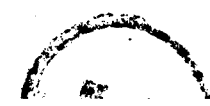


Administration Report

Public Works Department

1945-46

Part II irrigation



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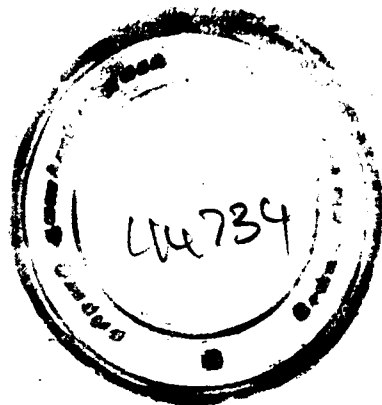
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PUBLIC WORKS DEPARTMENT, MADRAS PRESIDENCY

ADMINISTRATION REPORT

FOR THE YEAR 1945-46

PART II—IRRIGATION

Chapter I.

I. PERSONNEL.

Sri Rao Bahadur A. R. Venkata Acharya took charge as the Chief Engineer for Irrigation on 10th October 1945, from Sri Diwan Bahadur N. Govindaraja Ayyangar and continued as Chief Engineer throughout the rest of the year.

Sri A. R. Venkataraman who continued as the first Deputy Chief Engineer proceeded on leave on the 18th June 1945 and rejoined duty as the first Deputy on the 19th July 1945 and continued thereafter till the end of the year.

Sri R. Srinivasa Acharya continued throughout the year as the second Deputy Chief Engineer for Irrigation. He also held additional charge as first Deputy between 18th June 1945 and 19th July 1945 when the first Deputy was on leave.

The post of a third Deputy Chief Engineer was created during the year and Sri Rao Sahib A. Venkata Ramanan took charge of the post on the 2nd February 1946.

The post of a Special Chief Engineer was also created during the year to deal with the Tungabhadra and the Ramapadasagar Projects. Sri Diwan Bahadur N. Govindaraja Ayyangar on relief as the Chief Engineer for Irrigation was appointed to the post.

II. SALIENT FEATURES OF THE ADMINISTRATION—PUBLIC WORKS (IRRIGATION) FOR THE YEAR 1946.

The summary in this chapter is as usual intended to bring the general information up to date to the end of the year 1946.

I. *Cauvery Delta System.*—(i) As the level of water in the Mettur reservoir was very low, viz., 6'40 feet at the end of May 1946, the opening of the reservoir had to be postponed to the 28th of June by which time the level had risen to 52'70 feet. Water reached the delta on 1st July 1946 about a month later than usual. Even then the storage was low and it was possible to draw only a very restricted supply. It was not till 10th July 1946 that the reservoir showed definite signs of filling up and permitted the restoration of the normal scale of supply. The reservoir then filled up rapidly and after an interval of 3 years, it started surplusing on the 15th August 1946. Since then there has been a steady and plentiful flow permitting liberal issues being drawn into the river. This should have to a large extent counteracted the effect of the late opening of the season. The north-east monsoon has also been favourable and the delta has had heavy rains. The standing crops are good and a normal harvest is expected.

(ii) There was a breach in the right bank of the Grand Anicut Canal at R.D. 8/70 on 11th August. It was closed expeditiously and irrigation restored after an interruption lasting only four days. As there were local rains during the period the crops did not suffer any significant damage.

(iii) Twelve key schemes for drainage improvements in the delta at a cost of Rs. 29.3 lakhs were sanctioned during the year. Of these, the schemes pertaining to the Maraka-korayar, Kilathangiar, Madavanar and Ayyavaiyanar were taken up for execution and were in progress.

(iv) In pursuance of the revised policy of the Government to take up silt clearance of channels—irrigation and supply—at Government cost irrespective of the fact whether they were done by kudimaramath or not, 19 tank supply channels and 80 irrigation channels in the Tanjore Circle were silt-cleared at a cost of over Rs. 86,000.

(v) Duty experiments were continued at the Pattukkottai and Aduthura Agricultural Research Stations.

