

**WATER RESOURCES
OF
CEYLON**

S. ARUMUGAM

**WATER RESOURCES OF CEYLON
ITS UTILISATION
AND
DEVELOPMENT**

By

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A WATER RESOURCES BOARD PUBLICATION

Colombo, 1969

FOREWORD

Over thirty five years ago D. S. Senanayake wrote in his FOREWORD to R. L. Brohier's publication "ANCIENT IRRIGATION WORKS IN CEYLON" that the "...greater part of the contribution to a knowledge of our past has been made by officers employed in the administration and technical branches of our Public Service. We owe indeed a deep debt of gratitude to these officers..."

I feel very much the same today as I peruse Mr. S. Arumugam's compilation on Water Resources Development in Ceylon. He has included in it ample information to stimulate the interest of visitors to the magnificent irrigation works of Ceylon. While delving into our glorious past, the present has not been minimised nor the future overlooked.

At present there is no one volume, official or otherwise, providing information on our Water Resources Development Works, where they are or what they are like; this work amply satisfies that long felt need.

Mr. Arumugam has spent many years and definitely many hours of his leisure during his long career in the Irrigation Department in collecting and arranging the information contained in this monumental book.

This is a work of love and will be an example to the future generations of public servants.

C. P. DE SILVA

Ministry of Land, Irrigation & Power,
Colombo 1,
17th May, 1969.

PREFACE

Ceylon is blessed with ample rainfall: nevertheless, her people had to toil, through the ages, to conserve and utilise this precious natural resource. Though water is available in plenty over the year, it is by no means an easy task to be in a position to effect supply just where it is wanted and when it is wanted.

After assessing the water resources with which the country is served annually, an attempt is made in this compilation, to survey the story of conservation and utilisation of water resources in Ceylon from the very early days of history.

A description follows, in chapter 3 of about 400 of the more important water resource development works in the River Basins of Ceylon. At the end is also shown proposed data of some of the works likely to be taken up in the immediate future.

Acknowledgement is made of the assistance rendered by Mr. A. Rajadurai with photographs of the works.

Intimation of any changes in the parameters of the works described would be appreciated.

S. ARUMUGAM

Water Resources Board,
Colombo, June 1969.

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C O N T E N T S

FOREWORD

Preface

Chapter 1

Water Resources of Ceylon

Page

Section I—Resources

1. General	...	...	...	1
2. Rainfall	...	...	...	1
3. River Basins of Ceylon	...	...	...	2
4. Stream flow measurements	...	...	...	3
5. Ground Water	...	...	...	7

Section II—Utilisation

6. Domestic water supply	...	...	...	8
7. Agricultural Development	...	...	...	9
8. Industrial needs	...	...	...	10
9. Hydro Power	...	...	...	11
10. Water Shed Management	...	...	...	14

Chapter 2

Developing Water Resources

1. Work of the ancient Kings	...	...	...	16
2. Achievements of Parakrama Bahu	...	...	...	19
3. Development by the Dutch	...	...	...	20
4. Enthusiasm of the British Governors	...	...	...	21
5. Efforts of the Central Irrigation Board	...	...	...	23
6. Development by the Irrigation Department—I	...	...	...	24
7. Development by the Irrigation Department—II	...	...	...	26
8. Independence and Development	...	...	...	27

Chapter 3

Development Works

1. Major River Basins	...	...	...	34
2. Data of Development in the major river basins of Ceylon	...	...	...	36

Chapter 4

Projects Under Consideration

The Mahaweli Scheme	...	...	399
(1) Diversion Anicut at Polgolla	...	...	399
(2) Moragahakanda Reservoir	...	...	400
(3) Victoria Reservoir	...	...	401
(4) Randenigala Reservoir	...	...	402
2. Malwattu Oya Reservoir Scheme	...	...	404
3. Samanalawewa Scheme	...	...	405
4. Kelani Ganga Basin Scheme	...	...	406
5. Deduru Oya Reservoir	...	...	407

CHAPTER 1

WATER RESOURCES OF CEYLON

SECTION I—RESOURCES

1. General

Ceylon is a tropical island with a land mass of 25,332 square miles ($16\frac{1}{4}$ million acres or $6\frac{1}{2}$ million hectares), situated in the Indian Ocean, Latitude between 6° and 10° North and Longitude 80° to 81° East.

1.12. The island is subject to two monsoons; the South-West monsoon prevailing from about April to September and the North-East monsoon from October to March. On the basis of distribution of rainfall, the island is divided into two distinct areas—the Wet and the Dry Zones. The Wet Zone comprises of the south-west area, covering about a quarter of the Island, extending southwards from Chilaw and terminating with Kandy and Nuwara Eliya in the east. The area of the Wet Zone is about 4 million acres.

The Wet Zone, with its two rainy seasons and an annual average rainfall of 95 inches, is well developed with economic crops—tea, rubber, coconut etc. The present economy of the country is largely dependent on development of the Wet Zone.

1.13. The rest of the Island consists of its Dry Zone. The Dry Zone comprising of over 12 million acres, has only one rainy season, from about October to March, and the average annual precipitation is about 57 inches. The Dry Zone areas are arid and dry and well suited for irrigated agriculture.

2. Rainfall

1.21. The only source of water in Ceylon is direct rainfall; the amount of rainfall varies from place to place. The Island is served with a network of rain gauge stations, some of which have been in function for over hundred years. The more important stations are equipped with automatic recorders. Today there are over 600 rain gauge stations established all over the Island.

1.22. Rainfall, in the dry and wet zonal areas, during the twelve months of the year is depicted by the averages, shown below:-

Average Monthly Rainfall in Inches

		Dry Zone	Wet Zone	All Island
January	...	7.5	4.2	5.9
February	...	2.7	2.6	2.7
March	...	3.3	5.7	4.5
April	...	4.0	8.8	6.4
May	...	2.9	11.7	7.3
June	...	0.9	9.3	5.1
July	...	1.1	7.8	4.5
August	...	1.8	5.8	3.8
September	...	2.7	7.7	5.2
October	...	7.7	14.1	10.9
November	...	12.0	11.5	11.8
December	...	10.6	6.1	8.4
Total	...	57.2	95.3	76.3

Annual average rainfall at a few representative stations are shown below, as illustrated:-

Annual Rainfall at Selected Stations

Dry Zone		Wet Zone	
Anuradhapura	56.9	Colombo	94.3
Jaffna	52.3	Kandy	79.6
Hambantota	42.3	Nanuoya	101.2
Mannar	38.1	Ratnapura	153.1
		Watawala	214.9

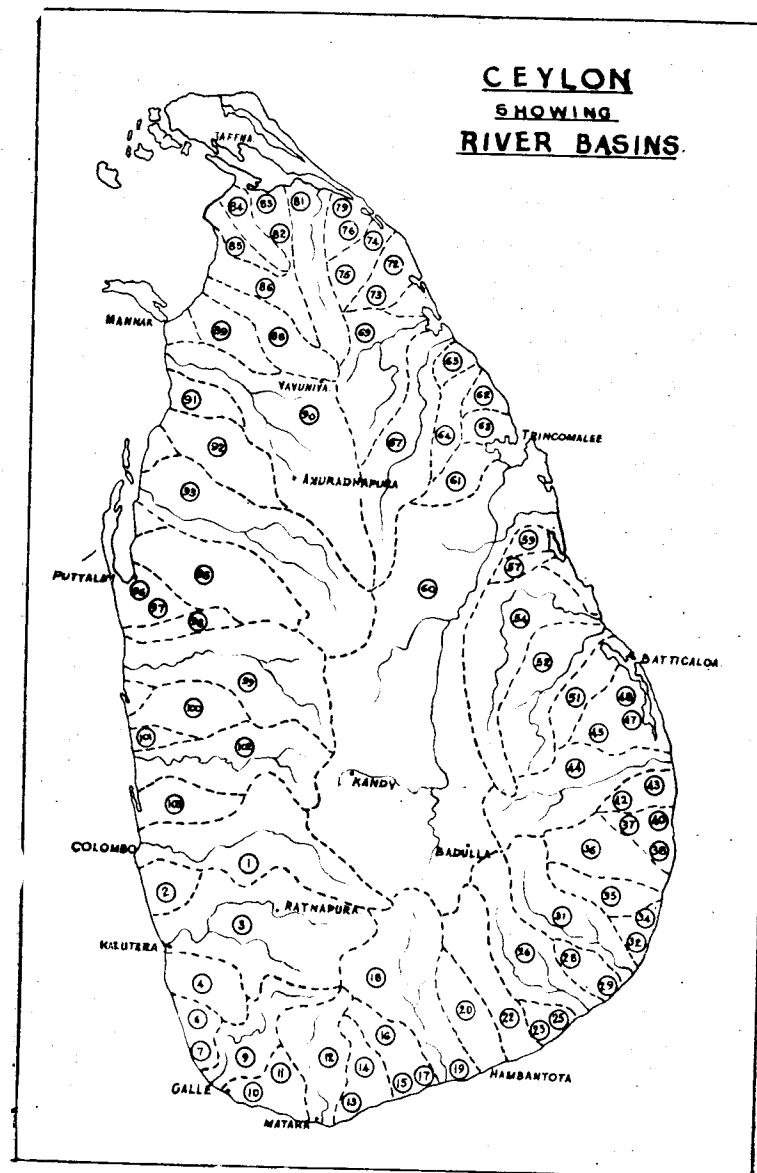
Annual Precipitation

1.23. Quantitatively the mean annual precipitation in the Dry Zone is about 57 million acre feet and 32 million acre feet in the Wet Zone totalling to 89 million acre feet as *mean annual precipitation* over the entire Island.

3. River Basins of Ceylon

1.31. The basic requirement for any water resources development is the collection of comprehensive data. Knowledge of not only the water available for use, but also its conservation and distribution from season to season, etc. For this purpose the Island has to be considered in small units, provincially or district-wise or what is more natural, by river basins. A river basin is a natural unit and lends itself ideally for water resources studies concerning rainfall, stream flow water use, drainage etc.

1.32. The territory of Ceylon can be divided into 103 component natural river basins and another 94 small coastal basins. The 94 low lying coastal basins are small and have problems of their own; they do not make an effective contribution to the water resources of the Island. Several of even the 103 river basins are not appreciably large.





STREAM FLOW MEASUREMENTS



MAHAWELI GANGA
CEYLON'S LARGEST RIVER

4. Stream Flow Measurements

1.41. Run off from the rivers of Ceylon varies very widely from stream to stream due to variations in rainfall, type of soil, its slope and other factors. For purposes of assessing the yield from river basins, stream gauging stations have been established to measure the flow of most of the more important rivers of Ceylon. There are nearly ninety stream gauging stations established in different localities, of which about thirty are equipped with current metering equipment. In most cases, the sites selected as flow gauging stations are potential impounding reservoir sites, with the result that there is no representative all Island coverage of stream flows in Ceylon. The ideal would be at least three gauging stations in each stream.

1.42. However, for purposes of assessment of total run-off in various streams of the Island, rates of flow have been synthesised² in the ungauged streams. In the tables that follow are shown the RUN OFF, so prepared, in the streams of the Dry Zone and the Wet Zone respectively.

1.43. The streams in the dry zone have poor run off varying between 10% to 50% of the precipitation; in about ten of them the percentage run off does not exceed 20%. The annual run off from the streams in the *dry zone* amounts to 20.7 million acre feet.

But on the other hand, as would be expected there is more flow in the wet zone streams; the annual run off from the streams in the *wet zone* amounts to 20.9 million acre feet.

The total run off from all the streams in Ceylon thus amounts to 41.6 million acre feet.

RUN OFF FROM DRY ZONE BASINS¹

No.	BASIN Name	Area in Sq. Mls.	RUN OFF in 1000 Ac. ft.		
			Maha	Yala	Annual Total
1-16	In the wet zone—	—	—	—	—
17.	Kachigala	86	73	27	100
18.	Walawe Ganga	954	1,126	658	1,784
19.	Karagan Oya	22.5	11	9	20
20.	Malala Oya	156	105	26	131
21.	Embilikala Oya	23	15	4	19
22.	Kirindi Oya	455	438	99	537
23.	Bambawe Ara	31	21	5	26

¹Irrigation Department - S. Bocks.

²Hydrometeorology of Ceylon, Part I. Rainfall and Run off. Messrs Hunting Survey Corporation Ltd. Toronto, Canada.

No.	BASIN Name	Area in Sq. Mls.	RUN OFF in 1000 Ac. ft.		
			Maha	Yala	Annual Total
24.	Mahasiliwa Oya	5	3	0	3
25.	Butawa Oya	15	11	3	14
26.	Menik Ganga	497	437	87	524
27.	Katupila Aru	33.5	30	6	36
28.	Kuranda Ara	51	43	9	52
29.	Namadagas Ara	42	35	8	43
30.	Karambe Ara	18	26	7	33
31.	Kumbukkan Oya	476	516	70	586
32.	Bagura Oya	36	44	11	55
33.	Girikula Oya	6	3	3	6
34.	Helawa Ara	20	4	4	8
35.	Wila Oya	189	179	13	192
36.	Heda Oya	236	273	29	302
37.	Karanda Oya	165	187	9	196
38.	Simena Ara	20	25	2	27
39.	Tandiadi Ara	8.5	12	2	14
40.	Kangikadichi Ara	22	25	2	27
41.	Rufus Kulam	13.5	12	2	14
42.	Pannel Oya	72	113	3	116
43.	Ambalam Oya	45	68	2	70
44.	Gal Oya	700	13,23	95	1,418
45.	Andella Oya	204	310	14	324
46.	Thumpanken	3.5	3	0	3
47.	Namakada Ara	4.5	6	0	6
48.	Mandipattu Aru	39	62	2	64
49.	Pattanthu Dephue Aru	39	62	2	64
50.	Vett Aru	10	20	1	21
51.	Unnichchai	135	145	8	153
52.	Mundeni Aru	500	578	31	609
53.	Miyangolla Ela	88	95	6	101
54.	Maduru Oya	602	1,062	71	1,133
55.	Pullianpota	20.5	24	3	27
56.	Kirimechi Odai	30	69	3	72
57.	Bodigoda Aru	64	139	5	144
58.	Mandan Ara	5	13	3	16
59.	Makarachchi Aru	14.5	36	3	39
60.	Mahaweli	4,034	2,836	1,470	4,306
61.	Kantalai	174	214	7	221
62.	Palampotta Aru	27	44	2	46
63.	Panna Oya	56	87	3	90
64.	Pankulam	147	216	7	223
65.	Kunchikumban Aru	80	69	2	71
66.	Palakutti Aru	8	8	0	8
67.	Yan Oya	594	611	25	636
68.	Mee Oya	35	35	1	36

No.	BASIN Name	Area in Sq. Mls.	RUN OFF in 1000 Ac. ft.		
			Maha	Yala	Annual Total
69.	Ma Oya	400	372	12	384
70.	Churian Aru	29	29	1	30
71.	Chavar Aru	12	12	0	12
72.	Palladi Aru	24	25	1	26
73.	Munidel Aru	73	89	1	90
74.	Kodalikallu Aru	29	41	1	42
75.	Per Aru	146	181	4	185
76.	Pali Aru	33	43	1	44
77.	Maruthapilly Aru	16	23	0	23
78.	Thoravil Aru	35	38	1	39
79.	Piramenthal Aru	32	40	1	41
80.	Nethali Aru	47	50	1	51
81.	Kanakarayan Aru	350	325	12	337
82.	Kalawalappu Aru	22	34	0	34
83.	Akkarayan Aru	75	106	1	107
84.	Mandekal Aru	116	120	1	121
85.	Pallararayan Kadu	62	51	0	51
86.	Pali Aru	176	160	3	163
87.	Chappi Aru	26	18	0	18
88.	Parangi Aru	325	260	6	266
89.	Nay Aru	219	141	4	145
90.	Aruvi Aru	1,268	962	42	1,004
91.	Kal Aru	82	92	2	94
92.	Moderagoma Aru	364	243	9	252
93.	Kala Oya	1,083	795	64	859
94.	Moongil Aru	17	11	0	11
95.	Mi Oya	592	109	12	121
96.	Madurankuli Aru	28	5	2	7
97.	Kalagamuwa Oya	59	11	1	12
98.	Rathambala Oya	84	94	10	104
99.	Deduru Oya	1,022	968	254	1,222
100-103—In the wet zone—					
Total: Dry Zone		18,158	17,350	3,311	20,661

RUN OFF FROM WET ZONE BASINS

No.	BASIN Name	Area in Sq. Mls.	RUN OFF in 1000 Ac. ft.		
			Maha	Yala	Annual Total
1.	Kelani Ganga	885	2,372	3,435	5,807
2.	Bolgoda	146	326	343	669
3.	Kalu Ganga	1,050	2,801	3,493	6,294
4.	Bentara	243	663	764	1,427
5.	Madu Ganga	23	63	74	137
6.	Madampe Lake	35	95	110	205
7.	Telwatte Ganga	20	53	67	120
8.	Ratgama Lake	4	11	12	23
9.	Gin Ganga	360	734	816	1,550
10.	Koggala Lake	25	63	74	137
11.	Polwatte Ganga	91	125	130	255
12.	Nilwala Ganga	375	625	585	1,210
13.	Sinimodara Oya	15	24	22	46
14.	Kirama Oya	87	100	68	168
15.	Rekawa Oya	29.5	32	23	55
16.	Urubokka Oya	136	143	63	206
100.	Karambala Oya	230	205	87	292
101.	Ratmal Oya	84	83	60	143
102.	Maha Oya	590	795	775	1,570
103.	Attanagalu Oya	284	300	318	618
Total: Wet Zone		4,712.5	9,613	11,319	20,932

Note:

The above figures do not include

(1) Area of Jaffna Peninsula including Vadamarachchi Lagoon 393.0 Sq. Mls.

(2) Residual Area comprising largely Coastal zones intervening between adjacent Basins 2,068.5 Sq. Mls.

1.44. The Average annual precipitation amounts to 89 million acre feet as indicated in para 1.23. A quantity of 41.6 million acre feet has been assessed as flowing in the streams as run off and the position may be shown as:—

PRECIPITATION AND STREAM FLOW (In million Acre Feet)

	Dry Zone	Wet Zone	Total
Average Annual Precipitation	57	32	89
Run off	20.7	20.9	41.6
Stream flow	(37.5%)	(65%)	(47%)
Balance	36.3	11.1	47.4
	(62.5%)	(35%)	(53%)

5. Ground Water

1.51. Ground water is not an independent natural resource of a country. It is really a composite portion of the water resource, but available at a certain phase of the process of the water cycle movement. Undoubtedly it would entirely depend on the amount of surface flow that percolates into the subsoil, which is dependant on the nature of the subsoil.

An inventory of the ground water resources of the Island based on river basins has not been made, as no systematic exploration has been carried out.

1.52. Appraisal of ground water occurrences in Ceylon has been limited until recently to generalised statements indicating the possibilities of finding underground water in the five divisions the Island has been divided into:—

The Central Highland Zone.

The Dry Lowland Zone.

The Limestone regions of the North.

The Coastal Zone.

The Jaffna Peninsula.

1.53. The Central Highland Zone of Ceylon consists of the wet region, enjoying very good precipitation, and rises up to 8000 feet in elevation. The igneous rocks of the area do not contain water, though some may often be found in the fissures and in the overburden. The amount is not copious.

1.54. The Dry Lowland Zone with less rainfall, has the same basic rock structure, but with different soil conditions. As in the above, ground water may be expected in the fissures. Where however the bed rock is irregular with depression, alluvial deposits in these depressions retain percolation, and can be recovered as ground water, before it finds its way to the sea.

1.55. A belt of Limestone Region extends along the western coast, northwards from Puttalam. In many places the limestone is covered over by red alluvial soil called "Terra Rosa," often as much as twenty feet in depth.

Water occurs trapped in the solution cavities and in canal systems along joints and fractures. These caverns are expected to yield large quantities sufficient for irrigation purposes, etc. However, in view of the close proximity to the sea, the threat of sea infiltration is always there.

1.56. Fresh water is found in the sand dunes and permeable formations all along the *Coastal Zone*. The amount of water depends on rainfall and the nature of the locality. As this fresh water is more or less floating on the infiltrated sea water any attempt of heavy or deep draw off will bring up the sea water. Such sources may therefore satisfactorily serve the individual settlements in the locality.

1.57. The limestone belt along the western coast is best developed in the *Jaffna Peninsula* which is entirely composed of it. The surface of the area is generally flat rising to thirty two feet into the interior near Tellipalai. Soil cover is thin, about three feet generally, extending to about ten to twenty at a few places.

The fresh water trapped in the solution caverns which is found floating on sea water, forming a line is drawn out heavily for irrigation supply to garden crops, mainly chillies, onions, tobacco, etc.

The rate of depletion of the ground water has been alarming and recently fears have been expressed of several wells turning brackish with the exhaustion of fresh water storage and ingress of sea water.

With the intention of carrying out a hydrological investigation of the Peninsula, an organisation has been set up in March 1965, for the systematic observation of water levels and testing of sample water regularly in selected wells of the region.

Over four hundred wells, known as "Observation Wells," have been selected, situated representatively all over the region of the Jaffna Peninsula. The water levels of the water in these observation wells are regularly measured and observations tabulated. Samples of water found at the bottom of these wells are collected and analysed for the presence of chloride ions, hardness as calcium carbonate and total solids present. The work is proceeding, but an interim report has been released.

SECTION II—UTILIZATION

6. Domestic Water Supply

1.61. The quantity of water used for domestic consumption is relatively small compared to other consuming demands such as irrigation supply. Nevertheless this demand counts top-most in priority due to the nature of its service. Hence it receives priority in any water resource consideration.

The responsibility to effect domestic water supply to the public, generally rests with the civic institution of the locality. The Municipalities, Town Councils, Village Committees and the other Institutions of the Local Government secure financial assistance from the Central Government for the purpose and the service is executed by the Division of Drainage, Water Supply and Local Government Works.

1.62. The city of Colombo, with a population of over five lakhs, is served by the reservoirs across the tributaries of the Kelani Ganga. This is further augmented by pumping direct from the parent Ganga at Ambatalan and the system delivers over 40 million gallons per day including supply to towns south of Colombo as well. The Municipality of Kandy obtains about five million gallons daily from the Mahaweli Ganga and Negombo nearly 3 million gallons from Maha Oya. Besides these, there are about fifty other supply undertakings. These obtain their supply from batteries of shallow wells; their yield is usually inadequate for satisfactory issue. Further details appear in para 2.82.

1.63. It has been stated that 20%* of the population in Ceylon is today receiving pipe-borne domestic water supply; if we apportion to each a *maximum* of 50 gallons per day (which of course is very excessive in the case of rural areas), the total amount of water used does not exceed 500 ac. ft. per day.

But in spite of the small quantity, the difficulty is to effect this supply at the place and at the time it is required.

7. AGRICULTURAL DEVELOPMENT

(a) Water for Irrigation supply

1.71. In Ceylon the use of irrigation supply has been mainly confined to rice production. The following table indicates approximate water requirements for paddy production.

CONSUMPTION OF IRRIGATION WATER FOR RICE CULTIVATION

Requirements for the growth and maturity of a five month variety of rice plant:—

	Maha Season Crop		Yala Season Crop	
	Ac. ft.		Ac. ft.	
October (½)	0.50	April	0.75	
November	0.75	May	1.75	
December	0.50	June	1.50	
January	1.00	July	1.25	
February	0.75	August	0.75	
March (½)	0.50			
	4.00		6.00	

To mature an acre of rice crop about 4 acre feet of water is necessary, if it is cultivated during the wet months; 6 acre feet would be the requirement during the dry weather period. This is

*Administration Report of the Director of Water Supply and Drainage, 1965.

usually termed the "duty" of water supplied for irrigation. The quantity of water used would vary with the cultivation system adopted and the period of maturity of the particular variety of paddy.

1.72. With the need for more diversified agricultural enterprise, irrigated supply is now provided to more and more subsidiary food crops. Food crops, other than rice, that are now receiving consideration for irrigated water supply, include chillies, red onions, Bombay onions, potatoes, pulses of several kinds and food grains such as Maize.

As a result of experiments, it has been found that the water requirements (duty) of some of these crops are as follows:—

Water Requirements of Subsidiary Crops*	
Chillies	3½ to 4 acre feet
Red Onions	1½ to " " "
Bombay Onions	1½ to " " "
Small Grains	2½ to " " "

8. Industrial Needs

1.8. Industrial undertakings require water: (1) as aid to production (2) for cooling systems. In both cases some of the water would usually be discharged as effluent—often contaminated. The effluent is allowed to re-join the sources of supply only when purified and offensive acids, alkalies and poisonous chemicals, e.g., cyanides are neutralized and also factory residual waste is removed by pre-settlement tanks.

In planning, water resource supply for industrial needs the governing criteria are (1) the steady supply of the quantity stipulated throughout the year—as the factory cannot obviously be shut down for water shortage, and (2) the usual demand for more, due to subsequent expansion of the industry.

In Ceylon the problem, however, is in its infancy, but will rapidly show up as the programmed industrial development of the country gets into full production. The flow in the Kelani Ganga river has to be shared by the following undertakings;

1. The National Textile Corporation.
2. The Steel Corporation.
3. The Petroleum Corporation.
4. The Tyre Corporation.
5. The Fertilizer Corporation.
6. Kelanitissa Power Station.

Their demands impose a heavy call on the Kelani flow during the dry weather days.

There are other industrial concerns which draw off from other sources but there is no such heavy demand.

*Implementation Programme, 1962—Dept. of National Planning.

9. Hydro Power

1.91. The only source of indigenous energy in Ceylon is hydro-electric power. The central hilly areas of Ceylon experience heavy precipitation, due to which stream flows descend rapidly to the lower regions; there are several water falls and over 50 of them have been listed.

The potential for hydro-electric development in the Island has never been systematically investigated. There is no inventory of all possible sites where such development is feasible.

1.92. The Economic Commission for Asia and the Far East in an early report mentions a potential of 1,000 megawatts of Hydro Power in Ceylon. When the Mission from the International Bank for Reconstruction and Development visited Ceylon* they were shown a list of 13 stations where hydro-power development was feasible. This list, prepared in 1949, however assesses total potential at 500 megawatts.

The central highlands of Ceylon, where there is a concentration of high mountainous peaks with large rainfall and surrounded by a lower second plain, is basically suited for development of water power. But due to vagaries of rainfall, attempts at regular power production is impossible without impounding storage reservoirs; but the steep gradients of the mountainous streams necessitate high and therefore costly dams. Steep stream beds limit the storage capacity of the impounding reservoirs. So that hydro-power development becomes practical only where there are wide and long basins.

1.93. Mr. H. P. Pfeifer, a consulting engineer from the U. N. and Power Adviser to the Government of Ceylon, listed 30 possible hydro-electric power project sites in the Island in his report, over 5 years ago. He assessed the hydro-electric power that can be developed economically in Ceylon to be about 1,400 megawatts, and concluded that his computations show that the annual hydrel energy potential of Ceylon to be over 6000 million units of energy.

The more important sites selected by him were in the Kelani, Walawe and Mahaweli Ganga basins.

1.94. Since then several studies have been made and reports prepared by experts, summaries of which are indicated below:—

(a) Kelani Ganga Basin

- (1) Kehelgamuwa Tributary, fully utilised
- (2) Maskeliya Tributary, works in hand;
- (3) In the middle reaches of Kelani Ganga, the following possibilities have been suggested by a U. S. S. R. Team in 1961.

Nawatta Parusella Reservoir	36	M. W.	230	M. k. w. h.
Yogama	15	"	130	"
Holumbuwa	12.5	"	16	"

*"The Economic Development of Ceylon," I.B.R.D. Mission, 1952.

(b) Walawe Ganga Basin

(1) Samanala Wewa Reservoir.

Reports prepared (1966) by Engineering Consultants Inc., show that 120 M. W. Plant can be installed, expecting 398 m. kilowatt hours of energy.

(2) Uda Walawe Dam has an installed plant of 6 M.W.

(c) Mahaweli Ganga

(1) The U. S. O. M. Team (1958-60) envisaged the following in a trans basin diversion project.

Nugawela Reservoir 120 M.W. 540 million Units Energy,

Cost Rs. 354 m.

Diversion at Primose Hill

Rs. 434 m.

Ukuwela Plant 45 MW 333 m. Units Energy Cost Rs. 41 m.

Diggala Plant 45 MW 333 m. " " " Rs. 41 m.

Lenadora Plant 33 MW 275 m. " " " Rs. 34.2] m.

Canal Units 17 MW 85 m. " " " Rs. 42 m.

(2) The UNSF (FAO) Team engaged (1966-68) on studies for the development of the Mahaweli Basin have the following:—

MAHAWELI GANGA HYDRO-POWER POTENTIAL

1. Mahaweli Ganga Cascade

No.	Unit	Installed M. W.	Firm Energy 10 ⁶ K. W. H.
1.	Rozella	2.6	7.4
2.	Trafalgar	9.5	34.2
3.	Carolina	12.5	42.9
4.	Koladeniya	6.0	22.8
5.	Ulapane	21.0	59.6
6.	Haloluwa	17.3	60.4
7.	Polgolla	38.8	183.0
8.	Victoria Falls (1410—M. S. L.)	120.0	469.0
9.	Randenigala (750—M. S. L.)	75.0	282.0
10.	Rantambe (495—M. S. L.)	42.8	177.9
Total		342.5	1339.2

2. Kotmale Oya Cascade

No.	Unit	Installed M. W.	Firm Energy 10 ⁶ K. W. H
1.	Agra	5.1	20.0
2.	Tillicoultry	11.4	40.7
3.	Talawakele	40.0	132.0
4.	Yoxford	43.5	138.8
5.	Kotmale	105.0	447.6
6.	Palmerston	2.2	5.6
Total		207.2	784.7

3. Amban Ganga Cascade

No.	Unit	Installed M. W.	Firm Energy 10 ⁶ K. W. H
1.	Kiula	22.3	98.9
2.	Makeli Wewa	15.9	68.2
3.	Kumbaloluwe	40.0	151.2
4.	Bowatenne No. 1	3.7	19.0
5.	Bowatenne No. 2	40.0	152.0
6.	Moragahakande	40.0	149.0
Total		161.9	638.3

4. Uma Oya Cascade

No.	Unit	Installed M. W.	Firm Energy 10 ⁶ K. W. H
1.	Bomurella	6.5	27.5
2.	Welimada	0.9	3.6
3.	Puhulpola	7.3	22.3
4.	Ettampitiya	22.1	70.4
5.	Upper Uma Oya	25.5	95.5
6.	Dematapelessa	21.5	85.5
7.	Lower Uma Oya	30.0	113.3
8.	Madulu Oya	6.9	26.2
9.	Needan Kanda	5.9	24.3
Total		126.6	468.6

5. Badulu Oya and Loggal Oya Cascade

No.	Unit	Installed M. W.	Firm Energy 10 ⁶ K.W.H
1.	Rookatenna	2.0	6.1
2.	Upper Yelverton	1.8	5.5
3.	Andeniya	14.1	35.2
4.	Kalawelpota	6.1	14.6
5.	Taldena	14.5	47.6
6.	Pallewela	10.0	34.5
Total		48.5	143.5

6. Other Tributaries of Mahaweli Ganga

No.	Unit	Name of Oya	Installed M. W.	Firm Energy 10 ⁶ K. W. H
1.	Naranpanawa	Hulu Ganga	8.6	27.6
2.	Tumpe	Maha Oya	8.1	27.9
3.	Heen Ganga	Heen Ganga	7.1	25.5
4.	Ratna Ela	Hasalaka Oya	12.4	38.9
Total			36.2	119.9

Summary

No.	River	Installed M. W.	Firm Energy 10 ⁶ K. W. H
1.	Mahaweli Ganga Cascade ...	342.5	1339.2
2.	Kotmale Oya Cascade ...	207.2	784.7
3.	Amban Ganga Cascade ...	161.9	638.3
4.	Uma Oya Cascade ...	126.6	468.6
5.	Badulu Oya & Loggal Oya Cascade ...	48.5	143.5
6.	Other tributaries ...	36.2	119.9
Total Potential ...		922.9	3494.2

(d) Malwattu Oya Reservoir

This reservoir when constructed would have a plant of installed capacity 0.8 M. W.

(e) Kalu Ganga Basin

An assessment made in 1957 envisages the generation of 480 million units of energy, with plant capacity 120 M. W at a cost of Rs. 395 million, at various sites in the basin.

(f) The Gin Ganga and the Nilwala Ganga Basins are among other possible sources.

The hydro-electric installations in commission in 1968 total only 110 megawatts; another 75 megawatts would be in commission by 1969. But the potential of the Island is 1,400 megawatts. The quest, therefore, is the securement of the balance 1,215 megawatts.

10. WATERSHED MANAGEMENT

1.10.1 For the optimum utilisation of water resources, the country's watersheds have to be well managed. Proper management, by the prevention of indiscriminate clearing near stream-bed areas and the beds of streams and the cultivation and growth of permanent plantation, where such clearing has already taken place, forms the basis of water shed management. Such conservation is vital for the cultivation of rice, the production of food, and forms the very essence for existence of life in the hill country villages.

The watershed areas of streams and rivers are being indiscriminately cleared, depriving them of the natural vegetation and cover, which detain and hold up water flow and tend to make the streams perennial. As this process is continuing unchecked, there would eventually be no detention in any water course: the streams will run down the hill slopes fast as torrents, be exhausted and dry up immediately afterwards; there would then be a long dry season. All this, for want of detentive effect in the watershed area. The wanton destruction of natural water retentive capacity of the terrain is becoming widely prevalent, and what is more, is rapidly spreading.

If a curb is not imposed at this juncture, the streams and elas in the hill country areas would all deplete and dry up; they would no longer be the perennial sources of domestic or irrigation water supply to the villagers, in the valleys. The situation concerns their very existence.

There is in Ceylon no specific legislation dealing with measures concerning the conservation of watershed areas that feed the water courses and streams. The Soil Conservation Act deals with measures necessary for the *Conservation of the Soil*—and that too only in “erodible” areas, including re-afforestation of streams etc., it does not provide for measures specifically necessary for the *Conservation of Water*. A draft Act to be cited “Water Shed Management Act” has been prepared for enactment.

It provides for the declaration of any watershed area as “*conserved watershed*” and would normally be directed to concern fringe areas along streams and water courses. These are not always necessarily Crown reservations. It would apply to beds of streams too, whether private or Crown. Regulations could be framed, insisting that in areas so declared, only approved form of agricultural plantation, that is plantation of a permanent nature which do not require the frequent or annual stripping of under cover and natural vegetation, could be adopted. Maintenance of the Village Tank is fundamental to sustain life in the low country village. Just the same way, conservation of the Watershed is vital for the hill country village. The Village Tank is an artificial reservoir storing rain water for use during non-rainy months: the watershed is natural retention (sub soil) reservoir of rain for water flow in streams, making them perennial. The attention that is given to the former cannot be denied to the latter; both are vital to the nation.

CHAPTER 2

DEVELOPING THE WATER RESOURCES

1. THE WORK OF THE ANCIENT KINGS

2.11 The conservation of water and its distribution for rice cultivation became the foremost and solemn duty of the Kings of ancient Ceylon and those Monarchs who discharged this obligation were held in high esteem and veneration by the people.

The ancient chronicles of Ceylon viz. Mahawamsa, Culavamsa etc. make mention of tanks existing in Anuradhapura even during the pre Christian period of the 6th and the 5th centuries B. C.

The Tissa Wewa, a City Tank of Anuradhapura, is attributed to King Devanampiya Tissa (250-210 B. C.).

Irrigation practice by the diversion of small streams and from small privately owned tanks is recorded to have been developed by the first century B. C.

Soon afterwards, development progressed from privately owned minor tanks to works of major utility, where not one individual but a whole group or community was benefited.

2.12 King Vasabha (65-109 A. C.) is recorded to have been responsible for the construction of eleven tanks and twelve canals, thus earning the name endowed on him by posterity, as the "First of the great Tank Building Kings." Six of these tanks have been identified, including:

Vaha Vapi (Panikkan Kulam off Puttalam—A'pura Road)
Mahanikkhavatti (Manakattiya Eastern Minor Road 12th Mile) Aggivaddhamavaha (Hirivadunna near Habarane).
Mayanti and Mayetti tanks (may be the Willachchiya tanks).
and of the canals only the Alisara (Elahera) canal is now known, to perpetuate his name.

2.13 Development progressed actively thereafter and larger tanks, in fact the celebrated sixteen large reservoirs of King Maha Sena (276-303 A. C.), the Great Tank builder, are then recorded. Eight of the sixteen tanks constructed by him are identified to-day:—

Mahagama Vapi
Challura Vapi (Huruluwewa)
Khanu Vapi (Mahakandarawa Tank)
Kokavata Vapi
Mahamani Vapi (Maminiya near Maradankadawela)
Dhammaramma Vapi
Kumbalaka Vapi (Kimbulvana, now known as Niramulla)

Vahana Vapi

Rattamalakandka Vapi (Padaviya Tank)

Velangavitthi Vapi

Tissavadhamanaka Vapi (Kaudulla Tank)

Mahagallaka Vapi

Cira Vapi

Mahadaragallaka Vapi (Mahagalkadawela)

Kalapasana Vapi (Karampankulam)

and foremost of them all *Manihira Vapi* (MINNERIYA TANK), where he is worshipped today at a shrine on the tank bund, a fitting tribute to the legacy left by him.

He is also said to have been responsible for the construction of the great Pabbatahata canal identified now as the present Minipe Canal—the dam across the Mahaweli (Manimekhala Dam) was however built later by Aggabodhi I.

2.14 King Dhatusena (459-477 A. C.) became immortal with his foremost irrigation work—the Kala Vapi (Kala Wewa) built across the Kala Oya and the Jaya Ganga (Kala Wewa-Yoda Ela) the 52 mile long canal to convey the Kala Wewa waters to the city of Anuradhapura. Besides the twin tanks Kala Wewa and Balalu Wewa, he is recorded to have constructed 18 tanks of which 4 were major works, including:

Mahadatta (Madatugama at 51st M. S. Dambulla-Anuradhapura Road) Maha Eli (Mealiya Vava on 12th mile Ibbagamuwa-Polpitigama Road).

2.15. A King who distinguished himself in literary scholarship and in development work alike was *Moggallana II* (535-555 A. C.). During his reign were constructed, Pattapasana Vapi (Nachchaduwa Tank) along with a five mile feeder channel (now a natural stream) from there to Nuwara Wewa, in Anuradhapura. To him is also attributed restoration or enlarging of Dhana Vapi (Padaviya Tank).

To Aggabodhi I (575-608 A. C.) a model king, who ruled for 34 years, is attributed the development of—

The Manimekahala Dam—The anicut across the Mahaweli Ganga at Minipe, along with improvements to about 17 miles of the Minipe Ela Scheme, built earlier.

The Minneriya Kantalai Yode Ela, conveying water from Minneriya tank to Kantalai.

Kurunda Vapi, now known as Thannimurippu Tank off Mullaitivu.

Aggabodhi II (608-618 A. C.) continued the development works commenced by his uncle Aggabodhi I and constructed the Ganga-tata Vapi (Kantalai Tank), into which the 54 mile Minneriya Kantalai Yode Ela terminated. To him is also attributed the construction of Giritata Vapi (Giritale Tank) fed by a branch of the Elahera canal.

2.16 Thus by the seventh century A. C., the following were among the larger achievements accomplished by the ancients in developing the water resources of Sri Lanka:—

Major Reservoirs (those known now)

Minneriya
Mahakandarawa
Kaudulla Tank
Huruluwewa
Padaviya
Kalawewa
Nachchaduwa
Thannimurippu Tank
Kantalai Tank
Giritale Tank
Thusa Vapi

River Diversion Works and Canals

Elahera canal
Kalawewa Yode Ela and Tissawewa
Feeder channel to and Nuwarawewa
Minipe anicut and 17 miles of Minipe Yode Ela
Minneriya Kantalai Yode Ela
Hattota Amuna and channel

Although not many new works were done during the three centuries that followed, the monarchs nevertheless repaired, strengthened, enlarged and restored the works already accomplished by the earlier kings.

2.17 The Kala Wewa spill is reported to have been strengthened by King Mahinda II (777-797), when a feeder channel was also constructed from there to Tintinigamaka Vapi (now called Usgala Siyambalagamuwa Tank).

The Minipe Ela Scheme was extended to a total length of 47 miles, during the reign of King Sena II (853-887), when an augmentation scheme was also provided to Mahakandarawa Tank by a dam near Maradankadawela.

2.18 Names of other kings of that period who interested themselves in irrigation matters and in the preservation of work include Udaya II (887-898), and Sena III (938-946). But the most strenuous effort at restoration and consolidation of irrigation works was by Vijayabahu (1055-1110). He is reported to have put into function once again the Elahera Canal; among the tanks which received his attentions were Minneriya, Kaudulla, Kantalai, Nachchaduwa and Mahakandarawa tanks.

2. THE ACHIEVEMENTS OF PARAKRAMA BAHU THE GREAT

2.21 *Parakrama Bahu I* (1153-1186), assumed charge of his own principality of "Dakkinadesa", contained in the area between Kalu Ganga and Kala Oya. *Conservation and Development was his key note to the path of plenty.* He demonstrated his own dictum that water that comes from rain must be made useful to man.

2.22 The Deduru Oya (Jajjara Nadi), the river of his principality of Dakkinadesa, was first harnessed by damming at three major works sites. The Kotthabaddha anicut with the present Sengal Oya near Chilaw, the Sukaraniyjhara (Ridi Bendi Ela anicut) and the uppermost dam, Doradattika, below the present anicut site at the junction of the two streams Hakwatunu Oya and Kimbulvana Oya. Along with this fifty three tanks were restored or improved in the area, chief of which was Panduvasnuvara, near Hettipola which was given the title of the first "Sea of Parakrama."

With the military conquest over his rivals and the subjugation of their territories, his own development plan spread out, eventually to cover the whole island of Ceylon. No irrigation work built before his time escaped from being put into working condition to ensure productivity everywhere.

2.23 It is recorded that Parakrama Bahu I was responsible for the construction, restoration and enlargement of:—

163	...	Major Tanks
2,376	...	Minor Tanks
165	...	Anicuts
3,910	...	Channels from tanks and anicuts.
a most stupenduous achievement!!		

The Mahawamsa narrates the ambitions of this great tank builder as follows:—

"In my kingdom are many paddy fields cultivated by means of rain-water, but few indeed are those which are cultivated by means of perennial streams and great tanks.

By rocks, and by many thick forests, by great marshes is the land covered, In such a country let not even a small quantity of water obtained by rain, go to the sea, without benefiting man.

Paddy fields should be formed in every place, excluding those only that produce gems, gold, and other precious things."

The Sea of Parakrama (the Parakrama Samudra) was the masterpiece of his many ambitious projects and stands today to commemorate his achievements.

2.24 Foremost of all the works initiated during the period is the present Parakrama Samudra Scheme; it consisted of the Angame-

dila anicut across the Kara Ganga (Amban Ganga) and the conveyance of the diverted flow by an inlet channel (Akasa Ganga) to Parakrama Samudra which earlier were three individual tanks: Topa Wewa, Dambutuluwewa and Eramaduwwewa; now these are merged (on restoration) to form the present Parakrama Samudra at Polonnaurwa.

2.25 Thus by the 12th century, water-conservation had reached its zenith in Ceylon with a record which was the greatest achievement in history.

During the three centuries that followed, no new development was promoted: even the completed works went into decay: developmental activity was probably confined to the maintenance in working order of the works in the neighbourhood of the capital cities of Dambadeniya, Yapahuva, Kurunegala and Gampola.

3. DEVELOPMENT BY THE DUTCH

2.31 The position did not change with the arrival of the Portuguese (1505-1656), whose interest in agricultural enterprise was confined to cinnamon only.

2.32 The Dutch were in Ceylon for about 150 years from 1656 A. C. Unlike their predecessors, attention was paid by them for the agricultural development of Ceylon. Grants of lands were freely made for this purpose and a regulation published in 1666 prohibited owners of rice fields from leaving them uncultivated. Another order in 1744 announced seizure of such uncultivated lands to be given to other "more diligent cultivators." The Dutch found it good economy to encourage agriculture in the low country and aided this with costly undertakings, by the construction and restoration of engineering works.

2.33 The most striking contributions made by the Dutch in Ceylon are the well known Dutch canals. These were excavated primarily for economical water transport but also aided agricultural development by draining the neighbouring areas and rendering them suitable for cultivation.

The Negombo and Kalutara canals facilitated the drainage of Muthurajawela and the Kotte area. The Maha Modera canal in Galle was expected to relieve flooding in the neighbouring low basin. Similarly the Nupa and Talagahoda canals in the Matara area.

2.34 Paddy cultivation in the Colombo and Galle areas received much attention by this as "a great part of the crops were being lost either having too great or too small a quantity of water." A long earthen embankment, over seven miles in extent, was erected along the northern bank of the Kelani Ganga, and which is in use today, known as the Kelani North Flood Protection Bund—to prevent the periodic inundation of the paddy fields in the

low basins around Kelaniya. The lands situated adjoining the Nilwala Ganga were drained and irrigation facilities provided by suitable dams, etc. The Kirama Oya was regraded and facilities provided for diversion of water to paddy fields.

2.35 By far the foremost of the Dutch water conservation work is the Urubokke Dam, completed in 1787 by Lt. Foenander to improve cultivation of 8000 acres.

2.36 Other works include the Irakkamam dam and the Amparai tank repair works by Bunnand, and improvement works to Kantalai Tank by Engineer Fornabur. Progress in development appears to have been very vigorous in the latter half of the 18th century during the administration of Vandegraaff.

4. ENTHUSIASM OF THE BRITISH GOVERNORS

2.4 The British took command of the maritime areas of Ceylon by 1798 and the entire Island in 1815.

Progress in the development of water resources in the Island, during the 150 years of the British occupation of Ceylon, divides into three distinct periods:—

Development, initiated by the enthusiasm of the Governors of the time.

Efforts of the Central Irrigation Board and the Provincial Boards.

Development by the Irrigation Department.

2.41 There had been an attempt with a proposal to restore Giant's Tank by Sir Thomas Maitland in 1806 which the Dutch too investigated for restoration but nothing was done; generally not much interest was taken on irrigation matters. However, following the pattern set up at Urubokke by the Dutch, the Kirama Dam was however constructed in 1825, across a tributary of the Nilwala Ganga.

With the removal of the Rajakariya system in 1832 the communal machinery by means of which tanks had been kept in good repair from the very ancient days, terminated, without a substitute in its place. So the maintenance and up keep of communal water conservation works was not the responsibility of any individual or group and the works just wasted into general decay.

Even the Kirama and Urubokke Dams breached in 1837.

2.42 To Sir Emerson Tennent, Colonial Secretary in 1847, belongs the credit of reviving interest in irrigation development by legislative authority, with measures for the gradual restoration of irrigation schemes. This idea, later in 1855, culminated in the hands of Sir Henry Ward, Governor of Ceylon (1855-1860). The "Irrigation Ordinance of 1856" described as the "Ordinance to facilitate the revival and enforcement of ancient customs regarding the Irrigation and Cultivation of Paddy lands," was enacted.

The Act was to be in force for 5 years from 1. 1. 1857 and was limited in the scope of application to those areas in Ceylon where there were large tracts of paddy land dependent on a single source of irrigation.

Under the terms and conditions of the Ordinance, funds were obtained and Sir Henry Ward was able to, during his term, to put back into working condition the works of the Dutch, viz: Irakkamam work in Batticaloa and the Urubokke dam and Kirama dam in the south.

The Irrigation Ordinance of 1861 was a renewal of the first, but the revised Irrigation Ordinance of 1867 embodied the required modifications with a wider scope covering repair of village tanks and minor works as well.

2.43. *Sir Hercules Robinson*, Governor (1865-1872) was able to embark on developmental activity on a large scale.

The reward of his enthusiasm enabled commencement of reconstruction and restoration, and in several cases even completion during his term. Among the schemes were:—

S. P.	N. W. P.
Kekandura Tank	Deduru Oya scheme
Hali Ela Tank	Kospotu Oya scheme
Tissamaharama Tank	Tinipitiwewa
Udukiriwela	Wennoruwewa

E. P.	Uva
Periyakulam	Horaborawewa
Rugam Tank	Buttala Ela
Pulukanavakulam	Kudawewa

and about 25 others, with a record expenditure (considered, then, as astounding) of Rs. 1,050,000.

2.44 His successor in office, Governor *Sir William Gregory* (1872-1877) was equally keen and the tempo of development was nearly doubled and several works of restoration were taken up including:—

S. P.	E. P.
Urapola anicut	Allai scheme
	Sakamam
	Chandiyantalawa
	Kantalai Tank
N. C. P.	N. W. P.
Basawakkulama	Maha Uswewa
Madawachchiya Tank	Galgamuwa Tank.
Yoda Ela from Kalawewa	
Elahera canal	

and a large number of village tanks, the restoration of which was the special interest of *Sir William Gregory* whose requirement was "that at least one hundred village tanks be properly repaired each year."

2.45 *Sir Arthur Gordon* (1883-1890) once again revitalised irrigation development and kindled enthusiasm which had worn out with the departure of *Sir William Gregory* and several works were taken up for restoration during his regime.

The restoration of Kalawewa was taken up, costing Rs. 405,095. The restoration of Kalawewa Yode Ela (Jaya Ganga of Old) was then (1889) undertaken, costing Rs. 304,484. Along with these the City Tanks of Anuradhapura, Nuwarawewa, Tissawewa and Basawakkulama were also restored.

5. EFFORTS OF THE CENTRAL IRRIGATION BOARD

2.51 In 1887 an Ordinance was passed creating a Central Irrigation Board, with the Governor as President, for the general management and promotion of irrigation. Provincial Boards were also set up with the respective Government Agents, of the area as Presidents who were entrusted with the execution of all works in their areas. No special staff was however provided and the works executed by the staff of the Public Works Department. Restoration Works taken up, included:—

Hambegamuwa Tank in Uva
Bodi Ela in C. P. (3 miles)
Kitulbokke Scheme in Sabaragamuwa Province.
Uggalkaltota Scheme in Sabaragamuwa Province.
Kanagarayankulam in N. P.
Lahugala Tank in E. P.
Maha Nanneriya in N. W. P.

2.52 A review of the progress achieved in the restoration and construction of irrigation development works, indicate the following position by the end of the Year 1889.

	Large Tanks restored	Small Tanks restored	Anicuts	Channels	Length of Channel
W. P.	...	—	—	—	—
C. P.	...	1	28	104	168
N. P.	...	5	35	1	—
S. P.	...	13	26	96	105
E. P.	...	17	5	11	8
N. W. P.	...	7	981	3	3
N. C. P.	...	6	1,148	—	14
Uva P.	...	10	27	28	26
Sab. P.	...	—	—	2	2
Total	...	59	2,250	245	326
					700 miles, of Channels

2.53 During the next five years construction and restoration work was commenced and in many cases completed at:—

Kumbukkan Anicut	(Uva)
Bowatenne Ela	(C. P.)
Bodi Ela	(C. P.) Had breached seriously and taken up again.
Irakkamam, Sagamam and Thum- pankerni	(in E. P.)
Rugam	(which had breached in 1881).
Badulu Ela	(Uva)
Hingura Ara Tank	(S. P.)
Deduru Oya Works	(N. W. P.)
Yoda Wewa	(S. P.)
Madukande, Cheddikulam, and Periyakulam	(in N. P.)

work at Giant's Tank was slow and later received a set back due to an epidemic of Cholera (1898).

2.54. In 1896, it was decided to vest entirely in the Director of Public Works the responsibility for the execution of irrigation works, relieving the Government Agents of this task. For this purpose a special Irrigation Assistant (Henry W. Parker) and a number of Junior Engineers were added to strengthen the P. W. D.)

A new Irrigation Manual was published on the 18th of March 1899, which helped to define responsibility for the maintenance of irrigation works.

6. DEVELOPMENT BY THE IRRIGATION DEPARTMENT—I

2.6 1900-1907—In order to expedite the execution of irrigation works, a separate Irrigation Department, as distinct from the Public Works Department, was formed on the 15th of May 1900, with H. T. S. Ward as first Director of Irrigation, H. W. Parker, Irrigation Assistant, and seven Irrigation Engineers.

All surveys, designs and construction of new works restoration and maintenance of large schemes were the responsibility of the new Department. The Government Agents (the Provincial Board being abolished) were concerned about the upkeep of minor works carried out by the villagers themselves.

2.61 In 1904, *Henry W. Parker, Irrigation Assistant*, who had by the time become a most valuable officer and whose reports on the ancient irrigation schemes are even now works of authority, retired from Government Service. The Director of Irrigation (H. T. Ward) writes:—“He (H. W. Parker) served in all the malarial districts of the Island and knew more about the ancient irrigation works than all the rest of the inhabitants of the island put together. He spoke Tamil, and Sinhalese fluently and was a Pali Scholar.

He designed Deduru Oya Works, Giant Tank restoration, the Karachchi Scheme and reported on numerous irrigation schemes all over the island.....”. Today he is more well known and remembered than even any Director of Irrigation of old.

The new Department, embarked on several new large construction works, besides repairing and improving several smaller works and was able to show in 1907 the accomplishment of the following:

Kirindi Oya Scheme
Walawe Scheme
Giant's Tank
Kala Wewa
Deduru Oya Works
Vakaneri
Sagamam-Vammiyadi
Pattipolaru Scheme
Nachchaduwa Tank.

2.62 An important event was the arrival in Ceylon of W. L. Strange, loaned by the Indian Government. His report on “Irrigation in Ceylon” was published in 1909. Work on Iranamadu Tank which was a new construction work was proceeding steadily and the Dri Aru Tank was done in 1908, as a preliminary work to cater for the labour camp and the water supply etc. Amparai, Kondavaddavan & Vellathipathi Tanks in E. P. were completed and Illakantai tank, Trincomalee executed in one year (1912). An estimate for Rs. 374,700/- was approved in the same year for the restoration of Tabbowa Tank.

2.63 The existing Irrigation Ordinance was revised and the new “Irrigation Ordinance No. 45 of 1917” was enacted and framed in accordance with the recommendations of Strange's Report of 1908. Irrigation rates were now made variable with development and no longer remained fixed.

2.64. In 1917 the technical staff were relieved of the administration of cultivation rules, which from now on became a responsibility of the Government Agents.

2.65. Iranaimadu Tank, commenced in July 1902, was completed in 1921; it filled and was spilling in November same year. The investigation of the flood problem in Colombo area from Ja-Ela to Kalutara was commenced in 1920. The proposals were accepted and the work on the Colombo South Flood Scheme commenced on 18th October 1923.

2.66. Due to intense rainfall Illakantai Tank breached in 1923. Lemasooriyagama anicut was completely overturned in 1923, and Madawachchiya Tank in N. C. P. also breached.

2.67. During the four years from 1924 construction work was carried on at good pace; foremost among the works carried out were the Colombo South Flood Protection Works, the Colombo

North Flood Protection Works, which was commenced in 1924 and completed in time to save Colombo from the 1926 floods; and the Left Bank Irrigation Scheme under the Liyangatota anicut, Walawe Scheme. The restoration work of Tabbowa, which was recommenced in 1921, was completed in 1925 and the tank filled for the first time and was spilling on 8. 12. 1925.

2.68 By 1930, the Irrigation Department was responsible for the maintenance of the following water conservation works:—

TABLE XI

164 Major Irrigation Works, Colombo South and North Flood Scheme Works
82 Miles of Tank Bund
563 Miles of Channels
95 Miles of Roads.

7. DEVELOPMENT BY THE IRRIGATION DEPARTMENT—II

2.71. A new irrigation policy was announced by D. S. Senanayake, Minister of Agriculture & Lands, in 1932, whereby improvements to village irrigation works also became the work of the Department. Ceylonising the higher engineering grades was also initiated.

2.72. The Department also launched out on carrying out of Minor Flood Protection Works, preventing Kelani Ganga Flood Waters inundating low lying adjoining basins up to a predetermined flood height called Minor Flood Level or Level of Flood Protection.

Rufus Kulam Works which commenced in 1930 was completed in 1932. Akathimurippu channel construction was completed in 1934. Walawe L. B. Scheme was nearing completion. The Kelani North Bund (Dutch Work) was improved.

2.73. An event of great importance was also the utilisation of heavy mechanical equipment, for the first time, in the execution of development works. A Rustan Bucyrus Excavator excavating channels and a Caterpillar Tractor assisting breach closure work at the Eramadu Gap, P. S. Scheme are events of 1936-37.

Construction work was commenced at several large major works:—

Topa Wewa (P. S. S. 1st Stage)
Ridi Bendi Ela
Minipe Ela (1st Stage)
Bathmedila Ela (1st Stage)
Colombo South Drainage—Wellawatte canal
Attanagalla Oya Scheme
Elahe'a Scheme.

2.74. Mahaweli Ganga was harnessed for the first time in recent years by the restoration of the Minipe Anicut during February-March, 1939.

2.75. In spite of dislocation of normal activity in the Island due to war conditions (the Air raid on Colombo was on 5th April 1942,) work was carried on, on the following projects:—

Parakrama Samudra Scheme
Minneriya—Stage III
Elahera—Stage II
Bathmedila—Stage II
Kottukachchiya
Nilwala Ganga—M. F. P. S.
Gin Ganga—M. F. P. S.

Parakrama Samudra Scheme filled for the first time on Feb. 22nd, 1944.

2.76. A new land policy was initiated. It was considered insufficient to construct tanks and the irrigation channel systems only, but in addition to the land being opened up, asswedomisation should be done before the colonists were settled.

A new land development unit embarked on clearing land and erection of colonists cottages at: Minipe, Kahagama, Elahera & Parakrama Samudra Schemes.

Irrigation development was pushed forward with great vigour during this period specially for the food production drive and work was commenced in July 1945 on the restoration of Devahuwa Tank and Murapola Scheme in October 1945. The ancient Elahera canal was mended with incredible speed by enthusiastic officers and the Ambanganga waters harnessed for immediate cultivation needs.

8. INDEPENDENCE AND DEVELOPMENT

Development Directed by Ministers of State

2.8. With the dawn of political freedom economic progress was the chief pre-occupation of Independent Ceylon. To this goal each Cabinet Minister directed his activities. The development of water resources for agricultural production (irrigation) was the responsibility of the Ministry of Agriculture and Lands. Water Conservation works for domestic water supply and for hydro-electric generation were subjects of the Minister for Communications & Works; due to subsequent re-allocations of functions of Ministers, the development of water resources now concern the Minister of Lands, Irrigation & Power—for the development of irrigation and hydro-power, the Minister of Agriculture and Food—for the up-keep of minor irrigation works and the Minister of Local Government—for domestic water supply.

2.81. With 1947 came the long awaited day of Independence. By that time:—

“Gal Oya has become a household word. It is symbolic of the New Lanka. May it obtain fulfilment speedily and herald the progress of our march towards self-sufficiency.”

With these words the Rt. Hon. D. S. Senanayake, Prime Minister, unveiled the commemoration pillar erected at Inginiyagala on which was inscribed in Sinhalese, Tamil and English the simple dedication:

“This commemorates the inauguration of the Gal Oya Irrigation and Power Project. Opened by the Hon. Mr. D. S. Senanayake, Prime Minister of Lanka on August 28, 1949.”

The Gal Oya Scheme was envisaged as a multi-purpose project, and preliminary works were done in 1948; active construction commenced in 1949. The dam and headworks were completed later and the Senanayake Samudra commenced issuing water for the first time on the 10th of December 1951.

2.82. The first six year programme was drawn up for irrigation development during the years 1947/48 to 1952/53, as part of the post war programme of work. In this the completion of the following Schemes were envisaged:—

Six-Year Programme—1947/48 to 1952/53

Giritale	...	623	
Parakrama Samudra	...	14,050	
Elahera	...	4,504	
Raja Ela	...	—	
Minneriya	...	3,216	
Kahagama Ext.	...	1,417	
Nuwarawewa Ext.	...	506	
Bathmedila	...	1,112	
Minipe Ext.	...	952	
Ridi Bendi Ela	...	1,695	
Dewahuwa	...	2,337	
Gal Oya	...	41,000	
Kantalai Ext.	...	2,000	
Allai Ext.	...	7,000	
Walawe Res.	...	1,000	
Huruluwewa	...	500	
Total	...	81,912	Acres of new lands

Progress of work was channelled to the construction and the completion of these works by Mr. Dudley Senanayake, Minister for Agriculture and Lands. Minipe Stage I and the Minneriya Augmentation Schemes were completed in 1949-50; Huruluwewa, Kandalama, Kantalai, Giritale and Mahakadawewa Projects were completed by 1953.

2.83. With the completion of the first six year programme towards the end of 1953, there were:—

113 Miles of tank bunds

54 Miles of flood bunds
1267 Miles of channels
363 Miles of roads
634 Buildings

completed and maintained for effecting irrigation water supply to:
271,433 Acres under Major Irrigation Works and
412,350 Acres under Minor Irrigation Works.

The next programme commenced in 1954 by (Mr.) P. Bulankulame Disawe the then Minister for Agriculture and Lands included:

Vavunikulam
Padaviya
Maha Wilachchiya
Mi Oya and
Badulu Oya schemes.

A vigorous programme of development was commenced by Mr. C. P. de Silva who assumed charge of the Ministry since 1956 with the following works:—

Giritale Extension
Gal Amuna
Hakwatunu Oya
Usgala Siyambalagamuwa
Mora Wewa
Muthu Iyan Kaddu Kulam
Kaudulla Tank
Mahakanadarawa Tank and
Chandrika Wewa.

Floods of 1957

2.84. But a most tragic event overtook all development activity in 1957. Torrential rains, unprecedented in living memory, fell on the 24th to 26th December 1957, causing such catastrophic devastations as never experienced before—rainfall recorded at Habarana was 16.48 ins. on the 24th, 18.76 ins. on the 25th and 13.59 ins. on the 26th. Serious damages were caused to 35 major irrigation works and 1300 village tanks. Among the major tanks that breached were:—

Kala Wewa
Hurulu Wewa
Nachchaduwa
Giant's Tank
Akkarayankulam
Pavatkulam
Iratperiyakulam
Unichchai Tank and
Rugam Tank.

Repairing all these ravages and putting back into commission, many of these giants of old necessarily slowed the momentum that would otherwise have been accomplished in new developmental construction works.

2.85. Soon afterwards however the pace of development was renewed with ever greater vigour and several large conservation projects, storage reservoirs and river diversions were embarked upon, among which are the Minipe Ela Extension Scheme, Muttu Aiyan Kaddu Kulam, Vavunikulam Reservoir, Akkarayan Kulam, Allai Extension Scheme, Morawewa Extension Scheme, Hakwatunu Oya Reservoir Scheme, Maha Kandarawa Scheme, Padaviya Extension Scheme, Rajangana Wewa, Angamuwewa Scheme, Kaudulla Scheme etc.

Construction work was commenced in 1963 on the Uda Walawe Dam across the Walawe Ganga, for the development of over 60,000 acres by the conservation and storage of over 200,000 acre feet of water.

Work on the storage reservoir at Muruthawela and at Nagadeepa was commenced in 1966.

In the subject of Water Resources Conservation and utilization Ceylon is just now in the midst of an epoch making era when a most stupendous project, bigger than any, ever thought of, is being evolved.

The Mahaweli Ganga, our longest and largest river is to be harnessed, whereby six million acre feet of water is to be conserved to aid the development of nine lakhs acres. The work would cost about Rs. 6,000 million and would be spread over a period of twenty years.

The architect of this project is the Minister for Lands, Irrigation & Power—Mr. C. P. de Silva.

Ground Water Exploitation

2.86 In 1964, two deep wells were drilled in the limestone regions, North of Puttalam

The first was at Kondachchi, about fifteen miles south of Mannar, where the surface was about 100 ft. above mean sea level. Red soil extended to 28 ft. depth and gravel up to 35 ft. depth. Thereafter sand mixed with limestone was encountered. Good limestone was first encountered at 90 ft. depth, and when broken through, water rose, on release, by 17 ft. Drilling was continued to over three hundred feet depth.

Yield tests were made later; these showed that even when pumping was done at 235 gallons per minute, the draw down as shown in a neighbouring drill hole did not exceed 3 feet, even after six hours of pumping. Plenty of supply is presumably available in the sub-

terranean regions of this locality. The quality of the water however was below standard.

The second well drilled at Vannathivillu about 12 miles north of Puttalam gave slightly different results.

Here again the surface was about hundred feet in elevation. The water bearing limestone was encountered and broken at a depth of 140 feet. When broken, water rose by seventy feet from the ground. Drilling was continued to a depth of 300 feet. With the pump lowered to a depth of about a hundred feet and working at its maximum speed of 235 gallons per minute, the draw-down was 30 ft. by which time pumping was stopped.

Since then several wells have been drilled and are being exploited for the lift irrigation scheme of the Vannathivillu region.

2.87. Hydro Power Generation

In the absence of coal fields, hydro power has always been looked upon as the only form of natural power available in Ceylon.

Electricity supply system from thermal stations was initiated in Ceylon in 1895, by private enterprise to serve the city of Colombo. The Pettah power station erected in 1898 served for several years. Kandy had electricity supply from 1901 and Nuwara Eliya from 1912 etc.

It was in 1910 that F.D. Rylands, Government Electrical Engineer, first presented a report on the possibilities of harnessing the flow in the upper reaches of the Kelani Ganga for the generation of electrical power. Later in 1918, D. J. Wimalasurendra who was engaged in its investigation, formulated proposals for the Aberdeen-Laksapana Project, which was subsequently modified to the present Laksapana Hydro Electric Scheme. Work was started on the project in 1924 but was suspended in 1927; the economic depression and the outbreak of the World War delayed recommencement till 1940, when after a few set-backs, work was finally completed in 1950. The capacity of the project is 25 M. W. and a total cost was Rs. 55 Million.

In 1954, the next stage of the work was commenced with the erection of a dam at Castlereagh. Castlereagh Reservoir storage augments the storage at Norton and aids generation of a further 25 M. W. at the Laksapana Station.

With the completion of a tunnel from Castlereagh to Norton a further capacity of 50 M. W. was brought into commission in 1964 at the Norton Wimalasurendra Power Station, which is the second hydro electric station to utilise the flows from the 65 sq. miles catchment of Kehelgamuwa Oya, tributary of the Kelani Ganga.

In the meanwhile at Inginiyagala, with the completion of the dam across Gal Oya in 1952 hydro electric generation was commenced;

Later with the installation of the balance two units in 1963 the complete four units have a generating capacity of 10 M. W.

The waters stored in the Uda Walawe Reservoir, harnessing the flow of the Walawe Ganga, is designed to generate 6 M. W. hydrel power at power stations erected at the sluices of the reservoir.

The Maskeliya Oya, tributary of the Kelani Ganga is to be fully harnessed for hydrel power generation. The first stage of the project now under construction expected to be completed in 1969, comprises of impounding the flow in the oya with a dam at Mousakelle and installing a generating station at Polpitiya of 75 M. W. capacity.

Domestic Water Supply

2.88. Development of water resources for domestic water supply was confined to the city of Colombo at the commencement.

Supply to Colombo is obtained by the erection of a storage reservoir at Labugama, impounding the flow in Wak Oya, a small tributary of the Kelani Ganga. The work is 28 miles east of Colombo and was constructed in 1886 and is expected to yield 12½ million gallons per day.

To augment the above supply, the construction of another reservoir impounding the flow in Kalatuwawa Ela, an adjoining tributary of the Kelani Ganga, was commenced in 1949 and completed in 1960. The estimated yield from this source is 20 million gallons per day.

Besides the above, a pumping station installed at Ambatalen-pahala, about eight miles from Colombo, is also utilised to augment the supply to the city from the flow in Kelani Ganga.

2.89. Water supply schemes for other places in Ceylon were executed by the Public Works Department. In 1955 a proper program was prepared for the systematic execution of several supply schemes and in 1961 a separate Department of Water Supply and Drainage was created, under the Ministry of Local Government, for the execution of several schemes of pipe borne water supply.

All the nine Municipalities viz: Kandy, Galle, Jaffna, Dehiwala-Mt. Lavinia, Kurunegala, Negombo, Nuwara-Eliya, Badulla and Matale have water supply schemes, although some of them may not be adequate. Kandy with the recently completed pumping scheme from the Mahaweli Ganga near Peradeniya, is now adequately served; so is Negombo's with the supply from the Maha Oya.

Besides the above, over fifty Urban Council and Town Council areas are provided with pipe borne domestic water supply.

The supply to these schemes are generally obtained from the following kinds of sources:—

Well water from sand formations as found in Batticaloa, and Mannar.

Well waters from the limestone formation as at Jaffna.

Well waters from the beds of streams as at Tangalle.

River waters as from Mahaweli Ganga for Kandy, Kelani Ganga for Colombo (Part), Walawe Ganga for Hambantota, Maha Oya for Negombo.

Water from Irrigation storage tanks as from Nuwara Wewa for Anuradhapura.

Surface drainage, from protected catchment stored in a reservoir, as at Labugama for Colombo.

Due to limitations of the recuperative capacities of the sources of draw off, the supply schemes do not all of them provide the 50 gallons per head per day in Municipal areas, 30 g. d. in urban and 10 g. d. in rural areas. However, overall computations show that nearly 100 million gallons are supplied per day for domestic water supply.

Minor Irrigation Works

2.90. Nearly 400,000 acres of rice cultivation in Ceylon is supplied with water conserved in small irrigation works all over the Island; these minor Irrigation Works (or Village Irrigation Works) are small water conservation storage tanks or stream diversion anicuts looked after by the beneficiaries, under the care of Cultivation Committees, who are responsible for their maintenance and upkeep.

2.91. The land tenure system of the Island has been the subject of reform from time to time.

The Paddy Lands Act of 1958 was introduced in order to provide security of tenure to the tenant cultivator who otherwise was reluctant to improve the land or adopt cultural practices which would bring in higher yields. The new Act made tenancy a heritable right and also established a new institution called the *Cultivation Committee*. The Cultivation Committee was elected by farmers from among themselves. The new Act was enforced only in six Districts in 1958, but gradually others were included and by 1963, all the 22 Districts of the Island had been brought under the Act.

Over four thousand Cultivation Committees have since been set up and their duties include preparation and maintenance of registers of paddy lands, fixing of wage-rates of agricultural labour, adopting steps for the development and maintenance of irrigation works, efficient cultivation of paddy lands and the maintenance of their fertility.

The Department of Agrarian Services annually spends over four million rupees in effecting such repairs and improvements to Minor Irrigation works which the shareholders themselves are unable to perform. The work is generally done by the Cultivation Committees.

In the Agricultural Development Proposals of the Ministry of Agriculture and Food, for the years 1966/1970, the Department has financial programme for annual expenditure of about ten million rupees on minor irrigation works.

CHAPTER 3

DEVELOPMENT WORKS

I. Major River Basins

3.11. The Island's area is divided into 103 component natural river basins.

Thirty six of these in number as shown in the list below have catchment areas of over 100 sq. miles and are usually termed Major (comparatively) River basins.

- | | |
|--------------------------------|--------------------------------|
| 1. Kelani Ganga | 19. Kantalai Basin and Per Aru |
| 2. Kalu Ganga | 20. Pankulam Aru |
| 3. Bentota Ganga | 21. Yan Oya |
| 4. Gin Ganga | 22. Ma Oya |
| 5. Nilwala Ganga | 23. Per Aru |
| 6. Walawe Ganga | 24. Kanakarayan Aru |
| 7. Kirindi Oya | 25. Mandekal Aru |
| 8. Menik Ganga | 26. Pali Aru |
| 9. Kumbukkan Oya | 27. Parangi Aru |
| 10. Wila Oya | 28. Nay Aru |
| 11. Heda Oya | 29. Aruvi Aru |
| 12. Karanda Oya, Iremeti Aru | 30. Modaragama Aru |
| 13. Gal Oya | 31. Kala Oya |
| 14. Andella Oya, Navakkiri Aru | 32. Mi Oya |
| 15. Magalawatavan Aru | 33. Deduru Oya |
| 16. Mundeni Aru | 34. Karambala Oya |
| 17. Maduru Oya | 35. Maha Oya |
| 18. Mahaweli Ganga | 36. Attanagalla Oya. |

3.12. It may be pointed out that of these thirty-six basins, those with common characteristics can conveniently be collected into three groups:—

The South-West Monsoonal Basins;

The North-East Monsoonal (Dry Zone) Basins;

Basins that receive benefits from both the monsoons.

The South West Monsoonal Basins

3.13. Important rivers of this group are:—Kelani Ganga, Kalu Ganga, Bentota Ganga, Gin Ganga, Nilwala Ganga, Maha Oya and Attanagala Oya. Generally they receive copious precipitation from April to September and are wet even during the other months. Land use predominates with tea, rubber, coconut and some rice cultivation. The area is well populated. Most of the areas are

already well developed. The need for irrigation is limited. Essential requirement and pressing demand in all these basins is flood prevention and effective internal land drainage, particularly in the lower reaches.

What is required therefore, at all these south west monsoonal river basins, is the erection of flood absorption reservoirs in the upper reaches, embodying hydro power generation wherever possible. As would be seen later, measures for the construction of these are at various stages of progress.

3.14. There are also low lying small basins all along the fringe of the seaboard of the Island. Of these, the basins in the south-west monsoonal area, which lie along the western coast from Negombo to Tangalla have distinct problems of their own, which may be listed as follows:—

1. Their drainage into the sea remains blocked by sand bar formation at the outfall, for about 10 months of the year.
2. Inundation of the area by minor floods is therefore inevitable during this period.
3. During the post flood period sea water travels up the drainage lines and intrudes into the cultivable lands, rendering them saline.

Works needed at these basins would therefore necessarily consist of:—

1. Measures, such as sea groyne walls to keep the sand bars open.
2. Salt water entry prevention structures.
3. Wherever possible, creation of inland lakes for fish and prawn culture and inland fishery harbours.

The North East Monsoonal or the Dry Zone Basins

There are twenty six basins in this Group.

3.15. These form by and large, the most extensive part of the Island. Unlike the wet zone, the area is dry and arid that no crops can be grown without irrigation; a hazardous crop cultivation is practised during the rainy months of October to December, but the success of that is subject to the vagaries of seasonal rainfall. It is now realised that the future development and prosperity of the country lies in the planned development of the dry zone.

The two most important natural resources are land and water; but land use is not possible without irrigation and irrigation becomes possible mainly as a result of storage reservoirs. Priority then, for this zone, is for more and more irrigation storage reservoirs.

All the twenty six basins of this group have the common characteristic, there is land, there is water; the water resources have to be harnessed for irrigation supplies to convert the arid lands into arable productive lands.

Several reservoirs have been constructed and ancient works restored in these basins, details of some of these are given, as each basin is dealt with and a few illustrations are also shown.

River Basins that receive benefits from both the Monsoons

3.16. There are two rivers which receive appreciable benefits from both the south-west and the north-east monsoons. These two bi-monsoonal rivers therefore have perennial flow conditions.

The Mahaweli Ganga is unique in that it is the only river that flows along the length (more or less) of Ceylon whereas, other rivers commencing from the central hills reach the sea as quickly as possible.

The second of these, the Walawe Ganga, has its source in the hills and flows in a southerly course.

The Deduru Oya, though strictly not a bi-monsoonal river, has its source in mid-country and flows down to the dry zone.

2—DATA OF DEVELOPMENT IN THE MAJOR RIVER BASINS OF CEYLON

Having thus made an assessment of all our water resources, reviewed the water requirements for each of type of activity, and attempted a grouping of related river basins, the stage is set for the consideration of actual developments in each basin.

With this in view, each of the 103 river basins of Ceylon is now considered separately, in an anti clockwise order commencing from Kelani Ganga, giving details of major development works that have taken place in these with illustrations of some of them.

