 1967. We appreciate hearing from you about your interest in the Bangkok Water Project and Malta Water Supply and Waste Disposal survey. As I told Mr. Mohrmann, at the moment we are not involved in either of these. The only thing I could advise is for you to keep in close contact with the prospective clients and W.H.O.

It was a pleasure to meet Mr. Mohrmann. We talked quite a lot about the Bank and consulting engineering on Bank projects before he proceeded to the general program that had been arranged for the German Consulting engineering group. I trust he found his visit beneficial.

I hope that one of these days I will see you in Washington. Also on one or another of my trips, I look forward to the prospect of visiting your office in Dusseldorf and becoming better acquainted with your firm.

Very truly yours,



Peter Callejas
Water Supply Section
Projects Department - Public Utilities

PCallejas:aca

cc: Gen. Vogel

Water

April 17, 1967

Dr. Abraham Horwitz
Director
Pan American Health Organization
525 Twenty Third Street, N.W.
Washington D.C. 20037

Dear Dr. Horwitz:

This will acknowledge receipt of your letter of March 21 to Mr. Woods in which you extend an invitation for us to be represented at the five day course to be given in Cincinnati and concerned with fluoridation of water. ✓

Our Water Supply Section has a considerable interest in this field and would, under normal circumstances, have made arrangements for at least one of the staff to attend. As of this moment, however, our commitments in July are such that it appears highly unlikely that we will be able to take advantage of your kind offer. We appreciate very much the invitation and are certain that the course will be most useful for those engaged in the important field of municipal water supply.

Very truly yours,



Gerald Alter
Director
Western Hemisphere Department

Cleared with and cc: Mr. Knox

cc: Mr. Woods
Mr. Demuth

HRShipman/pbf



April 17, 1967

Dr. Abraham Horwitz
Director
Pan American Health Organization
525 Twenty Third Street, N.W.
Washington D.C. 20037

Dear Dr. Horwitz:

This will acknowledge receipt of your letter of March 21 to Mr. Woods in which you extend an invitation for us to be represented at the five day course to be given in Cincinnati and concerned with fluoridation of water.

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Very truly yours,


Gerald Alter
Director
Western Hemisphere Department

Cleared with and cc: Mr. [unclear]

cc: Mr. Woods

1967 APR 18 PM 4:31

COMMUNICATIONS

HRShimman/pot

Studies
Water

April 10, 1967

Mr. Eric F. Johnson
Director of Publications
American Water Works Association Inc.
2 Park Avenue
New York
N.Y. 10016

Dear Eric:

I am attaching herewith copy of the paper presented at the New York Section AMWA meeting in January of this year and requesting that it be considered for publication. During the course of the meeting in New York, I gave a copy to Ray Faust who had requested it for publication but since I have heard nothing further, I assumed that it may have been mislaid.

Please accept my best regards.

Very truly yours,

Harold R. Shipman
Chief - Water Supply Section
Projects Department - Public Utilities

attachment

HRShipman/pbf

Mr. D.S. Mitchell
Agriculture Division, Projects Dep.
International Bank for Reconstruction
and Development
1818 H Street, N. W.
Washington, D. C. 20433
U. S. A.

Projects Dept. Correspondence

ANS'D BY D.S. Mitchell

DATE Apr. 21, 1967

International Courses in Hydraulic and Sanitary Engineering, Delft

Oude Delft 95, Delft, the Netherlands, tel. (01730) 25581

April 6, 1967

Dear Mr. Mitchell:

✓
Enclosed are your lecture and your remarks in discussions from the third week of the Symposium for Water Resources Development, held in Delft, September 29 to October 19, 1966.

All the discussions have been edited by Mrs. Ruth McEachern, Assistant Lecturer at the International Courses, in order to make them as concise and, therefore, as readable as possible. The basic content is, of course, the same. If, however, there is anything which you would like changed or deleted could you please mark it on the copy. In some cases there may be an error when the tape was difficult to follow. Virtually no changes have been made in your lecture but I enclose it, nevertheless, for your final approval.

I would be very grateful if you could return the sections which you have made changes in as soon as possible as we are anxious to publish the material shortly. If we do not hear from you by May 4 then we will assume that you have approved the publishing of your lecture and comments in their present form.

del. April 21

1967 APR 10 PM 10:55

Thank you very much for your assistance. Your lecture and participation in the discussions comprise a valuable contribution to the proposed book. We will be happy to send you some copies when it is published.

With sincere regards,

A handwritten signature in blue ink, appearing to read 'L. J. Mostertman', with a stylized flourish at the end.

L. J. Mostertman

THE APPRAISAL OF IRRIGATION AND DRAINAGE PROJECTS

Mr. D. S. Mitchell

Introduction

The International Bank for Reconstruction and Development, often called the World Bank, was established in 1945. Originally, it was geared to the task of reconstructing the war-torn economies of Europe. Gradually, however, the focus of operation shifted toward assistance in the development efforts of the less developed countries, and presently almost all of the Bank's lending operations are concentrated in this field. The money used in the Bank's lending operations is raised by floating bonds in capital markets throughout the world, and the cost to the Bank in raising funds dictates the interest rate charged to its borrowers.