II. *Godavari Delta System*.—(i) The area thrown open for second crop cultivation during the year was 71,170 acres in the Godavari Eastern Delta; this included an area of 9,598 acres thrown open as additional area to make up for the loss suffered during the cyclone and tidal wave of October 1945. However, an extent of 55,527 acres alone was actually cultivated, as the ryots apprehended inadequacy of supplies in March and April 1946. In the Central Delta an extent of 58,000 acres was cultivated against 70,000 acres scheduled under second crop. The total area thrown open for second crop in the West Delta was 168,000 acres comprising 131,000 according to the localization scheme, 25,000 acres of additional area to compensate the loss in the cyclone and 12,000 acres under new projects. The yield in all the deltas was fair and generally satisfactory.

(ii) During the transplantation period of the 1st crop season, supply was normal in June, but the position became critical in July owing to lack of local rain. The critical period was tidied over by equitable distribution of the available supplies with the utmost difficulty. Freshes received late in July relieved the anxiety and facilitated transplantation and supply in the river was generally satisfactory. The subsequent heavy rains damaged the crops in the Eastern and Western Deltas to some extent. However, the yield in both the deltas is fair and is expected to be normal. In the Central Delta, the ryots who raised short-term paddy were allowed back-water transplanation and an area of 22,000 acres thus raised had a very good harvest. A similar bumper harvest of short-term paddy was made in the Western Delta also.

(iii) A special subdivision sanctioned for the scientific investigation of drains and remodelling of channels began to function in the Eastern Delta during the year. Investigation in the Central Delta will be taken up by the subdivision later.

(iv) The construction of the collapsed arches of the Gannavaram aqueduct and pile-driving in front and rear of its aprons as a protective measure were completed. The remodelling of the remaining vents of the aqueduct and widening the bridge over it was taken up by a special division formed in November. The work is estimated to cost Rs. 28,00,000.

III. *Kistna Delta System*.—The freshes in the Kistna river were received by 20th May and the maximum flood-level reached was 16.5 feet over the crest of the anicut against 13.0 feet during the last year and the maximum ever recorded of 23.5 feet. Supply conditions were satisfactory in the beginning, but transplantation had to be commenced late owing to the late reopening of canals. The heavy rains and wind during November 1946 caused slight damage to crops. A few breaches occurred in the canals but they were immediately closed, and no appreciable damage was allowed to be caused to standing crops. About 6,500 acres were allowed 2nd crop to make up for the damage sustained by them during the cyclone and tidal wave of last year. Temporary irrigation facilities were granted to Government porambores, assessed waste lands, etc., in pursuance of the Grow More Food drive; about 9,500 acres were thus cultivated in the Kistna Western Delta.

IV. *Kistna East Bank Canal Extension Scheme*.—The canal was reopened on the 25th May and transplantation was completed by the middle of August. Crops were fair to good and no submersion worth-mentioning due to rains has occurred. A number of small areas were allowed wet cultivation in addition by sanctioning temporary pipes.

V. *Periyar System*.—Due to the partial failure of the north-east monsoon last year, the long or kalam crop was transplanted late and the reservoir had to be kept open for eleven days beyond the normal closing date of 1st March for saving the standing crops. Consequently, the reservoir had to be opened late by twenty days;

still supply to the single crop zone below Kalandri regulator was issued on the usual date, namely, 15th August 1946. The intensity of the north-east monsoon this year is expected to bring the standing crops to maturity in time and fill the lake. Water-supply to the Madura town was given as usual owing to the drought in the months of July and August.

VI. *Ramapadasagar Project*.—The detailed investigation of the project was in progress. Exploratory borings and percolation experiments pertaining to coffer dam works in foundations at the dam-site, waterspread survey, taking of checks and block levels along the left canal alignment down to Vizagapatam Harbour were all being attended to by special staff. A technical commission was appointed by the Government of India in respect of the sharing of waters by the Madras and the Hyderabad Governments. Sri Diwan Bahadur N. Govindaraja Iyengar, Chief Engineer (Special) returned from his tour of the United States of America and the United Kingdom in March 1946 after studying the methods of design and construction of large dams and collecting valuable data on deep foundations for dams. Messrs. J. L. Savage and Karl Terzaghi, two eminent American Engineers who are the Consulting Engineers for the project, visited the dam-site and submitted their report regarding the coffer dam and dam-designs.