LIST OF RIVER BASINS

- | | |
|--------------------|--------------------|
| 1. Kelani Ganga | 17. Kachigala |
| 2. Bolgoda | 18. Walawe Ganga |
| 3. Kalu Ganga | 19. Karagan Oya |
| 4. Bentara | 20. Malala Oya |
| 5. Madu Ganga | 21. Embilikala Oya |
| 6. Madampe Lake | 22. Kirindi Oya |
| 7. Telwatta Ganga | 23. Bambawe Ara |
| 8. Ratgama Lake | 24. Mahasiliwa Oya |
| 9. Gin Ganga | 25. Butawa Oya |
| 10. Kegalla Lake | 26. Menik Ganga |
| 11. Polwatte Ganga | 27. Katupila Aru |
| 12. Nilwala Ganga | 28. Kuranda Ara |
| 13. Sinimodara Oya | 29. Namadag s Ara |
| 14. Kirama Oya | 30. Karambe Ara |
| 15. Rekawa Oya | 31. Kumbukkan Oya |
| 16. Urubokka Oya | 32. Bagura Oya |

- | | |
|---------------------------|-----------------------|
| 33. Girikula Oya | 69. Ma Oya |
| 34. Helawa Ara | 70. Churian Aru |
| 35. Wila Oya | 71. Chavar Aru |
| 36. Heda Oya | 72. Palladi Aru |
| 37. Karanda Oya | 73. Nay Aru |
| 38. Simena Ara | 74. Kodalikallu Aru |
| 39. Tandiadi Ara | 75. Per Aru |
| 40. Kangikadichi Ara | 76. Pali Aru |
| 41. Rufus Kulam | 77. Maruthapilly Aru |
| 42. Pannel Oya | 78. Thoravil Aru |
| 43. Ambalam Oya | 79. Piramenthal Aru |
| 44. Gal Oya | 80. Nethali Aru |
| 45. Andella Oya | 81. Kanakarayan Aru |
| 46. Thumpankeni | 82. Kalawalappu Aru |
| 47. Namakada Aru | 83. Akkarayan Aru |
| 48. Mandipattu Aru | 84. Mandekal Aru |
| 49. Pathanthoddathane Aru | 85. Pallarayan Kadu |
| 50. Vett Aru | 86. Pali Aru |
| 51. Unnichchai | 87. Chappi Aru |
| 52. Mundeni Aru | 88. Parangi Aru |
| 53. Miyangolla Ela | 89. Nay Aru |
| 54. Maduru Oya | 90. Aruvi Aru |
| 55. Pulliyanpota | 91. Kal Aru |
| 56. Kirimechi Odai | 92. Moderagoma Aru |
| 57. Bodigoda Aru | 93. Kala Oya |
| 58. Mandan Aru | 94. Moongil Aru |
| 59. Makarachchi Aru | 95. Mi Oya |
| 60. Mahaweli | 96. Madurankuli Aru |
| 61. Kantalai | 97. Kalagamuwa Oya |
| 62. Palampotta Aru | 98. Rathambala Oya |
| 63. Panna Oya | 99. Deduru Oya |
| 64. Pankulam | 100. Karambalan Oya |
| 65. Kunchikumban Aru | 101. Ratmal Oya |
| 66. Palakuttai Aru | 102. Maha Oya |
| 67. Yan Oya | 103. Attanagalla Oya. |
| 68. Mee Oya | |

The numbering adopted above for each basin is identical with the numberings of basins in the published maps of "Planned River Basin Development" of "Irrigation and Power" of the Ministry.

This numbering is maintained in what follows in dealing with individual basins. Some of the smaller basins have however been omitted.

1. KELANI GANGA BASIN

Natural Conditions

The Kelani Ganga is one of the main rivers of Ceylon; it has its source in the central hills near Adam's Peak and, flowing through the south-western part of the Island, falls into the sea at Colombo.

It takes the sixth place in respect of its extent of water shed, viz., 885 sq. miles, but, nevertheless, with an annual average yield of 4.86 million acre feet, becomes second from the water resources aspect due to bounteous rainfall in the catchment. The basin is about 56 miles long from east to west and about 28 miles in width (north-south).

Hydrology

Annual precipitation of rainfall in the Kelani Ganga basin varies from 225 inches in the hill country to 86.5 inches in the low-country flat plains.

The Kelani Ganga starts at the confluence of Kehelgamu Ganga and Maskeliya Oya; (from the mountain range of Kirigalpotha at an elevation of 7867 M. S. L.). In the same region other tributaries such as We Oya, Gurugoda Oya, Sitawaka Ganga etc. join up bringing in an abundance of drainage. The characteristic feature of all these tributaries is their steep gradient, dropping about 200 ft. per mile.

Floods

As a result, prevalence of floods in the basin is a frequent feature. The heavy precipitation in the upper catchment causes the river to overflow its banks in the lower region. The flood plain is formed below the Glencorse Gorge which is 32 miles upstream of the sea outfall of the Kelani Ganga, the river bed level at the Gorge being 11 feet above M. S. L. Below Hanwella the flood plain becomes much wider.

Land Use

The upper basin is planted with tea. Rubber predominates in mid-country occupying about 110,000 acres; Coconut 160,000 acres and rice cultivation in about 95,000 acres. Towns, villages, home gardens and some vegetable gardens, etc., form the balance 120,000 acres. Due to availability of good clay, manufacture of brick and tile, and pottery making is lucrative.

Power

The flow down the Ganga has been harnessed satisfactorily for hydro power.

The Kehelgamuwa tributary has been fully tapped with a 43,800 acre feet reservoir at Castlereagh and a small 730 acre feet reservoir at Norton Bridge. The first supplies water for hydro generation of the 50 M. W. installed plant at Norton and the second to another 50 M. W. plant at Laxapana.

The Maskeliya Oya tributary is being dammed at Mousakelle to detain 88,000 acre feet to generate 75 M. W. of power at Polpitiya.

This forms Stage I of Maskeliya Scheme.

The second and third stages compose of the installations of 75 M. W. and 22.5 M. W. capacity plants for further use of water already stored at Mousakelle under Stage I.

Irrigation

In this basin of abundant rainfall, rice cultivation is carried out with the aid of village schemes utilising unregulated flow from small streams and with direct rainfall. There is no scope for any new venture as all lands are already developed. There will be no large scale use of Kelani Ganga water for extensive irrigation projects within the basin.

Domestic Water Supply

The flow down the river is used for domestic water supply of some villages and lower down, for augmenting supply to the City of Colombo. At present about 5 million gallons per day is being drawn off at Ambatalenpahala pumping station for this purpose; this quantity is to be increased to 75 million (300 acre-feet) in the future.

Water Supply for Industrial Use

Industrial projects are being mooted along the banks of the lower reaches of the Ganga, all of which would be requiring the flow in the river for their use. An indication of their probable requirements may be as follows:—

	M.G.D.	Acre Feet Per Day
Textile Corporation	1½	6
Steel Corporation	3½	14
Petroleum Corporation	20	80
Tyre Corporation	3½	14
Fertilizer Corporation	30	120
Grandpass Power Station	80	320
		554
Colombo Water Supply		40
South Colombo Supply		64
		104

The requirements would increase as productions are raised to maximum capacity of the installed industrial production plants.

Reports on the Development of the Kelani Ganga Basin

The Kelani Ganga has been studied and reported on mainly from the point of view of the Flood Problem as it concerned the capital city of Colombo and the neighbouring areas.

In 1948, John Cotton, Consulting Engineer, U. S. A., prepared a report on the Control of the Kelani Ganga. He envisaged a storage reservoir in the upper reaches at Glencorse with a 75 M. W. hydro plant and the strengthening of existing embankments.

The International Engineering Co. Inc., San Francisco, U. S. A., made detail studies and suggested several alternative flood control schemes in 1948.

A mission from the International Bank for Reconstruction and Development prepared a scheme in 1952 for the re-settlement of flood victims to higher localities in preference to undertaking costly reservoir construction.

A team of experts from the Technopromexports, U. S. S. R., in 1961, prepared a report on the "Kelani Ganga Basin Scheme, for flood control and utilisation of water potential of the basin with a view to flood protection development of power and irrigation."

The feasibility report prepared by them envisages the construction of (1) two reservoirs across two upper tributaries; (2) Hydro power generation of 33 M. W.; (3) diversion canal system to irrigate 146,500 acres of new land in the adjoining basins; (4) embankment along the banks of the river in the lower reaches, costing in all about Rs. 920 million.

The following are some of the water resources development works in the basin, considered in the pages that follow:—

- Mousakelle Reservoir
- Castlereagh Reservoir and Wimalasurendra Power House
- Norton Dam and Laksapana Power Station
- Labugama Reservoir
- Kalatuwawa Reservoir
- Kelani Ganga Water Supply Scheme to Towns South of Colombo.
- Kelani Ganga Minor Flood Protection Schemes
- Muthurajawela Scheme
- Colombo North Flood Protection Scheme
- Colombo South Flood Protection Scheme
- Colombo South Drainage Scheme.

1.1 MOUSAKELLE RESERVOIR

(and Polpitiya Power Station)

Location:

Situated at Mousakelle on the Norton-Maskeliya Main P. W. D. Road.

Co-ordinates $L/15(2.1 \times 1.6)$

Project:

To impound the flow in Maskeliya Oya, a tributary of the Kelani Ganga, for the development of Hydro power at three sites lower down the valley.

DATA

Source of Supply: Catchment area	50 sq. miles
Dam: Concrete gravity structure.	
Length of dam at crest	615 feet
Maximum height	115 feet.

Reservoir Full:

Storage capacity	93,000 ac. ft.
Area of water spread	1750 acres

Operational status

Normal maximum water level	3830 M. S. L.
Normal minimum water level	3758 M. S. L.
Allowance for dead storage	8000 ac. ft.

Spill:

Three radial gates each 35 ft. by 15 ft.

Polpitiya Diversion Dam:

Object:

Sited about 700 feet below the Laksapana power house, i.e. about 7 miles from Mousakelle reservoir, this dam diverts the flow in Maskeliya Oya (consisting now of flow in Maskeliya Oya and the diverted flow from Norton Dam discharged through Laksapana Power House) into the Polpitiya tunnel for power generation.

Dam:

Concrete gravity structure

Length (at crest)	430 feet
Max. height	100 feet
Free overflow section	55 feet
Balance non-overflow Gated spillway (3 openings)	115 feet
Gates 24 feet high.	

Reservoir Full

Storage capacity 115 acre feet
Full supply water elevation 1233 M. S. L.

Intake to tunnel:

Invert level 1215 M. S. L.
Size: 15 × 13 feet

Tunnel:

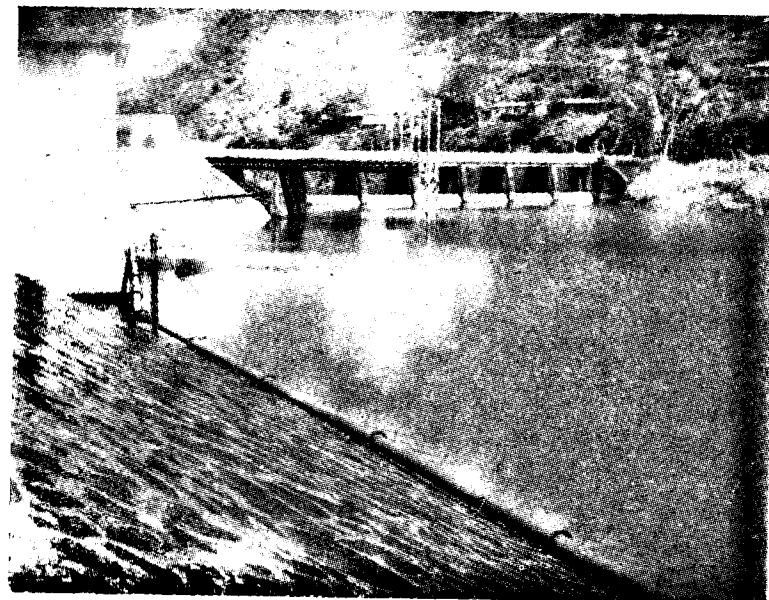
Length 23,000 feet (approx. 4 $\frac{3}{4}$ mls.)

Surge Tank:

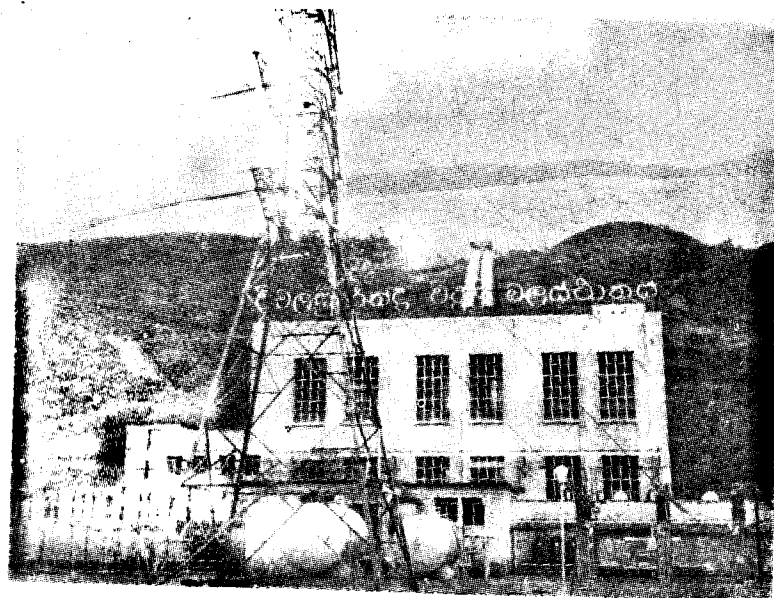
Diameter 21 feet

Power Plant at Polpitiya:

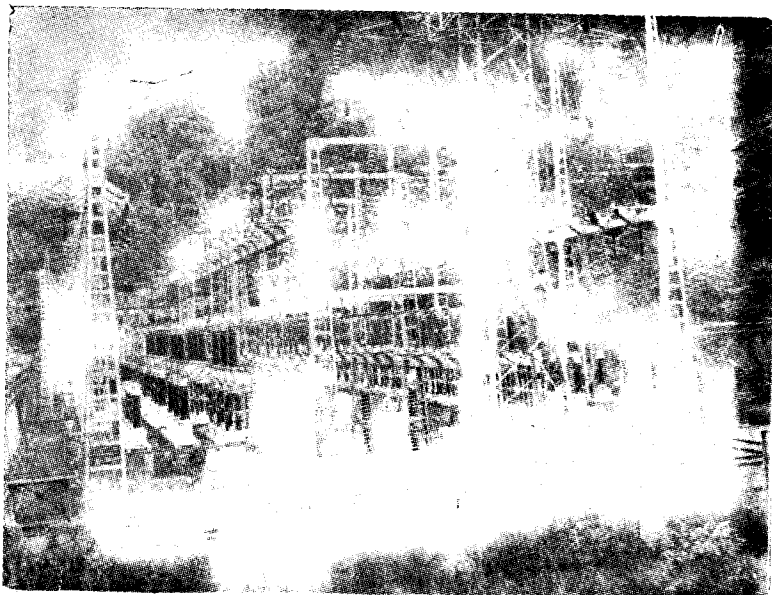
Two Francis turbines each driving a 37 $\frac{1}{2}$ MW generator, have a total capacity of 75 M.W. Annual output of electrical energy expected is 313 million units; This project which forms Maskeliya Hydro Electric Scheme Stage I is designated Samanala Power House.



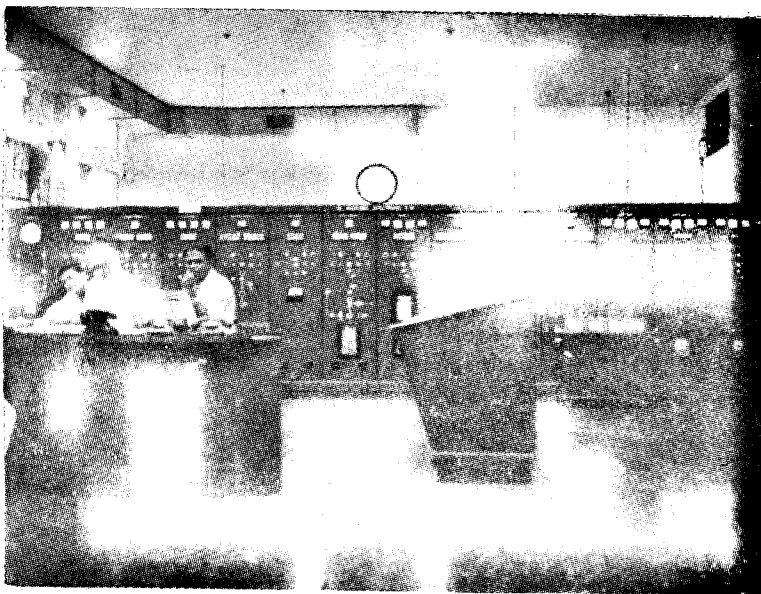
1.2 CASTLEREIGH DAM U/S VIEW



1.2 WIMALASURENDRA POWER STATION &
SWITCH YARD



1.3 LAXAPANA SWITCH YARD



1.3 LAXAPANA CONTROL ROOM

1.2 CASTLEREAGH RESERVOIR

(and Wimalasurendra Power House)

Location:

Across Kehelgamu Oya, also known as Hambantota Oya in the upper reaches, about $4\frac{1}{2}$ miles above Norton Dam.

Co-ordinates: L/15 (3.1×3.9)

Project:

Impounding the flow in Kehelgamu Oya, and conveying the storage through a tunnel for hydro power generation at the Wimalasurendra Power House at Norton. Constructed during 1956-58.

DATA

Source of Supply:

Kehelgamu Oya Catchment	44.5 sq. miles.
Average annual rainfall	137 inches.

Concrete Gravity Dam:

Length at top level	711 feet.
Max. height	155 feet.

Reservoir Full:

Storage capacity	43,830 ac. ft.
Head of water	65 feet.
Area of water spread	910 acres.

Operational status:

Elevation of full water level	3590 M. S. L.
Elevation of minimum water level	3525 M. S. L.

Spillway:

Length	470 feet.
Sluice at	3525 M. S. L.

Power Generation:

Tunnel:

Length	4 Miles.
Size: Horse Shoe shaped with side radius of	
11 feet and crown radius of	3 ft. 6 ins.
Conveyance	1000 cusecs.
Level at inlet (sluice)	3525 M. S. L.

Pipe Line:

Two pipe lines each 48 ins dia. at top end tapering down to 36 ins. dia. at the power house end.

Power House:

Water Wheels—Pelton wheels, single runner, horizontal double jet turbines. Each wheel consumes 125 cusecs at full load for the continuous output of 12,500 K. W. generated at 11,000 Volts 3 phase 50 cycle with a capacity of 50 M. W. An annual output of 123 million units of electrical energy is expected to be generated costing about $3\frac{1}{2}$ cts. per unit. This project is usually referred to as Stage II B.

1.3 NORTON RESERVOIR

(and Laksapana Power House)

Location:

The Norton dam is sited across the Kehelgamuwa Oya—a tributary of the Kelani Ganga, where the Oya crosses the Ginigathena-Maskeliya P. W. D. Main Road under the bridge known as the Kotelawala Bridge, near the 10½ M. S. The site is about 100 miles from Colombo.

Co-ordinates: L/15 (0.0×7.0)

Project:

The reservoir, formed by the dam regulates the flow in the Oya for diversion of storage for power generation at Laksapana Power House and was completed in 1950.

DATA

Source of Supply:

Drainage from the Kehelgamuwa Oya catchment 65 sq. miles in extent, partly direct and partly after detention (and power generation) in Castlereagh Reservoir, built higher up in the same basin.

Concrete Gravity Dam:

Length at top level	345 feet.
Maximum height	94 feet.
Size of inspection gallery	6 ft. 3 ins high and 3 ft. wide.

Reservoir full:

Storage capacity	744 ac. ft.
Head of water	36 feet.
Area of water spread	36 acres.

Operational status:

Elevation of full water level	2844 M. S. L.
Elevation of minimum water level	2808 M. S. L.
Active storage	315 ac. ft.

Spillway:

Length	240 ft.
--------	---------

Sluices:

Supply to tunnel conveyance.

Power Generation:

Tunnel

Length:	8400 ft.
Size: 8 ft. wide by 9' 3" high (horse shoe shaped) area	65 sq. ft.

Conveyance

Level at inlet (sluice)

500 cusecs

Level at outlet (surge chamber)

2808.0 M. S. L.

Overall drop in level 11 ft. 6 inches.

2796.5 M. S. L.

Surge Chamber:

Height

71 ft.-6 ins.

Diameter

40 ft.

Level of floor

2766.5 M. S. L.

Pipe Line:

Length 5000 ft. Gradient 1 in 3

Two 68 inch pipes each bifurcating into two 48 inch pipes at top end of pipe line; these are reduced to 36 inches at the bottom end which in turn bifurcates to, two of 28 inch pipes.

Laksapana Power House:

Maximum static head at the Power House is 1580 ft.

Floor level is

1275 M. S. L.

Water Wheels—Pelton type.

Type: Single runner, two jet type running at 600 r.p.m.

Effective head on the wheel is 1474 ft. and each wheel consumes 83 cusecs at full load for the continuous output of 8,333 KW generated at 11,000 volts three phase fifty cycle.

Total output 50,000 K.W.

When Stage I of this project was completed in 1950 the capacity was 25 M. W; with the completion of Stage II A, which includes the Castlereagh Reservoir and necessary extensions to the Power House at Laksapana, the entire project at Laksapana has a capacity of 50 M. W. and is expected to generate annually 270 million units of electrical energy at a cost of about 2½ cts per unit (Kilowatt hour)

1.4 LABUGAMA RESERVOIR

Location:

At Labugama, about 29 miles east of Colombo.

Co-ordinates: L/13 (3.6×2.2)

Project:

Storage reservoir impounding the flow of the Wak Oya for water supply for domestic consumption in the City of Colombo. Construction completed in 1886. Improvements were effected subsequently.

DATA

Catchment area—2500 Acres (3.9 sq. miles)

Reservoir Full:

Storage capacity 1960 million gallons (7200 ac. ft).
Depth of Water 73 ft. .
Area of water spread 205 acres
Elevation of full supply level 374 above Mean Sea Level
Safe Yield $12\frac{1}{2}$ million gallons per day.

Service Reservoirs:

Two of 8 million gallon capacity each, at Elie House and at Maligakande.

As the consumption in Colombo is however about $21\frac{1}{2}$ million gallons a day the supply is augmented from Kalatuwawa Reservoir. The work is maintained by the Colombo Municipal Council.

1.5 KALATUWAWA RESERVOIR

Location:

The Kalatuwawa Ela basin adjoins the Labugama Reservoir basin, and is situated about 24 miles east of Colombo.

Co-ordinates: L/13 (4.4×2.8)

Project:

A storage reservoir impounding the flow in the Kala uwawa Ela for domestic water supply to residences in Colombo.

DATA

Catchment area of Basin, 3,320 acres (5.2 sq. mls.)

Main Dam

Length	930 ft.
Concrete gravity section	710 ft.
Earthen embankment	220 ft.
Height (Max).	72 ft.

Reservoir Full

Storage capacity 3900 million gallons (14,400 ac. ft.)	
Head of water	60 ft.
Elevation of F. S. L.	370 M. S. L.
Area of water spread	454 acres

Spill

100 ft. long provided in the concrete section.

Water Treatment Plant

Designed to purify 20 million gallons per day. Estimated safe yield—20 million gallons per day.

The Kalatuwawa Reservoir with 33" ϕ pipe line from Kalatuwawa to Dehiwala, 4.2 million gallon Reservoir at Dehiwala and 30" ϕ pipe line from there to Wellawatte, augments the supply from Labugama to the City of Colombo. These works are in the charge of the Colombo Municipal Council.

1.6 THE KELANI GANGA WATER SUPPLY SCHEME TO TOWNS SOUTH OF COLOMBO

Object

The flow in the Kelani Ganga is drawn off at Ambatale and supplied to Dehiwela, Mount Lavinia, Moratuwa, Kotte, Panadura and Kolonnawa.

Scheme

The project consists of river intake works and treatment plant at Ambatale near the 8th M. S. on the Colombo Hanwella Road, 40 miles of 1000 m.m. diameter pipe line to the service reservoirs at Dehiwela, Moratuwa and Panadura, and water towers at Dehiwela-Mt. Lavinia, Kotte and Kolonnawa. Necessary pumping stations, lift the supply to the water towers from the service reservoirs.

Progress

The project is at various stages of construction; at the commencement excess supply available at Kalatuwawa is being utilised for the project; but this scheme would eventually supply 26 million gallons, daily to the six areas mentioned above.

1.7 THE KELANI GANGA MINOR FLOOD PROTECTION SCHEMES IN THE LOWER REACHES OF THE RIVER

The several tributary basins of the Kelani Ganga in its lower reaches frequently fill up by reverse flow from the swelling Ganga due to heavy rainfall in the upper reaches of the hill country. To aid the agricultural development in these basin areas Minor Flood Protection Schemes had been evolved preventing the back water entry of Kelani Ganga.

2. The basin entrance is dammed by a bund in which is incorporated a masonry structure with either flap one-way gate (automatic) or screw down gate or/and plank bays for manual manipulation. The Ganga, however, enters the protected basin when the river rises over a certain level—the level of protection. The minor protection level by convention is worked out by actual observation to be the level at the site corresponding to the Flood Level of 5 ft. at the Nagalagam Street Gauge, Grandpass, Colombo. By these devices it is expected that the protected basins will not be inundated by the Kelani Ganga up to the point of the Minor Flood Level mark, viz., 5 ft. When the water reaches above that level it enters the basin through suitably provided spills and floods them and there is no longer any protection.

3. The introduction of the impediment, mainly gates, however large they may be in number would no doubt cause a certain amount of delay or time lag in draining out the basin's own drainage into the Ganga. Whereas flood water in the basin used to rise and fall freely with the water level in the Ganga when there was no Minor Flood Protection Works across it, now the basin drainage has to await the fall in the river flow before discharge through the sluices could occur. Thus, the most disputed aspect of Minor Flood Protection Projects is the retardation of post flood basin drainage.

A. MINOR FLOOD PROTECTION SCHEMES ON THE LEFT BANK OF KELANI GANGA

1. Ambatalenpahala Minor Flood Protection Scheme (1930), a large basin just East of Colombo extending to about 5 miles with drainage outlets at Grandpass—two flood gate openings 6' x 5'.
Sedawatte—10 flood gates 5' x 4' and at Ambatale by the Main Road—4 flap gates 5' x 4'.
2. Weliwita Minor Flood Protection Scheme (1930), situated near 8½ Mile Post with two number 3' diameter Armco gates.
3. Hewagamuwa Minor Flood Protection Scheme (1933), near 10½ Mile Post has three of 18" diameter gates.

4. Bomiriya Minor Flood Protection Scheme (1937) L/12 (4.2×8.2) catchment area $25\frac{1}{2}$ sq. miles at Kaduwela, has eight number gates $5' \times 4'$. Length of Structure 73'-6". Protection level 20.50. Extent benefited 3000 acres.
5. Ranala Minor Flood Protection Scheme (1934) L/12 (8.1×6.8) has three number 3' diameter gates.
6. Henpita Minor Flood Protection Scheme (1940) L/12 (8.9×6.3) has six number $5' \times 4'$ gates two of which are screw down type to admit floods; Catchment area 4 sq. miles; Protection level 28.6; area benefited 580 acres.
7. Kaluaggala-Berendi Gampala Minor Flood Protection Scheme (1960), the sluices are on the Kaluaggala/Labugama Road near bridges 1/6 and 1/9 and have rows of 4' diameter pipes.
8. Akkarawita Minor Flood Protection Scheme (1960), has eight number flood gates $5' \times 4'$ these cover the basins that lie along the Colombo/Hanwella Road from Grandpass up to Kaluaggala.

B. Minor Flood Protection Scheme on the Right Bank of Kelani Ganga

1. Talwatte Minor Flood Protection Scheme (1934), L/7 (0.65×0.55) near $7\frac{3}{4}$ Mile Post on the Kelaniya/Diyagamuwa Road has three number 3' diameter gates. Protection level 16.50. Extent benefited 300 acres.
2. Pattiwila Minor Flood Protection Scheme (1933), near the 9th Mile Post has three number 18" diameter gates and two planked bays of 5 ft.
3. Yabaruwela Minor Flood Protection Scheme (1933), L/7 (4.9×0.2) near the 11th Mile Post close to Diyagama junction has three number 3' diameter gates. Catchment area $\frac{1}{2}$ sq. mile. Level of protection 20.00. Extent benefited 200 acres.
4. Pahuru Oya (1934), L/7 (6.1×0.3) Malwana Minor Flood Protection Scheme has 6 flood gates $5' \times 4'$ and also two planked regulators. Catchment area $10\frac{1}{2}$ sq. miles. Protection level 21.5. Extent benefited 680 acres.
5. Mora-Ela (1936), L/12 (8.1×7.0), near the 6th Mile Post on Malwana Road. Catchment area 1 sq. mile has two gates $5' \times 4'$; length of structure 45 ft. Level of protection 27.50. Extent benefited 300 acres.
6. Welgamuwa Minor Flood Protection Scheme (1936); L/12 (9.5×6.3) on the 7th Mile Post of Malwana Road has two number $5' \times 4'$ gates; length of structure 45 ft. Protection level 30.75. Extent benefited 350 acres.

7. Giridara Minor Flood Protection Scheme (1954); L/7 (11.7×0.9) on the Pugoda Road has 6 gates $5' \times 4'$; length of structure 40 ft. Catchment area 4 sq. miles. Area benefited 350 acres.
8. Nikawela Minor Flood Protection Scheme (1954), L/7 (12.5×1.8) on the Pugoda Road has 5 gates $5' \times 4'$. Catchment area $5\frac{1}{2}$ sq. miles; length of structure 50 ft. Protection level 33.00. Area benefited 225 acres.
9. Pugoda Minor Flood Protection Scheme L/8 (0.1×2.2), has gates $5' \times 4'$. Catchment area $20\frac{1}{2}$ sq. miles; 4 openings $4' \times 5'$ sill 21.5, 4 openings $4' \times 5'$ sill 27.5. Area benefited 340 acres. Level of protection 37.75.
10. Minimaru Minor Flood Protection Scheme (1959), has gates $5' \times 4'$.

1.8 COLOMBO NORTH FLOOD PROTECTION SCHEME

A scheme for the protection of the low lands in Colombo North from periodic flooding by the Kelani Ganga, though under investigation much earlier, was commenced in 1925, and completed by 1929.

Railway Embankment, about $2\frac{1}{2}$ miles long, comprises the main defence against the Ganga flood waters, connects on to high ground at Meetotamulla; the railway line to Kolonnawa is laid partly on it. Top level about 20 M. S. L.

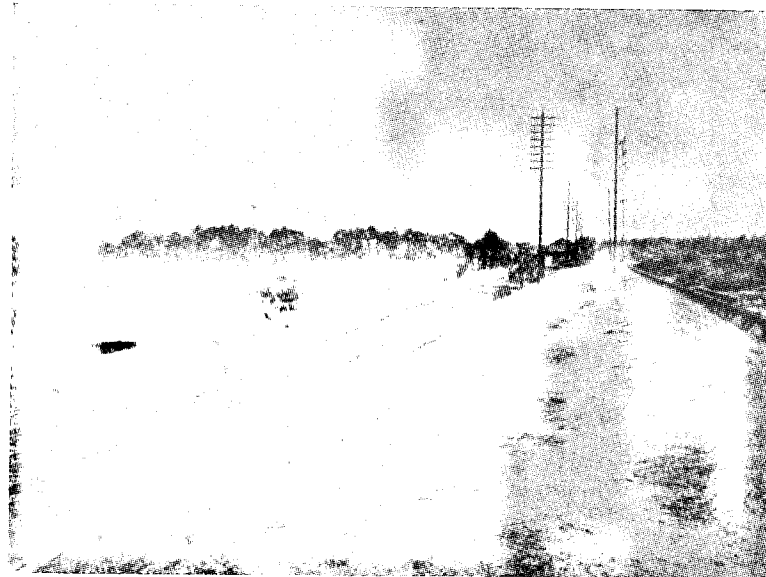
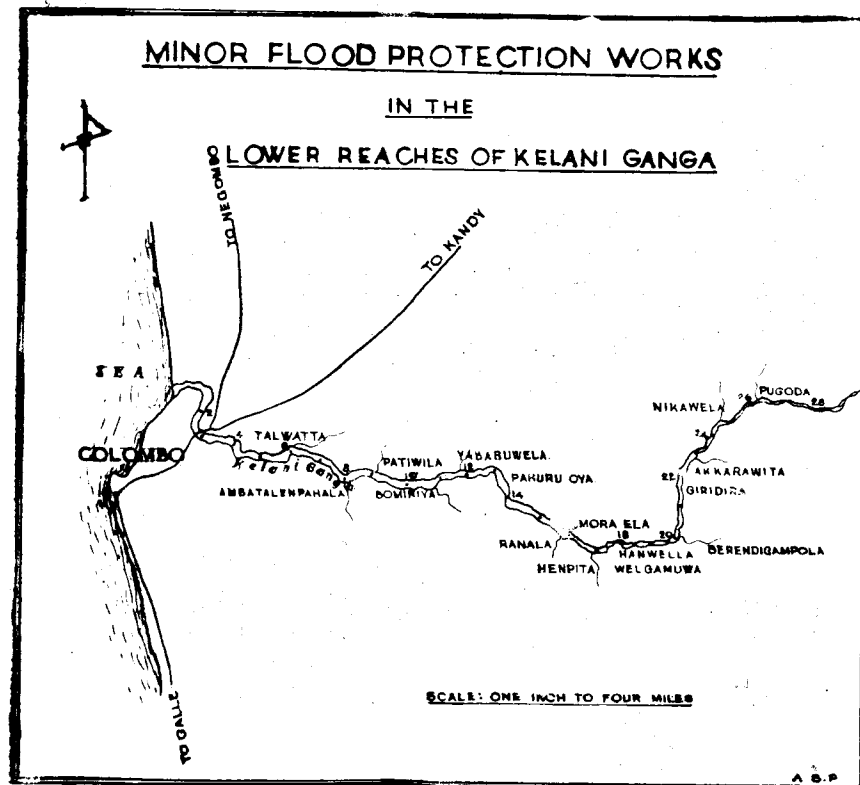
Lock Gates at Grand Pass—North Lock. A set of four pairs of lock gates across the canal at Grand Pass prevent the Ganga water from entering through the canal.

Main Drain is expected to carry off local rainfall (when lock gates are closed and canal flow to Ganga is blocked up) and is about $2\frac{1}{2}$ miles long from St. Sebastian canal at Prince of Wales Avenue to Aluthmawatte. The last stretch of the main drain is by a 6 ft. dia. tunnel, about 1900 ft. long discharging into the sea at the Fisheries Harbour, Mutwal.

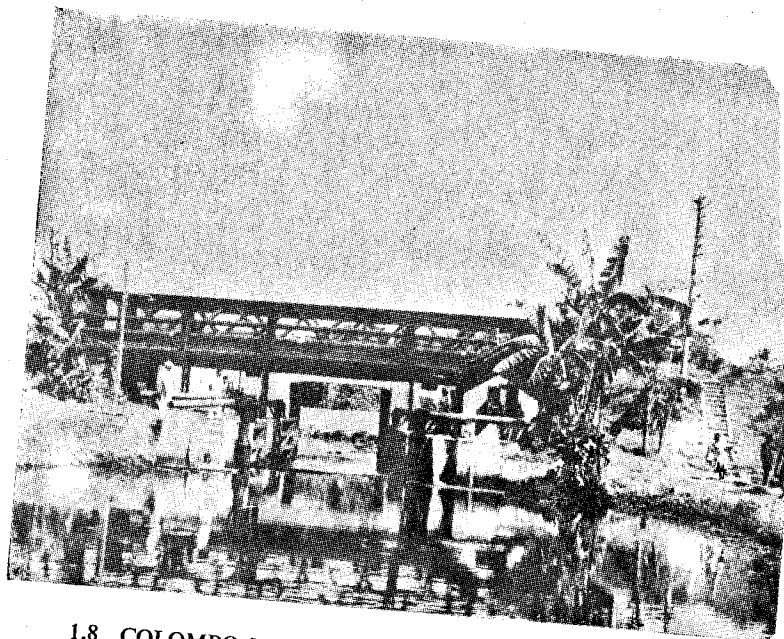
Kelani North Bund—originally erected by the Dutch is on the R. B. of the Kelani Ganga and protects the Kelaniya area, across the river on the opposite bank. It is about 5 miles long.

Flood Scheme—Minor Flood Level is reached when the Kelani Ganga reaches a height of 5 feet at the Gauge Post erected at Nagalagam Street, Grand Pass. A flood height of 8 ft. is classified as a Major flood etc.

Standing orders have been prepared requiring each Govt. Dept. to undertake certain functions as the flood level rises in the Kelani Ganga.



1.8 COLOMBO NORTH FLOOD PROTECTION SCHEME
RAILWAY EMBANKMENT



1.8 COLOMBO NORTH FLOOD PROTECTION SCHEME
NORTH LOCK



1.11 MUTHURAJAWELA SCHEME—NEW SLUICE

1.9 COLOMBO SOUTH FLOOD PROTECTION SCHEME

A Scheme to protect the low parts of the city of Colombo from periodic inundation by the Kelani Ganga was first considered in 1890-1900 but did not become a concrete proposal till 1922. In 1923 necessary investigations and proposals were made and construction was commenced. The Colombo South Flood Protection Scheme was completed in 1926.

The two gaps through which Kelani Ganga Floods entered the low lands of Colombo South were the:—

(1) *Kolonnawa Bund* (Heen Ela closure).

This bund connects to high ground at Gothatuwa, Wellampitiya and is 2400 ft. long. Top level is 23 M. S. L.

(2) *Dematagoda Ela*—Lock Gates

A set of four pairs of Lock Gates erected at Dematagoda, to form a lock, prevent the entry of floods through this ela, nevertheless permitting normal boat traffic.

N. B.—See also under Colombo North Flood Protection Scheme.

1.10 COLOMBO SOUTH DRAINAGE SCHEME

Location. The drainage of swamps in Kotte, Nawala, Battaramulla and Talangamuwa—Southern suburbs of the city of Colombo.

Scheme. About 2000 acres of low lands, which at one time may have formed the estuary of the Kelani Ganga, are to be drained effectively for development purposes. Much of the land is just above sea level and natural drainage through the Dehiwela Canal, and the Kalutara Canal—which are the drainage out flow canals of the area, is sluggish and insufficient.

The flow in the Kalutara Canal is to be accelerated by keeping the sea outfall at Panadura open, by means of groyne walls.

Scheme envisaged includes the provision of pumps to evacuate the swamps, improvements to Dehiwela Canal with sea groyne walls and Salt Water Exclusion gates and regulated outlet to the Kalutara Canal.

Eventually it is visualized to drain Colombo South and the Madiwela Catchments, through the Wellawatte Canal, Dehiwela Canal and the Panadura Ganga, into the Ocean.

1.11 MUTHURAJAWELA SCHEME

Location

Muthurajawela is a tract of marshy land, about 6,000 acres in extent, along the western coast lying between North of the Kelani Ganga and South of Negombo Lagoon.

History

It is said to bear the name of King Muthu Rajah, who asweddu-mized the area in the 13th century. Some say it was so named because at one time it produced pearl like rice even now known as Muthu samba. The Dutch canal was opened by the Kings of Kotte in the 15th century for irrigating rice fields and improving communications. It linked the Kelani Ganga with the Dandugam Oya but unfortunately also led to the unforeseen result of introducing salt water during droughts and floods during rains.

The fields were found abandoned by the Dutch; in the middle of the 18th century however, the lands were partly reclaimed by Dissave de Costa. The chief features of the scheme were:—

- (i) A bund in the North known as Tudella-Pamunugama road,
- (ii) the Ja-ela canal intended to lead water into the fields from a tank at Map-eliya, and
- (iii) A lock at Mabole controlling the canal in the south.

These however went into decay and the area relapsed once more to waste lands; the Hamilton Canal was then opened on the West to have water communication with Negombo. Unfortunately this brought sea water into the area at high tide.

Salt Water Prevention & Flood Protective Works

In 1929 a scheme devised by C. Harward (D. I. E. Colombo Flood schemes) was taken up and the following works were done from 1929 to 1935 and again after a break due to the 2nd world war, the work was continued from 1948 to 1953.

(1) Kelani North Bund Scheme (improvements)

Kelani North Bund—4M 3384 ft.

- (a) Peliyagoda sluice—L/6 (10.6 × 1.50) at 3½ M. P. —Colombo-Negombo road concrete structure 23'-9" long with one gate 4'-3" × 7'-3" sill 46.00.
- (b) Talwatte sluice.

(2) Kalu Oya Muthurajawela Scheme

Wattala bund—L/6 (10.70 × 2.70) at Wattala on left of Colombo-Negombo road at 5th M. P. Length 1888 ft. level 59.0 to 58.0, Top-width 8 ft. sluice at 200 ft, 4 openings 4'-3" × 6' 6" sill 46.00.

- (3) **Ja-ela bund**—L/1 (10.90 × 0.70)
Length—1 M—3900 ft., level 58.15 to 56.40.
Top width 8 ft.
Sluice at 1 MP, 4 openings 4'-3" × 6'-6" sill 44.50.
- (4). **Pamunugana road bund.** L/1 (9.30 × 0.70)
Along Pamunugama road 1½ miles from Ja-ela.
Length 3000 ft., level 56.65 to 55.65.
Top width 14ft. to 16ft.
Sluice No. 1—2' dia.
Sluice No. 2—2' dia.
- (5). **Pamunugama diversion bund**
Length 470 ft.
- (6) **Bopitiya road gap** L/1 (8.8 × 0.5)
On Bopitiya V. C. Road
Length 1480', level 54.8. Top width 14ft.
at 1400 ft. one concrete pipe 1' dia. with flap gate at sill 51.0
- (7) **Telengapatha Sluice** L/1 (10.75 × 2.0)
At 4½ M. P. on Colombo-Negombo road
Length 29'-6" with 2 openings 4'-3" × 6'-1½" sill 46.0
- (8) **Peliyagoda Main drain.**
- (9) **Controlled pipes and culverts**—3 Nos.
These works were devised for the protection of Kalu Oya Basin and the Muthurajawela tracts from the intrusion of salt water and flood water from Kelani Ganga, Kalu Oya and Ja-ela.

Drainage works

The following additional works were then undertaken, for drainage:—

- (1) Construction of 28 drainage channels and a channel parallel to Hamilton canal—total length of 20 miles of channel and bund.
- (2) construction of 7 salt water exclusion structures.
- (3) 4 Miles of marginal bunds along Dutch canal.

The drainage channels were connected on the East to the Old Dutch canal and on the west to the Hamilton canal and controlled by Salt Water Exclusion structures. The entry of salt water via Old Dutch canal is controlled by Ja-ela sluice at the north and Wattala sluice at the south ends.

Additional work in 1956

The following were done:—

- (1) Isolation bund at Mabile 1440 ft. long to isolate Kalu Oya catchment (24 sq. mls) from the basin (14 sq. mls). The Kalu Oya water will be diverted to Kelani Ganga through the Wattala sluice.

- (2) Additional sluice at Wattala to take flood flow.
- (3) Old Dutch canal widened from the confluence of Kalu Oya to the Wattala sluice.
- (4) When Kalu Oya and Kelani Ganga are in spate, discharge of Kalu Oya into Kelani is not possible. To cater for this an additional outlet to the sea was provided by installing a sluice on the Isolation bund and letting out the flood water to Hamilton canal via Old Dutch canal and drainage channels.
- (5) 6 P. W. D. culverts were widened. The estimated cost of above is Rs. 1,750,000/-

The Reclamation of the lands below Mean Sea Level, within the Muthurajawela marshes, probably by lift irrigation methods awaits consideration.

2. BOLGODA BASIN

The Bolgoda basin is a low lying coastal basin, typical of the South West coastal basins and located between the Kelani Ganga and the Kalu Ganga. What is usually termed Bolgoda Lake is a long stretch of accumulation of water in the low lands extending continuously from Weerasganga near Dehiwela to Bolgoda Lake North, Bolgoda Ganga and Bolgoda Lake South beyond Panadura. The main supply streams are the Maha Oya flowing into the North Lake and the Bolgoda Ganga flowing into the South Lake. The main sea outlet for the basin is the Panadura Ganga outfall at Panadura.

The catchment area of the basin is 146 sq. miles. The area of water spread of the lakes is 3,775 acres; due to sand bar formation at the Pandaura sea outfall, drainage discharge is impeded and water accumulates in the basin, preventing agricultural development of lands four feet below mean sea level.

Construction work, estimated cost of which is four million rupees, is in hand to erect groyne walls at the Panadura sea outfall to keep the mouth open for free flow throughout the year, as has been done at the Wellawatte outfall. This would help to reclaim about 5750 Acres of low lying fringe areas in the Bolgoda Basin.

The following works in the basin are considered in the pages that follow:—

Attidiya Drainage and Salt Water Exclusion Scheme,
Bolgoda Flood Protection Scheme,
Galtude Kindelpitiya Drainage & S. W. E. S.

2.1 ATTIDIYA DRAINAGE & S. W. E. S.

Location

In Attidiya about 4 miles East of Dehiwela on the Dehiwela-Pannipitiya Road. Co-ordinates L/11 (11.2×1.6).

Scheme

Drainage

About a thousand acres of land developed with rice cultivation in Attidiya, suffer damage due to difficulties in drainage, as they are low lands; half the extent is not even two feet higher than mean sea level. The Attidiya canal, the main drainage outlet of the area flows into Weerasganga thence to Bolgoda Lake, which has its sea outfall at Panadura.

At the Southern end of the paddy area where lock gates are provided, pumps are installed which assist in draining the flow when water level in the Attidiya basin has to be lowered for needs of cultivation.

Salt Water Exclusion

Salt water which comes up the Weerasganga is prevented from spreading into the 640 acres of cultivated area, through the Ela by providing earthen embankments and 20 ft. long structure containing one way sluices:

Openings: Two of 4 ft. by 4 ft.

One of 4 ft. by 4 ft.

and regulators at the road bridges.

2.2 BOLGODA FLOOD PROTECTION SCHEME

The scheme lies from 3rd Mile Post to 5th Mile Post on the Kalutara - Horana road.

Distance from Kalutara Town is about 5 miles.

Scheme:

Major floods occurring on R.B. of Kalu Ganga have adversely affected low lying lands in Bolgoda area. A flood preventive scheme was provided in 1951.

Main component works of the scheme are:—

- (a) Main flood bund 70 chs. long and at further end is the Dikhena flood bund in length 10.4 chs. A closure bund is provided at Kapu Ela lock 7.0 chs. long.
- (b) 4 sluices with control arrangements at sites along the main Bolgoda flood bund.
- (c) A sluice with control arrangements at Dikhena gap across Dikhena flood bund.
- (d) One Lock Gate structure across closure bund at Kapu Ela Lock 90 ft. long and 17 ft. wide, with gates and inlet and outlet valves.

Area protected 9000 Acres.

2.3 GALTUDE KINDELPITIYA S. W. E. & M. F. P. SCHEME

Location

Along Paraduwa-Horana P. W. D. road upto 4th mile post turn right and proceed along gravel road a distance of about 1 mile to the L. B. of Bolgoda Lake which is L. B. of scheme and ends at Kitulgahawatta Ferry. The R. B. of scheme starts at Bridge No. 6/1 on Waskaduwa-Bandaragama P. W. D. Road and ends at Kitulgahawatta Ferry.

Distance from Kalutara Town is about 15 miles.

Scheme

The Galtude Kindelpitiya tract of 2285 acres of paddy lies on either bank of the Bolgoda Ganga. High tide water along Panadura Ganga heads upto the river and finally inundates the area about the Bolgoda lake and ganga thus causing damage to crops. There are about 20 drainage courses falling into the ganga from the tracts and these help salt water entry to the cultivated area.

Main components of the scheme are:—

- (a) Salt Water Exclusion bund, 5 miles along L. B. & 6 miles on R. B. of Bolgoda ganga with provision to carry an 8' wide roadway. Bund top level + 5 ft.
- (b) Parallel drainage channel along Salt Water Exclusion bund on L. B. & R. B.
- (c) Salt water exclusion structures on both L. B. & R. B. with capacity to adequately deal with the discharge of minor floods totalling 12 in number with batteries of 3' x 4' openings.

Area protected 2300 Acres.

3. THE KALU GANGA BASIN

Description of Basin

The Kalu Ganga also like the neighbouring Kelani Ganga, is a westerly flowing river commencing from sources in the central hills at Adam's Peak at an elevation of over 7,000 feet. A few miles below Ratnapura the Ganga passes through a narrow constriction called the Ellagamuwa Gap. The Ellagamuwa Gap may be considered as separating the upper and lower regions of the basin. The Ganga is 82 miles long.

Hydrology

The Ganga drains some of the heaviest precipitating areas of Ceylon near Ratnapura. The average annual rainfall in the catchment is about 160 inches, of which over 90 inches precipitate during the months of May to June. The maximum volume of flood that had gone down the Ganga is assessed at two million acre feet, during a period of two weeks flood duration.

Kalu Ganga in Flood

The Kalu Ganga is a most prolific provider of flood waters; though only 80 miles long, Kalu Ganga is No. 1 in the annual amount of water conveyed by the river into the sea, an aggregate of over 6 million acre feet of water empties into the Indian Ocean to waste every year.

When in flood, Ratnapura town is affected and some houses go under water. The flooding is more damaging in the lower reaches where the gradient of the river is flatter. Several flood protection schemes against minor floods have been resorted to, to isolate and protect pockets near the coastal regions in the neighbourhood of Kalutara.

Land Use

The entire basin is well developed; tea is grown in the areas generally about 2,000 feet in elevation and above; then rubber and coconut and rice in valleys of the lower region:

Tea	35,000 acres
Rubber	143,000 "
Coconut	30,000 "
Rice	63,000 "

The Ratnapura District is the main gem producing area of Ceylon and high quality graphite is also mined there.

The following is the list of some of the development works, details of which are given in some cases with illustrations in the next pages.

Batugedera Anicut

Damme Ela

Kalutara South Flood Protection Scheme

Palatota Scheme-Kalu Ganga Flood Protection Scheme

Paraduwa-Diyagama Minor Flood Protection Scheme.

A flood protection scheme for this basin has been investigated and reported on by Engineering Consultants Incorporated.

3.1 BATUGEDERA ANICUT

Location

Near Ratnapura; anicut near 66th Mile Stone on the Ratnapura-Pelmadulla Road. Co-ordinates L/24 (7.8×7.3).

Historical

Local tradition associates this work with Ellapola, a Minister of the last King of Kandy under whose direction, the amuna is said to have been first erected.

Restoration

The work was restored in 1889 by the construction of a permanent anicut across Dodangaha Ela and Ketandola Ela and channel system.

Later improvements were effected in 1947 and in 1953, and concrete lining of the channel etc. was done.

Data

Anicut Diversion

Catchment area 6.2 sq. miles

Main Anicut (Dodangaha Ela)

Length of Structure	131 ft.
Height	2 ft.
Head Sluice	5'×2'

Pick-up Anicut (Ketandola)

Length of Anicut	63½ ft.
Height	22½ ft.
Head Sluice	5'-3"×1'

Irrigation Supply

About 2½ miles of main channel system provide over 200 acres with supply for irrigation development.

The channel skirts the main road for some distance and can be seen near the 65th Mile Stone.

3.2 DAMME ELA

Location

Near Ratnapura, South West about 10 miles. Co-ordinates
I/24 (2.6×6.5).

Restoration

Said to have been restored or constructed in 1876 by private individuals.

Scheme

In 1952, the work was acquired by Government, and improvements effected.

Anicut Diversion of flow in Niri Ela Ganga.

Data

Anicut

Catchment area	35.6 sq. miles
Length of Structure	200 ft.
Maximum Height	4 ft.
Planked Bays	3 Nos.
Head Sluice:	
Location	L. B.
Size	6' $\times$ 2-9"

Irrigation Supply

A five mile long left bank channel mostly in deep cutting, commands lands in Elapatha, Dellaboda and other areas. Target for development 425 Acres.

3.3 PARADUWA-DIYAGAMA MINOR FLOOD PROTECTION SCHEME

Location:

From Nagashandiya junction along Horana Road and turn right at $2\frac{3}{4}$ miles along Galkande Road and about a mile to project. About 5 miles from Kalutara.
Co-ordinates: L/22 (5.7×5.3)

Scheme

The paddy lands in the villages of Paraduwa, Diyagama & Panapitiya on R. B. of Kalu Ganga were affected by the floods of the ganga.

Main components of the scheme

A flood bund 4100 ft. long has been constructed on the right bank of Kalu Ganga, along the 3rd, 4th & 5th miles of the river.

5 Nos. structures have been provided with Screw operated gates along the bund at Nala Ela, Kalugoda Ela, Ukule Ela, Liggala Ela and Aluth Ela. A natural spillway 300 ft. long at chainages 30-33, a short bund at spillway 300 ft. in length, a closure bund to close gap at Goraka Ela to a higher level 135 ft. long has been constructed. Another additional bund 700 ft. long is constructed at a higher level across Palli Ela to shut off flood water entering the Diyagama Basin.

The bunds and structures act as a minor flood protection scheme on the R. B. of Kalu Ganga. Protecting an area of about 411 acres of Paddy Lands. The scheme was constructed in 1958/59.

3.4 PALATOTA BASIN KALU GANGA FLOOD PROTECTION SCHEME

Location

Proceed towards Kalutara on Colombo-Galle Road, turn left at Kalutara Clock Tower junction and proceed one mile along Palatota-Kethena P. W. D. Road.

Co-ordinates L/22 (2.8×2.5).

Scheme

The low lying area on the U/S of Kalutara-Kethena Road has been frequently subjected to minor floods of Kalu Ganga on the left bank and on representation made by the land owners this scheme was devised to protect an area of about 60 acres under Kalu Ganga flood protection scheme—Palatota Basin.

Main components of the scheme are:

- (a) The main flood bund has been constructed on L. B. of Kalu Ganga by raising the Kalutara-Kethena P. W. D. road to a length of 14.25 chains and connecting bunds on either ends 1.0 chains and 2.9 chains forming ramps.
- (b) A bridge cum sluice with lifting gates to control flood waters has been provided across main bund at 5.5 chains. A culvert 2 feet ϕ has been provided at 8.5 chains across main bund to act for drainage purposes. The work was done in 1958.

Area protected: 60 acres.

3.5 KALUTARA SOUTH FLOOD PROTECTION SCHEME

Location:

Kalu Ganga. About a quarter mile towards Palatota, from Kalutara.

This scheme is for the protection of the low lying lands in the neighbourhood of Kalutara south L. B. of Kalu Ganga in the banks of Aluth Ela.

Co-ordinates L/22 (2.6×2.2).

Data

Bund:

Length of bund from P. W. D. Road Bridge to River side Road 32.0 chs.

Structure

- (a) One sluice is provided at 2.5 chs on the bund with control arrangements and opening $8'-0" \times 6'-0"$ inclusive of 3' ϕ Sewerage Outlet with automatic gate on one side of structure at 2.5 chs.
- (b) Another sluice is provided across River side Road at Aluth Ela gap with seven openings 4' ϕ with control arrangement gates of $4' 9" \times 4' 9"$ at 19.0 chs.

Area protected: 260 acres.

4. BENTOTA GANGA BASIN

The Bentota Ganga has its source in the one thousand feet hilly plateau above Pitagala and following a 30 mile long westerly course reaches the sea at Bentota, near Alutgama.

Hydrology

The Bentota Ganga drains an area of 243 square miles, in which an annual average rainfall of over 100 inches can be expected, spread over almost all the months of the year, usually prevalent in the wet zone. Mean annual flow is estimated at 810,000 acre feet.

Floods

Frequent inundation by periodic floods impose hardship on the land owners and retard agricultural development.

Land Use

Except in the very low reaches near the coastal belt the basin is planted with rubber. In the lower reaches coconuts and some paddy can be seen.

The basin is typical of the coastal basins along the south western coast of Ceylon.

Basin requirements

Flood Protection

During times of flood, the ganga overflows the banks in the lower reaches and inundates adjoining low-lying lands. These lands require protection.

Land Drainage

Speedy internal drainage of these lands is the key note for its development, without which the area remains as marshy lands. The position is aggravated by the blockage of the ganga sea outfall by sand bar formation.

Salt Water Prevention

When flow in the ganga subsides, sea water enters the ganga and intrudes into the adjacent low-lying lands rendering them brackish and unsuitable for agricultural development. S. W. E. sluices and gates are needed to prevent such intrusion.

Inland Fisheries and Prawn Culture

This basin, like several other basins similarly situated along the south-west coast of Ceylon, with inland lakes and water-ways, provide scope for development of inland fish and prawn culture.

Development works in the basin consist mostly of salt water exclusion schemes to prevent ingress of sea water which travels up the river. Details of some of the S. W. E. Schemes follows:—

4.1 Dedduwa

4.2 Kavijjapitiya

4.1 DEDDUWA DRAINAGE AND SALT WATER EXCLUSION SCHEME

Location

Adjoining the 39th to 42nd Mile Post on Colombo-Galle Road.

Scheme

To prevent ingress of sea water which enters through the Bentota Ganga and also to facilitate drainage of the area.

Restoration

Constructed in 1945.

Drainage Works

1. Dedduwa Regulator and Bund O/7 (6.5×7.5)
Regulator—4 bays of 4 ft. each.
Bund—650 ft.
2. Andu Ela Drainage Culvert O/7 (7.3×7).
Opening $2\frac{1}{2}' \times 2\frac{1}{2}'$.
3. Obadawatte Regulator O/7 (5.1×8.4).
Drainage channel $1\frac{1}{4}$ miles.

Salt Water Exclusion Works

1. Aturuwella sea outfall structure O/7 (5.4×6.6).
Openings: 4 of $2'-3" \times 2'-3"$.
Channel—910 ft.
2. Kaikawela sea outfall structure O/7 (5.6×5.1).
Openings: 4 of $2'-3" \times 2'-3"$ each.
Channel—610 ft.

Irrigation Supply

The work aids development in 2100 acres by drainage and prevention of ingress of sea water.

4.2 KAVIJJAPITIYA DRAINAGE AND SALT WATER EXCLUSION SCHEME

Location

Near the 47th mile Colombo-Galle Road.

Co-ordinates O/7 (7.0×1.5)

Scheme

The Kavijjapitiya Ela is the main drainage of a basin of about 400 acres; agricultural development of this basin is handicapped by (1) insufficient and slow drainage of the Maduganga lake and (2) the ingress of salt water.

New work constructed in 1944 to alleviate these difficulties have been:—

1. A mile long drainage channel connecting Kavijjapitiya Ela direct to the sea, crossing Colombo-Galle Road by culvert No. 47/3.
2. Sea outfall works at exit of channel consisting of 4 openings of double one way flap gates $2'-3" \times 2'-3"$ with channel cut in rock, deflector and chamber, 100 ft. long.
3. Culvert cum Regulator on Madu Ganga intake:
2 openings of $12'-3" \times 7'$ with planking arrangement.

Irrigation Supply

The scheme benefits an extent of 362 acres with drainage facilities and prevention of ingress of sea water.

5. MADU GANGA BASIN

The Madu Ganga basin is a small area of 23 sq. miles in the West Coast, and enters the sea near Balapitiya. The sea outfall is usually closed by a sand bar; hence the chief work in the area is the Drainage and Salt Water Exclusion Scheme which was commenced in 1964.

MADU GANGA DRAINAGE AND SALT WATER EXCLUSION SCHEME

Location

Area on the East of the 49th mile, Colombo-Galle Road

Co-ordinates O/12 (7.4×6.9)

Scheme

About a 1000 acres of developed land and swamps about 200 acres, which border the outer fringes of Madu Ganga Lake and the Ramtombe Lake, suffer due to insufficient drainage and cultivation is impaired. The sea water that travels up Madu Ganga also renders the area saline.

Construction work, for the project, provides:

- (1) Reconditioning and regrading the internal drainage channels within the area.
- (2) Training the sea outfall at the mouth of the Madu Ganga with groyne walls into the sea, to prevent sand bar formation and facilitate daily flow out of the Ganga.
- (3) Salt Water Exclusion structure to prevent sea water intrusion into Madu Ganga.

The work incidentally provides safe anchorage for the fishing craft in calm waters secluded away from the rough seas.

Approximate cost Rs. $2\frac{1}{2}$ million.

6. MADAMPE LAKE BASIN

MADAMPE LAKE DRAINAGE AND SALT WATER EXCLUSION SCHEME

Location

Near Ambalangoda, about the 54th mile on Colombo-Galle Road.

Co-ordinates O/12 (8.8×3.2).

Scheme

About 3500 acres of developed land that border the fringes of Madampe Lake suffer:—

(1) periodic inundation, as the lake does not always speedily discharge flood waters into the sea due to sand bar formation at the mouth.

(2) Salinity, due to sea water intrusion into the lake.

Construction work at the site provides:—

(1) Sea groyne walls at river mouth to assure permanent functioning of the river flow into the sea by the prevention of sand bar formation at the mouth.

(2) Reduction of rock at river mouth to facilitate rapid outflow of basin drainage.

(3) Salt water exclusion structure to prevent sea water intrusion into Madampe Lake.

The work incidentally provides safe anchorage for fishing craft in seclusion away from the rough seas.

Total cost Rs. $\frac{1}{2}$ million.

7. HIKKADUWA ELA POST FLOOD DRAINAGE SCHEME

Location

At Hikkaduwa, adjoining 61st mile on Colombo-Galle Road.

Co-ordinates O/18 (11.6×6.9).

Scheme

Hikkaduwa Lake collects drainage from water shed area of 23 sq. miles and discharges into the sea through the Hikkaduwa Ganga (Bridge No. 60/1). Due to sand bar formation at the mouth of Hikkaduwa Ganga, this is possible only when floods are high. Normal floods, however accumulate in Lake and the rising water level periodically inundates over 650 acres of developed land, bordering the fringes of the lake. Attempt has been made to relieve such accumulation on these occasions, by the opening up of a drainage channel $1\frac{1}{4}$ miles long through Madabokka, from the lake to the sea direct, independent of the Hikkaduwa Ganga. This channel (crosses Colombo-Galle Road at bridge No. 62/1) is provided with salt water exclusion structure and helps in the lowering of water level in the Hikkaduwa Lake, on normal rainy days even when the sand bar at the Ganga mouth fails to open. Completed in 1960.

9. THE GIN GANGA BASIN

The Gin Ganga, situated in the south-western region of Ceylon, and drains an area of 370 sq. miles. The Ganga is over 70 miles long; with its source at Abbey Rock (El: 4268), the river passes Udugama, Baddegama and flows into the sea at Gintota. The last stretch of 15 miles is through flat plains.

Hydrology

The region is essentially a south-west monsoonal area and floods are experienced during that period. The average annual flow into the sea is about $1\frac{1}{2}$ million acre feet and the mean annual rainfall about 130 inches.

Land Use

The basin is fairly well developed; the upper hill country region is planted with tea and rubber; coconut and cinnamon plantations predominate in the lower areas. Paddy lands are in pockets all along the ganga, amounting to about 28,000 acres. About half of this situated in the lowlands suffer from periodical floods.

An effort has been made to protect certain pockets of areas from floods by means of earth bunds, but without satisfaction.

A flood absorption reservoir higher up the river at Hiniduma and or at Madugeta has been suggested.

Basin Requirements

Foremost requirements is flood protection-prevention of the lands in the lower reaches from periodic inundation by flood waters of the Gin Ganga. Therefore construction of flood absorption reservoirs is the indication.

Preliminary Planning of Water Resources Utilisation

Several stream diversion works have been carried out in the basin for irrigation supply to paddy cultivation, details of one of these follow; details of the flood protection scheme for the protection of the adjoining lands from minor flood in the Gin Ganga are also shown with illustrations in the next pages.

3.91 Bogahaduwa anicut.

3.92 Gin Ganga Minor Flood Protection Scheme.

A flood protection Scheme for this basin has been investigated and reported on by Engineering Consultants Incorporated.

9.1 BOGAHADUWA ANICUT

Location

About a mile East of the 5th mile on the Galle-Baddegama Road.

Co-ordinates O/18 (6.2×3.0)

Restoration

Constructed in 1954.

Scheme

Diversion of flow in Holuwegoda Ela.

Data

Anicut

Catchment area	17 $\frac{1}{2}$ sq. miles
Length of Structure	52'-3"
Openings	7 Nos.
	Each 5'-6" wide by 7'-6"

Sluices:

Location	R. B.
Size	15 ins dia.

Irrigation Supply

The work benefits rice cultivation in 225 acres of land situated along the bank of Holuwegoda Ela.

9.2 GIN GANGA MINOR FLOOD PROTECTION SCHEME

The Gin Ganga is a 70 mile long river in the South West of Ceylon, with its source near Deniyaya—4000 ft. elevation and falls into the sea at Gintota, a few miles from Galle. The area lies directly in the path of the South West monsoon and experiences very heavy rainfall.

In the lower reaches, the Gin Ganga valley is about a mile wide and about 12,000 acres are under rice cultivation. These lands which are situated in the basins suffer from periodic inundation due to floods in the Ganga.

A flood protection scheme has been promoted for the area, which has as criterion the prevention of floods up to 18,000 cusecs in the Ganga, which corresponds to a height of 18.2 ft. at the Gauge near Aggاليا—a few miles from Baddegama.

Earthen embankments prevent the ingress of Ganga floods into the protected basins; the control sluices permit basin drainage into the Ganga when it is low. The spill is for permitting floods in excess of minor floods to enter the basin. Lock gates are provided where necessary.

Basins in the Left Bank

1. Puhulduwa Basin
Area protected 3354 acres
2. Gotetuwa
Area protected 128 acres.
3. Ganegama Basin
Area protected 314 acres.
4. Holuwegoda
Area protected 3550 acres.
5. Kepu Ela
Area protected 346 acres.

Basins in the Right Bank

1. Majuwana
Area protected 307 acres.
2. Dodangoda
Area protected 326 acres.
3. Kudawe Ganga
Area protected 2630 acres.

10. KOGGALA BASIN

WAGGALAMODERA DRAINAGE AND SALT WATER EXCLUSION SCHEME

Location

At Talpe, near 77th to 79th miles, Colombo-Galle Road.
Co-ordinates 0/23 (10.1 × 5.5)

Scheme

A Scheme for the reclamation of Waggalamodera lands was constructed by the P. W. D. in 1889.

The Habaraduwa tract of paddy fields, about 600 acres in extent, situated between the 77th and 79th miles of Colombo-Galle Road, annually suffer inundation by flood waters and also become uncultivable due to salt water entry.

The Waggalamodera Drainage and Salt Water Exclusion Scheme consists of improving the conditions of above and hence aiding development.

The work consists of:—

1. Waggalamodera new Drainage Channel discharging low water drainage, through culvert No. 78/3 into the sea, with a sea outfall structure.
2. Eluwila Main Drainage Channel discharging accumulation of water ponding up in the basin, through structure No. 80/2 on Galle-Matara Road. This functions only when there is a big flood and the sand bar is therefore open. Scheme was completed in 1939.

Irrigation Supply

The scheme benefits an extent of 601 acres.

11. POLWATTA GANGA BASIN

11.1 POLWATTA GANGA INUNDATION REGULATOR

Location

Situated about 4 miles North of Weligama.

Co-ordinates O/24 (6.8×6.8)

Scheme

By the erection of a regulator across Polwatta Ganga, the flow in it is headed up and diverted for cultivation.

Constructed in 1954.

Data

Diversion Regulator

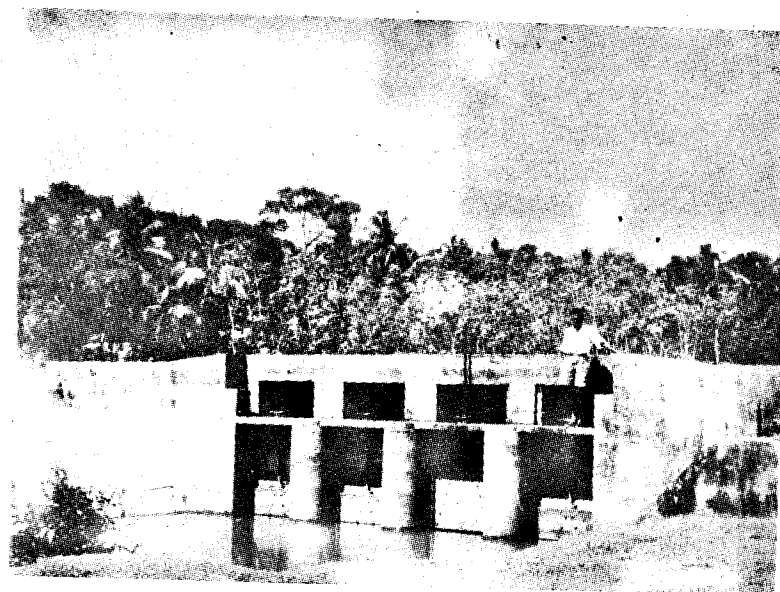
Catchment area	82 sq. miles
Length of Structure	100 ft.
Height	12 ft.

Three Openings each 20 ft. wide by 12 ft. high with overhead bridge and steel gates and lifting gear.

Irrigation Supply

The work aids the development of 1135 acres of rice cultivation, situated in Jamburegoda and Palalla paddy tracts.

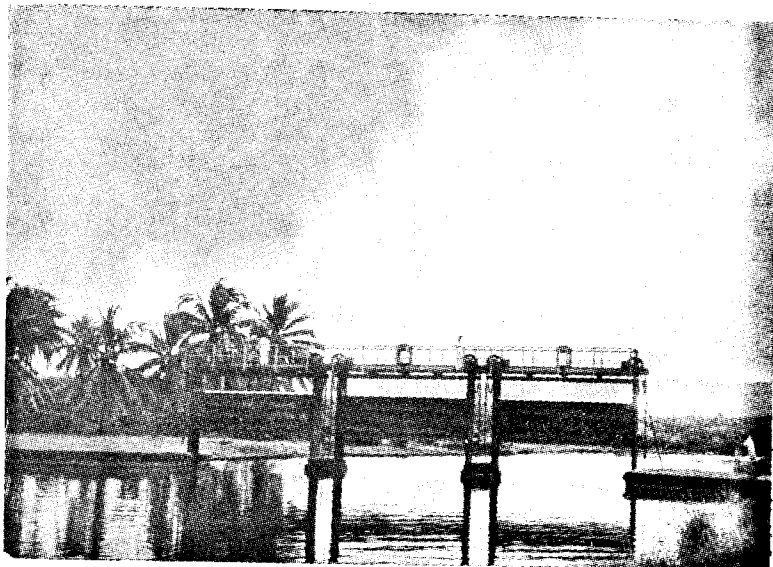
The Polwatta Ganga has its source above Nakiyadeniya, where it is known as Udugan Oya. It has a catchment area of 91 sq. miles and traverses nearly 20 miles before flowing into the sea at Weligama Bay. The upper reaches of the Basin are planted with rubber and some tea. In the lower reaches the Ganga flows through large stretches of rice lands. An important development work is the Polwatta Ganga Inundation Regulator. This work is supplemented by a diversion anicut at Tottegedora.



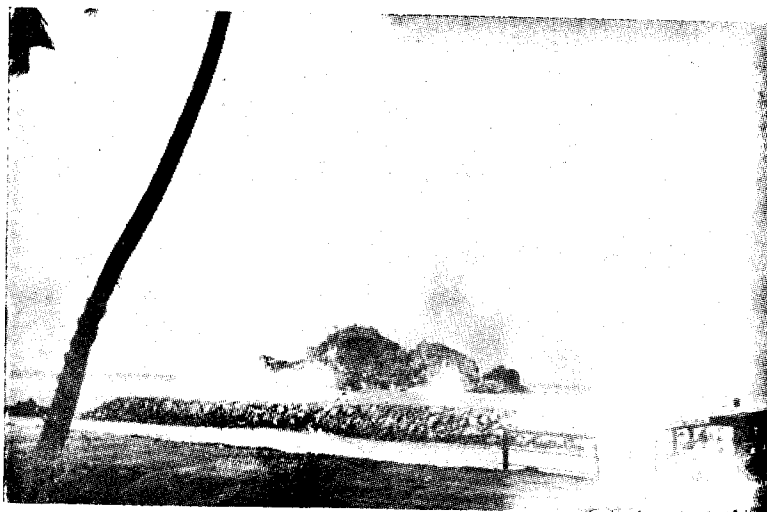
3.3 STRUCTURE AND GATES
PARADUWA-DIYAGAMA SCHEME



6. MADAMPE SCHEME S.W.E. STRUCTURE



11.1 POLWATTA GANGA REGULATOR



11.3 SEA GROUYNE WALLS
GOIYAPANA SCHEME

11.2 HALLOLA DOLA ANICUT

Location

Situated off the Weligama-Kananke Road.

Co-ordinates O/24 (8.4×7.0)

Restoration

Constructed in 1961-63.

Scheme

Utilisation of flow in Hallola Dola.

Data

Anicut

Catchment area	1 sq. mile
Length of Structure	50 ft.
Openings:	2 Nos.
	Each 5 ft. by 5 ft.
Storage	80 ac. ft.
Sluices:	
Location	L. B.
Size	24" dia. to parent stream.

Irrigation Supply

The work aids rice cultivation in 200 acres extent, situated in Hallola village. Tanks in this bimonsoonal zone receives replenishment several times in a year unlike the dry zone where only one annual replenishment can be expected.

11.3 GOIYAPANA DRAINAGE AND SALT WATER EXCLUSION SCHEME

The Goiyapana basin is an adjoining (West) minor basin of the Polwatta Ganga.

Location

Near Weligama, the sea outfall adjoins bridge No. 86/2 on Galle-Matara Road.

Co-ordinates O/24 (4.0×3.2)

Scheme

About 800 acres of developed land, situated in the fringes of the Goiyapana Ganga, are difficult to cultivate due to:

- (1) Periodic inundation by the Ganga waters, as the mouth of the Ganga at the sea outfall gets closed by sand bar formation.

- (2) Salinity, due to sea water intrusion up the Goiyapana Ganga.

Construction work provided at the project includes:

- (1) Two sea groyne walls at the Ganga mouth, which prevent sand bar formation, facilitate daily flow of the Ganga and rapid discharge of floods from the basin.

- (2) Salt water exclusion structure to prevent ingress of sea water.

Completed in 1960.

12. NILWALA GANGA BASIN

The 45 mile long Nilwala Ganga, draining an area of 375 sq. miles, is in the southern sector of the Island and flows into the sea at Matara, after passing Akuressa and Morawaka higher up.

Hydrology

The entire basin is in the south monsoonal zone and experiences an average rainfall of 115 inches. Flood occurrence is fairly frequent during the monsoon. Annually about a million acre feet of water reaches the sea to waste, through the Nilwala Ganga.

Land Use

About a third of the basin, forming the uppermost region, is in luxuriant jungle; then the tea and the rubber plantation areas, followed by coconut, citronella and cinnamon areas are situated below.

Cultivation of rice is quite extensive in the basin amounting to about 40,000 acres.

A minor flood protection project consisting of earthen embankments and drainage gates has been attempted to protect cultivated areas in the lower region. This has not been very satisfactory.

Basin Demands

The cultivated lands (40,000 acres) in the lower reaches suffer by inundation due to periodic flooding by the Ganga. The demand of the basin is the alleviation of this distress, consistent with efficient drainage and irrigation supply when needed.

Preliminary Planning of Water Resources Utilization

As an all-purpose satisfactory solution, it has been suggested that multi-purpose flood detention reservoirs be constructed in the upper reaches of the valley, one each across the two tributary streams, Urubokka Ganga and Hulandawa Ganga.

A flood protection Scheme for this basin has been investigated and reported on by Engineering Consultants Incorporated.

12.1 HALIELA TANK

Location

Is situated about $1\frac{1}{2}$ miles West of Kamburupitiya Junction, which is 11 miles North of Matara.

Co-ordinates O/20 (1.6×2.5)

Restoration

Present tank restored in 1871.

Data

Tank

Catchment area	$3\frac{1}{4}$ miles
Length of Tank Bund	320 ft. and 170 ft.

Tank Full:

Storage	3000 acre ft.
Head of water	$25\frac{1}{2}$ ft.
Area of water spread	300 acres

Spills:

Width 116 ft. and 86 ft.

Sluices:

3 Nos.

Irrigation Supply

Channel system over three miles long provides supply for 306 acres of rice cultivation.

12.2 ELLAWELA TANK

Location

Is situated in Ellawela village, about 2 miles North East of Kamburupitiya Junction which is 11 miles North of Matara.
Co-ordinates O/20 (5×3.5)

Restoration

Present tank restored in 1876.

