

FY 1971

# ANNUAL REPORT



IA②  
SK0070  
=企業局=

CONSTRUCTION SITE OF FUKUJI DAM  
JUNE 1971



FY 1971 in Summary

<u>Item</u>	<u>FY 1971</u>	<u>FY 1970</u>	<u>Increase or (Decrease) %</u>
<b>1. Operation</b>			
What we received:	\$ 2,520,558	\$ 2,047,751	23.1
Revenue from the sales of water	2,520,558	2,047,751	23.1
How it was used:	2,679,122	2,170,102	23.5
Purchase of water	1,468,581	1,086,626	35.2
Operation and maintenance	517,849	431,510	20.0
Provision for depreciation	692,692	651,966	6.2
Operating income (or loss)	( 158,564)	( 122,351)	29.6
<b>2. Capital investment program</b>	\$ 1,472,450	\$ 10,106,890	(85.4)
Contribution in aid of construction programmed from U.S. Government	512,450	8,851,890	(94.2)
Capital investment program from RDWC retained earnings	960,000	1,255,000	(23.5)
<b>3. Other statistics</b>			
Water sales (in 1,000 gallons)			
Treated water	11,062,860	8,914,142	24.1
Raw water	1,112,559	1,137,695	( 2.2)
Number of employees	124	130	( 4.6)

FY 1971  
**Annual Report**

**Ryukyu Domestic Water Corporation**

No. 284 Aza-Yamazato, Koza City, Okinawa

Telephone: (077)-0111

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### Letter from the President

I am pleased to present the report on RDWC's activities in FY 1971. FY 1971 was a significant year for RDWC. A most noteworthy occasion was the completion of a modern and beautiful three-story office building. The newly completed office building with a total floor space of 23,135 square feet is located in Koza City near the center of major water facilities and will enable RDWC to provide better services to the people of Okinawa and to insure more efficient operation of water works.

Another noteworthy accomplishment was the completion of the Phase I work of the Fukuji Dam and Reservoir. When completed in 1972, this Dam and Reservoir will impound almost 10 billion gallons of water which is about 10 times the storage capacity of all presently existing RDWC reservoirs on Okinawa.

During FY 1971 RDWC also completed the 2 MG Yokatsu Tank, the 10 MG Uema No. 2 Tank, the Zukeyama Reservoir to Jaku Booster Pump Station Pipeline, and the 1.5 MG Tengan Clear Well.

Water sales to the civilian communities during FY 1971 showed an increase of 24.1 per cent over the previous year. With the ever-growing industry, the rising standard of living, and concentration of population into urban areas, the demand for domestic and industrial water on Okinawa has greatly increased for several years. To meet such an ever-increasing demand for water, RDWC strives to construct various water facilities and to carry out water resources development projects.

I express my sincere appreciation to the Civil Administrator, the RDWC Board of Directors, and others concerned for the cooperation and assistance ever provided to the RDWC and to its various projects. I ask your continued support and cooperation in the important days to come.

HIROSADA OHAMA  
President

### RDWC Headquarters



The office building with a total floor space of 23,135 square feet was completed in July 1970.



## Civil Administrator and Board of Directors

### Civil Administrator



Mr. Robert A. Fearey

### Board of Directors



H. W. Lombard  
(Chairman)



E. Miyazato  
(Member)



F. S. Tarbell  
(Member)



T. Teruya  
(Member)



H. Ohama  
(Member)

1. Colonel Harry W. Lombard, Chairman  
Director, Public Works Dept.  
U. S. Civil Administration of the Ryukyu Islands
2. Eiichi Miyazato, Member  
Director, Construction Dept., Government of the Ryukyu Islands
3. Colonel Frank S. Tarbell, Member  
Director, Facilities Engineering, U. S. Army, Ryukyu Islands
4. Teruo Teruya, Member  
President, Ryukyu Development Loan Corporation
5. Hirosada Ohama, Member  
President, Ryukyu Domestic Water Corporation

## RYUKYU DOMESTIC WATER CORPORATION

### Establishment and Objectives

The Ryukyu Domestic Water Corporation (RDWC) was established on 4 September 1958 by High Commissioner Ordinance Number 8, as an instrumentality of the United States Civil Administration of the Ryukyu Islands (USCAR), for the purpose of providing safe and adequate water for the use and benefit of the Ryukyuan people and for the industrial development of the Ryukyu Islands.

### Scope of Business

To accomplish its objectives, the Corporation is empowered to:

(1) Produce, purchase, distribute and sell water to public and private consumers at rates approved by the Civil Administrator of the Ryukyu Islands.

(2) Acquire, maintain and operate domestic water producing properties and facilities in the Ryukyus for the collection, treatment, transmission, distribution and sale of water.

(3) Acquire and/or construct dams, pump stations, treatment plants, transmission lines, and incidental works, including storage facilities.

### Management and Operations

The management of the Corporation is vested in a Board of Directors, which is composed of five members appointed by the Civil Administrator.

The business affairs of the Corporation are carried out by the 124 employees including 4 officers.

The Integrated Island Water System (IIWS), the main source of potable water for the people of Okinawa, consists of facilities owned by the United States Army, Ryukyu Islands (USARYIS) and RDWC.

Under an operational agreement between USARYIS and RDWC, USARYIS operates and maintains the IIWS and furnishes RDWC the amount of water needed to satisfy the requirements of local municipalities and other consumers.

### Organization and Employees

The organization structure of the RDWC includes three departments and seven divisions. The total number of employees as of 30 June 1971 is 124. Of 124, 62 RDWC employees including three Americans have been placed under the direct supervision of the Island Water Division, Facilities Engineer, USARYIS for support of IIWS operation, based on an agreement between RDWC and USARYIS. The aggregated wages for these employees are credited to the cost of water furnished RDWC.

These employees are Deputy Chief of the IIWS, a water works engineer, chemists, pump station operators, instrument repairers, and dam tenders.



## WATER DEMAND



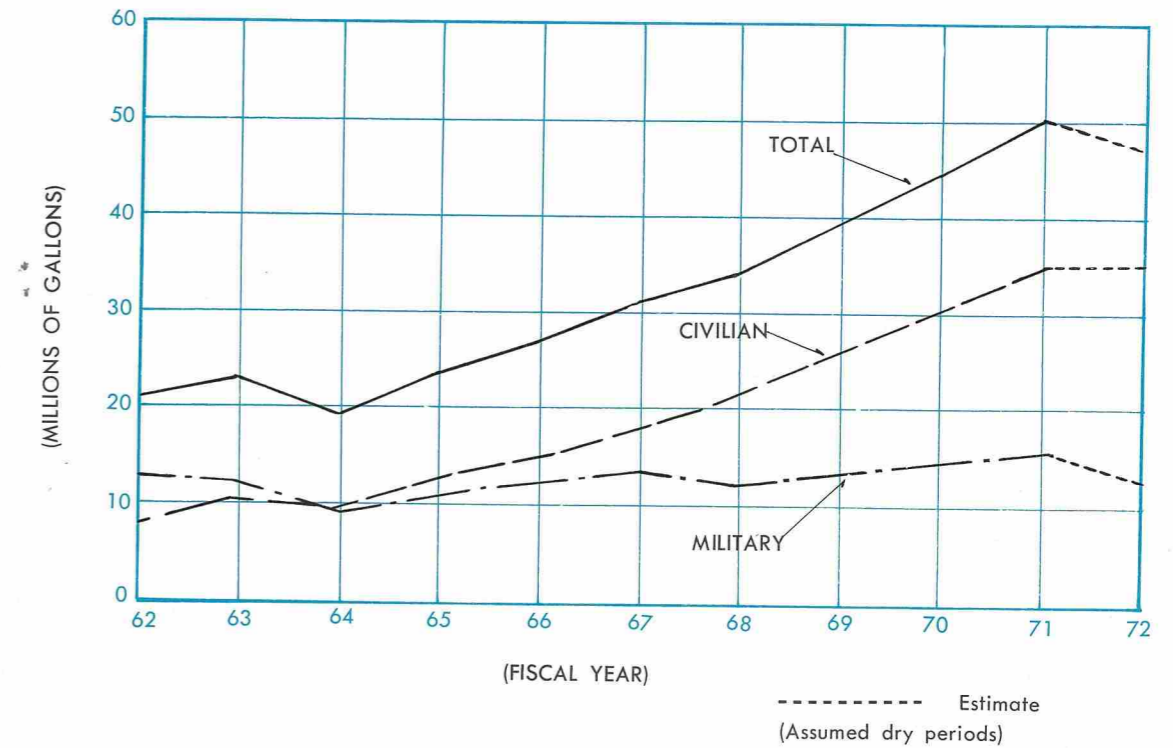
Growing Industry

In parallel with the ever-growing industry and economy, the rising standard of living, concentration of population into urban areas, and modernization of agriculture, the demand for domestic, industrial, and agricultural water on Okinawa has greatly increased year after year.