A Designs and Tests Division was formed during the year with Dr. K. L. Rao as its head in connexion with finalizing the designs for the Tungabhadra and Ramapadasagar dams under the direct guidance and supervision of the Chief Engineer (Special).

VII. *Tungabhadra Project*.—(i) To ensure quick progress in the execution of this project, another circle called the Headworks Circle was sanctioned by Government and it was formed in April 1946 at Hospet. Construction of quarters for the officers and staff along the low-level canal, and at the dam-site were in progress. Necessary preliminaries were being attended to for expediting the timely completion of the water-supply, drainage and electric-supply arrangements in the camp area. Formation of the road from Hospet to the dam-site was in progress. The designs for under-tunnel and bridges were settled as also contracts for a few of them. Preparation of plans and estimates for the Hagari aqueduct and main canal were in progress. Owing to the failure of the monsoon last year, expansion relief works were commenced in January 1946 and famine labour was engaged in excavating the canal in five reaches.

(ii) The technical aspects of the dam construction were under consideration by the Chief Engineers of the Madras and Hyderabad Governments. Orders for machinery available in local Army Dumps were also placed. Collection of materials like cement, steel, etc., were also being attended to.

VIII. *Contour Bunding*.—The investigation of the scheme for dry farming and contour bunding in the famine-affected areas of the Ceded Districts was completed. An estimate for Rs. 2.94 lakhs for contour-bunding on an area of about 5,500 acres near Guntakal as an experimental measure in the first instance, was submitted to Government through the Board of Revenue during the year. Another scheme for contour-bunding about 2,500 acres near Hagari was also formulated by the Director of Agriculture. Orders of Government on both the schemes were awaited.

IX. *Grow More Food Schemes*.—(i) The second target of 15,000 acres proposed for reclamation under the Cauvery-Mettur Project was completed during the year. Extension of irrigation beyond Narasinga Cauvery was in an advanced stage of execution. Further ten new schemes at an estimated cost of Rs. 9.85 lakhs designed to irrigate an approximate ayacut of about 9,987 acres were also sanctioned during the year—vide list appended.

(ii) Since the inauguration of the Grow More Food Campaign 89 schemes including major and minor ones were sanctioned at a cost of Rs. 131.41 lakhs for irrigating about 154,000 acres including lands under Cauvery-Mettur Project. Of these, 62 schemes had been completed up to date.

X. *Research*.—The Irrigation Research Division at Poondi was provided with a research laboratory. Studies relating to Irrigation, Hydraulics and Soil Mechanics

and problems relating to construction of dams with special reference to the Tungabhadra and the Ramapadasagar dams were carried out. Models both on tank weirs and spillways were also constructed and studied. Stauching of canals and other such problems were also done.

XI. *Post-war Reconstruction Schemes.*—Twelve major irrigation schemes including the Tungabhadra, Ramapadasagar, Gandikota and Vaigai Reservoir projects and improvements to the Godavari, the Kistna and the Cauvery Deltas were treated as Post-war Irrigation Schemes. Of these, the Tungabhadra Project the improvements to Romperu drain in the Godavari Delta and drainage improvements to the Cauvery Delta were sanctioned and were under execution, while the others were under investigation. Schemes for the improvements of inland waterways were also formulated irrespective of return, as cheap transport of essential commodities like food-stuffs, fuel and fodder are more important, these days. Sixteen such schemes were proposed relating to the Buckingham Canal, Vedaranyam Canal and the West Coast Canals at an approximate total cost of Rs. 52.95 lakhs. These schemes were under examination.

XII. *General.*—The south-west monsoon was very poor in the Cauvery and Periyar catchment areas, but the north-east monsoon which set in late in the year was heavy and vigorous. The heavy rains breached many tanks and supply channels in South Arcot, Salem, Nellore, Chingleput and Ceded Districts. These were being attended to.