Data

Tank

Catchment area	2.2 sq. miles
Length of Tank Bund	360 ft.

Tank Full:

Storage	800 acre ft.
Head of water	30 ft.
Area of water spread	65 acres

Spills:

Natural, channel 42 ft. wide.

Sluices:

24 ins. dia.

Irrigation Supply

Channel system over $1\frac{1}{4}$ miles long provides supply to 1613 acres for rice cultivation. Unlike in the dry zone, tanks in these bimonsoonal areas receive replenishment more than once in a year.

12.3 DANDENIYA TANK

Location

In Dandeniya village, about 4 miles North West of Dickwella—turn off near 109½ M. P. on Colombo-Tangalla Road and proceed three miles.
Co-ordinates O/25 (9×5)

Restoration

Present Tank restored in 1884.

Data

Tank

Catchment area	2 sq. miles
Length of Tank Bund	250 ft.
Tank Full:	
Storage	750 acre feet
Head of water	30 ft.
Area of water spread	50 acres

Spills:

Natural, channel 84 ft. wide.

Sluices:

L. B. Masonry Tower Sluice with 24" dia. pipe.

Irrigation Supply

Left Bank channel about 3½ miles long and a short channel on the Right Bank, together aid rice cultivation in 626 acres. Unlike in the dry zone, tanks in these bimonsoonal areas receive replenishment more than once in a year.

12.4 SAPUGODA ANICUT

Location

About half a mile West of Kamburupitiya, a village 11½ miles North of Matara.

Co-ordinates O/20 (2.7×2.4)

Restoration

Present work constructed in 1874.

Scheme

Diversion of flow in Kirama Ara, a tributary of Nilwala Ganga.

Data

Anicut

Catchment area	53 sq. miles
Length of Structure	20 ft.
Height	5' - 6"
Openings	One Plank Control— 3'×5'
Head Sluice:	
Size	3'×5'

Irrigation Supply

A short channel 900 ft. long benefits 382 acres with irrigation supply for rice cultivation.

12.5 URAPOLA ANICUT

Location

About 9 miles North of Matara on the Road to Kamturu-pitiya.

Co-ordinates O/25 (2.6×8.6)

Scheme

Diversion of flow in the Kirama Ara, a tributary of the Nilwala Ganga.

Data

Anicut

Catchment area	69 sq. miles
Length of Structure	24 ft.
Height	5 ft.

Head Sluice:

Size 11'-6" × 6'-8"

Irrigation Supply

A five mile long channel system commands irrigation supply to 1500 acres for development with rice cultivation.

12.6 KEKANADURA TANK

Location

Is situated in Kekanadura village, which is 4 miles North East of Matara.

Co-ordinates O/25 (5×4)

Restoration

Present work restored in 1871.

Data

Tank

Catchment area	3½ sq. miles
Length of Tank Bund	425 ft.

Tank Full:

Storage	2300 acre ft.
Head of water	35½ ft.
Area of water spread	210 acres.

Spill:

Natural channel 50 ft. wide.

Sluice:

Masonry Tower with two openings each of 24" dia.

Irrigation Supply

Channel system with over 5 miles of main channel and the branch channels to Indopitiya, Ranaliya, Talpawila, Mahawita and Mahakanda totalling 7 miles, provide irrigation supply to 1165 acres for rice cultivation.

12.7 NAGODAWETIYA INUNDATION REGULATOR

Location

At Narangola, a village about four miles South East of the 5th mile on Matara-Akuressa Road.

Co-ordinates O/25 (1.0×8.1)

Constructed in 1962/63.

Scheme

Heading up of flow in Badulu Oya for irrigation by inundation.

Data

Anicut

Catchment area	7.8 sq. miles
Length of Structure	30 ft. 6 ins.
Openings:	4 Nos. Each 5'-6" wide by 6'-6" with lifting gates
Sluice:	
Size	18 ins. dia.

Irrigation Supply

The work is intended to benefit, by inundation about 750 acres of land for rice cultivation, situated along the banks of Badulu Oya, in Narangola village area.

12.8 NILWALA GANGA MINOR FLOOD PROTECTION SCHEME

In the lower reaches of the Ganga commencing from about Paraduwa to the sea about, 13,000 acres are developed with rice cultivation. These suffer due to periodic inundation by Ganga floods.

The Nilwala Ganga Minor Flood Protection Scheme envisages the prevention of minor floods up to the magnitude of 11,800 cusecs (corresponding height 23.5 ft. at the Akuressa Gauge), from entering the four basins of the rice area by means of bunds, spills, control sluices, lock gates and irrigation sluices.

Basins on Left Bank of Ganga

1. Badulu Oya Basin
2. Kadawedduwa Basin

Extent of Rice cultivated area for protection

3,550 acres
4,270 „

Basins on Right Bank of Ganga

1. Katuwangoda Basin
2. Lenaduwa Basin

1,110 „
2,470 „

Construction of the Scheme was terminated pending further investigations.

14. KIRAMA OYA BASIN

The Kirama Oya, has its source near Kirama village and flows through Walasmulla area and has its outfall into the sea at Tangalla.

The Kirama Oya Irrigation development scheme, the earliest irrigation work to receive the attention of the British (original work was by the Dutch) breached in 1837 and was restored in 1858-1875 at a cost of Rs. 94,603, for the maximum utilisation of the oya catchment drainage, by a detention storage tank in the upper reaches—the Kirama Tank, and effecting diversion of flow in the parent oya at various selected sites, all along the 20 mile long stretch of the Kirama Oya, for irrigation supply for the cultivation of 3625 acres. Each anicut has its own diversion channel system for conveyance of supply.

14.1 KIRAMA TANK

Location

In Kirama village about 20 miles North West of Tangalla.
Co-ordinates O/15 (8.9×2.8)

Data

Tank

Catchment area	5½ sq. miles
Length of Tank Bund	750 ft.
Tank Full:	
Storage	450 acre ft.
Head of water	6 ft.
Area of water spread	90 acres

Spills:

At L. B. 22 ft. Masonry
At R. B. 80 ft.

Sluice:

Two openings 6' × 6'

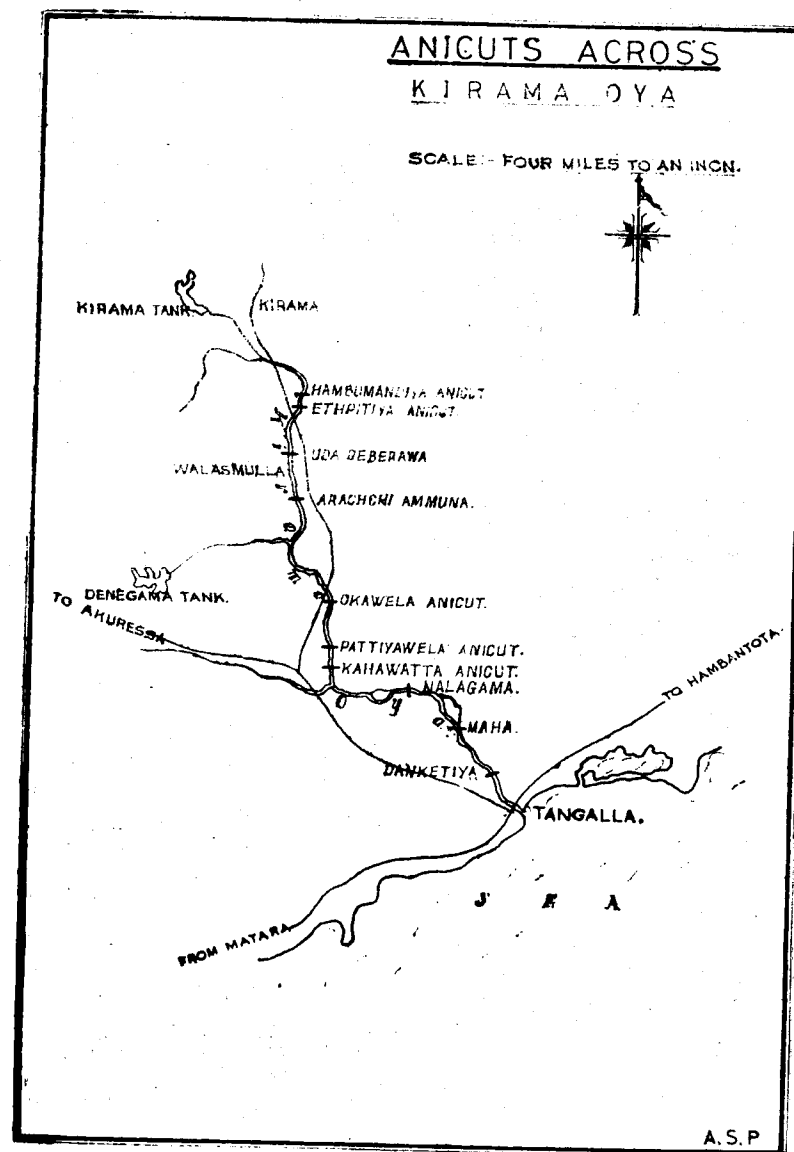
Irrigation Supply

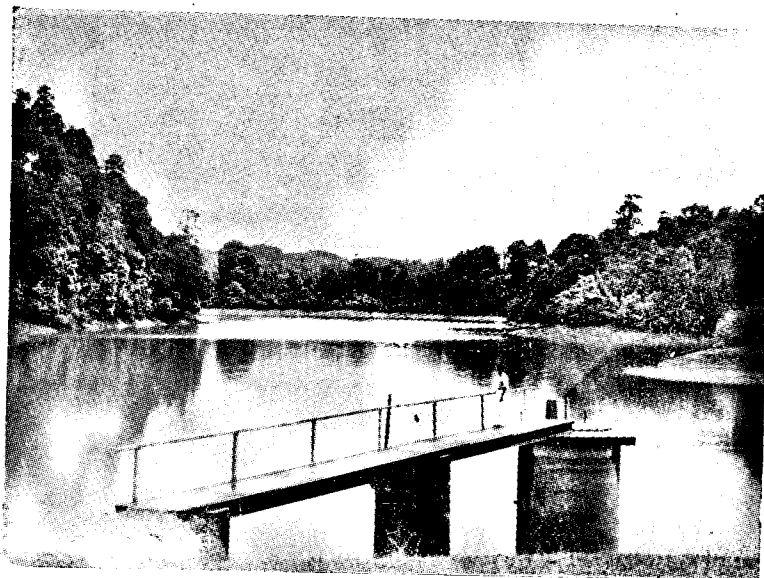
About 400 acres of rice cultivation is directly fed from the tank.

KIRAMA OYA BASIN

14.2 DIVERSION ANICUTS

1. **Hambumandiya Anicut O/15 (12×0.6)**
 Catchment area 20 sq. miles.
 Length of Structure 36 ft.
 Height 7 ft.
 Irrigates 210 acres
 2. **Ethpitiya Anicut O/15 (11.7×0.1)**
 Catchment area 19.7 sq. miles.
 Length of Structure 43 ft.
 Height 11½ ft.
 Head Sluice 5'×5'-3"
 Irrigates 200 acres
 3. **Uda Deberawa O/20 (11.8×7.2)**
 Catchment area 20.7 sq. miles.
 Length of Structure 85'-6"
 Height 9 ft.
 Irrigates 180 acres
 4. **Arachchi Amuna O/20 (11.9×6.7)**
 Catchment area 25.1 sq. miles.
 Length of Structure 54 ft.
 Maximum Height 11 ft.
 Irrigates 310 acres
 5. **Okawela Anicut O/20 (13.2×4)**
 Catchment area 29.4 sq. miles.
 Length of Structure 29'-6"
 Height 7½ ft.
 Irrigates 520 acres
 6. **Pattiyawela Anicut P/16 (0.1×2.5)**
 Catchment area 32.6 sq. miles.
 Length of Structure 37'-6"
 Height 7 ft.
 Irrigates 274 acres
 7. **Kahawatta Anicut P/16 (0.9×1.6)**
 Catchment area 66.6 sq. miles.
 Length of Structure 40 ft.
 Height 10 ft.
 Sluices 3 Nos.
 Irrigates 165 acres
- and three others:—
 Nalagama P/16 (2.8×1.7)
 Maha P/16 (4.1×0.3)
 and Danketiya P/21 (4.8×6.3)





12.1 HALIELA TANK



12.4 SAPUGODA ANICUT

14.3 DENAGAMA TANK

Location

Is situated at Hakmana, about 13 miles North East of Matara.
Co-ordinates O/20 (8.3×4.3)

Restoration

Present tank restored in 1876.

Data

Tank

Catchment area	3 sq. miles
Length of Tank Bund	$\frac{1}{2}$ mile.

Tank Full:

Storage	840 acre ft.
Head of water	$14\frac{1}{2}$ ft.
Area of water spread	80 acres

Spills:

Natural, channel 90 ft wide.

Sluices:

3 Nos. sluices.

Irrigation Supply

Two short channel systems aid rice cultivation in 850 acres.
Unlike in the dry zone, tanks in these bimonsoonal areas receive replenishment more than once in a year.

14.4 TANGALU WELYAYA SALT WATER EXCLUSION SCHEME

The Tangalu Welyaya tract of paddy fields are adjacent to the 124th mile on the Colombo-Hambantota Road, about a mile out of Tangalla.

The tract is about 1200 acres in extent of which about 600 acres are low, being only a foot above sea level.

Waters from the Kirama Oya Scheme, diverted by the Maha Amuna and Danketiya anicut help the cultivation of the paddy tracts. But sea water enter the tract through the Rekawa Kalapuwa and retard development in the lower areas in particular.

The Salt Water Exclusion Scheme consists of:—

- (1) Salt Water Exclusion Bund along the Kalapuwa confining it, without spreading all over the fields.
- (2) An 8 bay Regulator up-stream of Bridge No. 124/6.
- (3) A 5 bay Regulator up-stream of Bridge No. 124/7 and other works, which were constructed in 1946.

These assure that no salt water from the Rekawa Kalapuwa reach the paddy fields.

They nevertheless retard the discharge of flood waters that accumulate in the Tangalu Welyaya basin from the Kirama Oya and further measures e.g. sea groyne walls are necessary to assure steady flow out of drainage from the basin.

16. URUBOKKE OYA BASIN

The Urubokke Oya has its source at Urubokka, a village 40 miles directly North of Matara. The oya is formed at the source as a result of a diversion by a massive masonry dam across a perennial hill country stream. The oya then traverses a long stretch of nearly fifty miles draining 136 sq. miles to reach the sea at Ranna, near 130th M. S. on the Hambantota Road.

The drainage waters of the basin are well utilised for irrigation development by means of detention storage tank at Udukiriwila and several anicut diversion schemes all along the course of the oya.

One of the earliest irrigation works to be restored by the British in 1861—original work was by the Dutch.

A total extent of 5,100 acres are thus developed in the basin and receive irrigation supply for regular rice cultivation.

Historical

One of the few irrigation works constructed by the Dutch; it was breached in 1837 for want of proper maintenance. The restoration of the scheme was again put in hand 1859-62 and completed at a cost of Rs. 407,302.

16.1 URUBOKKE DAM

Location

At Urubokka, about 40 miles North of Matara.
Co-ordinates O/10 (7.3×0.7)

Data

Catchment area	9 sq. miles
Length of Structure	160 ft.
Maximum height	38 ft.
Top width	$13\frac{1}{2}$ ft.

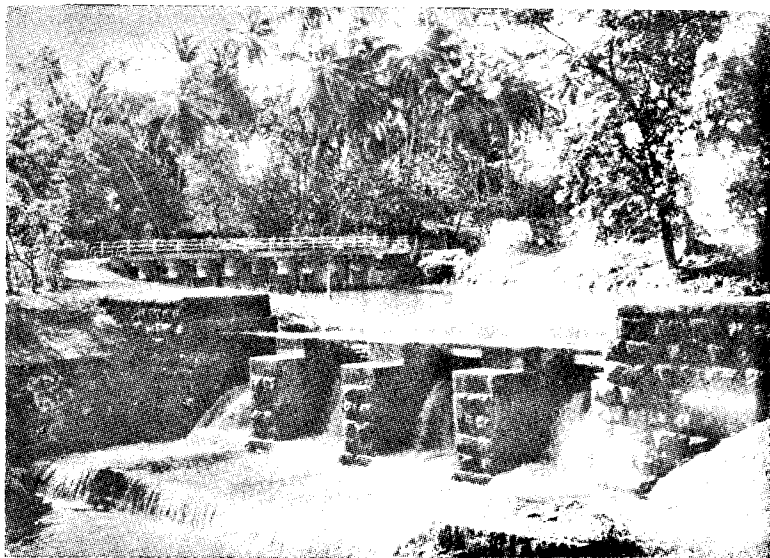
A $2\frac{3}{4}$ mile long channel conveys water to Ginnely Oya stream
to form Urubokke Oya.



14.3 DENAGAMA TANK



16.2 UDUKIRIWELA TANK



16.2 FOUR BAY ANICUT FEEDING UDUKIRIWELA TANK



16.3 ANDUPELANA ANICUT

URUBOKKE OYA SCHEME

16.2 UDUKIRIWELA TANK

Location

Situated at Weeraketiya, about 10 miles North of Tangalla.

Co-ordinates P/16 (3.4 × 8.0)

Scheme

The Udukiriwela Tank is the fundamental means of irrigation detention storage and supply for development in the Urubokke Oya basin. Inflow is diverted for storage, from Urubokke Oya by Udukiriwela anicut.

Data

Tank

Source of Supply:

Diversion from Urubokke Oya and catchment drainage from 10 sq. miles.

Length of Tank Bund 3300 ft.

Tank Full:

Storage	3200 acre ft.
Head of water	12½ ft.
Area of water spread	650 acres

Spills:

Nature	Channel flow
Length	70 ft.

Sluices:

- No. 1 With one 24" dia. opening.
- No. 2 With two openings.

Irrigation Supply

Water stored in the tank ultimately reaches 4,150 acres, being let down into the parent stream and diverted by anicuts of the Urubokke Oya Scheme.

URUBOKKE OYA SCHEME

16.3 DIVERSION ANICUTS

Udukiriwila Anicut P/16 (3.6×8.3)

Catchment area	20 sq. miles
Length of Structure	65'-6"
Bays—three,	15 ft. wide each
Height	5 ft.
Irrigates	700 acres

Wakumulla Anicut P/16 (4.5×7.4)

Length of Structure	41'-6"
Bays—five,	6'-6" wide
Height	7'-6"
Irrigates	760 acres

Hakuruwela Anicut P/16 (7.5×7.2)

Length of Structure	37 ft.
Bays—five,	6 ft. wide
Height	6 ft.
Irrigates	550 acres

Andupelena Anicut P/16 (8.4×4.8)

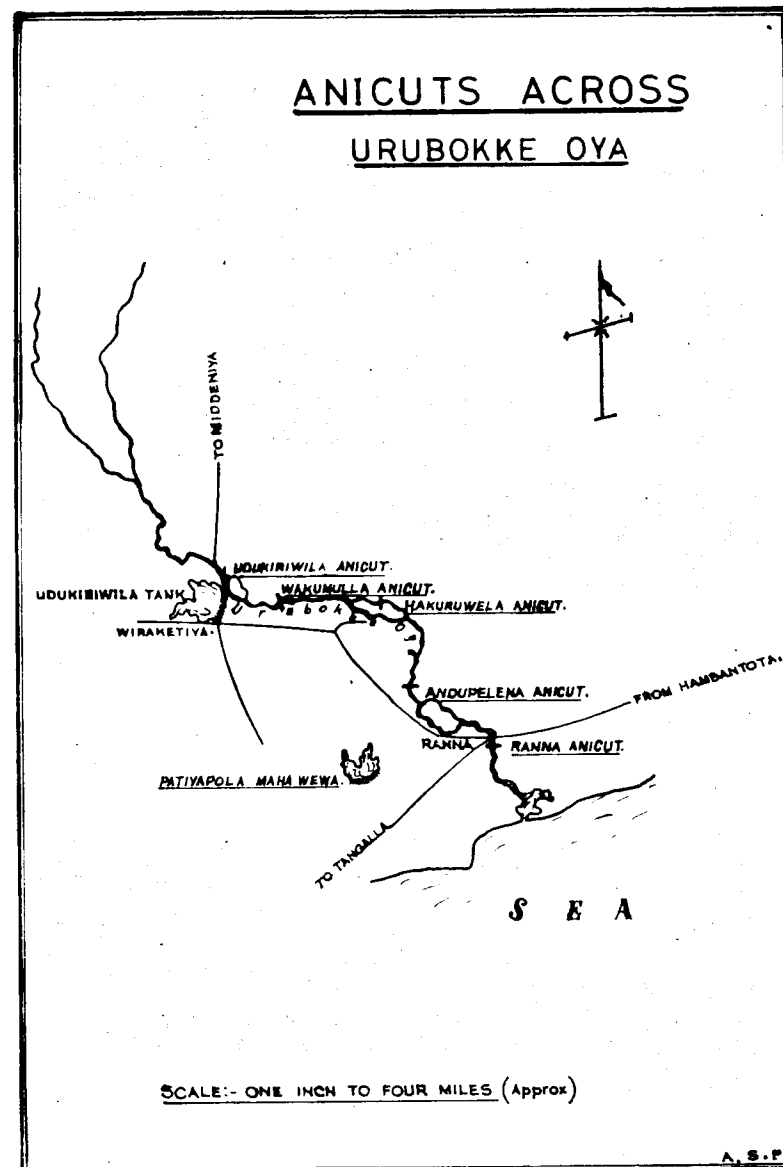
Catchment area	108 sq. miles
Length of Structure	41'-6"
Bays—five,	6½ ft. wide
Height	7½ ft.
Irrigates	800 acres

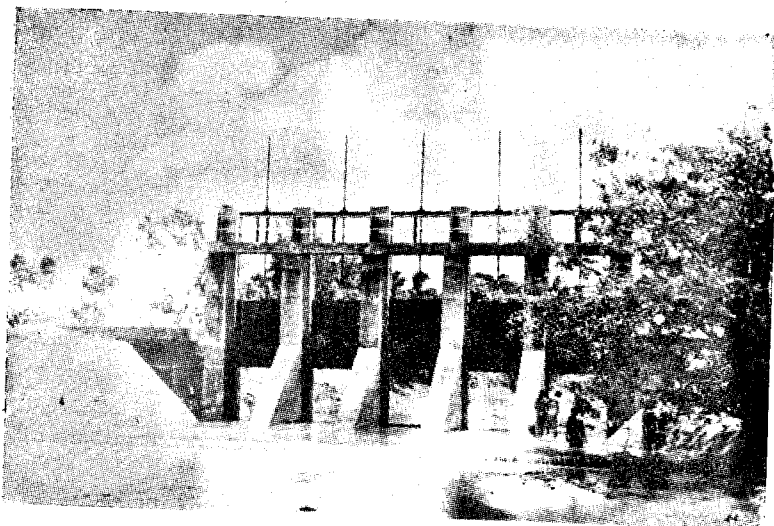
Ranna Anicut P/16 (0.9×3.4)

Catchment area	110 sq. miles
Length of Structure	38 ft.
Bays—five,	6 ft. wide
Height	7 ft.
Irrigates	270 acres

Pattiyapola Maha Wewa P/16 (4.3×2.5)

Catchment area	16 sq. miles and supply from Udukiriwila Tank
Bund—Length	4000 ft.
Storage	570 acre ft.
Head	9 ft.
Spills—Two,	250 ft. long and 85 ft. long
Sluices—4 Nos.	
Irrigates	450 acres.





16.3 RANNA ANICUT



18.1 UGGALKALTOTA L.B. CHANNEL HEAD SLUICE

16.4 MURUTHAWELA SCHEME

Location

Near Muruthawela village about 12 miles North of Tangalla.

Co-ordinates P/11 (0.5×2.4)

Project

A new storage reservoir to impound the waters of Urubokke Oya.

Tentative Data

Tank

Catchment area	136 sq. miles
Length of Tank Bund	4500 ft.
Maximum height	105 ft.
Tank Full:	
Storage	38,000 acre feet

Spills:

Nature Concrete with four radial gates each 20' × 12½'

Length 86 ft.

Sluices:

Location	L. B.	R. B.
Size	2 of 3½' × 5'	3½' × 5'

Approximate capital cost Rs. 14 million.

Irrigation Supply

A four mile long right bank conveyance channel augments development in Kirama Oya Scheme with supplemental irrigation to 5000 acres.

The left bank scheme similarly aids development of 4000 acres in Urubokke Oya Scheme and provide irrigation supply to 3000 acres of new development.

18. THE WALAWE GANGA BASIN

The Walawe Ganga Basin, like that of the Mahaweli, lies in both the south-west and the north-east monsoonal zones. An upper segment of 224 sq. miles receives benefits of the wet zone and the 730 sq. miles in the lower reach receive the dry zone benefits. The mean annual rainfall ranges from 145 inches precipitation in the upper reaches to only 44 inches at Ambalantota, the southern end.

The Walawe Ganga commencing from Adam's Peak is 85 miles long up to Ambalantota and annually conveys about 1.2 million acre feet of water. There are seven major tributaries draining into Walawe Ganga. In all about 1.2 million acre feet of water flows down the ganga in an average year.

Land Use

The present development consists of tea and rubber in the upper basin and 15,000 acres of rice lands in the lower basin. The balance area awaits development.

Water Resources Utilization

The Liyangahatota Anicut situated about 15 miles from the sea, diverts the ganga flow for irrigation supply to the Walawe Right Bank channel and Left Bank Ridiyagama Tank major works schemes, to benefit about 10,000 acres.

Apart from the above there are other major irrigation works and minor irrigation schemes in the basin.

A new reservoir has been constructed across the Hulanda Oya tributary, called—Chandrikawewa to aid development of about 5000 acres of land with rice cultivation.

New Projects

Uda Walawe Reservoir scheme when completed would aid the development of 70,000 acres for agricultural development, approximately as follows:—

Rice cultivation about	34,000	acres
Sugar cane, cotton and citrus	36,000	„

Samanala Wewa Proposal

A multi-purpose storage reservoir impounding the flow from 132 sq. miles of the main Walawe Ganga has been proposed—known as the Samanala Wewa Reservoir Scheme.

The Scheme consists of the main reservoir, a tunnel nearly two miles long, a forebay reservoir power plant and an after bay reservoir at Katupai.

It would supply irrigation for the cultivation of about 23,000 acres with subsidiary food crop and produce 398 million units of electric energy, 120 M. W. capacity.

The resources of the basin would have been well utilized when the proposals envisaged are completed.

18.1 UGGAL KALTOTA SCHEME

Location

At Kaltota, about 18 miles by road from Balangoda Town.
Co-ordinates M/21 (0.9×7.1)

Historical

The area is associated with the name of one Nila, to whom the area was given for development for services rendered by King Gaja Bahu (112-134 A.C.)

Restoration

In 1892 the Right Bank Channel was restored at an initial cost of Rs. 35,271/-. It was improved later and extended subsequently.

The Left Bank Channel with an independent anicut was commenced in 1956.

Scheme

Diversion of flow in Walawe Ganga.

Data

Natural Diversion by rock & boulders for R. B. Concrete anicut across Ganga (lower) for L. B.

Catchment Area 152 sq. miles

Right Bank Scheme (Upper)

Length of Structure— Natural Diversion Inlet
Sluice and long silt reach.

Head Sluice 4'×4'

Left Bank Scheme (Lower Site)

Length of Structure 235 ft.
Maximum Height 3 ft.
Planked Bays 2 Nos.
Head Sluice: 2 Openings each 3'×3'-6"

Irrigation Supply

Right Bank Channel—about 4 miles long conveys supply to about 500 acres of rice cultivation in Kaltota village. The extension of the channel by another 4 miles benefits additional 500 acres. The new Left Bank Channel system consisting of 1½ miles of main channel and 2½ miles of distributary channels convey irrigation supply for the development of 650 acres (rice cultivation) as new Colonization Project in Demodera and Meddebedde villages.

18.2 KATUPATH OYA ANICUT

Location

South East of Balangoda, is reached by a steep 4 mile walk from the 5th mile on Balangoda-Kaltota Road.

Co-ordinates M/21 (4.4×1.6)

Scheme

Diversion of flow in Katupath Oya, a tributary of Walawe Ganga.

Data

Anicut

Catchment area	5½ sq. miles
Length of Structure	300 ft.
Planked Bays	2 Nos. 5 ft. wide
Height	6½ ft.
Head Sluice:	
Location	R. B.
Size	3'×1'-6"

Irrigation Supply

104 acres of new colonization development with rice cultivation is benefited by the work.

18.3 DIYAWINNE MAHA ELA

Location

About 3 miles South of 11th mile on Balangoda-Kaltota Road in rugged terrain.

Co-ordinates M/21 (7.3×2.2)

Historical

In 1908 a small anicut was constructed, which got washed off in 1948. New structure was subsequently erected about half mile down stream. The channel system suffered damage due to floods.

Scheme

Diversion of flow in Diyawini Oya, a tributary of Walawe Ganga.

Data

Anicut

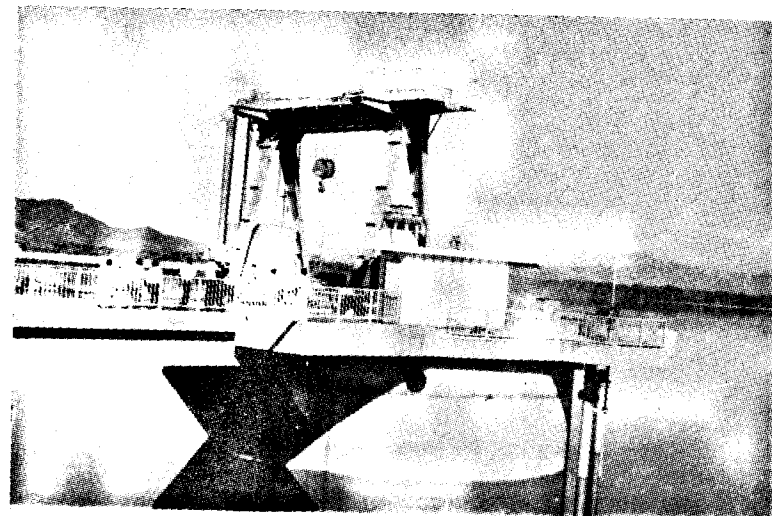
Catchment area	11½ sq. miles
Length of Structure	80 ft.
	10 Nos. Bays 5' × 5'

Head Sluice:

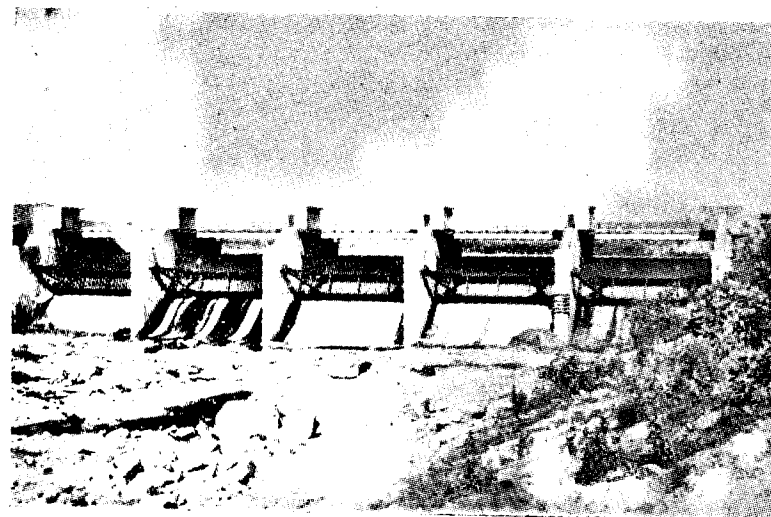
Location	R. B.
Size	12" × 12"

Irrigation Supply

About 200 acres are cultivated in the area.



18.4 UDA WALAWE RESERVOIR—SLUICE



18.4 UDA WALAWE RESERVOIR—SPILL



18.4 UDA WALAWE SCHEME—R.B. CHANNEL



18.4 UDA WALAWE SCHEME—R.B. CHANNEL
ENTERING CHANDRIKAWEWA

18.4 UDA WALAWE RESERVOIR

Location

East of the 27th Mile on the Pelmadulla-Ambalantota Road. From Colombo about 100 miles.

Scheme

A new reservoir across the Walawe Ganga, (Vana Nadi of old) formed by a long earthen embankment.

Data

Tank

Catchment area	454 sq. miles
Length of Tank Bund	2½ miles
Maximum Height	130 ft.

Tank Full:

Storage, total	217,800 ac. ft.
Usable storage	203,500 ac. ft.
Area of water spread	8,400 acres
F. S. L.	290 M.S.L.

Spills

Radial Gates	5 Nos. 60.5 ft. × 20 ft.
Natural spill	1250 ft.

Sluices:

	R. B.	L. B.
Capacity	500 Cusecs	1300 Cusecs
Power Sluices	1 No	2 No
Irrigation By Pass	2 No	2 No

Power Plant

Two Power Plants installed at each of the sluices, generate 1.8 MW at R.B. and 3.6 MW at L.B., totalling in all 5.4 MW.

Canals

The Right Bank canal, 26 miles long and 30 ft. wide, conveys 500 cusecs to benefit 25,000 acres.

The Left Bank canal, 25 miles long and 40 ft. wide, conveys 1000 cusecs to benefit 46,000 acres.

Approx. cost Rs. 135 million.

18.5 HAMBEGAMUWA TANK

Location

In Tanamalwila area, Wellawaya, Uva Province, situated 21 miles West of Tanamalwila and is difficult of access. Co-ordinates P/2 (2.6×7.3)

Historical

An ancient work across the Mau Ara restored in 1890 at an initial cost of Rs. 31,887/- to store about 2,000 acre ft. In 1961 the work was augmented and improved to store 3,400 acre ft.

Data

Tank

Catchment area 20 sq. miles
Length of Tank bund 2800 ft.

Tank full:

Storage 3400 acre ft.
Head of water 17 ft.
Area of water spread 400 acres

Spills:

	(1)	(2)	(3)
Nature	Masonry	Masonry	Concrete
Location	L.B.	L.B.	L.B.
Length	24 ft.	58 ft.	360 ft.

Sluices:

R. B. size 12 inches dia.
L. B. new.

Irrigation Supply

Original channel two miles long benefits 300 acres of rice cultivation. The subsequent augmentation brings under command an additional 375 acres for new development.

Capital Cost

The 1961 improvements works cost Rs. $\frac{1}{2}$ million.

18.6 WELLAWA ANICUT

Location

Near Godakawela; off 21½ Mile Stone on the Pelmadulla-Ambalantota Road.

Co-ordinates P/1 (1.1×1.8)

Restoration

Present anicut constructed in 1897. Was subsequently improved in 1958 and in 1960.

Scheme

Anicut diversion of flow in Rakwana Ganga.

Data

Anicut

Catchment area 4½ sq. miles
Length of Structure 122 ft.
Maximum Height 3 ft.
Planked Bays 2 Nos.

Head Sluice:

Location L. B.
Size 4'×2'-6"

Irrigation Supply

A main channel 3½ miles long conveys supply to about 250 acres of rice cultivation.

18.7 AMBAGAHA ELA AMUNA

Location

Near Embilipitiya, by the road side at 3½ Mile Stone on the Embilipitiya-Panamure Road.

Co-ordinates P/6 (5.1 × 2.3)

Restoration

The present anicut and inlet channel was constructed in 1891 at a cost of Rs. 30,390. Subsequently improved in 1921 and later in 1959.

Scheme

Diversion of flow in Panamure Ela (which itself is augmented higher by Kitulabokke diversion) to augment supply to Hingura Ara Tank.

Data

Anicut Diversion for augmentation

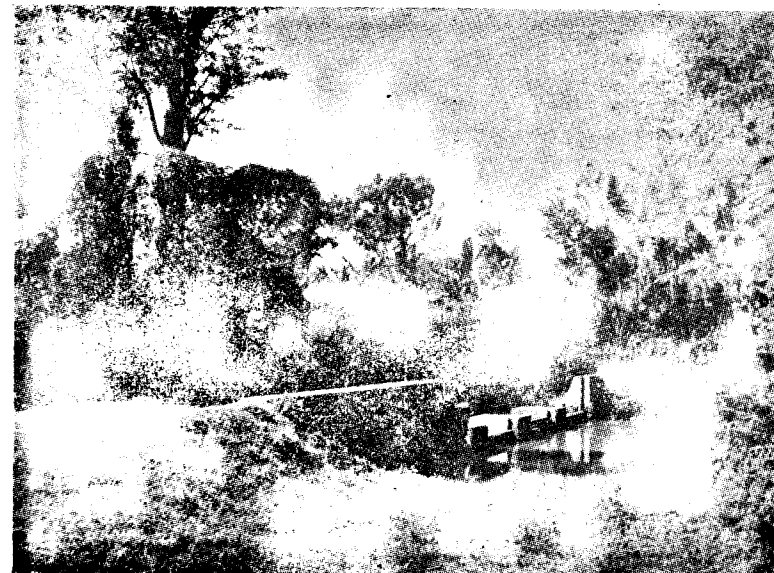
Catchment Area	27 sq. miles
Length of Structure	33 ft.
Maximum Height	5 ft.
Planked Bays	3 Nos.

Head Sluices:

Location	L. B.
Size	4'-9" × 2'-6"

Irrigation Supply

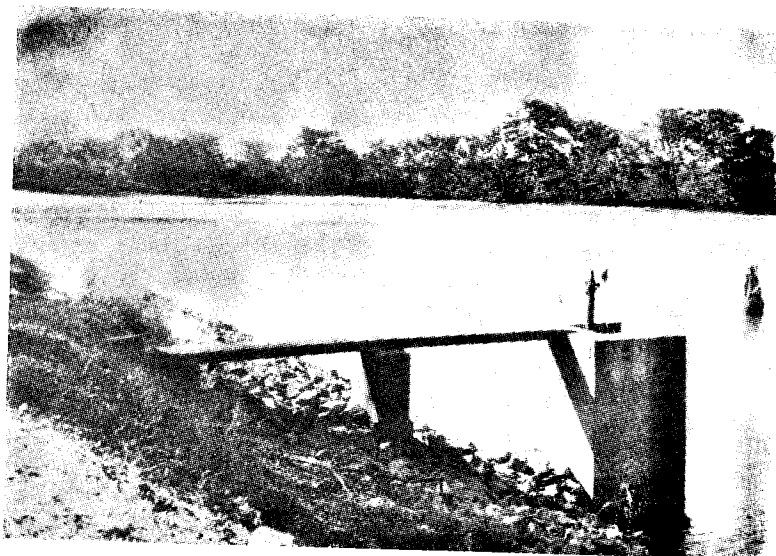
Inlet channel to Hingura Ara Tank 3½ miles long, crosses the Panamure Road near the 2nd mile. The channel flows along a natural stream the Guru Ara, to the tank.



18.7 AMBAGAHA ELA AMUNA



18.8 HINGURA ARA TANK D/S OF SLUICE & CHANNEL



18.8 HINGURA ARA TANK



18.11 CHANDRIKAWEWA

18.8 HINGURA ARA TANK

Location

Near Embilipitiya, off 34th mile on Pelmadulla-Ambalantota Road.

Co-ordinates P/6 (8.2×3.1)

Scheme

Was constructed under the direction of the Central Irrigation Board in about 1891. A beautifully constructed small tank.

Data

Tank

Source of Supply:

Diverted flow from Ambagaha Ela Amuna, through Guru Ara and drainage from self catchment of $4\frac{1}{2}$ sq. miles.

Length of Tank Bund	1340 ft.
---------------------	----------

Tank Full:

Storage	340 acre ft.
Head of water	18 ft.
Area of water spread	38 acres

Spills:

Nature	Concrete crest wall.
Location	R.B. end of bund.
Length	70'

Sluices:

Location	O.M. 4 ch.
Size	12" ϕ hume pipe and tower; downstream well and channel lining.

Irrigation and Supply

A three mile long main channel convey irrigation supply to over 350 acres of rice cultivation situated on either side of the main road at Embilipitiya.

18.9 EMBILIPITIYA TANK

Location

At Embilipitiya, on the Pelmadulla-Ambalantota Road.
Co-ordinates P/6 (8.8×2.3)

Restoration

Was restored by P. W. D. in 1891. A new spill was provided and the Anicut Sluice (Bisokotuwa type) was restored.

Data

Tank

Source of Supply:

Diverted flow from Hulanda Oya Anicut and drainage from self catchment area of $1\frac{1}{2}$ sq. miles.

Length of Tank Bund 2950 ft.

Tank Full:

Head of water 6.4 feet

Spills:

Nature	Masonry C.O.
Location	R.B.
Length	30 ft.

Sluices:

Location	R.B. at 1685 ft.
Size	12" ϕ

Irrigation Supply

Benefits 120 acres situated at Embilipitiya. This tank is now supplied by the R. B. Channel of Uda Walawe Scheme.

18.10 KITULABOKKE ANICUT

Location

Off Embilipitiya, about 14 miles on the Embilipitiya-Suriyakande Road and a mile walk from there.

Co-ordinates O/10 (13.1×6.6)

Historical

Present anicut constructed in 1891, with an initial expenditure of Rs. 12,665/-.

Scheme

An anicut across the Eraporuwa Ganga diverts the Ganga flow into a channel, for trans basin diversion into neighbouring valley to augment flow in Panamure Ela—which is the source of supply to the Kolonne Irrigation work under the Hingura Ara Tank.

Data

Anicut Diversion

Catchment Area	$19\frac{1}{2}$ sq. miles.
Length of Structure	98 ft.
Maximum Height	5 ft.
Planked Bays	3 Nos.

Head Sluice:

Location	R.B.
Size	Two Openings

Irrigation Supply

The trans basin diversion conveyance channel is about three quarter mile long and is cut through a ridge of hills, it was constructed in 1891 at a cost of Rs. 19,335/-.

18.11 CHANDRIKA WEWA

(Reservoir across Hulanda Oya, a tributary of Walawe Ganga)

Location

Is situated about two miles South of Embilipitiya near the 36th Mile Post on the Pelmadulla-Ambalantota Main Road. Co-ordinates P/6 (10.2×0.8)

Project

An entirely new work (there had been no tank at the site before) formed by the erection of an earthen embankment across the Hulanda Oya.

Data

Tank

Catchment Area	64 sq. miles
Length of Tank Bund	$1\frac{1}{4}$ miles
Tank Full:	
Storage	22,400 acre ft.
Head of water	$27\frac{1}{4}$ ft.
Area of water spread	1,100 acres
Spills:	
Location	L.B. Flank
Nature	Channel flow
Length	1000 ft.
Sluices:	
Location	Right Bank
Size	2 Openings each $3'-9" \times 3'-9"$

Irrigation Supply

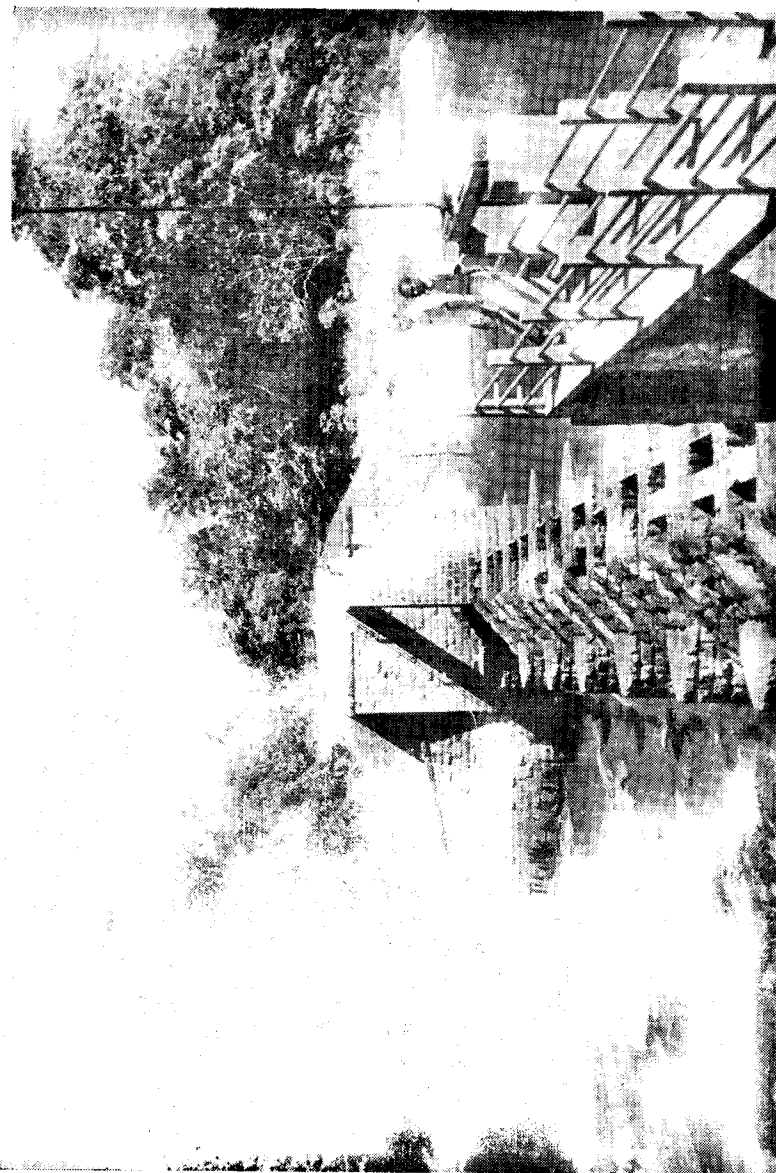
Main channel 7 miles long, with a conveyance at commencement of 146 cusecs, terminates at Metigatwela tank. A system of 20 Distributary Channels totalling over 30 miles, command an extent of 5300 acres consisting of 250 acres in Halmillaketiya, about 2200 acres in Tunkama, 1100 in Kuttigala and 1700 acres (Tract VI) in Padanangala. The R. B. Channel of Uda Walawe now flows through this tank.

Capital Cost

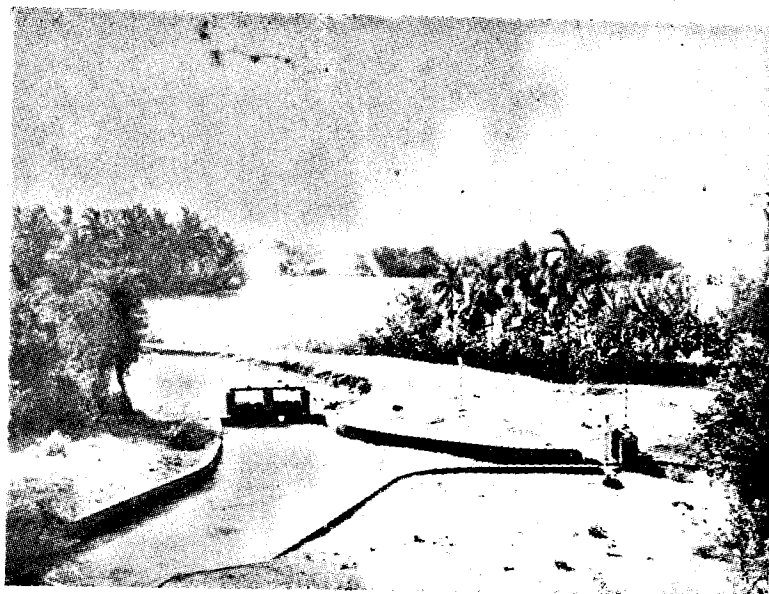
Rs. $14\frac{1}{2}$ Million.

Progress

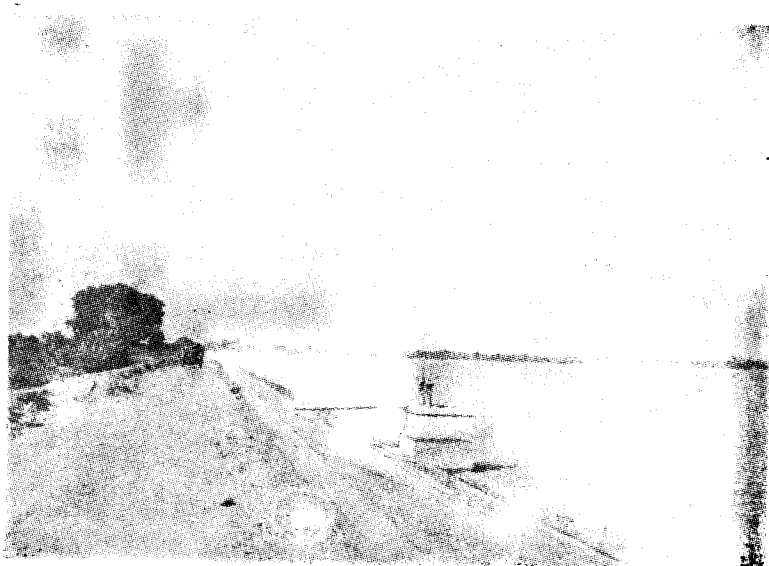
Water stored in the tank for the first time in 1963.



18.12 LIYANGAHATOTA ANICUT



18.12.3 RIDIYAGAMA TANK—SLUICE



18.12.3 RIDIYAGAMA TANK

18.12 WALAWE SCHEME (LOWER BASIN)

Irrigation development in the lower reaches of the Walawe Ganga (Vana Nadi of old) basin consists of the diversion of the Ganga at Liyangahatota by an Anicut, which diverts supply to Left Bank and Right Bank channel systems.

Walawe Left Bank Scheme feeds Ridiyagama and Kadawara Tanks while the Right Bank Scheme feeds Mamadola and Oluwila Tanks for intermediate storage.

Head Works of the Scheme, (Liyangahatota Anicut) was constructed in 1889. The Left Bank Scheme was incorporated in 1924.

HEAD WORKS

LIYANGAHATOTA ANICUT

Location

In Hambantota District, is situated $\frac{3}{4}$ mile East of Barawakumbura, a village 11 miles from Embilipitiya towards the South on the P. W. D. road from Pelmadulla to Ambalantota. Co-ordinates P/12 (2.1×4.3)

Data

Anicut Diversion

Catchment area	882 sq. miles
Length of Structure	240 ft.
Maximum Height	18 ft.
Four Scour Sluices	

Head Sluices:	L.B.	R.B.
Size	5 ft. $\times$ 7 ft.	6½ ft. $\times$ 3½ ft.
Head of water	6.35 ft	9.5 ft.

Irrigation Supply

A total extent of 12,670 acres are irrigated under this Anicut through the Walawe Left Bank and Walawe Right Bank Schemes.

18.12.1 WALAWE RIGHT BANK SCHEME— MAMADOLE TANK

Location

On the 4th Mile Post of Nonagama-Ratnapura Road.
Co-ordinates P/17 (3.83 × 8.30)

Scheme

Walawe Right Bank Scheme.

Data

Tank

Source of Supply:—

Drainage from Catchment area 1.20 sq. miles and
supply by Walawe R.B. Channel.

Length of Tank Bund 1800 ft.

Tank Full:

Storage 300 acre ft.
(approximately)
Head of water 4 ft.

Spills:

Nature Masonry Wall
Location L. B.
Length 38'—two lengths of
19 feet.

Sluices:

Location	L.B. Inlet Sluice & R.B. Outlet Sluice
Size	L.B. 7' 0" wide × 4' 0" high R.B. 7' 0" wide × 4' 6" high

Irrigation Supply

Walawe Ganga R.B. Main Channel feeds the tank.

18.12.2 WALAWE RIGHT BANK SCHEME—OLUWILA TANK

Location

$\frac{1}{4}$ Mile North of 139 $\frac{1}{2}$ Mile Post of Tangalla-Hambantota
P. W. D. Road.

Co-ordinates P/17 (6.46 × 5.40)

Scheme

Walawe Right Bank Scheme.

Data

Tank

Source of Supply:

Drainage from Catchment area 0.25 sq. miles and
Supply by Walawe Right Bank Channel.

Length of Tank Bund 1935 ft.

Spills:

Nature	Clear over fall, concrete slab pitching.
Location	Right Bank
Length	30 ft.

Sluices:

Location	L.B (Low Level)	R.B. (High Level)
Size	3' 0" wide	3' 0" wide
	5' 0" high	2' 6" high

Irrigation Supply

No. 3 D Channel of Walawe Right Bank Scheme feeds the
tank. The Oluwila L. B. Channel 200' and Oluwila R. B.
Channel 1500' irrigate the fields at Oluwila and Tawaluwila.

18.12.3 WALAWE GANGA LEFT BANK SCHEME— RIDIYAGAMA TANK

Location

Is situated in Ridiyagama village, the terminus of the 6 mile long P. W. D. Road running North from Ambalantota Co-ordinates P/12 (5.70 × 2.03)

Project

This tank which is the main reservoir in the Walawe Ganga L.B. Scheme was commenced in 1923 and completed in 1928.

Data

Tank

Catchment area:

12 sq. miles but is mainly fed by the Walawe Left Bank diversion channel from the 240 ft. long Anicut across Walawe Ganga at Liyangahatota.

Tank Bund: Length $1\frac{1}{2}$ miles
Average height 20 ft.

Storage 21,750 acre ft.
Head of water 17 ft.
Area of water spread 2,200 acres

Spills:

	No. 1	No. 2
Location	R.B.	R.B.
Type	Natural	Natural
	with crest wall	

Length 210 ft. 87 ft.

Sluices:

Location	L.B.
Size	Two
	Openings of
	$3\frac{1}{2}' \times 4'$

Irrigation

The work irrigates a total extent of 5,700 acres, listed under Walawe Ganga Left Bank Scheme.

18.12.4 WALAWE LEFT BANK SCHEME— KADAWERA TANK

Location

3 miles North of 3rd Mile Stone on Ambalantota-Ridiyagama Road.

Co-ordinates P/12 (7.15 × 1.72)

Scheme

Walawe Left Bank Scheme.

Data

Tank

Source of Supply:

Drainage from Catchment area 24 sq. miles & Walawe Left Bank Channel.

Length of Tank Bund 1100'

Spills:

Nature	Natural Spill	Natural Spill
Location	L.B.	R.B.
Length	100 ft	200 ft.

Sluices:

Location	At 610 ft. from L.B. end of Bund
Size	15" diameter.

Irrigation Supply

Walawe Left Bank Main Channel feeds the tank and Walawe Left Bank Main Channel also directly feeds the fields.

20. MALALA OYA BASIN

The Malala Oya, which drains an area of 156 sq. miles has its source near Augunukolapelessa and collects its waters from innumerable clusters of minor abandoned tanks of ancient Ruhuna. Three works of development in the basin are Mahawewa, Mahagalwewa and Badagiriya which are recent restorations for Colonization. Much of the run off from the catchment is very likely lost in percolation en route as the sea outfall of the Oya at Malala Lewaya and the Malala Modera are not impressive in magnitude.

20.1 MAHA WEWA

Location

About 10 miles to the West of Tanamalwila on the Hambegamuwa Road.

Co-ordinates P/2 (6.7×1.9)

Restoration

1956-60.

Scheme

Storage Tank.

Data

Catchment area	5 sq. miles
Length of Tank Bund	2200 ft.
Tank Full:	
Storage	630 acre feet.
Head of water	11 ft.
Area of water spread	125 acres

Spills:

Nature	Channel flow
Location	R.B.
Length	270 ft.

Sluices:

Location	L.B.	R.B.
Size	12 ins.	12 ins.

Irrigation Supply

A Left Bank and a Right Bank channel system provide irrigation facilities for 200 acres of rice cultivation.

20.2 MAHAGAL WEWA

Location

About 25 miles North West of Hambantota.
Co-ordinates P/7 (8.75×5.95)

Restoration

Restoration of present work commenced 1953.

Scheme

Impounds the waters of Maha Ara.

Data

Tank

Catchment area 37.0 sq. miles
Length of Tank Bund 3,900 ft.

Tank Full:

Storage 1,446 acre ft.
Head of water 10 ft.
Area of water spread 240 acres

Spills:

Nature C. O. Spill
Location L. B.
Length 300'

Sluices:

Location R.B. end
Size 1'×2'

Irrigation Supply

Main Channel 3 miles 2400' long.

The work supplies water for the irrigation of 500 acres for rice cultivation in new colonization development project.

20.3 BADAGIRIYA TANK

Location

About 12 miles North of Hambantota.
Co-ordinates P/13 (2.3×5.7)

Historical

The ruins at Badagiriya are ancient and are reported to include 3rd & 6th century inscriptions. The ruins may be of Badagaldora Vihare built by Kavantissa.

Restoration

Restoration work commenced 1956-57.

Scheme

Impounds the waters of Malala Oya.

Data

Tank

Catchment area 135 sq. miles
Length of Tank Bund 1½ miles

Tank Full:

Storage 2350 acre ft.
Head of water 8 ft.
Area of water spread 105 acres

Spills:

Nature	Concrete on Rock	Concrete
Location	Central	Structure
Length	280 ft. and 175 ft.	R.B.
		110 ft.

Sluices:

Location	L.B.
Size	3 ft. dia.

Irrigation Supply

The work supplies irrigation for new development of 800 acres of rice cultivation.

Augmentation proposals has a target for bringing under command another 200 acres in addition.

22. KIRINDI OYA BASIN

The Kirindi Oya basin, commencing from Ella, near Bandarawela elevation 4,000 ft. extends through Wellawaya and Tanamalwila to finish up at the southern seaboard at Kirinda near Tissamaharama a total length of 50 miles.

Kirindi Oya is essentially a dry zone river and the flow in it now benefits the irrigation system at Tissamaharama.

Hydrology

The Kirindi Oya has a total watershed area of 455 sq. miles of which about 177 sq. miles are above the 500 ft. elevation, 175 sq. miles lower down with another 103 sq. miles in the plains; average annual rainfall is about 74 inches. Gaugings indicate an average annual flow of 322,000 acre feet at Ellawela diversion structure.

Land Use

The very upper reaches close to Ella is developed with tea, and lands around and below Wellawaya and Tanamalwila are in jungle; the lower reaches close to the coastal plains have been developed for rice cultivation.

Water Resources Utilization—Irrigation

Three major irrigation works at Sudupanawela, Handapanagala and the Kirindi Oya Diversion Works aid the cultivation of about 10,000 acres of paddy lands.

Besides these, there are about 30 minor irrigation schemes.

A storage reservoir is proposed near Lunuganwehera with a storage capacity of 180,000 acre feet for the cultivation of 60,000 acres with rice. Some of this land has to be found from the adjoining basin.

22.1 SUDUPANAWELA ANICUT

Location

In Wellawaya, Uva Province. Is reached by the Sudupana-wela Agricultural road at Wellawaya.

Co-ordinates M/18 (0.2 × 5.7)

Historical

This anicut was constructed across the Kirindi Oya, in 1891, at an initial cost of Rs. 14,120. It was rebuilt and the scheme improved in 1934 by the Irrigation Department.

Data

Anicut

Stream catchment at Anicut site	40 sq. miles
Length of Structure	180 ft.
Height	10½ ft.
Planked Bays:	4 Nos.
Sluice—	L.B. opening 5½' × 5 ft.

Irrigation Supply

By a left bank main channel over two miles long 356 acres are supplied for rice cultivation.

22.2 HANDAPANAGALA WEWA

Location

In the Wellawaya area of Uva Province. Is situated about six miles South East of Wellawaya and is reached by a three mile approach road branching off from near 45th Mile Post on the Wellawaya-Hambantota Main Road.

Co-ordinates M/23 (2.8×6.7)

Historical

The area is traditionally associated with the reign of Walagam Bahu (104-88 B.C.) when many works were carried out. The tank is formed by a short bund across the Maha Ara, a tributary of the Kirindi Oya, and abutting at the left bank into Handagalla hill, from which the tank derives its name. Restoration was commenced in 1952 and was completed subsequently; but could not withstand the disastrous flood of December 1957 and was breached. Was however re-restored in 1960, and first supply made for cultivation.

Data

Tank

Catchment area	20 sq. miles
Length of Tank Bund	3600 ft.
Tank Full:	
Storage	5000 acre ft.
Head of water	19 ft.
Area of water spread	450 acres
Spills:	
Nature	Concrete C.O.
Location	R.B.
Length	535 ft. and 100 ft. of rock face.

Sluices:

R.B.—Size 3 ft. dia.

Irrigation Supply

A right bank channel system benefits an extent of 800 acres for development by new colonization.

Capital Cost

Rs. 1½ million.

22.3 BALAHARUWA TANK

Location

In the Wellawaya area of Uva Province; is situated about seven miles West of the 35th Mile Stone on the Wellawaya-Hambantota Main Road—about 22 miles South West of Wellawaya.

Co-ordinates M/22 (8.2×1.3)

Restoration

Tank was restored in 1956.

Data

Tank

Catchment area	10 sq. miles
Length of Tank Bund	4200 ft.

Tank Full:

Storage	630 acre ft.
Head of Water	8 ft.
Area of water spread	130 acres

Spills:

	(1)	(2)
Nature	Concrete C.O.	Channel
Location	Right Bank	Left Bank
Length	70 ft.	320 ft.

Sluice:

R. B.—18 inches dia.

Irrigation Supply

With a main channel over 1½ miles long and field channels an extent of 210 acres benefited for rice cultivation, over half of which is new colonization.

Capital Cost

Rs. 3 lakhs.

22.4 DAMBE WEWA

Location

About 2½ miles West of the 43rd mile on Hambantota-Wellawaya Road, passing Etiliwewa colony.

Co-ordinates M/22 (12.4×3.6)

Restoration

Restoration 1960-62

Scheme

Impounds the flow in Dambe Ara and Mimule Ara.

Data

Tank

Catchment area	4.3 sq. miles
Length of Tank Bund	3550 ft.

Tank Full:

Storage	1170 acre ft.
Head of water	13 ft.
Area of water spread	175 acres

Spills:

Location	R.B.
Length	200 ft.

Sluices:

Location	L.B.	R.B.
Size	15 ins.	15 ins.

Irrigation Supply

The work effects irrigation supply to 230 acres of rice cultivation.

THE KIRINDI OYA SCHEME

The waters of Kirindi Oya are utilised for irrigation development by anicut diversion at Ellagala near Tissamaharama, and Left and Right Bank Schemes from the anicut.

The Left Bank Channel takes off about quarter mile above the anicut with a four-bay head sluice with two openings 5 ft. by 4½ ft. each, with a conveyance of 440 cusecs and flows down as an inlet channel to Tissawewa. On the way, a feeder channel takes off to supply Deberawewa. Tissawewa supplies water through a plank bay spill to Yodawewa, the last tank in the Kirindi Oya L.B. Channel Scheme. The L.B. Scheme consisting of Deberawewa, Tissawewa and Yodawewa benefits a total extent of 6,224 acres.

Access to the Ellagala anicut and Tissawewa inlet channel is gained by the inlet channel road going northwards from Tissawewa Bund passing between Deberawewa and Tissawewa.

The Right Bank Channel taking off from just above the Ellagala anicut and controlled by the head sluice cum bridge, on the anicut approach road from the Hambantota-Wellawaya P. W. D. Road, falls into Pannegamuwa Tank. The planked bay spill structure below the bridge on the Hambantota-Wellawaya Road at the 16½ mile post delivers supply from Pannegamuwa Tank into the inlet channel to Wirawilawewa; Wirawilawewa is connected to the tank across the road formerly called Yoda-Kandiya Wewa, and now absorbed as Wirawilawewa. The Right Bank Scheme consisting of Pannegamuwawewa and Wirawilawewa benefits a total of 2,241 acres.

22.5 ELLAGALA ANICUT

HEAD WORKS OF THE KIRINDI OYA SCHEME

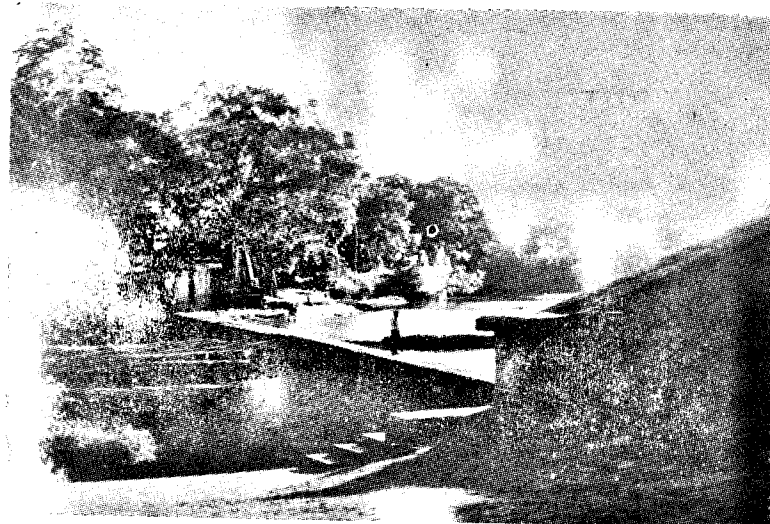
This anicut is built across the Kirindi Oya about 7 miles from Tissamaharama and is reached by a two mile road N.E. of the 165th mile post on the Hambantota-Wellawaya Road.

Co-ordinates P/8 (8.9×2.6)

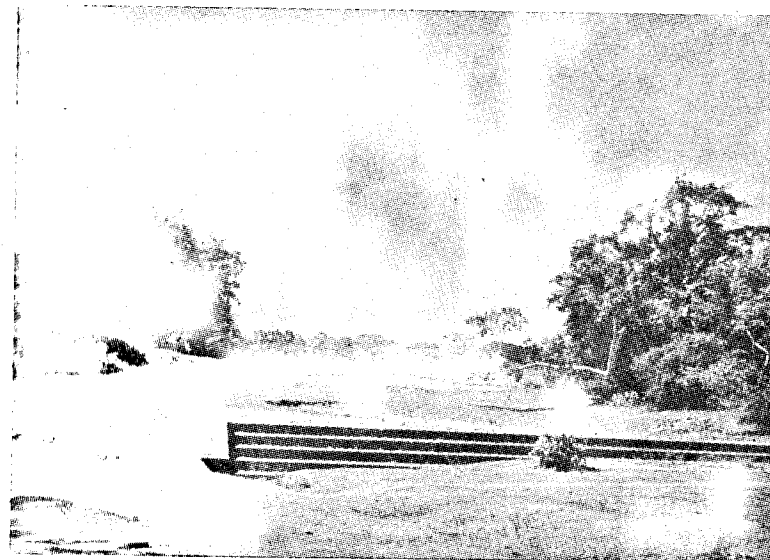
The present structure of the anicut was constructed during 1874-78, at an initial cost of Rs. 101,842.

Damming the flow from 300 sq. miles of catchment area in Kirindi Oya Basin, the anicut is 289 feet long, crest level 103.84 M. S. L. and 17½ high from the bed of the river.

The anicut contains a two bay concrete arched scour gate 6 ft. by 4 ft. with sill at 86.34 M. S. L. provided with lifting gate and planking arrangement. A silt ejector 4 ft. by 4 ft. is also embodied at 94.67 M. S. L.



22.5 ELLAGALA ANICUT



22.5.1 DEBERAWEWA SPILL

22.5.1 DEBERA WEWA

KIRINDI OYA LEFT BANK SCHEME

Location

Is situated in Tissamaharama about a quarter mile from the Hospital and is approached along the Mutuamma Low Level Channel and Road, turning off near the Tissa Hospital. It can also be reached from the Inlet Channel Road from Tissa Wewa.

Co-ordinates P/13 (10.7×8.6)

Restoration

The present tank was restored in 1889.

Project

The tank is fed by a 4 mile feeder channel which takes off from the Kirindi Oya Left Bank or Inlet Channel feeding Tissa Tank and is one of the Tissa Tanks.

Data

Tank

Has own Catchment area 2.2 sq. miles, but is mainly fed by Kirindi Oya Diversion waters.

Length of Bund 1m 700 ft.
Average Height 12 ft.

Tank Full:

Storage 450 acre ft.
Area of water spread 150 acres

Spills:

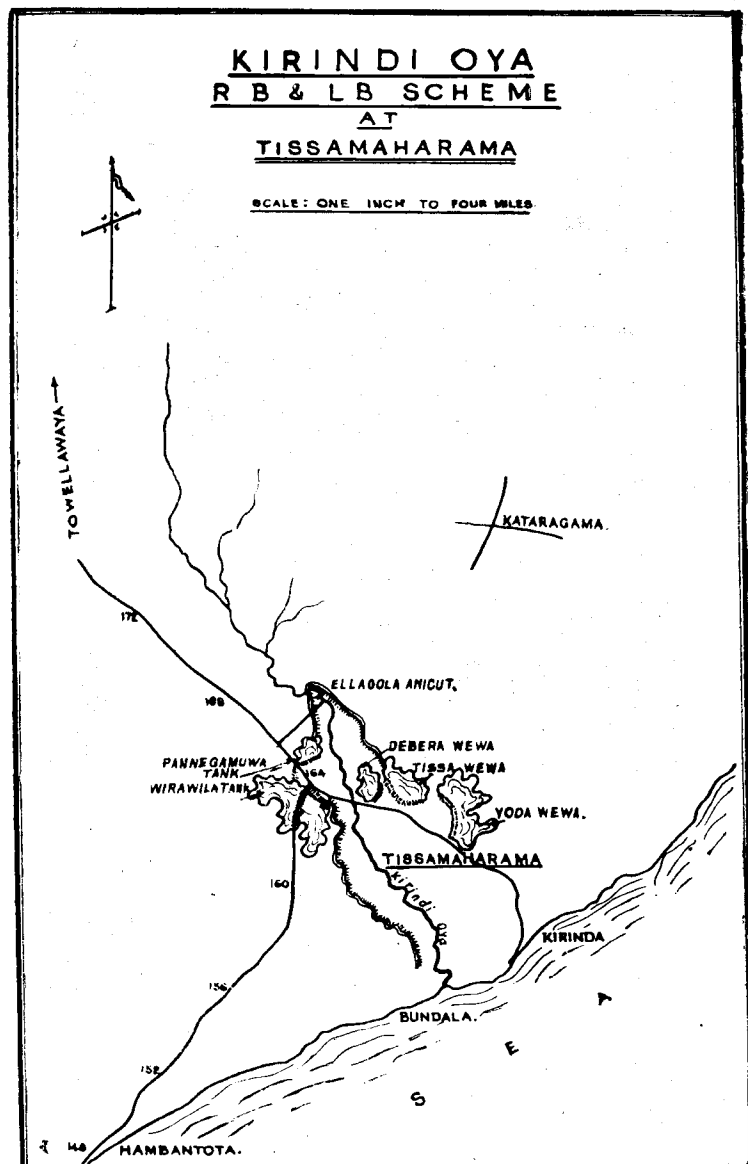
Clear overfall masonry at left bank
Length 62 ft.
Spill channel falls into Tissa Tank.

Sluices:

L.B. High Level (Yatala)	R.B. Low Level Mutuamma	R.B. High Level
One opening $2' \times 1\frac{1}{4}'$	One opening $4' \times 4\frac{1}{2}'$	One opening 1 ft. dia.

Irrigation Supply

The Channel system benefits an extent of 945 acres of rice cultivation.



22.5.2 TISSA WEWA

KIRINDI OYA LEFT BANK SCHEME

Location

The well known tank situated at Tissamaharama in Ruhuna of ancient fame and fed by Kirindi Oya, diversion (Left Bank) effected at the Ellagala anicut.

Co-ordinates P/13 (12.2×7.6).

Historical

Tissavapi, first large tank in Mahagama, was built by Ilanaga (35-44 A.C). The work has several subsequent references as the area was the seat of the Princes who ruled over Ruhuna.

Restoration

Present tank was restored in 1879 at an initial cost of Rs. 28,572/-.

Recent work (improvements) in 1939.

Later work—Spill raised to level 66.0 in 1949 and to 66.5 in 1955.

Data

Tank

Own Catchment 15 sq. miles
Is also fed by a $4\frac{1}{2}$ mile inlet channel from Ellagala Anicut, Kirindi Oya Scheme.
Length of Tank Bund $\frac{3}{4}$ mile (Main Road)
Average height 15 ft.

Tank Full:

Storage 2,900 acre ft.
Head of water $14\frac{1}{2}$ ft.
Area of water spread 575 acres

Spills:

A 200 ft. masonry structure at L.B. with two planked bays $5' \times 7'$.

Sluices:

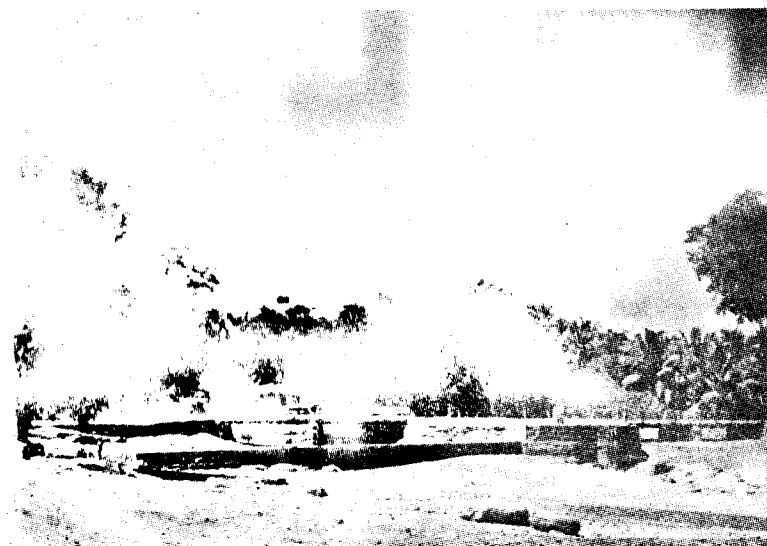
Location	Size
L.B. (low level)	$2' \times 3'$
L.B. (high level)	$8' \times 2\frac{1}{4}'$
R.B. (high level)	2' dia.

Irrigation Supply

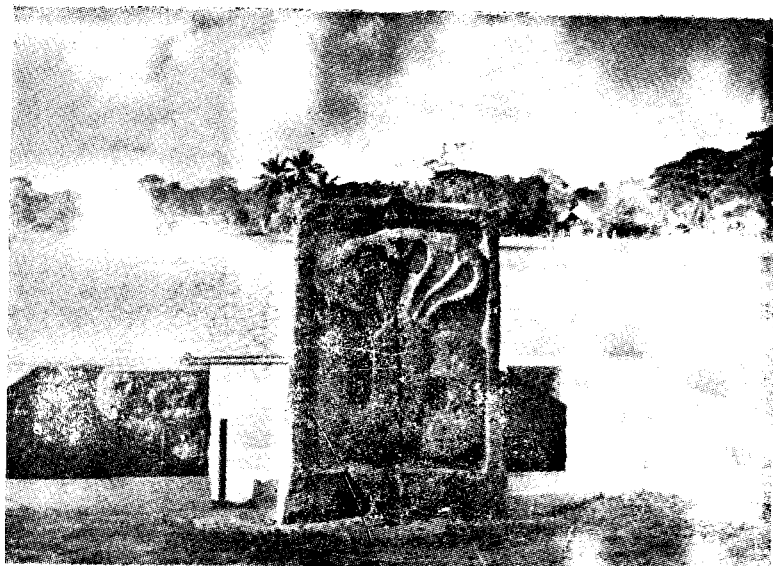
The work benefits an extent of 2725 acres for cultivation of rice.



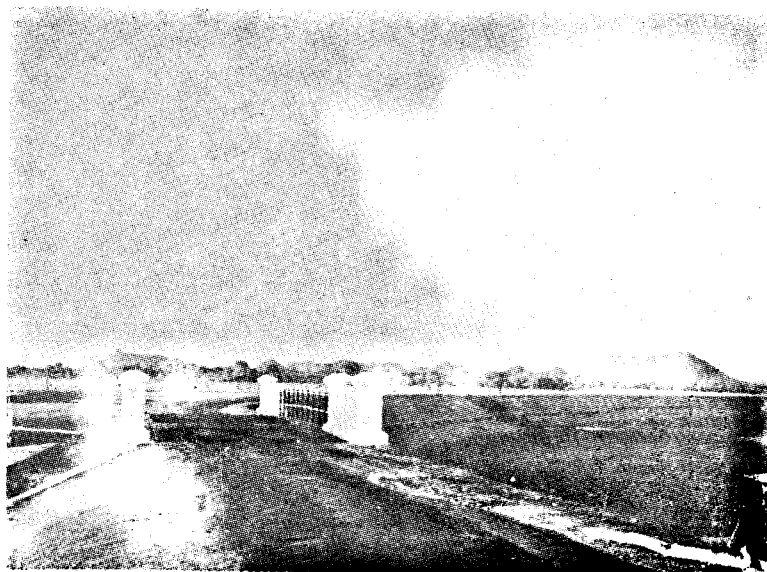
22.5.2 TISSAWEWA



22.5.3. YODE WEWA SPILL



22.5.3 YODE WEWA



22.6.5 WIRAWILA TANK

22.5.3. YODA WEWA

KIRINDI OYA LEFT BANK SCHEME

Location

Is the end tank of the Kirindi Oya Left Bank Scheme which comprises of Deberawewa, Tissa & Yodawewa tanks and is situated about 6 miles from Tissamaharama on the Tissa-Kirindi Main Road. Road forms part of the Tank bund. Co-ordinates P/13 (13.4×5.9)

Historical

Yoda Wewa identified as the ancient Duratissa (the far Tissa Tank) and the adjoining Sitharawila are believed to have been constructed by King Maha Naga in the second century B.C. These were enlarged during King Ilanga (38-44 A.D.) period. In the twelfth century A.D., it is recorded to have been restored by King Parakrama Bahu.