During Fiscal Year 1971, the average water demand was 50.3 million gallons per day, an increase of 12.5 per cent over the previous year. The peak daily water demand recorded was 60.0 million gallons. The average water demand by civilian communities increased 16.3 per cent, while water consumed by the U. S. Military increased 4.8 per cent.

The graph on the next page depicts average water demand per day during the past 10 years:

## IIWS AVERAGE WATER DEMAND PER DAY



## WATER PRODUCTION

In FY 1971, the Integrated Island Water System produced 18.4 billion gallons of water (17.2 billion gallons of treated water and 1.2 billion gallons of raw water) and furnished RDWC 12.2 billion gallons of water (11.1 billion gallons of treated water and 1.1 billion gallons of raw water).

As of 30 June 1971, the IIWS including the Tomari Treatment Plant of Naha City produced a daily average of 50.3 million gallons of potable water. About two-thirds (2/3) of the production was supplied to 19 municipalities and the Southern District Eastern Sector Water Works Association. The United States Military Installations on Okinawa consumed about one-third (1/3) of the water produced by IIWS.



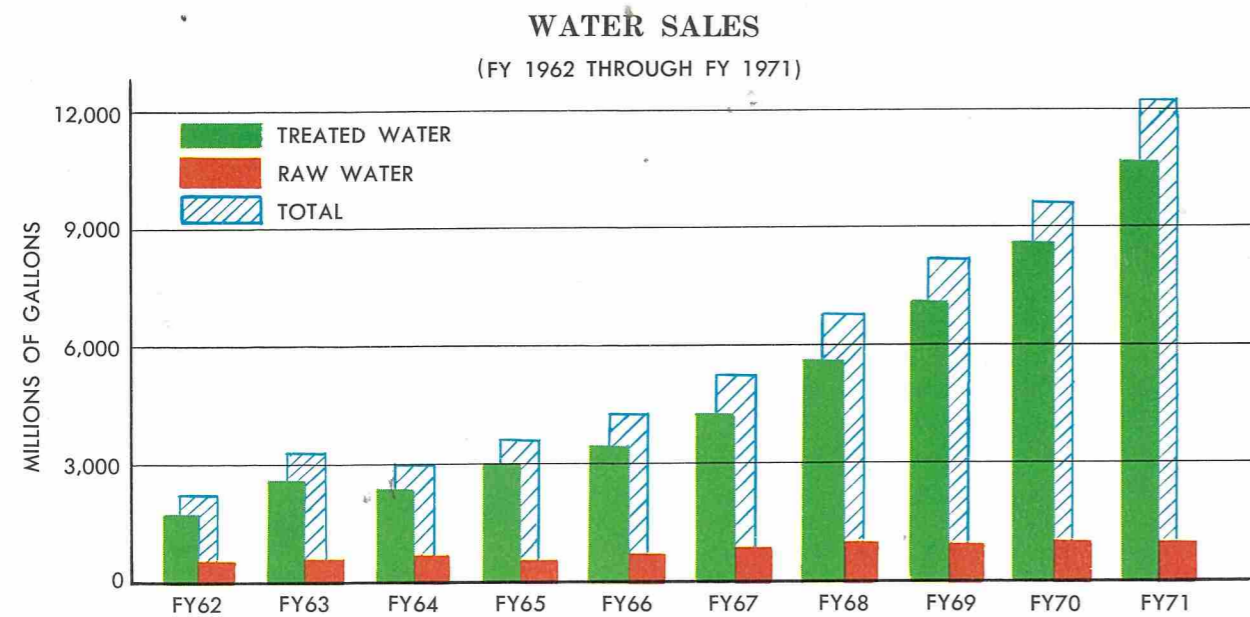
## WATER SALES



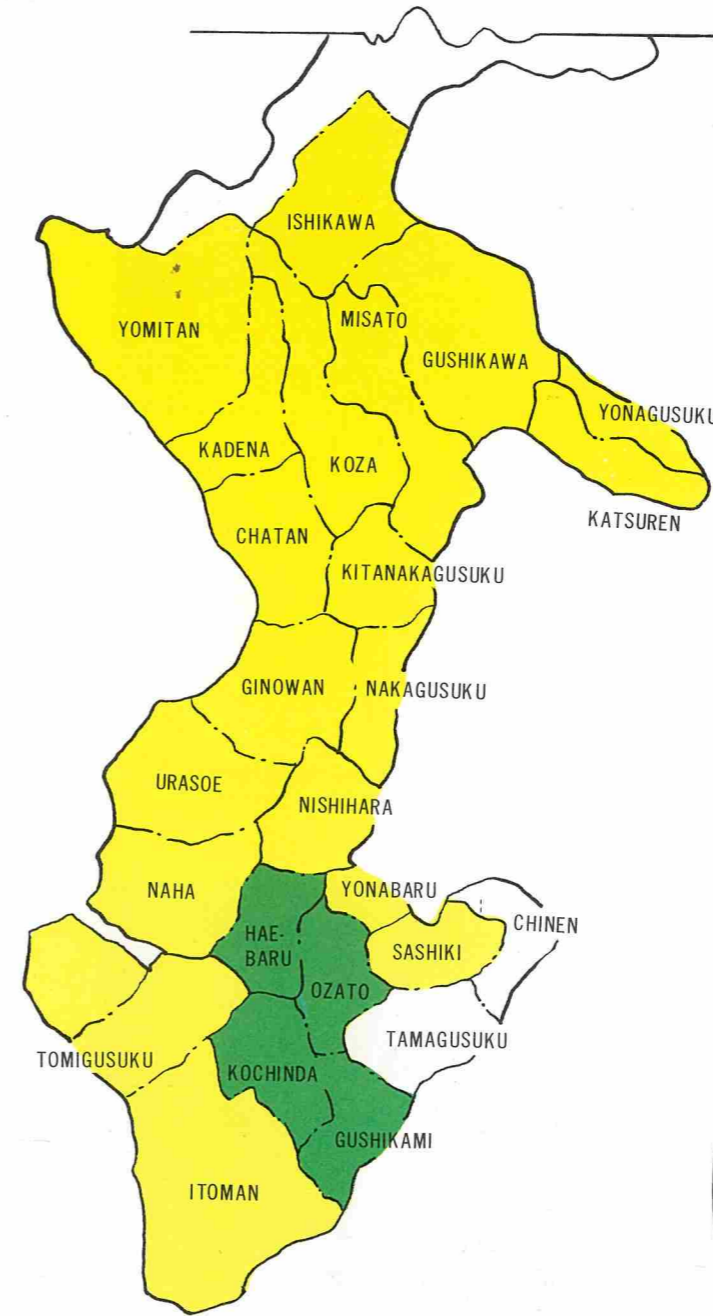
Developing urbanization

During FY 1971, RDWC sold 11.1 billion gallons of treated water to 19 municipalities and the Southern District Eastern Sector Water Works Association consisting of four municipalities, and 32 retail customers. Water Sales during FY 1971 showed an increase of 24.1 per cent over the previous year.

In addition, RDWC sold 1.1 billion gallons of raw water to Naha City and others. The next chart illustrates RDWC's water sales from FY 1962 through 1971. The area served by the Corporation and the breakdown of the water sales is shown on the next page.



