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WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC



REPORT

**WHO/UNDP WATER SUPPLY AND SANITATION CONSULTATIVE MEETING
OF PACIFIC ISLAND COUNTRIES**

Suva, Fiji
26 June - 1 July 1989

Manila, Philippines
August 1989

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ENGLISH ONLY

REPORT

WHO/UNDP SUPPLY AND SANITATION CONSULTATIVE MEETING
OF PACIFIC ISLAND COUNTRIES

Convened by the
REGIONAL OFFICE FOR THE WESTERN PACIFIC
OF THE
WORLD HEALTH ORGANIZATION
AND THE
UNITED NATIONS DEVELOPMENT PROGRAMME
Suva, Fiji, 26 June - 1 July 1989

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NOTE

The views expressed in this report are those of the participants in the WHO/UNDP Water Supply and Sanitation Consultative Meeting of Pacific Island Countries and do not necessarily reflect the policies of the World Health Organization or the United Nations Development Programme.

This report has been prepared by the World Health Organization for the Member States and participants in the WHO/UNDP Water Supply and Sanitation Consultative Meeting of Pacific Island Countries held in Suva, Fiji, from 26 June to 1 July 1989 and other interested parties.

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SUMMARY

An interregional meeting on water resources was held in Suva, Fiji for 200 participants from 35 countries and areas from 26 June to 1 July 1989. The meeting, which was a cooperative effort involving a number of international organizations, had two major components: an Interregional Seminar on Water Resources For Small Islands; and a Consultative Meeting of Pacific Island Countries for the Promotion of Water Supply and Sanitation. The Honourable Ratu William Toganivalu, Minister of Lands and Mineral Resources, opened the meeting which was hosted by the Government of the Republic of Fiji.

The Water Resources Seminar for Small Islands was sponsored by the United Nations Department of Technical Cooperation for Development (DTCD), in cooperation with the United Nations Development Programme (UNDP) and the Commonwealth Science Council. It was held in conjunction with the World Health Organization/UNDP Decade Consultative Meeting for the Promotion of Water Supply and Sanitation in Pacific island countries. A number of other regional agencies also participated in both meetings.

Participants came from all the South Pacific countries and areas, as well as Micronesia, Indonesia and the Philippines. Representatives from island countries in the Indian and Atlantic Oceans, the Caribbean and Mediterranean Seas also attended. Resource people and participants from Australia, Japan, New Zealand and the United States also contributed to the discussions.

The main objective of the Water Resources Seminar was to present for the first time in an international forum the currently available range of solutions to the different water problems faced by island countries. Several successful case studies were presented as tested solutions to specific problems which might apply to islands in the Pacific. Topics included surface and ground water systems, legal and economic issues and proposals for future development in the region and elsewhere. The Seminar drew on experience gained through the UNDP-UNDTCD regional project on water resources for small islands in the Pacific, based in Fiji, and earlier projects on small islands worldwide.

As the end of the International Drinking Water Supply and Sanitation Decade period (1981-1990) is drawing near, the WHO/UNDP meeting focused on identifying remaining constraints and recommending ways of overcoming them, with particular emphasis on future donor agency-WHO collaborative activities.

Many Pacific island countries and areas have water supply and sanitation (including solid waste management) programmes that depend largely on assistance from external support agencies. In the past, a common constraint to the timely execution of aid projects has been the lack of efficient communication of possible avenues of assistance between recipient and donor agencies. This meeting identified potential ways and means of overcoming these difficulties.

1. INTRODUCTION

- (1) During the International Drinking Water Supply and Sanitation Decade (1981 - 1990), Pacific island countries have significantly increased their commitment to improving drinking water and sanitation facilities and extending coverage to all segments of the population. In the collaborative process between the World Health Organization (WHO) and national governments to provide potable water and adequate sanitation, the Decade programme has come to be regarded as a major factor in efforts to improve health and overall well-being.
- (2) Although nearly nine years of the Decade have passed, in many Pacific island countries and areas of the Region progress in the provision of water supply and sanitation facilities lags behind national targets, and significant problems remain in achieving substantially greater coverage. As the end of the official Decade period draws near, it is desirable to assess progress in a systematic fashion, to identify remaining constraints, and to recommend ways of overcoming these constraints, with particular emphasis on future donor agency-WHO collaborative activities (i.e. the funding of specific project proposals). The need for this type of effort was recognized by the 38th session of the Regional Committee. Resolution WPR/RC38.R12 of this session, requested the Regional Director to collaborate with Member States in mobilizing sources of funds among other things.
- (3) Although sometimes not emphasized as a major component of the International Drinking Water Supply and Sanitation Decade, this consultative meeting also focused on solid waste management. Deterioration of the living environment due to inadequate solid waste management is common in the urban areas of many Pacific island countries and areas, where the phenomenon has accelerated with the growth of urban poor populations. Also, the problems associated with the siting of waste disposal facilities have become increasingly complicated because of the fact that appropriate sites can no longer be found easily or economically. The associated improper disposal of solid waste can cause contamination of drinking water sources. The improvement of solid waste management to alleviate these problems is urgently needed to protect public health and the aesthetic aspect of population centres in the Pacific.
- (4) Many Pacific island countries and areas have water supply and sanitation (including solid waste management) programmes that depend largely on assistance from External Support Agencies (ESAs). In the past, a common constraint to the timely execution of aid projects has been the lack of efficient communication of possible avenues of assistance between recipient and donor agencies. Because of this, some worthwhile projects remain unfunded. Also, some activities, particularly in rural and urban poor areas, are unnecessarily fragmented among several donor agencies and are not effectively coordinated. This consultative meeting was designed to bring together representatives of national governments and donor agencies in an effort to enhance the implementation of worthwhile projects; to improve coordination and cooperation; to assess progress in the implementation of Decade activities; and to explore opportunities for future collaboration.

2. THE MEETING

The United Nations Department for Technical Cooperation for Development (UNDTCD) is implementing a UNDP-funded Water Resources Assessment and Planning Project covering 16 Pacific island countries and areas. This 4 1/2 year, US\$1.5 million project which began in late 1987, involves about 25 long-term and short-term staff located around the South Pacific. As part of this project, a seminar on water resources management techniques was planned for late June 1989. After discussions between WHO and UNDTCD in the latter part of 1987, it became obvious that there was an overlap between this meeting and WHO's proposed Decade Consultative Meeting (DCM) and that the two activities should be coordinated. The two meetings were then organized in parallel for the week of 26 June to 1 July 1989.

2.1 Opening session

The DCM was co-sponsored by WHO and UNDP and hosted by the Government of Fiji. The opening ceremony took place in the Grand Pacific Hotel in conjunction with the UNDTCD seminar. The two meetings were opened by the Honourable Ratu W. Toganivalu, Minister of Lands and Mineral Resources. Other speakers at the opening session included Mr N. Ringrose, UNDP Resident Representative of Fiji; Mr P. Hadwen, Director of the Water Resources Assessment and Planning Project; Dr S.K. Ahn, WHO Representative, Fiji, on behalf of Dr S.T. Han, Regional Director of WHO's Regional Office for the Western Pacific (WPRO); and Dr S. Malomo, Representative of the Commonwealth Science Council (CSC).