List of Grow More Food Schemes sanctioned in the calendar year 1946.

	Approximate ayacut to be benefited.	Estimated cost.
	ACS.	RS.
1 Extending irrigation under Konda No. 2 channel Kom. regiripatnam scheme	874	85,000
2 Providing irrigation facilities to dry lands in Udrajavaravam village	883	59,500
3 Restoring the Gurappa C eruvu and excavating a channel from Nalavagu	150	49,750
4 Excavating new Sitampet channel	5,030	3,94,000
5 Providing irrigation facilities to Melumat Lanka, etc., villages	540	16,100
6 Providing irrigation facilities to lands in Sooliakottai, etc., villages	800	53,500
7 Providing irrigation facilities in Vakkur and Kampiam-piliyur villages	800	39,000
8 Restoration of the Kotavadi tank	25	1,95,000
9 Extension of the Ho-pital channel	482	62,900
10 Excavating a channel to Rundravaram and Chigurukota villages	633	30,000
Total ..	9,937	9,87,750

Chapter II.

A BIRD'S-EYE VIEW OF IRRIGATION IN MADRAS PRESIDENCY.

A brief summary of the irrigation systems in the Presidency is given below.

In the Circars, we first have in the extreme north of the Presidency, the Bahuda River and Padmapuramedda irrigating an extent of 6,000 acres; next the Chicacole Minor Rivers system comprising a number of channels taking off from the rivers the Vamsadhara and the Langulya and also the hill stream Garibulagedda and irrigating about 67,000 acres. The Nagavalli system irrigates the next largest area in Vizagapatam district. By means of a regulator across the river at Thotapalli sufficient water is diverted through a main canal and its branch channels to irrigate roughly 28,000 acres. The project was completed in 1909 and has been of great benefit to the ryots. In the southern portion of the Vizagapatam district, there are again a number of channels taking off from the Varaha and the Sarada rivers. The former system irrigates about 18,000 acres and the latter 9,000 acres.

The next is the Godavari Delta. To those who have not the local knowledge the fact that the value of the crops now grown annually in this delta is several crores will convey a very meagre idea of the benefits of irrigation. The Godavari ryots will convey a very meagre idea of the benefits of irrigation. The Godavari ryots have recently erected at Dowlaiswaram, Bobberlanka and Chettipetta statues to commemorate the memory of Sir Arthur Cotton, the originator of the scheme, and by doing so have shown their appreciation of what he has done for the district by his monumental works for securing copious supply of precious water to their lands. Roughly one and half million acres of both first and second crops are irrigated by the net work of canals and channels thousands of miles long; the value of the crops grown annually exceeds nine crores. The canals have been designed not only for irrigation but also for navigation. Sixty locks have been built and more are being considered. About 400 miles of canals are navigable for boats up to 90 tons capacity and the major part of the exports and imports from and to the delta is conveyed by boat. That this connected system of navigation has helped a great deal to the prosperity of the Godavari and the Kistna ryots will be appreciated when it is stated that the cost of transport to Madras by water is only one-eighth to one-tenth of the cost of transport by cart or other means. For instance, the cost of transport per bag of rice from the Cocanada port to Rajahmundry is 6 pies whereas that from Negapatam port to Tanjore is four annas even though the distance to be covered is the same in both the cases; this is because water transport is available in the former and not in the latter case. By means of the Godavari and Kistna canals and Buckingham Canal, one can go by boat from Madras to Cocanada, a distance of 400 miles, and from Rajahmundry one can continue the journey by boat beyond Bhadrachalam right up to the Central Provinces, a further distance of 188 miles.

The next is the Kistna Delta. Just over a century ago, famines were recurrent in these parts and the appalling conditions that were then prevailing induced the Government of the day to push forward the Godavari and Kistna projects. At Bezvada in the Kistna district, an anicut was built across the Kistna in 1855 (shortly after the completion of the anicut at Dowlaiswaram). The anicut diverts water through a net work of canals and channels to irrigate over 9 lakhs acres in Kistna and Guntur districts. The Kistna canals are also navigable and the greater part of the trade of the deltaic portions of the two districts is carried on by boats. Our Godavari and Kistna projects are probably the most beneficial and most successful irrigation schemes ever executed by any Government in the world. They have improved the condition of the people of the districts beyond the highest expectations of the originator, while the return on the capital invested in building them has sufficed not only to maintain and keep the systems up to date but has provided a continuous source of revenue which has enabled Government to initiate other projects, far less attractive financially in less favoured districts.