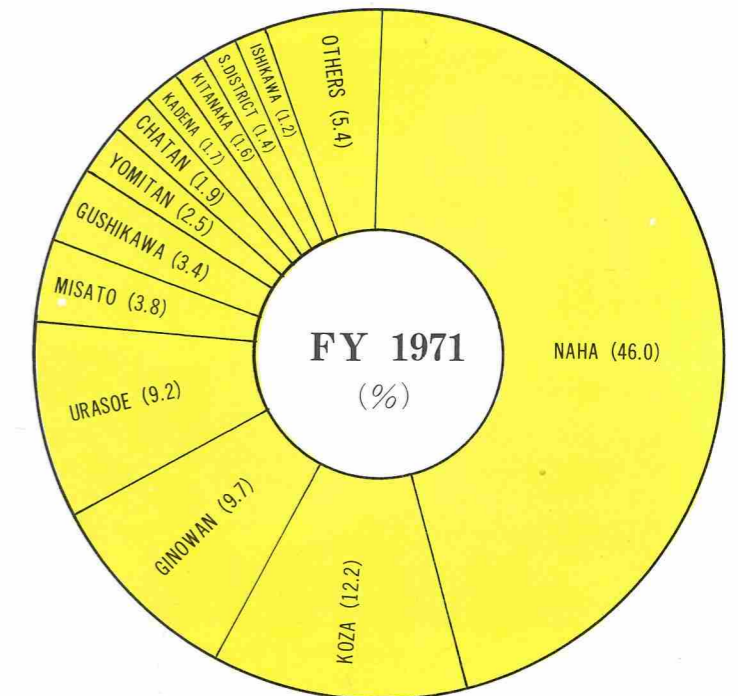
## MUNICIPALITIES SERVED BY RDWC



MUNICIPALITIES  
 SOUTHERN DISTRICT EASTERN SECTOR WATER WORKS ASSOCIATION

Treated Water	(1,000 gallons)	
	FY 1971	FY 1970
Naha	4,544,042	3,467,287
Koza	1,491,344	1,296,494
Ginowan	1,188,802	1,074,496
Urasoe	1,130,555	1,010,370
Misato	463,460	364,987
Gushikawa	417,817	331,622
Yomitan	300,467	254,378
Kadena	209,843	187,996
Chatan	227,241	204,613
Kitanakagusuku	192,799	177,350
Yonagusuku	60,333	41,938
Nishihara	59,569	30,410
Ishikawa	145,516	121,796
Tomigusuku	78,066	31,876
Nakagusuku	84,154	13,669
Yonabaru	89,856	56,642
Katsuren	7,154	1,231
Itoman	47,168	29,838
Sashiki	9,568	2,286
* Southern District		
District	168,942	96,224
Others	146,164	118,639
<b>Total</b>	<b>11,062,860</b>	<b>8,914,142</b>
<b>Raw Water</b>		
Naha	1,079,438	1,111,138
Ginowa	994	3,110
Others	32,127	23,447
<b>Total</b>	<b>1,112,559</b>	<b>1,137,695</b>

\*Consisting of Haebaru, Kochinda, Ozato and Gushikami.



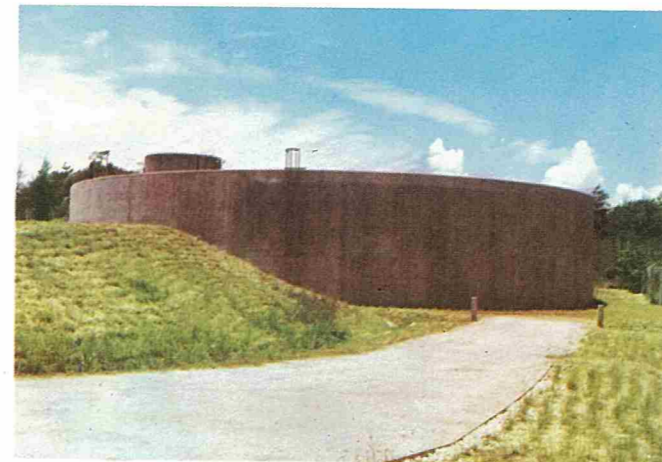


## FY 1971 - CONSTRUCTION

During fiscal year 1971, seven major construction projects were completed, and as of 30 June 1971 seven major projects are under construction.

### Completed Projects

<u>Facility</u>	<u>Completed Date</u>	<u>Cost</u>
1. RDWC Office Building	July 1970	\$589,249
2. 2 MG Yokatsu Tank	January 1971	180,640
3. 10 MG Uema Tank No. 2	March 1971	371,502
4. Zukeyama Reservoir to Jaku Booster Pump Station Pipeline	May 1971	80,438
5. 1.5 MG Tengan Clear Well	June 1971	148,833
6. Treated Water Distribution System at Tengan Village, Gushikawa City	June 1971	17,181
7. Treated Water Distribution System at Taba Village, Gushikawa City	June 1971	17,800



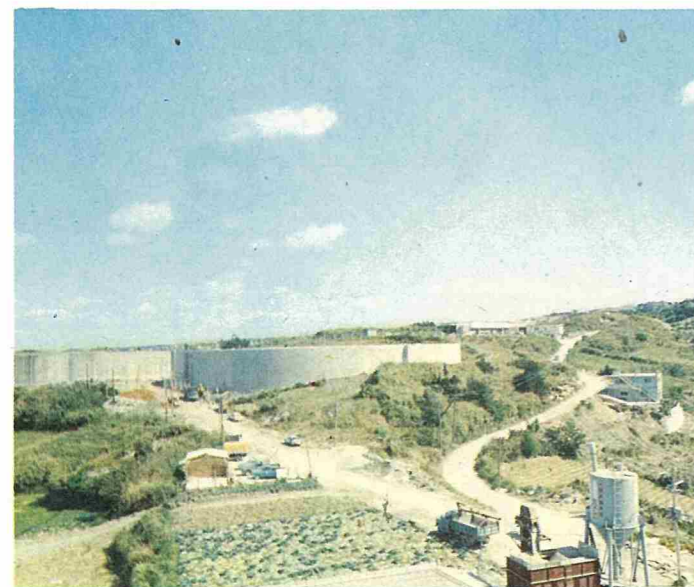
Tengan Clear Well



Ceremony Upon Completion of the Office Building

### Major Water Facilities Under Construction

1. Fukuji Dam and Reservoir (Phase II) (33%)
2. Well Development Stage IV (including development of ground water resources) (40%)
3. Okuma Booster Pump Station (15%)
4. Temporary Toguchi Booster Pump Station (99%)
5. Remote Control System for Well Pumps at Kadena, Kinser, and Tengan (84%)
6. 2 MG Tybase Clear Well (0%)
7. RDWC Logistical Facilities (Warehouse and Maintenance Shop Addition) (0%)



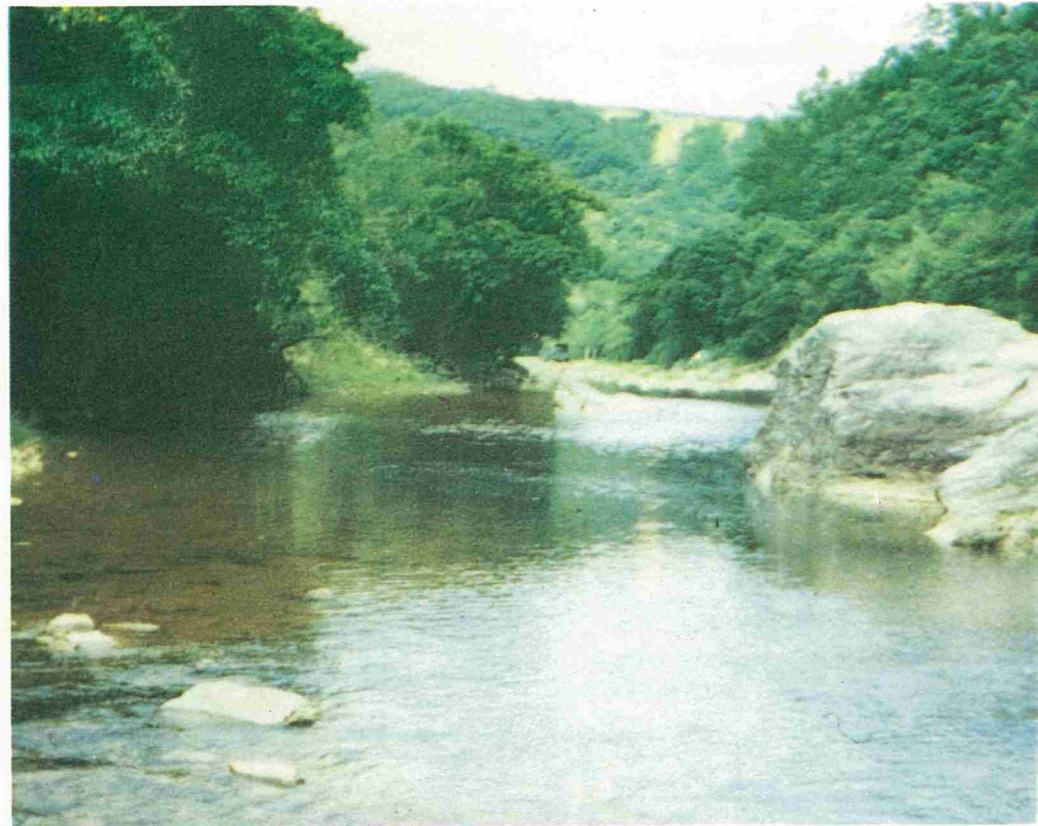
Uema No. 2 Storage Tank



Zukeyama - Jaku Pipeline



## FUTURE PLANS



Aha Gawa

Water demand has grown at predicted rates during FY 1971. The maximum daily water demand reached 60 million gallons as compared with 55 million gallons during Fiscal Year 1970. As it is predicted that water demand in Okinawa will continue to grow in the future, expansion of the water storage, treatment, and transmission facilities is required.