In his remarks, Dr S.T. Han challenged the participants to focus on the important task of more effectively and efficiently mobilizing resources to deal with constraints in the water supply and sanitation sector. He noted that this meeting was an excellent forum for improving collaboration and coordination in this regard. Both the Minister of Lands and Mineral Resources and the UNDP Resident Representative expressed their appreciation for the collaboration between the UNDTCD, CSC, UNDP and WHO in staging this joint meeting. Pointing out that the meetings could easily have been held separately, the Minister commended the agencies for pooling their resources and maximizing the benefits to the island country participants.

2.2 Participants

The two meetings were attended by some 200 participants from 35 countries, mostly representatives from island countries and areas in the Carribean, the Mediterranean, the Indian Ocean and the Pacific. The WHO/UNDP DCM had about 50 participants, of which 25 to 30 attended all of the sessions. The participants included representatives of nine Pacific island countries (Fiji, Federated States of Micronesia (FSM), Kiribati, Marshall Islands, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu). The Cook Islands and Palau, which were also invited, did not send representatives to the WHO/UNDP DCM; however, the Cook Island representative to the UNDTCD conference took part in some of the DCM sessions. In addition, representatives of Niue and Tuvalu attended the DCM

and made presentations. The DCM participants also included representatives of 13 ESAs (Annexes 1(a) and 1(b)) comprise the agendas of the WHO/UNDP DCM and the UNDTCD meeting, respectively; Annexes 2(a) and 2(b) - List of Participants of the two Meetings, respectively).

2.3 Objectives

The main objectives of the Decade Consultative Meeting were:

- (a) to assess the progress of participating countries in Decade activities including water supply, excreta disposal and solid waste management;
- (b) to identify and promote potential projects for external donor support;
- (c) to improve coordination and cooperation between External Support Agencies and national water supply and sanitation agencies; and
- (d) to explore future country activities in which WHO collaboration is required.

2.4 Activities

During the course of the meeting, participants presented country profile reports which documented progress made in Decade activities, and presented project proposals for external donor support. This information was compiled in a separate meeting document and provided to all the participating donor agencies for their consideration. In addition, several ad hoc meetings were held between individual countries and various support agencies to discuss specific project proposals.

DCM participants also strongly expressed the need for the continued support of the external support community in the 1990s and beyond, to supply all people with clean drinking water and safe sanitation facilities.

Extensive discussion at the meeting focused on improving coordination and cooperation between ESAs, between national agencies, and between ESAs and national agencies. It was concluded that collaboration between national agencies and individual ESAs was reasonably good; however, collaboration between ESAs, and between national agencies needed considerable improvement. Among the suggestions for improvement was emphasis on the importance of Pacific island country and area representation at the Asian Development Bank-sponsored Regional Consultation on Water Supply and Sanitation in June 1990 (Manila, Philippines). This meeting, involving most of ADBs developing member countries and multi- and bilateral ESAs (including nongovernmental organizations), will develop the Asia Region's input to the Global Consultation on water supply and sanitation, tentatively scheduled for New Delhi, India in September 1990. This Global Consultation is designed to develop coordinated strategies for dealing with sector problems in the 1990s and beyond.

Regarding future activities in which WHO collaboration might be required, it was suggested that the economic importance of clean water and adequate sanitation should be stressed more, both in quantitative and qualitative terms. For example, emphasizing the close link between clean water, good sanitation and growth in the tourism industry was cited as a way of raising the profile of the water supply and sanitation sector in the growth and development decision-making process. It should also be noted that some countries and areas, particularly the Federated States of Micronesia and the Marshall Islands, have not had extensive experience in dealing with external support agencies. As the historical single-donor relationship that has existed in these countries diminishes, there will be increasing interest in closer collaboration with other bilateral and multilateral agencies such as WHO.

3. MAJOR ISSUES

At the WHO/UNDP DCM, country representatives presented papers describing the water supply and sanitation (WSS) sector in their countries, pointing out issues and constraints, as well as priority areas that needed attention and required external funding. Priority project profiles were made available to the ESAs (Annex 3 - List of Priority Projects). A separate volume of country papers and project profiles was assembled and copies distributed to representatives of attending ESAs. Additional copies are available at the WHO offices in Suva, Fiji; Manila, Philippines; and Geneva, Switzerland. Information from the country project profiles will also be incorporated in the Country External Support Information (CESI) system at WHO Headquarters in Geneva. CESI is a computerized network of worldwide ESA and developing country project information. However, it should be clearly understood that neither the provision of this information to the ESAs nor its inclusion in CESI constitutes formal submission to ESAs. In this regard, each country is expected to follow its own internal procedures and those of particular ESAs.

Each country presentation was followed by a discussion session. The common problems that were highlighted throughout the discussions are summarized as follows:

- (1) long-term operation and maintenance (O and M) of WSS systems, including leak detection (e.g. lack of funding for replacement parts, non-availability of spare parts, and lack of trained personnel);
- (2) inadequate national management information systems;
- (3) inappropriate human resources development (HRD) plans and programmes;
- (4) insufficient community participation (owing to lack of motivation and training, socio-political conflicts, etc.);

- (5) groundwater pollution associated with population growth and economic development, as well as overuse of groundwater, leading to seawater intrusion;
- (6) insufficient groundwater in some islands;
- (7) complex and lengthy donor (ESA) procedures for project evaluation, funding and execution; and
- (8) ESA project interests which do not necessarily match country priorities (e.g. sanitation projects are unpopular, and tied aid leads to a diversity of equipment). Better composite information on all ESAs is needed. In this context, ESA strategy documents would be helpful.

4. CONCLUSIONS

The DCM arrived at three major conclusions:

(1) Cooperation and communication between national agencies and ESAs seems to be better on a bilateral basis than anticipated at the outset of this meeting. However, cooperation and communication among ESAs and between government agencies and ESAs as a collective group supporting the WSS Sector, are not effective. Considerable improvement is needed, possibly through country-initiated formal or informal donor meetings. Such meetings could be organized on an ad hoc basis or in conjunction with the national planning cycle.

(2) In comparison with other sectors associated with growth and development, the water supply and sanitation sector has a low profile. Raising the sector's profile or priority in the decision-making process is essential. One way of doing this is to measure the socio-economic impact of the sector.

(3) Representation of Pacific island countries and areas at the Asian Development Bank Regional Consultation in June 1990 is important. Topics of common interest to be presented might comprise the following:

- (a) groundwater resources management, including groundwater pollution and excessive depletion;
- (b) the long-term operation and maintenance of WSS systems, including the funding and community management of O and M;
- (c) inadequate national management information systems; and
- (d) complex and lengthy donor (ESA) project appraisal, funding, and execution procedures.