Bank loans are restricted to the financing of projects, which, after careful scrutiny and appraisal, are found to be technically and economically sound. To date, loans totalling over 10 000 million dollars have been granted in the fields of transportation, public utilities, water supply, agriculture and education, although there have been several occasions recently where loans have been made to assist in the financing of a programme in a given sector, rather than a specific project. Most loans cover only the foreign exchange component of the project, with the stipulation that all construction works and the purchase of equipment to be financed out of the Bank loan should be done under international competitive bidding. Every loan must be guaranteed by the borrowing government, and usual terms are fifteen to twenty-five years, with an average grace period of about five years. As indicated earlier, the interest rate is determined by the going market rate and is presently six percent.

In the late 1950's, it became apparent that many of the developing countries in need of assistance were not in a financial position to meet the Bank's lending terms. To overcome this, the Bank

established in 1960 the International Development Association, which receives its capital from contributions made by the developed countries members of the Bank. While IDA follows the same standards adopted by the Bank in evaluating the technical and economic soundness of projects, its lending terms can be best described as soft terms - generally fifty years with ten years of grace, and no interest charge except for a small service payment.

Although Bank loans have contributed to growth in all major economic sectors, until recently emphasis was placed particularly on the fields of transportation and electric power, which together account for two-thirds of all loans made. While these sectors are important, they could not provide, at least in the short run, a solution to the pressing problems of unemployment, balance of payments deficits, and a host of other problems which beset the economics of such nations. At the same time, there was also a growing awareness of the need to provide additional food sources to feed the rapidly expanding population of the world. Consequently, the management of the Bank decided to intensify its lending in agriculture.

In making agricultural loans, the Bank uses the same criteria it applies to other types of loans. Broadly speaking, this means that the Bank will not lend to, or invest in, projects which in its judgement have not been well planned, are poorly engineered, or of low economic priority, or likely to be badly managed, or are not agriculturally sound. More specifically, before granting a loan, the Bank carefully considers the following points:

First, the creditworthiness of the borrower. This is done, not only in order to safeguard the interests of the Bank and its members as a whole, but also so as not to overburden the borrower with debt service obligations beyond his capacity.

Second, the way in which the project fits into the overall development plan of the country. Here, the purpose is not merely to

insure that only projects with high priority would be financed, but also that each sector of the economy has been examined, and that priorities within sectors have been established.

Third, and finally, the Bank scrutinizes closely the technical, managerial, and financial soundness of the project.

Although all three criteria are closely related, it is the last one which I will expand later in my talk and describe some of the experiences gained and problems encountered by the staff of the World Bank in appraising irrigation and drainage projects.

Project Preparation

The identification of projects and the preparation of sound feasibility reports have proven to be major bottleneck in many countries. In order to expedite the work, the Bank lends assistance to its members long before a project is presented for appraisal. This is accomplished by sending Bank staff on project preparation missions and, more recently, through the establishment of several permanent regional offices which are actively engaged in project preparation assistance. The Bank has also entered into a co-operative program with the United Nations Food and Agricultural Organization for the same purpose. Although these arrangements have aided materially in the preparation of projects for Bank financing, the volume of work is too large for the Bank to handle single-handed. It is therefore the practice of the Bank to recommend to prospective borrowers to engage foreign consultants. These consultants are often engaged, not just in the preliminary stages, but also during construction, and at times even as part of the management structure.

A feasibility report for an irrigation project should normally contain pertinent information related to the project area, such as: location, climate, topography, soils and water supply, land use, land distribution, land tenure and water rights; extension services, agricultural research and training, credit facilities, supply

of agricultural inputs, marketing, prices and gross and net value of present production. Aside from this general background data, the report should include a detailed description of the project for which financing is requested. Here the borrower should describe the proposed works to be included in the project, water utilization studies, estimated investment and operating costs, a projected organization and management structure, anticipated increase in farm production and farm income and the economic benefits and justification for the project. Later on in my talk, I will expand on these points in greater detail.

Project Appraisal

Once a feasibility report is received in the Bank, it is reviewed and if the proposed project is found to be suitable for further consideration, an appraisal mission is sent to the field. Such missions are composed of various experts as required, usually from the Bank staff, but where necessary outside consultants are often used.

Although no two irrigation projects are alike, and conditions differ widely from country to country, considerations entering into the appraisal of irrigation projects by the Bank can be broadly grouped under the following headings:

- a) Technical soundness.
- b) Organization and management.
- c) Financial aspects.
- d) Economic benefits and justifications.

Technical Soundness

The major ingredient for a successful irrigation project is the compatibility of water, land, climate and people. Oversight of the interdependency of these factors has often spelled the

difference between success and failure of an irrigation project.

Water is one of the most important physical resources. In appraising hydrology, particular attention is paid to the quantity, quality and reliability of the water supply. For this purpose, it is generally essential to have at least five years of good streamflow records. Where such short-term records are used, it is advisable to have longer-term precipitation records and to use correlation methods to expand the streamflow record.

Soil surveys or land classification made to semi-detailed standards are considered essential in the appraisal of a project. This not only helps to determine the type of crops which could be best grown in the area, but also it dictates the most useful mode of production, the type of irrigation to be adopted, and the amount of water needed. In this connection, drainage information is extremely important, and we require information concerning both surface and sub-surface conditions. Adequate climatic data indicating temperature ranges and the amount, distribution and reliability of rainfall in the project area is also paramount for determining the type of cropping system to be adopted and the nature and capacity of the irrigation system.