Restoration

Restoration of all the Tissa Tanks were taken up during the administration of Governor, Sir Henry Ward (1855-60) on the recommendation of Civil Engineer, Mr. Harrison and completed in 1902.

Data

Tank

Yoda Wewa has its own catchment drainage from 18 sq. miles, but is mainly fed from Kirindi Oya Diversion from Tissa Wewa, crossing the Tissa-Kataragama Road, about $\frac{1}{2}$ mile from Tissa.

Tank Embankment-Length 3,500 ft. (Main Road)
Tank average height 15 ft.

Tank Full:

Storage 7,900 acre ft.
Head of water $12\frac{1}{2}$ ft.
Area of water spread 1,200 acres

Spills:

	L.B. No. 1	L.B. No. 2
Location	Masonry C/O	Masonry C/O
Nature	104 ft.	38 ft.
Length		

Sluices:

	L.B.	Central
Location	Bisokotuwa	Masonry
Type	Two of 2'×2'	3'×2 $\frac{1}{2}$ '
Size		

Irrigation Supply

An extent of 2576 acres is fed by the two channel systems which extend four miles.

Note: The Naga-Gala (Cobra Stone) found at the sluice is traditionally believed to commemorate the builder—King Maha Naga, such stones, however, are generally associated with the name of the Snake King, Muchalinda, the sacred guardian of the water.

22.5.4 PANNAGAMUWA WEWA

KIRINDI OYA RIGHT BANK SCHEME

Location

Is situated off 16½ M.P. on the Hambantota-Wellawaya Road.

Co-ordinates P/8 (8.7×0.5)

Data

Tank

Catchment area 2½ sq. miles, but is fed by the Kirindi Oya Right Bank channel system from Ellagala Anicut en route to Wirawila Tank.

Length of Tank Bund	¾ mile
Average height	7 ft.

Tank Full:

Storage	1000 acre ft.
Head of water	8 ft.
Area of water spread	275 acres

Spills:

L.B. Natural	300 ft.
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Spill water flows down to Wirawila Tank.

Sluice:

Location	L.B.	R.B.
Opening	2'×2½'	2 of 8'×6'

22.5.5. WIRAWILA TANK

KIRINDI OYA RIGHT BANK SCHEME

Location

Is 4 miles west of Tissamaharama.

Co-ordinates P/13 (8.6×8.4)

Historical

The stretch of water to the South of the Hambantota-Wellawaya Road still retains the original historical name of Yoda Kandiya Wewa but the scheme as a whole is merged into Wirawila Tank.

Data

Tank

Catchment area 32 sq. miles, but also receives Kirindi Oya Diversion Supply from the Right Bank Channel fed into Pannagamuwa Tank by planked bay spill below the bridge on the Hambantota-Wellawaya P. W. D. Road.

Length of Tank Bund $1\frac{1}{2}$ miles

Average Height 17 ft.

Tank Full:

Storage 10,000 acre ft.

Head of water 12 ft.

Area of water spread 1,400 acres

Spills:

Location	L.B. No. 1	L.B. No. 2	R.B.
Nature	Natural	Natural	Clear over-flow
Length	300 ft.	330 ft	42 ft.

Sluices:

Location	Right Bank
Size	$4' \times 3\frac{1}{2}'$

Irrigation Supply

The four mile long channel system irrigates 2,000 acres.

26. MENIK GANGA BASIN

The Menik Ganga has its source in the Passara hills, elevation about 4000 ft. and flowing past Buttala and Kataragama reaches the sea at Yala.

The river is about 50 miles long and the watershed area of 497 sq. miles is in the dry zone. Annually about 0.18 m. acre feet reach the sea through the Ganga. Flood period is during the months of November-December.

Most of the basin is in thick virgin jungle, except for some tea near Passara and the rice lands developed under Buttala anicut.

As the Ganga flows through the heart of the Yala sanctuary, and by the strict natural reserve of the Ruhunu National Park, the desirability of programming agricultural development for man is subject to question.

Development proposals in this valley is however advisedly restricted to the restoration of several village tanks, situated between Kataragama and Buttala.

However, if and when it becomes necessary, a storage reservoir can be well sited which would aid the development of 8,000 acres for irrigated agriculture and another 8,000 acres for lift irrigation or highland cultivation.

26.1 KONGAHA WEWA

Location

In Moneragala area of Uva Province. Is situated near Buttala about $3\frac{1}{2}$ miles to the north of 142nd mile on the Wellawaya-Pothuvil Main Road.
Co-ordinates M/18 (9.2×8.5)

Historical

Is a work that had functioned in the olden days, but was abandoned with over five breaches. Restoration was commenced in 1958.

Data

Tank

Catchment area	$1\frac{1}{2}$ sq. miles
Length of Tank Bund	1,500 ft.
Tank Full:	
Storage	357 acre ft.
Head of water	14 ft.
Spills:	
Nature	Concrete
Location	Left Bank
Length	160 ft.
Sluices:	
Size	2 Nos. each 12" dia.

Irrigation Supply

Work restored to benefit 200 acres for the cultivation of rice.

Augmentation Scheme

The tank has an augmentation project, by the erection of a 33 feet anicut across the Okuruwa Kandura at site M/13 (9.2×1.5) and the diversion of the Kandura flow by means of a four feet wide inlet channel 1 mile 1600 ft. long. This would give an assured inflow to fill the tank.

26.2 YUDAGANAWA TANK

Location

In the Buttala area of Uva Province; is sited about a mile and half from Buttala. Co-ordinates M/18 (8.0×6.1)

Historical

The tank is said to have been constructed during the reign of King Mahanaga 300 B.C. and the area is traditionally associated with the fight—the "Yuda" between Dutugemunu and his brother. Restoration 1950-52.

Data

Tank

Catchment area	1.7 sq. miles
Length of Tank Bund	3,000 ft.
Tank Full:	
Storage	1,000 acre ft.
Head of water	$12\frac{1}{2}$ ft.
Area of water spread	150 acres
Spills:	
Nature	Concrete C.O.
Location	Left Bank
Length	100 ft.

Irrigation

By means of a mile long main channel, with distributaries and field channels, 252 acres of rice fields are developed for colonization.

Capital Cost

Rs. 230,000/-

26.3 BUTTALA ANICUT

Location

In Buttala, Uva Province. The Anicut is reached by a two mile walk along the channel from the 141st mile on Wella-way-Pottuvil Road.

Co-ordinates M/18 (8.7×6.0)

Historical

Built by the P. W. D. in 1871 across Menik Garga, at an initial cost of Rs. 17,501; in the anicut is incorporated a stone which has the following inscription:

“Buttala Ela Built in 1871 by J. A. Araiel and R. D. Ormesby, C.E. Sir Hercules Robinson K. C.M.G. Governor, W. E. Sharpe A. G. A., Dickwella Ratmahatmaya.”

Data

Anicut

Stream catchment at site	56 sq. miles
Length of Structure	224 ft.
Average height	$7\frac{1}{2}$ ft.
Planked bays	3 Nos.
Sluice—Two openings	5 ft. $4\frac{3}{4}$ ft.

Irrigation Supply

The flow in Menik Garga, thus diverted feeds the $4\frac{1}{2}$ miles long main channel to supply 1,350 acres of rice fields.

Note

It is customary to release supply from this work, to boost up Menik Garga, on festival occasions for pilgrims needs at Kataragama.

26.4 KARAWILA WEWA

Location

In Kataragama area, about 3 miles west by cart track.

Co-ordinates P/3 (11.9×0.15)

Scheme

Two small tanks—the original Karawila and the neighbouring Mylagama are merged to form one larger work.

Data

Tank

Catchment area	5.0 sq. miles
Length of Tank Bund	79 chains

Tank Full:

Storage	290 acre ft.
Head of water	7.35 ft.
Area of water spread	325 acres

Spills:

Nature C.O. spill on R.B., Natural spill on L.B.

Location	L.B.	R.B.
Length	300'	225'

Sluices:

Location	At 27 chs., 37.5 chs., 1 mile 5 chs.
Size	3 Nos. 18" ϕ dia. each.

Irrigation Supply

250 acres in Karawilagama village.

31. KUMBUKKAN OYA BASIN

The Kumbukkan Oya has its source in the hills above Moneragala and flowing a length of over thirty miles reaches the sea at Kumana.

The basin falls just outside the area of the wet zone and in extent is 476 sq. miles. The Oya is assessed to have a mean annual flow of 586,000 acre feet. But development in the basin has been confined to the upper reaches in and around Moneragala.

It has to be admitted that any attempt at large scale land development for agriculture cannot be undertaken in the lower reaches of this basin, without adversely affecting the seclusiveness of the Yala Sanctuary.

Anyhow, when it is thought prudent to embark on such enterprise, development can best be done by the construction of four reservoirs, the Kumbukkan Oya, Nambane Oya (tributary), Hulandawe Oya and the Alahala Aru reservoirs. These would then provide irrigation supply to about 15,000 acres.

31.1 KUMBUKKAN OYA ANICUT

Location

In the Moneragala area, Uva Province. Is situated below Bridge on the 147th mile of the Wellawaya-Pottuvil Main Road, about six miles from Moneragala.

Co-ordinates M/18 (12.4×8.2)

The Project

Where the Wellawaya-Pottuvil Main Road crosses the Kumbukkan Oya, the P. W. D. constructed a road bridge with anicut underneath, in 1883. The diversion fed a seven mile long channel. The anicut and channel cost Rs. 188,345. The Irrigation Department improved the work and extended the scheme, making it a comprehensive irrigation development project in 1951.

Data

Anicut

Stream Catchment at site	98 sq. miles
Length of anicut	200 ft.
Average Height	9 ft.
Planked bays:	Six Nos. each 9 ft × 9½ ft.
Sluice:	L.B. Two openings 6 ft × 6 ft.

Irrigation Supply

A left bank scheme, with a ten mile long main channel, four miles of distributary channels and field channels supply 1,600 acres of rice fields about half of which is private and the balance a colonization project in Okkampitiya.

31.2 HULANDA OYA ANICUT

Location

Near Moneragala about a mile south of the 151st mile of Wellawaya-Pottuvil Road.
Co-ordinates M/14 (2.5×2.8)

Scheme

Anicut diversion of waters of Hulanda Oya, a tributary of Kumbukkan Oya.

Data

Anicut Diversion

Catchment area 34 sq. miles
Length of Structure 100 ft.
with 8 bays each 5 ft. × 5 ft.

Head Sluice:

Location L.B.
Size 30" dia.

Irrigation Supply

A Left Bank channel carried precariously in the upper reaches on steep terrain, with several drainage crossings convey supply for rice cultivation of about 400 acres of new colonization development.

31.3 KUMANA TANK

Location

About 26 miles. south of Panama.

Co-ordinates: P/5 (12.1×7.9)

Data

Tank

Catchment Area 2.5 sq. mls.
Length of Tank Bund 60 chs.

Tank Full

Storage: 1375 ac. ft.
Head of water 5 ft.
Area of water spread 380 acs.

Spills:

Nature Natural
Location 12 chs.
Length 200 ft.

Sluices:

Location 51 chs.
Size 15" dia. Tower type.

Irrigation supply

Irrigable area 114 acres for late Mahaor Yala cultivation.

35. WILA OYA BASIN

The Wila Oya is a short stream about twenty miles long in the south-east regions of the island.

The basin is in the dry arid areas south of Pottuvil and is not suitably situated to attract settlement or development.

Annually about 192,000 acre feet of water is computed to be flowing in the river, all of which will be during the north east monsoonal period.

The development of the basin is best done by the erection of a reservoir, more or less at the provincial boundary, which would provide irrigation water supply to about 4,000 acres.

35.1 ETTIMOLE WEWA

Location

In Moneragala Area of Uva Province. Is reached by turning off at the 169th mile on the Wellawaya-Pottuvil Main Road and proceeding 8 miles to Wattedagama village and thence another 5 miles along new road.

Co-ordinates M/14 (10×1.1)

Historical

The area has important historical references. Ettimole was the capital of "Ruhuna" and was the Head Quarters residence of the rulers of Ruhuna. Queen Sugala, the last of them, was defeated in battle by Parakrama Bahu's forces here. The tank Ettimole Wewa—"Uruvela Vapi" as it has been identified, would have been an important land mark. The tank was restored by Parakrama Bahu (1153-1186). Present tank restored in 1962.

Project

Drainage from 10 sq. miles is stored in Ettimole Wewa and let down the parent stream Wila Oya to be picked up and diverted by an anicut four miles down-stream to benefit a thousand acre left bank colonization project.

Data	
Tank	
Catchment area	9.5 sq. miles
Length of Tank Bund	3950 ft.
Tank Full:	
Storage	5000 acre ft.
Head of water	16 ft.
Area of water spread	470 acres
Spills:	
Nature	Concrete (C.O.)
Length	130 ft.
Sluice:	30 ins. dia.
Pick-up Anicut	
Own catchment (excluding Tank)	10 sq. miles
Length of Anicut	145 ft.
Planked Bays	3 Nos.
Sluice: L.B. 2 Openings, each	3'×2'-6"

Irrigation Supply

Supply commences below the pick up anicut with a left bank scheme commanding an extent of 1,000 acres for new colonization development.

Capital Cost

Rs. 1.6 million.

Progress

Construction commenced 1956.

35.2 KOTIYAGALA MAHA WEWA

Location

About 10 miles south of 169th mile on the Wellawaya-Pottuvil Road.

Co-ordinates M/20 (0.3×6.6)

Restoration

Work 1953-58.

Scheme

Impounds the flow in Uva Ela.

Data

Tank

Length of Tank Bund $\frac{1}{2}$ mile

Tank Full:

Storage	1400 acre ft.
Head of water	15 ft.
Area of water spread	210 acres

Spills:

Nature	Concrete	Concrete	Channel
Location	L.B. 1	L.B. 2	R.B.
Length	230 ft.	40 ft.	100 ft.

Sluices:

Location	R.B.
Size	24 inches.

Irrigation Supply

The work irrigates 450 acres of rice fields for new colonization settlement.

35.3 PANAMA TANK

Location

This is situated in Panama Pattu D.R.O.'s Division in the Pottuvil Electoral District.

Co-ordinates N/16 (4.15×4.85)

Data

Tank

Catchmet area	Self catchment of 1 sq. mile and supply from Inlet Channel from Wila Oya Anicut
Length of Tank Bund	4385 feet

Tank Full:

Storage	2170 ac. ft.
Head of water	10 ft.
Area of water spread	300 acres

Spills:

	No. 1	No. 2
Nature	C. O.	C. O.
Location	R. B.	R. B.
Length	116'-9"	100 ft

Sluices:

Location	40 ch. 33 ft. from L. B.
Size	24 ins dia.

Irrigation Supply

An R. B. Main Channel 77.30 chains long irrigates a total of 437 acres.

36. HEDA OYA BASIN

Natural Conditions

Heda Oya is a short stream, which along with the adjacent Karanda Oya, flows eastwards into the eastern sea board at Arugam Bay near Pottuvil. The Oya has its source in the Moneragala hills.

Hydrology

The watershed of Heda Oya is 237 sq. miles; the annual rainfall of the upper catchment is 79 inches of which 51 inches precipitate during the north-east monsoon. December-January are the usual rainy months. The annual yield in the Heda Oya is about 332,000 acre feet.

Land Use

Most of the basin is in jungle; the lower reaches being alluvial plains is suited for agricultural development, provided satisfactory irrigation supply is ensured. Two chief settled areas are around Lahugala and Pottuvil, population of which does not exceed 20,000. About six small irrigation storage projects aid the development of about 3,000 acres of rice lands.

Water Resources Utilization

For utilizing the greater part of the water resources of the basin, a site has been selected for reservoir construction about 15 miles from the sea board. Various preliminary work necessary to collect data has been done.

This reservoir has a catchment area of 161 sq. miles and a yield of 332,000 acre feet, would benefit about 30,000 acres of rice cultivation. The expected cost of the project is Rs. 95 million.

Basin Requirement

Essential requirement of this jungle basin is development.

With the provision of the above project, ensuing development may be visualized as follows:—

Rice Lands	30,000	acres
Highland (gardens, etc.)	20,000	„
Land for reservoir bed, streams and other civic uses	10,000	„
Forest reserves (above the reservoir) etc.	10,000	„

36.1 LAHUGALA TANK

Location

This is situated 10 miles west of Pottuvil.

Co-ordinates: N/15 (13.35×5.15)

Data

Tank

Catchment area 3 sq. mls. and also supply by channel from Heda Oya.

Length of Tank Bund 3700 ft.

Tank Full:

Storage	2670	ac. ft.
Head of water	9	ft.
Area of water spread	574	acs.

Spills:

Nature	Masonry	Natural
Location	L.B. end	R.B. end
Length	188 ft.	500 ft.

Sluice:

Location	L.B. end
Size	2/9" dia.

Irrigation supply

Length of chls.	R.B.—1 ml. 4900 ft.
	L.B.—1 ml. 1900 ft.
Irrigable area	366 acs.

36.2 RADELLA TANK

Location:

In Panama area, about 10 mls. south west of Arugam Bay

Co-ordinates N/11 (3.5×0.9)

Historical

Ancient work, which was really composed of two tanks hence probably its name "Erattal Kulam" (twin tank). The Northern portion of the tank had apparently functioned separate from the South Western, being separated by a dividing bund.

Has now been restored as a combined large tank known as Radella Tank.

Data

Tank

Catchment area	4½ sq. mls.
Length of Tank Bund	One mile
Tank Full:	
Storage	1650 ft.
Head of water	11 ft.
Spills:	
Nature	Rock
Location	L.B.
Length	105 ft and 3 openings each 4'×3'
Sluices:	
Location	R.B.
Size	24" dia.

Irrigation Supply

An R. B. channel system conveys supply to new development of 500 acres of rice cultivation.

36.3 NAULLA TANK

Location:

This tank is situated in Panama Pattu D.R.O's Division in Pottuvil.

Co-ordinates: N/16 (5.40×8.62)

Data

Tank

Catchment area	1.8 sq. mls.
Length of Bund	625 ft.
Tank Full:	
Storage	920 ac. ft.
Head of water	9½ ft.
Spills:	
Nature	Rubble masonry
Location	135 ft. from L.B. end
Length	41 ft.
Sluice:	
Location	42 ft. from L.B. end
Size	10"

Irrigation supply

Length of Main Channel	25.80 chs.
Irrigable area	255 acs.

36.4 ROTTA KULAM

Location

This tank is situated 3 miles north of Pottuvil

Co-ordinates N/11 (6.80×6.90)

Data

Tank

Catchment area 15.4 sq. mls. of self catchment and Kunchan Odai Anicut at R.B. of tank diverts water to tank.

Length of Tank Bund 5740 feet

Tank Full:

Storage 3400 ac. ft.

Head of water 12.5 ft.

Area of water spread 660 acres

Spills:

Nature Natural
Length 580 feet

Sluice:

Location	Menthodai	Siriya	High Level
Size	12" dia.	12" dia.	12" dia.

Irrigation Supply

Irrigation development 760 acres.

37. KARANDA OYA BASIN

Natural Condition

The Karanda Oya Basin is adjacent and north of the Heda Oya, and is a short stream emptying into the eastern sea board at Arugam Bay near Pottuvil.

Hydrology

The catchment area of Karanda Oya is 167 sq. miles. It is essentially a north-east monsoonal stream which is dry otherwise. Average annual yield from the catchment has been computed at about 132,000 acre feet.

Land Use

Most of the land is alluvial plain and well suited for agricultural development, provided irrigation water supply be available.

The best economic crop to be cultivated has to be decided.

Water Resources Utilization

A site has been selected for the construction of a dam to form a reservoir and some preliminary work has been done in this connection. About 80,000 acre feet of water is available for irrigation supply to about 10 to 12 thousand acres for agricultural development. Approximate cost of project Rs. 25 m.

Basin Requirement

Storage reservoir for irrigation supply is the essential requirement for the development of this arid jungle basin.

41. RUFUS KULAM ARU BASIN

This is a small basin of 13 sq. miles of catchment area which drains into the sea near Tirukkovil. The development of the area is due to the restoration of the Tank between 1920-1930. The ancient name would more aptly have been Thirukkovil Kulam.

41.1 RUFUS KULAM

Location

About 7 miles west of Tirukkovil

Co-ordinates: N/1 (4. 9×1.8).

Data

Tank

Catchment area	3.8 sq. mls.
Length of Tank Bund	740 ft.

Tank Full:

Storage	2770 ac. ft.
Head of water	16 ft.
Area of water spread	350 acs.

Spills:

Nature	Structure
Location	R.B.
Length	242 ft.

Sluices:

Location	R.B.
Size	2 openings, 2'×1-6" each

Irrigation Supply

For the cultivation of 1020 acres.

42. PANNEL OYA BASIN

42.1 PANNALAGAMA RESERVOIR

Location

Near the abandoned village Pannalagama.

Co-ordinates: M/10 (7.25×8.77)

Scheme:

Storage reservoir restored by the River Valleys Development Board and improved to a larger work. The Pannalagama Reservoir impounds the waters of Pannel Oya.

Data

Catchment area 18 sq. miles
Length of Tank Bund 1300 ft.

Tank Full:

Storage 22,200 ac. ft.
Head of water 35 ft.
Area of water spread 980 acs.

Spills: 3 Nos. 15' $\times$ 8' Radial Gates—Crest Level 250' M.S.L.
Sluices: 48" dia Barrel—Sill Level 215' M.S.L.

Irrigation Supply

The L.B. Channel and distribution system benefits 3600 acres.

42.2 VAMMIYADI TANK

Location

About 15 miles west of Tirrukovil.

Co-ordinates N/1 (1.3×1.5)

Restoration

Impounds the flow in Potana Oya.

Data

Tank

Catchment area 5.4 sq. mls.
Length of Tank Bund 1030 ft.

Tank Full:

Storage 1130 ac. ft.
Head of water 12 ft.
Area of water spread 170 acs.

Spills:

	No. 1	No. 2	No. 3
Nature	structure	structure	structure
Length	68'	145'	38'

Sluices:

Size 18" dia.

Irrigation Supply

Along with Sagamam irrigates 2734 acres.

42.3 SAGAMAM TANK

Location:

About 6 miles west of Tirukkivil.

Co-ordinates N/1 (4.9×3.9)

Historical

Ancient work incorporated in the Gal Oya Scheme.

Restoration

Present work was restored in 1872 at an initial cost of Rs. 105,733.

Data

Tank

Supply from Ambalam Oya tank and self Catchment area

5 sq. mls.

Length of Tank Bund

1 ml.

Tank Full:

Storage

3620 ac. ft.

Head of water

16 ft.

Area of water spread

750 acs.

Spills:

Nature

Structure C/O

Location

R.B.

Length

295 ft.

Sluices:

Location

L.B.

R.B.

Size

2½' × 1½'

24 ins. dia.

Irrigation Supply

Supplies irrigation facilities for rice cultivation in 2734 acs.

43. AMBALAM OYA BASIN

43.1 AMBALAM OYA TANK

Location

South of Gal Oya Scheme above R. B. Main Channel.

Co-ordinates M/5 (12.7×6.3)

Historical

New work constructed by Gal Oya Development Board in 1959-61.

Scheme

Impounds flow in Ambalam Oya.

Data

Tank

Catchment area

13½ sq. mls.

Length of Tank Bund

1¼ mile.

Tank Full:

Storage

35,000 ac. ft.

Head of water

25 ft.

Spills:

Nature

Crestwall on Rock

Location

Centre

Length

185 ft.

Sluices:

Location

R.B.

Size

3 Nos. each 36 ins. dia.

Irrigation Supply

The work has for target the supply for irrigation development of 3600 acres of rice cultivation.

43.2 NEETHAI KULAM

Location

The tank is about 6 miles S.E. of Irakkamam tank.

Co-ordinates N/1 (3.4 × 7.8)

Historical

Previously existing work incorporated in Gal Oya Scheme.

Data

Tank

Source of supply Wanagamuwa D. channel, Gal Oya R. B. channel scheme and drainage from.

Self Catchment area 11 sq. mls.
Length of Tank Bund 3300 ft.

Tank Full:

Storage 600 ac. ft.
Head of water 6 ft.
Area of water spread 190 acs.

Spills:

Nature channel flow
Location L.B.
Length 350 ft
also planked opening at LB: 3 of 6' × 6'.

Sluice:

Location	L.B.	R.B.
Size	12 ins.	24 ins.

Irrigation Supply

Along with Illukachchenai, supplies irrigation water for regular rice cultivation in 975 acres.

43.3 ILLUKACHCHENAL TANK

Location:

South of Irakkamam tank

Co-ordinates K/21 (2.9 × 0.4)

Historical:

Previously existing work incorporated in Gal Oya Scheme.

Data

Tank

Source of supply: drainage from catchment area of 7 sq. miles, now augmented by R.B. Main Channel Gal Oya Scheme.

Length of Tank Bund 4300 ft.

Tank Full:

Storage 1240 ac. ft.
Head of water 10 ft.
Area of water spread 220 acs.

Spills:

Nature Structure C/O
Location R.B.
Length 200 ft.

Sluices:

Location	L.B.	R.B.
Size	24 ins.	12 ins.

44. GAL OYA BASIN

44.1 GAL OYA ANICUT NEAR BIBILE

Location

An existing diversion work, at the head waters of Gal Oya Stream, about 3 miles south of Bibile; it has no connection with the Gal Oya Development Project.

Co-ordinates M/3 (7.7×3.1).

Restoration

Restored in 1890, at an initial expenditure of Rs. 32,414/-

Scheme

Diversion of flow in Gal Oya (across which is the Senanayake Samudra about 25 miles lower).

Data

Anicut

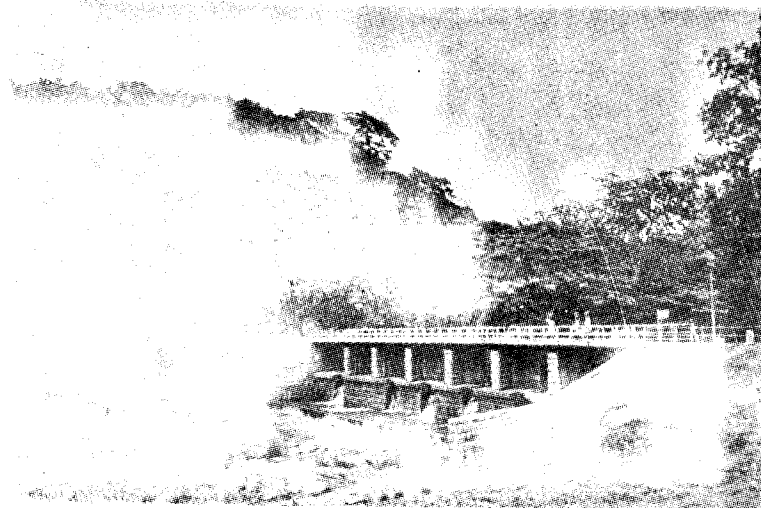
Catchment area	35 sq. miles
Length of structure	263 ft.
Scour Sluices:	2 Nos. each 8'×7'-6"
Crest level	735.63

Head Sluices:

Location	L.B.	R.B.
Size	2 Openings 4'×7'-6"	2 Openings 4'×7'-6"

Irrigation Supply

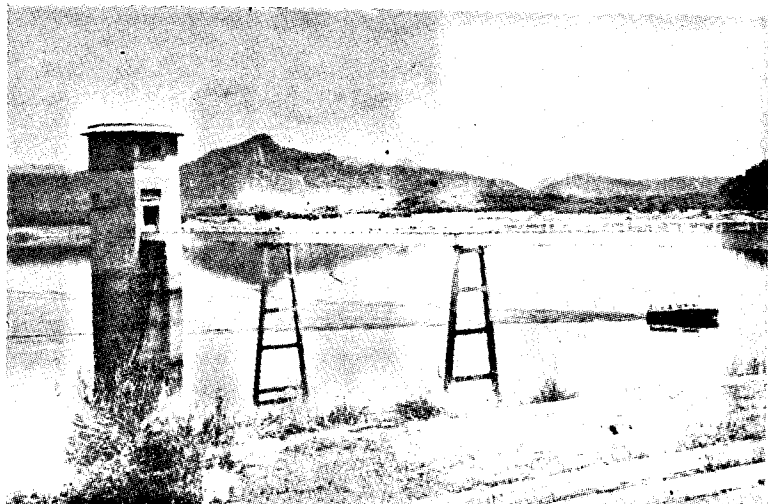
The left bank channel irrigates over 300 acres and the right bank about 110 acres.



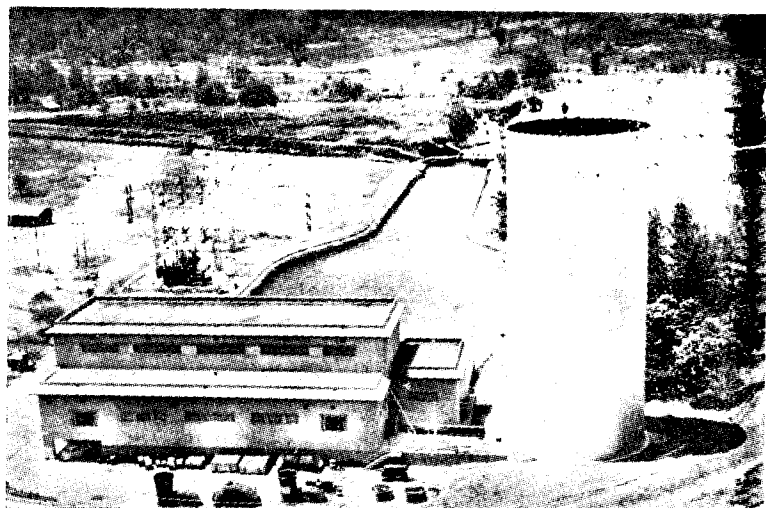
31.1 KUMBUKKAN OYA ANICUT



35.2 KOTIYAGALA MAHA WEWA—SPILL



44.2 INTAKE SLUICE
SENANAYAKE SAMUDRA



44.2 POWER HOUSE & TAIL CHANNEL
SENANAYAKE SAMUDRA

GAL OYA SCHEME

44.2 SENANAYAKE SAMUDRA

Gal Oya Reservoir, at Inginiyagala.

Location

About 54 miles S. W. of Batticaloa.

Co-ordinates J/25 (1.6×1.0).

Scheme

Storage Reservoir formed by earthen dam across the Gal Oya, at a narrow gap in the valley by the Inginiyagala hills. Was constructed by Messrs. Morisson & Knudson, Contractors, during 1949-52.

Reservoir	Data
Catchment area	384 sq. miles.
Earthen Dam	Length 3600 ft. Height 140 ft. Top width 30 ft. Contents—2 million cu. yds. earth
Full Reservoir	Storage 770,000 ac. ft. Head of water 110 ft. Water spread 30 sq. mls.
Spillway	Site at L.B. about $1\frac{1}{2}$ mls. from dam. Type: Concrete o'gee gravity section with inspection Chamber. 1020 ft. overall. 770 ft. spill length. 60 ft. Height: Openings: Sluice: Power Generation:
	6 Nos. of $5\frac{1}{4}' \times 5\frac{1}{4}'$ each. 13 ft. dia pipe. Penstock 13' dia, 714 ft. long. Surge Tank 48', 112 ft. high. Generators 4 Nos. each 2500 K.W

Irrigation Supply

Left Bank channel scheme, target 80,000 acres; length of main channel about 32 miles.

Right Bank channel scheme, target 40,000 acres; length of main channel about $21\frac{1}{2}$ miles.

The Reservoir cost Rs. 750 Lakhs (1949) and stores irrigation supply for over 110,000 acres for rice and other cultivation.

44.3 GAL OYA SCHEME—LEFT BANK MAIN CHANNEL

Total length 32 miles.

Main Channel Data

- (a) Miles 1 to $8\frac{1}{2}$ (Himidurawa) Bed width 50 ft. Depth 7 ft.
Conveyance 1145 cusecs for 80,000 acs.
- (b) Miles $8\frac{1}{2}$ to $12\frac{1}{2}$ (Uhana)
Bed width 35 ft.
Depth 6.7 ft.
Conveyance 785 cusecs.
- (c) After Navakiri the channel is reduced to about 20 ft. as only about 25,000 acres (approx) are under command.

The main channel crosses Namal Oya in the 2nd mile and enters Aligalge tank in the 4th mile and thence to Himidurawa tank in the 9th mile.

The Andella Oya tank is reached at the 14th mile, after the Uhana take-off. Navakiri Aru tank is about another 10 miles along the channel.

Paragahakella channel	Distributary Off-take at $5\frac{1}{4}$ miles from M. channel Length 3 miles Conveyance 44 cusecs Irrigates 1530 acres
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Uhana Branch channel	Off-take at $12\frac{1}{2}$ miles from M. channel Length $9\frac{1}{2}$ mls. Conveyance 435 cusecs Bed width 25 ft. Irrigates 30,000 acs.
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Mandur Distributary	Takes off $9\frac{1}{2}$ mls. from Uhana Br. chl. Length $9\frac{1}{2}$ mls. Conveyance 259 cusecs Bed width 20 ft. Irrigates 18,000 acres
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44.4 NAMAL OYA TANK

Location

About 4 miles north of Senanayake Samudra, above L.B. main channel—Gal Oya Scheme.

Co-ordinates J/20 (1.1×6.1)

Historical

New work constructed by the Gal Oya Development Board 1961-62.

Scheme

Impounds the flow in Namal Oya.

Data

Tank

Catchment area	20 sq. mls.
Length of Tank Bund	$1\frac{1}{4}$ miles.

Tank Full:

Storage	37,000 acre feet
Head of water	$35\frac{1}{2}$ ft.
Area of water spread	1600 acs.

Spills:

Nature:	Channel Spill
Location	R.B.
Length	300 ft.

Sluices:

Location	L.B.
Size	48 ins. dia.

Irrigation Supply

The work provides irrigation supply to 8000 acres of rice cultivation.

44.5 GAL OYA SCHEME, LEFT BANK—ALIGALGE TANK

Location

About 4th mile of L. B. main channel of Gal Oya Scheme.

Co-ordinates J/25 (4.6.×2.7)

Historical

New work constructed by Gal Oya Development Board 1950-51.

Scheme

L. B. main channel conveyance tank

Data

Tank

Catchment area 5 sq. mls.
Length of Tank Bund 3500 ft.

Tank Full:

Storage 2150 acre feet
Head of water 8 ft.
Area of water spread 270 acres

Spills:

Nature Channel flow with crest wall
Location R.B.
Length 360 ft.

Sluices:

Location	L.B.	R.B.	River Sluice
Size	18 ins.	12 ins.	24 ins.

44.6 GAL OYA SCHEME, LEFT BANK—HIMIDURAWA TANK

Location

On the 9th mile of L.B. main channel Gal Oya Scheme.

Co-ordinates J/25 (6.6×6.5)

New work constructed by Gal Oya Development Board, 1951-52

Scheme

L. B. main channel conveyance tank.

Data

Tank

Catchment area 5 sq. mls.
Length of Tank Bund 5000 ft.

Tank Full:

Storage 3500 acre feet
Head of water 9½ ft.
Area of water spread 275 acres

Spills:

Nature Rock face C/O
Location L.B.
Length 200 ft.

Sluices:

Location	L.B.	R.B.
Size	1 No. radial gate 15'×8'	24 ins.

The work feeds Kondavattavan Tank.

44.7 GAL OYA SCHEME, LEFT BANK—KONDAVATTAVAN TANK

Location

Below 9th mile of L.B. main channel and adjoining Amparai Tank.

Co-ordinates J/25 (9.1×5.8)

Historical

Existing work constructed under the Pattipola Aru Scheme; now incorporated in the Gal Oya Scheme.

Restoration

Present work was restored in 1912.

Data

Tank

Source of supply: inlet channel from Himidurawa tank,
Gal Oya Scheme L. B. channel & drainage from Catchment
area 18 sq. mls.
Length of Tank Bund 4500 ft.

Tank Full:

Storage	9130 acre feet
Head of water	19 ft.
Area of water spread	880 acres

Spills:

Nature	channel flow	channel flow
Location	L.B.	R.B.
Length	350	300

Sluices:

Location	Centre
Size	Two openings, $4' \times 3'-6"$

Inlet channel from Magaha Ela anicut $3\frac{1}{2}$ miles long, also completed in 1912.

Irrigation Supply

This work supplies water to Amparai Tank and to Valathipiddy Tank.

44.8 GAL OYA SCHEME, LEFT BANK—AMPARAI TANK

Location

At Amparai, Gal Oya Valley.

Co-ordinates J/25 (10.9×6.4)

Historical

Existing work constructed under the Pattipola Aru Scheme, now incorporated in the Gal Oya Scheme.

Restoration

Present work restored in 1873 at an initial cost of Rs. 32,217 subsequently improved in 1912.

Data

Tank

Source of supply: inlet channel from Kondavattavan tank,
Gal Oya Scheme L. B. channel also

Catchment area	5.4 sq. mls.
Length of Tank Bund	1 mile

Tank Full:

Storage	7250 ac. ft.
Head of water	13 ft.
Area of water spread	900 acres

Spills:

Nature	Structure	Structure
Location	L.B.	R.B.
Length	19 ft.	320 ft.

Sluices:

Location	L.B.	Centre
Size	$10' \times 9\frac{1}{2}'$	$2\frac{3}{4}' \times 2\frac{3}{4}'$

44.9 GAL OYA SCHEME, LEFT BANK—VALATHIPIDY TANK

Location

Near the 37th mile, Kalmunai-Inginiyagalla road—about 5 mls. east of Amparai.

Co-ordinates K/16 (0.9×0.4)

Historical

Existing work in the Pattipola Aru Scheme, now incorporated in the Gal Oya Scheme.

Restoration

Present work was restored in 1912.

Data

Tank

Source of supply: inlet channel from Kondavattavan tank, Gal Oya Scheme L.B. channel & drainage from

Catchment area	12 sq. mls.
Length of Tank Bund	1½ miles

Tank Full:

Storage	2070 acre feet
Head of water	10 ft.
Area of water spread	380 acres

Spills:

Nature	channel flow		
Location	L.B.	centre	R.B.
Length	100 ft.	130 ft.	170 ft.

Sluices:

Location	L.B.	R.B.
Size	5'×10'	5'×10'

Planked openings

44.10 GAL OYA SCHEME, LEFT BANK VEERAGODA TANK

Location

About 7 miles north of Amparai.

Co-ordinates J/20 (13.×2.5)

Historical

Anicut work incorporated in the Gal Oya Scheme.

Restoration

Present work restored in 1889, with an initial expenditure of Rs. 37,669.

Data

Tank

Source of supply: Uhana Branch channel Gal Oya Scheme, Left Bank channel scheme and drainage from

Catchment area	7 sq. mls.
Length of Tank Bund	2120 ft.

Tank Full:

Storage	1300 ac. ft.
Head of water	12'-9"
Area of water spread	260 acs.

Spills:

Nature	Structure
Location	L.B.
Length	350 ft.

Sluices:

Location	L.B.
Size	20 inches dia.

This work feeds Chadayantalawa tank.

Irrigation Supply

Along with Chadayantalawa tank supplies irrigation to 2217 acres.

44.11 GAL OYA SCHEME, LEFT BANK—CHADAYANTALAWA TANK

Location

About 9 miles N. E. of Amparai.

Co-ordinates K/16 (1.4×3.3)

Historical ancient work incorporated in the Gal Oya Scheme.

Restoration

Restored in 1873 at an initial cost of Rs. 55,926.

Data

Tank

Source of supply: from Veeragoda tank, Uhana Branch channel and drainage from

Catchment area 10½ sq. mls.

Length of Tank Bund 2440 ft.

Tank Full:

Storage 3200 acre. ft.

Head of water 15 ft.

Area of water spread 600 acs.

Spills:

	Structure	Structure
	L.B. 1	L.B. 2
Nature		
Location		
Length	175 ft.	400 ft.

Sluices:

	L.B.
Location	
Size	27 ins.

Irrigation Supply

Supplies irrigation to 2217 acres.

GAL OYA SCHEME

44.12 RIGHT BANK CHANNEL

The Right Bank channel commences with bed width of 30 ft. and a mean depth of about 7 feet capable of conveying 750 cusecs and gradually tapers as issues are made, down to 16 ft. bed width and 150 cusecs conveyance in the final section from 20th mile to 21½ mile at end of channel.

The channel crosses the Pallang Oya by a syphon in the 4th mile and enters Padagoda Tank soon after.

The Galmadu and Varipattanchennai Distributory channels take off near the 9th mile and the main channel is conveyed by Alahena tank in the 11th mile and by the Malayadi tank at the 13th mile.

44.13 GAL OYA SCHEME, RIGHT BANK— PALLANG OYA TANK

Location

South of Senanayake Samudra, above R.B. main channel
Gal Oya Scheme.

Co-ordinates M/5 (12.8×6.4)

Historical

New work constructed by Gal Oya Development Board
1957-60.

Scheme

Impounds the flow in Pallang Oya.

Data

Tank

Catchment area	36½ sq. mls.
Length of Tank Bund	2600 ft.

Tank Full:

Storage	93,000 acre ft.
Head of water	55 ft.
Area of water spread	2500 acres

Spills:

Nature	} The tank is expected to absorb the entire yield from the catchment. However a natural spill is provided at the right bank end.
Location	
Length	

Sluices:

Location	R.B.
Size	3 Nos each 4'×6'

Irrigation Supply

The work effects irrigation supply to 2960 acs. of rice cultivation and 2700 acres of sugar cane development.

44.14 GAL OYA SCHEME, RIGHT BANK— EKGAL ARU TANK

Location

South of Senanayake Samudra, above the R.B. main channel,
Gal Oya Scheme and near the 20th mile on the Siyambalan-
duwa-Amparai road.

Co-ordinates M/5 (7.6×7.1)

Historical

New work constructed by Gal Oya Development Board
1955-57.

Scheme

Impounds the flow in Ekgal Aru.

Data

Tank

Catchment area	13½ sq. mls.
Length of Tank Bund	3700 ft.

Tank Full:

Storage	21,500 ac. ft.
Head of water	18 ft.
Area of water spread	1000 acres.

Spills:

Nature	channel
Location	L.B.
Length	340 ft.

Sluices:

Location	R.B.
Size	2 Nos. of 4'×6'

Irrigation Supply

The work effects supply for the irrigation development of
420 acres of rice cultivation and 1600 acres of sugar cane
cultivation.

**44.15 GAL OYA SCHEME, RIGHT BANK—
ALAHENA TANK**

Location

On the 12 th mile of R.B. main channel Gal Oya Scheme and near 26th mile on Siyambalanduwa-Amparai road.

Co-ordinates J/25 (9.1 × 0.5)

Historical

New work constructed by Gal Oya Development Board 1957-59.

Scheme

R. B. main channel conveyance tank.

Data

Tank

Catchment area	11½ sq. mls.
Length of Tank Bund	4300 ft.

Tank Full:

Storage	1770 acre feet.
Head of water	6½ ft.
Area of water spread	250 acs.

Spills:

Nature	Structure C/O.
Location	R.B.
Length	200 ft.

Sluices:

Location	R.B.
Size.	Radial gates 2 Nos. each 15' × 8'.

Spill, gated sluice and draw off for R.B. main channel are all at one site at R. B. flank.

**44.16 GAL OYA SCHEME, RIGHT BANK—
MALAYADI TANK**

Location

14th mile of R. B. main channel, Gal Oya Scheme .

Co-ordinates J/25 (10.8 × 0.4)

Historical

New work constructed by Gal Oya Development Board 1959-61.

Scheme

R. B. main channel conveyance tank.

Data

Tank

Catchment Area	5 sq. mls.
Length of Tank Bund	1 mile

Tank Full:

Storage	7300 ac. ft.
Area of water spread	580 acres

Spills:

Nature	Channel flow
Location	L.B.
Length	200 feet

Sluices:

No sluice provided. The lands below tank bund and above sugar factory are supplied from the R. B. main channel.

44.17 GAL OYA SCHEME, RIGHT BANK—IRAKHAMAM TANK

Location

About 7 miles S. E. of Amparai.

Co-ordinates K/21 (1.4×4.2)

Historical

Anicut work incorporated in Gal Oya Scheme.

Restoration

Present work was restored in 1891.

Data

Tank

Source of supply effected by deviation at Maruthadi anicut off Ekgal Aru.

Drainage from Catchment area 7.8 sq. mls.

Length of Tank Bund 2650 ft.

Tank Full:

Storage 15,700 ac. ft.

Head of water 15 ft.

Area of water spread 2030 acs.

Spills:

2 Nos. 26 ft. and 51 ft. in length

Sluices:

	Selindivan	Andimadu	Andimadu
Location	R.B.	L.B.	anicut
Size	12"×9"	7'×5'	2'×5'

45. ANDELLA OYA BASIN

45.1 ANDELLA OYA TANK

Location

On the 14th mile of L. B. main channel, Gal Oya Scheme.

Co-ordinates J/20 (5.4×3.6)

Historical

New work constructed by the Gal Oya Development Board.

Scheme

L. B. main channel conveyance tank.

Data

Tank

Catchment area 33 sq. mls.

Length of Tank Bund 1½ mls.

Tank Full:

Storage 2140 ac. ft.

Head of water 7½ ft.

Spills:

Nature	Structure	C/O channel	channel
Location	L.B. 1	L.B. 2	R.B.
Length	150 ft.	200 ft.	300 ft.

Sluices:

Location	L.B.	L.B.
Size	18 ins.	4 pipes each 24 ins.

45.2 BALAGALLA TANK

Location

The tank is about $2\frac{1}{2}$ miles. S. W. of Navakiri tank.

Co-ordinates J/20 (3.4×8.7)

Scheme

Tank formed by damming a narrow valley. Impounds waters of Balagalla Ela, a tributary of Navakiri Aru.

Data

Tank

Catchment area 10.1 sq. mls.

Tank Full:

Storage 6200 ac. ft.
Head of water 25 ft.
Area of water spread 500 acres

Spills:

Location R.B.
Length 265 ft.

Sluices:

Size Opening 36" dia.

45.3 NAVAKIRI ARU RESERVOIR GAL OYA VALLEY

Location

On the 23rd mile of the Gal Oya Scheme main L.B. channel.
Co-ordinates J/15 (7.3×0.8)

New work constructed in 1950-54.

Restoration

Impounds waters of Navakiri Aru, source of which is at Friars Hood well known hill of Veddah resident Tissahamy, bounded by Raja Gala hill range.

Data

Tank

Source of supply: Gal Oya Scheme main L. B. channel and
drainage from self catchment 70 sq. mls.
Length of Tank Bund 2 miles.

Tank Full:

Storage 42,500 ac. ft.
Head of water 19 ft.
Area of water spread 2700 acres.

Spills:

Nature	Structure C/O channel	Structure C/O
Location	L.B. 1	L.B. 2
Length	250 ft.	225 ft.
		R.B.
		250 ft.

Sluices:

Location L.B.
Size 2 Nos. each of 4' x 6'

Irrigation Supply

Supplies facilities to 15,000 acres.

45.4 THUMPANKERNI TANK

Location

About 4 miles north of Vellaveli.

Co-ordinates K/11 (0.8×7.5)

Historical

Previously existing work incorporated in the Gal Oya Scheme

Data

Tank

Catchment area 1.5 sq. mls.
Length of Tank Bund 1970 ft.

Tank Full:

Storage 680 ac. ft.
Head of water 14'-3"
Area of water spread 125 acs.

Spills:

Nature Structure on rock
Location L.B.
Length 187 ft.

Sluices:

Location R.B.
Size 20" dia.

Irrigation Supply

Supplies water for the irrigation of 672 acres of rice cultivation.

48. MANAL PUDDI ARU BASIN

48.1 PULUGANAWI TANK

Location

This tank is situated 6 mls. S. W. of Unichai-Paddirippu E. D.

Co-ordinates J/15 (7.9×6.5).

Restoration

Present work restored in 1872 at an initial cost of Rs. 56,343.

Data

Tank

Catchment area 10 sq. mls.
Length of Tank Bund 2250 ft.

Tank Full:

Storage 1875 ac. ft.
Head of water 20 ft.
Area of water spread 240 acs.

Spills

	L.B.	R.B.
Nature	C.O. 90'	C.O. structure
	natural 110'	on rock
Location	L.B.	R.B.
Length	200 ft.	10 ft.

Sluices

Location 250' from L.B. end.
Size 2'4 1/2" x 1'6"

Irrigation Supply

Irrigable area—4222 acres: however due to insufficiency of water, only about 2200 acres are regularly cultivated.

48.2 KADDUKAMUNAI TANK

Location

This tank is situated near Kokkadicholai in Paddiruppu Electoral District

Co-ordinates: K/6 (1.0×0.2)

Restoration

Restored in 1872 at an initial cost of Rs. 33,680.

Data

Tank

Catchment area	2.44 sq. mls. & supply from inlet chl.
Length of Tank Bund	8044 ft.
Tank Full:	
Storage	5026 ac. ft.
Head of water	6½ ft.
Area of water spread	891 acres

Spills

Nature	Drowned
Length	146 ft.

Sluice

Location	L.B.	R.B.
Size	2'1¼" × 8¾"	2'1¼" × 8¾"

Irrigation Supply

Main Channel	R.B. 1300 ft. L.B. 100 ft.
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Irrigable area 6964 acres (entire Manalpuddi Aru scheme).

51 & 52—MAGALAVATTAVAN AND MUNDENI ARU BASINS

These two adjacent basins in the Eastern Province contain about 800 sq. miles. The area is undeveloped jungle land except at the lower reaches below Unichchai. The Badulla-Batticaloa main road runs for a distance of over 40 miles through the heart of the basin.

Hydrology

The area is situated in the dry zone and average annual rainfall is about 70 inches. Annual floods inundate the rice lands in the coastal areas.

Land Use

The upper reaches yet remain in jungle; four storage reservoirs at Unichchai, Rugam, Kitulwewa, Wadamune and a few minor irrigation schemes aid the development of about 30,000 acres of rice cultivation. Bulk of the balance, which is over ten times as much, is not developed.

Water Resources Utilization

For the comprehensive utilization of the water resources of the 800 sq. miles, proposed plan envisages the construction of four storage reservoirs, one each, in the upper reaches of the four streams, Magalavattavan Aru, Rambukkan Oya, Maha Oya and Gallodai Aru. The sites are selected so that yield from 328 sq. miles are being utilized by the four combined reservoirs, amounting to over 643,000 acre feet. Land to be developed is assessed at 60,000 acres in addition to benefiting the 22,000 acres already developed lands below Unnichchai Tank.

Unused water resource potential and land use potential await development.

51 MAGALAVATTUVAN ARU BASIN

51.1 ADACHCHAL KULAM

Location

5 miles S. E. of Unnichchai Circuit Bungalow.

Co-ordinates J/10 (5.65×0.03).

Restoration

Restoration 1950-1952.

Data

Tank

Catchment area 3.25 sq. mls.
Length of Tank Bund 2000 ft.

Tank Full:

Storage 510 ac. ft.
Head of water 14 ft.
Area of water spread 65 acres

Spills:

Nature C.O. spill
Length 150 ft.

Irrigation Supply

Benefits 200 acres.

51.2 UNNICHCHAI TANK

Location

4½ miles approximately east of Badulla-Batticaloa road from 8th mile post.
Co-ordinates J/10 (2.60×2.50).

Historical

A scheme for restoration of "Oniche" tank was put up in 1892. Proposals to construct the above tank were however framed in 1902 and the work was completed in 1919.

Scheme

It is not an ancient tank. This was constructed by throwing an embankment across the Magalavattuvan river.

Data

Tank

Catchment area 106 sq. mls.
Length of Tank Bund 6200 ft.
Height 35 ft.
Tank Full:
Storage 30,500 ac. ft.
Head of water 23 ft.
Area of water spread 2500 acs. at FSL

Spills:

Nature Clear overfall spills.
Location R.B. & L.B.
Length R.B. 540' & L.B. 154'
The L.B. spill being extended by 320' with 3 radial gates 20'×10'

Sluices:

Location 2 Nos. sluices—one on R.B. other on L.B.
Size 4'×3'6" both R.B. & L.B.

Irrigation Supply

The area developed is divided into 3 divisions.

1. *L. B. Division.* This receives its supply of water through L. B. sluice & the distribution is done through the main chl. 8 M. 2,640' in length.
2. *River Division.* The L. B. sluice is utilised to supply water to the river division as well. The R. B. sluice constructed to serve the R. B. division eventually is at present utilised to supply water also to the river division.
3. *R. B. Division.* Area is fed by the R. B. sluice & the chl. has recently been completed to the 13th mile. There is the possibility of extending the chl. to the 20th mile. The area cultivated is 6936 acres, which includes 1700 acres of new cultivation.

52. MUNDENI ARU BASIN

52.1 WELIGAHAKANDIYA TANK

Location

This tank is situated across Thevali Odai Aru just above the confluence of the two main tributaries in the Bintanne Pattu. Co-ordinates J/14 (9.90 × 7.60)

Restoration

Restoration commenced in 1955.

Data

Tank

Catchment area 5.10 sq. mls.
Length of Bund $\frac{1}{2}$ mile

Tank Full:

Storage 1700 ac. ft.
Head of water 15 ft.
Area of water spread 230 acres at FSL.

Spill No. 1:

Nature C.O.
Location L.B.
Length 60 ft.

Spill No. 2:

Nature C.O.
Location R.B.
Length 60 ft.

Sluice:

Location on bund at 13 chs.
Size One No. 2/24" ϕ pipe.

Irrigation Supply

The development of 566 acres by supply from the work.

52.2 RUGAM TANK

Location

$1\frac{3}{4}$ mile to the left of Badulla-Batticaloa road at 82 $\frac{1}{2}$ mile post.
Co-ordinates J/9 (10.25 × 4.25).

Restoration

Restored in 1868 at an initial cost of Rs. 158,943. Breached in 1891 & repaired by 4th Division Pioneers. Breached in 1957 & repaired in 1958-59.

Scheme

Waters of Mundeni Aru enter the tank. At high flood, the inflow is beyond exact assessment. The tank spills heavily.

Data

Tank

Catchment area 35 sq. mls.
Length of Bund 1 m. 2173 ft.
Tank Full

Storage 16,120 ac. ft.
Head of water 14'10"
Area of water spread 2430 acs.

Spills:

Nature Masonry structure
Location At R.B. end
Length 1036' 6"
A natural spill also exists on the L.B. end.
Length 230 feet.

Sluices

Location At R.B. end.
Size 1'-6" × 2'-4" wide.

Irrigation Supply

The storage in Rugam Tank aids rice cultivation in 7814 acres, by a system of channels, drainage streams and pick up anicuts e.g. Sadvakaddu Anicut.

52.3 KITULWEWA TANK

Location

This tank is close to Rugam and about 13 mls. S. W. of Chenkaladi. It is situated on the Left Bank of Mundeni Aru directly opposite Rugam Tank.

Co-ordinates J/9 (9.05×5.75).

Data

Tank

Catchment area 11 sq. mls.
Length of Bund 7,600 ft. (L.B. 2600 & R.B. 5000).

Tank Full:

Storage 4200 ac. ft.
Head of water 12 ft.
Area of water spread 530 acres

Spills:	No. 1	No. 2	No. 3
Nature	structure	structure	structure
Location	L.B.	central	R.B.
Length	200 ft.	250 ft.	300 ft.

Sluices:

Location At 22 chs and 4.75 chs. on bund

Size 2 Nos. 24" dia. Tower-sluice.

Irrigation Supply

Target for development 800 acres of rice cultivation, in new colonization land.

52.4 KARADIAN ARU TANK

Location

Off the Batticaloa-Badulla road, near 86th mile stone, 10 miles west of Chenkaladi.

Restoration

Restored in 1950-52.

Scheme

Impounds the flow in Karadian Aru.

Data

Tank

Catchment area 4½ sq. mls.
Length of Tank Bund ¼ ml.

Tank Full:

Storage 1000 ac. ft.
Head of water 8 ft.
Area of water spread 225 acres

Spills:

Nature Rock
Location R.B.
Length 310 ft.

Sluices:

Location L.B.
Size 24" in dia.

Irrigation Supply

Provides irrigation supply for the cultivation of 200 acres in Karadian Aru Farm.

53 MIYANGALLA ELA

53.1 THARAVAI KULAM

Location

The tank is situated in the Miyangalla Ela Basin, in the Eravur Korale Pattu. At present the access is to proceed along the tract to Wadamune Tank—up to the 7th mile turn. left and proceed $\frac{1}{2}$ mile.

Co-ordinates J/4 (7.45×7.35).

Historical

Restored in 1962.

Data

Tank

Catchment area	2.66 sq. mls.
Length of Tank Bund	3200 ft

Tank Full:

Storage	370 ac. ft.
Head of water	7 ft.
Area of water spread	90 acres

Spills:

Nature	C.O. spill
Location	L.B.
Length	165 ft.

Sluices:

Location	At 27 chs. on bund
Size	12" ϕ sluice.

Irrigation Supply

Target for development 200 acres of rice cultivation.

54. MADURU OYA BASIN

The Maduru Oya has its source near Bibile and flowing for 86 miles reaches the sea about fifteen miles north of Batticaloa.

The entire region is in the dry zone and the drainage area is 602 square miles in extent. The Oya is estimated to convey a flow of over one million one hundred thousand acre feet, all during the north-east monsoonal period.

The basin area is not well developed and the upper reaches are yet in complete jungle. In the lower reaches rice cultivation are practised mostly under direct rainfall.

Basin Requirement

As these are suitable lands (some of them already under cultivation) for development and water is available in the river, what are wanted very early are storage reservoirs for providing irrigation water supply.

Two reservoirs are proposed, one in the upper regions—the Maduru Oya upper reservoir and another in the lower—the Maduru Oya lower reservoir. These and another across the tributary stream Kuda Oya, would satisfactorily irrigate about 50,000 acres.

The U.N.S.F. Team engaged in the development of the water resources of the Mahaweli Ganga envisage augmentation of the Maduru Oya by a right bank canal from Minipe anicut and with an upper and lower reservoir across the Maduru Oya, provide irrigation water supply to about 101,000 acres of land.

54.1 ARALAGANWILLA WEWA

Location

Situated about 15 miles south east of Manampitiya.

Co-ordinates J/3 (4.9 × 4.0)

Restoration

Restoration of present tank commenced in 1956. The tank breached for the major floods and was repaired subsequently.

Data

Tank

Catchment area	3½ sq. miles
Length of Tank Bund	4300 ft.
Tank Full:	
Storage	1560 acre ft.
Head of water	12 ft.
Area of water spread	250 acres
Spills:	
Nature	Concrete Structure
Length	400 ft.
Sluices:	
Location	L.B.
Size	9" × 9"

Irrigation Supply

A left bank channel system delivers supply for development of 300 acres of rice cultivation for new colonization development.

54.2 GAL WEWA

Location

About 5 miles east of Manampitiya.

Co-ordinates G/23 (5.7 × 4.4)

Scheme

Two village tanks Bora Wewa and Gal Wewa have been merged, by removal of the dividing bund, to form one large scheme, impounding the waters of Wage Oya, a tributary of Maduru Oya.

Data

Tank

Catchment area	9 sq. miles
Length of Tank Bund	3500 ft.
Tank Full:	
Storage	1050 acre ft.
Head of water	8.75 ft.
Area of water spread	250 acres
Spills:	
Nature	Concrete Rock Face
Location	L.B. R.B.
Length	300 325
Sluices:	
Location	L.B. R.B.
Size	12" dia. 2 of 12" dia.

Irrigation Supply

The work delivers irrigation supply to 350 acres of new colonization development for rice cultivation.

54.3 WADAMUNE WEWA

Location

The tank is situated in the Electoral District of Kalkudah and is 3 mls. south as the crow flies from Welikanda.

Co-ordinates G/23 (10.64×4.8)

Scheme

Tank restored in 1957-62.

Data

Tank

Catchment area 7.8 sq. mls.
Length of Tank Bund 3,200 ft.

Tank Full:

Storage 3660 ac. ft.
Head of water 11 ft.
Area of water spread 510 acres

Spills:

Nature Concrete
Location L.B. R.B.
at 1 ch. 32 chs.

Sluices

Location L.B. R.B.
Size 24"dia. 24"dia.

Irrigation Supply

The work aids new development of 400 acres of rice cultivation.

54.4.1 PUNANI ANICUT—VAKANERI SCHEME

Location

To the left of the abandoned old Punani Anicut in the diverted section of the Maduru Oya.

Scheme

Anicut diversion

Anicut Data

Length 177'
Crest Level 55.75 MSL
Openings Radial Gates 7 Nos. 13' 6" × 8' 0"
3 Nos. 20' 0" × 10' 0"

Irrigation Supply

L. B. Channel supplements the supply to Vakaneri Tank. The Distribution system under the R. B. Channel would benefit 1600 acres.

VAKANERI SCHEME

54.4.2 VAKANERI TANK

Location

This tank is situated 10 miles from Oddamavadi town. It is $2\frac{1}{4}$ miles from the Batticaloa-Polonnaruwa road.

Co-ordinates G/24 (7.95×5.90 .)

Restoration

Present tank restored in 1908. F. S. L. of tank raised by 1 foot in 1953.

Data

Tank

Source of supply:—Drainage from own catchment area of $4\frac{1}{4}$ sq. mls. & mainly diverted supply from Punani anicut, across Maduru Oya.

Length of Tank Bund 6800 ft.

Tank Full:

Storage	11,250 ac. ft.
Head of water	17.7 ft.
Area of water spread	1,120 acres

Spills:

Nature	Masonry spill cum-causeway.
Location	14.15 chs.
Length	185'8"

Sluices:

Location	R.B.	L.B.
Size	$5' \times 2\frac{1}{2}'$	$3' \times 2\frac{1}{2}'$

Irrigation Supply

Main channel	11 miles
Irrigable area	R.B. 5580 acres
	L.B. 1232 acres

By a long channel system and also by dropping supply & picking up later from the parent stream (river division) the work provides irrigation supply to 6285 acres of rice cultivation.

In addition the work also supplies water for the Government Paper Factory at Valaichchenai.

55. PULIYANPOTHA BASIN

55.1 ANAISUDDA KADDU KULAM

Location

This tank lies in the village Mankerni, in Eravur Korale Pattu.

This tank is accessible from both the Batticaloa-Trincomalee and Batticaloa-Polonnaruwa roads. The tracks are jeepable in dry weather with difficulty.

Co-ordinates G/19 (9.4×1.3).

Restoration

This is an abandoned breached tank selected for restoration.

Data

Tank

Catchment area	5.30 sq. mls.
Length of Tank Bund	2,700 ft.
Tank Full:	
Storage	750 ac. ft.
Head of water	8 ft.
Area of water spread	250 acres

Spills:

Nature	C.O. spill
Location	R.B.
Length	300 ft.

Sluices:

Nature	Tower Sluice
Size	18"

Irrigation Supply

The work has a target of 300 acres of development with rice cultivation.

56. KIRIMECHI ODAI BASIN

56.1 KIRIMACHCHI KULAM

Location

The tank is situated in Mankerni village, Eravur Korale Pattu. The tank is reached by proceeding along the Batticaloa-Trincomalee road and taking the V. C. road on the left at the 28th M.P.

Co-ordinates G/19 (6.90×2.75)

Historical

This is an ancient breached tank having a massive bund of 3100 ft. in length.

Data

Tank

Catchment area	5.85 sq. mls.
Length of Bund	3100 ft.

Tank Full:

Storage	1260 ac. ft.
Head of water	9'6"
Area of water spread	275 acres.

Spills:

Nature	C.O. 220' and rockface 100'.
Location	Left Bank
Length	320 ft

Sluices:

Location	At 28.5 chs. on bund
Size	18" Tower sluice.

Irrigation Supply

Target for development 250 acres of rice cultivation.

56.2 MARUTHANKERNI KULAM

Location

The tank is situated in Eravur Korale Pattu, Batticaloa District. It is about 5½ miles. S. W. of Pannichchankerni village. The tank is formed by constructing a bund across the river Pakkilipattu Aru.

Co-ordinates G/19 (5.45×5.30).

Data

Tank

Catchment area	9.30 sq. mls.
Length of Tank Bund	5000 ft.

Tank Full:

Storage	2150 ac. ft.
Head of water	8 ft.
Area of water spread	492 acres

Spills:

Nature	C.O. spill
Location	L.B.
Length	250 ft.

Sluices:

Location	Tower sluice at 25.25chs. & 48.10 chs.
Size	18"φ

Irrigation Supply

Target for development 400 acres of rice cultivation.

59. MAKARACHCHI ARU BASIN

59.1 KADDUMURIPPU KULAM

Location

This tank is situated in Eravur Korale Pattu in the Eastern Division.

Co-ordinates G/14 (0.85 × 3.10)

Data

Tank

Catchment area 25½ sq. mls.
Length of Bund 5,200 ft.

Tank Full:

Storage 4250 ac. ft.
Head of water 11 ft.
Area of water spread 750 acres

Spills:

Nature C. O. spill
Location At 1 m. 2.25 chs. on bund.
Length 800 ft.

Suices:

Location At 5.1 chs.
Size 2'6" of Tower sluice

Irrigation Supply

Target for development 400 acres of rice cultivation.

60. MAHAWELI GANGA BASIN

The Mahaweli Ganga is Ceylon's largest and longest river. It drains an area of 4,034 sq. miles which is nearly one sixth of the area of the island. Its length is 207 miles. It has its sources in the Central highlands and drops nearly 8,000 ft. to flow into the sea at Koddigar Bay, South of Trincomalee. The Dik Oya which has its source in Marlborough Estate—elevation 4,500 ft. and Dambagastalawa Oya, Agra Oya and Nanu Oya from the Ambawela hills, Horton Plains and Pidurutalagala respectively (all above 7,000 ft.) are the four streams that form the Ganga. Dambagastalawa Oya flows into Agra Oya and these two streams meet Nanu Oya at Talawakelle to form Kotmale Oya which is one of the largest tributaries of the Mahaweli Ganga. Dik Oya meets Kotmale Oya at Mahavilla and from their confluence the river is called Mahaweli Ganga. The peripheral length of the watershed boundary is 400 miles and water divides separate this river from the Walawe Ganga, Kirindi Oya, Kelani Ganga, Maha Oya, Deduru Oya, Kala Oya and Maduru Oya.

Land Use and Potential

The Mahaweli Ganga basin consists of distinctive natural regions having characteristic soil types, topography, climate and land use potential. The high lands in the wet zone are well developed with tea, rubber and cocoa on the hill slopes and with paddy in the valleys, but there is very little development in the lower basin. The existing land use pattern* in the basin is given below:—

Land Use	Extent Acres	Percentage
1. Urban	7,520	0.3
2. Homestead gardens	172,580	6.7
3. Rubber	32,380	1.3
4. Tea	357,720	13.9
5. Paddy	177,430	6.9
6. Other Permanent Cultivation	84,450	3.3
7. Shifting cultivation	364,700	14.2
8. Forest	1,131,190	43.9
9. Grass Land & Scrub	180,760	7.0
10. Unused Land	15,530	0.6
11. Water & Marsh	50,450	1.9
Total	2,574,710	100%

* Taken from the Report on Survey of the Resources of the Mahaweli Ganga Basin, Part I by the Hunting Survey Corporation Ltd.

The above table shows that 65% of the area of the basin, mostly in the plains, is yet available for development.

Existing major irrigation development schemes in the basin consist of:—

Name of Scheme	Extent Benefited
1. Badulu Oya Scheme	2500 acres
2. Sorabora Wewa Scheme	1300 "
3. Damparawa Wewa Scheme	1100 "
4. Mapakada Wewa	900 "
5. Bathmedilla Scheme	1300 "
6. Allai Scheme	14000 "
7. Minneriya Tank	14325 "
8. Giritalle Scheme	4400 "
9. Parakrama Samudra Scheme	18150 "
10. Elahera Scheme	4800 "
11. Kaudulla Scheme	10230 "
12. Minipe Extension Scheme	10460 "
13. Hathtota Amuna	600 "
14. Nalanda Oya Reservoir Diversion Scheme	Nil

Paddy is cultivated in all these lands.

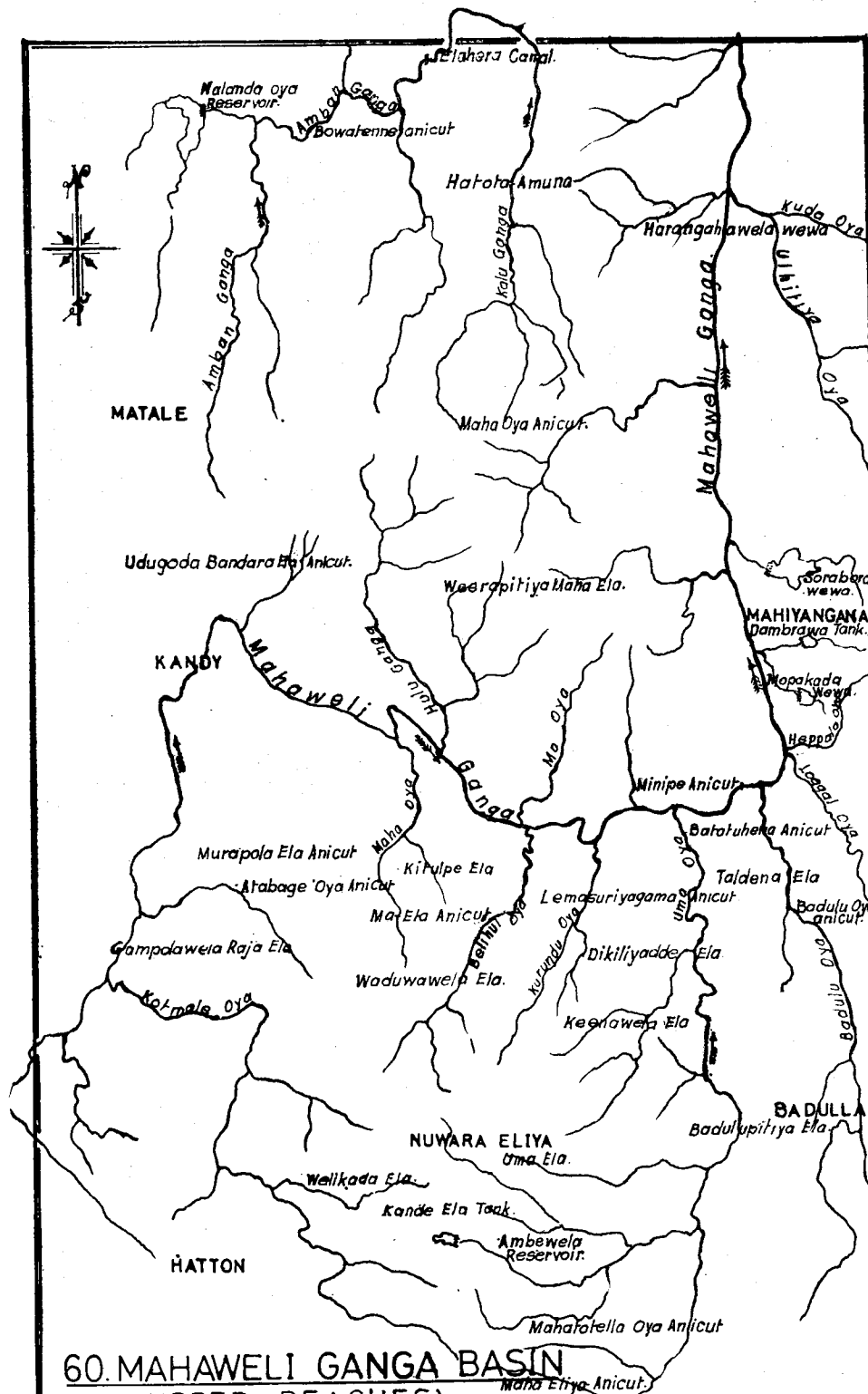
Hydrology

The source of the Mahaweli is in the hill country Wet Zone and hence it has two flood peaks and two dry spells. The 820 sq. miles of its catchment area which is in the wet zone experiences heavy rainfall, the highest mean annual fall being 218 inches at Watawala. The balance catchment area of 3,214 sq. miles is in the dry zone where the average annual rainfall varies between 55 to 80 inches.

The average annual run-off of the Mahaweli excluding the 600,000 acre feet diverted annually at Minipe, Elahera and Angamedilla anicuts is 7,900,000 acre feet. The mean annual discharges at some points along the river are:—

at Peradeniya	1,680,000 ac. ft.
„ Gurudeniya	1,935,000 ac. ft.
„ Randenigala	2,951,000 ac. ft.
„ Weragantota	4,206,000 ac. ft.
„ Manampitiya	6,360,000 ac. ft.

The flood cycles in the Mahaweli basin coincide either with the North East or South West Monsoon periods. Major floods were recorded in June 1888, October 1906, December 1913, July 1932, May 1933, May 1940, August 1947 and December 1957. The largest recorded flood experienced in the upper reaches of the river was in August 1947, the flood peak at Peradeniya railway bridge at 2.30 p.m. on the 15th August 1947 was 180,000 cusecs.



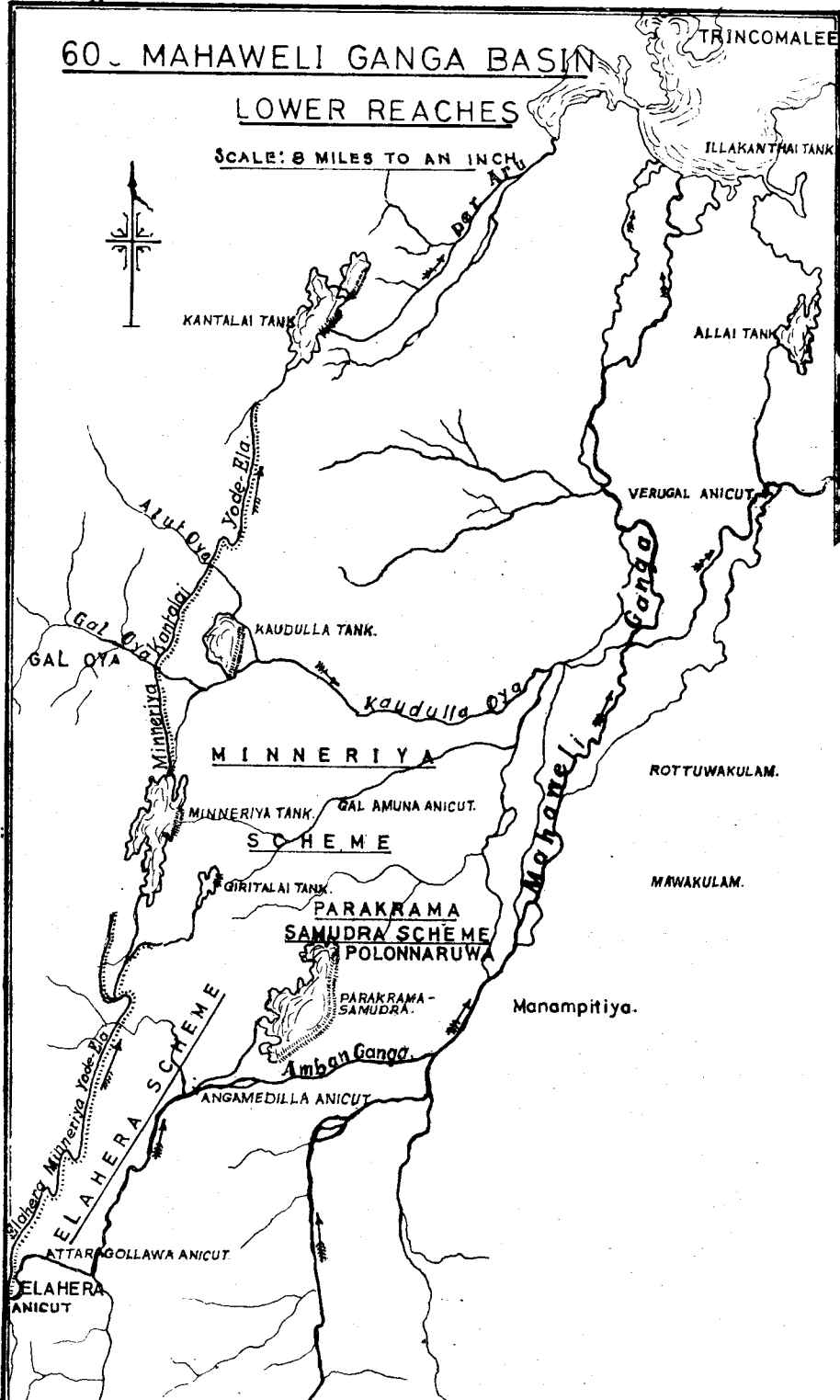
60. MAHAWELI GANGA BASIN

(UPPER REACHES)

60. MAHAWELI GANGA BASIN

LOWER REACHES

SCALE: 8 MILES TO AN INCH



Flood peak periods in the lower Mahaweli do not necessarily coincide with that of the upper reaches. In the upper section the river flows mostly through a deep and rocky river channel while the lower portion forms the flood plain. The biggest flood experienced in the flood plain was in December 1957 when the flood peak flow at Manampitiya on the 26th of December was estimated as 514,950 cusecs. The railway embankment at Manampitiya acted as a weir and the flood waters spilled over it for a length of 21,500 ft. Also the Weragantota Rest House which was under 3 ft. of water for the August 1947 floods, was almost completely submerged except for the ridge of its roof.