5. PROPOSALS FOR ACTION

On the basis of the above conclusions, the following Action Programme was drawn up in agreement with the DCM participants:

Action 1

Representatives from participating countries and areas will recommend to their governments that regional or country-level meetings with external support agencies should be initiated to discuss the funding of the water supply and sanitation sector. These meetings could be UNDP-sponsored Round Table Meetings (RTM), covering all sectors, or consultations dealing especially with the WSS sector.

Meetings could be held on an ad hoc basis, annually, biannually, or on other bases, possibly coinciding with the national planning cycle.

In preparing for these meetings, countries would be expected to seek ESA assistance.

Action 2

Delegates from participating countries and areas will recommend to their governments the strengthening of existing, or the setting up of new, national WSS sector coordination mechanisms to streamline national resources to the sector. This is also expected to enhance the profile of WSS sector projects which are presented to ESAs for funding in the context of the overall national economy.

In addition, methods of evaluating the socio-economic benefits of the WSS sector should be developed at the national level. These should consider, among other things, the reduction of water and sanitation-related disease incidence, hospital costs, labour outfall and overall social well-being. Such an evaluation would be descriptive as well as quantitative and would look at negative impacts on other economic activities (e.g. tourism) if the WSS sector is not improved.

To develop these evaluation methods, governments are expected to seek support from external support agencies which have experience in this field.

Action 3

DCM participants of Pacific island countries and areas recommend to the Asian Development Bank that one or more of the following subjects be presented and discussed at the Asia Regional Consultation, to be hosted by ADB in June 1990:

- (a) groundwater resources management, including groundwater pollution and excessive depletion; and/or
- (b) water supply and sanitation in small islands in the context of overall environmental sanitation (including solid and liquid waste disposal) on a limited surface with limited supply and disposal potential; and/or
- (c) complex and lengthy ESA project appraisal, funding and execution procedures.

These conclusions and proposals for action were presented to and endorsed by the DCM participants at a joint concluding session of the WHO/UNDP DCM and the UNDTCD Water Resources Seminar.

WHO/UNDP DECADE CONSULTATIVE MEETING OF
PACIFIC ISLAND COUNTRIES FOR THE PROMOTION OF
WATER SUPPLY AND SANITATION
Suva, Fiji, 26 June - 1 July 1989

		<u>Tentative Agenda</u>	<u>Venue</u>
Monday 26 June	0830 - 0900	Registration of Participants	Grand Pacific Hotel
	0900 - 1000	Opening Ceremony	"
	1000 - 1030	Photo Session	"
	1030 - 1100	Coffee Break	"
	1100 - 1230	Session on Donor Coordination	Suva Travelodge (Banyan Room)
	1230 - 1400	Lunch	
	1400 - 1500	Vanuatu Presentation	"
	1500 - 1530	Solomon Islands Presentation	"
	1530 - 1600	Coffee Break	"
	1600 - 1645	Papua New Guinea Presentation	"
	1645 - 1700	Overview of discussions	"
Tuesday 27 June	0830 - 0930	Fiji Presentation	Suva Travelodge (Banyan Room)
	0930 - 1015	Kiribati Presentation	"
	1015 - 1035	Coffee Break	"
	1035 - 1115	Federated States of Micronesia Presentation	"
	1115 - 1215	Tonga Presentation	"
	1215 - 1415	Lunch	
	1415 - 1435	Marshall Islands Presentation	"
	1435 - 1500	Western Samoa Presentation	"
	1500 - 1530	Coffee Break	"
	1530 - 1630	Western Samoa (Cont'd) and Niue Presentations	"
	1630 - 1700	Tuvalu and other interested countries' Presentations	"
1700 - 1800	Overview and Conclusions of discussions	"	
Wednesday 28 June through Saturday, 1 July	REVERT TO UNDTCD Wed. 28 June 1400 - 1530	WHO/UNDP Decade Consultative Meeting Working Group on issue-oriented proposal for actions	"

INTERREGIONAL SEMINAR ON WATER RESOURCES
MANAGEMENT TECHNIQUES FOR
SMALL ISLAND COUNTRIES
SUVA, FIJI, 26 JUNE - 1 JULY 1989

Revised Programme (26 June)

Sunday, 25 June 1989

3:00 - 6:00 Registration of participants in Room 3,
Grand Pacific Hotel

Monday, 26 June 1989

8:00 - 9:00 Registration

9:00 - 10:00 Opening ceremonies
Mr N. Ringrose
Mr P. Hadwen
Dr S.K. Ahn
Dr S. Malomo
Hon. Ratu W. Toganivalu

10:00 - 10:30 Coffee break

10:30 - 12:00 Session I. Surface water systems

Overview E. Fox
Intake structures N. Hughes
Case Study: Surface water on Fiji L. Crick

12:00 - 1:30 LUNCH

1:30 - 2:45 Session II. Ground water systems
in small islands

Overview A. Falkland
Ground water exploration techniques W. Dale
Abstraction by gravity U. Golani

2:45 - 3:00 Coffee break

3:00 - 4:30 Modelling of the ground water lens J. Karanjac

6:00 - 8:00 Welcome reception Tapa Room

Tuesday, 27 June 1989

9:00 - 10:30 Session III. Ground water systems

Infiltration galleries N. Hughes
Low-cost drilling techniques J. Davies

10:30 - 11:00 Coffee break

Annex 1(b)

11:00 - 12:30	Case studies Ground water in Papua New Guinea Potable water supplies for Emae Island, Vanuatu Conjunctive use of surface and Ground Water on La Digne Island, Seychelles	S.S. Egara C.S. Cheney R. Cetoupe
12:30 - 2:00	LUNCH	
2:00 - 3:15	<u>Session IV.</u> Rainwater catchment systems Overview Design and construction	Y.S. Fok D. Parish
3:15 - 3:30	Coffee break	
3:30 - 4:30	Case studies Rainwater catchments on Tuvalu	C. Reynolds

Wednesday, 28 June

9:00 - 10:45	<u>Session V.</u> Institutional solutions Experience in establishing specialized information centres Regional small islands water project Proposal for Water Resources Centre	D. Campbell P. Hadwen A. Simpson
10:45 - 11:15	Coffee break	
11:15 - 12:30	Training needs and programmes Overview CCOP/SOPAC ILO/INSTRAW Training Modules	W. Dale R. Howorth M. Johnson
2:30 - 2:00	LUNCH	
2:00 - 3:30	<u>Session VI.</u> Advanced technologies in island settings Overview Use of microcomputers Desalination technologies	O.K. Buros J. Karanjac T. Goto
3:30 - 3:45	Coffee break	
3:45 - 5:00	Case studies Bermuda Tonga	N. Thomas F. Koloi

WHO/UNDP DECADE CONSULTATIVE MEETING
OF PACIFIC ISLAND COUNTRIES
FOR THE PROMOTION OF OF WATER SUPPLY AND SANITATION

SUVA, FIJI, 26 June - 1 July 1989

1. PARTICIPANTS

FIJI

Mr Azmat Khan
Division Health Inspector, Central
Ministry of Health
Tamavua

Mr Clive Simpson
Public Works Department
Tamavua

FEDERATED STATES OF MICRONESIA

Mr A.L. Mulchahy
Project Engineer
Office of Planning and Statistics
Federated States of Micronesia
Kolonia
Pohnpei 96941