In selecting an appropriate cropping pattern for a project, an important criteria is whether the programme is both agriculturally practicable and the product can be marketed at profitable levels. Revising a cropping pattern which would fit both requirements is largely a matter of judgement, but should be undertaken with the following factors in mind:

- a) The types of soils in the project area and their adaptability to irrigation and drainage conditions.
- b) Water requirement.
- c) Climatic condition.
- d) Farmers' proficiency or "know how" and the proposed programmes to improve production techniques through education and extension services.

- e) Projected local and foreign demand for the various crops and the adequacy of marketing facilities.
- f) Anticipated product prices and production costs.

Once a cropping pattern is selected, one can determine the capacity and layout of the system, as well as arrive at a financial and economic evaluation of the system.

The proposed engineering works must be carried out in sufficient detail to indicate that the project is technically sound and suitable for the intended purpose, with reasonable operation and maintenance costs. Where major structures are involved, we require geological and foundation explorations. Since the safety of these structures is of prime concern, we often arrange for an independent review where we have doubts concerning such aspects as foundation conditions or design of the works. Designs of the major works should also be in sufficient detail to provide a reasonable basis for making work quantity estimates to which unit prices can be applied in order to compute the costs of the works. The Bank usually insists that cost estimates be prepared to insure an accuracy of plus or minus fifteen percent. As a lending institution, we want to be sure that cost estimates are adequate to cover all the necessary works, that the project is fully financed, and that the project is economically sound.

We are also concerned with the question of complementary on-farm works, such as drainage, land levelling and irrigation ditches, without which a project would not become operative. Where these works are left to be constructed by the farmers, provision should be made for adequate credit arrangements and technical assistance. However, even this is not always enough. Farmers should be surveyed prior to construction to establish their attitude toward the project. It often happens that even where farmers are positively inclined to take advantage of a project, they will not carry out the necessary on-farm works. This can be due either to uncertainties concerning land tenure, or the farmers lack of creditworthiness. Since our experience has

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shown that these conditions prevail in many countries, we have decided to include, where feasible, the on-farm works as part of project financing, with the works being carried out by a public authority for the farmers. Such costs could later be recovered by the government, either through water charges, land taxes, or other means.

Organization and Management

Even the most meticulously prepared project is doomed to fail unless a competent management operating in a suitable organizational structure is readily available to supervise the construction of the project and handle the day-to-day operations. It is therefore only natural that the Bank pays particular attention to the proposed organization and management. In most countries in which we have financed irrigation projects, we normally deal with a government agency such as an irrigation department which is responsible for the planning, construction and operation and maintenance of irrigation projects. Although the competency of such departments varies greatly from country to country, our experience indicates that many developing countries suffer from a shortage of trained personnel to carry out their obligations under the project. Consequently, we often ask our borrowers to strengthen their management structure by hiring outside consultants. The employment of consultants is usually deemed necessary only as a short-run solution. In the long-run, it is our aim to build up, with the assistance of these consultants, a competent local managerial cadre.

In examining the irrigation authority, we not only look at its technical proficiency, but also consider whether the authority has the necessary legal powers to enter into contracts, acquire rights-of-way, and levy water charges. Where the authority does not enjoy such powers, we usually require the borrower to enact the necessary legislation before approving the loan. As indicated earlier, the Bank usually requires that major

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project works be undertaken by contract, let under international competitive bidding, although in some cases the work can be done by force account. All imported equipment and materials financed under the loan must also be purchased under international competitive bidding.

Irrigation projects are usually complex undertakings which involve more than one governmental department or ministry. When analyzing the proposed organization, we are therefore interested not merely with the agency directly responsible for constructing the project, but also with other related agencies in charge of such activities as agricultural research, extension services, credit and marketing. A lack of co-ordination between these agencies can easily result in failure on even the best of projects.

One of the problems which we often encounter in this respect is the lack of co-ordination between construction of the irrigation works and agricultural development. Looking at the same problem from a different angle, we can state it as the interrelationship between the size of the project and the capacity of the borrower to undertake agricultural development.

In many countries, there is often a tendency to prepare large-scale irrigation projects. This can be generally attributed to several factors: first, the sincere desire to push ahead with development in the belief that the greater the project area, the greater would be the benefits; second, assessment of the project on the basis of capacity to execute the construction phase without due consideration of the farmer's ability to derive benefits from the project. Since most irrigation projects involve a change in existing production techniques, which calls for an educational and training programme of the farmers, and the number of farmers involved is usually large, the process is a long and tedious one. By comparison, the construction of an irrigation system, often undertaken by foreign contractors, is a relatively easier undertaking. Thus, time and again the Bank finds itself in a position

where it must request the borrower to restrict the project area, or to develop it in stages, so that there will be no delays between the construction of an irrigation system and its full and effective use by the farmers. The development of an area by stages has the additional advantage of allowing adequate time for a comprehensive research program, as well as letting the neighbouring farmers observe and appreciate the usefulness of irrigation.