Water Resources of the Major Tributaries:

The Mahaweli Ganga has numerous tributaries, the main parameters of the larger ones are:—

Name of Tributary Stream	Catchment area	Length 112 mls.	Drop in feet	Q ac.ft. $\times 10^3$
1. Kotmale Oya	226.0	43.3	5500	845
2. Uma Oya	283.0	46.5	5985	520
3. Badulu Oya	152.0	37.5	3394	305
4. Loggal Oya	101.5	28.3	3711	269
5. Heppola Oya	47.6	22.0	4220	70
6. Ulhitiya Oya	170.5	38.5	811	138
7. Hulu Ganga	97.3	18.5	3900	300
8. Hassalak Oya	46.0	13.0	4250	126
9. Heen Ganga	49.7	17.5	5583	218
10. Amban Ganga	573.5	77.1	4100	1165
11. Kalu Ganga	107.0	25.0	2775	265
12. Kaudulla Oya	196.0	35.0	517	136

Almost all the major irrigation schemes in the area are fed by the tributary streams. All these schemes are ancient works restored and improved in recent times and reflect the efforts and the skill of the ancient engineers to harness the water resources of the Mahaweli Ganga.

Investigation for Development

Three Teams of engineers and other specialists investigated various aspects of the development that could be undertaken utilising the water resources of the Mahaweli Ganga.

USOM Team

A team from the U. S. O. M. was assigned the task of investigating the most suitable means of augmenting water supplies to the (Dry

Zone) areas of the North Central Province with the Mahaweli water. This was done in collaboration with the Irrigation Department, during 1958-1961. Their report, which was published in 1961, outlined a scheme to divert 2500 cusecs of the Mahaweli flow at Primrose in Kandy and convey the discharge in a lined canal to assure double cropping of 97,000 acres of existing paddy land and opening up 155,000 acres of undeveloped land. The plans included four hydro-power stations with installed capacities of 120 MW., 45 MW., 45 MW., and 33 MW. The construction cost of this diversion scheme without land development and infra-structures cost was estimated at Rs. 1203 million.

Hunting Survey Corporation Ltd.

In keeping with an agreement between the Governments of Ceylon and Canada, the Hunting Survey Corporation Ltd., of Canada were awarded in 1955 the task of evaluating the land and water resources of the Island. They worked in collaboration with the Survey Department.

As far as the Mahaweli Ganga basin was concerned, their task was more explicit, for in addition to evaluating the land and water resources, they had to evaluate the land potential for development and to prepare tentative plans for future use and to specify additional investigations required before development could be undertaken. They did their field work in 1958 and published their report (2 volumes) in 1961.

The UNDP-FAO Team

The third team which consisted of experts in irrigation, hydro-power, agriculture, sociology, economy etc. from the F. A. O. worked in collaboration with the Irrigation and other government counterparts to prepare a Master Plan for the complete utilization of the water resources of the Mahaweli Ganga for irrigation and hydro-power development and for flood protection. They commenced their investigations in March 1965 and published an ad-hoc report in March 1967 outlining the development potential of the Mahaweli Ganga. In the next stage of their investigations they studied the first priority structures and areas in more detail and finalised the main parameters of the Master Plan.

Their investigations showed, that it would be possible to supply 5,800,000 acre feet of water, from the proposed and existing reservoirs on the Mahaweli Ganga and in the N.C.P. for the irrigation of 9,000,000 acres. The extents to be benefited in the Mahaweli and Maduru Oya basins is estimated as 473,000 acres while the balance 427,000 acres will be in the North Central Province. Proposals envisage an assured water supply to 246,000 acres of already irrigated lands for rotational cropping and opening up 654,000 acres of uncultivated lands for irrigated agriculture. Based on the soil types,

diversified agricultural cultivation has been proposed making the project economic and also catering to the food and other demands of the country. In addition to the agricultural benefits, the combined use of the reservoir and canal drops permit development of 2611 K. W. H. of electrical energy annually, with an installed capacity of 507 M.W.

The estimated cost of the project for providing irrigation, drainage and flood protection facilities, land development and settlement and power production is Rs. 5,583 million. This includes the cost of land clearing and levelling for water delivery to the farmers fields. The foreign exchange component of the expenditure is estimated at 38%. The total capital cost of the project including power transmission lines, overhead expenditure etc. is estimated at Rs. 6,700 million. It is estimated that the annual benefits from agricultural and power production when the scheme has been fully developed will be Rs. 1,320 million and Rs. 114 million respectively.

In view of the vast financial implication, the project has been planned to be implemented in 3 phases over a period of 20 years. The first phase has again been sub-divided into three steps. The estimated cost of the first phase is Rs. 1549.9 million while the first step is estimated to cost Rs. 575.7 million. The target period set for completion of the first step is 1972.

60.1 AMBEWELA RESERVOIR

Location

Near Ambewela Railway Station.

Co-ordinates M/11 (5.8×4.3).

Scheme

Flow in Dambagastalawa Oya to be impounded near Ambewela and supply diverted across the ridge to the neighbouring Palugama and Welimada valley by a link channel leading to a 450 ft. tunnel underneath the railway line adjoining the railway station.

Data

Tank

Catchement area 5½ sq. miles
Length of Tank Bund 280 ft.

Tank Full:

Storage 4,000 ac. ft.
Head of water 62½ ft.
Area of water spread 150 acres
F. S. L. (5992.5)

Spills:

Nature Structure (C.O.)
Location L.B.
Length 40 ft.

Sluices:

1. Location	L.B. (in spillway) for discharging 10 cusecs into parent stream.
Size	24" dia.
Sill Level of Sluice	5930 M.S.L.
2. Location	R.B. (for trans-basin discharge through tunnel).
Size	24" dia.
Sill Level of Sluice	5960 M.S.L.

Irrigation Supply

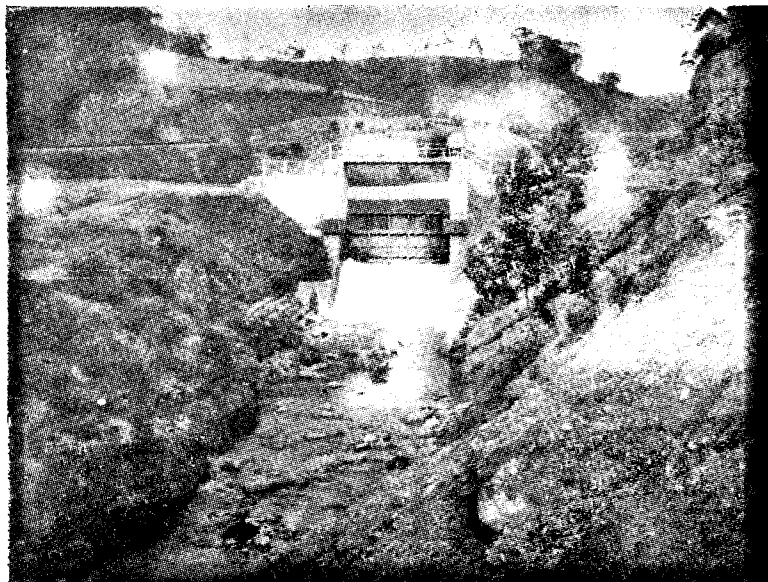
The work has for target aiding vegetable and other cultivation practised in the Palugama and Welimada valley, an extent of about 1000 acres.



60.1 RECONNAISSANCE FOR AMBEWELA RESERVOIR



60.1 AMBEWELA RESERVOIR TUNNEL INTAKE



60.1 REGULATOR AMBEWELA RESERVOIR



60.6 UDUGODA BANDARA ELA

60.2 KANDE ELA TANK

Location

In Nuwara Eliya District; is sited on the Blackpool-Ambawela main road, about 8 miles from N'Eliya.

The Project

A tank was constructed in 1947 by damming the narrow Kande Ela Valley: the flow in the ela, thus controlled and regulated, is picked up lower down and conveyed by channel and natural stream ravine to Palugama, for benefiting rice and vegetable cultivation.

Tank

Kande Ela Tank:	
Catchment area	1 sq. mile.
Tank Bund (Road)	460 ft.
Tank full:	
Storage	1760 ac. ft.
Head of water	27½ ft.
Area of water spread	110 acres

Spill:

Circular "Morning Glory" RCC spill, 3' dia.	
Crest Elevation:	6170.9 M.S.L.
Sluice Size:	14" dia.

Anicut—M/11 (7.1 × 6.1)

Natural rock diversion about 3 miles below the tank. Conveyance channel 6½ miles long passes through Glenorchy and Ambewela Tea Estates skirting Welimada-N'Eliya road at 60th mile and afterwards to Edanpolakotha village; it bifurcates (L. B.) to Gawarammera and (R. B.) drops by 700' ravine to Palugama and joins up with Alut Ela Scheme. Benefits 410 acres of rice cultivation and 700 acres of vegetable cultivation.

60.3 WELIKADA ELA

Location

From Talawakelle to Madakumbura Tea Estate Factory and thence to site.

Co-ordinates L/10 (9.5×2.3)

Constructed in 1960.

Scheme

Diversion of flow in Welikada Ela, a tributary of Kotmale Oya, to benefit paddy cultivation in Dunuhadeniya and Medakumbura villages.

Data

Anicut

Catchment area	1 sq. mile
Length of Structure	15 ft.
Planked Openings	2 Nos $4' \times 2'$
Silt reach	26 ft. long
Pick up anicut across Kande Ela at 1 mile 11 chains	
Length of Structure	12 ft.
Height	$1\frac{1}{2}$ ft.
Planked bays	2
Head Sluice	$3' \times 1' - 6''$
Silt reach	38 ft. long

Irrigation Supply

A two mile channel through tea plantation leads to a ravine which flows down to cultivated area in extent 260 acres.

60.4 ATABAGE OYA ANICUT (UPPER)

Location

Off Panwilatenna, a village near 23rd mile on the Kandy-Gampola-Galaha road.

Co-ordinates L/5 (7.7×5.4)

Scheme

Diversion of flow in Atabage Oya (upper reaches). Improved in 1953-54.

Data

Anicut

Catchment area	12 sq. miles
Length of Structure	126 ft.
With two openings	$5' \times 3'$ and $3' \times 3'$
Head Sluice:	
Location	L.B.
Size	$3' \times 1\frac{1}{2}'$

Irrigation Supply

A left bank channel system over $1\frac{1}{2}$ miles long conveys supply for the development of 140 acres of rice cultivation.

ATABAGE OYA ANICUT (LOWER) L/5 (7.5×5.2)

Location

This is in Atabage Udagama, and is about half mile downstream of the Atabage Oya (upper) anicut. Improved in 1949.

Data

Anicut

Catchment area	$12\frac{1}{2}$ sq. miles
Length of Diversion Walls	20 ft. and 28 ft.
Head Sluice:	$2' \times 1'$ L.B.
	$2' \times 1'$ R.B.
L.B. Channel— $\frac{1}{2}$ mile (Bulane Channel)	
R. B. Channel— $1\frac{1}{2}$ miles (Maharawela Raja Ela)	
Rice area benefited—172 acres.	

60.5 GAMPOLAWELA RAJA ELA

Location

Between Gampola and Nawalapitiya. Turn westwards near 19¼ M.P. on Gampola-Nawalapitiya road and proceed 3 miles.

Co-ordinates L/5 (1.9×2.0)

Restoration

Anicut work restored in 1938.

Scheme

Diversion of flow in perennial stream—Ulapane Oya.

Data

Anicut Diversion

Catchment area	6 sq. miles
Length of Structure	27½ ft. upper stretch
	57½ ft. lower stretch
Maximum height	3 ft.
Head Sluice	Two openings each
	3½'×2'

Irrigation Supply

A long channel over 8 miles in length irrigates 435 acres, situated on either side of the main road to Nawalapitiya.

60.6 UDUGODA BANDARA ELA ANICUT

Location

Near Wattagama; 1½ miles north west of 11th mile on Kandy-Madulkele road.

Co-ordinates I/20 (12.2×2.2)

Scheme

Diversion of Maha Oya. Constructed in 1938.

Anicut Diversion

Catchment area	1.1 sq. mile
Length of Structure	23 ft.
Maximum height	5 ft.
Head Sluice	3'-6"×1'-6"

Irrigation Supply

L. B. channel 4½ miles long with several water falls effects supply to 285 acres of rice cultivation.

60.7 MURAPOLA ELA ANICUT

Location

Near Hanguranketa. Turn westwards near 13th mile on Kandy-Hanguranketa road; proceed one mile to channel at 8th mile.

Co-ordinates M/I (0.8 × 6.0)

Scheme

Diversion of flow in Gurugal Oya and in Kuda Oya, constructed in 1948-51.

Data

Anicut Diversion (3 anicuts)

Catchment area 11.6 sq. miles

Gurugal Oya Anicut

Length of Structure 76'

Kuda Oya First Anicut

Length of Structure 90'

Kuda Oya Second Anicut

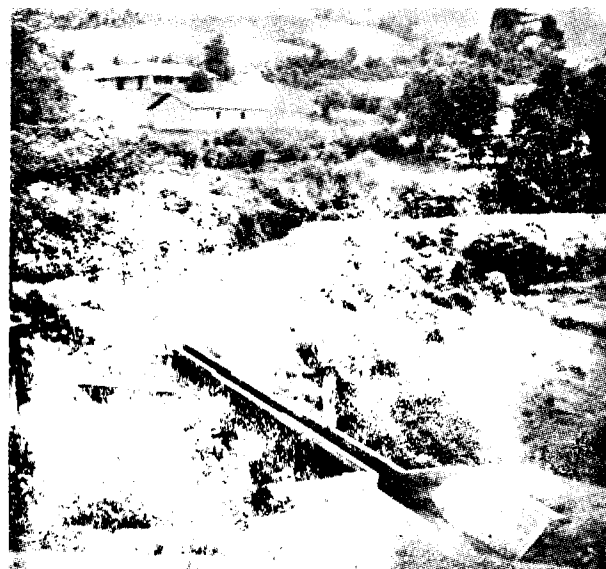
Length of Structure 104'
Head Sluice 3'-6" × 2'-8"

Irrigation Supply

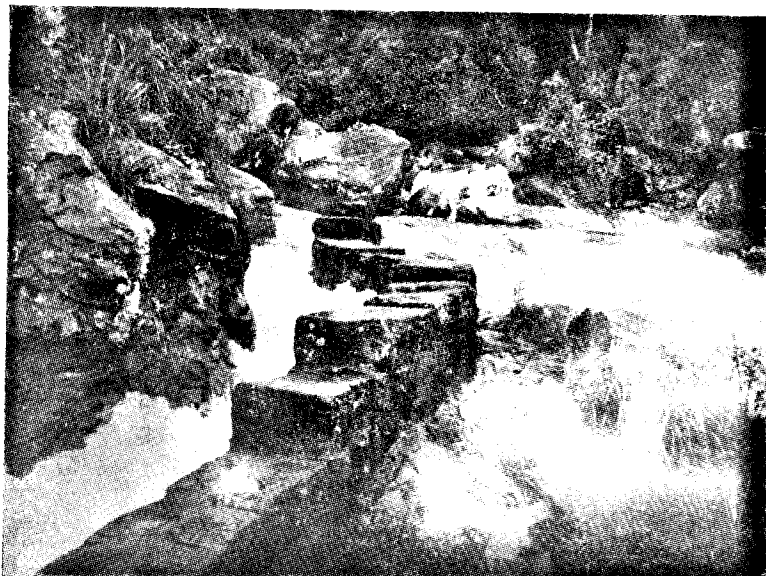
A long channel system—over ten miles in length collects the flow from the three anicuts and conveys to rice fields and other development in Bopitiya and Marassana, totalling over 2000 acres. Further augmentation works are envisaged. The work cost Rs. 18 lakhs (1948).



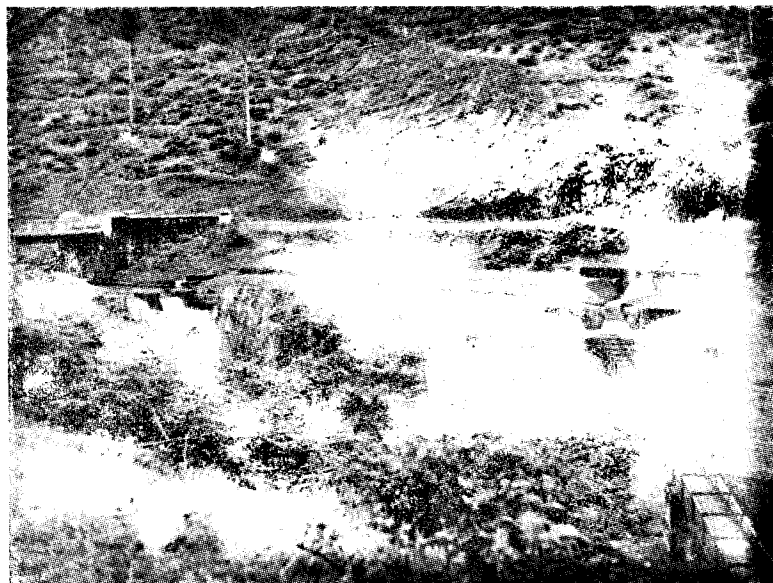
60.7 MURAPOLA ELA SCHEME—HEAD WORKS



60.7 MURAPOLA ELA



60.9 MA-ELA DIVERSION



60.9 MA-ELA CHANNEL KANDURA CROSSING

60.8 WEERAPITIYA MAHA ELA

Location

Near Rangalla; from Teldeniya proceed towards Rangalla and then north for 3 miles from near the 21st mile.

Co-ordinates J/16 (4.6 × 3.0).

Restoration

Restored in 1897.

Scheme

Diversion of flow in Kota Ganga.

Data

Anicut

Catchment area	3 sq. miles
Length of Structure	25 ft.
Maximum height	3 ft.
Size	5' × 2'

Irrigation Supply

A left bank channel system over 3 miles in length conveys irrigation supply to 170 acres of rice fields.

60.9 MA-ELA ANICUT

Location

Near Hewaheta; about two miles south of the $31\frac{1}{2}$ M. P. on the Kandy-Galaha-Rikilligaskada road.

Co-ordinates M/1 (2.6×2.3)

Scheme

Restored in 1900, for part diversion of flow in Mul Oya.

Data

Anicut Diversion

Catchment area	5 sq. miles
Natural diversion by rock	
Head Sluice	$3' \times 1'-9"$

Irrigation Supply

An eight mile long channel, crossing and re-crossing the main road at five places and finally reaching Hanguranketa area after supplying Wilwala areas etc. and Walugam Wewa, benefits in all an extent of 1360 acres for rice cultivation and other crops.

Walugam Wewa, M/1 (4.6×5.6)

Source of Supply—Ma-Ela Irrigation Channel	
Length of Tank Bund	424 ft.
Two Masonry Spills	L.B. 15 ft. R.B. 25 ft.

Serves as intermediate storage for 535 acres.

60.10 KITULPE ELA

Location

About 5 miles from Rikillagaskada, along Hewaheta and Ekiriya road.

Co-ordinates M/1 (1.7×5.8)

Historical

The Unantenna area is Ruantenna of old which was the name during the days of King Kirtisiri Rajasinghe. On the R. B. of the Head Works is "Dolugalakanda" reputed to have harboured Prince Pandukhabaya during the period of his misfortunes. On the L. B. is "Malhethgoda" where he met his uncles in battle.

Restoration

Restored in 1935 and subsequently improved in 1950 and 1955.

Scheme

Anicut diversion of Mal Oya flow into Unantenna channel etc.

Data

Anicut

Catchment area	$13\frac{1}{2}$ sq. miles
Length of Structure	170 ft.
Maximum height	$3\frac{1}{2}$ ft.
Planked bays	3 Nos.
Silt reach	37 ft. long with scour bay.
Head Sluice:	
Location	R.B.
Size	$6' \times 3'$

Irrigation Supply

$3\frac{1}{2}$ miles long channel system conveys irrigation supply to 400 acres of rice cultivation.

60.11 WADUWAWELA ELA

Location

Is across Belihul Oya, under the bridge near culvert No. 27/13 on Padiyapelella-Ellamulle road which takes off from 28½ mile on the Kandy-Padiyapelella-Maturata road.

Co-ordinates M/1 (5.2×0.7)

Scheme

The present masonry anicut was restored in 1887, together with a four mile long channel, but was abandoned after the 1915 earth slip. Was reconstructed and the scheme put into working order in 1951

Data

Anicut Diversion

Catchment area	21½ sq. miles of up-land area
Length of Structure	70 ft.
Maximum height.	4 ft.
Head Sluice	5'-6" × 3'-6"

Irrigation Supply

Four mile long channel skirting steep hill slopes is intercepted by streams; pick up anicuts across Ampiti Oya and Ukutul Oya, both in the first mile of channel augment conveyance and altogether 328 acres are irrigated for rice cultivation.

60.12 LEMASURIYAGAMA ANICUT

Location

About 8 miles from Padiyapelella; at Lemasuriyagama. Turn northwards near 31st mile on the Kandy-Maturata-Ragalla road and go down about two miles.

Scheme

Diversion of flow in Belihul Oya, for the development of a settlement sponsored by Mr. Le-Mercier, Govt. Agent, Kandy. Constructed in 1893.

The anicut, turned over as an entire block, during the floods in 1923 and was rebuilt subsequently.

Data

Anicut Diversion

Catchment	44½ sq. miles
Length of Structure	50 ft.
Maximum height	4 ft.
Head Sluice	2'-3" × 4'

Irrigation Supply

An L. B. channel system in steep land, about 3 miles long, irrigates 264 acres.

60.13 DIKILIYADDE ELA

Location

In Lewellegolla village in Walapane, and is reached by a 3 mile walk from Wattumulla, at 38th mile on Kandy-Ragalla road.

Co-ordinates M/1 (11.4×2.3)

Restoration

Restoration commenced in 1957.

Scheme

Diversion of flow in Aran Oya.

Data

Anicut

Catchment area	2 sq. miles
Length of Structure	27 ft.
Planked bays	2 Nos. 4'×3'
Silt reach	65 ft. long
Inlet Sluice:	
Size	2'-6"×2'
Silt escape	4'×3'-9"
Head Sluice:	
Size	2'-6"×3'-9"
Low level silt escape	2'×6"

Irrigation Supply

Two mile long channel system conveys supply for the development of 250 acres with rice cultivation.

60.14 MINIPE YODE ELA

An anicut diversion scheme across the Mahaweli Ganga.

Location

The Head Works is reached by travelling 46 miles from Kandy to Weragantota and then 12 miles along agricultural road, passing Morayaya. The channel (Yode Ela) is crossed over at Hassalaka, near Weragantota—on the opposite bank of the Mahaweli Ganga is Aluthnuwara (Mahiyangana). Co-ordinates M/2 (3.9×8.8)

Early History

Head works identified as the "Manimekkala Dam" across the Mahaweli Ganga, constructed by Aggabodhi I (575-608 A.C.) when 17 miles of the Minipe Canal identified as "Pabbatana Canal", was also constructed. Later, the Pabbatana Canal was extended to a length of 47 miles during the reign of King Sena II (853-887 A.C.).

Restoration

The scheme was restored in 1941, as a colonization project when anicut Head Works and 17 miles of Minipe Channel were constructed.

Large scale extension of the scheme was however commenced in 1949, when the anicut was raised and Head Works improved and the channel widened and regraded, to be extended over thirty miles. The new Minipe Yode Ela will be augmented by inflow from Hassalaka Oya and Heen Ganga and other streams.

Data

Diversion Anicut across Malaweli Ganga

Catchment area of Ganga	1218 sq. miles
Length of Structure	735 ft.
Maximum height	14 ft.
Planked bays	98 Nos.
Head Sluice (L. B.)	11'-6"×3'

Irrigation Supply

The target is irrigation supply and development of 21,500 acres of rice cultivation, for two seasons regularly, Extension work is estimated to cost 550 lakhs (1960).

60.15 KEENAWELA ELA

Location

In Uda Pussellawa area; from Rupaha school (Rupaha-Nildandahena-Watumulla road) down hill walk of $1\frac{1}{2}$ miles to reach head works.

Co-ordinates M/7 (0.2×6.6)

Scheme

Anicut across Madullu Oya, constructed several years ago, first reconditioned in 1908 and later considerably improved in 1963.

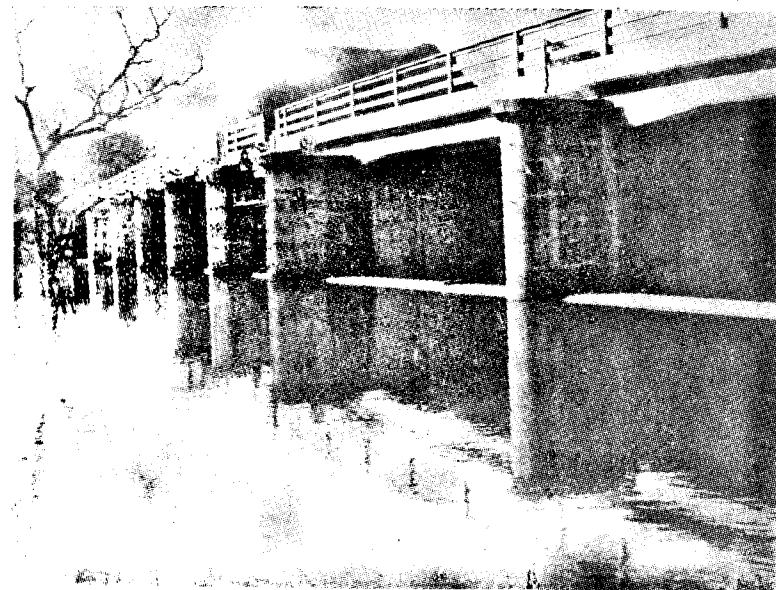
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Anicut Diversion

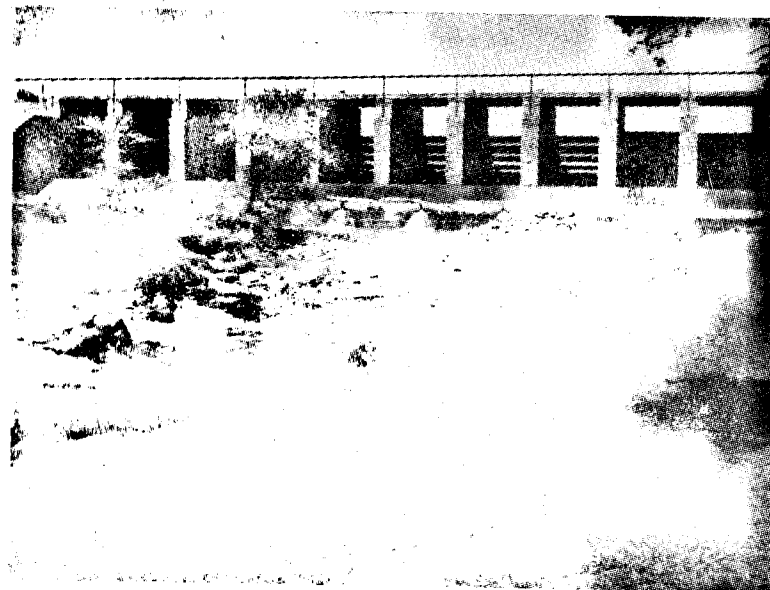
Catchment area	27 sq. miles
Length of Structure	60 ft.
Maximum height	6 ft.
Planked bays	3 Nos.
Head Sluice	3'-6" $\times$ 2'-6"

Irrigation Supply

Four mile long channel on sloping face of hill country conveys supply to 300 acres for development with rice cultivation, in Madulla village. Improvement works cost 2.2 lakhs in 1963.



60.14 BRIDGE CUM SPILL OVER HASALAK OYA
MINIPE SCHEME



60.14 BRIDGE CUM SPILL OVER HASALAK OYA (D/S VIEW)
MINIPE SCHEME

60.16 UMA ELA

Location

Head works reached by stiff 3 miles walk down hill from Hakgala near N'Eliya.

Co-ordinates M/11 (8.7×8.5)

Present work constructed in 1900 by the beneficiaries and later improved by the Government.

Scheme

Diversion of flow in Uma Oya (upper-reaches).

Data

Anicut

Catchment area
Length of Structure
Scour Sluice

16 sq. mls.
76 ft.
4'4"×4'

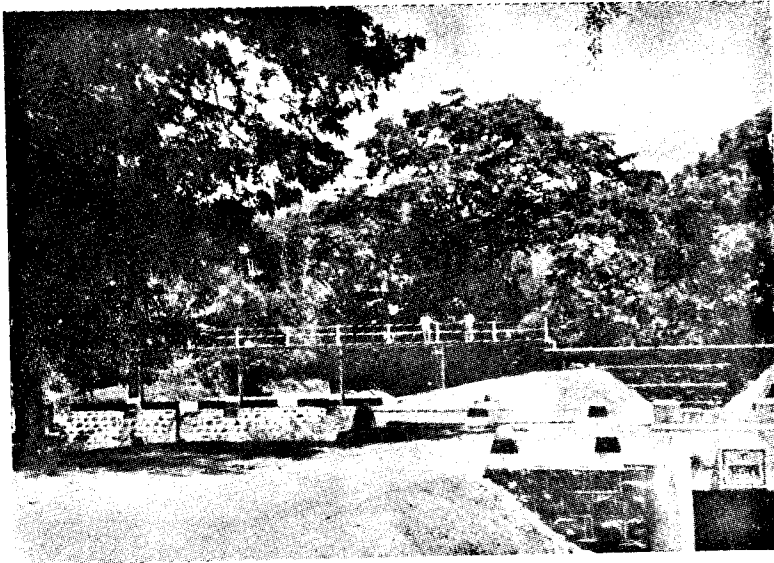
Head Sluice:

Location
Size

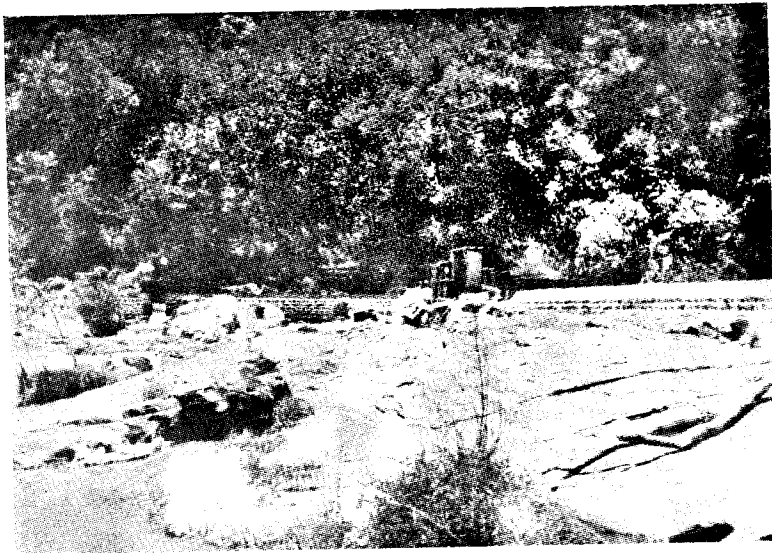
L.B.
6'×4'

Irrigation Supply

A ten mile long winding channel, which almost reaches Welimada area, supplies water to 1000 acres of rice cultivation in steep terrain.



60.19 DIVERSION OF WELA OYA
BATHMEDILLA SCHEME STAGE II



60.19 DIVERSION OF UMA OYA
BATHMEDILLA SCHEME STAGE I

60.17 MAHA ELIYA ANICUT

Location

In the Boralanda Ohiya area of Uva Province. Is reached by the Welimada-Ohiya road, 8 miles drive to Rahangalla Farm and 3 miles walk along the channel.

Co-ordinates M/16 (10.7×8.4).

The Project

Originally a stick and boulder amuna diverted the flow of Mahatotilla Oya to Hinnarangolla Ela, along a 3 miles long channel benefiting rice and other cultivation in Hinnarangolla Village. Subsequently permanent anicut structure was constructed called the Maha Eliya Anicut, and the main channel was widened, regraded and extended.

Data

Anicut

Stream Catchment at site	6½ sq. mls.
Length of Anicut	56 ft.
Average height	4 ft.
Planked bays—two	4'×4' each
Sluice—L. B. size	4½'×2'

Irrigation

The 7 mile long left bank main channel conveying 25 cusecs at commencement drops supply to the Hinnarangolla private lands over 380 acres at the Kandura crossings and outlets for rice and vegetable cultivation. Potatoes are cultivated at the Rahangalla Farm. The last 4 miles of channel benefits over 500 acres for new development with suitable crops.

Capital Cost

Rs. 3½ lakhs.

60.18 MAHATOTILLA OYA ANICUT

Location

In Bandarawela area of Uva Province. Is situated near Bandarawela and is reached by a short walk from culvert No. 6/8 on the Bandarawela-Welimada Main Road.

Co-ordinates M/12 (2.6×3.8).

The Project

An anicut founded on solid rock just above a 30 ft. fall of the Mahatotilla Oya, diverts flow from 60 sq. miles, to a right bank channel commanding 700 acres for development. The left bank is too steep for agricultural enterprise. Construction commenced in 1961.

Data

Anicut

Stream Catchment at site	60 sq. mls.
Length of anicut structure	100 ft.
Planked bays—two	4½'×4'

Irrigation

A right bank main channel 4½ ft. wide at commencement and 6 miles long, extending up to the 7 M. S. on the Welimada-Badulla Road, will command new development.

Capital Cost

Rs. one million.

60.19 BATHMEDILA ELLA

Scheme

The flow in Uma Oya is diverted by an anicut in Talpitigala Rubber Estate and carried in a conveyance channel (usually designated Stage 1), across the ridge into a natural stream, which flows into Wela Oya valley.

The Wela Oya is dammed at Kivulegedera and left and right bank channel irrigation schemes constructed as Stage 2.

Further, about 3 miles below, another pick up anicut across the same Wela Oya diverts the accumulating drainage flow by a new mid channel to irrigate the lands in the tail end of Stage 11.

Stage 1—Diversion of Uma Oya

Anicut

Location	Talpitigala Estate
Co-ordinates M/2	(3.2 × 0.3).
Length of Structure	382 ft.
Crest level	1000.96 R.L.
Sluice	Two of 4'6" × 4'3"

Conveyance Channel

Conveyance from anicut to ridge.

Bed width	7 ft.
Conveyance	65 cusecs.
Length	5 miles.

Stage 11—Diversion of Wela Oya

Anicut

Location	At Kivulegedera about 30 miles north of Badulla.
Co-ordinates M/2	(7.5 × 4.6).
Length of Structure	82 ft.
Crest level	643 R.L.
Sluice 1	L.B. 4'3" × 3'
11	R.B. 2'9" × 2'6".

Irrigation Supply

L.B. Channel system 6 miles long irrigates 1200 acres.
R.B. Channel irrigates 200 acres.

Mid Channel

Anicut

Location	At Kivulegedera about 25 miles from Badulla.
Co-ordinates M/2	(5.8 × 6.1).

Irrigation Supply

This work augments supply to about 250 acres of lands in the tail end of Stage 2, by a channel system 4 miles long.

60.20 BATATUHENA ANICUT

Location

About 8 miles west of Kandeketiya and situated along the Mahaweli Ganga, opposite to Minipe.

Co-ordinates M/2 (2.2 × 7.4).

Construction

Constructed 1962-1963.

Scheme

Diversion of flow in Uma Oya in the lower reaches, about ½ mile above its confluence with the Mahaweli Ganga.

Data

Anicut

Catchment area	168 sq. mls.
Length of Structure	635 ft. on rock
Openings	13 Nos. each 4' wide.
Head Sluice:	
Location	R.B.
Size	4'-6" × 2'

Irrigation Supply

A 3 mile long channel conveys supply to 100 acres of new colonization area situated by the banks of Mahaweli Ganga.

60.21 BADULUPITIYA ELA

Location

About a mile S. W. of Badulla.
Co-ordinates M/7 (8.9×2.6).

Restoration

Restored in 1897.

Scheme

Diversion of flow in Badulu Oya, about $\frac{1}{2}$ mile below the Alut Oya Anicut.

Data

Tank

Catchment area	46 sq. mls.
Length of Structure	163 ft.
Crest level	2205.5 M.S.L.
Scour Sluices two	4' $\times$ 4' each

Head Sluice:

Location	L.B.
Size	5' $\times$ 2'

Irrigation Supply

Left bank channel system over 2 miles long aids the development of rice cultivation in 200 acres, in Badulla town. The channel runs past the Hospital and the Irrigation Department Subdivisional Office.

60.22 TALDENA ELA

Location

Head works below 6th mile on Badulla-Migahakiwula Road.
Co-ordinates M/7 (9.9×7.2).

Restoration

Restored in 1888 at an initial cost of Rs. 21,873.

Scheme

Diversion of flow in Badulu Oya.

Data

Anicut

Catchment area	92 sq. mls.
Length of Structure	158 ft.
Scour Sluice	8' $\times$ 4'-6"

Head Sluice:

Location	L.B.
Size	4' $\times$ 3'

Irrigation Supply

Long channel skirting the road all along the 7 mile length supplies irrigation facilities to 200 acres of rice fields.

60.23 BADULU OYA ANICUT

Location

In the Kiulegedera area of Badulla District. The Anicut is sited across Badulu Oya, in the lower section about 10 mile before its confluence with the Mahaweli Ganga and is reached from Kandeketiya, 18 miles from Badulla.

Co-ordinates M/2 (7.0×4.3).

The Project

Drainage from over 100 sq. miles is diverted by an anicut to a right bank colonization scheme extending to the banks of Mahaweli Ganga, benefiting over 2000 acres for new development.

Anicut

Stream Catchment at site	114 sq. mls.
Length of anicut	217 ft.
Crest level	573.0
Average height	5 ft.
Planked bay: one,	5' × 6'
Sluice:	
Two openings	4' × 4' each.

Irrigation

Main right bank channel over eight miles long, designed to convey 82 cusecs at commencement and four distributary channels totalling 9 miles, with necessary field channels to command 2513 acres for development with rice cultivation.

Capital Cost

Rs. 2½ million.

60.24 DAMBARAWA TANK

Location

In Bintenne, about 2½ miles E. S. E. of Alutnuwara.

Co-ordinates J/22 (7.7×7.6)

Scheme

A minor work now becoming of greater utility in view of the supply from Mapakada Wewa, which in turn receives diverted conveyance from flow in Heppola Oya.

Data

Tank

Source of Supply	Inlet channel from Mapakada Wewa and self-catchment 7 sq. miles	
Length of Tank Bund	3700 ft.	
Tank Full:		
Storage	12,900 acre ft.	
Head of water	25 ft.	
Area of water spread	850 acres	
Spills:		
Nature	Concrete on Rock	
Location	L.B.	
Length	220 ft.	
Sluices:		
Location	L.B.	R.B.
Size	18" dia.	2 of 24" dia.
Inlet channel from Mapakadawewa Tank		
Bed width	5 ft.	
Length	2000 ft.	

Irrigation Supply

Target for development 1800 acres of rice cultivation.

60.25 MAPAKADA WEWA

Location

Situated close to Alutnuwara, by the 19th mile on the Bibile-Alutnuwara Road.

Co-ordinates J/22 (7.8 × 5.0)

Historical

An ancient work, the origin of which has not been identified. Was apparently functioning during the 9th-10th centuries as indicated by an inscription of the period, in the locality.

Restoration

Restoration 1952-53.

Data

Tank

Source of Supply Diverted supply from Heppola Oya and self catchment drainage from 3 sq. miles.

Length of Tank Bund 1900 ft.

Tank Full:

Storage 6700 acre ft.
Head of water 25 ft.
Area of water spread 460 acres

Spills:

Nature Channel flow
Location R. B. flank
Length 125 ft.

Sluices:

Location L.B. R.B.
Size 24" dia. 24" dia.

Anicut across Heppola Oya

Length of Structure 144 ft.
with 9 No. openings each 6' × 6'
fitted with lifting gates and two bays each 30 ft. wide
with permanent crest.

Irrigation Supply

The work has for target irrigation development of 1300 acres of rice cultivation.



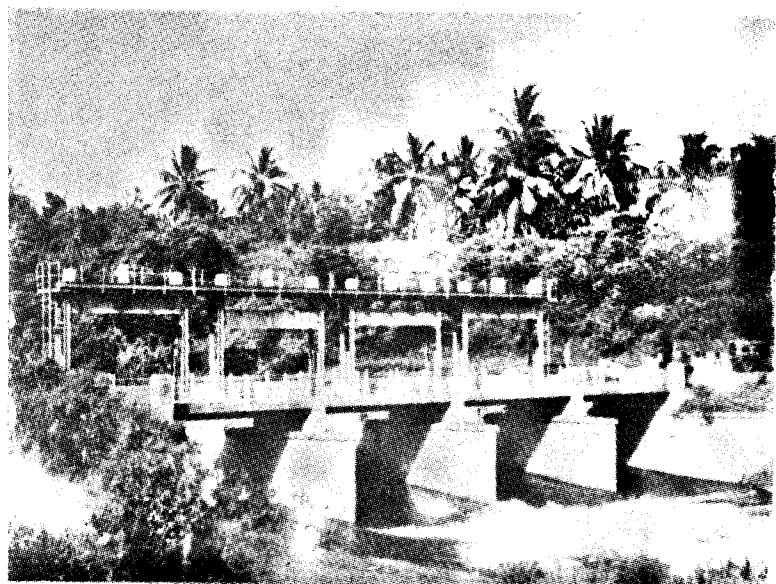
60.24 DAMBARAWA TANK



60.25 MAPAKADAWEWA—SLUICE



60.26 SORABORAWEWA—SPILL



60.30 NALANDA OYA SCHEME—EBBAWELA REGULATOR

60.26 SORA BORA WEWA

Location

About 3 miles from Alutnuwara (Mahiyangana).

Co-ordinates J/17 (6.1×2.3)

Historical

An ancient work of historical importance, which has several references. The area and the Vihare was visited by Udaya IV (946 A.C.), Vijayabahu I (1055-1110), Parakrama Bahu I (1153-1186) etc.

Restoration

Present work was restored in 1876 at an initial cost of Rs. 11,405/-. Has been improved subsequently.

Scheme

Storage Tank.

Data

Tank

Catchment area	24 sq. miles
Length of Tank Bund	1600 ft.

Tank Full:

Storage	11800 acre feet
Head of water	21.7 ft.
Area of water spread	1100 acres

Spills:

Nature	Rock
Location	R.B.
Length	30 ft.

Sluices:

Location	L.B.	R.B.
Size	24" dia.	24" dia.

Irrigation Supply

The work regularly benefits rice cultivation in 1700 acres.

60.27 HATTOTA AMUNA

Location

At Pallegama, about 30 miles from Naula Junction and 12 miles from Elahera.

Co-ordinates J/11 (8.1×8)

Historical

An anicut diversion scheme with 28 miles long channel, identified as Hattota Amuna was constructed during the reign of Aggabodhi II (608-618 A. C.); it is later reported to have been repaired and reconstructed by Parakrama Bahu I (1153-1186).

Restoration

The present Hattota Amuna, however, may not be the identical work; it was completed in 1952-57.

Scheme

Diversion of waters of Kalu Ganga (in the Central Province)

Data

Anicut

Catchment area	50 sq. miles
Length of Structure	320 ft.
Head Sluice:	
Location	L.B.
Size	4'×2'-6"

Irrigation Supply

The Left Bank Scheme consists of a 6½ miles long channel system and aids the development of 500 acres of rice cultivation in new colonization development lands.

The projected Right Bank Scheme will benefit approximately 800 acres, similarly.

60.28 MAHA OYA ANICUT

Location

From Kandy to Rangalla and to Corbetts Gap and down by newly traced road, through rubber estate to site—about 35 miles.

Co-ordinates J/16 (8.4×8.6)

Construction 1956.

Scheme

Diversion anicut on wide rock site, across Karambekeliya Oya.

Data

Anicut

Catchment area	4.2 sq. miles
Length of Structure	60 ft.
Maximum height	5 ft.
Planked bays	One
Head Sluice:	
Size	3'×2'

Irrigation Supply

2 mile long supply channel in rugged terrain crosses drainage from Pusse Ela and other minor streams and conveys supply to 23 acres of private fields and 204 acres (102 lots of 2 acres each) for new colonization development in Meemure village. Cost of work in 1960 was Rs. 4.2 lakhs.

60.29 KARAUGAHAWELA WEWA

Location

13 miles south east of Elahera.

Co-ordinates J/7 (1.3×1.5)

Restoration

Restoration work initiated in 1956.

Scheme

Impounds flow in Gamburu Oya.

Data

Tank

Catchment area 11 sq. miles
Length of Tank Bund 3500 ft.

Tank Full:

Storage 1820 acre ft.
Head of water 20 ft.
Area of water spread 220 acres

Spills:

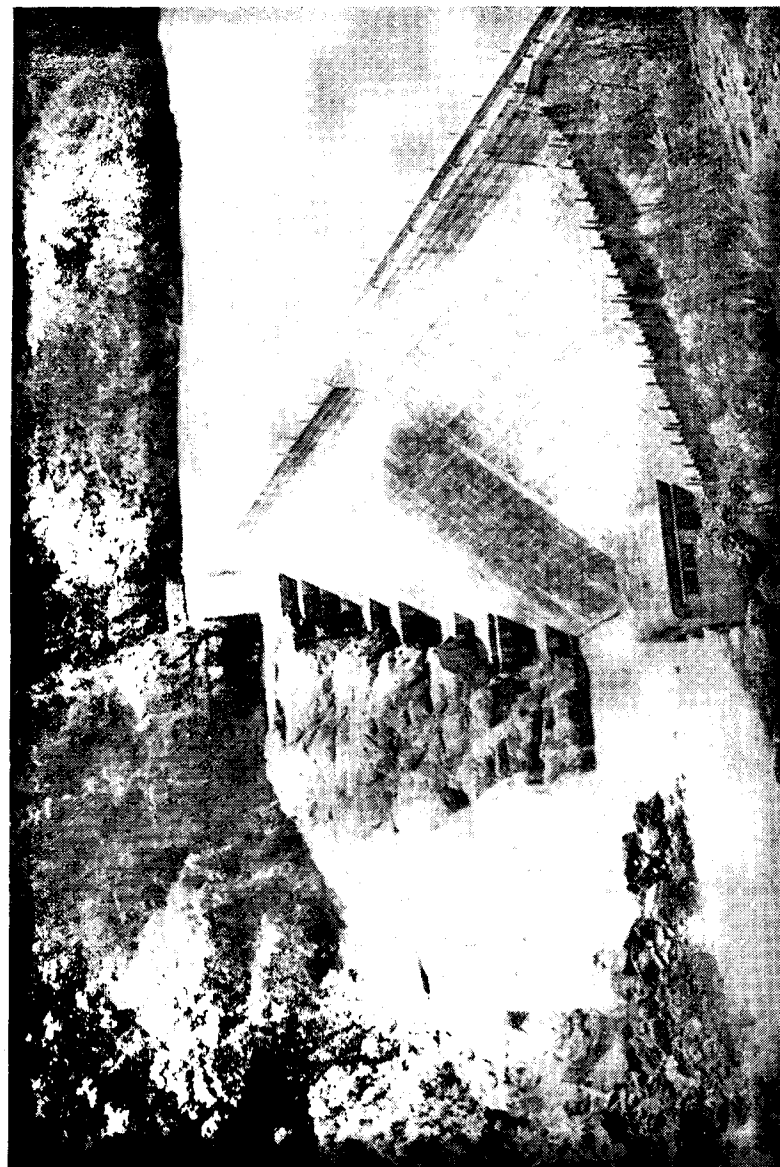
Nature	Structure C.O.	Rock	Rock
Location	L.B.	Central	R.B.
Length	200 ft.	120 ft.	155 ft.

Sluices:

Location	R.B.
Size	24 ins. dia.

Irrigation Supply

R. B. Channel Scheme started for development 470 acres.
L. B. system 130 acres. Some of the R. B. lands eventually become absorbed in the Miripe Yode Ela Project.
The work is expected to cost Rs. 6.5 lakhs (1965).



60.30 NALANDA OYA RESERVOIR—DAM



60.30 NALANDA OYA RESERVOIR—SPILL



60.32 ANICÚT ACROSS AMBAN GANGA

60.30 NALANDA RESERVOIR

Location

Near Nalanda; turn off westwards from 31st mile on Kandy-Trincomalee Road and proceed about four miles.

Co-ordinates I/10 (7.1×6)

Constructed 1947-57.

Project

Nalanda Reservoir has been formed by impounding the waters of Nalanda Oya (a tributary of Amban Ganga) by a mass concrete dam.

In the dam structure is incorporated necessary spillway, for discharge of surplus water and sluices for effecting supply down the Nalanda Oya watercourse to augment Amban Ganga.

When the reservoir water level is sufficiently high, flow can also be diverted, by means of regulator gates at Ebbawela at the northern end of the reservoir.

Data

Tank

Catchment area	48 sq. miles
Length of Concrete Dam (at top)	402 ft.
Maximum height of Dam	102 ft.
Width of Dam at base	80 ft.
Width of Dam at top	7 ft.
Head of water	70 ft.
Storage capacity	12,400 acre ft.

Sluices:

Two steel pipes of 3 ft. diameter, fitted with shut off needle valves—sill 70 ft. below spill level.

Spill:

Horse shoe shaped 156 ft. long concrete spill, level three feet below top of dam.

EBBAWELA REGULATOR—FOR TRANS BASIN DIVERSION

Structure with four openings each 18 ft. wide and 7 ft. high is constructed with sills about 63 ft. higher than the reservoir sluice level, for sending supply to Kala Wewa, through Welimiti Oya. The work cost Rs. 70 lakhs.

60.31 BOWETENNE ANICUT

Location

Off Naula. Travel towards Elahera, from Naula (34 M.P. on Kandy-Trincomalee Road), and after 4 miles proceed $1\frac{1}{2}$ miles on minor road till road along channel is met.

Co-ordinates I/10 (10.2×5.5).

Scheme

Anicut across Amban Ganga, constructed in 1895 at an initial cost of Rs. 15,101/-. It was repaired and improved in 1925.

Data

Anicut Diversion

Catchment area	187 sq. miles
Length of Structure	25 ft.
Maximum height	5 ft.
Head Sluice	$6' \times 4\frac{1}{2}'$

Irrigation Supply

A three mile long Left Bank channel system supplies irrigation water to 230 acres of rice fields.

60.32. ELAHERA CANAL

Location

Near the 12th mile on the Naula-Elahera Road.

Co-ordinates of Head Works: Anicut across Amban Ganga J/6 (4.0×8.5).

Historical

Known as the Alisara canal of old, is a work of ancient antiquity, which has several references in history. Earliest reference is construction by Vasaba (65-109 A. C.). King Aggabodhi II (608-618) is recorded to have improved it and extended to supply Giritale and Minneriya Tanks. Later Vijeyabahu (1055-1110) repaired and improved the work. It was put into good commission during the Parakrama Bahu period.

It was restored in 1887 at a cost of Rs. 55,430.

In 1945 it was re-commissioned and once again Amban Ganga waters augmented Minneriya Tank. It has since been improved and widened.

Scheme

The purpose of the Elahera Canal is to divert flow in the Amban Ganga for direct irrigation development and to augment supply to Minneriya and Giritale Tanks.

Data

Anicut Head Works

Catchment area	538 sq. miles
Length of Dam	
(1) Anicut across Amban Ganga	380 ft.
(2) Anicut across Kuda Ganga loop	95 ft.

Head Sluice:

Openings: $10' \times 6'$ and $5' \times 6'$, fitted with steel gates on rollers.

Channel

The total length of Elahera Canal, from Amban Ganga Head-works to the bifurcation structure at Diyabeduma is $20\frac{1}{2}$ miles. The canal is capable of conveying 1000 cusecs with $5\frac{1}{2}$ ft. depth; the first 900 ft. is in rock. The road crosses the channel just after 2 M.P. The Kongetta Oya (4th mile), Heerati Oya (7th mile) and the Kotapitiya Oya (12th mile) are among the several cross drainage streams that fall into the canal. From Bakamulla, supply is made to Minneriya and Giritale by two separate streams and channel.

Irrigation Supply

An extent of 5200 acres is directly irrigated, in tracts situated along the length of the canal. Besides, the canal augments supply to Minneriya Tank and also to Giritale Tank.

60.33 ATTARAGOLLA ANICUT

Location

Off the 16th mile on the Naula-Pallegama Road, in the Elahera area.

Co-ordinates J/1 (6.1 × 2.0)

Anicut constructed in 1957-60.

Scheme

Anicut diversion of waters of Amban Ganga.

Data

Anicut

Length of Structure	518 ft.
Inlet Sluice	2 bays 4' × 2'-6"
Head Sluice:	
Location	R.B. Scheme.
Size	5' × 2'

Irrigation Supply

A main channel, over 5 miles in length with necessary field channels and offtakes has for target, water supply to 500 acres of new colonization development in rice cultivation.

60.34 GIRITALE TANK

Location

At Giritale, 8 miles from Polonnaruwa on the Minneriya Road.

Co-ordinates G/17 (0.5 × 2.2)

Historical

Identified as "Giritala vapi" or Giritala vava", constructed during the reign of King Aggabodhi II (608-618); later reported as restored or enlarged by Parakrama Bahu I (1153-1186).

Restoration

Present tank restored in 1905, to hold 4000 acre ft. of water; has now been improved and enlarged during 1949-52 to hold 17,500 acre ft. of water and the new right bank colonization development project incorporated.

Data

Tank

Source of Supply:

Drainage from own catchment 9½ sq. miles and also Amban Ganga flow diverted through the Elahera canal.

Length of Tank Bund 1700 ft.

Tank Full:

Storage	17,500 acre ft.
Head of water	40½ ft.
Area of water spread	760 acres

Spills:

Nature	Concrete Ogee Section
Location	L.B.
Length	125 ft.

Sluices:

Location	L.B.	R.B.
Size	(2'-6" × 1'-6")	36" dia.

Irrigation Supply

The Left Bank channel supplies 780 acres. The new Right Bank channel system aids colonization development of 3800 acres of rice cultivation.

60.35 MINNERIYA SCHEME

60.35.1 MINNERIYA TANK

Location

At Minneriya, 14 miles from Polonnaruwa.
Co-ordinates G/16 (12.3×5.3)

Historical

Identified as "Manihira vapi", foremost of the 16 celebrated reservoirs constructed by King Maha Sena (276-303 A.D.). He is still worshipped in a shrine by on the tank bund. The tank was later repaired and improved by Parakrama Bahu (1153-1186).

Restoration

Present tank restored in 1903 and subsequently improved and enlarged in 1953.

Data

Tank

Source of Supply:

Drainage from own catchment of $9\frac{1}{2}$ sq. miles and supply of Amban Ganga diverted through the Elahera canal.
Length of Tank Bund $1\frac{1}{2}$ miles

Tank Full:

Storage	110,000 acre ft.
Head of water	38 ft.
Area of water spread	6,300 acres

Spills: Two Nos.

Nature	Masonry with radial gates.
Location	Below Bridges on the Main Road.
Length	45 ft.

Sluices:

	L.B. 1	L. B. 2	R.B.
Location	Jayanthi	Low	Raja Ela
	Sluice	Level	
Size	3 Openings of 4'×5'-6"	4'×5'-6"	3'×2'-6"

Irrigation Supply

The Minneriya Yode Ela-Left Bank channel system over 15 miles long, commands bulk of the irrigation development area and reaches Kaudulu Oya.

The Right Bank Raja Ela irrigates over 1,400 acres of rice cultivation.

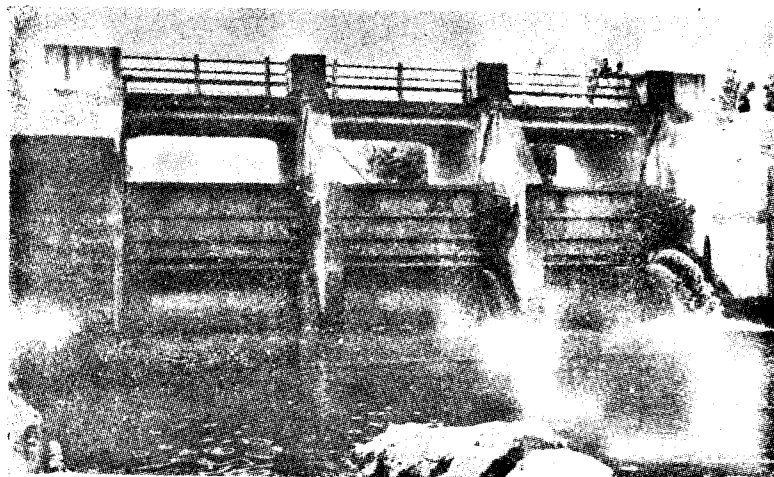
The Minneri-Kantalai Yode Ela originates from one of the tank spills. The discharge from the other feeds Kaudulla Tank.



60.35.1 MINNERIYA TANK R.B. SLUICE



60.35.1 MINNERIYA TANK



60.35.1 MINNERIYA TANK—SPILL

MINNERIYA SCHEME

60.35.2. MINNERIYA YODE ELA

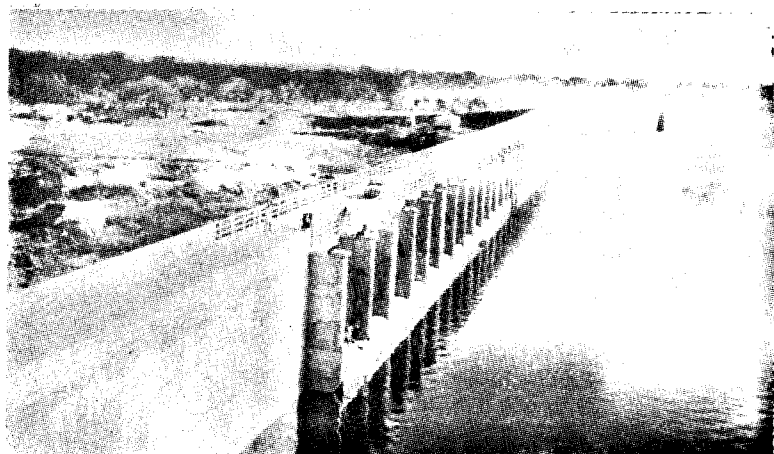
The Minneriya Yode Ela takes off from the Low Level Sluice of the Tank. The Jayanthi Sluice supplies the Yode Ela.

Irrigation Development under this Ela, forms four stages, in order of development.

Stage I	4500 acres
Stage II	2300 acres
Stage III	2600 acres
Stage IV	2568 acres

This Yode Ela is 15 miles long, the last five miles of which are extensions, to supply Stage IV of the scheme.

At commencement when it passes under the P. W. D. Road bridge the bed width is 20 ft, thereafter the section is reduced as water is delivered for irrigation en route. In the seventh mile, the railway line is crossed.



60.36 KAUDULLA TANK SPILL

60.35.3 MINNERIYA - KANTALAI YODE ELA

This ancient conveyance canal was devised to feed Kantalai Tank with the waters of Amban Ganga, already diverted through the Elahera canal to Minneriya Tank.

The original work is attributed to Aggabodi I (575 to 608), later it is reported as being repaired and restored during the days of Vijeyabahu (1055-1110). As a component of the well known "sea of Parakrama" it would have been in its best condition during Parakrama Bahu's period (1153-1186).

This Yode Ela, 20 miles in length, commences from the spill on L.B. of Minneriya Tank, under Road Bridge of Habarana-Polonnaruwa Road, where three radial gates each 15 ft. by 8 ft. are installed.

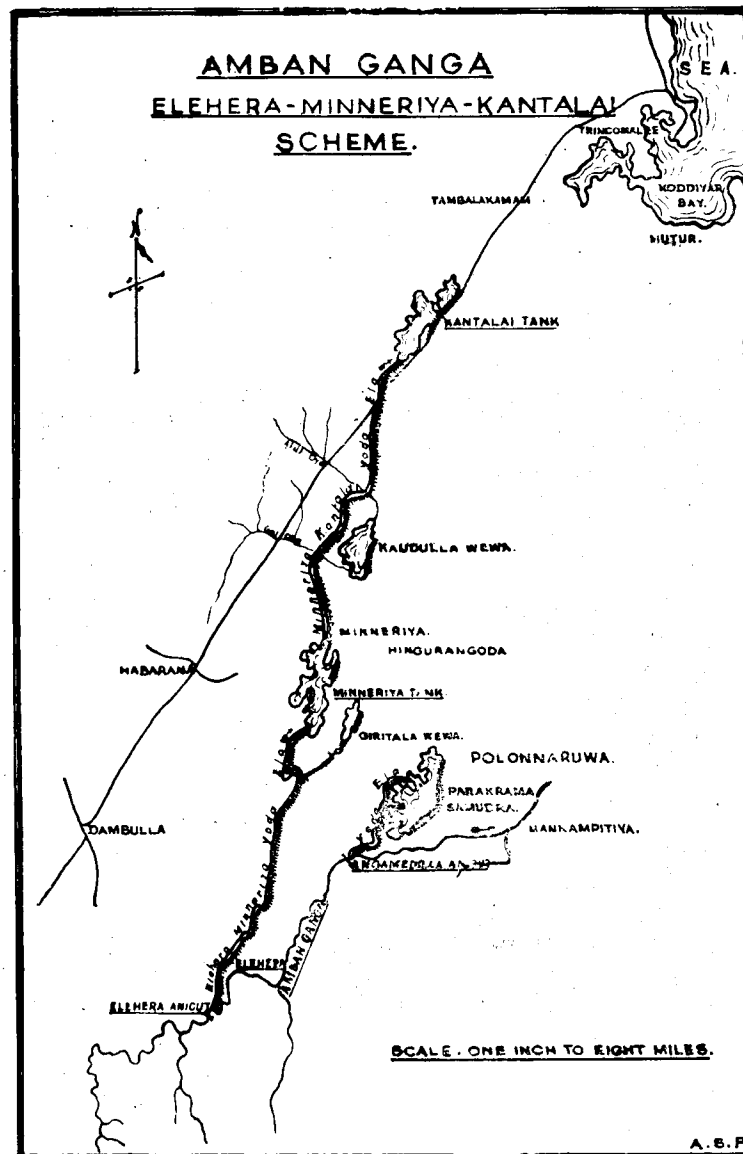
The first section of the Yode Ela from Minneriya Tank to Gal Oya (stream) crossing, adjoining the Gal Oya Railway Station is over five miles in length, and the canal is 80 ft. wide capable of carrying normal discharge of 300 cusecs and flood flow of 2,800 cusecs. It flows under the railway near the quarter mile post and also feeds two small tanks Rotawewa and Matale Wewa.

The next section of the canal is from Gal Oya stream crossing to Alut Oya stream crossing, a length of 8 miles. These two stream crossings are provided with suitable gated structures to exclude flood flow; these are in the catchment of Kaudulla Tank.

Yode Ela extends from Alut Oya for 7 miles to main road crossing at Dambulla-Trincomalee Road bridge from where it flows as a natural stream—Kituluttu, into Kantalai Tank.

The last two sections were restored in 1955.

Total length	20 miles
Bed width	80 ft.
Conveyance (flood)	2800 cusecs.





60.36 RADIAL GATES: KAUDULLA TANK



60.36 KAUDULLA TANK—D/S OF SLUICE

60.36 KAUDULLA TANK

Location

About 8 miles north of Minneriya.

Co-ordinates G/12 (1.4×5.2)

Historical

Identified as Tissavaddhamanaha-vapi (Rantisava) one of the 16 celebrated reservoirs constructed by King Maha Sena (276-303 A.C.) and later reported as being repaired and restored by Vijeyabahu (1055-1110). Improved by Parakrama Bahu (1153-1186).

Restoration

Present restoration commenced in 1958.

Scheme

Impounds waters of Gal Oya and Alut Oya (also receives supply from Minneriya-Kantalai Yode Ela).

Data

Tank

Source of Supply:

Drainage from own catchment 32 sq. miles augmented by flood flow from Gal Oya and Alut Oya streams and flood flow from Minneriya Tank, through the Aggala Wan Oya.

Length of Tank Bund 5 m. 39 ch.

Tank Full:

Storage	104,000	acre ft.
Head of water	25	ft.

Spills:

Nature	Concrete structure
Location	L.B.
Length	650 ft.

Sluices:

Location	L.B.
Size	4'-6" $\times$ 4'-6".

Irrigation Supply

The target for irrigation water supply is the development of 6282 acres of rice cultivation as new colonization. Approximate cost Rs. 17.5 million.

60.37 PARAKRAMA SAMUDRA SCHEME

60.37.1 ANGAMEDILA ANICUT AND THE INLET CHANNEL

Location

About 12 miles from Polonnaruwa, along tank and channel bunds.

Co-ordinates G/21 (12.9×1.1)

Historical

Anicut and the conveyance channel, known as Akasa Ganga, and now called the Angamedila Yode Ela was constructed by Parakrama Bahu (1153-1186)

Restoration

Present work restored in 1948-1952.

Scheme

Anicut diversion of flow in Amban Ganga to Topawewa and Dambutulu Wewa.

Data

Anicut

Catchment area of Amban Ganga 540 sq miles

Length of Structure 90 ft.

Scour Gate 5'×4'

Head Sluice:

Location L.B.

Size 2 openings of 10'×4½'

Irrigation Conveyance Channel—Angamedila Yode Ela.

THE AKASA GANGA

Length of Channel 3¾ miles

Bed width of Channel 50 ft. and 40ft.

Depth 6 ft.

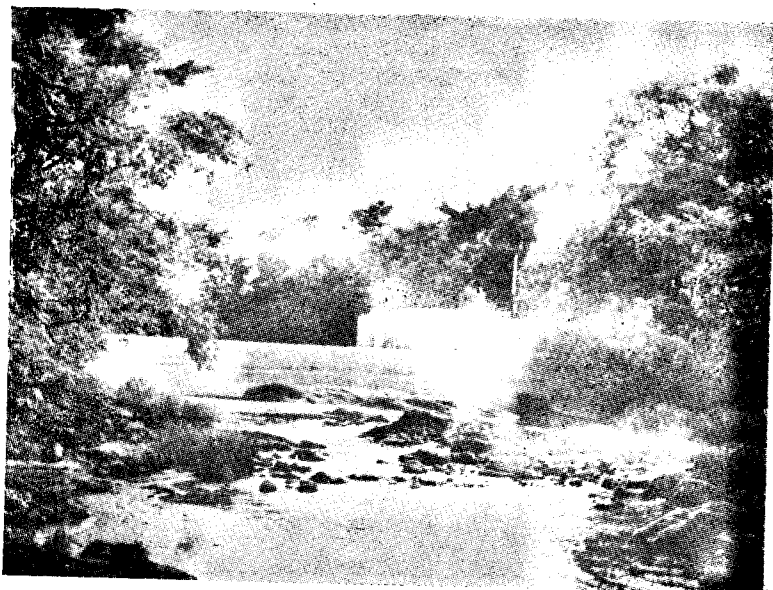
Conveyance 1000 cusecs.



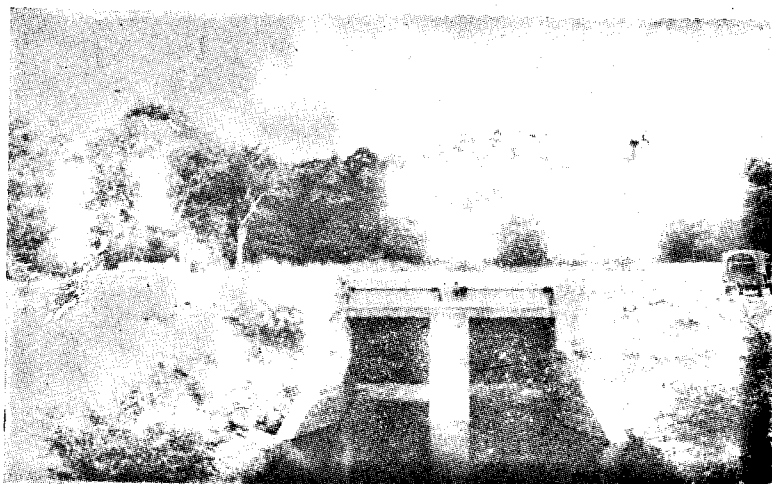
60.37 PARAKRAMA SAMUDRA



60.37 PARAKRAMA SAMUDRA SCHEME
D I CHANNEL



60.37.1 ANGAMEDILA ANICUT



60.37.1 ANGAMEDILA ANICUT—R. B. SLUICE

PARAKARAMA SAMUDRA SCHEME

60.37.2 TOPAWEWA AND DAMBUTULU WEWA

Location

At Polonnaruwa.

Co-ordinates G/12 (5.4×8.1)

Historical

The achievements of Parakrama Bahu I (1153-1186) were prodigious. His is the immortal glory of having constructed or improved 165 dams, 3910 canals, 163 major tanks and 2376 village tanks. The pride of all is the Angamedila Anicut, Akasa Ganga, Dambutulu Wewa and Topawewa chain—called today the Parakrama Samudra.

Restoration

Present work restored in 1948-52.

Data

Tank

Source of Supply:

Conveyance received through the Angamedila diversion of Amban Ganga flow and drainage from own catchment of 28 sq. miles.

Tank Full:

Storage	98,000	acre ft.
Head of water	22	ft.
Area of water spread	5600	acres

Spills:

Nature	Concrete Structure with Radial gates
Location	On 5th mile of bund.
Length	127 ft.
Also a natural spill.	

Sluices:

No. 1. D. 1 Sluice	
Location	At 1½ miles on Bund
Size	4 openings of 42" dia.
No. 2. D. 2 Sluice	
Location	At 2½ miles on Bund
Size	1 opening of 4'-3"×4'
No. 3. D. 3 Sluice	
Location	At 4½ miles on Bund
Size	1 opening 36" dia.

Irrigation Supply

D. 1 Channel System supplies 15,000 acres of rice cultivation.
D. 2 Channel System supplies 2,400 acres of rice cultivation.
D. 3 Channel System supplies 800 acres of rice cultivation.
The work cost Rs. 33 lakhs (1950) and effects irrigation supply to 18,200 acres of rice cultivation (most of which is colonization development.)

60.38 GAL AMUNA ANICUT

Minneri Oya carries the drainage from Minneriya, Giritale and Polonnaruwa areas.

Cultivation was practised in the area below these, with the aid of a temporary dam (amuna) at a rock (Gal) site—G/17 (8×6.6), by enthusiastic peasants.

The anicut diversion scheme commenced in 1956, provided at the site, a permanent anicut as Head Works with data:—

Data

Anicut

Length of Structure 46 ft. with 3 Nos. Radial gates each $13'-6" \times 4'-6"$ and overhead bridge.

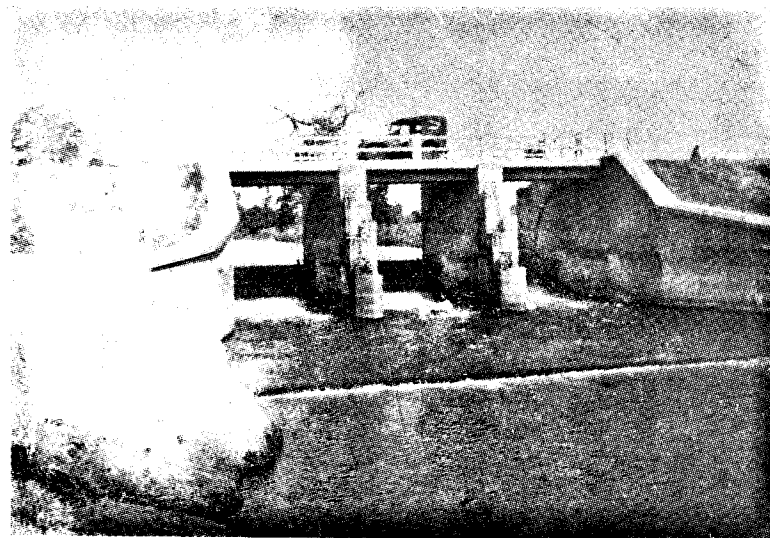
L.B. Head Sluice:

3 openings $4'-9" \times 3'-9"$.

Irrigation Supply

A left bank main channel system, with the aid of necessary distributary and field channels, diverts water supply for irrigation development of 3056 acres situated between Minneri Oya and Khambili Oya.

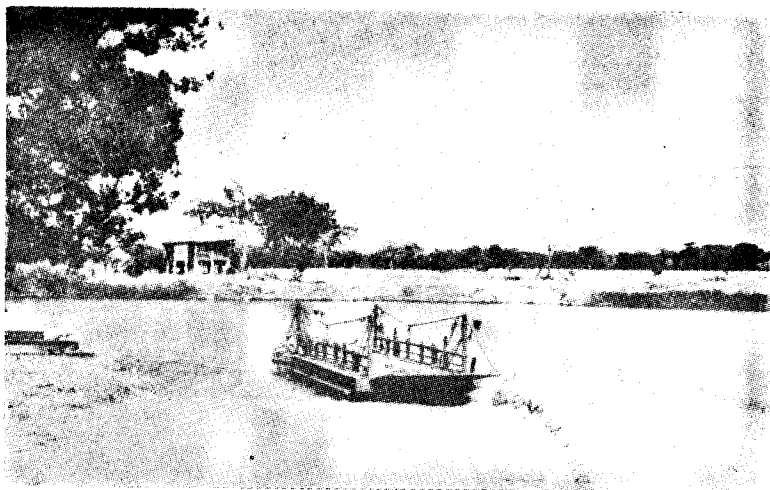
Approximate cost Rs. 3.2 million.