KIRIBATI

Dr Tetaua Taitai
Secretary for Health
and Medical Services
Tarawa

MARSHALL ISLANDS

Mr Methan Edwin
Majuro Atoll Local Government
Republic of the Marshall Islands
P.O. Box 796
Majuro
Marshall Islands 96960

PAPUA NEW GUINEA

Mr Kaoga Galowa
Senior Health Inspector (RWSES)
Department of Health
P.O. Box 3991
Boroko

Mr E.S. Webber
Engineering Manager
The Waterboard
Boroko

Annex 2 (a)

SOLOMON ISLANDS

Mr Daniel V. Buto
Planning Officer (Social Services)
Ministry of Finance and
Economic Planning
P.O. Box 26
Honiara

Mr Robinson S. Fugui
Project Manager,
Rural Water Supply and
Sanitation Project
P.O. Box 349
Honiara

TONGA

Mr Lelea Tuitupou
Acting Senior Health Inspector
Ministry of Health
Nuku'alofa

Mrs Sinaitakala Tuitahi
Project Economist
Central Planning Department
Nuku'alofa

VANUATU

Dr Gerald Haberkorn
Senior Planning Officer
National Planning and
Statistics Office
Private Bag 8
Port Vila

Mr Elison Sese Bovu
Senior Environmental Health Officer
Department of Health Department
Private Mail Bg 009
Port Vila

WESTERN SAMOA

Mr Sale Ah Kuoi
Senior Health Inspector
Health Department
Apia

Mr Ainini Tiumalu
Health Inspector
Health Department
Apia

2. SECRETARIAT

Mr S.A. Tamplin (Operational Officer)
Regional Adviser in Environmental Health
WHO Regional Office for the Western Pacific
Manila
Philippines

Mr B. Fisher (Co-Operational Officer)
Decade Engineer
Regional Centre for the Promotion of
Environmental Planning and Applied Studies (PEPAS)
Kuala Lumpur
Malaysia

Mr P. Koenig (Co-Operational Officer)
Community Water Supply and Sanitation
Environmental Health Division
World Health Organization
Geneva
Switzerland

Dr H. Ogawa (Co-Operational Officer)
Environmental Systems Engineer
Regional Centre for the Promotion of
Environmental Planning and Applied Studies (PEPAS)
Kuala Lumpur
Malaysia

Mr R.J. Abrams
Public Health Engineer
SOL/CWS/002

Mr J. A. Hazbun
Technical Officer
VAN/CWS/001

Mr Neale Farmer
STC, FIJ/HMD/004
World Health Organization
Suva

Annex 2(a)

3. OBSERVERS

COOK ISLANDS

Mr K. Browne
Ministry of Works
P.O. Box 102
Rarotonga
Cook Islands

FEDERATED STATES OF
MICRONESIA

Mr. Robert Spegal
Department of Human Resources
FSM National Department
P.O. Box 490
Pohnpei
FSM 96941

FIJI

Dr Lydia G. Uy, Ph.D.
Harrison Grierson Consultants Ltd
Suva

Dr Bob Lloyd
University of the South Pacific (US)
Suva

Mr Ram B. Singh
Ministry of Rural Development
Suva

Mr T.J. Chan
Harrison Grierson
Consultants Ltd
Suva

Mr Alfred Simpson
Department of Lands and Mineral Resources
Suva

Mr R.S. Shandil
Public Works Department
Suva

Mr Sharda Nand
Public Works Department
Suva

Miss Marica Rokovada
Public Works Department
Suva

Mr Rajendra Singh
Public Works Department
Suva

Mr John Tavo
Public Works Department
Suva

Mr Samu Liga
Public Works Department
Suva

Mr Henry Seniloli
Public Works Department
Suva

Mr Ulai Meo
Public Works Department
Suva

Mr John Wanneck
Public Works Department
Suva

Mr Les Fabian
Public Works Department
Suva

Mr Baba Jeremaia
Public Works Department
Suva

Mr Ame Racule
Housing Authority
Suva

Mr G.G. Green
Public Works Department
Suva

NIUE

Mr Arbutus Mitikulena
Director of Health
Health Department
Alofi

TONGA

Mr Filipe Koloi
Tonga Water Board
P.O. Box 92
Nuku'alofa
Tonga

TUVALU

Mr Vete Sakaio
Public Works Department
Funafuti
Tuvalu

WESTERN SAMOA

Mr Isikuki Punivalu
Public Works Department
Private Mail Bag
Apia
Western Samoa

Annex 2 (a)

4. DONOR AGENCIES

AUSTRALIA

Mr Keith Joyce
AIDAB
Australian Embassy
P.O. Box 214
Suva

Mr Harvey Crowe
Overseas Projects Corporation of Victoria
11th Floor
176 Wellington Parade
East Melbourne
Australia

Mr Roger Dickson
AIDAB
Northbourne Avenue
Canberra
Australia

FRANCE

Mr Olivier Venencie
French Embassy
Suva

JAPAN

Mr Tomoki Nitta
Embassy of Japan
2nd Floor, Dominion House
G.P.O. Box 13045
Suva

NEW ZEALAND

Mr Vince McBride
N.Z. Embassy
P.O. Box 1378
Suva

Mr E.G. Fox
Ministry of External Relations and Trade
New Zealand
(Stationed in Western Samoa)

UNITED KINGDOM

Mr Siyan Malomo
Commonwealth Science Council
Marlborough House
Pall Mall
London
SW1Y 5HX

Mr Ian Gale
BDDP
Private Mail Bag
Suva

UNITED STATES

Mr Dan Campbell
Washington Project/A.I.D.
1611 N. Kent St
Suite 1001
Arlington, VA 22209

Ms Mariangela Pledl
United States Agency for International Dev.
(USAID)
P.O. Box 218
Suva

FORUM SECRETARIAT

Ms Marieta Tukuafu
Forum Secretariat
Suva

UNITED NATIONS

Ms Mary Johnson
ILO Office for South Pacific
P.O. Box 14500
Suva

Ms Phyllis Fong
UNDP
Private Mail Bag
Suva

Ms Cindy Low
UNICEF
Suva

INTERREGIONAL SEMINAR ON WATER RESOURCES
SUVA, FIJI 26 JUNE - 1 JULY 1989

LIST OF PARTICIPANTS

COUNTRY REPRESENTATIVES

AUSTRALIA

Roger DICKSON
Snowy Mountains Engineering Corp (for AIDAB)
161 Clarence St.
Sydney, NSW, Australia
Fax : (02) 262-4661

Norman HUGHES
Johnson Filtration Systems
P.O. Box 172
Jannali NSW 2226
Australia
Fax : (612) 521-3947

Terry NEWTON
T.R. Newton Consultants Pty Ltd
Box 935
Port Macquarrie NSW
2444 AUSTRALIA
Fax : 065 837927

BAHAMAS

Michael S. SWANN
Water and Sewerage Corporation
P.O. Box N3905
Nassau, Bahamas

COOK ISLANDS

Ken BROWNE
Ministry of Works
P.O. Box 102
Rarotonga, Cook Islands
Fax: 682 - 21134