The RDWC has programmed construction projects needed to meet the increasing demand for water in the heavily populated southern and central Okinawa.

In Fiscal Year 1972, \$0.35 million from USCAR General Fund and \$0.60 million of RDWC Funds are programmed for the following major projects:

1. 2 MG Maeda Storage Tank, Construction
2. Toguchi Booster Pump Station, Construction
3. Ishikawa Treatment Plant Expansion, Design
4. Hwy 13 and 38 Pipeline and Pump Station, Design
5. 5 MG Kitanakagusuku Tank, Design
6. Pipeline from Ishikawa to Tengan and Zukeyama Reservoirs, Construction
7. Raw Water Pumping Station and Pipeline from Kawasaki to Henza Island, Construction

## RDWC WATER RATE

The RDWC purchases water from USARYIS at cost, and sells it to local municipalities and a small number of individual consumers at rates established to cover the RDWC costs of operation and to provide a reasonable amount for renewals, replacement, additions and improvements to the system.

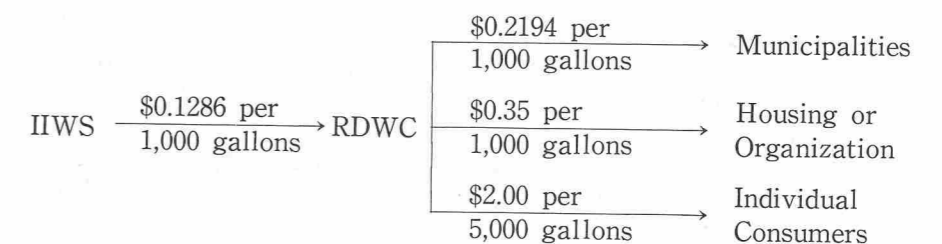
### A. Treated Water:

Purchase from IIWS	\$0.1286 per 1,000 gallons
Wholesale to municipalities	\$0.2194 per 1,000 gallons
Retail	
(a) Individual consumers	\$2.00 for 5,000 gallons (Minimum Charge)
Excess Charge	\$0.38 per 1,000 up to 100,000 gallons
	\$0.36 per 1,000 up to 500,000 gallons
	\$0.30 per 1,000 over 500,000 gallons
(b) Housing or Organization	\$0.35 per 1,000 gallons

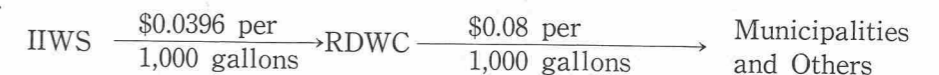
### B. Raw Water:

Purchase from IIWS	\$0.0396 per 1,000 gallons
Wholesale to municipalities and others	\$0.08 per 1,000 gallons

### Treated Water



### Raw Water



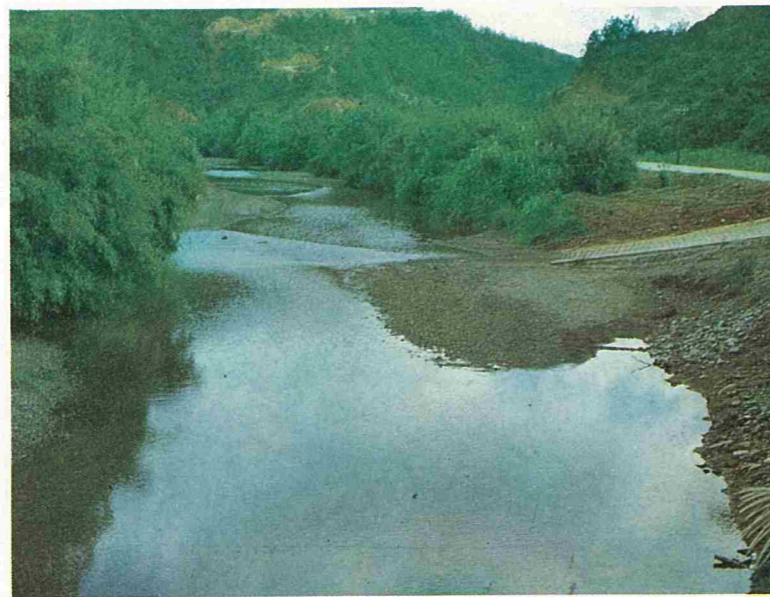


## Existing Source of Water

Water is obtained from local streams in the central and northern Okinawa and from wells located in the Kadena, Napunja and Tengan areas.

About 30 to 40 million gallons of water are available daily from nine main rivers in the central and northern Okinawa and about 20 to 25 million gallons of water are obtained daily from 47 wells in the Kadena, Napunja and Tengan areas.

Water from the 620 million gallon Zukeyama Reservoir and 330 million gallon Tengan Reservoir is used to supplement natural stream flows during periods of drought.