Another way in which the Bank attempts to solve the problem of co-ordination, is by requiring the borrowing country to establish a project co-ordinating committee. Such a committee is composed of representatives from the various ministries and agencies involved in the project, and charged with implementing and supervising project activities. Generally, the Bank's participation in the financing of a project is limited to the foreign exchange component, and even where we do finance local currency expenditures, we rarely finance more than half of the total project cost. There is, therefore, a necessity to receive assurance that government counterpart funds would be available in the amount needed and at the right time. For this purpose, we try to receive assurance that budget appropriations will be made to cover the cost of construction and also, later on, for the operation and maintenance of a project. Where the project authority is an independent unit, we generally expect it to maintain financial accounts and have these accounts reviewed periodically by an acceptable certified accountant.

While initially all government expenditures on a project are allocated through a budget, we normally consider, as a matter of principle, that farmers benefiting from a project should participate in financing it. In the early years of the project, when the farmers have just begun to change their mode of production and usually need substantial credit for improved production and new machinery, it is hard to expect them to contribute toward

infra-structure costs. It is also inadvisable to levy in the early years high water charges or heavy land taxes to cover these expenses, because such taxes could easily discourage the farmers from taking advantage of a project. It is normally our policy, however, to encourage the borrower to gradually recuperate part of the costs from the farmers in a manner acceptable to the Bank and deemed best by the borrower.

The most common way of collecting revenue from the farmer has been through water charges and the Bank normally presses for these charges to be set as high as is practicable under the circumstances. In some projects, water charges have been set at levels which would allow the project to be self-liquidating. On other projects, the level of water charges has been sufficient to cover the cost of operation and maintenance and depreciation of the project, while on other projects only operation and maintenance costs have been covered.

There are, however, some projects where no water charges are levied, due to the fact that there is another form of tax through which the government can collect from the project area sufficient taxes to cover the cost of the project. Although the Bank has no fixed policy on the charges to be placed on farmers, it appears that charges should be based upon the ability of the farmers to pay out of their increased income, and as a minimum the beneficiaries of a project should at least pay all operation and maintenance expenses.

Financial Aspects

The evaluation of a project must also consider the expected financial consequences, namely, the operating results of the project, the expected benefits to the farmer and questions related to the pricing or irrigation water.

Where the project is undertaken by private investors, the operating results show whether or not it is profitable. Since most

of our projects are undertaken by public authorities, analysis of operating results is basically used to assure appropriate accounting procedures on the part of the authority and to indicate the desirable level of water charges.

Analysis of the expected benefits occurring to the farmers is a crucial element in the appraisal of irrigation projects. Although financial incentives are not necessarily the only factors in the motivation of farmers, it is unlikely that farmers would participate in the project unless they stand to gain clear benefits from it. The assessment of benefits requires a comparison between net income in the pre-development and post-development period. For this purpose, it is necessary to estimate present yields and production costs, as well as to assess future costs and the expected increase in yields. I shall describe the difficulties encountered in this analysis in greater detail when I discuss the economic evaluation of a project. At this point, I would only like to reiterate the need for the preparation of a farm budget for each project in order to verify that the farmers would in fact gain from the project.

As I have mentioned earlier, the Bank insists that water rates be set so as to cover at least the operation and maintenance cost of the system. The actual rate, however, should depend, not only on fiscal consideration, but also on the impact on farm income and the farmers' attitude.

Economic Benefits and Justification

Evaluation of the economic benefits of a project could be broadly described as an attempt to justify the proposed investments over alternative opportunities for investment in the economy. To do so, we must resolve the following basic questions: is the sector into which the project falls high on the list of priorities? Will the project stimulate further development in the sector? Is the project formulated in a fashion which would ensure the most economical use of scarce resources such as capital and

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skilled manpower? These are broad questions which set up the framework of our analysis. The more specific test of the profitability of a project is the return on the investment. Since we want to know the returns from the project for the economy as a whole, it is necessary to evaluate both costs and benefits in terms of their real values which is usually different from their market value used in calculating the financial aspect of the project.

The method generally used by the Bank to determine the priority or desirability of a project, and at the same time to present the economic justification for undertaking it, is the internal rate of return and the present worth. Although conceptually the two methods are correct, their practical application depends largely on empirical judgment. Generally speaking, our analysis depends on a host of variables whose true value is rarely known to us. To arrive at a solution, we must therefore introduce an "intelligent guess" as to the opportunity cost of capital in the country, the real value of investment costs, projections regarding the increase in output and yields, as well as the future pricing of agricultural inputs and outputs. As if all this was not enough, there is always the question of what investment items should be charged against the project and what benefits can be reasonably assumed to accrue from it.

Having decided what to include in investment costs and how to value the various items at appropriate prices, we must determine what are the effects of the proposed works and what they are worth. The principal problem in evaluating benefits is, first, how to measure the expected increase in production and, second, what prices should be applied to this output.

The area to be irrigated and the amount of water which could be made available can be reasonably well estimated. What is questionable, however, is the rate at which farmers would

make full use of the new facilities. Our experience has shown that this takes a great deal of time and therefore benefit estimates are made on the basis of gradual increase in yields.