DOMINICA

Damian C. SHILLINGFORD
National Water Services Division
P.O. Box 185
Roseau
Commonwealth of Dominica

Annex 2 (b)

FEDERATED STATES OF MICRONESIA

Antonio ACTOUKA
Chief, Division of Energy
Pohnpei State Government
Kolonia, Pohnpei
FSM
Fax : 691 320-2505

Weston LUCKYMIS
Administrative Officer
Department of Public Works
P.O. Box 277
Lelu, Kosrae
FSM
Fax : 691-370-3058

Misami SEO
O & M Superintendent
Department of Public Works
P.O. Box 783
Moen, Truk State
FSM

C. YINUG
Director, Office of Planning & Budget
Yap State Government
P.O. Box 471
Kolonia, Yap
FSM
Fax : 729-350-4113

FIJI

Mohammed ASLAM
Technical Assitant
Mineral Resources Department
Suva, Fiji

Kaloumaira ATUNAISA
Principal Engineer (River Engineering)
Drainage & Irrigation Division
Ministry of Primary Industries
P O Box 1292
Suva, Fiji

J.K. BABA
Water Engineer, Operation & Maintenance
Public Works Department Western
Box 128
Lautoka, Fiji

S.K. BOOTH
Hydrogeologist
Mineral Resources Department
Suva, Fiji

Atish CHANDRA
Chemist-in-Charge
National Water Quality Laboratory
Public Works Division
P O box 6438
Valelevu, Nasinu
Suva, Fiji

Len CRICK
Senior Engineer
Public Works Department
Suva, Fiji

Jeffrey DAVIES
Senior Hydrogeologist
Mineral Resources Department
Suva, Fiji

Les FABIAN
Public Works Department
Box 3740
Samabula
Suva, Fiji

Victor EPELI
Acting Senior Assistant Secretary
Ministry of Rural Development
Suva, Fiji

Malakai FINAU
Technical Assistant
Mineral Resources Department
Suva, Fiji

G.G. GREEN
Director of Water & Sewerage
Public Works Department
Private Mail Bag
Suva, Fiji

Rusiate KOROVUSERE
Principal Assistant Secretary
Ministry of Rural Development
P.O. Box 2210,
Government Buildings, Suva, Fiji

Maretino LAWAKELI
Technical Officer
Mineral Resources Department
Suva, Fiji

Samu LIGA
Public Works Department
Suva, Fiji

Ulaiasi Matia MEO
Technical Assistant
Public Works Department
Box 3740, Samabula
Suva, Fiji

Ratu MISIVISA
Water Supervisor
Public Works Department
Lautoka, Fiji

Sharda NAND
Public Works Department
Suva, Fiji

Mawendra NANDAN
Senior Technician - Groundwater
Mineral Resources Department
Suva, Fiji

Vijay NATH
Director of Drainage and Irrigation
Ministry of Primary Industries
P O Box 12921
Suva, Fiji

Neil PALMER
Senior Engineer, Sewerage
Public Works Department
P O Box 3740
Samabula
Suva, Fiji

Bhaskar RAO
Principal Geologist Mapping/Hydrogeology
Mineral Resources Department
Suva, Fiji

Samisoni RATUYAWA
Senior Technical Officer
Mineral Resources Department
Suva, Fiji

Marica ROKOVADA
Public Works Department
Suva, Fiji

Henry SENILOLI
Actg. Divisional Engineer Northern
Public Works Department
Labasa, Fiji

R.S. SHANDIL
Public Works Department
Suva, Fiji

Alfred T. SIMPSON
Assistant Director
Mineral Resources Department
Suva, Fiji

Rajendra SINGH
Public Works Department
Suva, Fiji

R.B. SINGH
Ministry of Rural Development
Suva, Fiji

Maureen STANCIK
Civil Engineer
Peace Corps/Ministry of Health
Fiji

John TAVO
Public Works Department
Suva, Fiji

John WANNECK
Public Works Department
Suva, Fiji

Paul WILISONI
A/Principal Engineer, Suva Water Supply
Public Works Department
Box 3740, Samabula
Suva, Fiji

Annex 2 (b)

GRENADA

Terrence P. SMITH
Senior Engineer
Central Water Commission
P.O. Box 392
Carenage, St. George's
GRENADA
Fax : 440-4107

INDONESIA

Heru MARSUDI
Chief of Water Resources Development
East Nusa Tenggara
Jl WJ Lalamentik 20
Kupang
INDONESIA

JAPAN

Totaro GOTO
Director
Water Re-use Promotion Center
2-3-4 Akasaka
Tokyo, Japan
Fax : 03-583-9436

KIRIBATI

Graham JACKSON
Water & Sewerage Engineer
Public Utilities Board
Box 443
Betio, Tarawa, Kiribati

Taboia METUTERA
Acting Water Engineer
Public Works Division
Box 498
Betio, Tarawa, Kiribati
Fax : 26172

Paul Henry SCHUTZ
Acting Chief Engineer
Public Works Division
Box 498
Betio, Tarawa, Kiribati

MALDIVES

Mohamed IBRAHIM
Director
Maldives Water & Sanitation Authority
Marine Drive, Male
Republic of Maldives

MARSHALL ISLANDS

Robert KELEN
General Manager
RMI Environmental Protection Agency
Box 1322
Majuro
Marshall Islands

Edwin METHAIN
Clerk, Majuro Atoll Local Government
P.O. Box 796
Majuro
Marshall Islands

MAURITIUS

Dhaneswar SOOBRAH
General Manager
Central Water Authority
St. Paul
Mauritius

Annex 2 (b)

NEW ZEALAND

Brian ALCOCK
Managing Director
Bisley's Pump Industries Ltd
Private Bag
Hamilton, NZ
Fax : 64 71 556170

Dr. Lydia UY
Harrison Grierson Consultants Ltd
P.O. Box 37091 Parnell
Auckland, NZ
Fax : 373552 (09)

NIUE

Toe TONGATULE
Director of Works
Public Works Department
P.O. Box 38
Alofi, Niue

PALAU

August REMOKET
Water Branch Supervisor
Bureau of Public Works
P.O. Box 100
Republic of Palau

PAPUA NEW GUINEA

Simon S. EGARA
Hydrogeologist
Geological Survey
P.O. Box 778
Port Moresby, PNG
Fax : 224222

John KING
Principal Engineering Geologist
Geological Survey of Papua New Guinea
P O Box 778
Port Moresby, PNG
Fax : 224222

E.S. WEBBER
Engineering Manager
The WaterBoard
Box 2779
Boroko, PNG
Fax (685) 241610

PEOPLE'S REPUBLIC OF CHINA

CHEN
Economic Counsellor
Embassy of the Republic of China
Private Mail Bag
SUVA

Ding Hui SHEN
Consulting Engineer
Chinese Hydro Power Group
Zangzhan Regional Center
Box 13528
Suva