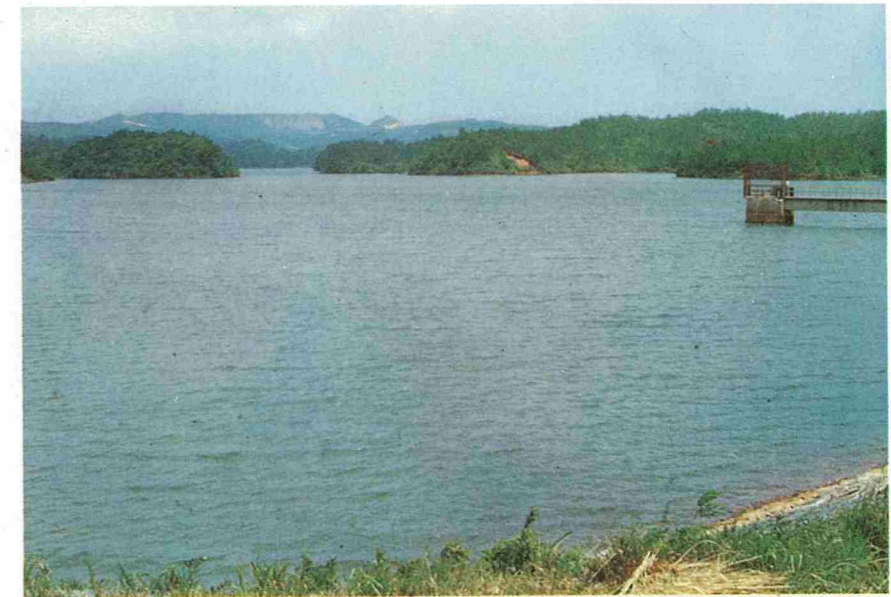
Taiho Gawa



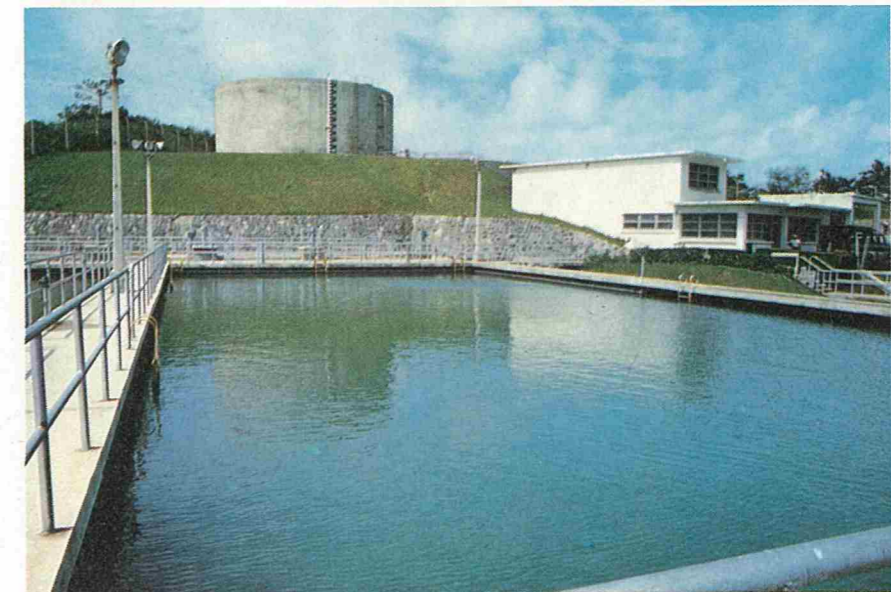
Deep Well

Surface water comes from nine main rivers such as the Bishi and Tengan rivers in central Okinawa and the Fukuji, Taiho, Henan, Genka, Okawa, Kanna, and Okukubi rivers in the northern Okinawa.

Ground water comes from 20 wells in the Kadena area, 8 wells in the Napunja area, and 19 wells in the Tengan area. The normal capability of these combined wells is 25 million gallons per day.



Zukeyama Dam & Reservoir



Tengan Treatment Plant



## STREAM GAGING AND HYDROLOGIC NETWORK

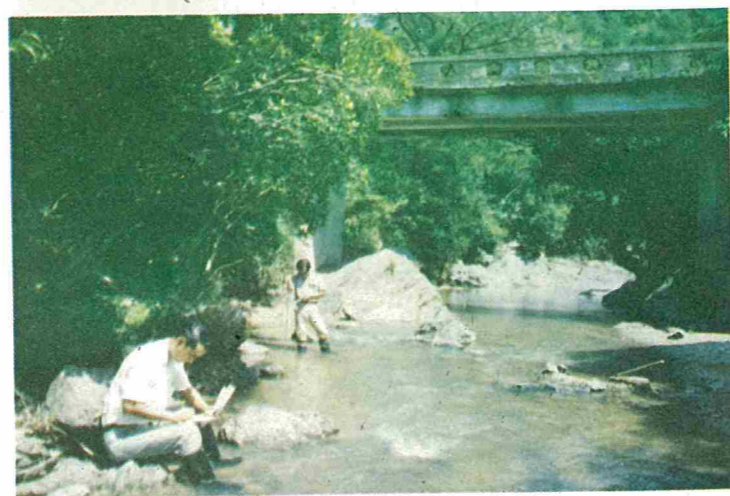
Since FY 1964 the Corporation has been conducting a stream-gaging program (annual expense of about \$70,000) with the technical assistance of the U. S. Geological Survey (U.S.G.S.) for the purpose of collecting basic water data. Such data are essential for economical water development planning and design as well as for operations. The chemical and physical water data collected such as water quality, streamflow rate, water level, sediment volume and precipitation have been used by many agencies concerned.

The stream-gaging network consists of 20 continuous recording stations on main streams. There are also 17 partial-record stations. The continuous recording stations are equipped to obtain water elevations on a continuous basis so that necessary information can be obtained for any desired period. The partial-record stations are located so that they will supplement the continuous stations.

The locations of these stations are shown on the next page:



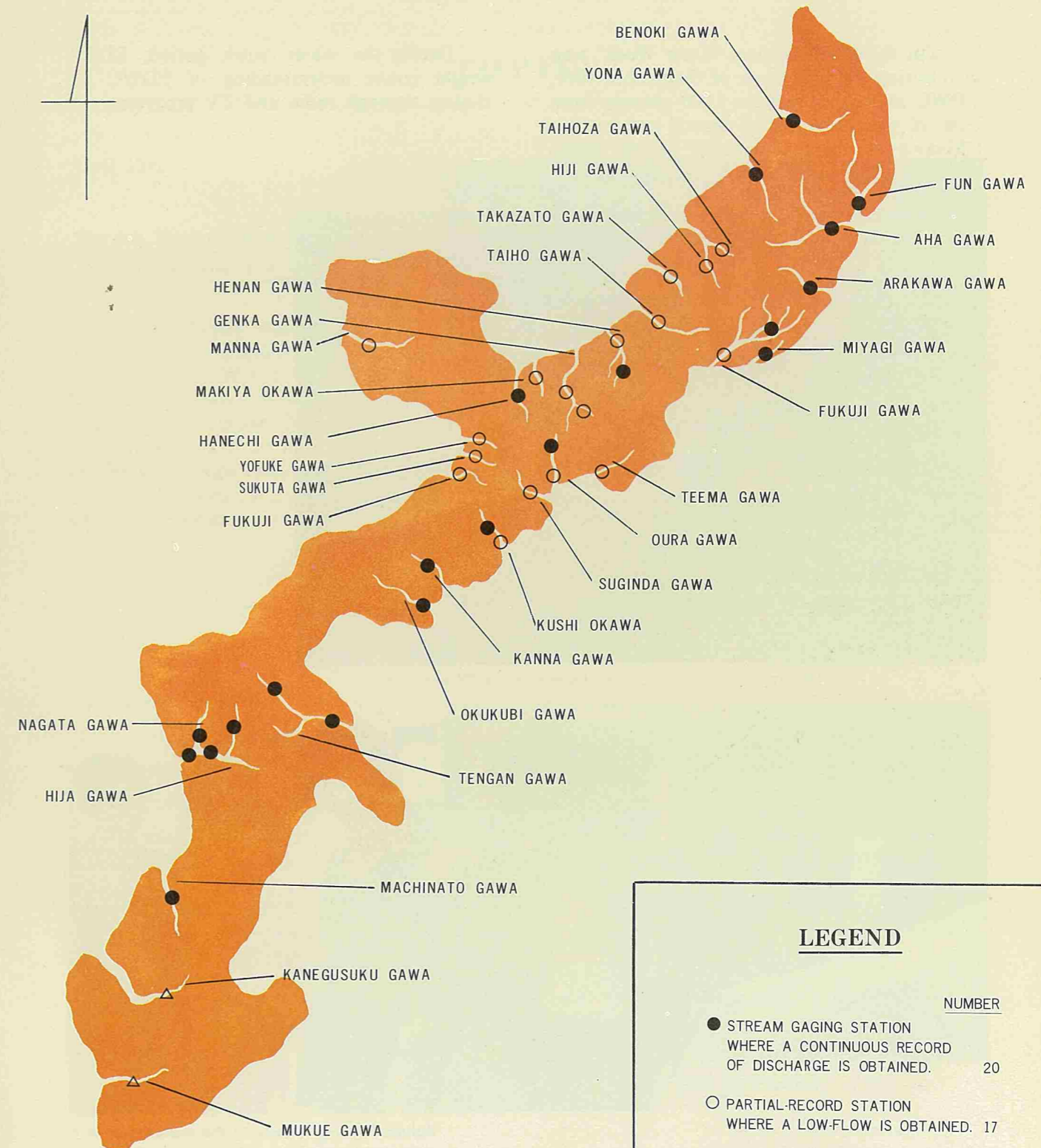
Stream gaging station  
(Aha-gawa at Kunigami Son)



Discharge measurements by wading  
(Arakawa-gawa at Higashi Son)