To determine the value of the expected increase in agricultural output, we can use local market or farm gate prices, except where the crops are to be exported in which case we should consider export prices. It is usually preferable, however, in an economic appraisal of a project, to make use of expected export or import prices, adjusted for transportation costs and handling charges where necessary, regardless of whether the product is actually exported or whether or not it displaces import. The reason for this is that even though export and import prices may be just as distorted as local prices, they nevertheless represent the real value of the commodity for the country concerned.

The expected benefits and costs, once determined, are finally compared and expressed as a return on the investment to be made. At one time, we expressed the return as a gross output/investment ratio. However, this method relates expected benefits only after the project is in full operation, thus disregarding the timing element. Our current practice is to use the discounted cash flow by which we obtain the internal rate of return for the project. This is usually checked against the present worth method in which the costs and benefits streams are discounted at a rate corresponding to the estimated opportunity cost of capital in the country.

Conclusion

My description of the appraisal techniques followed by the World Bank in evaluating irrigation projects has probably revealed to you our cautious approach in this field. This approach is dictated, not merely by the fact that we are a financial institution and therefore strive to invest only in sound projects,

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but also because, as a development institution, we try to ensure that our borrowers invest the scarce resources available to them in the most economical way.

If the Bank is to expand its activities in the field of irrigation and agriculture as a whole, the developing countries would have to first build a sound administrative, institutional and technical framework in the agricultural sector. Only then would the existing gap between the need for capital in agriculture and their capacity to absorb it efficiently be reduced. We at the I. B. R. D. consider assistance in this direction to be one of our major tasks in the years ahead.

Discussion: Mitchell

Terms of Loans and Estimation of Expenditure

Q. De Geeter

You mentioned that it is now possible for a country to obtain an IDA loan. As this type of loan has a very low interest rate and long repayment term, I imagine many countries must try to obtain such a loan, as opposed to those on a 6% basis. Under what conditions do you give IDA loans?

A. Mitchell

The Bank sends an economic survey mission to a country before a loan is made, as well as every couple of years. The financial capabilities, outstanding debts, ability to undertake further debt and revenue sources are reviewed in order to estimate the credit-worthiness of the country. If the country has a good credit-worthiness, they are not permitted to obtain an IDA credit, but must undertake a regular Bank loan.

Q. Goossens

It is generally accepted that reclamation on water development projects for agricultural purposes is a long-term investment. An interest rate of 6% on a 15 to 20 year loan is high as the first 10 to 15 years of such projects do not generally yield a return on the investment.

A. Mitchell

I agree with this point. We do not require that the project itself return the capital investment with or without interest. The one thing we want the farmers to pay is the operational costs on the project and if they can also pay towards the capital investment then this will assist their government. However, it is the government's responsibility and they may find it easier to get the extra amount from other sectors of the economy such as those indirectly benefited by the project.

Q. Pranich

In view of the fact that agricultural projects are not able to pay back the 6%, 15 to 20 year loans themselves, does the Bank have any policy for easier loans of 3% interest rates and a repayment period of 40 to 50 years?

A. Mitchell

We have no plans at present to set up loans with such terms. There are, of course, IDA loans with no interest rate and a 50 year repayment period.

Q. Rook

The foreign exchange component of the total costs of a scheme varies considerably depending on the resources available in the country. Obviously the maximum effort should come from the country itself, which may tend to raise the costs and lengthen the time of construction, especially if labour is abundant and so labour intensive methods are used even though time and cost are increased. Foreign exchange could reduce the time and costs but a balance should be reached. What is the maximum foreign exchange component that you consider a project should bear?

A. Mitchell

It depends whether the country is interested in providing employment, for example, or doing the work as cheaply as possible. In the latter case we bring in a lot of equipment and construction time is therefore quicker. Labour intensive methods, on the other hand, can help the economy of a country with unemployment problems. We find that we often hire many more workers than necessary on our projects for this reason, even though it costs more in the long run. Thus we are flexible in working out the exact amount of the foreign exchange component.

Q. Garcia

Does the Bank finance some part of the local currency costs as well

as the foreign component?

A. Mitchell

Yes, we do. The exact proportion of the local currency which we undertake varies from project to project, depending on the needs of the country.

Q. Van Dijk

It seems to me that there is one direction in which the Bank is very limited and this has to do with the way capital is invested into the country. As we know, capital alone will not cause development. The labour component is important and in developed countries social securities for labourers are provided from taxes in that country. Now when the Bank lends money, that money must be paid back with an interest. Half the interest is taxed by the country of the agency or firm which put that money into the Bank. Thus the benefits do not go to the underdeveloped countries but rather to the developed countries. Would it not be better to have no tax on this interest so that the underdeveloped country could use the amount which would otherwise be taxed for their own social benefits and improvement of labour standards.

A. Mitchell

The Bank must pay the 6% interest on the capital it borrows or otherwise countries and agencies would not put their money in the Bank. Apart from this we pay no dividends or extra payments.

Q. Van Dijk

I see the need to obtain your money on the world market but I still believe you are working with a one-way tool, that is, with the capital alone, and not, as a government would with its own money, for the social benefit of the labourers as well. There is no taxation on salaries by all the International Bodies for example. Similarly, you could arrange to have no taxation levied on the interest obtained by loaning money to underdeveloped countries so that $\frac{1}{2}$ the interest can go back to that country and the other $\frac{1}{2}$ to the owner of the

of the capital. Thus not only is the original capital generating production, but the 3% from $\frac{1}{2}$ of the interest can be used to improve labour standards in the developing country.