WANG
Secretary (Economic)
Embassy of the People's Republic of China
Suva

PHILIPPINES

Antonio basillio
Chief Water Resources Officer
National Water Resources Board
Philippines

Atty Jesus G. DE LEON
Water Resources Staff Officer
National Water Resources Board
NIA Bldg, EPSA, O.C.
Quezon City, Philippines

SEYCHELLES

Ronald CETOUPE
Engineer
PUC Water & Sewerage Division
BOX 34
Victoria, Mahe
Seychelles

SOLOMON ISLANDS

Pital C. IKIOA
Water Resources Officer
Geology Division, Ministry of Natural Resources
Box G 24
Honiara, Solomon Islands
Fax : (672) 21245

Annex 2 (b)

Donn Hicks TOLIA
Senior Water Resources Officer
Geology Division, Ministry of Natural Resources
Box G 24
Honiara, Solomon Islands

TOKELAU

George T. TINIELU
Assistant Director
Public Works Department
Office of Tokelau Affairs
Apia
WESTERN SAMOA

TONGA

Saimone P. HELU
Assistant Government Geologist
Ministry of Lands, Survey & Natural Resources
P.O. Box 5
Nuku'alofa, Tonga

Filipe F. KOLOI
Manager/Engineer
Tonga Water Board
P.O. Box 92
Nuku'alofa
TONGA

TURKS & CAICOS

Lea L.E. ASTWOOD
Government Water Superintendent
Turks & Caicos Water Department
Grand Turk, Turks & Caicos Is.

TUVALU

Colin REYNOLDS
UNV Water and Sewerage Engineer
Public Works Department
Vaiaku, Funafuti
Tuvalu

Vete SAKAIO
Civil Engineer
Public Works Department
Vaiaku
Funafuti, Tuvalu

UNITED KINGDOM

Ian GALE
Hydrogeologist
British Geological Survey
Wallingford
Oxon OX10 8 BB
UK

UNITED STATES OF AMERICA

Dan CAMPBELL
United States Agency for International
Development (USAID)
1611 N. Kent St, Room 1001
Arlington, VA 22209
Washington DC, USA

Rick KNAUTH
Public Health Engineer
Peace Corps
P.O. Box 1094
Suva, Fiji

Mariangela PLEDL
Rural Development Adviser
USAID
P.O. Box 218
Suva, Fiji
Fax : 300075

Jeff ROBERTSON
Associate Director
Peace Corps Fiji/Tuvalu
Box 1094
Suva, Fiji

Eric WITT
USAID
P.O. Box 218
Suva, Fiji

VANUATU

Mr. Greg BARROWCLIFF
Rural Water Engineer
Rural Water Supply
Private Mail Bag No. 1
Port Vila, Vanuatu
Fax : 3948

Annex 2 (b)

C.S. CHENEY
Actg. Director/Hydrogeologist
Geology, Miners & Rural Water Supply
Private Bag 1
Port Vila
Vanuatu

Jules S. TEMAKON
Applied Geologist
Department of Geology, Mines &
Rural Water Supply
Port Vila
Vanuatu

WESTERN SAMOA

E. Gordon FOX
Chief Water Engineer
Public Works Department
P.O. Box 1876
Apia, W. SAMOA

A.K. TITIMAEA
Superintendent
Apia Observatory
Box 3020 -
Apia, W. SAMOA

Isikuki PUNIVALU
Deputy Director
Public Works Department
Apia, W. SAMOA
Fax : (685) 20054

INTERNATIONAL ORGANISATIONS

INTERNATIONAL LABOUR ORGANISATION

Mary JOHNSON
Director at
ILO South Pacific
P O Box 14500
Suva, Fiji

UNITED NATIONS DEVELOPMENT PROGRAMME

Mr. Nigel RINGROSE
Resident Representative
UNDP
Private Mail Bag
Suva, Fiji

Ms. Phyllis FONG
Programme Officer
UNDP
Private Mail Bag
Suva, Fiji

Ms. Christine WONG
Programme Support Assistant
UNDP
Private Mail Bag
Suva, Fiji

UN DEPARTMENT OF TECHNICAL CO-OPERATION FOR DEVELOPMENT

Marcia BREWSTER
Economic Affairs Officer
Water Resources Branch
UNDTCD
New York, NY 10017

Uri GOLANI
Technical Adviser in Ground Water
Water Resources Branch
UNDTCD
New York, NY 10017

PROJECT RAS/87/009 - SUVA

Peter HADWEN
Project Manager
UN Water Project
Box 13719
Suva, Fiji

Annex 2 (b)

Barnabas MOSLEY
Senior Engineer
UN Water Project
Box 13719
Suva, Fiji

David PARISH
Training Consultant
UN Water Project
Box 13719
Suva, Fiji

Frans VAN PUTTEN
Associate Expert Hydrogeologist
UN Water Project
Box 13719
Suva, Fiji

RAS/B7/009 - FIELD STAFF

Chander BADLOE
Associate Expert
Public Works Department
Port Vila, Vanuatu

Frederick de BRUIJN
Assex Water & Sewerage Engineer
Water Unit
Box G8
Honiara, Solomon Islands
Fax : 23997

Tjeerd DIJKSTRA
UN Hydrologist
Department of Geology, Mines &
Rural Water Supply
Private Mail Bag
Port Vila, Vanuatu
Fax : 3142

Simon DE HAAN
Senior Engineer
Water Unit
Box G8
Honiara, Solomon Islands
Fax : 23997

Vincent HALLET
Associate Expert Hydrogeologist
Ministry of Natural Resources
Box G24
Honiara, Solomon Islands

Deva HAPUGODA
Engineer
Public Works Division
Box 498
Tarawa, Kiribati
Fax : 26172

Dirk LIBBRECHT
Associate Expert Hydrogeologist
Mineral Resources Department
Suva, Fiji

K. VAN DER MADE
Associate Expert, Hydrogeologist/Geophysicist
UNDP
Port Moresby
Box 1041
PNG

Cornelius VERRA
Assex Water and Sewerage Engineer
Water Unit
MTWU
Box 68
Honiara, Solomon Islands

CONSULTANTS

O.K. BURROS
Manager, Water Resources Division
CH2M Hill International
Box 1647
Gainesville, Florida
USA
Fax : 904-331-2442

Tony FALKLAND
Principal Engineer, Hydrology &
Water Resources
ACT Electricity and Water
GPO Box 366, Canberra
ACT 2605, Australia
Fax : (062) 819585

Yu-Si FOK
Professor
Department of Civil Engineer
University of Hawaii
3185 Oahu Avenue
Honolulu, Hawaii
USA
Fax : 808-948-5014

Annex 2 (b)

Jasminko KARANJAC
UNDTCD Consultant
J. Gagarina 185
11070 Belgrade
YUGOSLAVIA

E. Norman THOMAS
UNDTCD Consultant
P O HM 966
Hamilton HMDX
Bermuda
Fax : 809-293-2469

REGIONAL AND INTERNATIONAL INSTITUTIONS

COMMONWEALTH SCIENCE COUNCIL

W.R. DALE
Director
Asian Pacific Consultants
P.O. Box 31, Paekakariki
Wellington
New Zealand
Fax 04 587 3010