## HYDROLOGIC NETWORK OF RDWC

AS OF JUNE 1971

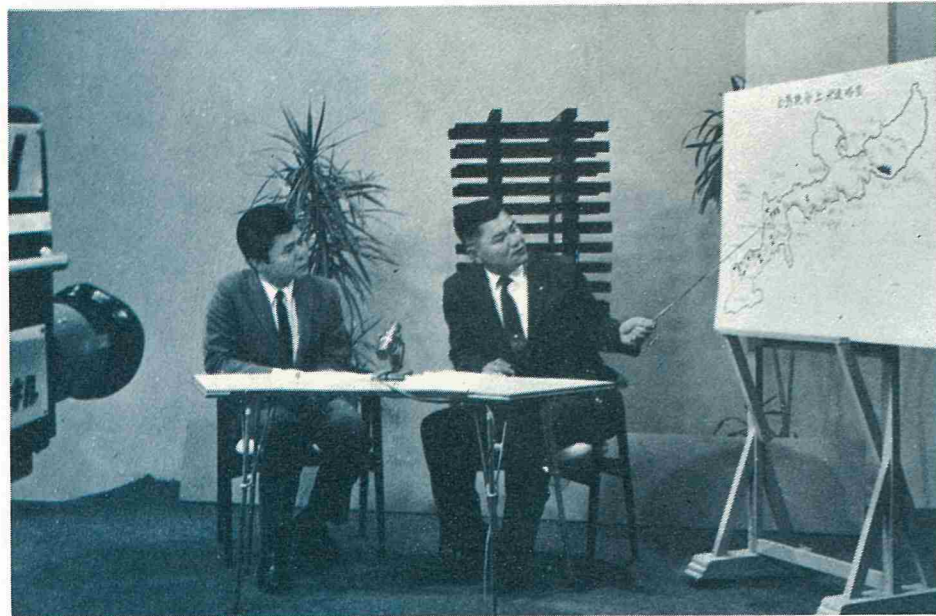




## PUBLIC RELATIONS

The third "All Ryukyu Water Week" was held during the first week of September 1970. RDWC invited more than 1,000 citizens from over 20 municipalities in central and southern Okinawa to dams, treatment plants, pump stations, and storage tanks.

During the water week period, RDWC sought public understanding of RDWC activities through radio and TV programs.



Mr. Ohama explains RDWC water facilities on a TV program.



Visitors listening intently to the explanation of a water treatment plant.

## TOPICS

April 1971

### The 9th Water Works Management Seminar was Held in Naha

The 9th Water Works Management Seminar sponsored by the Japan Water Works Newspaper Company was held on 14 through 16 April 1971 at "Yunaso," Naha. President Ohama gave an hour lecture on "RDWC's Organization and Activity" on 15 April 1971, the second day of the seminar.



Mr. Ohama giving a Lecture

June 1971

### Critical Water Situation

Unusually low rainfall since January 1971 has drastically reduced water in streams and underground resources. Total water stored the combined reservoirs decreased to only 300 million gallons on 30 June 1971. RDWC has appealed to its customers to conserve water whenever and wherever possible.



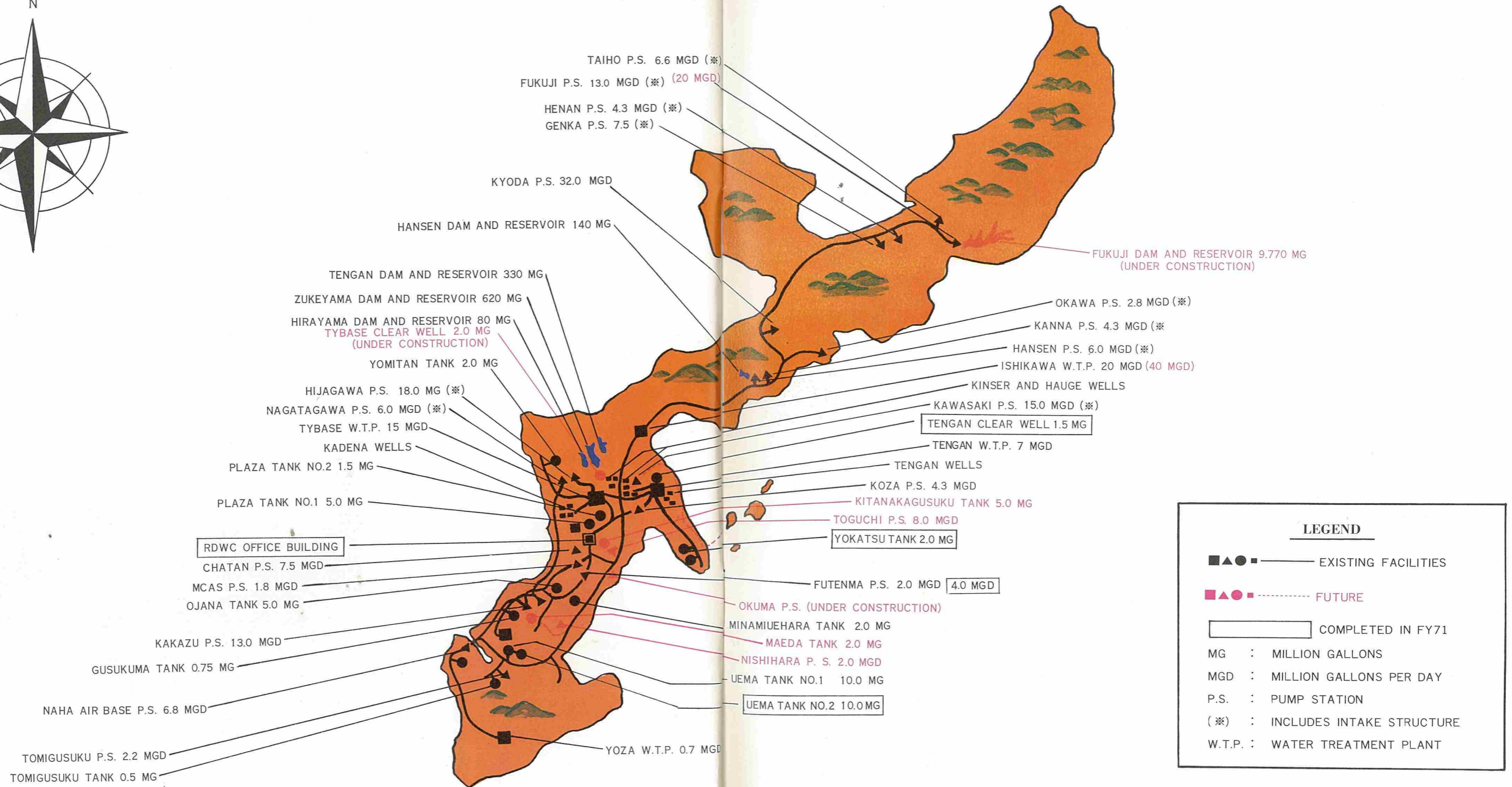
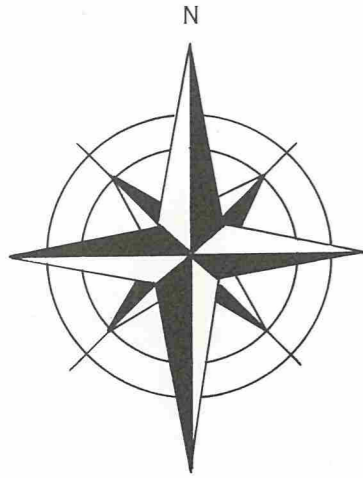
Tengan Dam and Reservoir



# INTEGRATED ISLAND WATER SYSTEM

## PRINCIPAL FEATURES WITH CAPACITIES (MAX.)

(As of 30 June 1971)





## FINANCIAL REVIEW

### Financial Condition

During FY 1971, the total assets of the Corporation increased from \$31.7 million to \$35.1 million for an increase of 10.5 per cent. The total assets include \$33.3 million of utility plant and \$1.8 million of current and accrued assets.