A. Mostertman

On the free market no one will lend money at less than 6%. There are special cases where the government arranges to lend capital to an underdeveloped country at a lower rate of interest, even 2 to $2\frac{1}{2}\%$.

Q. Van Dijk

I understand that, but it is very limited, and my point is about the World Bank.

A. Mitchell

In fact, as many of the countries from whom we obtain capital have their own aid programmes to underdeveloped countries, financed from their taxes, then the tax on the interest of our loans indirectly goes back to the underdeveloped countries.

Q. Nolthenius

You mentioned that the Bank wants an accuracy of 15% on the amount needed on a project for the feasibility reports. Now there is a big difference between a preliminary design and a detailed design, and for your financing you will need the detailed design, which in itself comprises 2 to $2\frac{1}{2}\%$ of the total cost. Is not the preliminary design, which gives an accuracy of 30 to 50%, sufficient for a feasibility report? On any large project where there is competitive bidding, the chance that you are within 10% is very limited even with a detailed design.

A. Mitchell

We normally find preliminary designs satisfactory for feasibility reports, with a 15 - 20% estimate accuracy. Thus we are happy to finance on the basis of this a detailed design plus the construction ^{this} ^{and proceeding to} ^{before}

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Q. Thijsse

It surprises me greatly that you are able to get an accuracy of 15%.

A. Mitchell

Well, this has been the case for most of our projects, even when it is an overall bid for a whole project.

Q. Thijsse

But does this include payments to the farmers?

A. Mitchell

It depends on the project. If these payments are small, they aren't included. However, I still find it realistic to say that a 15% margin can be kept when there are payments to farmers included.

Q. Van Staveren

I am glad to hear that you do support farm works payments. However, often the most important thing is to train the farmers to work most effectively. Can the Bank put high enough requirements on its loan contract to require that there be good training and good consultants for the benefit of farm works?

A. Mitchell

We make a strong point in our financial arrangements to ensure that satisfactory services are furnished to the farmer in the form of extension services, credit services, marketing and so on. If there is need we also require that outside assistance be brought in to teach the agencies involved how to approach the problems and how to teach the farmers. Thus educational work is a condition of the loan.

Q. Mostertman

How do you account then for variable factors such as floods?

A. Mitchell

Depending on the detail of the investigation and the design, we generally put on an 8 to 20% allowance. If the preliminary designs and investigations are very good then a low^{er} allowance is sufficient.

Criteria for Projects

Q. Nolthenius

There has been a tendency, especially on the part of international organizations who finance feasibility studies for many projects, to look for large projects. Thus I was glad to hear that you at the Bank are trying to put projects in stages and reduce the costs to reasonable amounts from the beginning.

A. Mitchell

We prefer to aid development that is within the capabilities of the country as far as their experience and financial resources are concerned. We much prefer 10 year projects as opposed to 15 to 20 year ones so that the country can start receiving benefits as soon as possible. For this reason we urge that the size of the project be kept down. For larger projects we prefer to finance and work in three or four stages. I think other agencies may also be starting to follow this trend.

Q. Özal

You mentioned that in the economy evaluation projects, you use the estimated opportunity costs of the capital, that is, the costs of the capital in the home market. This is not easy to measure in developing countries, and moreover, if you apply such high capital costs, I would say that the infra-structure projects for irrigation might not be able to compete with projects in other sectors of the economy for priority in development. How do you solve this problem?

A. Mitchell

We establish development priorities first between sectors of the economy and then within sectors. Then the determination is

made within the sector chosen of the other opportunities for investing capital.

Q. Ozal

Then you must use other criteria for giving priorities between the sectors. Can you tell us on what basis you give these priorities?

A. Mitchell

This is the function of the economic survey mission. They look at the overall economy, and, together with the Government, establish what sectors should have priority for development. After overall priorities are set, then priorities are made within sectors, so that irrigation, for example, might have priority within the agricultural sector.

Q. Garcia

How does the Bank determine the opportunity costs of capital for a country in its feasibility studies?

A. Mitchell

We know what the costs of the money are in each country, and these vary considerably from country to country.

A. Dekker

As I understand it, the Bank uses shadow prices.

Q. Ozal

How is your experience with the internal rate of return. Sometimes it looks too complicated to use it effectively.

A. Mitchell

The internal rate of return is only one measure, and as such cannot be expected to give an infallible answer. Thus we use it only as one of our criteria. The conditions and needs of the country, capital in the country and so on are also used. However we prefer it to such measures as the benefit cost ratio, as if you have a very expensive project where benefits are low, or vice

versa, the internal rate of return gives a better picture.

Q. Van Staveren

Could you please elaborate on what exactly are the standards you use when considering if a project is really feasible, and what the minimum standards are, say for an irrigation project.

A. Mitchell

We have no minimum standards but judge every project on its own merit. Some projects have been financed with as low as 6 to 7% internal rate of return, although 11 to 15% is more normal. Thus all projects are judged on a case by case basis.