Siyon MALOMO
Chief Project Officer
Commonwealth Science Council
Marlborough House
Pall Mall
London, UK
Fax : 41-839-3411

FORUM SECRETARIAT

Marieta TUKUAFU
Development Resources Officer
Forum Secretariat
Ratu Sukuna Rd.
Suva, Fiji

UNIVERSITY OF THE SOUTH PACIFIC

Bob LLOYD
Director
Institute of Natural Resources
University of the South Pacific
Box 1168
Suva, Fiji

John MORRISON
Professor of Chemistry
University of the South Pacific
Box 1168
Suva, Fiji

Kandiah SUNDARALINGAM
Reader in Physics
University of the South Pacific
Box 1168
Suva, Fiji

COMMERCIAL REPRESENTATIVES AND OBSERVERS

AUSTRALIA

A.G. BRAY
Manager
George Moss Ltd.
P.O. Box 136
Mt. Hawthorn WA
Australia
(61 9 4463404)

Harvey CROWE
Project Manager (Water Resources)
Overseas Projects Corporation of Victoria
11th Floor, 176 Wellington Parade
Melbourne, Victoria
Australia
(61 3 4198597)

Peter MARRIOTT
Export Manager
Mono Pumps (Australia) Pty Ltd
338 Lower Dandenong Road
Mordialloc
Melbourne, Australia

John W. PRIDMORE
Agricultural Produc Manager
Mono Pumps (Aust) Pty Ltd
338 LWR Dandenong Road
Mordialloc, Melbourne
Australia

Ian SHARP
Pak-Poy and Kneebone
3 Eden St.
Crowsnest NSW 2065
Australia
Fax: (02) 922 5684

FEDERATED STATES OF MICRONESIA

Robert SPEGAL
National Health Planner
FSM National Government
P.O. Box 203
Pohnpei
FSM
Fax : 691-320-5263

FIJI

Terence J. CHAN
Engineer
Harrison Grierson Consultants Ltd
Box 422
Suva, Fiji
Fax : 301981

Daniel van CLAASEN
Technical Adviser
ESCAP/UNDP Remote Sensing Project
C/- UNDP
Private Mail Bag
Suva, Fiji
Fax : 300373

Kewwa J. t.OW
Regional Planner/Surveyor
Harrison and Grierson Consultants
G P O Box 422
Suva, Fiji
Fax : 301981

Aribilola Samuel OMOLAYO
Lecturer of Physics
University of the South Pacific
Box 1168
Suva, Fiji

Ame RACULE
Civil Engineer
Housing Authority
Valelevu, Nasinu
Suva, Fiji

Doug THOMSON
Pacific Islands Sales Manager
Wormald International Fiji
(Southern Cross Corp of Aust)
G.P.O. Box 769
Lautoka, Fiji
Fax : 302426

JAPAN

Seiji FUCHIGAMI
General Manager South Pacific Region
Fujita Corporation International Division
4-8-6 Sendagaya
Shibuyaku, Tokyo, Japan
Fax (03) 402 9815

WATANABE
Manager
Chizaki Kogyo Co. Ltd
2-23-1, Nishi Shinbashi
Minato-ku, Tokyo, Japan
Fax : (03) 434 6393

NEW ZEALAND

Alan PATTLE
Director
Pattle Delamore Partners Ltd
P.O. Box 9528
Auckland
New Zealand
Fax : 09 523 3931

UNITED STATES OF AMERICA

Sheila BUROS
Consultant
Buros & Associates
515 SW 40th Terr
Gainesville
Florida
USA

WHO/UNDP DECADE CONSULTATIVE MEETING
OF PACIFIC ISLAND COUNTRIES FOR THE
PROMOTION OF WATER SUPPLY AND SANITATION

Suva, Fiji, 26 June - 1 July 1989

Summary of Project Profiles Submitted

<u>Country</u>	<u>Title and No. of Project</u>	<u>Executive Agency</u>	<u>Cost in US\$</u>
1) Fiji	1. Village & Settlement Water Supplies	P.W.D.	\$ 300,000/annum for 3 years
	2. Assessment & Develop- ment of Water Resources on Small Islands	Mineral Resources	\$ 1,300,000
	3. Extension of Water Mains into Rural Areas	P.W.D.	\$ 250,000/annum 4 years
	4. Matawalu/Drauvini Water Supply	P.W.D.	\$ 250,000
	5. Vatia Rural Water Supply	P.W.D.	\$ 300,000
	6. Fluoridation at Public Supplies	P.W.D.	\$ 350,000
	7. Coral Coast Regional Water Supply	P.W.D.	\$ 1,400,000
	8. Levuka Water Supply	P.W.D.	\$ 1,400,000
	9. Navua/Deuba Regional Water Supply	P.W.D.	\$ 2,000,000
	10. Rakiraki (Vaileka) Water Supply	P.W.D.	\$ 60,000
	11. Sanitary Handfill	Department of Health	\$ 424,000
	12. Rural Sanitation	Department of Health	\$ 650,000
	13. Suva Sewerage - Sub Trunk Network Study	P.W.D.	\$ 300,000
	14. Suva Sewerage - Reticulation	P.W.D.	\$25,000,000
	15. Suva Regional Treatment Plant Review	P.W.D.	\$ 150,000
	16. Ba Sewerage Scheme	P.W.D.	\$ 1,700,000
	17. Septage Handling Facilities	P.W.D.	\$ 400,000

Annex 3

<u>Country</u>	<u>Title and No. of Project</u>	<u>Executive Agency</u>	<u>Cost in US\$</u>
Fiji	1. Rural Sanitation	Ministry of Health	\$ 300,000
	2. Rural Water Supply	Ministry of Health	\$ 680,000
	3. School Sanitation	Ministry of Health	\$ 500,000
	4. Sanitary Land Fill	Suva City Council Ministry of Health	\$ 3,000,000
	5. 4 Public Toilets at Markets - Rural Area	Ministry of Health	\$ 40,000
2) Kiribati	1. Latrine Construction in Outer Islands	Ministry of Health & Family Planning	\$ 210,000
	2. Water Supplies in Outer Island Villages	" " "	\$ 47,650
	3. Development of Appropriate Sanitation Technologies for low cost Housing in Urban South Tarawa	Ministry of Works and Energy	\$ 14,000
	4. Buota Water Supply (Marakei Island)	" " "	\$ 10,000
	6. Supply of Groundwater Assessment Survey Equipment	" " "	\$ 5,600
3) Federated States of Micronesia	1. Development of a Master Plan for Solid Waste Management Systems in FSM	FSM Department of Resources Environmental Protection Agency	\$ 350,000
	2. FSM Rural Water Supply	FSM office of Planning & Statistics Construction Division	\$ 5,000,000 can be phased
	3. FSM National Workshop of Safe Drinking Water	FSM Dept. of Human Resources - Environmental Protection Agency	\$ 19,000
	Purchase of Underground Pipe Inspection Equipment	FSM Office of Planning & Statistics Construction Division	\$ 50,000
	4. Environmental Impact Assessment Training Cumulative effects of small projects	FSM Dept. of Health Services - Environmental Protection Agency	\$ 40,000