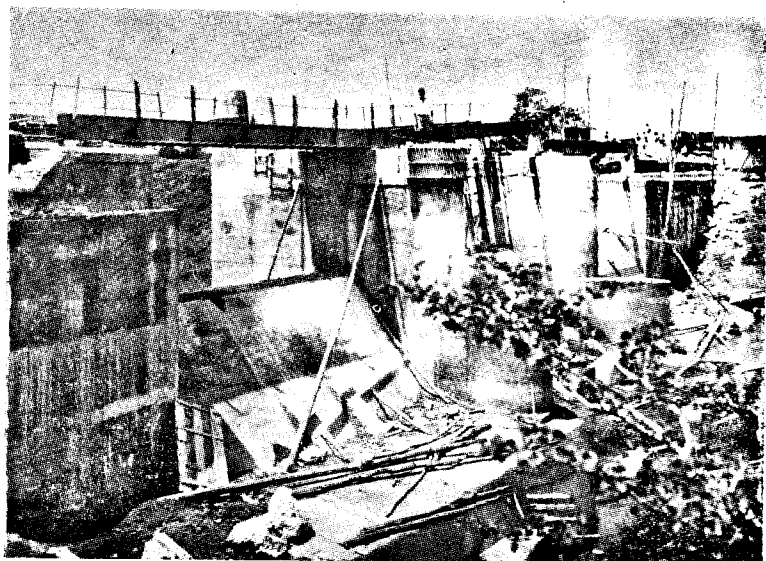
60.38 GAL AMUNA ANICUT



60.38 GAL AMUNA SCHEME—SPILL CUM CAUSEWAY



60.41.1 ACROSS THE MAHAWELI GANGA
KANTALAI-ALLAI ACCESS



60.41.1 ALLAI SCHEME—VERUGAL ANICUT (Under Const.)

60.39 ROTTUWAKULAM

Location

About 15 miles north of Manampitiya, off the 10th mile on the Welikanda-Tirukonamadu Road.

Co-ordinates G/18 (5.4 × 5.7)

Data

Tank

Catchment area 7½ sq. miles
Length of Tank Bund 2700 ft.

Tank Full:

Storage 650 acre ft.
Head of water 10 ft.
Area of water spread 165 acres

Spills:

Nature	Concrete	Structure
Location	L.B.	R.B.
Length	80 ft.	150 ft.

Sluices:

Location	L.B.	Central
Size	12" dia.	21" dia.

Irrigation Supply

The work benefits the development of 275 acres of rice cultivation.

60.40 MAWAKULAM

Location

About 10 miles north east of Minneriya.

Co-ordinates G/18 (5.2×2.2)

Scheme

Impounds the waters of Mawakulam Aru a minor stream that falls into the Mahaweli Ganga, after crossing the Welikanda-Thirukonamadu Road.

Data

Tank

Catchment area	7 sq. miles
Length of Tank Bund	4200 ft.

Tank Full:

Storage	670 acre ft.
Head of water	8 ft.
Area of water spread	175 acres

Spills:

Nature	Channel flow with crest wall
Location	L.B.
Length	400 ft.

Sluices:

Location	L.B.	R.B.
Size	6" dia.	15" dia.

Irrigation Supply

The work benefits the development of 225 acres, with rice cultivation.

60.41 ALLAI SCHEME

The Koddiiyar Pattu, in Trincomalee is a fertile area for agricultural enterprise and several reports were prepared for its development.

In 1907, a scheme to build an anicut across Verugal in place of the stick dam, cut a link channel between Mavil Aru and Verugal and deepen the Kallar channel, with a flood bund and Head Regulator at Kallar was prepared and work on this were completed by 1928, when it was formally inaugurated by H. E. Sir Herbert Stanley.

In 1941, was launched the Allai Extension Scheme by which the perennial flow in Mahaweli Ganga is conveyed for irrigation through Mavil Aru and Verugal Head Works.

The Allai Scheme now composes of:—

- | | |
|---|----------------------|
| (1) Anicut across Verugal Aru | } Verugal Head Works |
| (2) Anicut across Mavil Aru | |
| (3) Flood Bund and Sluice | |
| (4) Kallar Inlet Channel and Head Sluices | |
| (5) L.B. & R.B. Channel Distribution System | |
| (6) Allai Tank | |

ALLAI SCHEME

60.41.1 VERUGAL HEAD WORKS

Location

Is situated direct south of Trincomalee about 20 miles as the "crow flies."
At Verugal, 3 miles along Kallar inlet channel.
Co-ordinates G/8 (11.1×2.1).

Scheme

A detention tank formed by the retention of flow in the Mavil Aru and Verugal river—both branches of Mahaweli Ganga, by means of the Mavil Aru Anicut and Verugal Anicut and the flood bunds at Verugal. As the Mahaweli Ganga is perennial, the amount detained is small and the quantity of inflow from the Ganga into these branches is indeterminate, considerable spilling overflow accommodation is required.

Data

Tank

Catchment area	Indeterminate inflow from Mahaweli Ganga.	
Length of Tank bund	1 mile	
Nature	Verugal Anicut Concrete with Radial gates	Mavil Aru Anicut Concrete with 4 Radial gates each 20'×10'
Length	197 ft. with 3 bays each	
New Sluice:		
Location	at L.B.	
Size	5 openings each 6'×6'.	
Kallar Head Sluices:		
Location	L.B.	R.B.
Size	3 openings each 5'×4'-6"	Two openings: 4'×3'-6" and 6'×5'-2".

Irrigation Supply

The diverted supply is led into Kallar inlet channel 3 miles long.
The left bank channel system about 10 miles long, taking off from Kallar Head Sluice effects supply to new rice cultivation for colonization development. Supply is delivered into the original Kallar stream to aid the regular cultivation of the Allai and Peruveli lands; the right bank system incorporates a 9 mile long main channel for supply to new development. In all about 10,000 acres of rice fields are benefited by the work.

ALLAI SCHEME

60.41.2 ALLAI TANK

Location

South of Trincomalee, in Toppur village.
Co-ordinates G/3 (12.8×2.5)

Restoration

The original Allai Tank, restored in 1890, has since been modified as more or less perennial supply can be delivered to the area from the Mahaweli Ganga.

Scheme

The tank has since been reduced.

REDUCED ALLAI TANK

This work comprises of the main Allai Tank but with a reduced F. S. L. and its northern portion kept apart. Reduction of F. S. L. from the original 16.0 to 14.0 enables blocking out of the land in the fringe area for cultivation under the R. B. Scheme.

Data

Supply from Kallar drainage.		
Bund top level	18.0	M.S.L.

ILLAKANTHAI KULAM

Location

In Koddigar Pattu, south of Trincomalee, and is approached from the 2nd mile of Muttur-Foul Point Road.
Co-ordinates G/4 (1.3×7.8)
Restored in 1891.

Data

Tank

Catchment area $1\frac{1}{2}$ sq. miles
Length of Tank Bund 3600 ft.

Tank Full:

Storage 620 acre ft.
Head of water 10 ft.
Area of water spread 165 acres

Spills:

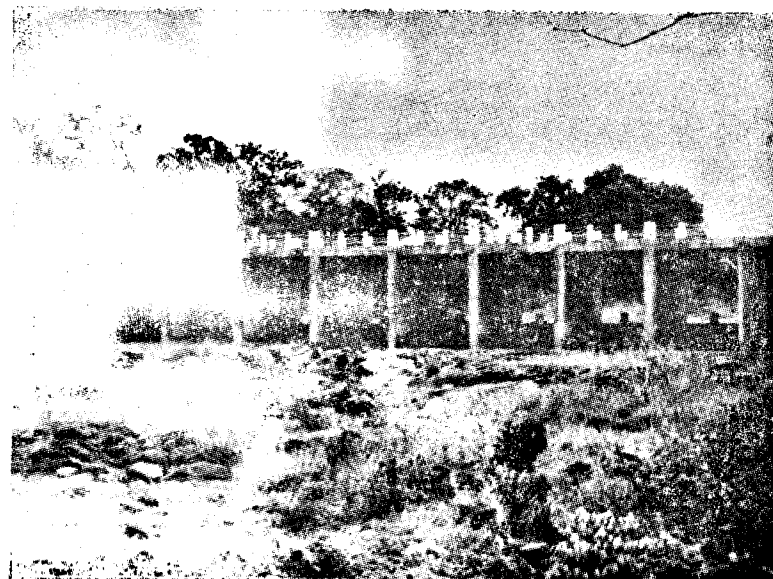
Nature Masonry
Location L.B.
Length 185 ft.

Sluices:

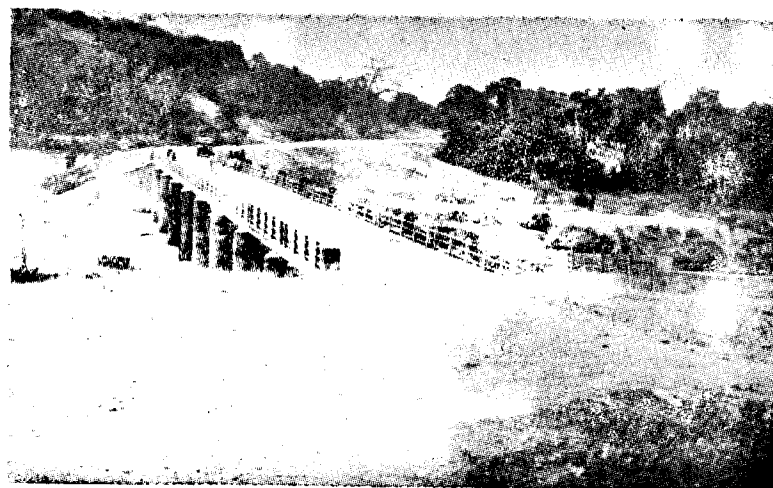
Location L.B. R.B.
Size 6" dia. 12"×12"

Irrigation Supply

The work supplies water to 300 acres of rice cultivation.



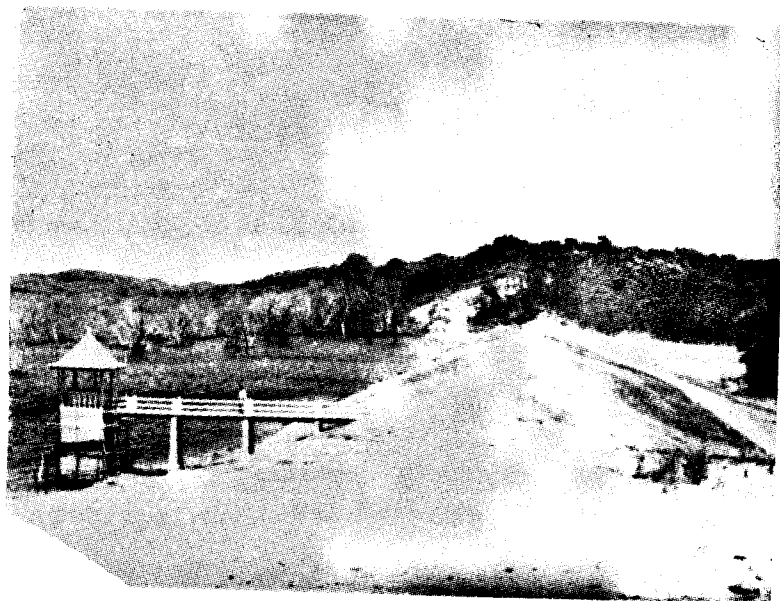
61.1 KANTALAI TANK—SPILL



61.1 GAL OYA SPILL—KANTALAI YODE ELA



63.2 PERIYAKULAM—SPILL



64.1 MORAWEWA SLUICE

61 KANTALAI (PER ARU) BASIN

61.1 KANTALAI TANK

Location

At Kantalai, 28 miles south west of Trincomalee.
Co-ordinates G/2 (5.7×1.1)

Historical

An ancient work, which has several historical references; identified as "Gangatota Vapi" or "Gangatala Vapi" constructed during the reign of Aggabodhi II (608-618). It is also the Thirukulam (Sacred tank) of Kulakoddai Arasan (circa 436) built for the upkeep of Koneswaram Temple lands at Thampalakamam. Later improved by Parakrama Bahu I (1153-1186).

Restoration

Present tank restored in 1869, to store 25 ft. of water, from own catchment. Enlarged to store 33 ft. an ancient conveyance channel Kantalai Yode Channel (constructed by Aggabodhi I 575-608) repaired from Gal Oya, Alut Oya to Kitul Utu in 1959. Vendarasenkulam was also restored and enlarged to augment the supply from Kantalai.

Data

Tank

Source of Supply:

Drainage from own catchment 77 sq. miles and the diversion of Gal Oya and Alut Oya catchments through the Kantalai Yode Ela.

Tank Full:

Storage	110,000 acre feet.
Head of water	41 ft.
Area of water spread	5,000 acres

Spills:

Nature	Concrete structure below road bridge.
Location	R.B.
Length	150 ft. with 10 Radial gates 15'×8'

Sluices:

Location	L.B. (Per Aar)	R.B. 1	R.B. 2 (Montagna)
Size	2 No. 3½'×2'	3½'×2'	2 bay tunnel 3½'×2'

Irrigation Supply

The L.B. channel system (Per Aar) and the R.B. channel supply water for over 13,000 acres of rice cultivation and 7500 acres of sugar cane cultivation.

61.2 VENDARASAN KULAM

Location

Adjoining Kantalai Tank.

Co-ordinates G/2 (6.25 × 2.00)

Scheme

Supplements supply to fields under Kantalai Tank.

Data

Tank

Catchment area 4.3 sq. miles
(Is also linked with Kantalai Tank)

Length of Tank Bund 3800 ft.

Tank Full:

Storage 20,000 ac. ft.
Head of water 39.5 ft.

Spill:

Nature Natural
Elevation 180 M.S.L.

Sluices:

2 Nos. 3'6" ϕ

Irrigation Supply

Benefits land under Kantalai Tank.

61.3 GALMETIYAWA TANK

Location

About 18 miles south west of Trincomalee, off the Trincomalee-Dambulla Road.

Co-ordinates G/2 (9.75 × 8.60)

Historical

Parakrama Bahu I (1153-1186) founded Panduvijayagama; Nissanka Malla (1187-1196) is recorded to have constructed Panduvijayakulam, from an inscription found at the site.

Restoration

Restoration commenced 1960.

Scheme

Storage tank

Data

Tank

Catchment area 4½ sq. miles

Length of Tank Bund 1400 ft.

Tank Full:

Storage 7770 acre ft.
Head of water 36 ft.
Area of water spread 400 acres

Spills:

Nature Channel flow
Location R.B.
Length 300 ft.

Sluices:

Location L.B.
Size 36" dia.

Irrigation Supply

Channel system conveys supply for 600 acres of rice cultivation for new colonization development.

61.4 PARAVIPANCHAN KULAM

Location

25 miles south west of Trincomalee, on the Trincomalee-Dambulla Road.

Co-ordinates G/2 (8.1 × 5.7)

Scheme

Flood Detention tank impounding flow of Paravipanchan Aru.

Data

Tank

Catchment area	5½ sq. miles
Length of Tank Bund	1400 ft.
Tank Full:	
Storage	4500 acre ft.
Head of water	25 ft.
Area of water spread	250 acres
Spills:	
Nature	Concrete chute on rock
Location	R.B.
Length	120 ft.
Sluices:	
Location	L.B.
Size	36" dia.

Irrigation Supply

There is no direct development under the work as such, but the supply aids development under Kantalai Tank and also helps the new settlement from flood damage by Paravipanchan Aru.

63. PAN OYA

63.1 ANDANKULAM

Location

About 3½ miles west of Trincomalee, on the Kandy Road.

Co-ordinates D/23 (4.7 × 7.6)

Restoration

Present work restored in 1885 at an initial cost of Rs. 32,953/-

Data

Tank

Catchment area	4.7 sq. miles
Length of Tank Bund	4300 ft.
Tank Full:	
Storage	1350 acre ft.
Head of water	13 ft.
Area of water spread	210 acres
Spills:	
Nature	Masonry
Location	Masonry
Length	L.B. 46 ft. R.B. 100 ft.
Sluices:	
Location	L.B. 12" dia. R.B. 16" dia.
Size	

Irrigation Supply

An R.B. main channel about 2 miles long and a short L. B. channel, together supply irrigation to 460 acres, situated on either side of the Trincomalee-Anuradhapura Road.

63.2 PERIYAKULAM

Location

About 6 miles on the Trincomalee-Kuchchaveli Road and two miles to west.

Co-ordinates D/18 (3.9×2.6)

Historical

Extensive archaeological ruins of places of worship in the vicinity indicate the ancient origin of the work. The cultivators even now make an annual observance to Iyanar, the presiding deity over agricultural enterprise, at the site of a huge monumental stone on the tank bund.

Restoration

The present tank was restored in 1869.

Scheme

As catchment is insufficient, is augmented by supply from Pokkankulam which has a catchment of $2\frac{1}{2}$ sq. miles and storage 300 acre ft.

Data

Tank

Catchment area	$3\frac{1}{4}$ sq. miles	
Length of Tank Bund	4100 ft.	
Tank Full:		
Storage	1600 acre feet	
Head of water	$10\frac{1}{2}$ ft.	
Area of water spread	275 acres	
Spills:		
Nature	Masonry	Masonry
Location	L.B.	Central
Length	90 ft.	28 ft.
Sluices:		
Location	L.B.	R.B.
Size	$1\frac{1}{2}' \times 2\frac{1}{2}'$	12" dia.

Irrigation Supply

A total extent of 270 acres in Nilaveli village is regularly cultivated by the aid of left bank and right bank channel systems from the tank.

63.3 PERIYA ELUMPURUKKI KULAM

Location

About 10 miles north west of Trincomalee.

Co-ordinates D/18 (1.9×4.9)

Restoration

Restored in 1960.

Scheme

Apart from impounding flow from its own catchment, the work had, one time, been augmented by diverting supply from Pay Oya, when it would have been a major scheme of the area.

Data

Tank

Catchment area	$2\frac{1}{2}$ sq. miles	
Length of Tank Bund	6600 ft.	
Tank Full:		
Storage	600 acre feet	
Head of water	7 ft.	
Area of water spread	200 acres	
Spills:		
Nature	Channel flow	
Location	L.B.	R.B.
Length	300 ft.	300 ft.
Sluices:		
Location	Central	
Size	15 ins. dia.	

Irrigation Supply

The work commands an extent of 200 acres for development in Nilaveli village.

64. PANKULAM ARU BASIN

The Pankulam is a short stream to the north of Trincomalee. It has its source in the hills north of Kantalai, and after being impounded at Mora Wewa and at Pankulam flows into the sea near Kuchchaveli.

Hydrology

The stream is in the dry zone; the basin is 147 sq. miles in extent and is estimated to convey an average annual flow of 223,000 acre feet.

Land Use

The newly constructed Mora Wewa with the proposed extension works now in hand would utilize the commandable water flow.

Basin Requirements

More land is available for development in the lower reaches, which can conveniently be opened up with the aid of a channel system from the reservoirs proposed in the neighbouring Yan Oya basin.

64. PANKULAM ARU BASIN

64.1 MORA WEWA

Location

About $3\frac{1}{2}$ miles south of 16th mile on the Trincomalee-Anuradhapura Road.

Co-ordinates D/22 (6×7.7)

Historical

Is an ancient work (not to be mistaken with the more well known Mora Vapi in Kala Wewa District where important events took place in the days of old.)

Restoration

Present restoration in 1962.

Scheme

Storage reservoir formed by impounding flow in Pan Oya. Part of the catchment is diverted to tanks that supply the Trincomalee Town Water Supply Scheme.

Data

Tank

Catchment area (effective)	15 sq. miles
Length of Tank Bund	1600 ft.
Tank Full:	
Storage	27,200 acre feet
Head of water	26 ft.
Area of water spread	1900 acres
Spills:	
Nature	Concrete chute fall
Location	L.B.
Length	200 ft.
Sluices:	
Location	R.B.
Size	$4\frac{1}{2}' \times 4\frac{1}{2}'$

Irrigation Supply

A main channel of length $5\frac{1}{2}$ miles, crossing the Trincomalee-Anuradhapura Road through a syphon, along with necessary branch channels etc. effect supply for new development of 300 acres of rice cultivation, in Pankulam village and beyond. Approximate cost Rs. 5 million.

64.2 ETHANDAMURIPPU KULAM TANK

Location

North west of Trincomalee, about 7 miles south west of Kuchchaveli.

Co-ordinates D/12 (10.3 × 3.9)

Restoration

Restored about 25 years ago and subsequently improved.

Data

Tank

Catchment area	3 sq. miles
Length of Tank Bund	6500 ft.
Tank Full:	
Storage	420 acre ft.
Head of water	7 ft.
Spills:	
Nature	Channel flow
Location	L.B. R.B.
Length	200 ft. 300 ft.
Sluices:	
Location	L.B. R.B.
Size	9" dia. 9" dia.

Irrigation Supply

About 200 acres are developed with supply from the work.

65. KUNCHU KUMBAN BASIN

65.1 GOMARANKADAWELA WEWA

Location

In Gomarankadawela village, about 5 miles to north of 17th mile on Trincomalee-Anuradhapura Road.

Co-ordinates D/17 (2.2 × 4.4)

Data

Tank

Catchment area	1½ sq. miles
Length of Tank Bund	2300 ft.
Tank Full:	
Storage	600 acre ft.
Head of water	12 ft.
Area of water spread	200 acres
Spills:	
Nature	Concrete
Location	L.B.
Length	100 ft
Sluices:	
Location	Central
Size	12" dia.

Irrigation Supply

About 125 acres are supplied for rice cultivation in a well settled village.

65.2 MADAWACHCHIYA KULAM

Location

Off the 10th mile on the Trincomalee-Anuradhapura Road.

Co-ordinates D/17 (2.5×8.3)

Restoration

Restored in 1960.

Data

Tank

Catchment area 2½ sq. miles
Length of Tank Bund 3700 ft.

Tank Full:

Storage 750 acre feet
Head of water 14 ft.
Area of water spread 190 acres

Spills:

Nature Concrete
Location L.B.
Length 110 ft.

Sluices:

Location Centre
Size 12"×12"

Irrigation Supply

About 300 acres of development is aided by this work.

65.3 NEELA PANIKKAN KULAM

Location

North of Trincomalee, about 12 miles beyond Kuchchaveli.

Co-ordinates D/12 (3.5×6.4)

Historical

Local tradition associates it with a one time hero named Neela Panikkan. The hillock of same name, by the side, also figures in the tradition. Restoration first taken up in 1909. Enlarged about 25 years ago and subsequently improved and enlarged.

Scheme

Formed by impounding the waters of Neela Panikkan Aru.

Data

Tank

Catchment area 10 sq. miles
Length of Tank Bund 3400 ft.

Tank Full:

Storage 1800 acre ft.
Head of water 9 ft.
Area of water spread 430 acres

Spills:

Nature Concrete on rock
Location L.B.
Length Two spills totalling 200 ft.

Sluices:

Location L.B.
Size 18 ins. dia.

Irrigation Supply

A channel system over 1½ miles in length benefits 600 acres in Tiriya village

65.4 CHAMALANKULAM TANK

Location

About 5 miles south west of Kuchchaveli, north of Trincomalee.

Co-ordinates D/12 (9.0 × 4.9)

Restoration

Restored in 1941 and subsequently improved.

Data

Tank

Catchment area 6½ sq. miles
Length of Tank Bund 7100 ft.

Tank Full:

Storage 400 acre ft.
Head of water 6 ft.
Area of water spread 170 acres

Spills:

Nature	Concrete	Natural
Location	L.B.	R.B.
Length	180 ft.	120 ft

Sluices:

Location	L.B.	R.B.
Size	12 ins. dia.	12 ins. dia.

Irrigation Supply

Target for development 300 acres.

67. YAN OYA BASIN

The Yan Oya rises in the hills near Dambulla and after being impounded at Huruluwewa, flows a length of 94 miles to reach the sea south of Pulmoddai, about thirty miles north of Trincomalee.

The entire Yan Oya basin is in the dry zone and is 594 square miles in extent. The mean annual flow from the catchment is estimated to be 636,000 acre feet. There are several minor tanks dependent on the flow of its tributaries, particularly in the upper reaches of the catchment. Huruluwewa reservoir was restored a few years back, impounding the flow from 77 sq. miles of the Yan Oya catchment; but due to the unusual shape of the catchment, being narrow and long, the tank has not been filling up to full capacity regularly, every year.

Land use in the basin consists of rice cultivation and home gardens under the settlements of each of the minor tanks and the major work Huruluwewa.

Basin Requirements

There is abundant land available for development, which is now in jungle in the basin, particularly from where the Oya crosses the Anuradhapura-Trincomalee Road. There is also appreciable flow in the Oya during the North East monsoonal season. Reservoirs and schemes of development to open up the jungle lands are required.

Proposed Development

A large reservoir has been proposed near Horowupotana, called the Horowupotana Reservoir, and a smaller reservoir lower down, both of which between them would store sufficient flow to effect irrigation supply to a large extent. In fact, the scheme can function jointly along with the neighbouring basins Pankulam (on right bank) and Ma Oya (on left bank), benefiting a total extent of about 70,000 acres.

The proposals under formulation by the U. N. S. F. Team for the development of the water resources in the Mahaweli Ganga basin, envisages the augmentation of the flow in Yan Oya by the N. C. P. supply canal; Huruluwewa would then provide assured supply to lands depending on the tank. Proposals also include (only) one new Yan Oya reservoir in the terminal reaches of the Oya, called the Yan Oya reservoir, capable of developing 27,000 acres with irrigation supply.

67.1 HABARANA TANK

Location

At Habarana.

Co-ordinates G/16 (1.5×5.05)

Scheme

Storage Tank

Data

Tank

Catchment area 2 sq. miles
Length of Tank Bund 3940 ft.

Tank Full:

Storage 330 acre ft.
Head of water 10 ft.

Spills:

Nature Masonry C.O.
Location L.B.
Length 120'

Sluices:

Location R.B.
Size 18" dia. Hume Pipe
Tower Sluice.

Irrigation Supply

Length of Channel one mile, irrigating 110 acres.

67.2 HORIWILA TANK

Location

About a mile off from the 9¼ mile stone on the Maradan-kadawela-Habarana Road.

Co-ordinates F/20 (10.2×5.4)

Restoration

Restored 1952-54 and improved after flood damage in 1957.

Scheme

Impounds the flow in Horiwila Oya.

Data

Tank

Catchment area 27¼ sq. miles
Length of Tank Bund 1¼ miles

Tank Full:

Storage 4000 acre ft
Head of water 16 ft.
Area of water spread 600 acres

Spills:

Nature Concrete Structure
Location R.B.
Length 300 ft.

Sluices:

Location L.B. R.B.
Size 15" dia. 15" dia.

Irrigation Supply

Left Bank Channel system about 2 miles long provides irrigation supply to 320 acres. The Right Bank Channel, crossing the spill channel by a syphon is about a mile long and irrigates 190 acres.

67.3 HURULU WEWA

Location

Is situated about $\frac{1}{2}$ mile east of Yakalla village and can be approached from Kekirawa, along 17 miles motorable road leading to Kahatagasdigiya.

Co-ordinates F/15 (13.2×8.7)

Historical

An ancient work with reference made during King Mahasena's (276-303 A.D.) regime, when it was known as "Challural Vapi."

Project

Restoration was commenced on 10.7.1949. The head works and the left bank scheme received early attention and the tank commenced holding water from 1953. Much work was done subsequently to complete the scheme.

The work encountered phenomenal floods in December 1957 (Habarana 16" rain in a day) and breached disastrously for over 1100 foot wide; was subsequently restored in 1958.

Data

Tank

Catchment area 77 sq. miles
Length of Tank Bund 8730 ft.
Maximum height 81 ft.

Tank Full:

Storage 55,000 acre ft.
Head of water $27\frac{1}{2}$ ft.
Area of water spread 4,000 acres

Spills:

	(1) Concrete Ogee Left Bank	(2) Natural High Level Left Flank
Nature		
Location		
Length	400 ft.	500 ft.

Sluices:

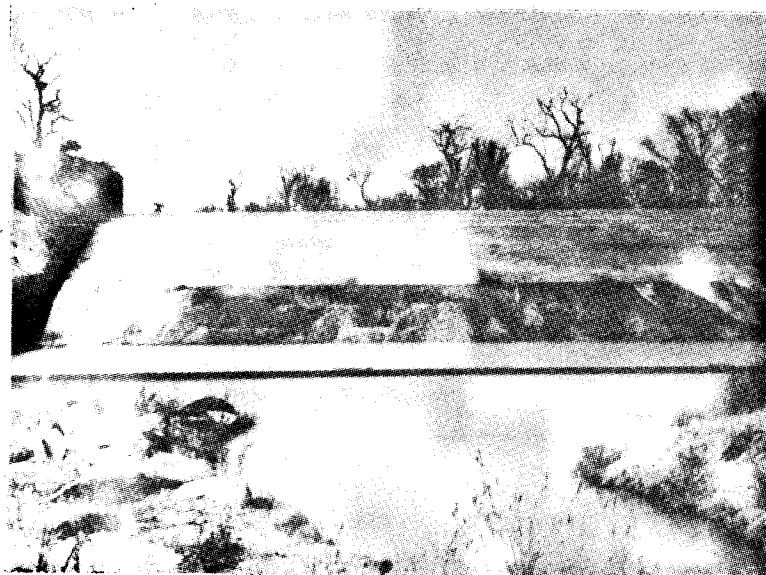
	L.B.	Central	R.B.
Location			
Size	30" dia.	30" dia.	30" dia.

Irrigation Supply

The Left Bank and the Right Bank Channel systems, each about 10 miles long, irrigate over 4,000 acres each, consisting of private lands 750 acres and colonization area 7150 acres. About 850 acres at the end of the R.B. is augmented from Keulkada Wewa.

Capital Cost

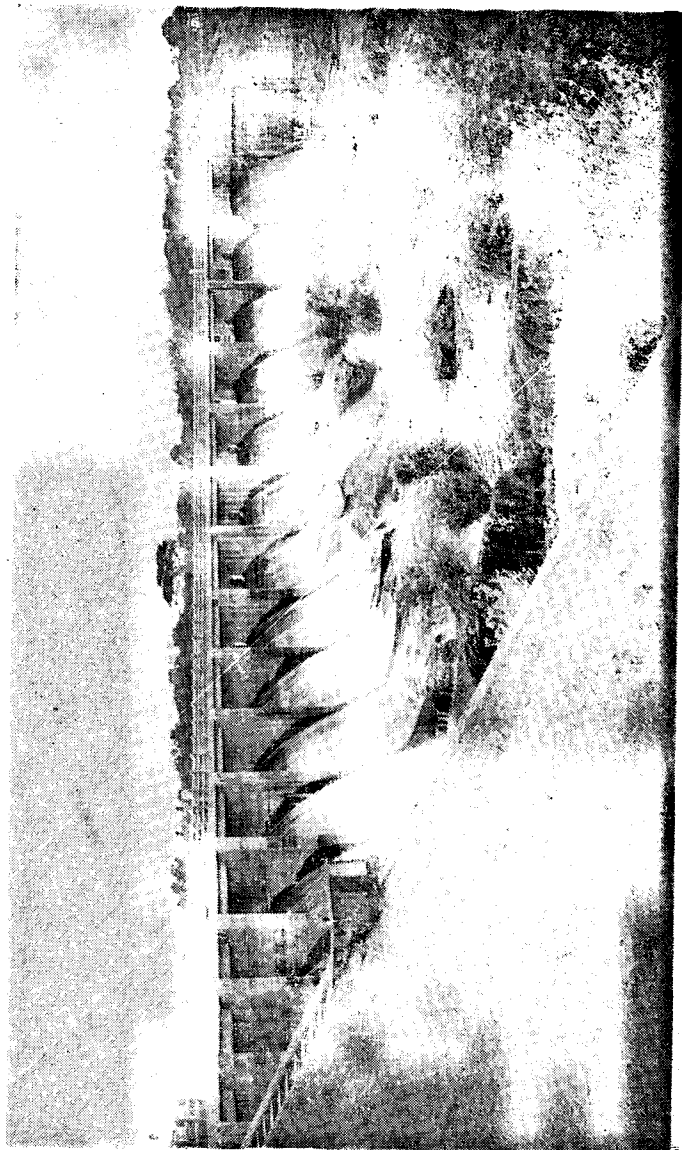
Rs. 7 million.



64.1 MORAWEWA SPILL



67.3 VIHARE ON HURULUWEWA TANK BUND



67.3 HURULUWEWA—SPILL

67.4 KEULKADA TANK

Location

About 10 miles north of Huruluwewa.

Co-ordinates G/6 (6.0×6.6)

Historical

An ancient work, which may have functioned at the same time as Huruluwewa. Ruins of sluice structure etc. seen in the vicinity.

Scheme

Restored in 1959 chiefly to augment supply to lands in the end tracts of Huruluwewa Scheme.

Data

Tank

Catchment area	11½ sq. miles
Length of Tank Bund	1600 ft.

Tank Full:

Storage	4700 acre ft.
Head of water	20 ft.
Area of water spread	460 acres

Spills:

Nature	Clear overfall chute	
Location	L.B.	L.B.
Length	100 ft.	200 ft.

Sluices:

Location	L.B.	R.B.
Size	30" dia.	18" dia.

Irrigation Supply

A four mile main channel conveys supply to Tracts 11 and 12 of Huruluwewa R.B. Scheme—extent about 850 acres.

67.5 DIUL WEWA

Location

About two miles north of the 71st mile on the Anuradhapura-Trincomalee Road.

Co-ordinates D/21 (0.7×1.5)

Historical

Stone ruins of Bisokotuwa Sluice indicate its antiquity, but the work has not been identified so far.

Restoration

Restored in 1952 but breached again in 1957 for the major flood of December 1957.

Data

Tank

Catchment area	6.8 sq. miles
Length of Tank Bund	700 ft.
	(High ground in between)

Tank Full:

Storage	3000 acre ft.
Head of water	22 ft.
Area of water spread	350 acres

Spills:

Nature	Concrete Structure	} and two other H.L. natural spills
	60 ft.	
Location	R.B.	
Length	60 ft.	

Sluices:

Location	L.B.
Size	24" dia.

Irrigation Supply

Over 400 acres are developed with rice cultivation, with supply from this work.

69. MA OYA BASIN

Physical Features

The Ma Oya is a forty mile long river in the North Eastern regions of Ceylon; commencing in the Kahatagasdigiya area, the stream collects drainage from 400 sq. miles and passing Kemitigollewa and Padawiya regions, empties into the sea at the Kokilai Lagoon.

The stream receives a flow estimated at 384,000 acre feet as drainage from the catchment.

Land use is dependent on the several minor tanks constructed on the tributaries and the major tank Padawiya completed recently. The main stream is thus utilized.

Proposals for development

The tributary basins have not been harnessed for water resources utilization. The proposals include a new reservoir across the northern tributary to be called Kiul Oya reservoir and to provide irrigation supply to about 2,000 acres.

The U. N. S. F. Team's proposals for development of this basin, consists of augmentation of flow in the Ma Oya by conveyance from the N. C. P. canal and the construction of three reservoirs, called the Kiulwewa, Kitulgala and the Mukunu Wewa reservoirs across the tributaries which would provide irrigation supply to a total of 86,000 acres.

69.1 PADAWIYA TANK

Location

About 50 miles north east of Anuradhapura, proceeding through Medawachchiya and Kebitigollewa.

Co-ordinates D/11 (1.0×3.2)

Historical

Identified as Ratmalkandha Vapi of Mahasena and Danavapi of Moggallana II (535-555 A.C.); later known as Padivapi, was enlarged and put into good order by Parakrama (1153-1186). Nissanka Malla (1187-1196) decreed Padivapi a sanctuary for animals.

Restoration

Present tank restored in 1954-58.

Scheme

Storage reservoir impounding the waters of Mora Oya and Mukunu Oya.

Data

Tank

Catchment area 106 sq. miles
Length of Tank Bund $2\frac{1}{4}$ miles

Tank Full:

Storage 72,500 acre ft.
Head of water 22 ft.
Area of water spread 5,800 acres

Spills:

Nature	Concrete and Rock with gates
Location	Left Bank
Length	O'gee Section — 50 ft.
	Trapezoidal — 590 ft.
	Rock — 300 ft.

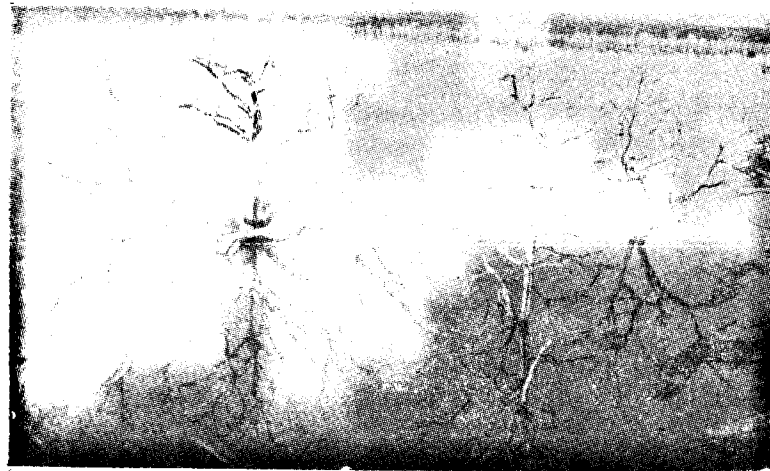
Sluices:

Location	R.B.
Size	3 Openings $4' \times 2'-6"$ each

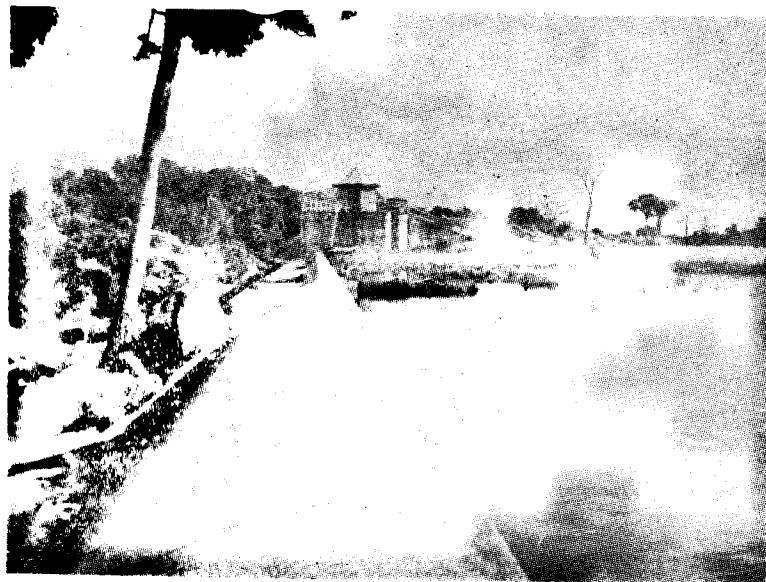
Irrigation Supply

An extensive channel system, on right bank only, supplies water to about 13,000 acres of rice cultivation.

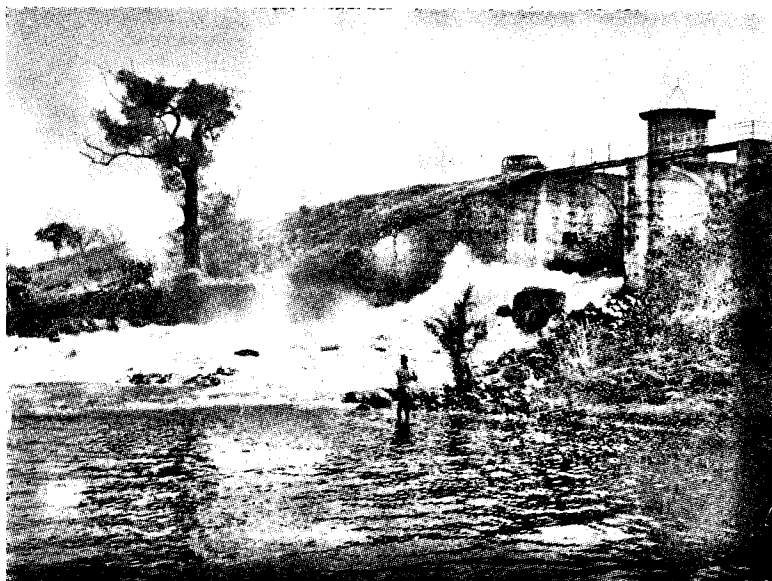
Approximate cost Rs. 22 million.



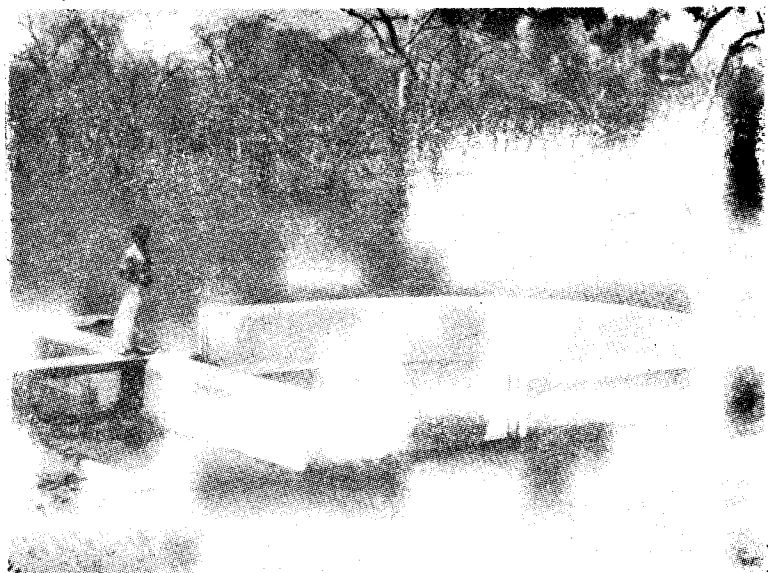
69.1 VIEW OF PADAWIYA TANK FROM CIRCUIT BUNGALOW



69.1 PADAWIYA TANK SPILL



69.1 PADAWIYA TANK SLUICE



69.1 PADAWIYA SCHEME—CHANNEL SPILL

73. MANAL ARU (NAY ARU) BASIN

73.1 THANNIMURIPPU KULAM

Location

About 20 miles north east of Puliyankulam.

Co-ordinates D/1 (2.3 × 7.9)

Historical

Work of antiquity. Identified as Kurundavapi of King Aggabodhi I (575-608). Celebrated Kurantan Kulam of old, together with Kurantan ūr (settlement), Kurantanmalai (place of worship) and Kurantan Cholai (parkland); reported in Sessional Paper No. XLVI of 1886 by Henry Parker.

Restoration

Restored in 1959 and subsequently improved.

Scheme

Impounds the waters of Thanikallu Aru and Periyak Aru, tributaries of Nay Aru.

Data

Tank

Catchment area	51 sq. miles
Length of Tank Bund	2½ miles

Tank Full:

Storage	15,000 acre feet
Head of water	19 ft.
Area of water spread	1500 acres

Spills:

Nature	Structure (C.O.)
Location	R.B.
Length	600 ft.

Sluices:

Location	L.B.	R.B.
Size	3'-6" × 3'	3'-6" × 3'

Irrigation Supply

Target area for development, 3,330 acres.

74. KODALIKALLU ARU BASIN

74.1 KANUKERNI TANK

Location

About 6 miles south of Mullaitivu.

Co-ordinates B/21 (5.3×5.1)

Restoration

Present work restored 1895-1905.

Scheme

Impounds the waters of Kodalikallu Aru.

Data

Tank

Catchment area	26 sq. miles.
Length of Tank Bund	4200 ft.

Tank Full:

Storage	2100 acre feet
Head of water	12 ft.
Area of water spread	430 acres

Spills:

Nature	Structure (C.O)
Location	L.B.
Length	300 ft.

Sluices:

Location	L.B.	R.B.
Size	12" diameter	12" diameter

Irrigation Supply

The work regularly aids the development of 1250 acres of rice cultivation, in Mullaitivu area.

75. PER ARU BASIN

75.1 MUTHU IYAN KADDU KULAM

Location

About 15 miles east of Mankulam; is reached from Oddichuddan—on the Mankulam-Mullaitivu Road.

Historical

Earlier known as Muthu Rayan Kaddu Kulam, is referred to as "Man Malai" by Parker in Sessional Paper XLVIII of 1886, where he describes the state of work and also of the Adukku Kallu Anicut (Tekkam) across the same Per Aru about two miles below. The massive anicut is 18 feet thick, 15 feet high and over 200 feet in length.

Restoration

Restoration commenced 1959.

Scheme

The work impounds the waters of Per Aru.

Data

Tank

Catchment area	66 sq. miles
Length of Tank Bund	5850 ft.

Tank Full:

Storage	41,000 acre feet
Head of water	27 ft.
Area of water spread	3,100 acres

Spills:

Nature	Structure on rock
Location	R.B.
Length	500 ft.

Sluices:

Location	L.B.	R.B.
Size	3'-3"×4'-6"	3'-3"×4'-6"

Irrigation Supply

Target for development was 6000 acres of rice cultivation, equally divided between Left Bank and Right Bank channel systems (approx). Cultivation of subsidiary food crops has now been substituted.

78. TERAVID ARU BASIN

78.1 UDAYAR KADDU KULAM

Location

Off the 16th mile on the Paranthan-Mullaitivu Road and 3 miles to south.

Co-ordinates:- A/20 (4.3×5.4).

Scheme

Formed by damming the waters of Teravil Aru.

Data

Tank

Catchment area	24 sq. mls.
Length of Tank Bund	4900 ft.

Tank Full:

Storage	6500 ac. ft.
Head of water	18 ft.
Area of waterspread	750 acres

Spills:

Nature	Structure
Location	L.B.
Length	410 ft.

Sluices:

Location	L.B.	R.B.
Size	24" dia	30" dia.

Irrigation Supply

A two mile long channel system has a target extent of 1200 acres for development with rice cultivation.

79. PIRAMENTHAL ARU BASIN

79.1 VISUWAMADUKULAM

Location

About 3 miles south of the 13th mile on Paranthan-Mullaitivu Road.

Co-ordinates A/20 (1.8×7.6)

Scheme

Impounds the flow in Piramenthal Aru.

Data

Tank

Catchment area	12½ sq. mls.
Length of Tank Bund	4320 Ft.

Tank Full:

Storage	3000 acre ft.
Head of water	18 ft.
Area of water spread	250 acres

Spills:

Nature	Structure
Location	R.B.
Length	300 ft

Sluices:

Location	L.B.	R.B.
Size	24" dia	24" dia

Irrigation Supply

Extent of development in rice cultivation 600 acres.

80. NETHALI ARU BASIN

80.1 KALMADU KULAM

Location

About 11 miles east of Kilinochchi, situated beyond Iranaimadu Tank

Co-ordinates A/19 (13.0×6.6).

Early History

Not known, other than what the name implies, viz. a tank formed by damming low swamp (madu) at a rocky (Kal) site.

Restoration

Present work restored in 1951-1953 and improved subsequently.

Scheme

Impounds the waters of Nethali Aru.

Data

Tank

Catchment area	26½ sq. mls.
Length of Tank Bund	4500 ft.

Tank Full:

Storage	9150 ac. ft.
Head of water	21 ft.
Area of water spread	1000 acres

Spills:

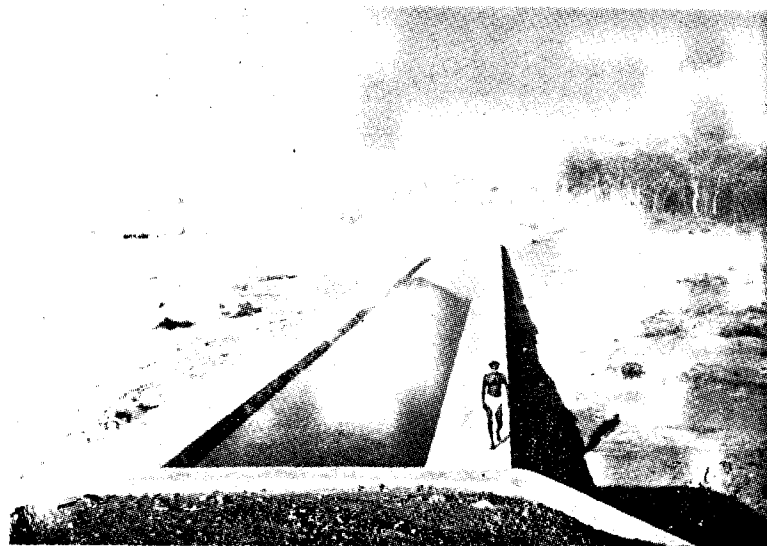
Nature	Structure
Location	R.B.
Length	400 ft.

Sluices:

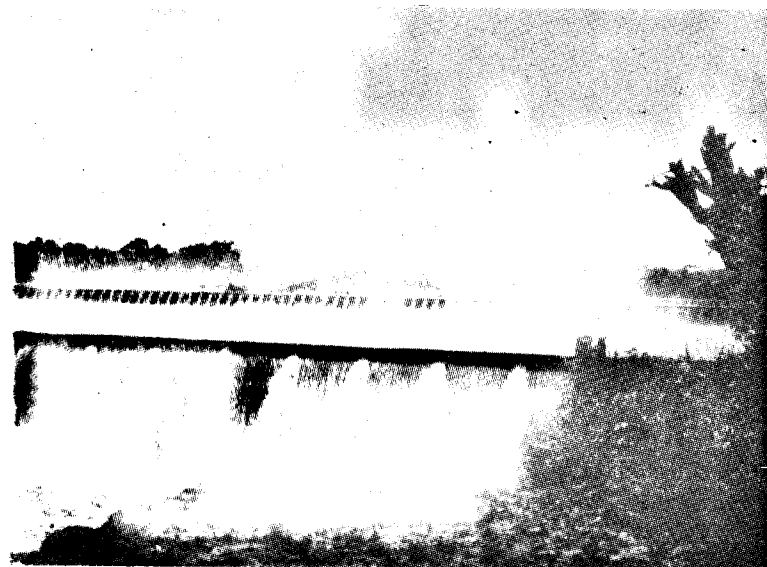
Location	L.B.
Size	30" dia.

Irrigation Supply

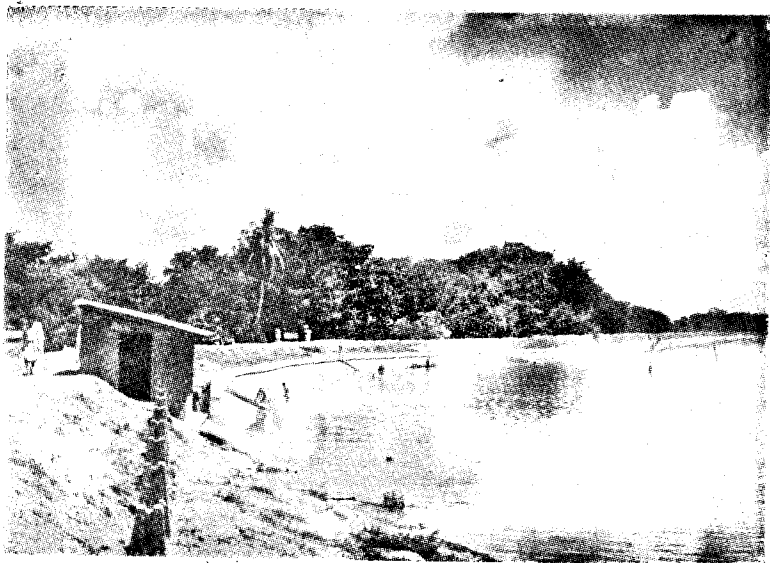
Target for development 450 acres of middle class new Colonization Scheme and supply of irrigation water to existing rice fields below.



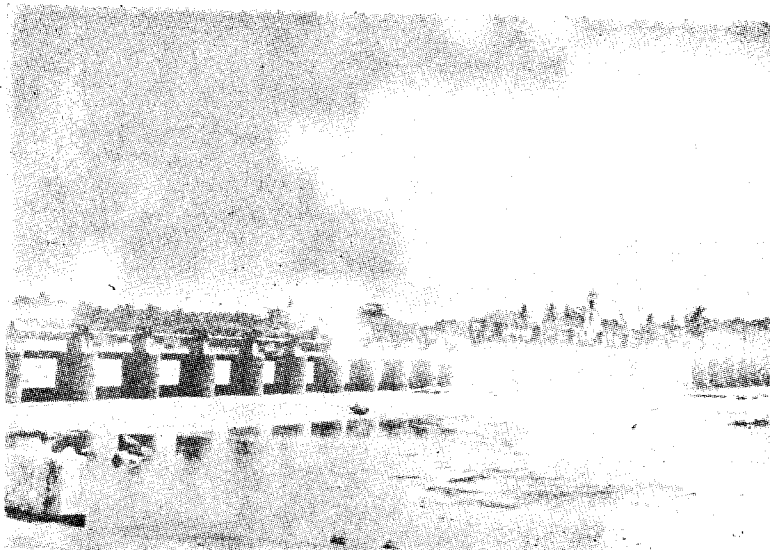
80.1 KALMADU KULAM SPILL



81.3 IRANAIMADU KULAM SPILL



81.3 IRANAIMADU SCHEME—DRI ARU TANK



81.4 THONDAIMANAR BARRAGE—JAFFNA LAGOON SCHEME

81. KANAGARAYAN ARU BASIN

The Kanagarayan Aru has its source near Vavuniya and flowing in a south to north direction for over sixty miles, fills the Iranaimadu tank and eventually falls into the Elephant Pass Lagoon.

Historically it is recorded that in order to increase the flow in the river, its catchment area was extended by joining up by a cut canal, drainage from areas above Kanagarayan Kulam, which apparently was the terminal source then.

The basin is entirely in the dry zone and therefore flow in the river is limited to the North East monsoonal season only.

Land Use

Much of the basin is yet in jungle, dotted with isolated villages and settlements below minor tanks. The main development areas are under Kanagarayan Kulam and Iranaimadu Tank where about 20,000 acres are under rice cultivation.

Proposals for new development

A new storage tank has been suggested about fifteen miles above Iranaimadu Tank where about 7,000 acres could be developed.

The scope of this new proposal is visualized to be much bigger with the proposed N. C. P. canal from the Mahaweli diversion augmenting the flow in the Kanagarayan Aru.

81.1 CHEMAMADU

Location

About 14 miles north east of Vavuniya, on the Mamaduwa Road.

Co-ordinates C/10 (4.1×1.6)

Historical

The tank (madu) may have obtained its name from the "shema" flowering plants, often found in the jungle.

Restoration

Restored in 1958.

Scheme

Impounds flow of the topmost reaches of Kanagarayan Aru.

Data

Tank

Catchment area	14½ sq. miles
Length of Tank Bund	5000 ft.

Tank Full:

Storage	2000 acre ft.
Head of water	9'-8"
Area of water spread	400 acres

Spills:

Nature	Structure (C.O.)
Location	L.B.
Length	300

Sluices:

Location	L.B.	R.B.
Size	24" dia.	24" dia.

Irrigation Supply

The work aids the development of 600 acres of rice cultivation.

81.2 KANAGARAYAN KULAM

Location

Situated west of 133rd mile, Kandy-Jaffna Road.

Co-ordinates C/4 (12.7×4.5)

Historical

Original name said to be suggestive of one time colonist settlers of the Vanni—the "Rayans", along with Pallava rayan, and Akka rayan Kulams

Restoration

Present tank restored in 1888-1896, initial cost Rs. 27,714.

Scheme

Source of Kanagarayan Aru.

Data

Tank

Catchment area	3.5 sq. miles
Length of Tank Bund	6100 ft.

Tank Full:

Storage	700 acre feet
Head of water	11 ft.
Area of water spread	160 acres

Spills:

Nature	Structure	Structure
Location	L.B.	R.B.
Length	85 ft.	52 ft.

Sluices:

Location	Central
Size	12" diameter

Irrigation Supply

Irrigable area 125 acres.

The work aids rice cultivation in 75 acres.

81.3 IRANAIMADU KULAM

Location

This reservoir is sited $4\frac{1}{2}$ miles east of Kilinochchi Town. From the Kandy-Jaffna Road, turn right at 157 $\frac{1}{2}$ M.P. and proceed along Wilson Road for a distance of $4\frac{1}{2}$ miles to the tank bund.

Co-ordinates A/19 (7.95×6.50).

Original construction:-

This is the first tank to be constructed new, by the Irrigation Department, other than the restoration of earlier works. The original proposal and estimate were prepared by H. T. S. Ward, Director of Irrigation in 1902, to hold 26' of water. Work was commenced in 1906 and completed in 1922. All work was done with manual labour by the Pioneer Labour Force. The tank was formed by joining up and damming two (iranai) low lying swamps (madu) of the Kanagarayan Aru.

Subsequent improvement:-

The tank was raised in 1951 to hold 30 ft. and an additional sluice was constructed on the R. B. Additional lands were taken up on the R. B. & L. B. areas.

Tank Data:-

Catchment area	227 sq. miles.
Length of Tank Bund	9850'
Tank Full:	
Storage	82,000 ac. ft.
Head of water	30': F.S.L. 57.0 M.S.L.
Area of water spread	5750 acres

Spills:

Nature—	C/O spill
Location	L.B. end.
Length	600'

Sluices:

Location	L.B.	R.B.
Size	5'-0" $\times$ 4'-0"	4' $\times$ 2'-8"

Irrigation Supply:-

L.B.

Main Channel	3m. 4700'	Land irrigated private	14,908 acres
Distributary	2m. 3886'	Colonization area	1,131 "

R. B.

Main	7m. 400'		
Distributary	2m. 4950'	Colonization area	2,805 "
Total			18,844

81.4 THE JAFFNA PENINSULA LAGOON SCHEME

Location

The name "Jaffna Peninsula Lagoon" has become attributed individually to each and collectively to all the lagoons in and around the Jaffna Peninsula.

Within the Jaffna Peninsula there are the Vadamarachchi and the Upparu lagoons. Of these the first forms the north and east lagoons with the sea outfall and ingress at Thondamannar. The second, often referred to as the South Lagoon is linked to the sea at Ariyalai, in the outskirts of Jaffna Town.

The external lagoons i.e. Elephant Pass Lagoon and Jaffna Lagoon are to the east and west of Elephant Pass. The Elephant Pass Lagoon stretches from Elephant Pass to the eastern fringe of the Peninsula at Chundikulam. The Jaffna Lagoon is the sheet of water west of Elephant Pass and is the largest of them all.

Historical

It has been said that the lagoons in the Jaffna Peninsula were formed by subsidence due to subterranean deposits getting dissolved.

In 1879, Sir William Twynam refers to a tradition that these lagoon areas were once cultivated lands, without any sea water entry. He promoted a scheme for their reclamation.

In 1916, due to persistent requests of Mr. Horsburg, an attempt was made to prevent salt water entry into the East Lagoon, and to retain at least a foot of fresh water.

Scheme

Reclamation of the areas, by shutting off any further sea water entry and its gradual replacement by fresh water.

JAFFNA PENINSULA LAGOON SCHEME

THE VADAMARACHCHI LAGOON

Location

The sea outfall of this lagoon is through Bridge near the $7\frac{1}{2}$ mile on the Pallai-Valvettiturai Road, 13 miles north of Jaffna.

Co-ordinates A/23 (0.8×4.0)

Historical

Thondamannar (Thondai-mannaru) is said to have been excavated by Thondai-mann to provide safe shelter to fishing craft against the fierce North East monsoonal storms.

Scheme

Unfortunately the Thondaimannaru also provides entry for sea water to inundate and render saline over 5000 acres.

The ingress is particularly heavy during the heavy blowing and high seas of the North East monsoonal season.

Project consists of a barrage across the outfall.

Data

Thondaimannar Barrage Structure

Catchment area	11.5 sq. miles
Length of Barrage	613 ft.
Permanent Spillway:	
Length	200 ft.
Solid Crest	2.50 M.S.L.
Top of planking	4.00 M.S.L.
Gated Openings:	
Total No. 18	
Gate Size: Upper	20' x 4'
Lower:	20' x 4'
Crest Level of Barrage (Gates closed position)	4.0 ft. above M. S. L.
Sill of Planking in Permanent Spillway	2.5 ft. above M.S.L.
Sill of Bottom of 18 No. Gateways	3.5 ft. below M.S.L.
Area inundated by sea water (the North & East Lagoon)	7300 acres
The work cost Rs. 11 lakhs in 1948.	

JAFFNA PENINSULA LAGOON SCHEME

THE SOUTH LAGOON

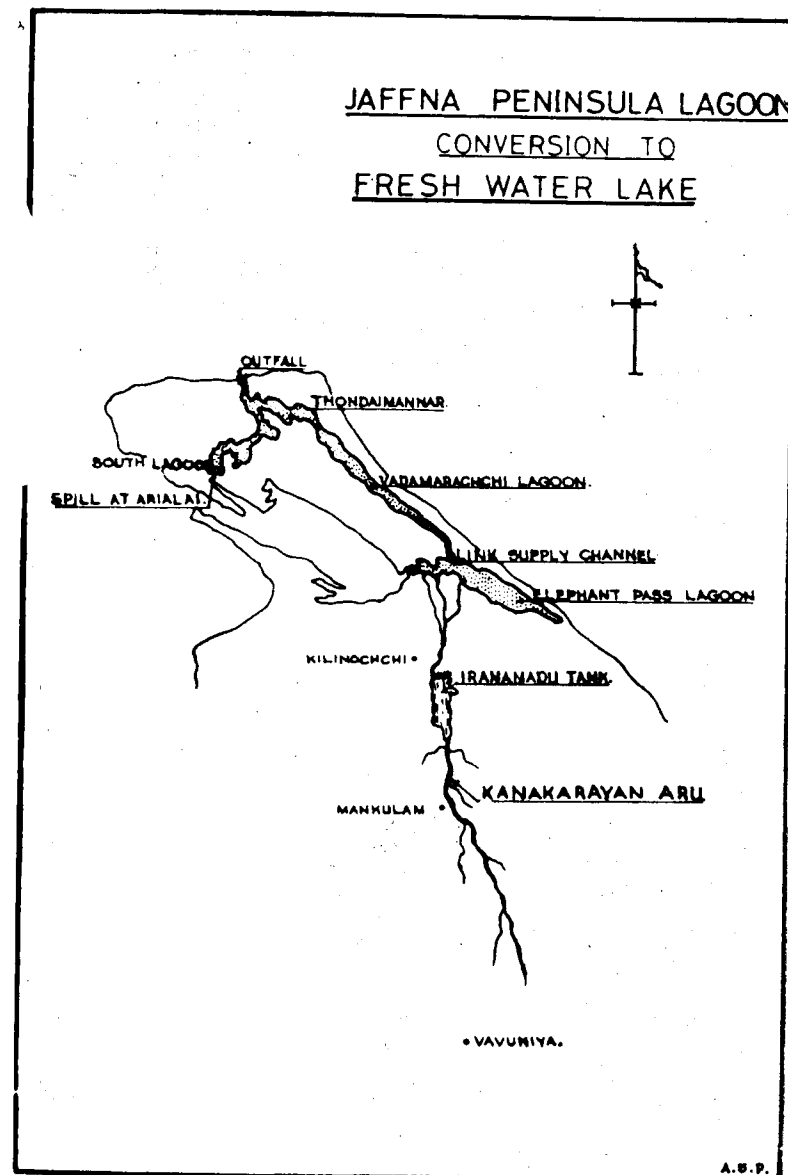
Location

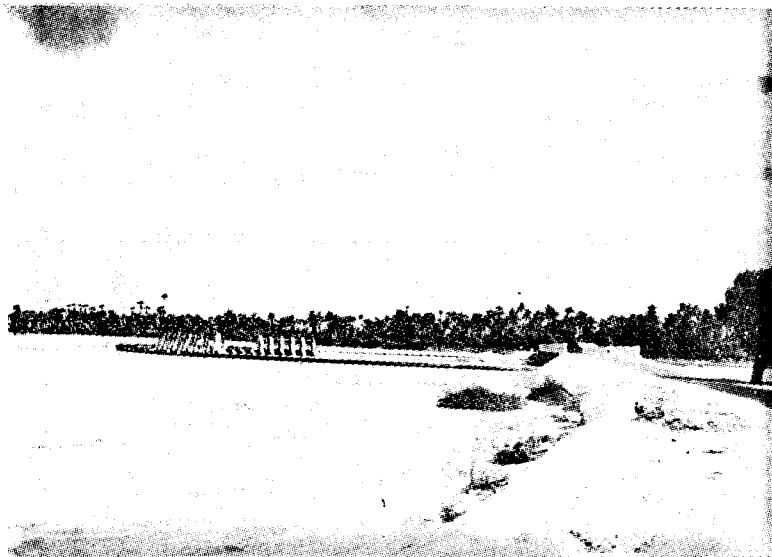
The sea outfall of this lagoon is through the Bridge in the 196th mile on the Jaffna-Kandy Road, 4 miles south east of Jaffna.

Co-ordinates A/2 (10.1 x 2.2)

Scheme

Sea water enters, driven particularly by the South West monsoonal winds, through the bridge and renders waste about 1500 acres of land. Project consists of a semi-circular spill across the outfall.





81.4 ARIYALAI SPILL
SOUTH LAGOON



81.4 ELEPHANT PASS LAGOON

Data

Salt Water Exclusion Structure

Catchment area 85 sq. miles
150 ft. radius, Circular Structure— Length 540 ft.

Openings:

10 Nos. wooden gates 5'-6" × 5 ft.
32 Nos. Planked Openings 5 ft. wide.
Crest Level of Structure 4 ft above M.S.L.
Sill Level of Openings 1 ft. below M.S.L.
Area of water spread 6400 acres.

JAFFNA PENINSULA LAGOON SCHEME

ELEPHANT PASS LAGOON

Location

At Elephant Pass stretching east of the 116th mile on the Kandy-Jaffna Road, about 30 miles south east of Jaffna.

Scheme

The bed of the lagoon, 19,000 acres in extent, has been rendered saline by sea water entry from the west (during South West monsoon) through the bridge at Elephant Pass and from the east (during North East monsoon) by the collapse of the sand bar openings at Chundikulam.

The project envisages the prevention of such ingress and the conservation of fresh water, draining down the Kanagarayan Aru. It was first thought of in 1879, and later pressed for in 1928.

Data

Catchment area 474 sq. miles
Length of Bund at Elephant Pass 2 m. 3740 ft.
(Bridge closed)
Length of Bund cum spill at Chundikulam 1 m. 4700 ft.

Spill:

Length 2000 ft.
Sill level 2.5 M.S.L.
Planking 2.0 ft.
Link Channel:
Length 2½ miles

81.5 NILAWARAI PUMPING SCHEME

PUTTUR

Location

At Puttur, a village two miles west of 10th mile on the Jaffna-Point Pedro Road.

Nilawarai

The "Tidal Well" at Puttur, usually known as the Nilawarai, appears on the surface very much like an ordinary rectangular pit or "kerni", but unlike others it is 164 ft. 6 inches deep.

The well is of approximate dimensions 50 ft. by 40 ft. at the surface but widens out to an undefinable subterranean cavern beneath the top land crust.

Water level is about 0.2 feet below mean sea level and is of the highest potable quality down to a depth of 50 ft. Presence of dissolved impurities become evident below that level and the water contained below 80 ft. depth is comparable to sea water; below 130 ft. the contents are even heavier than sea water with more dissolved solids.

Pumping Project

Pumping tests were carried out in 1946 to ascertain the quantity of water that could be drawn daily without making a permanent lowering of the water level and without affecting the wells in the vicinity.

Based on the results of tests, a pumping irrigation development project has been promoted to supply water for the cultivation of subsidiary food crops in 250 acres and has been working satisfactorily since 1950.

83. AKKARAYAN ARU BASIN

83.1 MURIHANDY TANK

Location

About 7 miles west of the 150th mile on Kandy-Jaffna Road.

Co-ordinates A/24 (0.50 × 8.00)

Historical

An ancient village by which is found the original shrine, in commemoration of which is founded the new Murihandy way side temple at 151½ M.S. on Kandy-Jaffna Road.

Data

Tank

Catchment area	7½ sq. mls.
Length of Tank Bund	9500 ft.

Tank Full:

Storage	1800 ac. ft.
Head of water	9 ft.
Area of water spread	420 acres

Spills:

Nature	Structure
Location	R.B.
Length	240 ft.

Sluices:

Location	L.B.	R.B.
Size	18" dia.	18" dia.

Irrigation Supply

Aids development of 420 acres of rice cultivation.

83.2 AKKARAYAN KULAM

Location

About 10 miles west of Murihandy (152nd mile) on Kandy-Jaffna Road.

Co-ordinates A/18 (13.5×4.0).

Historical

An ancient work, the antiquity of which is not known.

Restoration

Present work restored in 1953-54 and subsequently improved.

Data

Tank

Catchment area 45 sq. mls.
Length of Tank Bund 5600 ft.

Tank Full:

Storage 17,000 ac. ft.
Head of water 21 ft.
Area of water spread 2000 acres

Spills:

Nature	Channel flow	High Level
Location	L.B.	R.B.
Length	600'	200'

Sluice:

Location	L.B.	R.B.
Size	36" dia.	2 of 12" dia. each

Irrigation Supply

L. B. channel system aids the development of 2000 acres and the R. B. 1000 acres, of rice cultivation.



83.2 AKKARAYANKULAM SPILL



85.2 KARIYALAI NAGAPADUVAN TANK—CENTRAL SPILL

84. MANDEKAL ARU BASIN

The Mandekal Aru along with the neighbouring eastern basin—Akkarayan Aru, together drain an extent of 181 sq. miles. Both these are north east monsoonal basins which are dry during the other months. They have their source near Puliyanikulam and flow in a north westerly and northerly course for about twenty five miles each, before falling into the sea on either side (west and east) of Poonakeri.

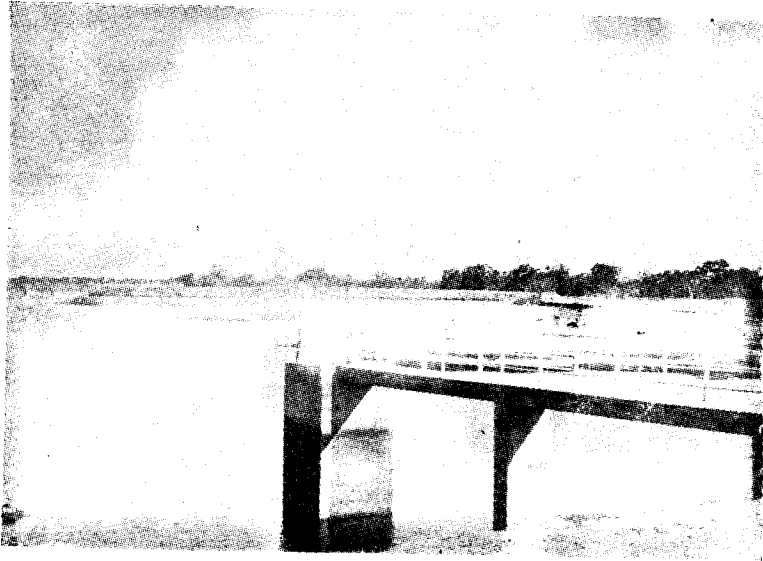
These basins are estimated to have a total annual yield of 72,400 ac. feet, out of which about 50,000 ac. ft. can be expected to be available for storage with reasonable success from year to year.

Land Utilization

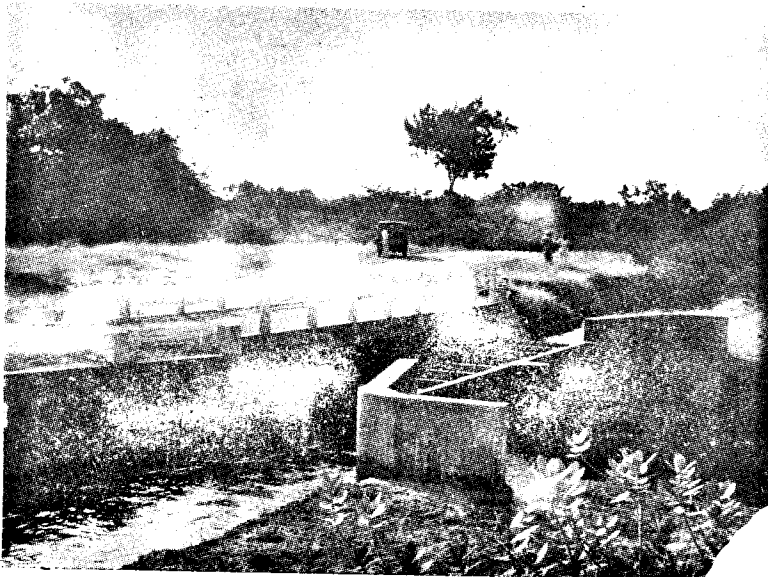
Existing schemes at Akkarayankulam, Vannerikulam, Maniyar Kulam etc., aid the development of about 6,000 acres; the balance area is in jungle.

Proposed development

A long low dam built to impound the flow from both the basins in one reservoir, sited above Poonakeri, would largely aid to sustain the underground water table of this dry arid region, facilitating domestic water supply and also providing irrigation water supply. The irrigation benefits will first accrue to the large extent of about 3,000 acres, now cultivated with rice, subject to the vagaries of direct rainfall. The proposed reservoir should also benefit about two thousand acres of new lands.



86.1 VAVUNIKULAM R. B. SLUICE



86.1 VAVUNIKULAM R. B. CHANNEL TROUGH

84.1 KODDAI KADDINA KULAM

Location

About 13 miles S. W. of Murihandy (152nd mile) on Kandy-Jaffna Road.

Co-ordinates A/23 (11×7.5).

Commenced in 1961.

Data

Tank

Catchment area $9\frac{1}{2}$ sq. mls.
Length of Tank Bund 8000 ft.

Tank Full:

Storage 1880 ac. ft.
Head of water 8 ft.
Area of water spread 520 acres

Spills:

Nature	Structure	Channel flow
Location	L.B.	R.B. (H.L.)
Length	380'	100'

Sluices:

Location	L.B.
Size	24" dia.

Irrigation Supply

Irrigation development of 400 acres of rice cultivation.

84.2 AMBELAPERUMAL KULAM

Location

About 11 miles S. W. of Murihandy (152nd mile) on Kandy-Jaffna Road.

Co-ordinates A/23 (11.2×8.7).

Restoration

Restoration work, 1960.

Data

Tank

Catchment area 24 sq. mls.
Length of Tank Bund $2\frac{1}{4}$ miles

Tank Full:

Storage 3050 ac. ft.
Head of water 9 ft.
Area of water spread 700 acres

Spills:

Nature	Structure
Location	At 1st mile on Bund
Length	675 ft.

Sluices:

Location	L.B.	R.B.
Size	2 of 18" dia.	18" dia.

Irrigation Supply

Target for irrigation development 1000 acres of rice cultivation.

84.3 VANNERIKULAM

Location

About 12 miles direct west of 152nd mile on Kandy-Jaffna Road.

Co-ordinates A/18 (7×3.6).

Historical

Location suggests it having been across and impounding waters of Iyankan Aru: later probably due to breaching and dwindling population became separate tank without a river supply, but only a tank (eri) with direct rainfall (van).

Restoration

Restored in 1950 and subsequently improved.

Data

Tank

Source of supply:

Regulated inflow from Iyankan Aru and from

Catchment area 5 sq. mls.

Length of Tank Bund $1\frac{1}{2}$ mls.

Tank Full:

Storage 1700 ac. ft.

Head of water 8 ft.

Area of water spread 350 acres

Spills:

Nature Structure

Location L.B.

Length 300 ft.

Sluices:

Location L. B.

Size 18" dia.

Inlet channel from Iyankan Aru.

Irrigation Supply

Aids cultivation development of 700 acres—new colonization.

85. PALLAVARAYAN KADDU BASIN

85.1 TENNIYANKULAM

Location

In the Tunukai area of the Jaffna District N. P., situated about 5 mls. N.W. of Tunukai and approachable also from Pallavarayan Kaddu.

Co-ordinates A/23 (7.9×5.8).

The Project

An ancient work formed by damming, Terrankandal Aru, also called Tenniyankulam Aru further down. Improvement work consists of detaining the flow of the main aru, without allowing it to escape at the right flank and other necessary works.

Data

Tank

Catchment area 17.75 sq. mls.

Length of Tank Bund 2 mls. 1500 ft.

Tank Full:

Storage 4,400 ac. ft.

Head of water 10 ft.

Area of water spread 940 acres

Spills:

Nature Masonry C.O.

Location R.B.

Length 500 ft.

Sluices:

L.B. R.B.

18" dia. 18" dia.

Irrigation

Irrigable land extends on both banks and are catered for by left bank and right bank channel system. About 250 acres of cultivated land and over 500 acres new land are commandable for irrigation water supply.

85.2 KARIYALAI NAGAPADUWAN TANK

Location

About 3 miles east of 18th mile on Pooneryn-Mannar Road, A/18 (3.4×1.9)

Restoration

Commenced in 1960.