It should be stated here that we have till now utilized only six per cent of the annual flow of the Godavari and seven per cent of the annual flow of the Kistna and we are still a great way from utilizing the large quantity of water that flows to the sea.

Leaving the rich districts of Guntur and Kistna and coming down to Nellore, we meet a dry and barren district but advantage has been taken of such facilities as exist for extending irrigation. Near the sea coast, the rainfall is generally favourable, and with the addition of some extra water, supplied by means of irrigation, excellent crops are grown. Nellore rice is famous for its quality. Two anicuts across the Pennar divert water to the Kanigiri and the Survapalli reservoirs and about 165,000 acres of paddy are cultivated under them annually. Further inland, the Mopad Reservoir built in 1921 as a famine-protective work has fulfilled the purpose for which it was intended.

Leaving Nellore, we shall divert from our course for a few moments and strike west and north-west to have a glimpse at Cuddapah, Kurnool, Bellary and Anantapur districts. These districts known as "Rayalaseema" are in the famine zone and are periodically liable to failure of rain and consequent drought. Irrigation in Rayalaseema is by the very nature of the country difficult. Rainfall with its consequences

river and stream flow is the first requirement for a successful irrigation scheme and when rain fails in the locality we propose to benefit, we must look to some external source, for example, a river whose main catchment area is outside the districts liable to failure for supply. Irrigation schemes in Rayalaseema depending on local rains must, generally speaking, be of doubtful utility. Proposals for tapping the supplies from the perennial Thungabhadra have been under examination, for a pretty long time and it was only recently that an agreement was arrived at between the Hyderabad and Madras Governments in the matter of sharing the water for irrigation purposes. The reservoir to be formed by constructing a dam at Mallapuram near Hospet is designed to have a capacity of about 110 T.M. cubic feet and irrigate over one million acres in the Madras and nearly an equal extent in the Hyderabad territories. The cost is estimated at about 10 crores of rupees. The Government have since sanctioned the execution of the scheme and posted special staff therefor. It is hoped that the spectre of famine in the Rayalaseema will vanish with the completion of the project in spite of the general deficiency of rainfall and the heavy black cotton soils in these parts. The Kurnool-Cuddapah canal which flows through a black cotton belt has not been successful though in years of deficient rainfall its water is eagerly sought after by the ryots for their crops.

South from Nellore we come to Chingleput where there are no major irrigation schemes, but about 450,000 acres are irrigated by as many as 653 tanks. The district is peculiarly suited to tank irrigation; rainfall is generally favourable and the topography of the district favours this method of irrigation.

In South Arcot district also there is a large number of tanks which irrigate over 300,000 acres. In addition, advantage has been taken of the fact that the district is traversed by two fairly large rivers, the Penniar and the Vellar. An anicut across the Penniar at Tirukkoyilur diverts sufficient water for about 30,000 acres. Regulators combined with road bridges have been built across the Vellar at Toludur and the Shatiatope; the former diverts water to Willingdon reservoir for over 25,000 acres (the anicut is still expanding) and the latter diverts water through the Vellar Rajan channel and its branches to irrigate about 34,000 acres between Cuddalore and Porto Novo. Coleroon water is diverted at the Lower Anicut to irrigate about 118,000 acres in Chidambaram taluk. Besides, there are two anicuts at Vriddhachalam and Mehmattur across Manimutha nadhi, a branch of the Vellar, which irrigate about 10,000 and 5,000 acres respectively.