Q. Goossens

I would like to ask a question about the multiplier effect, which, of course, will enter into your economic appraisal. By multiplier effect, I mean that if you invest in a project in a certain area, building dams, roads, houses and so on, this investment will cause quite a lot of general activity and further income in the area, apart from the actual construction, and so be beneficial to the area as a whole. If you anticipate a high multiplier effect, are you more willing to invest a greater amount of money into an area?

A. Mitchell

In the evaluation of a project we do not take indirect benefits into account. We realize the indirect benefits exist but prefer at the Bank to base our evaluation solely on direct benefits. I realize, however, that other organizations do take the multiplier effect into consideration.

Q. Kop

I would like to use an example to illustrate my question concerning criteria for projects. If we have 50 to 80 000 hectares to develop and irrigate we can use two methods. The first is to build a

dam and make a huge channel system. .But we can only work in 10 000 hectare blocks off the central channel and so it takes about 40 years to completely develop the whole area, and it is 50 to 75 years from the start before the project will be really profitable. The second method is to start with a pumping station. This necessitates higher energy costs but gives a quicker start and the project will be profitable by 50 years from the start. However, after 75 years the first method is more efficient and absolutely better. Therefore how do you make the choice as to which system to use?

A. Mitchell

We always try to stay within a 30 to 40 year period and do not attempt to forecast beyond that. A 75 year development period is far too long.

Q. Kop

The development period may be 25 to 30 years, but because the initial costs and interest on the flood irrigation system will be high, that is why I mentioned the 75 year period as a start for real profits.

A. Mitchell

The Bank does not look at the work value beyond 30 years.

Q. Thijssen

I have seen this case where the Bank, because they do not want to finance a long term project, will finance a small pumping system which is both cheaper and quicker, but has a limited lifetime.

A. Mitchell

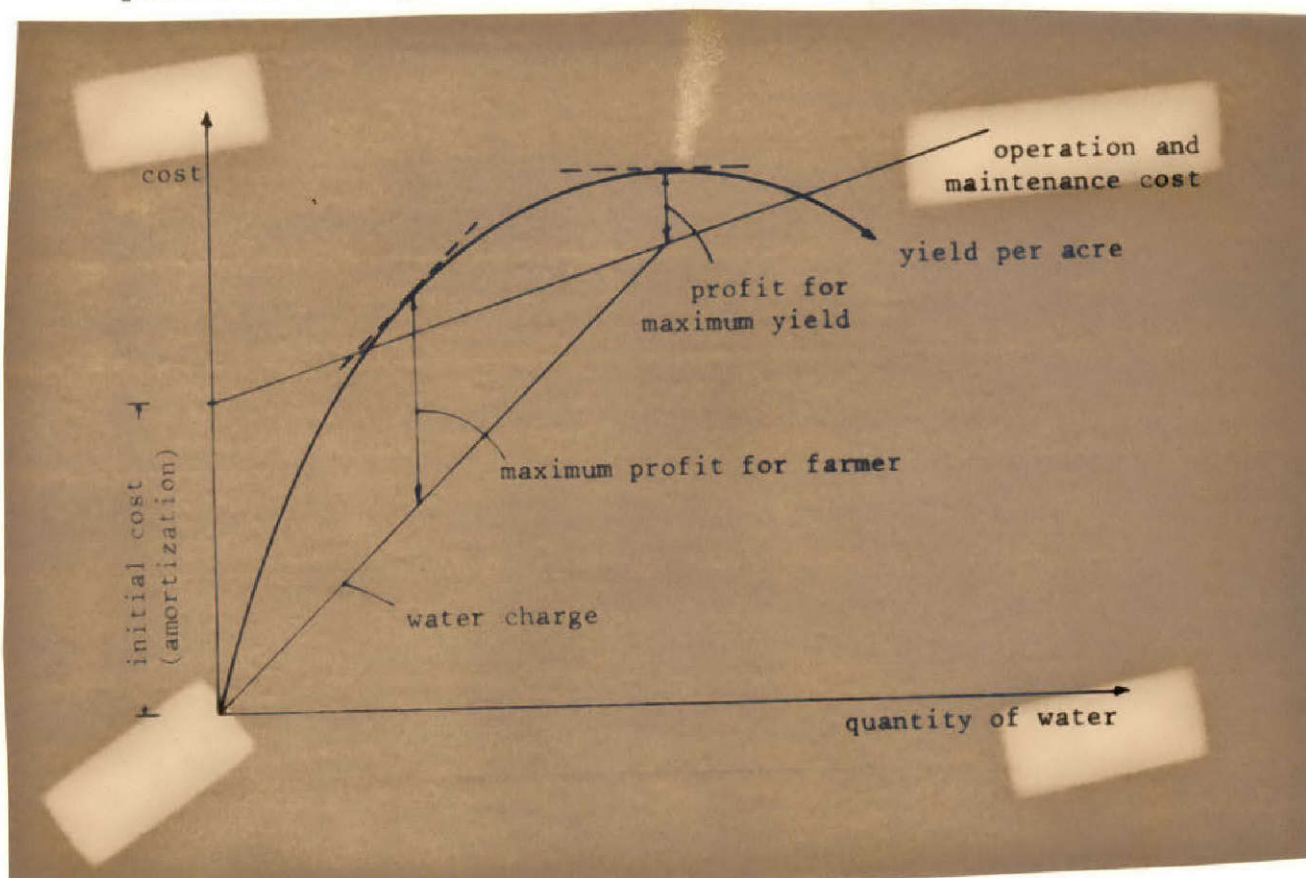
If you figure on a 30 year basis, you take whatever is cheaper at the moment, but we do not forget the long term. It may even be cheaper to replace pumps that have a lifetime of 20 to 30 years. On the other hand, another system altogether could be a cheaper

solution after such a period.