Scheme

Impounds the flow in Pallavarayan Kaddu Aru.

Data

Tank

Catchment area	55 sq. mls.
Length of Tank Bund	4½ miles

Tank Full:

Storage	7700 ac.ft.
Head of water	10 ft.
Area of water spread	1400 acres

Spills:

Nature	Structure	Structure
Location	L.B.	R.B.
Length	400 ft.	400 ft.

Sluices:

Location	L.B.	R.B.
Size	24" dia.	24" dia.

Irrigation Supply

Target for irrigation development rice cultivation in 1500 acres.

86. PALI ARU BASIN

Pali Aru basin, known to have been well developed even during the pre-Christian era, complete with its then Pali Wavi reservoir and Pali Nagaram township, has its source near Puliyankulam and flows in a north westerly course for over forty miles before reaching the sea.

The river drains an area of 176 sq. miles and about 163,000 acre feet of water flows in the stream annually.

Land Development

A new reservoir, Vavunikulam, has been completed recently across this stream; this work will aid the development of about 20,000 acres, for cultivation of rice, highland settlement and for other associated purposes, all around the village of Tunukai.

Proposals for development

An additional reservoir, to be called the Pali Aru reservoir, can be sited below the Vavunikulam Scheme. Such a reservoir would receive drainage from about 125 sq. miles and aid the development of about three thousand acres of direct cultivation.

The proposals of the U.N.S.F. Team include an upper reservoir, above Vavunikulam called the Pali Aru reservoir to be augmented with the flow diverted to Pali Aru by the N. C. P. canal. This along with a similarly placed Parangi Aru reservoir in the neighbouring basin is envisaged to aid irrigation supply to 45,000 acres in addition to the seven thousand acres already under irrigation.

86.1 VAVUNIKULAM

Location

Is situated about 10 miles S. W. of Mankulam.

Historical

Peliwapi, as this work was known in the olden days, is referred to as lying in a breached condition as far back as 161 B.C., the era of King Dutugemunu (Mahavamsa XXVII. 39-41). Local tradition also attribute the ancient name "Bhavani" to this work.

Restoration work was commenced in 1954, with aid from the Australian Government under the Colombo Plan.

Data

Tank

Catchment area	88 sq. mls.
Length of Bund	2 miles

Tank Full:

Storage	35,300 ac. ft.
Head of water	24 ft.
Area of water spread	3150 acres

Spills:	(1)	(2)	(3)
Nature:	Concrete C.O.	Chl.	Chl.
Location	R.B.	R.B.	L.B.
Length:	700'	1200'	500'

Sluices:

3 Nos.	L.B.	Central	R.B.
	4 × 3½'	18" dia.	4 × 3½'

Irrigation Supply

The work benefits 6000 acres of rice cultivation for new development.

The right bank scheme, with a channel over 8 miles long commands the Tunukai area, nearly 3000 acres in extent.

The left bank scheme benefits a similar extent.

88. PARANGI ARU

Parangi Aru has its source in the Vavuniya-Omantai region and flows westwards for about 40 miles before reaching the sea near the plains of Illuppai Kadavai.

The stream drains a catchment area of 325 square miles and the flow in the stream is assessed as 266,000 acre feet. There are a few minor village irrigation works in the catchment and three somewhat larger works near the source.

Existing land use is entirely dependent on the above tanks. Overall, it can be said that the bulk of the basin yet remains to be developed.

Proposals for development

Proposals formulated consist of two major reservoirs, the first the "Upper Parangi Aru Reservoir" in the upper regions above Mundumurippu and the second the "Lower Parangi Aru Reservoir" being an enlarged and augmented Kurai Tank.

The Upper Parangi Aru reservoir, along with the similarly situated Pali Aru reservoir in the adjacent basin would aid the development of 45,000 acres with irrigation supply.

The Lower Parangi Aru reservoir would be somewhat smaller and may be able to command about two to three thousand acres.

88.1 MADUKANDE TANK

Location

Near 3rd mile on Vavuniya-Horowupotana Road.

Co-ordinates C/15 (1.3×0.6)

Historical

The area is celebrated as one of the places where the sacred "Tooth Relic" was lodged on the journey from India to Anuradhapura. The tank has been once known as Mandu Kotte Tank, from the tree ferns "mandu" that flourish on the hill.

Restoration

Restored 1886-96, initial cost Rs. 19,807.

Data

Tank

Catchment area	4½ sq. miles		
Length of Tank Bund	3550 ft.		
Tank Full:			
Storage	1400 acre feet		
Head of water	13 ft.		
Area of water spread	270 acres		
Spills:			
Nature	Channel	Structure	Structure
Location	L.B. 1	L.B. 2	R.B.
Length	50 ft.	46 ft.	146 ft.
Sluices:			
Location	L.B.	R.B.	
Size	9" dia.	12" dia.	

Irrigation Supply

Extent of 400 acres depend on this work for irrigation water supply.

88.2 VAVUNIYA TANK

Location

At Vavuniya.

Co-ordinates C/14 (12.4×1.7)

Historical

Once known as Villam Kulam, was one of the earliest tanks to be restored.

Restoration

Present work restored in 1887.

Data

Tank

Catchment area	10½ sq. miles	
Length of Tank Bund	5200 ft.	
Tank Full:		
Storage	1620 acre feet	
Head of water	12½ ft.	
Area of water spread	350 acres	
Spills:		
Nature	Structure (C.O.)	Channel
Location	L.B.	R.B.
Length	352 ft.	136 ft.
Sluices:		
Location	(i)	(ii)
Size	12" dia.	9" dia.

Irrigation Supply

The work supplies irrigation water for cultivation of rice in 427 acres and also for the civic amenities of Vavuniya Town.

88.3 MAMADUWA TANK

Location

About 6 miles north east of Vavuniya.

Co-ordinates C/15 (1.7×5.0)

Historical

Believed to be a work of very early origin; reported to have been repaired during the reign of Kassapa V (914-923 A.C.).

Restoration

Restored in 1888-96, initial cost Rs. 16,396.

Tank	Data		
Catchment area	26.84 sq. miles		
Length of Tank Bund	6480 ft.		
Tank Full:			
Storage	3030 acre feet		
Head of water	12'-9"		
Area of water spread	600 acres		
Spills:			
Nature	Masonry	Natural	
Location	L.B.	R.B. (2 spills)	
Length	100 ft.	375 ft.	
Sluices:			
	(i)	(ii)	(iii)
Location	L.B.	L.B.	L.B.
Size	9" dia.	12" dia.	9" dia.

Irrigation Supply

The work aids development of 760 acres of rice cultivation in Mamaduwa village.

88.4 MAHA IRAMPAL KULAM

Location

About two miles east of 114th mile on Kandy-Jaffna Road.

Co-ordinates C/14 (13.2×4.1)

Restoration

Restored in 1888-96, initial cost Rs. 16,712.

Data

Tank

Catchment area	6 sq. miles		
Length of Tank Bund	3850 ft.		
Tank Full:			
Storage	640 acre feet		
Head of water	10½ ft.		
Area of water spread	160 acres		
Spills:	(i)	(ii)	(iii)
Nature	Structure	Structure	Structure
Location	L.B.	L.B.	R.B.
Length	100 ft.	59 ft.	60 ft.
Sluices:			
Location	L.B.	R.B.	
Size	12" dia.	9" dia.	

Irrigation Supply

The work aids cultivation of 226 acres.

88.5 KALMADU KULAM

Location

About 10 miles north east of the 10th mile on Vavuniya-Mannar Road.

Co-ordinates C/14 (4.0×7.2)

Scheme

Kalmadu is sited below Periyakaddu, to impound the waters of Periyakaddu Aru, and as its name would imply, it is a low ground (madu) with rock (kal) out crops along the bund line on L. B.

Restoration

Restored—1953-57.

Data

Tank

Catchment area 24 sq. miles
Length of Tank Bund 5700 ft.

Tank Full:

Storage 1200 acre ft.
Head of water 8 ft.
Area of water spread 350 acres

Spills:

Nature Concrete Structure—C.O.
Location L.B.
Length 400 ft.

Sluices:

Location R.B.
Size 18 ins.

Irrigation Supply

A Right Bank Channel System over 7 miles long conveys supply for the development of 400 acres of rice cultivation for new colonization.

88.6 PALAVI TANK

Location

About 10 miles north of the 10th mile on the Vavuniya-Mannar Road.

Co-ordinates C/9 (2.6×4.0)

Scheme

Impounds the waters of Periyakaddu Aru.

Data

Tank

Catchment area 48 sq. miles
Length of Tank Bund 2 miles

Tank Full:

Storage 12,000 acre ft.
Head of water 22 ft.

Spills:

Nature Structure—C.O.
Location R.B.
Length 835 ft.

Sluices:

Location L.B. R.B.
Size 24 inches dia. 24 inches dia.

Irrigation Supply

Target for development under the work—2500 acres of irrigated rice cultivation.

88.7 PANANKAMAN TANK

Location

From Mankulam to Vavunikulam and from there about four miles to village and tank.

Co-ordinates C/3 (13×13.3)

Historical

The name suggests a farm settlement (Kamam) of (Panar) which may have functioned when the city of Pali Nagaram and the large tank Peli Wavi, flourished in the neighbouring Vavunikulam area.

However, later said to be the Head Quarters of one of the Vanni kings; in the area are found abandoned wells, temples and other signs of ancient habitation.

Data

Tank

Catchment area and augmentation from Konayan Kulam

1.5 sq. miles

Length of Tank Bund

4900 ft.

Tank Full:

Storage

600 acre ft.

Head of water

7 ft.

Area of water spread

150 acres

Spills:

Nature

Structure—C.O.

Location

L.B.

Length

200 ft.

Sluices:

Location

Two Sluices

Size

9 ins. and 6 ins.

Irrigation Supply

The work aids irrigation development of 200 acres of rice cultivation.

88.8 KURAI TANK

Location

About 6 miles east of 17th mile on Mannar-Poonakeri Road.

Co-ordinates C/3 (1.30×3.50).

Historical

The work, very likely, is an unfinished (kurai) reservoir, conceived to function (like Giants Tank Scheme and Tekkam Diversion) along with partly completed anicut across Parangi Aru, five miles up; this comprehensive project had received a set back during the construction period.

Restoration

The tank (Kurai Tank) has since been restored to function by itself—1961.

Data

Tank

Catchment area

3½ sq. miles

Length of Tank Bund

2½ miles

Tank Full:

Storage

1600 acre feet

Head of water

10 ft.

Area of water spread

350 acres

Spills:

Nature

Channel flow with crest wall.

Location

Central

Length

200 ft.

Sluices:

Location

L.B.

R.B.

Size

24 ins. dia.

24 ins. dia.

Irrigation Supply

Target for irrigation development 500 acres.

89. NAY ARU BASIN

89.1 PERIYA THAMPANAI KULAM

Location

About two miles north of the 15th mile on the Vavuniya-Mannar Road.

Co-ordinates C/13 (9.7×3.3)

Historical

The first of the larger tanks across the Nay Aru (in the West of N.P.); H. W. Parker refers to the earlier work that had existed at the site in the ancient days in Sessional Paper No. XLIX of 1886

Restoration

Present tank restored in 1956.

Scheme

Impounds the waters of Nay Aru (upper raches).

Data

Tank

Catchment area	23½ sq. miles
Length of Tank Bund	5200 ft.

Tank Full:

Storage	1100 acre feet
Head of water	9½ ft.
Area of water spread	250 acres

Spills:

Nature	Concrete
Location	L.B. R.B.
Length	300 ft. 300 ft.

Sluices:

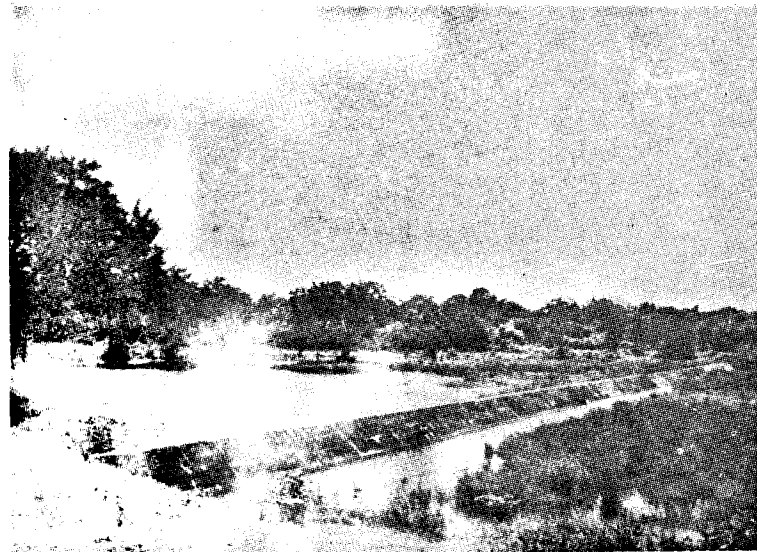
Location	L.B.	R.B.
Size	18" dia.	18" dia.

Irrigation Supply

A Left Bank and Right Bank channel system conveys supply for the development of 350 acres of rice cultivation for a thriving colonization project.



88.8 SETTLERS AND ENGINEERS AT KURAI TANK



89.2 PERIYAPANDIVIRICHCHAN TANK SPILL



89.4 PERIYAMADU TANK



90.1 NACHCHADUWA TANK

89.2 PERIYAPANDIVIRICHCHAN KULAM

Location

About 6 miles north west of the 15th mile on Vavuniya-Mannar Road.

Co-ordinates C/13 (7.4×4.5)

Restoration

Present work restored in 1952-57.

Scheme

Impounds the flow in Nay Aru, situated below Periya Thampanai Kulam in the same valley and as its name would indicate is an important (Pandu) largely spread out (Virichchan) tank.

Data

Tank

Catchment area	32½ sq. miles
Length of Tank Bund	7000 ft.

Tank Full:

Storage	2800 acre ft.
Head of water	11 ft.
Area of water spread	600 acres

Spills:

Nature	Structure (C.O.)
Location	L.B.
Length	750 ft.

Sluices:

Location	L.B.	R.B.
Size	18 ins. dia.	18 ins. dia.

Irrigation Supply

The work effects irrigation water supply for the development of 900 acres of rice cultivation, situated near Madhu Church.

89.3 THACHCHANA MARUTHAMADU

Location

About 3 miles north of Madhu Church.

Co-ordinates C/8 (5.7×2.7)

Restoration

Restored in 1951-54.

Scheme

Impounds the flow of Nay Aru, being another tank in the Nay Aru basin.

Data

Tank

Catchment area 43 sq. miles
Length of Tank Bund 4900 ft.

Tank Full:

Storage 580 acre feet
Head of water 5 ft.
Area of water spread 300 acres

Spills:

Nature Structure C.O.
Location Central
Length 600 ft.

Sluices:

Location L.B.
Size 12 ins. dia.

Irrigation Supply

The work supplies water for rice cultivation in over 100 acres.

89.4 PERIYA MADU

Location

About 10 miles east of the 12th mile on Mannar-Poonakeri Road.

Co-ordinates C/8 (3.9×7.8)

Scheme

The one before the last of the series of tanks in the Nay Aru Basin and as its name would imply it is comparatively a large (Periya), low swamp (Madu), banded up to form a tank.

Restoration

Restored in 1952-57. Has subsequently breached and been repaired.

Data

Tank

Catchment area 142 sq. miles
Length of Tank Bund $1\frac{1}{4}$ miles

Tank Full:

Storage 4500 acre feet
Head of water 12 ft.
Area of water spread 560 acres

Spills:

Nature Channel flow with structure.
Location R.B.—Two spills
Length 1000 ft. and 1500 ft.

Sluices:

Location L.B. R.B.
Size 30 ins. dia. 48 ins. dia.

Irrigation Supply

Left Bank Channel system extending 6 miles, aids the development of 750 acres of rice cultivation in Vidatal Thivu area, as new colonization.

90. ARUVI ARU BASIN

The basin is referred to as Malwattu Oya in the upper reaches and Aruvi Aru in the lower reaches. Though it is the second largest basin, but being situated in the dry zone monsoonal area the amount of yield from the basin is not very large.

It is one of the earliest basins to be settled, even from prehistoric days. There are about 1450 working tanks in this basin, some of them large (and with long history) but most of them are working minor irrigation schemes.

Among the larger reservoirs are Nachchaduwa, Tissa Wewa, Nuwara Wewa, Maha Kanadarawa, Iratperiyakulam, Pavat Kulam and Giant's Tank.

Malwattu Oya rises at Ritigala Hills (2,514 ft.) and draining the Dambulla and Anuradhapura areas passes Medawachchiya and falls into the Gulf of Mannar, near Chilvathurai, opposite Mannar Island. Its length is 104 miles.

Hydrology

The extent of the Malwattu Oya basin is 1,433 sq. miles. The basin depends entirely on the North East monsoonal rainfall and the average precipitation in the catchment annually is 56 inches, and the total annual yield is 1 million acre feet. Flood problems have not been very severe, though opening of the spill gates at Nachchaduwa has caused inundation of properties in Anuradhapura town.

Land Use

The upper segment of the basin is fairly well developed with the large reservoirs, rice lands, villages and the several minor irrigation works all over the area. Improving these, maintaining them in good working order and extending them to aid larger areas of development would be the pattern of land use in the region.

The lower region however is yet in jungle and provides scope for new development.

Water Resources Utilization

For the judicious use of the unexpended yield from the catchment a site for the construction of a storage reservoir has been selected about 25 miles from the sea outfall. The extent of the drainage of the Oya at this site is 832 sq. miles. Details are listed further down.

Irrigation

Several large scale, medium scale and minor irrigation development schemes utilise the water resources of the basin.

Domestic Water Supply

Supply for Anuradhapura town is drawn off from Nuwara Wewa. The quantity is small and presents no problem except during periods of severe drought.

As in all dry zone basins, the demand is for the storage of available flow for aiding irrigation supply.

Proposals for development

The Technoprom export organisation of the U.S.S.R. has prepared a project report for the construction of a reservoir, at the site mentioned earlier for storing 282,000 acre feet of water to irrigate 32,000 acres of land to be developed newly and for effecting supply to the nearly 20,000 acres of land already developed under Giant's Tank and Akathi Scheme. Cost of project Rs. 80.7 million.

The U. N. S. F. Team envisage the construction of two new reservoirs at Tirapane and at Kapirigama which, along with the proposed Malwattu Oya reservoir is expected to provide irrigation supply to 71,000 acres of new land development, in addition to the 41,000 acres already cultivated under the existing major tanks Nachchaduwa, Nuwara Wewa, Maha Kandarawa. Sangilikan-darawa, Pavat Kulam etc.

90.0 MANANKATIYAWA TANK

Location

Is situated about 20 miles S. E. of Anuradhapura and 5 miles west of Huruluwewa.

Co-ordinates F/15 (9.3×7.5)

Scheme

Storage Tank

Data

Tank

Catchment area 23.8 sq. mls.
Length of Tank Bund 5300 ft.

Tank Full:

Storage 8300 ac. ft.
Head of water 18 ft.

Spills:

Nature Concrete Structure
Location R.B.
Length 100 ft.

Suices:

Location L.B. R.B.
Size 2'×2' 4'×3'

Irrigation Supply

Extent benefited 1800 acres.

90.1 NACHCHADUWA TANK

Location

About 10 miles south east of Anuradhapura.

Co-ordinates F/19 (10.1×2)

Historical

Attributed to King Moggallana II (535-555 A.C.), a great tank builder and identified as Pattapasana Vapi of old.

Later reported as being repaired and restored by Vijeyabahu (1055-1110).

Restoration

Present tank restored in 1906 and improved in 1917. The breaches that occurred in 1957 were repaired in 1958.

Scheme

Impounds the waters of Malwattu Oya and Maminiya Oya from the Habarana area.

Data

Tank

Catchment area 236 sq. miles
and supply from Kalawewa, through Kalawewa-Yode
Ela by new link channel.

Length of Tank Bund One mile
Average Height 35 ft.

Tank Full:

Storage 45,100 acre ft.
Head of water 25 ft.
Area of water spread 4,400 acres

Spills:

Nature Concrete on rock
Location Right Bank
Size 467 ft. with three gates 9'×7'-6" each.

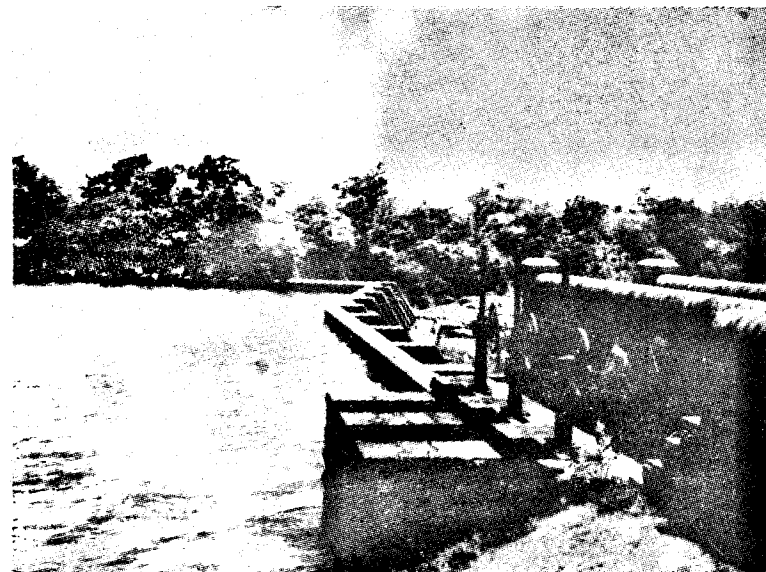
Suices:

Location L.B. 1 L.B. 2 R.B. (H.L.)
Size 2 of 4' dia. 3'×2' 3 of 4'×3'-6"
Extra sluice to supply Nuwara Wewa-Yode Ela : Openings
8 of 4 ft. dia.

Irrigation Supply

The long left bank channel system—(consisting of an upper channel 10 ft. higher than the lower channel), conveys supply to rice cultivation and also augments flow in K. Y. E. to A'pura reaching the outskirts of Anuradhapura. These supply water to over 5400 acres.

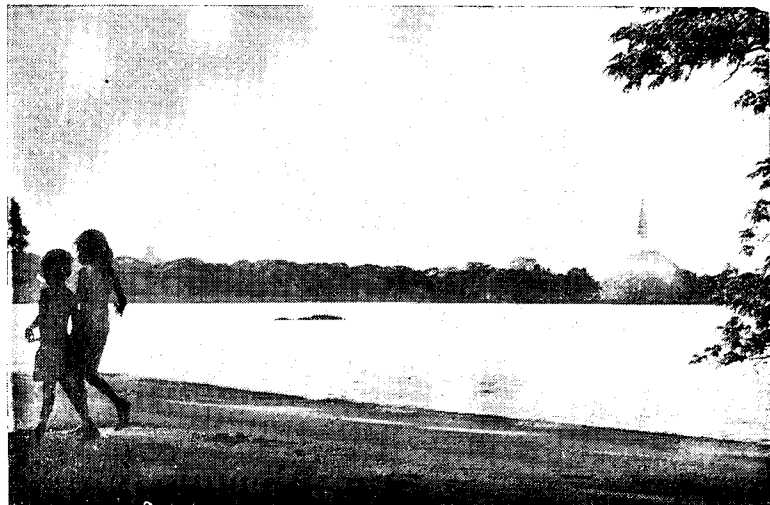
The ancient Yode Ela (excavated during the reign of King Moggallana II), now almost a natural stream flowing down to Nuwara Wewa is from a small spill at the Right Bank. A new sluice and a proper channel has now been constructed to feed Nuwara Wewa.



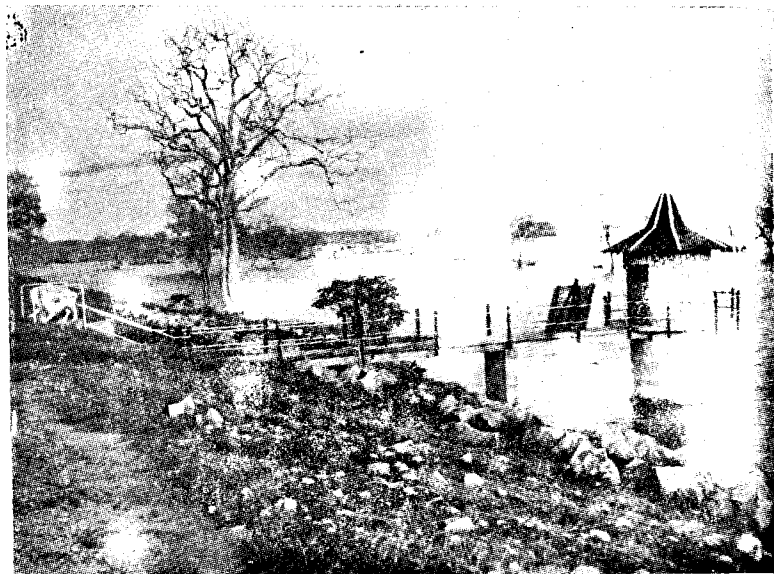
90.1 NACHCHADUWA TANK SPILL



90.2 NUWARA WEWA



90.4 BASAWAKKULAMA TANK



90.5 MAHAKANDARAWA TANK & SLUICE

90.2 NUWARA WEWA

Location

At Anuradhapura.

Co-ordinates F/9 (6.5×7.8)

Historical

One of the city tanks of Anuradhapura the origin of which belongs to the antiquity of the pre-Christian era. Identified as "Nakara vavi" recorded as having existed during the reign of Gaja Bahu I (114-136); was enlarged and improved to form large work and for augmentation, a feeder channel was cut from Nachchaduwa Tank (then Pattapasavanavapi). during the reign of Moggallana II (535-555).

Restoration

Present work was restored in 1890 at an initial cost of Rs. 65,307/-.

Data

Tank

Source of supply:

Drainage from own catchment of 32½ sq. miles and also augmentation from Nachchaduwa down special sluice via ancient canal.

Length of Tank Bund

4½ miles

Average Height

35 ft.

Tank Full:

Storage

36,000 acre ft.

Head of water

23 ft.

Area of water spread

3,000 acres

Spills:

Nature
Location
Length

Masonry
L.B.
113 ft.

Masonry
R.B.
30 ft.

Sluices:

Location
Size

Central
2 of 20" dia.

R.B.
2 of 20" dia.

Irrigation Supply

Total extent of 2400 acres depend on this work for regular irrigation supply.

The Anuradhapura town water supply is drawn from this tank, which apparently had always been one of its functions in early days.

90.3 TISSA WEWA

Location

At Anuradhapura.

Co-ordinates F/9 (4.1×8.2)

Historical

The construction of the original Tissa Wewa (Tissa Vapi) is ascribed to Devanampiya Tissa (250-210 B.C.); subsequent references relate to enlargement of the work by later monarchs.

Scheme

Present tank was restored in 1889.

Data

Tank

Source of Supply:

Conveyance from the Kala Wewa-Yode Ela (terminus), own catchment 2 sq. miles.

Length of Tank Bund $1\frac{3}{4}$ miles

Tank Full:

Storage	2900 acre ft.
Head of water	17½ ft.
Area of water spread	450 acres

Spills:

Nature	Masonry	Channel
Location	L.B.	R.B.
Length	60 ft.	35 ft.

Sluices:

Location	L.B.	R.B.
Size	12"×12"	12"×12"
and Bassawakkulama supply outlet		3'×3'

Irrigation Supply

Regular supply to 1000 acres of rice cultivation.

90.4 BASSAWAKKULAMA TANK

Location

In the city of Anuradhapura.

Co-ordinates F/4 (4.4×0.3)

Historical

Probably the most ancient work in Ceylon, identified as "Abhayawewa" and associated with the reign of Pandukabhaya, 4th Century B.C.

Restoration

Present tank restored in 1874 at an initial cost of Rs. 69,591/-.

Data

Tank

Has own catchment area of 3½ sq. miles, but receives in addition supply from Tissa Wewa.

Length of Tank Bund 3,900 ft.

Tank Full:

Storage	1900 acre ft.
Head of water	16½ ft.
Area of water spread	265 acres

Spill:

Channel flow with structure has 9 bays.
Length 100 ft.

Sluice:

Size	2'-4"×1'-6".
------	--------------

Irrigation Supply

An extent of 916 acres are benefited with irrigation supply from this work; an important function of Bassawakkulama however is the provision of water for civic needs of the pilgrims etc. for which purpose five feet of water is always reserved.

90.5 MAHA KANADARAWA TANK

Location

About 4 miles north east of Mihintale.

Co-ordinates F/3 (0.3×2.1)

History

Is identified as "Kanadiyadora" or Khanu vapi of ancient times, constructed by King Maha Sena (276-303 A.C.); later referred to as Maha Kanadara Wewa, when a feeder channel was constructed to it during the reign of Sena II (853-887) by the construction of a dam at Maradankadawela (Khat-tanta Nagara) and 12 miles long canal. Later reported as being repaired and restored by Vijayabahu (1055-1110) and improved by Parakrama Bahu (1153-1186).

Restoration

Present restoration commenced 1958.

Scheme

The reservoir is formed by impounding the waters of Kanadara Oya, a tributary of Malwattu Oya.

Data

Tank

Catchment area 126 sq. miles
Length of Tank Bund $1\frac{1}{4}$ miles

Tank Full:

Storage 32,300 acre ft.
Head of water 18 ft.
Area of water spread 3,400 acres

Spills:

Nature	On Rock	Ogee on rock with 2 gates 20'×10'
Location	Central	R.B.
Length	600 ft.	320 ft. and High Level (Central) spill 300 ft.

Sluices:

Location	L.B.	R.B.
Size	$3\frac{1}{2}' \times 4\frac{1}{2}'$	$3\frac{1}{2}' \times 4\frac{1}{2}'$

Irrigation Supply

The work benefits 6000 acres equally divided between the left bank and right bank channel systems.

The left bank main channel crosses the Mihintale-Medawachchiya Road and also the Anuradhapura-Medawachchiya Road and flows towards Parasanga Wewa. The right bank irrigation system extends towards Mahagalkadawela.



90.5 MAHAKANDARAWA DEVALAYA



90.9 PAVATKULAM SPILL



90.10 MANIAR KULAM



90.11 CHEDDIKULAM

90.6 SANGILIKANDARAWA TANK

Location

East of the 9th mile of Anuradhapura-Medawachchiya Road.

Co-ordinates C/25 (0.7×2.5)

Restoration

Present tank restored in 1907.

Data

Tank

Catchment area 63½ sq. miles
Length of Tank Bund 7000 ft.

Tank Full:

Storage 3140 acre feet
Head of water 12 ft.
Area of water spread 650 acres

Spills:	No. 1	No. 2	No. 3
Nature	Masonry	Masonry	Masonry
Location	L.B.	L.B.	R.B.
Length	400 ft.	270 ft.	75 ft.

Irrigation Supply

The work supplies irrigation facilities to 850 acres; the channel system crosses the Anuradhapura-Medawachchiya Road at the 90th mile.

90.7 MEDAWACHCHIYA TANK

Location

At Medawachchiya, 15 miles north of Anuradhapura.

Co-ordinates C/24 (12.3×3.9)

Restoration

Present tank restored in 1876; it breached due to excessive rains in 1923 and was repaired. It suffered damages during the big flood of December 1957.

Data

Tank

Catchment area	16 sq. miles
Length of Tank Bund	3100 ft.

Tank Full:

Storage	1150 acre feet
Head of water	11½ ft.
Area of water spread	180 acres

Spills:

Nature	Masonry
Location	L.B.
Length	82½ ft.

Sluices:

Location	L.B.	R.B.
Size	12" dia.	6" dia.

Irrigation Supply

The work supplies water for regular cultivation of 275 acres.

90.8 IRATPERIYA KULAM

Location

East of 108th mile on Kandy-Jaffna Road, in the village by the same name.

Co-ordinates C/19 (11.1×6.5)

Historical

The inscription found on the rock in the embankment, records the visit of Gaja Bahu I (112-134 A.C.) to the shores of "Alawichcha Lake."

Restoration

Present tank restored in 1886-1896, initial cost Rs. 25,556.

Scheme

Impounds the flow of Kal Aru.

Data

Tank

Catchment area	12½ sq. miles
Length of Tank Bund	5320 ft.

Tank Full:

Storage	3500 acre feet
Head of water	15½ ft.
Area of water spread	525 acres

Spills:

Nature	Structure
Location	R.B.
Length	142 ft.

Sluices:

Location	L.B.	Central	R.B.
Size	12" dia.	18" dia.	10" dia.

Irrigation Supply

The work regularly aids the development of 550 acres of rice cultivation.

90.9 PAVAT KULAM

Location

About 6 miles west of Vavuniya.

Co-ordinates C/19 (7.3×4.1)

Historical

Believed to be of very ancient origin, may even be pre-Christian. Had breached and overgrown for several centuries. A small portion of the reservoir had however been restored as an independent tank called "Ullukulama".

Restoration

In 1958, the comprehensive work has once again been restored.

Scheme

Impounds the waters of Kal Aru and Kallukundamadu Aru.

Data

Tank

Catchment area	115 sq. miles	
Length of Tank Bund	2 miles	
Tank Full:		
Storage	27,000 acre feet	
Head of water	19 ft.	
Area of water spread	3,000 acres	
Spills:		
Nature	Rock & Structure	Structure with four Radial Gates 20 ft.
Location	Central	R.B.
Length	650 ft.	400 ft.
Sluices:		
Location	L.B.	R.B.
Size	42" dia.	4' x 3'-6"

Irrigation Supply

Left Bank Scheme irrigates Olukulama and Mathuvaithakulam fields and new colonization development, in all 2000 acres.

Right Bank channel aids new development of 2000 acres of rice cultivation, making in all 4000 acres.

90.10 MANIAR KULAM

Location

About two miles south of 10th mile on Vavuniya-Mannar Road.

Co-ordinates C/14 (1.5×0.1)

Restoration

Restored in 1952.

Data

Tank

Catchment area	14 sq. miles
Length of Tank Bund	2900 ft.
Tank Full:	
Storage	700 acre feet
Head of water	10½ ft.
Area of water spread	140 acres
Spills:	
Nature	Rock
Location	L.B.
Length	250 ft.
Sluices:	
Location	R.B.
Size	12" dia.

Irrigation Supply

The work aids development of 160 acres of rice cultivation.

90.11 CHEDDIKULAM

Location

East of 37th mile on Mannar-Medawachchi Road and adjoining the village and railway station with the same name.

Co-ordinates C/18 (13.2×3.7)

Historical

Has been known as Vengala Cheddikulam; the site is said to be one time Head Quarters of the eldest of three brothers who ruled over adjoining areas—others being Nadu (middle) Cheddikulam and Sinna (youngest) Cheddikulam.

Restoration

Present tank restored in 1892.

Data

Tank

Catchment Area $5\frac{1}{2}$ sq. miles
Length of Tank Bund 3850 ft.

Tank Full:

Storage 700 acre feet
Head of water 11 ft.
Area of water spread 160 acres

Spills:

	Structure	Structure
Nature	L.B.	R.B.
Location	85 ft.	52 ft.
Length		

Sluices:

	Central
Location	12" diameter
Size	

Irrigation Supply

Irrigable area 125 acres.
The work aids rice cultivation in 75 acres.

90.12 MARUTHAMADU

Location

About 2 miles north of 44th mile on Medawachchiya-Mannar Road.

Co-ordinates C/24 (3.3×6.6)

Scheme

Impounds the waters of Naruvili Aru (upper reaches).

Data

Tank

Catchment area $14\frac{1}{2}$ sq. miles
Length of Tank Bund 3800 ft.

Tank Full:

Storage 1500 acre feet
Head of water 12 ft.
Area of water spread 275 acres

Spills:

	Structure	Structure
Nature	L.B.	R.B.
Location	100 ft.	150 ft.
Length		

Sluices:

	L.B.	R.B.
Location	9" dia.	9" dia.
Size		

Irrigation Supply

Over 400 acres are cultivated with irrigation supply from this tank.

90.13 MUHATHAN KULAM

Location

Adjoining the 39th mile on the Medawachchiya-Mannar Road.

Co-ordinates C/18 (12.5×1.8)

Historical

Tradition associates the area with temples and holy places at the nearby Vavale Lake, by the banks of Malwattu Oya—then known as “Kadamba Nadhi”.

Restoration

Present tank restored in 1953.

Scheme

Impounds the waters of Naruvili Aru.

Data

Tank

Catchment area	15 sq. miles
Length of Tank Bund	6000 ft.

Tank Full:

Storage	2400 acre feet
Head of water	11 ft.
Area of water spread	400 acres

Spills:

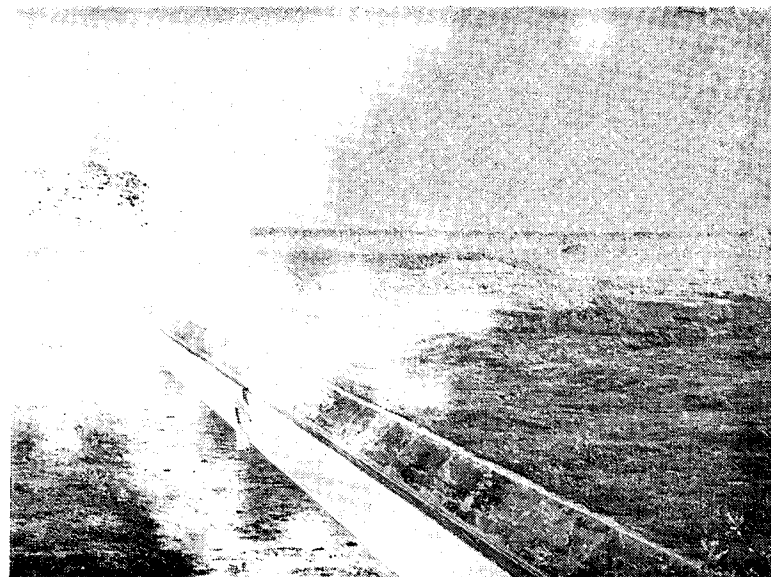
Nature	Channel flow
Location	L.B.
Length	630 ft.

Sluices:

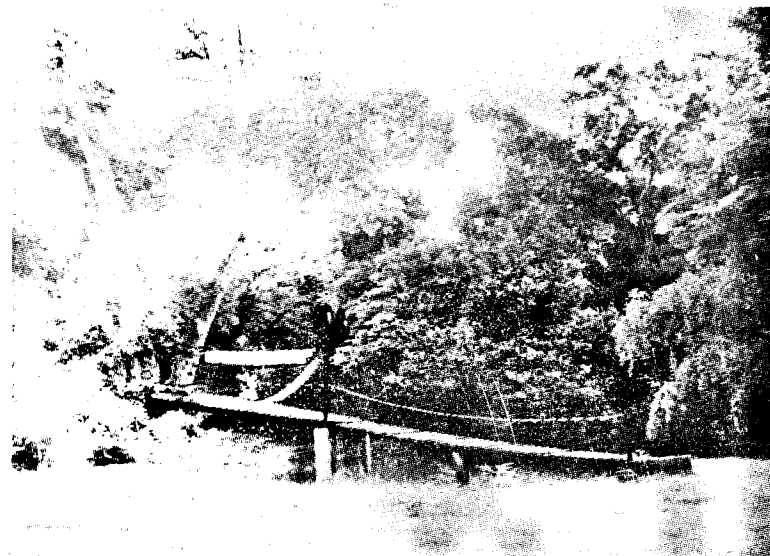
Location	R.B.
Size	24" dia.

Irrigation Supply

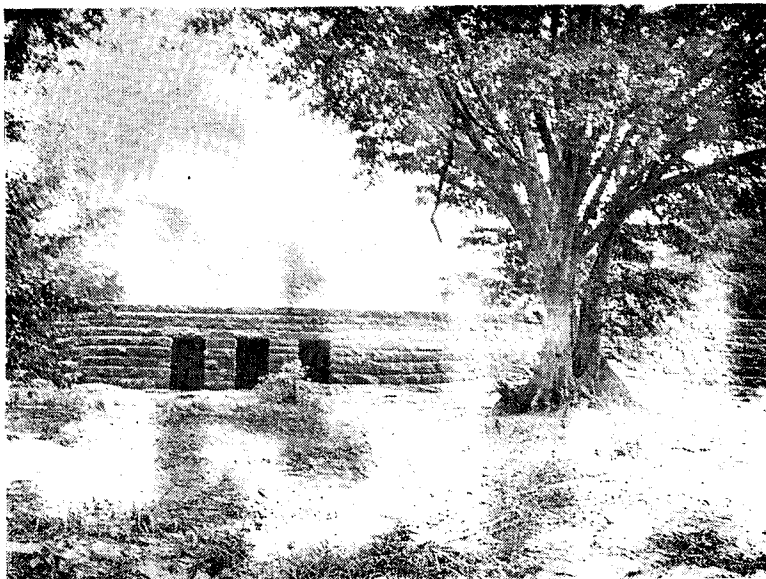
The work aids development of 800 acres of rice cultivation in Cheddikulam area.



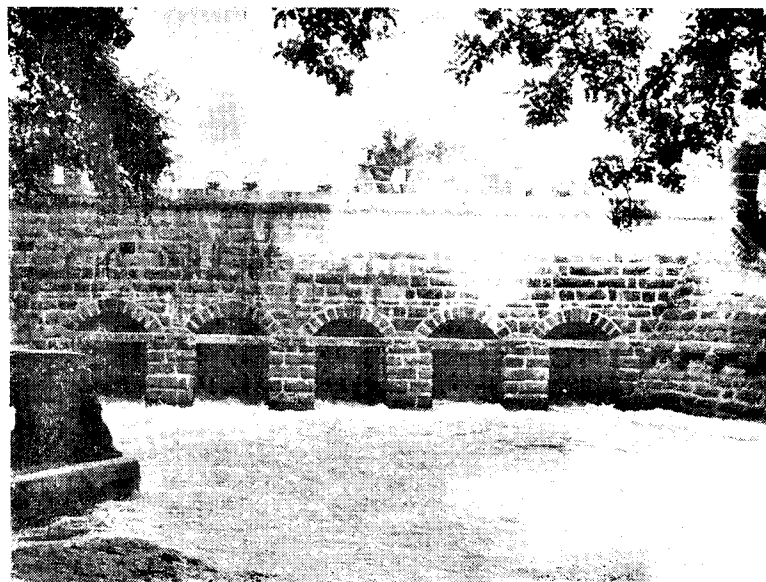
90.13 MUHATHAN KULAM—SPILL



90.14.1 SUSPENSION BRIDGE TO TEKKAM



90.14.1 TEKKAM



90.14.3 GIANTS TANK—HEAD SLUICE

90.14 GIANT'S TANK SCHEME

90.14.1 THE TEKKAM (DIVERSION ANICUT)

Location

About a mile South of 26th mile on Medawachchiya-Mannar Road.

Co-ordinates C/13 (4.8×0.6)

Historical

Malwattu Oya—"the Kadamba Nadhi" of ancient days and Aruvi Aru in Mannar District is dammed by a 'Tekkam' (obstruction) about 22 miles from its mouth. The structure is massive about 12 feet high, 640 feet long and "full breadth 90 ft."

Scheme

The flow in the river is headed up and diverted by the Tekkam to (i) Giant's Tank by means of the inlet channel and (ii) Akathimurrippu Scheme by an L.B. Channel.

Data

Anicut Diversion

Source of Supply:	Aruvi Aru (Malwattu Oya)
Catchment area	1168 sq. miles
Length of Structure	685 ft.
Height	12 ft.
Crest Level	70.39 M.S.L.

Right Bank Scheme

Inlet channel (Alawakkai) to Giant's Tank benefits 15,000 acres.

Left Bank Scheme

Akathimurippu Scheme main channel benefits 4500 acres.

GIANT'S TANK SCHEME

90.14.2 THE ALAWAKKAI

(INLET CHANNEL TO GIANT'S TANK)

The Alawakkai conveys the diverted flow, from the Tekkam to Giant's Tank and is about 15 miles in length.

The present channel was designed by H. Parker in 1881 (and construction commenced in the following year) to the following dimensions:-

Bed width	70 ft.
Depth of water	5 ft. 6 ins.
Conveyance	800 cusecs
Gradient	1 in 7500
Maximum velocity of flow	2 f. p. s.

On the 16th of November 1900, the Engineer in charge was happy to send "a stream of water 70 ft. wide and 4 to 5 ft. deep down the Alawakkai for the first time from the Aruvi Aru", the water "found its way through the breaches (yet unrestored) in the Giant's Tank Bund".

The Head Sluice control is sited very near the second mile post along the channel.

Immediately above the Head Sluice is the 70 ft. spillway to discharge unwanted water through Sittaru, back to the river.

At 6½ mile, the channel crosses the main road, from Medawachchi to Mannar under P. W. D. Bridge near the 20½ M. P.

Also along the channel are to be found spills, flood outlets and three main water issue sluices for irrigation needs.

90.14.3 GIANT'S TANK

Location

Between the 11th and 15th miles on the Mannar-Medawachchiya Road.

Co-ordinates G/12 (7.8 × 7.2)

Historical

Nicholas considers the possibility of this work being identical with "Mahanama Matha Vapi, a tank in the north with 17 mile canal" augmentation, constructed during the reign of King Dhatusena (459-477) and which was later listed as one of the tanks restored by Parakrama Bahu I (1153-1186). Its restoration was very vigorously mooted in the 18th century, during the administration of Van de Graaff under the Dutch regime, but nothing happened.

The subject was revived in 1880, with a motion in the State Council, dated September 29th, 1889 by Sir P. Ramanathan and its restoration commenced in the following year to be completed after several delays (due to epidemics, death of the I. E. etc) on the 30th November 1902.

Locally it is referred to as "Sodayan Kattu Karei" or the giant built embankment.

Data

Tank

Source of Supply:

Inlet Channel (Alawakkai) from the Tekkam (Malwattu Oya diverted flow) and own

Catchment area of 38 sq. miles

Length of Tank Bund 4½ miles

Tank Full:

Storage 26,600 acre ft.

Head of water 10'-4"

Area of water spread 4,550 acres

Spills:

Nature Channel flow

Location R.B.

Length 172 ft.

Sluices:

There are seven sluices:

Irrigation Supply

With a total net work of over 24 miles of main channel and equal length of branch channels, water is conveyed from the sluices to several minor irrigation tanks all over the irrigable area.

90.14.4. AKATHTHIMURRIPPU CHANNEL

Location

Takes off from the Tekkam.

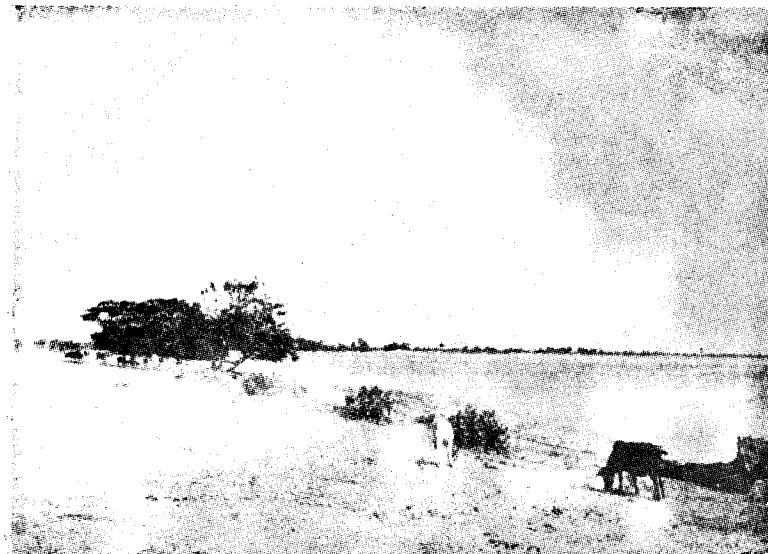
Historical

H. Parker who inspected the work in 1881, presumes that it was never a completed work. In Sessional Paper I of 1881 he describes the condition of the work, then. This probably is a higher channel.

The Akaththimurrippu Scheme of to-day was promoted in 1928, as a new left bank project from the already existing Tekkam (of Giant's Tank Scheme) and conveys surplus flow feeding several village tanks terminating with Akaththimurrippu Tank.

The channel is 14 miles long and has the following data:—

Bed width	7'
Depth	4'-6"
Slope	1 in 5000
Conveyance	83 cusecs.



90.14.3 GIANTS TANK



90.14.3 GIANTS TANK—D/S OF CHANNEL



90.14.4 AKKATHIMURIPU INLET CHANNEL & SLUICE



92.2 MODERAGAM ARU ANICUT

92. MODERAGAM ARU BASIN

The Moderagam Aru has its source near Anuradhapura and flows westwards by the Wilpattu National Park, separating the Puttalam and Mannar Districts, reaching the sea at Marichchukaddi.

Hydrology

This dry zone stream has a catchment area of 364 sq. miles and the annual average flow amounts to 252,000 acre feet.

Resources Development

Besides a few village tank projects in the upper catchment close to Anuradhapura, the flow in the Aru is impounded at Mahawilla-chchiya; a new scheme and a diversion weir at the historical site called Pilmadu Tekkam diverts supply to a storage tank called Viyadi Kulam.

Basin Plan

Due to the location of the Wilpattu National Park, which is a national asset, any further large scale development in this basin may not be desirable.

92.1 MAHA WILLACHCHIYA WEWA

Location

Is situated about 18 miles north west of Anuradhapura.

Co-ordinates F/3 (4.1×7.8)

Historical

Believed to be a work of very ancient antiquity, the origin of which has not yet been identified. "Mayettivapi" is recorded to have been improved and the bund enlarged during the reign of Udaya II (887-898).

Restoration

Present tank restored in 1955-58.

Scheme

The tank is formed by damming the waters of Talawe Oya, which is known as Moderagam Aru, further down. In view of the close proximity of Wilpattu National Park Reserve, development of the area under the work is restricted to 2500 acres.

Data

Tank

Catchment area	142 sq. miles
Length of Tank Bund	1½ miles
Tank Full:	
Storage	32,500 acre ft.
Head of water	37 ft.
Area of water spread	2,400 acres
Spills:	
Nature	Concrete Structure
Location	L.B.
Length	400 ft.
Sluices:	
Location	L.B. R.B.
Size	3'-6" dia. 3'-6" dia.

Irrigation Supply

L. B. and R. B. channel system together convey supply for the development of 2500 acres of rice cultivation.

92.2 MODERAGAM ARU ANICUT

Location

About 10 miles east of Marichchikaddi which is a village 32 miles south of Mannar.

Co-ordinates C/22 (8.8×2.9)

Historical

An anicut site with the ruins of an 8 ft. anicut of large boulders, 40 ft. thick and 80 ft. long (called the Ussayppu Kallu Tekkam) placed in lime mortar. A partly excavated channel (Alavakka) took off on the R. B. presumably to feed a tank "Periya Kattu" about five miles away, on the same pattern as the Malwattu Oya, Tekkam and Giant's Tank. H. Parker's report on the work appears in Sessional Paper No. 1 of 1881.

Restoration

Present work restored in 1962.

Scheme

Diversion of flow in Moderagam Aru, known as Talawa Ela in the upper reaches and across which the Mahawil-lachchiya Tank is constructed. The area of the anicut head-works is in proximity to the Wilpattu Game sanctuary.

Data

Anicut

Catchment area	336 sq. miles
Length of Structure	340 ft.
Spills:	
Nature	C.O.
Location	On flank
Length	30 ft.
Sluices:	
Location	R.B.
Size	3 of 36 inch pipes.

Irrigation Supply

The diverted flow augments supply to Viyadikulam and other tanks in Marichchikaddi area, by a conveyance channel over 5 miles long.

92.3 VIYADI KULAM

Location

About 4 miles east of Marichchikaddi village, which is 32 miles south of Mannar.

Co-ordinates C/22 (4.2×5.2)

Historical

This work, referred to once as "Periya Kattu" kulam was apparently originally conceived to receive the diverted flow from "Ussayppu Kallu Tekkam," a function in the same way as Giant's Tank. It was reported as having a bund five miles long.

Restoration

Restoration commenced in 1960.

Data

Tank

Source of Supply:

Diverted conveyance from Moderagam Aru and drainage from own catchment of $3\frac{1}{2}$ sq. miles

Length of Tank Bund $1\frac{1}{4}$ miles

Tank Full:

Storage 840 acre ft.

Head of water 8 ft.

Area of water spread 300 acres

Spills:

Nature C.O.

Location L.B.

Length 500 ft.

Sluices:

Location L.B.

Size 12 inches dia.

Irrigation Supply

The work aids development of rice cultivation in 150 acres of land and to augment supply to other village tanks e.g. Attikuli Tank in Marichchikaddi village.

93. KALA OYA BASIN

The Kala Oya has its source near Nalanda and flows for 97 miles in a north-westerly direction passing Dambulla, Kala Wewa, Rajangana and reaches the sea near Pomparippu.

Hydrology

This dry zone Oya draining an area of over a thousand sq. miles, is impounded at the historical Kala Wewa tank where the catchment area is 323 sq. miles and, again, at Rajangana reservoir, where catchment area is 622 sq. miles. The average annual flow in the Oya is 860,000 acre feet, of which 72,600 acre feet is impounded at Kala Wewa and 81,600 acre feet at Rajangana. There are several other smaller and minor tanks in the region.

Land Utilization

The upper reaches of the Kala Oya basin are fairly well utilised by development under the Kala Wewa, Siyambalagamuwa, Rajangana, Angamuwa and several other major & minor irrigation schemes.

The lower basin is yet undeveloped.

Proposals for development

A lower Kala Oya reservoir is proposed a few miles below the Puttalam-Anuradhapura road crossing. Such a scheme would aid the development of over 8,000 acres with irrigation supply; a total development of about 20,000 acres in all could be envisaged up to the western sea coast.

Among the proposals for the development of the water resources of the Mahaweli Basin, recommended by the U.N.S.F. Team, is the Bowatenna-Kala Oya canal, which would augment the flow in this basin. As a result, the development of a total area of 78,000 acres of irrigated cultivation, is envisaged in the basin.

93.1 KANDALAMA TANK

Location

This storage reservoir is situated about 3 miles to the east of Dambulla.

Co-ordinates F/25 (11.6×2.7)

Scheme

The tank was formed by damming Mirisgani Oya. Restoration work was done during the years 1952-1957 and the tank re-constructed to aid the development of the area around Dambulla town.

Data

Tank

Catchment area 37.7 sq. miles
Length of Tank Bund 3200 ft.

Tank Full:

Storage 24,400 acre ft.
Head of water 28½ ft.
Area of water spread 1,700 acres

Spills:

Nature Masonry on rock
Location At Left Bank entrance
Length 260 ft.

Sluices:

Size	R.B.	L.B.
Head	3½' dia. 28½ ft.	3½' dia. 26 ft.

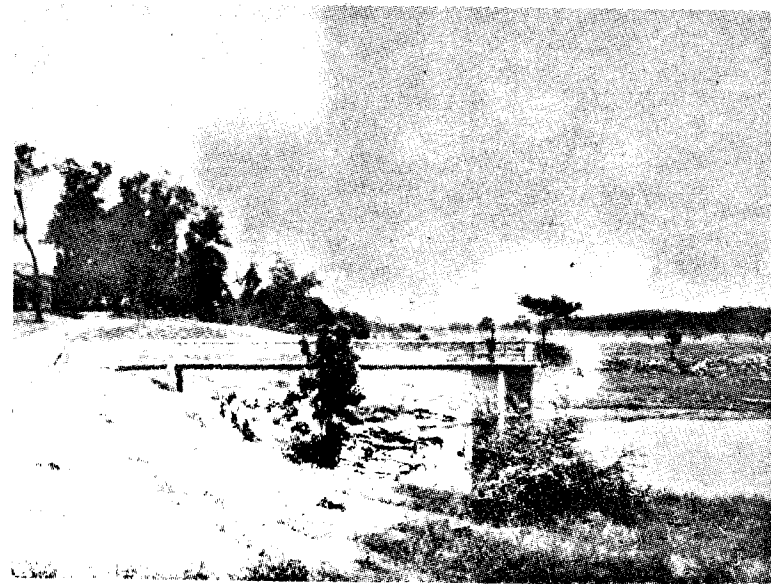
Irrigation Supply

The right bank channel system benefits an extent of 2080 acres including 350 acres of the Govt. Farm, through which it passes, crossing the Trincomalee Road to Randeni Wewa Tank and later parallel to the Anuradhapura Road.

The left bank system is not so extensive.



93.1 KANDALAMA TANK—SPILL



93.1 KANDALAMA TANK—SLUICE



93.2 DEWAHUWA TANK—SLUICE



93.2 DEWAHUWA TANK—SPILL

93.2 DEWAHUWA TANK

Location

At Dewahuwa about five miles from Galewela, on Galewela-Kekirawa Road and westwards one mile to tank bund.

Co-ordinates I/5 (1.7×6.7)

Early History

Local legend narrates the story of Dutugemunu receiving pirith thread ("huiya") from the Gods (Dewa) when camping at this site.

Restoration

There were two tanks Dewahuwa and Palu Rotawewa, which were made into one large tank in 1950.

Data

Tank

Catchment area	26 sq.miles
Length of Tank Bund	4300 ft.

Tank Full:

Storage	7750 acre feet
Head of water	$25\frac{1}{2}$ ft.
Area of water spread	850 acres

Spills:

Nature	Concrete structure on rock.
Location	L.B.
Length	600 ft.

Sluices:

Location	R.B.
Size	3 ft. diameter

Irrigation Supply

Colonization development of 2336 acres with rice cultivation is aided by a $9\frac{1}{2}$ miles long R. B. channel system, lying above and below main road; the channel crosses main road near 7th mile. The road along tank bund proceeds to Moragolla. The work cost Rs. 17 lakhs in 1950.

93.3 KALA WEWA SCHEME

93.3.1 KALA WEWA

Location

About 30 miles south east of Anuradhapura and 10 miles from Kekirawa.

Co-ordinates F/20 (0.8×0.7)

Historical

The celebrated Kalavapi reservoir (as Kalawewa was called then) of ancient history was constructed during the reign of Dhatu-sena (459-477). Several subsequent references make mention of the repairs etc. done at various times, e.g. Mahinda II (777-797) improved and strengthened the work. The Kala Oya valley was dammed by a five mile long earthen embankment, sixty feet high to impound the waters of Dam-bulla Oya and Heen Ela just below their confluence.

Present tank was restored in 1887 and enlarged by 6 ft. in 1939; the 1957 breaches were repaired in 1958, and the twin tanks Kalawewa and Balaluwewa merged to form one large reservoir.

Data

Tank

Sources of Supply:

Drainage from own catchment area 323 sq. miles and supply from Nalanda Reservoir by Welimiti Oya.

Length of Tank Bund:

Kalawewa	1 m. 1600
Balaluwewa	1 m. 1900

Tank Full:

Storage	72,700 acre ft.
Head of water	30 ft.
Area of water spread	6,400 acres

Spills:

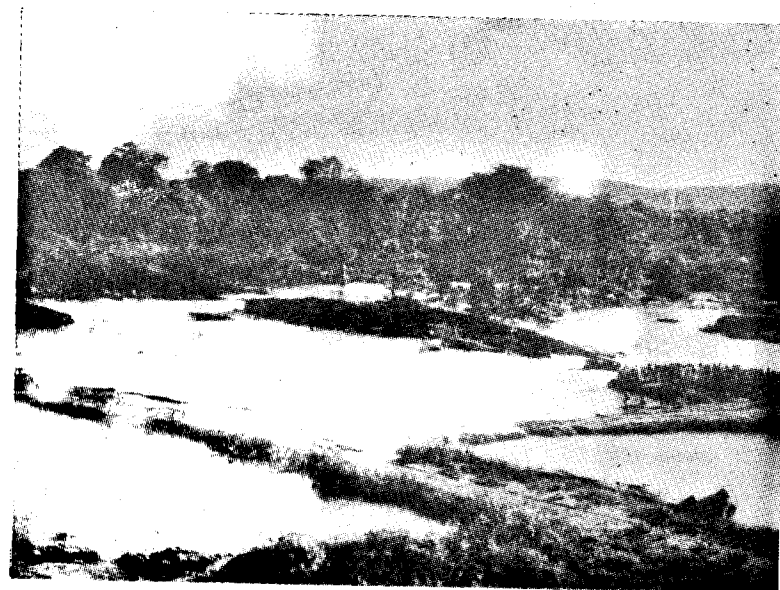
Nature	Concrete Masonry
Location	Central
Length	600 ft.
and a long high level natural spill at the L.B. end	

Sluices:

	(i)	(ii)	(iii)
Location	Yode Ela	Goda Ela	Balaluwewa
Size	3 of 2' x 2'-9"	2 of 27" dia	2 of 27" dia.



93.3.1 KALAWEWA



93.3.1 KALAWEWA SPILL WATERS



93.3.2 KALAWEWA YODE ELA

Channels:

R.B. —Yode Ela (Jaya Ganga), 54 miles long to Anuradhapura, Kahagama channel 15 miles long takes off near 5th mile on Yode Ela.

L.B. —Balalu Ela — 2 miles
Goda Ela — Short length.

Irrigation Supply

The work supplies water to 12,700 acres of rice fields direct.



93.4 KATTIYAWA TANK

KALA WEWA SCHEME

93.3.2 KALA WEWA YODE ELA (JAYA GANGA)

Receives supply from the Yode Ela sluice at Kala Wewa, size 3 openings each 2'×2'-9"; this ancient canal cut during the reign of Dhatusena (459-477), is a masterpiece of engineering skill. It is 54 miles long flowing from Kala Wewa to Anuradhapura; it conveys supply to 60 minor tanks en route, to the Kagama Branch channel, to Nachchaduwa Tank and the City Tank of Anuradhapura.

It was restored in 1889 at an initial cost of Rs. 295,750/-.

It crosses the Kekirawa-Anuradhapura main road at the 7th mile and can also be seen near the 9th, 10th, 16th & the 19th miles of the same road.

The Kagama Branch channel takes off from the 5th mile of the Yode Ela.

93.4 KATTIYAWA TANK

Location

Is situated about 3 miles to the south on the road which branches off near the 14½ mile stone on the Anuradhapura-Maha Illuppallama-Kekirawa Road.

Co-ordinates F/14 (5.3×0.8)

Historical

An ancient work—"Kativapi" was restored by Parakrama (1153-1186).

Scheme

Restored in 1950-1952 to impound the waters of Kattiyawa Ela, containing the waste waters of Maha Illuppallama and other tanks.

Data

Tank

Catchment area	34 sq. miles
Length of Tank Bund	5000 ft.
Tank Full:	
Storage	2750 acre ft.
Head of water	12 ft.
Area of water spread	400 acres

Spill:

175 ft. long, rock face, clear over fall spill at R.B.

Sluice:

One 24" dia. pipe.

Irrigation Supply

A three mile long channel system irrigates 500 acres of development area.

93.5 SIYAMBALANGAMUWA TANK

Location

About 6 miles to the west of Kala Wewa, is reached by travelling northwards about 4 miles from Moragallagama Railway Station.

Co-ordinates F/24 (9.5×7.2)

Historical

An ancient work, believed to have been put into working order during Parakrama Bahu's period—the 12th century.

Restoration

Present tank restored in 1956.

Scheme

Storage tank impounding flow in the upper reaches of Siyambalangamuwa Oya.

Data

Tank

Catchment area 18 sq. miles
Length of Tank Bund 3800 ft.

Tank Full:

Storage 1300 acre ft.
Head of water 17 ft.
Area of water spread 260 acres

Spills:

Nature	Concrete structure on rock		
Location	R.B.	Central	R.B.
Length	240 ft.	160 ft.	80 ft.

Sluices:

Location	L.B.	R.B.
Size	3 ft. dia.	3 ft. dia.

Irrigation Supply

The left bank channel supplies 250 acres and the right bank channel an extent of 160 acres for rice cultivation, for new colonization development.

93.6 USGALA SIYAMBALANGAMUWA WEWA

Location

About 6 miles north east of Galgamuwa.

Co-ordinates F/18 (12.7×6.7)

Historical

This very ancient work (correct name Siyambalangamuwa which was changed recently to Usgala Siyambalangamuwa to avoid confusion with another work of the same name about 15 miles up-stream) is presumed to be one of the works of King Maha Sena (276-303 A.D.), later, King Mahinda II (777-797) is recorded to have excavated a 16 mile channel from Kalawewa to augment this work identified as "Santini-gamakavapi". The area was the scene of an important battle. It had apparently been reduced to a smaller work subsequently and in the days of Bhuvaneka Bahu (1534-42) is said to have benefited about 750 acres.

Restoration

Was investigated for restoration in 1878 by Mr. Cotterill. Restoration was taken up in 1955.

Data

Tank

Catchment area 71 sq. miles
Length of Tank Bund 4700 ft.

Tank Full:

Storage 22,000 acre ft.
Head of water 21 ft.
Area of water spread 1,900 acres

Spills:

Nature	Concrete	Concrete
Location	R.B. 1	R.B. 2
Length	140 ft.	276 ft.
A short length of spill discharging into the oya is also constructed in the L. B.—		
	Total 450 ft.	

Sluices:

Location	R.B.	L.B.
Size	3' dia.	3' dia.

Irrigation Supply

The right bank channel commands 950 acres and the left bank channel system an extent of 622 acres for new colonization development with rice cultivation. Approximate cost Rs. 3½ million.

93.7 IHALA KALAN KUTTIYA TANK

Location

Situated about 10 miles west of Kala Wewa.

Co-ordinates F/19 (6.3×5.9)

Restoration

The work was improved in 1956.

Scheme

Impounds the flow in Kalan Kuttiya Ela.

Data

Tank

Catchment area	25½ sq. miles
Length of Tank Bund	One mile

Tank Full:

Storage	1000 acre ft.
Head of water	12 ft.
Area of water spread	170 acres

Spills:

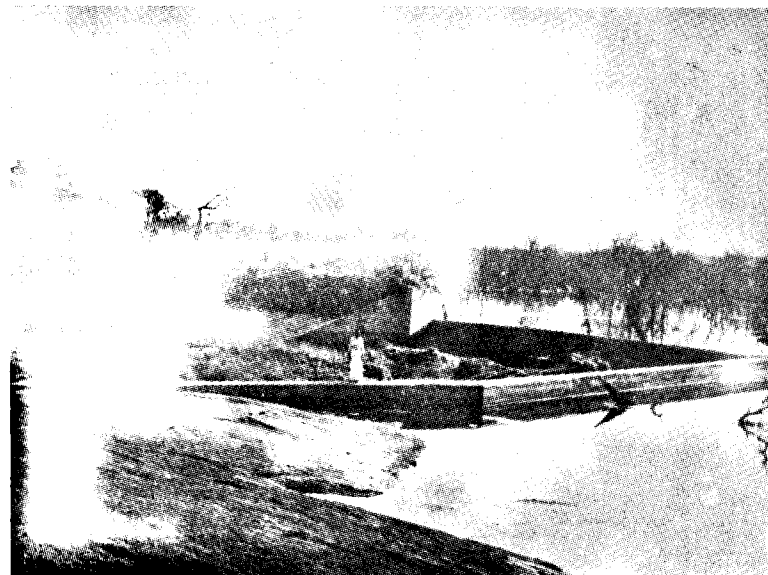
Nature	Concrete Structure
Location	R.B.
Length	370 ft.

Sluices:

Location	L.B.	R.B.
Size	12" dia.	12" dia.

Irrigation Supply

Provides irrigation supply for the development of 330 acres of rice cultivation.



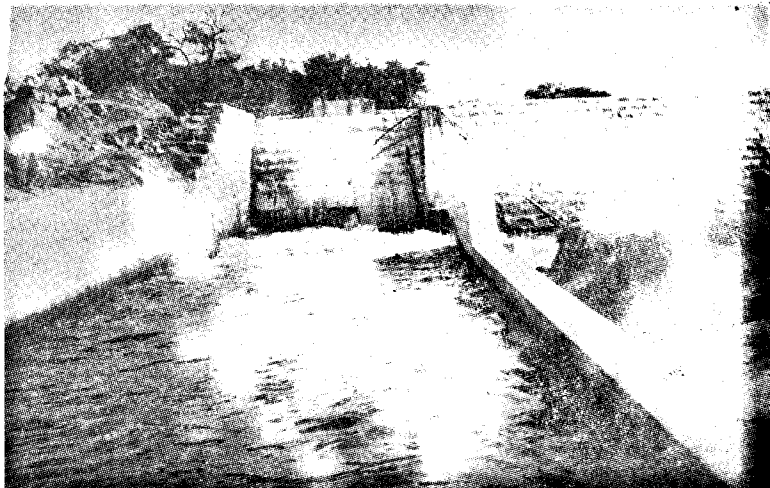
93.6 USGALA SIYAMBALANGAMUWA WEWA—SPILL



93.8 RAJANGANA RUINS



93.8 STEPS CUT ON ROCK—KADIGALA HILLS



93.9 ANGAMUWA SPILL & CHANNEL

93.8 RAJANGANA TANK

Location

About 5 miles west of Tambuttegama Railway Station.
Co-ordinates F/13 (6.4×2.6)

Historical

A new tank. A storage reservoir scheme project across Kala Oya, at Kadigalla hills site was mooted in 1951 in preference to the restoration of an anicut diversion work lower down.

On Kadigalla hills where the dam abuts into the rock are the ruins of Maha Mangala Vihara built by King Vankana-sika Tissa (109-112 A.C.) on the banks of Gona Nadi, as the Kala Oya was then known. Over 400 rock cut steps are said to have led to the top, with Thupas at the foot, summit and at other levels. The extensive ruins of Rajangana gives the name to the new tank.

Scheme

Impounds the waters of Kala Oya.

Data

Tank

Catchment area	622 sq. miles
Length of Tank Bund	1 mile 47 chains
Tank Full:	
Storage	81,500 acre ft.
Head of water	35 ft.
Area of water spread	4,000 acres
Spills:	
Nature	Concrete Dam
Location	Central
Length	Permanent Crest (10 bays of 20 ft.) 223
	Gated Section (32 of 20' × 10') 712
	935 ft.
	Non over flow Section 240 ft.

Sluices:

Location	L.B.	R.B.
Size	1 of 3'-9" × 3'-9"	3 of 3'-9" × 3'-9"

Irrigation Supply

The Right Bank main channel system provides for the irrigation development of 4,000 acres and in addition 2000 acres of Angamuwa lands.

The Left Bank Channel would similarly develop 13,000 acres.

93.9 ANGAMUWA WEWA

(RAJANGANA SCHEME)

Location

About 6 miles west of Tambuttegama.

Co-ordinates F/13 (6.6×4.9)

Historical

Angamuwa Wewa—"Angagama Vapi"—of old is recorded as being one of the tanks restored by Parakrama Bahu (1153-1186). Ruins found in the vicinity are said to be of Anulapavata Maha Vihare—1st and 4th century inscriptions.

Restoration

Present restoration—1956.

Scheme

Impounds the waters of Lunu Oya, a tributary of Kala Oya.

Data

Tank

Catchment area 50 sq. miles
Length of Tank Bund 1 mile

Tank Full:

Storage 11,700 acre ft.
Head of water 20 ft.
Area of water spread 1,100 acres

Spills:

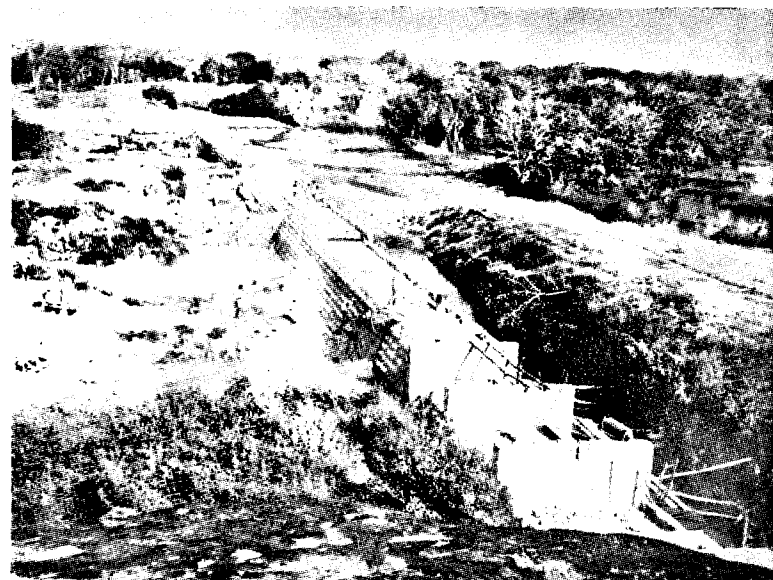
Nature Concrete Structure with 2 gates each 20'×10'
Location Central
Length 500 ft.

Sluices:

Location L.B. R.B.
Size 24" dia. 24" dia.

Irrigation Supply

This work forms part of the Rajangana Scheme; the sluice discharges into the R.B. channel of the Rajangana Scheme and benefits 2000 acres.



93.9 ANGAMUWA TANK—SPILL UNDER CONST.



95.1.1 ABAKOLA WEWA

95. MI OYA BASIN

The Mi Oya has its source in the Galgamuwa-Maho area and flows westwards for sixty seven miles, before reaching the sea at Puttalam.

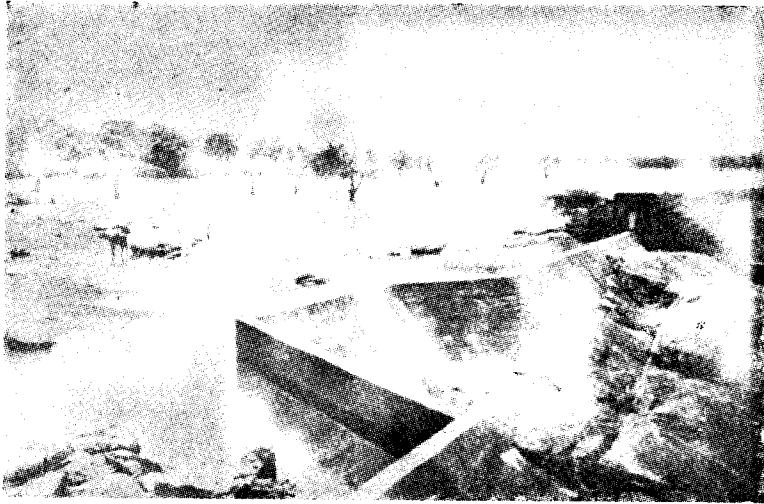
The stream drains an area of 592 sq. miles and is assessed to have a flow of 121,000 acre feet, during the north-east monsoon.

Land use is dependent, in the dry zone, on irrigation water supply. Existing works in the upper reaches consists of the recently completed Mi Oya Diversion Scheme and Tabbowa Tank which is constructed across Nanneri Oya, a tributary of Mi Oya. There are several minor works in the basin.

Proposals for development

Two major reservoirs are proposed; the upper Mi Oya reservoir at Inginimitiya and the lower Mi Oya reservoir (Rajawanni Reservoir) about five miles from Puttalam. A smaller reservoir can be erected in the upper reaches of Nanneri Oya.

As the amount of water in the basin is not sufficient to effect irrigation supply to all the commandable lands and as the neighbouring Deduru Oya basin has spare flow, diversion of Deduru Oya flow to the Mi Oya basin would be of advantage. In which event an extent of about 50,000 acres could be developed in the combined project.



95.1.2 ATTARAGALLA TANK—SPILL



99.1 DEDURU OYA ANICUT

95.1 MI OYA DIVERSION SCHEME

The nature of the Scheme that apparently existed in the area, consisted of a diversion anicut across the Mi Oya, diverting flow to Attaragollawa Tank for purposes of irrigation supply under that tank.

The present project consists of storage reservoir cum diversion of the Mi Oya at Abokalawa Tank, feeding Attaragollawa from where supply is also made to Palukadawela Tank where the bulk of the development is undertaken.

These three tanks of the Mi Oya Scheme chain are about a mile apart and are connected by inlet channels each 40 and 35 ft. wide.

MI OYA DIVERSION SCHEME

95.1.1 ABAKOLA WEWA

Location

3 miles south east of Ambanpola.

Co-ordinates F/23 (10.7×4.1)

Present tank constructed in 1954.

Scheme

Impounds, detains and diverts flow in Mi Oya for direct irrigation supply and to feed Attaragalla and Palukadawela Tanks in the Mi Oya Diversion Scheme.

Data

Tank

Catchment area	66 sq. miles
Length of Tank Bund	3500 ft.