Deviating from the southerly course for a few moments, we meet the North Arcot, Salem and Coimbatore districts. The Palar river which rises in Mysore is the main feeder for North Arcot. Water is diverted through a series of canals and channels of the Palar anicut, 15 miles from Vellore, to irrigate over 100,000 acres. The district had many old tanks which have been retained and which now form an essential part of the system. Flow in the Palar is intermittent and in the old tanks the flood flow of the river is stored which without tanks would be wasted over the anicut. The Poiney anicut in the same district irrigates over 36,000 acres. The Cheyyar anicut also in the same district irrigates over 37,000 acres.

The Salem district is particularly not favoured by nature. The largest irrigation scheme in it is Barur. An anicut across the Penniar diverts water to the Barur reservoir which irrigates over 7,000 acres. The district depends mainly on tanks many of which get a supply over and above that contributed by their own catchment through channels taking off from anicuts built across adjacent streams. Though Mettur reservoir is in the district it has not been possible owing to very unfavourable conditions to devise any scheme to benefit Salem from this source. The Cauvery channel in Namakkal taluk irrigates 7,000 acres of very rich and fertile lands. Proposals are however under consideration to provide irrigation for about 40,000 acres of lands in the district by pumping from the river Cauvery.

The Coimbatore district depends mainly on the Bhavani which irrigates at present a large area of paddy. There are in addition several tanks and the waters of the Chitrachavadi, the Noyel and the Amaravathi are also utilized to the greatest extent possible by means of anicuts.

Continuing the southerly route from South Arcot, Tanjore is reached. Irrigation of about 7.8 lakhs of acres has been practised in Tanjore for centuries and with the modern works recently built, the ayacut now is about 9 lakhs of acres. The

Cauvery-Mettur Project completed in 1934 is intended to ensure supply to the new delta as well as to extend irrigation by 301,000 acres in Pattukkottai, Mannargudi and Arantangi taluks. Tanjore has had a hoary tradition of irrigation works dating back to some 2,000 years. The benefits of Mettur reservoir to landholders in Tanjore delta are manifold. The reservoir acts as a flood moderator and protects the Tanjore ryots from the ravages of the Cauvery floods in the south-west monsoon to which they were subject hitherto. It secures to the ryots the benefits of early supplies in June and ensures steady and regular flow throughout the irrigation season.

The Trichinopoly district, like Tanjore, depends mainly on the Cauvery for its irrigation and prosperity. Many channels take off directly from the river to irrigate about 135,000 acres of fertile valuable lands.

Madura benefits mainly from the Periyar project. A dam built across the Periyar river in Travancore holds up water in the Periyar lake and a tunnel 5,700 feet long, conveys this water to the Vaigai valley and thence to Madura. One hundred and thirty-four thousand acres roughly are irrigated by the Periyar project. The difference that this scheme has made to the prosperity of Madura district is enormous. The chief merit lies in its sociological effects on the population of the district. The Kallars and Maravars whose habits of life were none too helpful to the society have now settled down in peace and prosperity to tilling land and adding to the wealth of the country.

The Tinnevely district, which adjoins Madura, depends mainly on the Tambraparni river across which several anicuts have been built to irrigate about 75,000 acres. The irrigated portion of Tinnevely is noted for its fertility.

In Tinnevely, the Papanasam hydro-electric scheme involving a dam 170 feet high on the Tambraparni has been completed. Though the reservoir is formed mainly for power, it will benefit irrigation also.

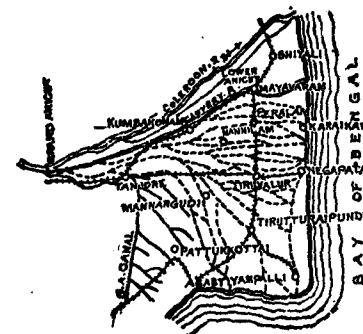
Tank irrigation is of the greatest importance in this presidency where 2,670,000 acres are irrigated under tanks. Similarly wells are another important source of supplies and are responsible for irrigation of about 1,340,000 acres. Attempts are being made to extend well irrigation by means of electric pumps in suitable areas.

Chapter III.

BRIEF DESCRIPTION OF IMPORTANT IRRIGATION AND NAVIGATION WORKS.