### Results of Operation

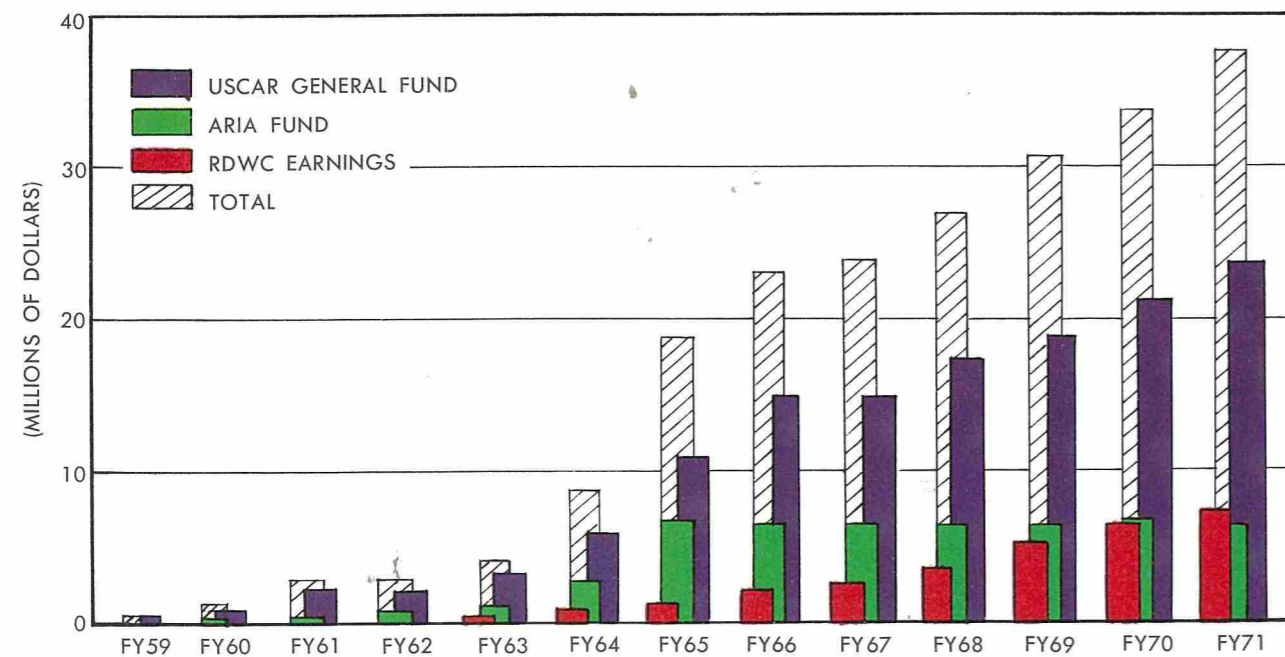
Although water sales increased 23.1 per cent as compared to water sales in FY 1970, net income decreased further due to increasing operating expenses and decreasing interest income on time deposits.

### Capital Investment

During the fiscal year 1971, RDWC invested \$3.6 million for development of northern water resources and expansion of central and southern water facilities. These investments consist of \$2.6 million from USCAR General Fund contributions to RDWC and \$1.0 million from RDWC retained earnings.

The following chart shows cumulative growth of capital investment by source of funds from FY 1959 through FY 1971.

CUMULATIVE GROWTH OF CAPITAL INVESTMENT BY SOURCE OF FUNDS  
FY 1959 THROUGH FY 1971



## OPERATING RESULTS

Unit: Dollar

	FY 1971	FY 1970	FY 1969
Operating revenue	2,520,558	2,047,751	1,731,990
Operating expenses	2,679,122	2,170,102	1,606,692
Cost of water purchased	1,468,581	1,086,626	846,803
* Operation & maintenance	517,849	431,510	273,757
Depreciation expense	692,692	651,966	486,132
Operating income (or loss)	( 158,564)	( 122,351)	125,298
Other income	34,327	46,336	144,431
Interest income	32,434	44,578	143,380
Miscellaneous income	1,893	1,758	1,051
Net income (or loss)	( 124,237)	( 76,015)	269,729

	FY 1968	FY 1967	FY 1966
Operating revenue	1,384,432	1,056,323	878,983
Operating expenses	1,312,736	823,312	664,866
Cost of water purchased	690,884	568,817	460,171
Operation & maintenance	129,386	106,509	81,353
Depreciation expense	492,466	147,986	123,342
Operating income (or loss)	71,696	233,011	214,117
Other income	378,846	657,887	721,938
Interest income	378,419	657,276	720,124
Miscellaneous income	427	611	1,814
Net income (or loss)	450,542	890,898	936,055



**KANWA HOKAMA**

Certified Public Accountant  
314 Yosemite, Naha, Okinawa  
Tel. 32-1072

**AUDIT REPORT**

Board of Directors  
Ryukyu Domestic Water Corporation  
P.O. Box 430, Koza, Okinawa  
Ryukyu Islands

I have examined the balance sheet of the Ryukyu Domestic Water Corporation as of June 30, 1971 and the related statement of income and retained earnings for the year then ended. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as I considered necessary in the circumstances.

In my opinion the accompanying balance sheet and the statement of income and retained earnings present fairly the financial position of the Ryukyu Domestic Water Corporation at June 30, 1971 and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

*Kanwa Hokama*  
Kanwa Hokama  
Certified Public Accountant

Naha, Okinawa  
August 15, 1971

**RYUKYU DOMESTIC WATER CORPORATION**  
**COMPARATIVE BALANCE SHEET**

	June 30	
ASSETS	1971	1970
Utility plant:		
Utility plants (Note 1)	\$28,914,162	\$27,441,735
Less: Accumulated depreciation	( 2,680,162)	( 2,051,215)
Construction work in progress	7,026,457	5,103,342
Total utility plant	<u>\$33,260,457</u>	<u>\$30,493,862</u>
Current and accrued assets:		
Cash (Note 2)	\$ 1,371,546	\$ 801,652
Accounts receivable	263,098	241,832
Accrued interest receivable	15,239	3,362
Plant materials and supplies (Note 3)	124,242	148,168
Prepaid expenses	56,236	50,585
Miscellaneous asset	1,000	1,000
Total current and accrued assets	<u>\$ 1,831,361</u>	<u>\$ 1,246,599</u>
Total assets	<u>\$35,091,818</u>	<u>\$31,740,461</u>
LIABILITIES AND CAPITAL		
Proprietary capital:		
Capital (Note 4)	\$30,254,006	\$27,553,094
Retained earnings (Note 7)	3,870,188	3,407,294
Total proprietary capital	<u>\$34,124,194</u>	<u>\$30,960,388</u>
Current and accrued liabilities:		
Accounts payable (Note 5)	\$ 754,639	\$ 683,960
Customer deposits	1,700	1,465
Total current and accrued liabilities	<u>\$ 756,339</u>	<u>\$ 685,425</u>
Deferred credits:		
Customer advances for construction	\$ 74,135	\$ 1,081
Operating reserves:		
Separation and other reserves	\$ 137,150	\$ 93,567
Total liabilities and capital	<u>\$35,091,818</u>	<u>\$31,740,461</u>

The accompanying notes to financial statements are an integral part of this statement.



## Comparative Statement of Income and Retained Earnings

	Year ended June 30	
	1971	1970
<b>Operating revenue:</b>		
Sales of water (Note 6)	\$2,520,558	\$2,047,751
<b>Operating expenses:</b>		
Cost of water purchased	\$1,468,581	\$1,086,626
Administrative and general salaries	267,647	217,108
Office supplies and other expenses	33,432	21,892
Property insurance	3,039	3,525
Injuries and damages	1,865	889
Rents	112,555	90,777
Payroll tax	8,821	5,733
Miscellaneous general expense	5,679	11,137
Maintenance of general plant	10,581	6,842
Field maintenance expense	10,376	15,507
Stream gauging expense	63,854	58,100
Depreciation expense (Note 1)	692,692	651,966
Total operating expenses	\$2,679,122	\$2,170,102
Utility operating income (or loss)	(\$ 158,564)	(\$ 122,351)
<b>Other income:</b>		
Interest income	\$ 32,434	\$ 44,578
Miscellaneous income	1,893	1,758
Total other income	\$ 34,327	\$ 46,336
Net income (or loss)	(\$ 124,237)	(\$ 76,015)

	Year ended June 30	
	1971	1970
<b>Adjustment to retained earnings:</b> (Note 7)		
Add: Recovery of property written off Gain on sale of properties	\$ 690,187	\$ 6,105
Less: Prior years' expenses Extraneous expense	( 103,056)	( 26,243)
Net increase (or decrease) in the retained earnings	\$ 462,894	(\$ 96,153)
Retained earnings at beginning of year	3,407,294	3,503,447
Retained earnings at end of year	\$3,870,188	\$3,407,294

The accompanying notes to financial statements are an integral part of this statement.