Annex 3

<u>Country</u>	<u>Title and No. of Project</u>	<u>Executive Agency</u>	<u>Cost in US\$</u>
FSM - Cont. (Yap)	1. Expansion of the Colonia, Yap Water Treatment Plant	Yap State Department of Public Utilities and Contracts	\$ 250,000
(Truk)	1. Truk On-Site Sewer Systems	Truk State Office of Planning and Statistics	\$ 2,030,000 (can be phased)
	2. Truk Rural Water Improvement	Truk State Dept. of Health Services - Rural Sanitation Programme	\$ 645,000 275,000 - Aid 365,000 - Local
	3. Truk Sewer Treatment Plant Improvements	Truk State Office of Planning and Statistics	\$ 105,000
	4. New Water Sources Development in Truk	Truk State Department of Public Works	\$ 300,000
	5. Truk State Atoll Island Groundwater Pumping System	Truk State Dept. of Health Services - Rural Sanitation Programme	\$ 55,000
(Pohnpei)	1. Kolonia Sewer System Repair and Up-Grade	Pohnpei State Dept. of Public Works	\$ 1,410,000
	2. Kolonia Town Garbage Collection and Disposal Project	Pohnpei State Dept. of Public Works - Kolonia Town Government	\$ 152,000
	3. Pohnpei State Rural Water Supply	Pohnpei State Dept. of Public Works	\$ 2,000,000 (can be phased)
	4. Pohnpei State Sewer Outfall Extension	FSM office of Planning & Statistics	\$ 6,000,000
	5. Pohnpei State Development and Implementation of Solid Waste Management System	Pohnpei State Dept. of Public Works	\$ 100,000 plus implementation costs
	6. Seidonokawa Stream Sanitary Improvement Project	Pohnpei State Dept. of Public Works - Kolonia Town Govt.	\$ 128,000

Annex 3

<u>Country</u>	<u>Title and No. of Project</u>	<u>Executive Agency</u>	<u>Cost in US\$</u>
4) Republic of the Marshall Islands	1. Solid Waste Management System, Majuro	Majuro Local Government	\$ 200,000
	2. Rural Water Supplies Marshall Islands	RMIEPA	\$1,124,700
	3. Rural Sanitation, Marshall Islands	Health Department Sanitation	\$ 100,000
5) Papua New Guinea	1. Provincial Rural Water Supply and Sanitation Surveys	Department of Health	\$ 76,051
	2. Training in Community Involvement and Health Promotion	Department of Health	\$ 84,456
	4. Plantation Managers Course	Department of Health	\$ 36,267
	5. Sanitary Land Filling for Major Urban Centres	Department of Health	\$8,707,052
	6. Design and Upgrade Landfill Sites in Port Moresby	Department of Health	\$1,092,000
	7. Excreta and Refuse Disposal in Small Urban Centres	Department of Health	\$1,577,500
6) Solomon Islands	1. Provincial Urban Centres Water Supplies Improve- ment and Development	Ministry of Transport Works and Utilities	\$ 885,400
	2. Honiara Urban Water Supply Development	" " "	\$ 383,000
	3. Honiara Urban Sewerage Development	" " "	\$ 823,700
	4. Provincial Urban Centres Sewerage & Sanitation Improvements & Developments	" " "	\$ 354,500
	5. Rural Water Supply Maintenance Programme	Ministry of Health & Medical Services	\$ 610,000
	6. Rural Water Supply Project	" " "	\$2,800,000
	7. Rural Sanitation project	" " "	\$1,000,000

<u>Country</u>	<u>Title and No. of Project</u>	<u>Executive Agency</u>	<u>Cost in US\$</u>	
7) Tonga (Rural)	1. Rural Sanitation Project	Ministry of Health	\$ 170,000	
	2. Training of Health Inspector	Ministry of Health	\$ 51,000	
	3. Rural Water Supply Monitoring	Ministry of Health	\$ 35,000	
	4. Chlorination of Rural Water Supply	Ministry of Health	\$ -	
	5. Solid Waste Management Nuku'alofa	Ministry of Health	\$ 64,000	
	(Urban)	1. Enlargement of Mainline Nuku'alofa Water Supply	Tonga Water Board	\$ 100,000
		2. Electronic Water Leakage Detection	Tonga Water Board	\$ 70,000
		3. Equipment Standby Generator	Tonga Water Board	\$ 140,000
		4. Study of Neiafu Water Scheme	Tonga Water Board	\$ 100,000
		5. Study of Eua Water Scheme	Tonga Water Board	\$ 120,000
		6. Laboratory Building	Tonga Water Board	\$ 120,000
8) Vanuatu	1. Rural Water Supply Projects II (2 projects)	Rural Water Supply	\$ 124,000	
	2. Basic Sanitary Measures	Dept. of Health	\$ 750,000	
	3. Rural Water Supply Projects I (10 Projects)	Rural Water Supply	\$1,200,000	
	4. Rural Water Supply & Health Awareness Training Scheme	Rural Water Supply	\$ 21,000	
	5. Mele Solid Waste Disposal	Efate Local Govt. Council	\$ 45,000	
	6. Rural Water Supply Training Project	Rural Water Supply	\$ 17,000	

Annex 3

<u>Country</u>	<u>Title and No. of Project</u>	<u>Executive Agency</u>	<u>Cost in US\$</u>
9) Western Samoa			
	1. Fellowship for Engineering Postgraduate Study	Public Works Department	\$ 48,000
	2. Water Quality Monitoring	Public Works Department	\$ 4,500 in Rural Areas
	3. Health Centre Water Supplies	Department of Health	\$ 66,000
	4. Rural Sanitation	Department of Health	\$ 72,000
	5. Rural Water Supply Rehabilitation - Sector Study	Public Works Department	\$ 250,000
	6. Rural Water Supply Rehabilitation Materials	Public Works Department	\$ 1,300,000
	7. Rural Water Supply Rehabilitation Main Consultancy and Contracting Services	" " "	\$10,000,000
	8. Rural Water Supply Rehabilitation - Barehole Rehabilitation	" " "	\$ 230,000
	9. Apia Sewerage Project Oceanographic and Environmental Studies	" " "	\$ 373,000
	10. Apia Sewerage Project Stage 1. Design and Construction	" " "	\$ 9,000

List of Abbreviations

ADB	Asian Development Bank
CESI	Country External Support Information
CSC	Commonwealth Science Council
Decade	International Drinking Water Supply and Sanitation Decade, 1981 - 1990
DCM	Decade Consultative Meeting
ESA	External Support Agencies
FSM	Federated States of Micronesia
GPH	Grand Pacific Hotel
HRD	Human Resources Development
O and M	Operation and Maintenance
RTM	Round Table Meeting
UNDTCD	United Nations Department of Technical Cooperation for Development
WHO	World Health Organization
WPRO	WHO Regional Office for the Western Pacific