Tank Full:

Storage	4200 acre feet
Head of water	12½ ft.
Area of water spread	500 acres

Spills:

Nature	Masonry	Rock
Length	500 ft.	200 ft.

Sluices:

Location	R.B.	L.B.
Size	12" dia.	36" dia.

Irrigation Supply

The work provides direct supply to 833 acres of rice cultivation and feeds Attaragollewa Tank, in the chain.

MI OYA DIVERSION SCHEME

95.1.2 ATTARAGALLA TANK

Location

About 3 miles east off Ambanpola.

Co-ordinates F/23 (11.1 × 5.5)

Restoration

Restored in 1954, to serve as an intermediate tank in the Mi Oya Diversion Scheme chain to convey Mi Oya flow (diverted by Abakola Wewa) to Palukadawela Tank and for direct supply to fields.

Data

Tank

Source of Supply:

Inlet channel from Abakola Wewa and 16 sq. miles of catchment.

Length of Tank Bund 1½ miles

Tank Full:

Storage	3700 acre feet
Head of water	15 ft.
Area of water spread	500 acres

Spills:

Nature	Masonry
Location	R.B.
Length	170 ft.

Sluices:

Location	L.B.	R.B.
Size	36" dia.	12" dia.

Inlet channel from Abakola Wewa:

Length	5280 ft.
Bed width	40 ft.

Irrigation Supply

The work serves as intermediate storage and also effects supply to 1000 acres of direct irrigation to new colonization development.

MI OYA DIVERSION SCHEME

95.1.3 PALUKADAWELA TANK

Location

About 3 miles north east of Ambanpola.

Co-ordinates F/23 (11.2 × 6.8)

Scheme

Improved and augmented in 1960 to receive diverted supply from Mi Oya, from Abakola Wewa, through Attaragalla Tank, forming the end tank of the Mi Oya Diversion Scheme.

Data

Tank

Source of Supply:

Inlet channel from Attaragalla Tank and 7 sq. miles of catchment.

Length of Tank Bund 3800 ft.

Tank Full:

Storage	5700 acre ft.
Head of water	15 ft.
Area of water spread	650 acres

Spills:

Nature	Concrete—skin type
Location	L.B.
Length	100 ft.

Sluices:

Location	Central	R.B.
Size	12" dia.	36" dia.

Inlet channel from Attaragalla Tank:

Length	4200 ft.
Bed width	35 ft.

Irrigation Supply

An extent of 3000 acres are supplied with irrigation water aiding new colonization.

95.2 GALGAMUWA WEWA

Location

About $1\frac{1}{2}$ miles east of Galgamuwa Station.
Co-ordinates F/18 (11.5×1.6)

Restoration

Present tank was completed in 1877. The site has historical references.

Data

Tank

Catchment area	4 sq. mls.
Length of Tank Bund	1200 ft.
Tank Full:	
Storage	6500 acre ft.
Head of water	20 ft.
Area of water spread	640 acres

Spills:

Nature	Rock
Location	R.B.
Length	20 ft.

Sluices:

Location	R.B.
Size	18" dia.

Irrigation Supply

Work aids in the development of 400 acres for rice cultivation.

Note: This Tank is not to be mistaken for the small railway tank of the same name adjoining the Railway Station.

95.3 MAHA ANDARAWA TANK

Location

Situated east north east of Maha Nanneriya a village 9 miles east of Galgamuwa.
Co-ordinates F/18 (2.2×3.1)

Historical

An ancient work.

Scheme

Impounds the flow in Nanneri Oya.

Data

Tank

Catchment area	13 sq. miles
Length of Tank Bund	4800 ft.
Tank Full:	
Storage	1700 acre feet
Head of water	11 ft.
Area of water spread	315 acres

Spills:

Nature	Concrete Structure
Location	L.B.
Length	272 ft.

Sluices:

Location	L.B.
Size	2' dia.

Irrigation Supply

The work benefits 400 acres of rice cultivation for new colonization development.

Approximate cost Rs. 6 lakhs.

95.4 MEDIYAWA WEWA

Location

About 4 miles north of Maho—3 miles east of 32nd mile on Kurunegala-Anuradhapura Road.

Co-ordinates F/23 (11.0×2.7)

Restoration

Present tank completed in 1879.

Data

Tank

Catchment area 11 sq. miles
Length of Tank Bund One mile

Tank Full:

Storage 2500 acre feet
Head of water 14 ft.
Area of water spread 380 acres

Spills:

Nature Masonry and channel flow
Location 4 Spills of total
Length length 250 ft.

Sluices:

Location L.B.
Size 12" dia.

Irrigation Supply

Work benefits about 1000 acres of rice fields.

95.5 MAHA US WEWA

Location

About 8 miles north east of Anamaduwa, which is on the Kurunegala-Puttalam Road.

Co-ordinates F/22 (11.7×6.4)

Restoration

The restoration of this work commenced in 1877 and was completed in 1894 at a cost of Rs. 61,392.

Data

Tank

Catchment area 32½ sq. miles
Length of Tank Bund 2310 ft.

Tank Full:

Storage 2740 acre ft.
Head of water 16 ft.
Area of water spread 525 acres

Spills:

	No. 1	No. 2
Nature	Masonry	Masonry
Location	L.B.	H.L.
Length	361 ft.	64 ft.

Sluices:

Location R.B.
Size 26"×18"

Irrigation Supply

A channel system, over 3 miles in length, delivers supply to 875 acres for development of rice cultivation.

95.6 KOTTUKACHCHIYA AND KACHCHIMADUWA TANKS

Location

At Kottukachchiya, 43rd mile on the Kurunegala-Puttalam Road.

Co-ordinates F/22 (1.3×7.6)

Kottukachchiya tank and Kachchimaduwa tank across the road are now interconnected by a free passage beneath the roadway and function as one scheme.

Scheme

Present tank restored in 1950.

Data

Tank

Catchment area	23 sq. miles
	and 95 sq. miles
Length of Tank Bund	3400 ft.
	and 3000 ft.
Tank Full:	
Storage	2700 acre ft.
	and 650 acre ft.
Head of water	13 ft.
	and 12 ft.
Area of water spread	450 acres
	and 140 acres
Spills:	
Nature	Concrete Concrete
Location	L.B. L.B.
Length	140 ft. 200 ft.
Sluices:	
Location	L.B. R.B.
Size	2' x 1'-6" 15 ins dia.

Irrigation Supply

Channel system nearly four miles long, supplies 857 acres of rice cultivation by colonists.

This tank functions along with and is augmented by storage and supply from Kachchimaduwa Tank, across the road.

95.7 PAHARIYA TANK

Location

Branch off northwards near $14\frac{1}{2}$ miles on the Puttalam Anuradhapura Road and proceed about 3 miles.

Co-ordinates F/12 (4.6×1.95)

Restoration

Restored 1957-62.

Scheme

Impounds the flow of Dangaha Ella.

Data

Tank

Catchment area	13 $\frac{1}{2}$ sq. miles
Length of Tank Bund	$\frac{1}{4}$ mile
Tank Full:	
Storage	1800 acre ft.
Head of water	16 ft.
Area of water spread	250 acres
Spills:	
Nature	On rock
Location	L.B.
Length	280 ft.
Sluices:	
Location	R.B.
Size	30" dia.

Irrigation Supply

The work aids rice cultivation in 350 acres of newly developed land.

95.8 TABBOWA WEWA

Location

About 2 miles north east of 8½ M.P. on the Puttalam-Anuradhapura Road.

Co-ordinates F/17 (1.1×7.3)

Restoration

Restoration of present work, was commenced in October 1912 (Estimated total Rs. 374,700), river closure was effected and work completed in 1925 and on 8.12.25 tank spilled for the first time. The work was improved and enlarged in 1969.

Scheme

Impounds the flow in Nanneri Oya, which is also dammed at Maha Andra Wewa, about 15 miles higher. The spill flows reach Mi Oya.

Data

Tank

Catchment area	150 sq. miles
Length of Tank Bund	1¼ miles

Tank Full:

Storage	12,000 acre ft.
Head of water	16 ft.
Area of water spread	1500 acres.

Spills:

Nature	Concrete with Radial Gates 20 of 23'-7"×3'-0
--------	--

Location	L.B.
Length	500 ft.

Sluices:

Location	L.B	Central	R.B.
Size	Masonry	12" dia.	Masonry
	Sluice	pipe	Arch
			Sluice

Irrigation Supply

A left bank channel system 3¾ miles long and a right bank channel system two miles long irrigate in all 2000 acres for rice cultivation.

98. RATHAMBALA OYA BASIN

The Rathambala Oya is a small river which empties into the Mundel lake, near Battulu Oya. Katupotha Tank is an ancient work which has since been restored.

98.1 KATUPOTHA TANK

Location

About 6 miles south east of 63½ mile post on Colombo-
Puttalam Road.

Co-ordinates I/1 (11.3×0.5)

Restoration

Restored 1952-56.

Scheme

Impounds the waters of Rathambala Oya.

Data

Tank

Catchment area	70 sq. miles
Length of Tank Bund	1¼ miles

Tank Full:

Storage	3300 acre ft.
Head of water	11½ ft.
Area of water spread	600 acres

Spills:

Nature	Skin Type
Location	L.B.
Length	350 ft.

Sluices:

Location	R.B.
Size	2'-6" dia.

Irrigation Supply

A 2½ mile long main channel with distributaries etc., supply
500 acres of newly developed rice fields by the colonists.

99. DEDURU OYA BASIN

Deduru Oya has its source in the foothills of Matale and flows
87 miles through the Kurunegala and Chilaw Districts and reaches
the sea north of Chilaw.

The Deduru Oya basin is one of the three river basins which
is situated and receive benefit from more than one monsoonal
zone. The upper reaches, about 576 sq. miles are situated in the
intermediate zone of Matale area and the lower 446 sq. miles are
in the dry zone of Chilaw District.

It has been assessed that the Oya receives a flow of 968,000 acre
feet during the Maha season; in addition 254,000 acre feet is received
during the Yala season, being the benefit of the south-west monsoonal
precipitation in the catchment.

Land Use

Unlike the dry zone river basins, land use in the Deduru Oya
basin does not depend on stored irrigation supply. In the upper
reaches some rice cultivation is practised with the aid of
Irrigation supply from diversion anicuts or diversion anicuts cum
storage tanks. There are also a few minor tanks in the catchment.

The basin is generally well developed with coconut plantation,
which forms the bulk of agricultural activity in the region.

Proposals for development

Two major reservoirs are proposed to conserve the flow in the
Deduru Oya. The Ridi Bendi Ela reservoir being larger and
situated higher could supply water to the Mi Oya basin as well.
The lower reservoir would aid the development of lands in the
Chilaw District.

As mentioned under Mi Oya Basin, the combined project would
aid the development of 50,000 acres.

99.1 DEDURU OYA SCHEME

In the upper reaches of the Deduru Oya, the river is diverted by a massive masonry anicut to feed Batalagoda Tank.

History records the damming of Deduru Oya at three other places lower down, by Parakrama Bahu I, during his earlier period when he was engaged in the development of Dakkinadesar:

1. "Kotthabaddha" dam, very likely Senegal oya.
2. "Ebavalapitiya" dam—above the Ridi Bendi Ela anicut.
3. "Demodera" anicut where Hakwatunu oya and Kimbulvana oya meet.

But the present Deduru Oya anicut, at Batalagoda, in the upper reaches is a later effort for augmenting Batalagoda Tank, when irrigation development was enlarged under the scheme.

Deduru Oya works was designed by H. Parker, Irrigation Assistant and constructed under his guidance, approx. initial expenditure Rs. 526,550.

DEDURU OYA SCHEME

99.1.1 DEDURU OYA ANICUT

Location

About 5 miles south of 66th mile on Kurunegala-Dambulla Road.

Co-ordinates $1/14 (10 \times 4.4)$

Scheme

Present work completed in 1902.

Data

Anicut Diversion

Catchment area	80 sq. miles
Length of Structure	275 ft.
Height	10 ft.

Massive masonry structure with three silt gates each 4 ft. wide by 5ft. high.

Head Sluice

Location	R.B. 6 No. openings
Size	6 ft. high 3'-6" wide, each.

Inlet channel to Batalagoda

Length	2 miles
Bed width	16 ft.

Irrigation Supply

The inlet channel also serves 250 acres direct besides feeding Batalagoda Tank.

DEDURU OYA SCHEME

99.1.2 BATALAGODA TANK

Location

About 2 miles south of 66th mile on Kurunegala-Dambulla Road.

Co-ordinates I/14 (8.8×5.9)

Historical

Believed to be a very ancient work, constructed to serve the Parana Nuwara City, and repaired by King Kumara Das (513-522 A.C.) and later by Queen Kalyanawathie (1202-1208 A.C.).

Restoration

Restoration was undertaken in 1890.

Present tank completed in 1902.

Data

Tank

Source of supply: Inlet channel from Deduru Oya Anicut and self catchment 5 sq. miles.

Length of Tank Bund 4400 ft.

Tank Full:

Storage 5000 acre feet

Head of water 12 ft.

Area of water spread 700 acres

Spills:

Nature Concrete Structure

Location L.B. 1 L. B. 2

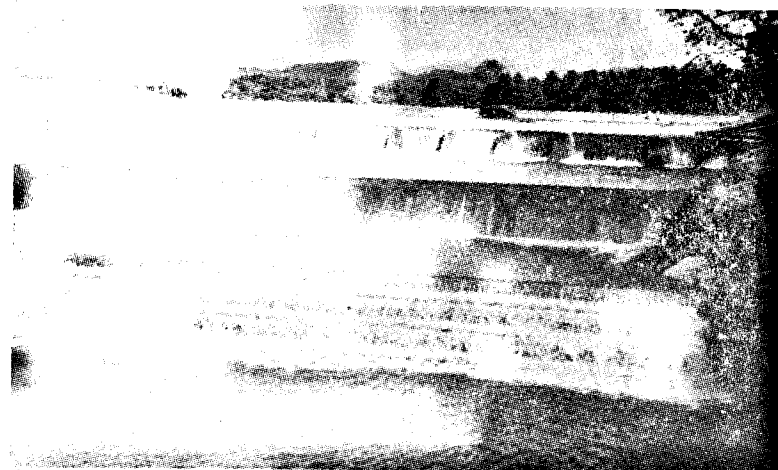
Length 100 ft. 150 ft.

Sluices:

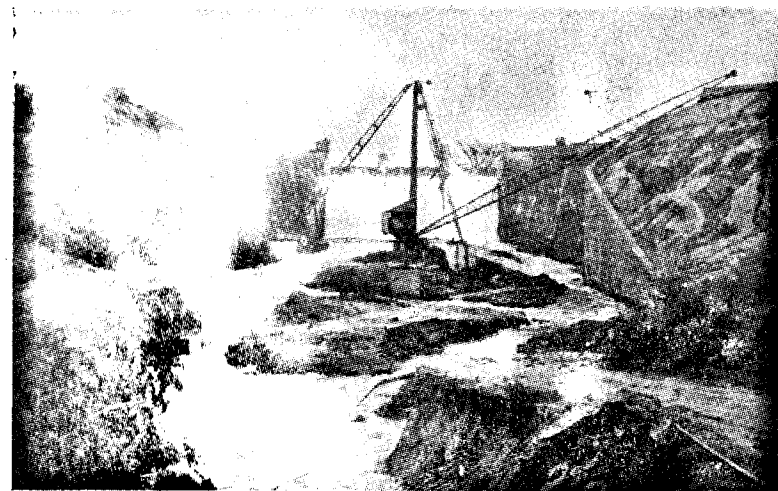
No. of openings 6
Size Each 6 ft. high by 2'-3" wide.

Irrigation Supply

Ten mile long main channel system feeds Dolukanda, Tatirigama, Uyangalla and Hiripitiya branch channels for irrigating in all 5000 acres of rice cultivation.



99.1.2 BATALAGODA TANK—SPILL



99.2 HAKWATUNU OYA RESERVOIR—SPILL UNDER CONST.



99.3 KIMBULWANA TANK



99.4 WANARA WEWA

99.2 HAKWATUNU OYA RESERVOIR

Location

Sited about four miles east of the 15th mile on the Ibbagamuwa-Maho Rd., which takes off from near 62nd mile on the Kurunegala-Dambulla Road.

Co-ordinates $1/4 (8.5 \times 4.0)$

Historical

The Hakwatunu Oya (Sankamadhamandu Nadi) tributary of the Deduru Oya had been dammed and diverted for irrigation supply in the ancient days, apparently at more than one site, in this locality.

Scheme

Reservoir formed by impounding the flow in Hakwatunu Oya, by damming a narrow valley between two hillocks Kepitigala and Koragahahena. Construction commenced 1957. Approximate cost Rs. $10\frac{1}{2}$ million.

Data

Tank

Catchment area	24 sq. miles
Length of Tank Bund	2900 ft.
Tank Full:	
Storage	16,000 acre ft. (nett)
Head of water	$26\frac{1}{2}$ ft.
Area of water spread	960 acres

Spills:

Nature	Mass concrete
Location	Central
Length	200' Segmental concrete structure over 26 ft. high with 3 radial gates $20' \times 12\frac{1}{2}'$ each.

Sluices:

Location	R.B.	L.B.
Size	$2/3' 6" \phi$	$2/3' 6" \phi$

Irrigation Supply

Left Bank Scheme 7 miles long benefits 2000 acres of private land and colonization development. Right Bank scheme similarly benefits 1500 acres.

99.3 KIMBULWANA TANK

Location

Situated about 4 miles north of the 72nd mile post on the Kurunegala-Dambulla Road, near Lenawa Group Estate.

Co-ordinates I/9 (9.9×4.5)

Scheme

Storage reservoir formed by the restoration of an ancient tank impounding the waters of Kimbulwana Oya, a tributary of Deduru Oya.

Data

Tank

Catchment area 38 sq. miles
Length of Tank Bund 2600 ft.

Tank Full:

Storage 3400 acre feet
Head of water 12½ ft.
Area of water spread 475 acres

Spills:

Location - (1) L.B. (2) R.B.
Length 100 ft. 100 ft.

Sluices:

Location R.B.
Size 3 ft.dia.

Irrigation Supply

The Left Bank Scheme benefits about 215 acres. The Right Bank Scheme, about 2¼ miles long, benefits 1300 acres.

Development consists of both private and new colonization lands.

99.4 WANARA WEWA

Location

In Kurunegala, near Railway Station.

Co-ordinates I/14 (4.3×1.3)

Historical

Along with Udu Watta Wewa (Kurunegala Tank) formed the ancient "row of lakes" that supplied water to the city of Hastisailapura (Kurunegala).

Restoration

Present tank was completed in 1873 and was improved subsequently.

Data

Tank

Catchment area 4 sq. miles
Length of Tank Bund } West Bund 1 mile
East Bund ¾ mile

Tank Full:

Storage 1500 acre feet
Head of water 17 ft.
Area of water spread 220 acres

Spills:

Nature Masonry
Location R.B. L.B.
Length 40 ft. 28½ ft.

Sluices:

Location R.B. L.B.
Size 16" dia 12" dia

Irrigation Supply

A right bank channel system over a mile long and a two mile left bank channel together benefit an extent of 431 acres of rice cultivation.

99.5 DIYATURE ANICUT

Location

Near 75th mile on Kurunegala-Dambulla Road.

Co-ordinates I/9 (13.5.×4.7).

Scheme

Anicut Diversion of flow in Kimbulwana Oya a tributary of Deduru Oya. The anicut was constructed in 1937.

Data

Anicut Diversion

Catchment area	12 sq. miles
Length of Structure	108 ft.
Height	6 ft.

Head Sluices:

Location
Size

L.B.	R.B.
3'-3"×1'-6"	3'×3'-3"

Irrigation Supply

The left bank channel, 3 miles long irrigates 500 acres.

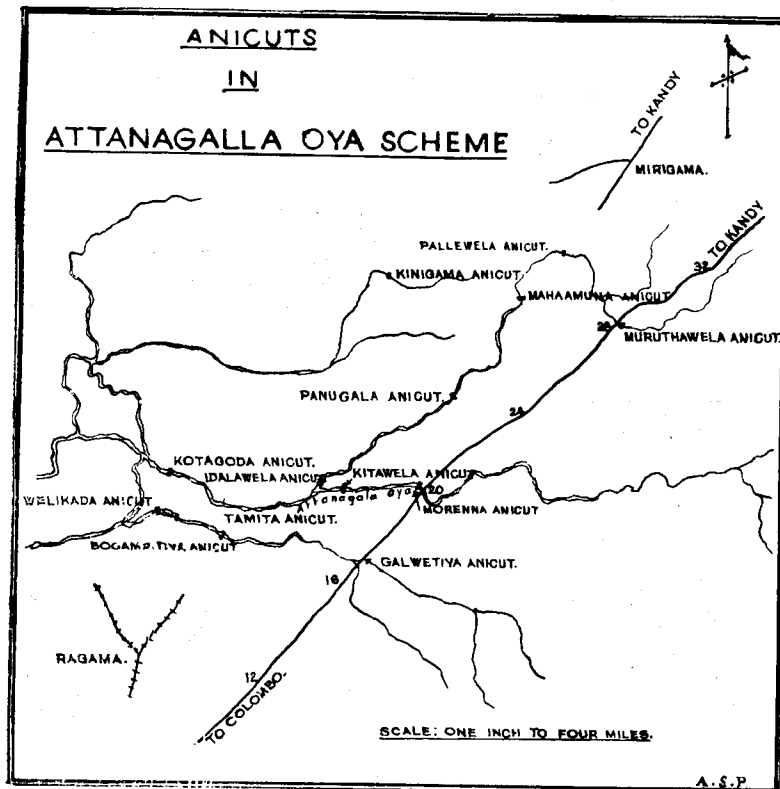
The right bank channel, 2 $\frac{3}{4}$ miles long supplies 300 acres.



99.5 DIYATURE ANICUT



99.6 KOSPOTHU OYA ANICUT



99.6 KOSPOTHU OYA ANICUT

Location

About 6 miles, as the crow flies to east of Kurunegala is reached by turning northwards at Mawatagama on the Kurunegala-Galagedera Road.

Co-ordinates I/14 (9×1.2)

Constructed 1872-90, cost Rs. 12,417.

Scheme

Diversion of flow in Dik Oya, a tributary of Deduru Oya.

Data

Anicut Diversion

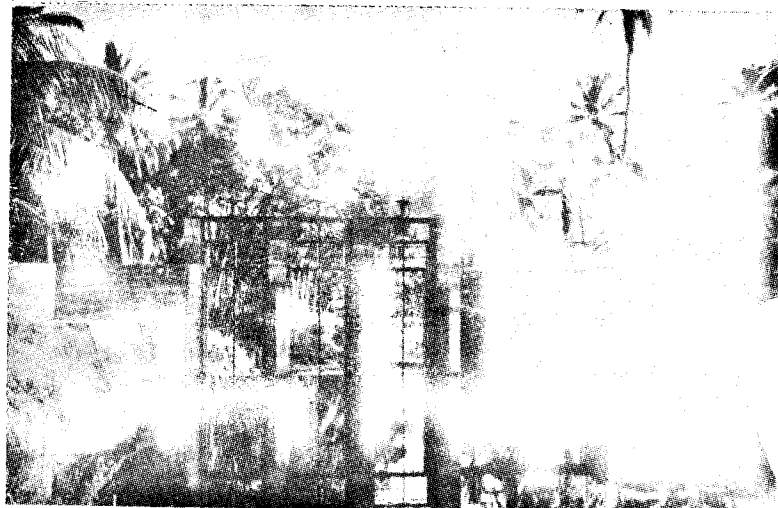
Catchment area	42 sq. miles
Length of Structure	221 ft.
Maximum height	6 ft.

Head Sluice:

Location	R.B.
Size	3'-6" × 2'

Irrigation Supply

Right Bank channel system about $\frac{3}{4}$ mile long benefits 300 acres.



103.1 MURUTHAWELA ANICUT

99.7 RIDI BENDI ELA SCHEME

A project to divert the flow in Deduru Oya, by means of the Ridi Bendi Ela Anicut and convey supply by a long inlet channel, irrigating about 500 acres en route, to Magalle Wewa in Nikaweratiya on which depends over 5000 acres of rice cultivation for water supply for double cropping each year.

Historical

Parakrama Bahu (1153-1186 A. C.) is recorded to have commenced this work, for the development of Panduvas Nuwara, by conveying Deduru Oya flow to Magalle Wewa. Project consisted of the anicut across the oya and a long channel.

The present inlet channel from anicut to Magalle Wewa was restored in 1942. A channel over $12\frac{1}{2}$ miles long, 21 ft. wide, with a road by the side, crossing the Padeniya-Anuradhapura Road near $21\frac{1}{2}$ M.P., conveys the diverted flow.

RIDI BENDI ELA SCHEME

99.7.1 RIDI BENDI ELA ANICUT

Location

About $1\frac{1}{2}$ miles east of 21st mile post on Padeniya-Anuradhapura Road.

Co-ordinates I/3 (9.6×1.1)

Historical

Ancient work, recorded to have been constructed by Parakrama Bahu (1153-1186) in his earlier period when he was engaged in the development of Panduvas Nuwara to augment supply to Magalle Wewa.

Restoration

Present anicut completed in 1952.

Scheme

Diversion of flow in Deduru Oya, into an inlet channel to feed Magalle Wewa.

Data

Anicut

Catchment area	530 sq. miles.
Structure	350 ft. Mass concrete with scour gates and divided wall. Abutments 20 ft. higher than anicut crest.
Head Sluice:	
Location	At L.B. Of concrete blocks with a central pier and two cast iron gates with winch lifting gear.
Openings:	2 Nos. each 10 ft. $\times$ 3 ft.

RIDI BENDI ELA SCHEME

99.7.2 MAGALLE WEWA—NIKAWERATIYA

Location

At Nikaweratiya.
Co-ordinates I/3 (0.8×1.9)

Historical

Constructed during the reign of King Maha Sena (276-303 A.D.), later repaired and enlarged, when Ridi Bendi channel and anicut was constructed by Parakrama Bahu (1153-1186).

Restoration

Present tank was restored in 1873 and improved and augmented in 1958

Scheme

Storage tank which receives in addition to flow from own catchment, copious supply from the Ridi Bendi Ela anicut by diversion of flow in Deduru Oya.

Tank

Data

Source of Supply:
Inlet channel from Ridi Bendi Ela anicut and self catchment 21 sq miles.
Length of Tank Bund 1 mile
Tank Full:
Storage 7500 acre ft.
Head of water 18 ft.
Area of water spread 650 acres
Spills:
Nature Masonry
Location L.B. No.1
Length 110 ft. Masonry L.B. No. 2 200 ft.
Sluices:
Location L.B. Central R.B. 1. R.B. 2
Size 24" dia 15" dia. 4" dia. 24" dia.

Irrigation Supply

The left bank channel system, about 3 miles long benefits lands in Magallegama village. The central sluice irrigates lands in Nikaweratiya. The right bank channel system is very long over 14 miles in length and covers an extensive area west and northwards. In all 5000 acres are irrigated from this work.

99.8 YAKADAPOTHA MAHA WEWA

Location

In Nikaweratiya area, about 3 miles south of 22½ mile post on Kurunegala-Nikaweratiya Road.

Co-ordinates I/8 (0.4×7.4)

Restoration

As the tank had been long out of function, rice and garden cultivation and dwellings are found in the tank bed area. The people have to be re-settled before restoration could be completed.

Scheme

Storage tank impounds flow in Rambukkan Oya—a small tributary of Deduru Oya.

Data

Tank

Catchment area 34½ sq. miles
Length of Tank Bund 3400 ft.
Tank Full:
Storage 3200 acre feet
Head of water 10 ft.
Area of water spread 505 acres
Spills:
Nature Skin type concrete structure
Location R.B.
Length 300 ft.
Sluices:
Location L.B. R. B.
Size 24" φ 24" φ

Irrigation Supply

Target for irrigation supply 1000 acres.

99.9 GALKISSA BEMMA ANICUT

Location

About a mile north of 32nd mile on Madampe-Kuliyapitiya Road.

Co-ordinates I/12 (0.5×2.8)

Scheme

The Dandagamu Oya has been dammed by relief labour and a concrete structure is now provided with spill gates etc.

Data

Diversion Anicut

Catchment area	189 sq. mls.
Length of Structure	100 ft.
With 8 No. openings each $5' \times 11'$ (Screw operated gates)	
Height	12 ft.

Also a spilling section 36 ft long.

Irrigation Supply

Eight pipe sluices sizes 15" dia. to 6" dia. would aid supply to 217 acres of private developed rice fields and aid in new development of over 50 acres.

99.10 KARAWITA YODE ELA

Location

About half mile north of the $10\frac{3}{4}$ M.P. on the Chilaw-Kurunegala Road.

Co-ordinates I/7 (1.7×1.5)

Historical

An ancient work which conveyed the waters of Deduru Oya to feed several minor tanks.

Restoration

Work on present anicut commenced in 1956.

Scheme

Diversion of flow in Kolamunu Oya, a tributary of Deduru Oya.

Data

Anicut

Catchment area	158 sq. miles
Length of Structure	177 ft.
Openings:	10 Nos. Fitted with radial gates of size 15 ft. wide by 8 ft.
Head Sluice:	
Location	L.B.
Size	2 openings each $4'-6" \times 2'$.

Irrigation Supply

A long ancient channel, over eight miles in length, has now been restored to feed 550 acres in Godawela, 120 acres in Mahawilattawa, 30 acres in Kanattawa etc., and 700 acres in Karawita, making in all a total of 1400 acres.

100. KARAMBALAN OYA BASIN

The Karambalan Oya is a short stream about twenty five miles long, which, rising in the Kuliapitiya region, reaches the sea south of Chilaw.

The basin is 230 sq. miles in area and is computed to carry a flow of about 300,000 acre feet.

The high land is all developed with coconut; some rice cultivation is practised in the isolated valleys. These are served with irrigation supply from diversion anicuts.

The area is well developed with highland crops. Almost the entire run off flows to the sea.

100.1 ANICUT ACROSS KADUPITIYA OYA

Location

About half mile above Tinipitiwewa tank.

Scheme

To divert flow in Kadupitiya Oya a tributary of Karambalan Oya, into Tinipitiwewa, constructed in 1904.

Data

Anicut

Length of Structure	150 ft.
Openings:	5 Nos. each 25 ft wide
Head of water	6 ft. 9 inches.
Inlet sluice to tank—	Planked regulator 3 bays 4 ft. × 5 ft.

100.2 TINIPITIWEWA

Location

Adjoins 42nd mile on Colombo-Chilaw Road.

Co-ordinates I/11 (7.7×1.5)

Restoration

Present tank was restored in 1871 and later improved and enlarged in 1939.

Data

Tank

Receives diverted supply from anicut across Kadupitiya Oya and also drainage from own catchment area of 3 sq. miles.

Length of Tank Bund, 1 mile

Tank Full:

Storage	500 acre ft.
Head of water	7 ft.
Area of water spread	200 acres

Spills:

Nature	Masonry—Circular, C.O.
Location	R.B. by road side.
Length	100 ft.

Sluices:

Location	R.B.
Size	2 bay planked regulator $2' \times 2'$

Irrigation Supply

The tank supplies irrigation facilities to 960 acres of rice fields.

102. MAHA OYA BASIN

The Maha Oya is one of the major rivers of Ceylon. Rising in the Kandy-Nawalapitiya area, the Maha Oya flows for 78 miles through the Kegalle and Negombo Districts, reaching the sea north of Negombo.

The Maha Oya basin is situated entirely in the wet zone and is 590 sq. miles in extent. The total annual run off in the Oya is assessed as being one and a half million acre feet. This is received in about equal quantities during the Maha and Yala seasons.

The basin is well developed with coconut, rubber and other crops of the wet zone. Some rice cultivation is also practised in isolated valleys with the aid of small diversion anicuts.

Computations show that about a million acre feet annually flow into the sea, to waste, unused and therefore plenty of surplus water is available for development

102.1 YAKA BENDI ELA SCHEME

Location

Across Maha Oya, about 3 miles down-stream of the Road Bridge at Giriulla.

Co-ordinates I/22 (12.1×8.1)

A massive anicut is said to have existed across Maha Oya, about $1\frac{1}{2}$ miles below the Giriulla road bridge, which diverted water supply along a long channel, traces of which are seen to-day, for irrigation in Pitigal Korale.

A concrete anicut is envisaged at the same rocky site, about 300 ft. long, 23 ft. high and with eleven radial gates, each 25 ft. by 16 ft. high incorporated in it, to dam the Maha Oya which drains 453 sq. miles of catchment at this spot.

A right bank channel about 20 miles long following the ancient course, wherever now possible, would convey supply for rice cultivation in the drainage basins of Mahandura Oya, Kandapola Oya and the Ratmale Oya assessed at 8000 acres of double cropping.

Approximate cost Rs. 25 million.

103. ATTANAGALLA OYA BASIN

Attanagalla Oya Basin is situated between the Kelani and Maha Oya Basins in the Western Province and is approximately 30 miles long by 20 miles wide.

The three streams (1) Diyella Oya (2) Attanagalla Oya and the (3) Uruwal Oya form the Attanagalla Oya which discharges into the Negombo Lagoon as Dandugam Oya and also through Ja-Ela.

Diyella Oya, with a catchment area of 55 sq. miles, crosses the Colombo-Kandy Road, in its upper reaches in the 28th mile near Pasyala. Among the permanent anicuts built across it, for irrigation purposes, are (1) Muruthawela Anicut (2) Pallewela Anicut (3) Maha Amuna Anicut (4) Panugala Anicut and (5) Idallawela Anicut.

The Diyella Oya has its confluence with Attanagalla Oya at Gampaha.

Attanagalla Oya, with a catchment area of 238 sq. miles crosses the Colombo-Kandy Road in the 19th mile. Among the permanent anicuts constructed across it are (1) Morenna Anicut (2) Kitawela Anicut (3) Tammita Anicut and (4) Kotagoda Anicut. The Attanagalla Oya, known as Dandugam Oya in the lower reaches crosses the Colombo-Negombo Road near the 16th mile.

Uruwal Oya, with a catchment area 63.5 sq. miles, forms the Southern basin. The Kinigama, Galwetiya, Bogampitiya and Welikada anicuts are constructed across it. The Uruwal Oya exits through Ja-Ela but discharges also through Dandugam Oya.

The Attanagalla Oya Irrigation Development Scheme, consisting of the various anicut diversion projects mentioned above was constructed during 1945-1950, and provides irrigation and drainage facilities to over seven thousand acres of land for rice production.

Each anicut project is considered in detail in the pages that follow.

ATTANAGALLA OYA SCHEME

103.1 MURUTHAWELA ANICUT SCHEME

Location

Along Colombo-Kandy Main Road after passing culvert No. 28/4 turn left. The anicut is situated here.

Nearest Town Nittambuwa 3 miles

Nearest Railway Station Pallewela 5½ miles

Co-ordinates L/3 (0.1 × 7.1)

Scheme

There used to be 6 temporary amunas built by cultivators to provide Irrigation facilities to their fields. These Amunas were very easily washed away for minor floods. As a result the cultivators had to face recurrent heavy losses.

A new permanent structure was constructed in 1955 with 3 No. planked bays and spillway 15 feet wide. The gates are operated by screw lifting arrangement. The two channels originate from the L.B. and R.B. head sluices each having an opening of 2' diameter.

Data

Anicut Diversion

Catchment of Oya	8½ sq. miles
Length of Structure	42'-0"
Maximum Height	18'-6"
Planked Bays	3 Nos.
Head Sluice	2 Nos. on L.B. and R.B.

Irrigation Supply

A total length of over 9 miles of main channels and necessary branch channels provide irrigation supply to 675 acres.

ATTANAGALLA OYA SCHEME

103.2 PALLEWELA ANICUT

Location

By railway line, about a mile north of the Pallewela Railway Station.

Co-ordinates I/22 (11.8 × 0.5)

Scheme

Diversion of flow in Diyella Oya.

Data

Anicut Diversion

Catchment area	18 sq. miles
Openings:	3 of 6' × 5'
	2 of 6' × 2'
	3 of 6' × 1'

Sluices:

Location	L.B.	R.B.
Size	18" dia.	18" dia.

Irrigation Supply

The work benefits 675 acres.

ATTANAGALLA OYA SCHEME

103.3 MAHA AMUNA ANICUT SCHEME

Location

From Veyangoda-Nittambuwa Road turn left at Pattalagedera and proceed to Kumbaloluwa Sub-Post Office. Turn left proceed $\frac{1}{2}$ mile.

Co-ordinates L/2 (10.7×7.6)

Scheme

There used to be 16 temporary amunas built by the cultivators to provide irrigation facilities for 275 acres. After every flood these had to be repaired.

A new permanent structure was constructed in 1951 with 6 planked bays the gates of which are operated by screw lifting arrangements.

Data

Anicut Diversion

Catchment of Oya	24 sq. miles
Length of Structure	47'-4"
Maximum Height	17'-0"
Planked Bays	6 Nos.
Head Sluice	2 Nos. R.B. and L.B.

Irrigation Supply

An R.B. and L.B. channel system, of total length about 4 miles, benefit 470 acres.

ATTANAGALLA OYA SCHEME

103.4 PANUGALA ANICUT SCHEME

Location

From Veyangoda Railway Station along Kalagedihena Road for about $\frac{1}{2}$ mile, turn right and proceed $\frac{1}{4}$ mile.

Co-ordinates L/2 (8.95×5.40)

Scheme

There had been 10 temporary amunas built by the cultivators to provide irrigation for 625 acres. These were built placing logs across the Oya. Cultivators had to repair them regularly as they were washed away for even minor floods. One permanent anicut was erected to replace them.

Data

Anicut Diversion

Length of Structure	60'-6"
Maximum Height	6'-0"
Planked Bays	4 Nos.
Head Sluice	2 Nos. L.B. and R.B.

Irrigation Supply

An R.B. and L.B. channel system of total length about 4 miles, benefit 470 acres.

ATTANAGALLA OYA SCHEME

103.5 IDALLAWELA ANICUT SCHEME

Location

Along Gampaha-Minuwangoda Road for about 1 mile turn right at the Sign Board and proceed $\frac{1}{2}$ mile to anicut site.

Co-ordinates L/2 (4.9×2.5)

Scheme

There had been 4 temporary amunas put up by cultivators to irrigate a total of 244 acres. Occasional floods had washed off these amunas and the cultivators had much difficulty in building them anew. A permanent structure was constructed in 1946 with 5 planked bays operated by screw lifting arrangement.

Data

Anicut Diversion

Catchment of Oya	53 sq. miles
Length of Structure	42'-6"
Maximum Height	9'-6"
Planked Bays	5 Nos. each 6' x 4'
Head Sluice	1 No. on the R.B. 1 No. on the L.B.

Irrigation Supply

A channel system about 4 miles long on R.B. benefits 520 acres. The one mile long left bank channel irrigates 50 acres.

ATTANAGALLA OYA SCHEME

103.6 MORENNA ANICUT

Location

In Colombo District, is situated about $4\frac{1}{2}$ miles from Gampaha, about 300 yards to the north of bridge No. 20/1 on the Colombo-Kandy Main Road.

Co-ordinates L/2 (7.7×2.0)

Scheme

There had been 9 temporary amunas, erected by cultivators to head up and divert the flow in this branch of Attanagalla Oya to aid irrigation of rice fields. In 1948 one permanent concrete anicut structure was erected instead.

Data

Anicut

Stream Catchment	71 sq. miles
Length of Anicut Structure	54 ft.
Maximum Height	11 $\frac{1}{2}$ ft.
Planked Bays	6 Nos. completed with screw lifting arrangements.
Sluices	L.B. and R.B.

Irrigation Supply

With over 4 miles of main channels and 6 miles of branch channels, in the right bank and left bank channel systems 1070 acres of private rice fields are irrigated for double cropping.

ATTANAGALLA OYA SCHEME

103.7 KITAWELA ANICUT SCHEME

Location

Along Gampaha-Yakkala P. W. D. Road for about $\frac{3}{4}$ mile, turn to left at Sign Board to the V. C. (gravel) road and proceed to Ihalagama Temple premises. From here proceed on foot to Railroad 300 yards to anicut.

Co-ordinates L/2 (5.35×2.25)

Scheme

There had been 16 temporary amunas built by the cultivators to irrigate a total of 1,318 acres. The cultivators had to face difficult times whenever there were floods.

Instead, in 1948 two permanent anicuts were constructed, a 4 Bay anicut and the other a 3 Bay anicut. The gates of these anicuts are operated by screw lifting arrangement.

Data

Anicut Diversion

Catchment of Oya	75 sq. miles
Length of Structure	(No. 1) 33'-4 $\frac{1}{2}$ " (No. 2) 24'-3"
Planked Bays	(No. 1) 4 Nos. (No. 2) 3 Nos.
Maximum Height	(No. 1) 13'-7" (No. 2) 12'-0
Head Sluice	2 Nos. on L.B. and R.B.

Irrigation Supply

A channel system, with 3 $\frac{1}{2}$ miles of main channels and 8 $\frac{1}{2}$ miles of distributary channels, provide irrigation supply to 1450 acres.

ATTANGALLA OYA SCHEME

103.8 TAMMITA ANICUT

Location

Near 15th mile on Ja-Ela-Gampaha Road.

Co-ordinates L/2 (2.0×1.8)

Scheme

Diversion of flow in Attanagalla Oya.

Data

Anicut

Catchment area	138 sq. miles	
Length of Anicuts	No. 1 24 ft.	No. 2 32 ft.
	3 bays 6' $\times$ 11'	4 bays 6' $\times$ 8'

Sluices:

Location	L.B.	R.B.
Size	18"	3' $\times$ 4'

Irrigation Supply

The R. B. channel 1 $\frac{1}{2}$ miles long irrigates 300 acres: the L.B. commands 30 acres.

ATTANAGALLA OYA SCHEME

103.9 KOTAGODA ANICUT

(GALWETIYA)

Location

Off the 16½ mile post on the Gampaha-Ja-Ela Road.

Co-ordinates L/2 (0.1×2.8)

Scheme

Diversion of flow in Attanagalla Oya.

Data

Anicut Diversion

Catchment area 143 sq. miles

Length of Structure 33 ft.

Openings: 4 Nos. each 6'×11'-6"

Sluices:

Location	L.B.	R.B.
Size	3 of 9" dia.	3 of 9" dia.

ATTANAGALLA OYA SCHEME

103.10 KINIGAMA ANICUT

Location

About half mile east of Miriswatte Junction, off 17th mile Colombo-Kandy Road.

Co-ordinates L/7 (6.5×8.5)

Scheme

Diversion of flow in Uruwal Oya.

Data

Anicut Diversion

Catchment area 12½ sq. miles

Length of Anicut 45 ft.

3 No. bays 3'-6"×6'

Irrigation Supply

The left bank channel system nearly 3 miles long irrigates 270 acres.

The right bank channel over 3 miles in length benefits 255 acres.

ATTANAGALLA OYA SCHEME

103.11 GALWETIYA ANICUT

Location

Near 16½ mile post on Colombo-Kandy Road.

Co-ordinates L/7 (5.8×0.02)

Scheme

Diversion of flow in Uruwal Oya.

Data

Anicut

Catchment area 16 sq. miles
Length of Structure 38 ft.
Openings: 1 No. $5' \times 5'-6''$
5 Nos. $5' \times 5'-6''$

Sluices:

Location
Size

R.B.
 $1' \times 3'$ planked

Irrigation Supply

Work benefits 142 acres.

ATTANAGALLA OYA SCHEME

103.12 BOGAMPITIYA ANICUT

Location

About a mile north of Ganemulla.

Co-ordinates L/2 (2.4×0.7)

Scheme

Anicut diversion across Uruwal Oya.

Data

Anicut Diversion

Catchment area $30\frac{1}{2}$ sq. miles
Length of Structure 40 ft.
Planked Bays 6 No. each $8' \times 5'$

Sluices:

Location
Size

L.B.
 $18'' \times 9''$

R.B.
 $18''$ two rows.

Irrigation Supply

A left bank and right bank channel system convey water to 160 acres.

ATTANAGALLA OYA SCHEME

103.13. WELIKADA ANICUT

Location

Along Gampaha-Ja-Ela P. W. D. Road for $3\frac{3}{4}$ miles, turn left at Mabima cemetery and proceed along road for $\frac{3}{4}$ mile to anicut site.

Co-ordinates L/2 (0.5×1.9)

Scheme

There had been 15 No. temporary amunas irrigating a total of 570 acres before a new permanent structure was built. The temporary structures erected by the cultivators were washed away whenever there were floods.

The new structure was constructed in 1946, and had 5 planked bays operated with screw lifting arrangements.

In June 1957 repairs were effected to R.B. Guide Bund which was affected by floods.

Data

Anicut Diversion

Catchment of Oya	39 sq. miles
Length of Structure	78'-9" (inclusive of Abutments)
Maximum Height	17'-0"
Planked Bays	5 Nos.
Head Sluice	Two Nos. R.B. and L.B.

Irrigation Supply

An R.B. and L.B. channel system, of total length 7 miles irrigates over 1230 acres.

CHAPTER 4

PROJECTS UNDER CONSIDERATION

1. MAHAWELI GANGA SCHEME

1.1 DIVERSION ANICUT AT POLGOLLA

Location

The site is by the road-side, about five miles from Kandy on the Wattegama Road.

Project

To divert a portion of the flow in the Mahaweli Ganga and convey same through Sudu Ganga to (1) Kala Wewa Basin (2) Moragahakanda Reservoir and (3) generate hydro-electric power.

Proposed Data

Diversion Weir

Length of weir (at top level)	530 ft.
Maximum height	49' ft.
Operating head of water	7' ft.
Elevation of water level	1445 M.S.L.

Spillways

Vertical lift hook type 10/40' $\times$ 20'

Diversion Tunnel

18' ft. diameter tunnel 26100 ft. long would convey 2000 cusecs of water for irrigation and power generation.

Power Generation

4 units of 9.0 M. W. each	
Mean annual energy	237 m.K.W.h.

Approximate Cost

Rs. 97.44 million.

1.2 MORAGAHAKANDA RESERVOIR

Location

Is situated on the Naula-Elahera Road about a mile above the Elahera anicut.

Project

Reservoir to regulate the flow in Amban Ganga, and the diverted flow from Mahaweli Ganga, for irrigation & power generation.

Reservoir

Proposed Data

Source of Supply:

Ambanganga catchment, also balance of Mahaweli Ganga flow (part) diverted at Polgolla through Sudu Ganga and after diversion at Bowatenne.

Length of Reservoir Dam consists of:

Earthen embankment	2,020 ft.
Earth & rock fill dam	1,200 ft.
Concrete dam	1,620 ft.
Total length	4,840 ft.

Reservoir Full:

Storage	600,000	acre feet
Normal Elevation—water spread	630	M.S.L.
Minimum Elevation	567	M.S.L.
Regulated yield	1,318,000	acre feet
Active Storage	455,200	acre feet

Spillway:

Sector gates $3/65' \times 15'$

Channels and Irrigation System:

The N.C.P. Canal & augmenting supply to systems D.G.

Power Generation

Four units of 10 M.W. each.
Mean Annual energy 196 K.W.h.

Est. Cost (1967)

Rs. 186.6 million

1.3 VICTORIA RESERVOIR

Location

Is situated across the Mahaweli Ganga, at Victoria Falls, somewhat below the confluence of Hulu Ganga tributary; the site is reached from the 12th mile Kandy-Teldeniya Road, by driving for six miles through estate roads and getting across the Hulu Ganga.

Project

The main purpose of this reservoir is to regulate the Mahaweli flow for power generation and irrigation.

Reservoir

Proposed Data

Source of Supply:

Mahaweli Ganga Catchment area	730 sq. miles
Length (at top level) of concrete Dam	1400 feet
Maximum height of Dam	338 feet
Cubic contents (concrete) Dam	681,000 c.yds

Reservoir Full:

Storage capacity 415,000 acre feet

Operational Status:

Normal water surface Elevation	1410 M.S.L.
Minimum	1215 "
Active Storage	390,000 acre feet
Regulated yield	926,000 acre feet

Spillway:

Four Segmental gates $4/50' \times 30'$

Under-sluices:

Two Size—25 ft. by 25 ft.

Power Supply:

Static head	660 ft.
Pressure tunnel (diameter)	21 ft.
Length	14,720 ft.
Discharge (Max)	2740 cusecs

Power Generation

Installed Capacity 4/30 M.W.
Mean power output 629,000 K.W.h.

Approx. Cost

Rs. 247.2 million.

1.4 RANDENIGALA RESERVOIR

Location

Is sited across the Mahaweli Ganga, at Randenigala Hills, about five miles above Minipe anicut, which is about ten miles drive from Mahiyangana.

Project

This main reservoir regulates the flow in the Mahaweli Ganga for irrigation, power generation and flood control.

Reservoir

Proposed Data

Source of Supply:

Mahaweli Ganga Catchment area 900.5 sq. mls.

Length

Along crest of concrete dam 1705 feet
Maximum height of dam 279 feet
Cubic contents of dam 1,200,000 c. yds.

Reservoir Full:

Storage capacity 629,000 ac. ft.

Operational Status

Normal water surface elevation 750 M.S.L.
Minimum —do— 672 M.S.L.
Active Storage 374,000 acre ft.
Regulated yield
90% frequency 1,462,000 ac. ft.

Spillway

Sector gates 3/70' x 25'

Power Generation

Installed Capacity 3/25 M.W.
Mean power output 370,000 K.W.h.

PROPOSED PLAN OF DEVELOPMENT OF THE MAHAWEELI BASIN

Phase	Step	Units	Extent Benefited			Hydro Power		Cost	Benefits
			10 ³ Acres			M. W.			
			Total	Existing	New	Inst.	Firm	Rs. × 10 ⁶	Rs. × 10 ⁶
I	1	(i) Polgolla Div. } (ii) Bowatenne Div. }	186.7	102.2	84.5	39.5	23.2	575.7	168.5
	2	Victoria Falls Res.	87.4	13.8	73.6	120.0	54.0	676.7	149.1
	3	Moragahakanda Res.	54.2	28.2	26.0	40.0	17.1	297.5	51.7
II	—	Total Phase I	328.3	144.2	184.1	199.5	94.3	1549.9	369.3
	—	(i) Maduru Oya Res } (ii) Taldena Res. }	229.8	20.8	209.0	14.5	5.4	920.0	356.2
III	—	(i) Randinegala Res. (ii) Kotmale Res. (iii) Kalu Ganga Res. (iv) Heen Ganga Res. (v) Upper Uma Oya Res. (vi) Lower Uma Oya Res. (vii) Pallawela Res. (viii) Hasalaka Res. (ix) Rotlawela Res.	341.9	81.2	260.7	305.0	137.3	3113.0	701.1
Total		Phases I, II & III	900.0	246.2	653.8	519.0	237.0	5582.9	1435.6

2. MALWATTU OYA RESERVOIR

Location

The Dam site is at the village of Kappachchi and is reached by an access road taking off from the Medawachchiya-Mannar Road near the 40th mile post.

Scheme

A reservoir to impound the flow in Malwattu Oya.

Proposed Data

Tank

Catchment area	819 sq. miles
Length of Tank Bund	2.42 miles
Maximum height	92.5 ft.

Tank Full:

Storage	282,000 acre ft.
Head of water	23 ft.
Area of water spread	15,300 acres

Spills:

Nature	Mass Concrete
Location	L.B.
Length	217 ft. with 5 No. Radial Gates 39' x 20' high
Crest Elevation	187.3 M.S.L.

Sluices:

Location	L.B.	R.B.
Size	8' x 6'	6'-6" x 6'-6"

Irrigation Supply

Target 32,000 acres including 20,000 acres of existing fields, and generation of 800 K. W. of electric power.

3. SAMANALA WEWA

Location

Impounding the flow in the upper reaches of Walawe Ganga. The dam site is reached from off Belihul Oya on Balangoda-Haputale Road and the tunnel sites etc. is easier reached from off the Balangoda-Kaltota Road.

Scheme

The proposal is to construct a main dam across the Walawe Ganga below its confluence with Belihul Oya, thus forming a large storage reservoir. The stored water is to be led through a two mile long tunnel into a smaller reservoir to be erected across the Diyawini Oya (called the Forebay reservoir, elevation about 1500); from here water will drop about a 1000 ft. into Katupai reservoir to be constructed across Katupai Oya. Hydro electric current will be generated and water will be issued for irrigation development from Katupai reservoir.

Proposed Data

Main Dam

Catchment area	132 sq. miles
Length of Tank Bund	1665 ft.
Maximum height of dam	353 ft.

Tank Full:

Storage	265,000 acre ft.
Head of water	54 ft.
Area of water spread	2,740 acres

Spill:

Nature	Concrete (El. 1524)
Length	220 ft.
Draw off to Diyawinne Tank	10 ft. dia. tunnel at El. 1470.

Power Generation

Four 30,000 K.W. units to be installed and expected to generate 350 million K.W. of electric at energy.

Irrigation Development

40,000 acres.

Probable Cost

Rs. 260 million.

4. KELANI GANGA BASIN SCHEME

Flood Control and Water Potential Utilization

The Kelani Ganga conveys the drainage of 890 sq. miles from Adam's Peak to the sea in Colombo.

A scheme for "Flood Control and Utilization of Water Potential of the Kelani Ganga Basin with the view to Flood Protection Development of Power and Irrigation" has been drawn up by U. S. S. R. Technopromexport of Moscow in 1961.

The proposals include:

1. Embankments

By raising the existing embankments and providing gh embankments from Pugoda to river mouth, the Kelani is to be made capable of discharging increased flood flow of 115,000 cusecs, as against the 57,000 cusecs only which can now be discharged by the river.

2. Storage Reservoirs

(a) Nawata-Parusella Reservoir will be constructed by short high dams across the Kelani Ganga at Nawata and across We Oya at Parusella. The reservoir thus formed would accommodate, 718,000 acre ft. of basin drainage and besides regulation of flood would generate electricity—33 M.W.

(b) Holombuwa Reservoir is formed by earth dam across the Gurugoda Oya at Holombuwa and would hold 62,000 acre ft.

(c) Diversion canal—50 miles of conveyance canal of 2430 cusecs capacity is to be constructed for transbasin diversion of the Kelani water to the dry zone regions of the North Western Province for the development of 146,500 acres of new lands. 9 Pumping Stations are to provide lift irrigation for 80,000 acres of rice cultivation.

Probable Cost

Rs. 922 million.

5. DEDURU OYA RESERVOIR

Location

The reservoir embankment is sited about 1000 ft. above the Ridi Bendi Ela Anicut across the Deduru Oya.

Co-ordinates $1/3$ (9.75×1.05)

Scheme

A reservoir Scheme impounding the waters of Deduru Oya to benefit 33,000 acres of existing lands.

Proposed Data

Tank

Catchment area	530 sq. miles
Length of Tank Bund	5500 ft.

Tank Full:

Storage	150,000 ac. ft.
Head of water	57 ft.

Spills:

Nature	Radial Gates 11 of $32' \times 25'$
Location	L.B.
Length	412'

Sluice:

Location	R.B.
Size	2 Nos. $4'0 \times 4'0$
Sill Level	178 M.S.L.

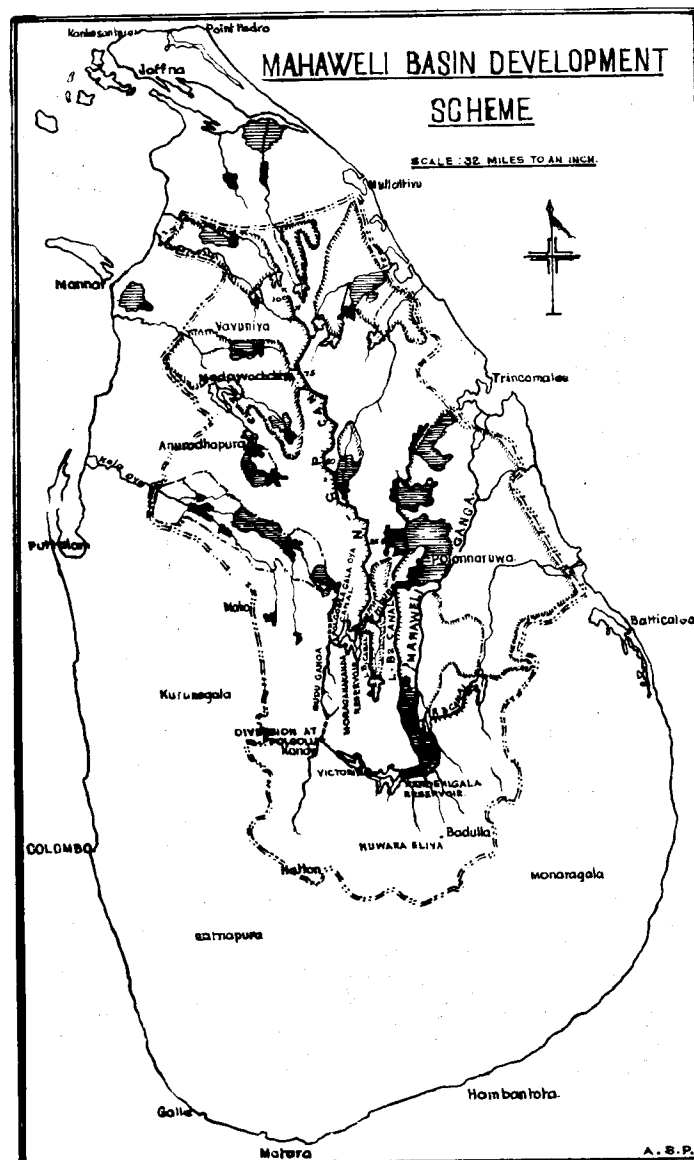
Pumping Plant

Part of the sluice discharge is expected to be lifted across the ridge to the neighbouring basin.

Total Capacity	325 cusecs.
No. of Pumps & Type	4 Nos. Vertical — Mixed flow
Horse power of each	1275
Designed head	84'
Maximum power req.	4,000
Size of delivery	2 Nos. pipe lines $5'0$ each.

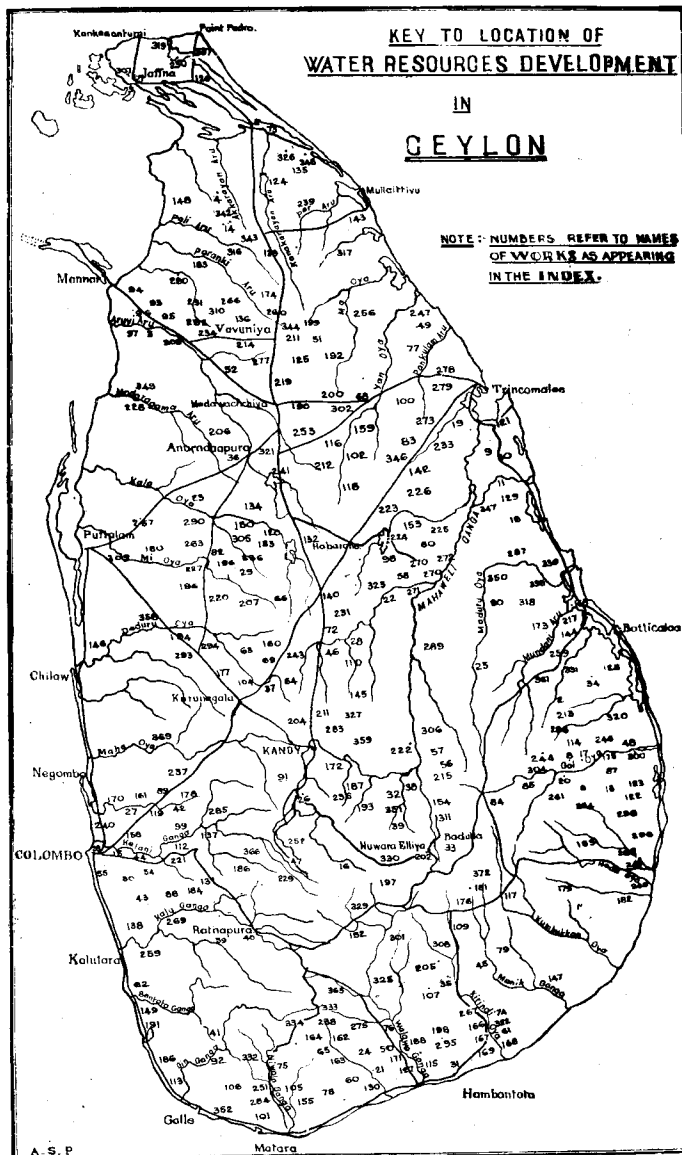
Irrigation Supply

To benefit 33,000 acres of existing lands.



INDEX OF DEVELOPMENT WORKS IN MAJOR RIVER BASINS

No.	Name	Page
1.	Abakola Wewa	353
2.	Adachchal Kulam	186
3.	Akathimurippu Channel	334
4.	Akkarrayan Kulam	292
5.	Akkarawita M.F.P.S.	50
6.	Alahena Tank	176
7.	Alawakkai	332
8.	Aligalge Tank	166
9.	Allai Scheme	251
10.	Allai Scheme—Allai Tank	253
11.	Allai Scheme Verugal Hd. Wks.	252
12.	Ambagaha Ela Amuna	108
13.	Ambalam Oya Tank	159
14.	Ambalaperumal Kulam	295
15.	Ambatalenpahala MFPS	49
16.	Ambewela Reservoir	208
17.	Amparai Tank	169
18.	Anaisuddakaddu Kulam	199
19.	Andankulam	259
20.	Andella Oya Tank	179
21.	Andupelena Anicut	98
22.	Angamedila Anicut	246
23.	Angamuwa Tank	350
24.	Arachchi Amuna	92
25.	Aralaganwilla Wewa	194
26.	Attabage Oya Anicut	211
27.	Attanagalla Oya Scheme	387
28.	Attaragollawa Anicut	240
29.	Attaragalla Wewa	354
30.	Attidiya Dr. & S. W. E. S.	59
31.	Badagiriya Tank	121
32.	Badulu Oya Anicut	230
33.	Badulupitiya Ela	228
34.	Balagalla Tank	180
35.	Balaharuwa Tank	125
36.	Bassawakkulama	321
37.	Batalagoda Tank	368
38.	Batatuhena Anicut	227
39.	Bathmedila Ella	226
40.	Batugedera Anicut	63
41.	Bogahaduwa Anicut	75
42.	Bogampitiya Anicut	397
43.	Bolgoda F. P. S.	60
44.	Bomiriya M. F. P. S.	50
45.	Buttala Anicut	138
46.	Bowetenne Anicut	238
47.	Castlereagh Reservoir	43
48.	Chadayantalawa Tank	172
49.	Chamalankulam Tank	268
50.	Chandrika Wewa	112
51.	Chemamadu	284
52.	Cheddikulam	328
53.	Colombo North F. P. S.	52
54.	Colombo South F. P. S.	53
55.	Colombo South Dr. Scheme	54



Numbers in the above map refer to names of works as appearing in index pages 408-414

No.	Name	Page
56.	Dambarawa Tank	231
57.	Dambe Wewa	126
58.	Dambutulu Wewa	247
59.	Damme Ela	64
60.	Dandeniya Tank	84
61.	Debera Wewa	129
62.	Dedduwa Dr. S. W. E. S.	69
63.	Deduru Oya Scheme	366
64.	Deduru Oya Anicut	367
65.	Denegama Tank	93
66.	Dewahuwa Tank	341
67.	Dikiliyadde Ela	220
68.	Diulwewa	274
69.	Diyature Anicut	372
70.	Diyawinne Maha Ela	104
71.	Ekgal Aru Tank	175
72.	Elahera Canal	239
73.	Elephant Pass L. S.	289
74.	Ellagala Anicut	128
75.	Ellawela Tank	83
76.	Embilipitiya Tank	110
77.	Ethandamurippu Tank	264
78.	Ethpitiya Anicut	92
79.	Ettimole Wewa	145
80.	Gal Amuna Anicut	248
81.	Galkissa Bemma	378
82.	Galgamuwa Wewa	356
83.	Galmetiyyawa Tank	257
84.	Gal Oya Anicut	162
85.	Gal Oya Scheme	163
86.	Gal Oya Left Bank Scheme	164
87.	Gal Oya Rt. Bank Scheme	173
88.	Galtude-Kindelpitiya SWES	61
89.	Galwetiya Anicut	396
90.	Gal Wewa	195
91.	Gampolawela Raja Ela	212
92.	Ginganga MFPS	76
93.	Giant's Tank	333
94.	Giant's Tank Scheme	331
95.	Giant's Tank Headworks	331
96.	Giant's Tank Inlet Chl.	332
97.	Giant's Tank Akathi Chl.	334
98.	Giritale Tank	241
99.	Giridara MFPS	51
100.	Gomarankadawela Wewa	265
101.	Goiyapana Dr. & SWES	80
102.	Habarana Wewa	270
103.	Hakuruwela Anicut	98
104.	Hakwatunu Oya Wewa	369
105.	Hali Ela Tank	82
106.	Hallala Dola Anicut	79
107.	Hambegamuwa Tank	106
108.	Hambumandiya Anicut	92
109.	Handapanagala Tank	124
110.	Hattota Amuna	234
111.	Henpita MFPS	50

No.	Name	Page
112.	Hewagamuwa MFPS	49
113.	Hikkaduwa PF. Dr. S.	73
114.	Himidurawa Tank	167
115.	Hingura Ara Tank	109
116.	Horiwila Tank	271
117.	Hulanda Oya Anicut	142
118.	Hurulu Wewa	272
119.	Idallawela Anicut	390
120.	Ihala Kalan Kuttiya Tank	348
121.	Illakanthai Kulam	254
122.	Illukachchenal Tank	161
123.	Irakkamam Tank	178
124.	Iranaimadu Kulam	286
125.	Iratperiya Kulam	325
126.	Jaffna Peninsula Lagoon Scheme	287
127.	Kadawera Tank	117
128.	Kaddukamunai Tank	184
129.	Kaddumurippu Kulam	202
130.	Kahawatte Anicut	92
131.	Kalatuwawa Reservoir	47
132.	Kala Wewa	342
133.	Kala Wewa Scheme	342
134.	Kala Wewa Yode Ela	344
135.	Kalmadu Kulam J	282
136.	Kalmadu Kulam V	306
137.	Kaluaggala-Berendi Gampala MFPS	50
138.	Kalutara S.F.P.S.	67
139.	Kanagarayan Kulam	285
140.	Kandalama Tank	340
141.	Kande Ela Tank	209
142.	Kantalai Tank	255
143.	Kanukerni Tank	278
144.	Karadiyan Aru Tank	191
145.	Karaugahawela Wewa	236
146.	Karawita Yode Ela	379
147.	Karawila Tank	139
148.	Kariyalai Nagapaduwan Tank	298
149.	Kavijjapitiya SWES	70
150.	Kattiyawa Tank	345
151.	Katupath Oya Anicut	103
152.	Katupotha Wewa	364
153.	Kaudulla Tank	245
154.	Keenawela Ela	222
155.	Kekanadure Tank	87
156.	Kelani Ganga MFPS	49
157.	Kelani Ganga Basin Scheme	406
158.	Kelani Ganga Water Supply Scheme	48
159.	Keulkada Wewa	273
160.	Kimbulwana Oya Wewa	370
161.	Kinigama Anicut	395
162.	Kirama Oya Scheme	90
163.	Kirama Oya Basin Anicut	92
164.	Kirama Oya Tank	91
165.	Kirimachchi Kulam	200
166.	Kirindi Oya Scheme	127
167.	Kirindi Oya Head Works	128

No.	Name	Page
168.	Kirindi Oya Left Bank ...	129
169.	Kirindi Oya Right Bank ...	133
170.	Kitawela Anicut ...	392
171.	Kitulabokke Anicut ...	111
172.	Kitulpe Ela ...	217
173.	Kitul Wewa ...	190
174.	Koddai Kaddina Kulam ...	294
175.	Kondavattuvan Tank ...	168
176.	Kongaha Wewa ...	136
177.	Kospothu Oya Anicut ...	373
178.	Kotagoda Anicut ...	394
179.	Kotiyagala Maha Wewa ...	146
180.	Kottukachchiya Tank ...	360
181.	Kumbukkan Oya Anicut ...	141
182.	Kumana Tank ...	143
183.	Kurai Tank ...	309
184.	Labugama Reservoir ...	46
185.	Lahugala Tank ...	149
186.	Laksapana Power Station ...	44
187.	Lemasuriyagama Anicut ...	219
188.	Liyangahatota Anicut ...	113
189.	Madampe Dr. & SWES ...	72
190.	Medawachchiya Kulam ...	266
191.	Madu Ganga Dr. & SWES ...	71
192.	Madukande Tank ...	302
193.	Ma Ela ...	216
194.	Magalle Wewa ...	376
195.	Maha Amuna Anicut ...	388
196.	Maha Andarawa Tank ...	357
197.	Maha Eliya Anicut ...	224
198.	Maha Gal Wewa ...	120
199.	Maha Irampai Kulam ...	305
200.	Maha Kandarawa Tank ...	322
201.	Maha Oya Anicut ...	235
202.	Mahatotilla Oya Anicut ...	225
203.	Mahaweli Ganga Basin Development ...	203
204.	Mahaweli Ganga Diversion Project ...	399
205.	Maha Wewa ...	119
206.	Maha Willachchiya Tank ...	336
207.	Maha Us Wewa ...	359
208.	Malayadi Tank ...	177
209.	Malwattu Oya Project ...	404
210.	Mamadole Tank ...	114
211.	Mamaduwa Tank ...	304
212.	Manankatiyawa ...	316
213.	Manalpiddi Aru Scheme ...	183
214.	Maniar Kulam ...	327
215.	Mapakada Wewa ...	232
216.	Maruthamadu ...	329
217.	Maruthankerni Tank ...	201
218.	Mawakulam ...	250
219.	Medawachchiya Tank ...	324
220.	Mediyawa Tank ...	358
221.	Minimaru MFPS ...	51
222.	Minipe Yode Ela ...	221
223.	Minneriya Scheme ...	242
224.	Minneriya Tank ...	242

No.	Name	Page
225.	Minneriya Yode Ela ...	243
226.	Minneriya-Kantalai Yode Ela ...	244
227.	Mi Oya Diversion Scheme ...	352
228.	Moderagam Aru Anicut ...	337
229.	Mousakelle Reservoir ...	41
230.	Mora Ela MFPS ...	50
231.	Moragahakanda Project ...	400
232.	Morenna Anicut ...	391
233.	Mora Wewa ...	263
234.	Muhathan Kulam ...	330
235.	Murapola Ela ...	214
236.	Murihandy Tank ...	291
237.	Muruthawela Anicut ...	386
238.	Muruthawela Project ...	99
239.	Muthuyankaddukulam ...	279
240.	Muthurajawela Scheme ...	55
241.	Nachchaduwa Tank ...	317
242.	Nagodawetiya Regulator ...	88
243.	Nalanda Oya Reservoir ...	237
244.	Namal Oya Tank ...	165
245.	Naulla Tank ...	151
246.	Navakiri Aru Reservoir ...	181
247.	Neelapanikan Kulam ...	267
248.	Neethai Tank ...	160
249.	Nickawela MFPS ...	51
250.	Nilavarai Pumping Scheme ...	290
251.	Nilwala Ganga MFPS ...	89
252.	Norton Dam ...	44
253.	Nuwara Wewa ...	319
254.	Okawela Anicut ...	92
255.	Oluwila Tank ...	115
256.	Padaviya Tank ...	276
257.	Pahariya Tank ...	361
258.	Pahuru Oya MFPS ...	50
259.	Palatota Basin MFPS ...	67
260.	Palavi Tank ...	307
261.	Pallang Oya Tank ...	174
262.	Pallewela Anicut ...	387
263.	Palukadawela Tank ...	355
264.	Pannalagama Reservoir ...	156
265.	Panama Tank ...	147
266.	Panankamam Tank ...	308
267.	Pannagamuwa Tank ...	133
268.	Panugala Anicut ...	389
269.	Paraduwa-Diyagama MFPS ...	65
270.	Parakrama Samudra Scheme ...	246
271.	Parakrama Head Works ...	246
272.	Parakrama Topawewa etc. ...	247
273.	Paravipanchan Tank ...	258
274.	Pattiyawela Anicut ...	92
275.	Pattiyapola Maha Wewa ...	98
276.	Pattivila MFPS ...	50
277.	Pavatkulam ...	326
278.	Periya Elumpurikki Kulam ...	261
279.	Periyakulam ...	260
280.	Periyamadu ...	313

No.	Name	Page
281.	Periyapandivirichchan	311
282.	Periyathampani Kulam	310
283.	Polgolla Diversion	399
284.	Polwatte Ganga Regulator	78
285.	Pugoda MFPS	51
286.	Puluganavi Tank	183
287.	Punani Anicut	197
288.	Radella Tank	150
289.	Randenigala Reservoir	402
290.	Rajangana Tank	349
291.	Ranala MFPS	50
292.	Ranna Anicut	98
293.	Ridi Bendi Ela Scheme	374
294.	Ridi Bendi Ela Anicut	375
295.	Ridiyagama Tank	116
296.	Rottakulam	152
297.	Rottuwakulam	249
298.	Rufus Kulam	155
299.	Rugam Tank	189
300.	Sagamam Tank	158
301.	Samanala Wewa Project	405
302.	Sangilikandarawa Tank	323
303.	Sapugoda Anicut	85
304.	Senanayake Samudra	163
305.	Siyambalangamuwa Tank	346
306.	Sorabora Wewa	233
307.	South Lagoon (JPLS)	288
308.	Sudupanawela Anicut	123
309.	Tabbowa Tank	362
310.	Thachchana Maruthamadu	312
311.	Taldena Ela	229
312.	Talwatte MFPS	50
313.	Tammita Anicut	393
314.	Tangalu Welyaya SWES	94
315.	Tekkam	331
316.	Tenniyankulam	297
317.	Thannimurippu Kulam	277
318.	Tharavai Kulam	192
319.	Thondai Mannar Barrage	287
320.	Thumpankerni Tank	182
321.	Tissa Wewa (in A'pura)	320
322.	Tissa Wewa (in Tissa)	130
323.	Topawewa	247
324.	Uda Deberawa Anicut	92
325.	Uda Walawe Reservoir	105
326.	Udayar Kaddu Kulam	280
327.	Udugoda Bandara Ela	213
328.	Udukiriwela Anicut	97
329.	Uggal Kaltota Scheme	102
330.	Uma Ela	223
331.	Unichchai Tank	187
332.	Urapola Anicut	86
333.	Urubokke Dam	96
334.	Urubokke Udukiriwela Tank	97
335.	Urubokke Diversion Anicuts	98
336.	Usgala Siyambalangamuwa Tank	347

No.	Name	Page
337.	Vadamarachchi Lagoon	287
338.	Vakaneri Scheme	198
339.	Vakaneri Tank	198
340.	Valathipiddy Tank	170
341.	Vammiyadi Tank	157
342.	Vannerikulam	296
343.	Vavunikulam	300
344.	Vavuniya Tank	303
345.	Veeragoda Tank	171
346.	Vendarasan Kulam	256
347.	Verugal Head Works	252
348.	Visuwamadu Tank	281
349.	Viyadikulam	338
350.	Wadamune Wewa	196
351.	Waduawela Ela	218
352.	Waggala Modera SWES	77
353.	Wakumulla Anicut	98
354.	Walawe Scheme (Lower reaches)	113
355.	Walawe Scheme Head Works	113
356.	Walawe Left Bank Scheme	116
357.	Walawe Rt. Bank Scheme	114
358.	Wanara Wewa	371
359.	Weerapitiya Maha Ela	215
360.	Welgamuwa MFPS	50
361.	Weligaha Kandiya Tank	188
362.	Welikada Anicut	398
363.	Welikada Ela	210
364.	Weliwita MFPS	49
365.	Wellawa Anicut	107
366.	Wimalasurendra Power House	43
367.	Wirawila Tank	134
368.	Yabaruwela MFPS	50
369.	Yakabendi Ela	384
370.	Yakada Potha Maha Wewa	377
371.	Yoda Wewa	131
372.	Yudaganawa Tank	137

*Printed by Lake House Printers and Publishers Ltd., 41, W. A. D. Ramanayak
Mawatha, Colombo 2, for Water Resources Board, 7, Sigiriya Gardens.
Bagatalle Road, Colombo 3.*

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91
10/11