## Notes to Financial Statements

For the Year ended June 30, 1971

### 1. Utility plants (fixed assets) and depreciation:

Additions and deductions of the utility plants during the year under review are as follows:

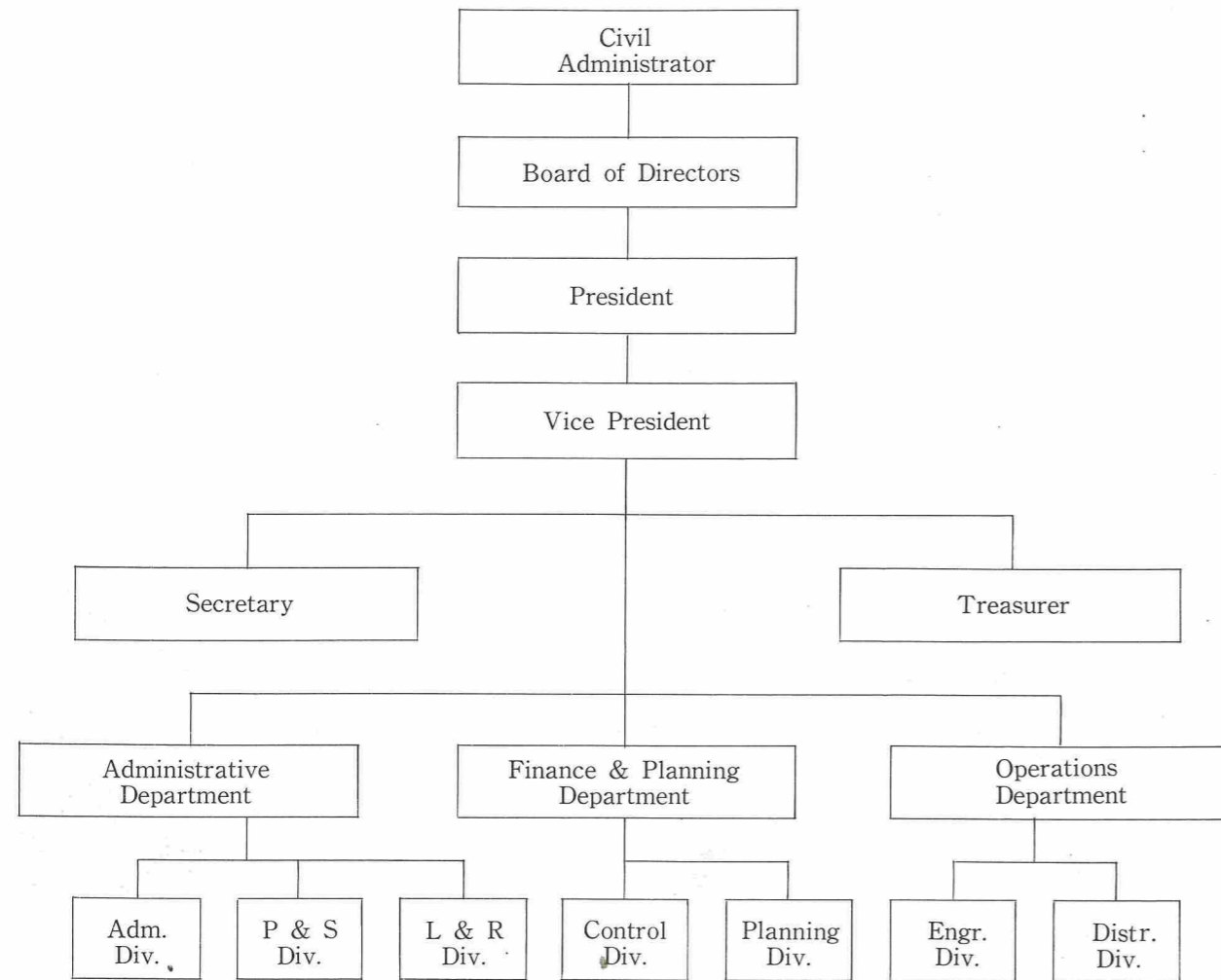
a) Original cost:-

Plant	Balance July 1, '70	Addition	Deduction	Balance June 30, '71
1) Source of supply	\$11,510,438	\$ 88,157	-0-	\$11,598,595
2) Pumping plant	2,855,282	26,963	\$35,119	2,847,126
3) Water treatment	3,542,166	4,987	-0-	3,547,153
4) Transmission	9,430,579	809,382	9,002	10,230,959
5) General Plant	103,270	622,282	35,223	690,329
Totals	\$27,441,735	\$1,551,771	\$79,344	\$28,914,162



# Ryukyu Domestic Water Corporation

## Organization Chart



## RDWC Officers



**HIROSADA OHAMA**  
President



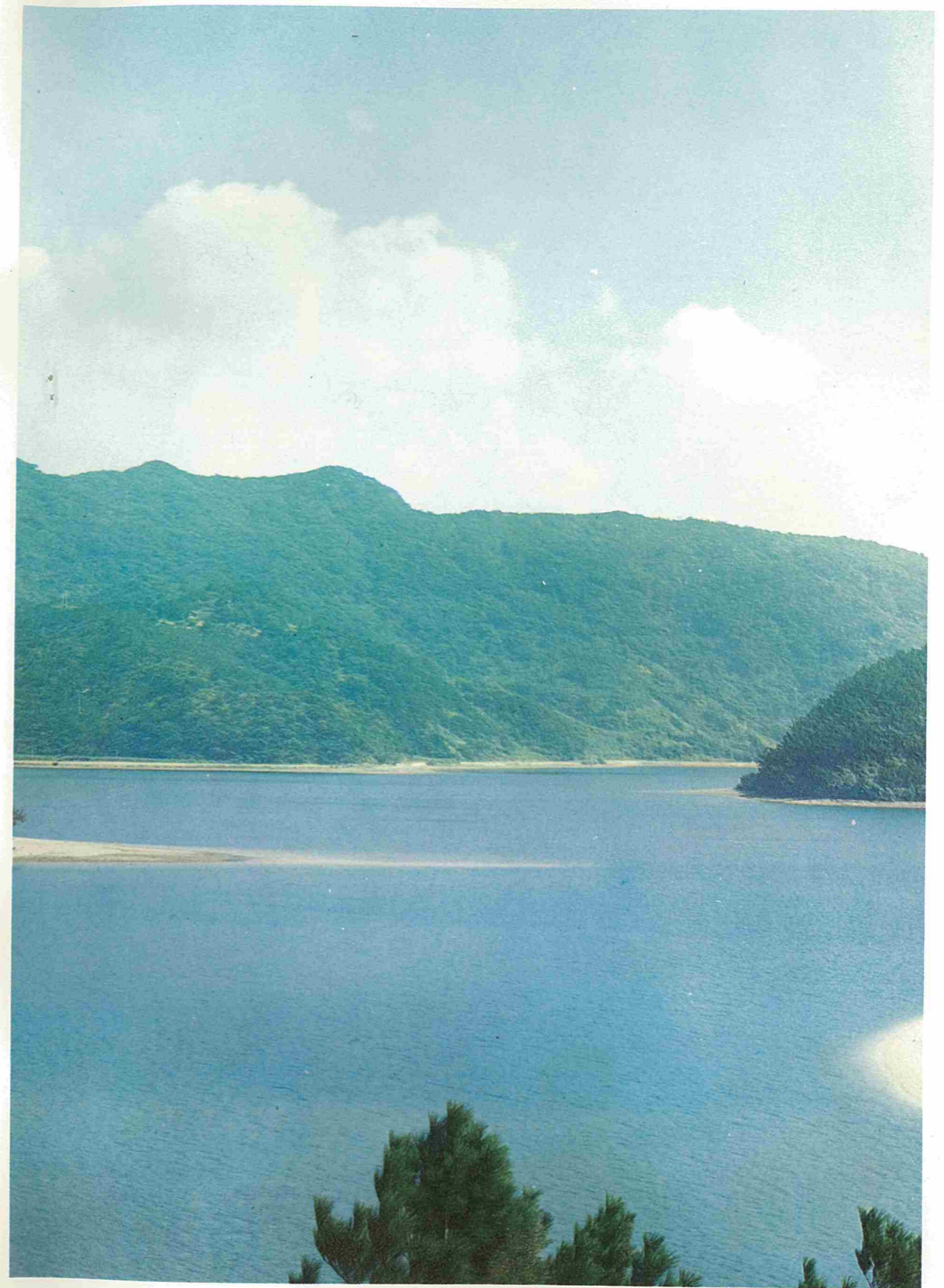
**YOHEI MIYARA**  
Vice President



**GORO CHINEN**  
Secretary



**GENSUKE ARAKAKI**  
Treasurer



Shioya-wan where estuary dam construction is planned