Water Charges to Pay for Irrigation Projects

Q. Thijsse

On the project on which I worked in East Pakistan, the problem was to get any grain of rice that could be produced. As long as the benefit cost ratio was more than one, the project area was cropped to get as much rice as possible, using the maximum water available. As the need for rice was so great, the price was also high.



Now, on the diagram are the initial costs, part of which is the amortization on the investment. Operation and maintenance costs, which are in proportion to the amount of water used rise from the point of total initial costs to give total overall costs. The yield increases very much for the first

bit of water used and then tapers off. Of course, it does not actually start at zero, but it makes no difference for the purposes of the diagram. Because of the great need for the crop and the increasing population, the price has to go to the maximum. In order to obtain part of the investment and the operation costs, the farmer must be charged for water. Now it is in the interest of the farmer to use only as much water as will give him maximum profit. This is the point where the difference between costs and benefits are greatest. But this does not give him maximum yield and so is not in the best interests of the country. As you can see, if the farmer uses more water beyond the point of his maximum profit, the cost of water increases at a faster rate than the income he will get from the additional crop.

A. Mitchell

But the farmer will want to produce the maximum yield even when it costs more, providing that the rate of return increases with the crop. In most places it does happen that your profit increases because the unit cost of production goes down as the yields increase. Since the unit cost of production goes down, the more the farmer produces the more his profits are, that is, over and above the cost of production.

Q. Thijsse

Why should he produce more when the top part of the production costs him more in water duties than the extra benefits which result?

A. Mitchell

I don't see why the water should cost more if you have a sliding or escalating scale on water costs.

Q. Thijsse

No, in your case you recommend a constant water charge per acre.

But I am talking about the cost per acre ft and therefore the cost rises the more you use.

C. Kop

If the cost is per acre it should be a horizontal line.

Q. Ozal

If water is charged by the acre ft, then the more water you use, the more will be the maintenance and operation costs.

A. Mitchell

Not per acre ft. The staff, equipment and facilities are all the same for the greater amount of water.

C. Özal

There is also the case where water is charged per unit area irrigated, depending on the crop. When water is charged per acre ft or m^3 , the cost of measurement is sometimes even higher than the cost of the water, and so the volumetric method is not so satisfactory.

Q. Dahmen

In my opinion, if you handle a small amount of water the cost will be more than for a large amount and so the water cost line should go down.

A. Thijsse

The total cost won't go down, only the cost per unit. The farmer, as he makes the gross benefit, has to make payments to the government so that the loan and interest can be paid. I still don't think the farmer will gain by the added production from the last acre ft or m^3 of water as the cost outweighs the benefits. The point of maximum profit for the farmer does not coincide with the point of maximum yield.

Q. Dekker

Then the water rates should be structured so that the last acre ft or m³ costs less.

A. Thijsse

This is dangerous because this last amount of water, which is, in fact, the most difficult to obtain, will cost the farmer no more.

C. Mitchell

There is another method of charging for water and that is to make a set charge per acre ft for the water required for a certain cropping pattern, and then to charge a higher rate for extra water above that amount. The initial or set charge must be paid.

C. Thijsse

Yes, this method is a good way of solving the problem of making the interests of the farmer, who wants maximum profit, and the country, which wants maximum yield, coincide. The case for the country is not necessarily an economic one, as the need for the crop is often very urgent.

Q. Horst

But are there not two cases, one where there is a scarcity of land and abundance of water, so that the land should be taxed, and the other where there is a scarcity of water and an abundance of land, so that the water should be taxed?

A. Mitchell

Regardless of the quantities of land and water, an excessive use of water necessitates high drainage costs and gives even lower production in some cases, and so it is always advisable to structure water charges to avoid excess water use. The farmer will be interested in the economic maximum for his production. Of course, much higher inputs in the form of fertilizers and so on can give higher yields but the additional yield does not warrant the extra cost.

Lectures given in the third week of the Symposium on Water Resources:
Delft, September 29 to October 19, 1966 .

Procedures in the Evaluation of Water Resources

Projects proposed for United Nations Assistance, and the Philosophy
behind these procedures

Ir W.J. van der Oord

The Appraisal of Irrigation and Drainage Projects

Mr D.S. Mitchell

Social Implications in Land and Water Development Projects

Dr E. Peñalosa-Camargo

Governmental and Organizational Aspects of Water Resources Development

Minister B.R. McKenzie

Organizational Aspects of Water Resources Development in Nigeria

Mr W.A. George

Post-Construction Assistance on Water Resources Development Projects

Mr A.A.R. Arar

Work of ECAFE in Water Resources Development

Mr K. Pranich

Work of ECA in Water Resources Development

Ir G. Dekker

Contribution of ECLA to Water Resources Development in Latin America

Mr E. Garcia

Priorities in Water Development Projects

Prof.ir L. J. Mostertman