The Cauvery Delta System.—The Cauvery rises in Coorg and flows for a considerable distance over the Mysore plateau. It then drops into the plains of Madras at the Hogainkal or Megadatu falls. The chief tributaries of the river are the Hemavathi, Lakshmanathirtha and Kabbini in Mysore and the Bhavani (rising on the Nilgiris) in Madras. The Cauvery is 50 miles long and drains 31,000 square miles. The river benefits by the south-west and north-east monsoons and irrigates a large area in Mysore before it enters Madras. There are two big reservoirs on the river—the Krishnarajasagara near Mysore and the Stanley reservoir near Salem. Hydro-electric power is developed at Sivasamudram and at Stanley Dam at Mettur, at the former by utilizing the natural fall of the river and at the latter by utilizing the head due to storage at the dam.

Irrigation in the Cauvery Delta System is of great antiquity dating back to the ancient Hindu Kings of Tanjore—said to be about the second century B.C. The delta begins at the head of the Srirangam Island where the river divides into two, the right arm called the Cauvery carrying irrigation supplies and the left arm, the Coleroon being the flood carrier. There is a barrage with lift shutters—the Upper anicut—across the Coleroon at its head to divert requisite supplies to the Cauvery over the Cauvery dam.



About 20 miles below the Cauvery dam is the Grand Anicut, an ancient masonry anicut built across a by-pass from the Cauvery into the Coleroon below the Srirangam Island. This anicut, intended to hold up and divert the normal flow of the Cauvery to the rivers supplying Tanjore delta, was converted into a regulator with lift shutters to permit effective disposal of surplus from the Cauvery and got passing supplies to the Lower Coleroon Anicut System.

At the Grand Anicut, the Cauvery branches into the Cauvery and the Vennar, which in turn throw off a number of branches and irrigate the fertile lands of the Tanjore delta, the well-known "Granary of South India." The new Grand Anicut canal of the Cauvery-Mettur Project also takes off at this point.

The delta is long, fertile and level, some 2,000 square miles in area with a seaboard over a 100 miles long extending from Point Calimere to the south as far north as Porto Novo and some distance beyond to Cuddalore. It is served with a net work of rivers and channels, supplies into which are controlled by several regulators. Many of the smaller rivers of the delta function both as irrigation and drainage channels.

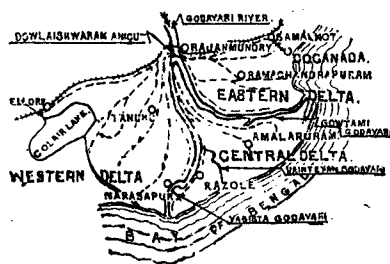
The area irrigated under the Cauvery Delta System alone is about 870,000 acres (first crop) and just over a million acres including the second crop. The value of the crops yielded is about Rs. 9.82 crores. Over 87 lakhs have been spent on improvements since the system was taken over from the Tanjore Kings. The system yields a return of about 14 per cent on the capital outlay after giving credit for about 38 lakhs of rupees towards old revenue.

Srivaikuntam Anicut System.—The Srivaikuntam anicut is the last of the Anicuts across the Tambraparni in Tinnevely district. Two channels take off at the anicut. On the left is the North Main channel feeding a series of tanks and finally emptying into the Morumpallam tank. On the right side, the South Main channel takes off and supplies the large Kadamba tank and a series of tanks below it and irrigation under it extends as far as Tiruchendur with its famous temple on the seashore. The system

irrigates about 24,700 acres. The capital expenditure was about Rs. 18 lakhs and the return is 4 per cent on the outlay.

The Godavari Delta System.—The Godavari rises in the Western Ghats within 50 miles of the Arabian sea and flows across the Peninsula for 900 miles before it falls into the Bay of Bengal. Its chief tributaries are the Manjira from Hyderabad and the Pranahita made up of three smaller streams from the Central Provinces, the Indravathi and the Sabari. Shortly after the Sabari joins it, the Godavari now deep and narrow winds its way through the spurts of the Eastern Ghats and for 2 miles it flows

through a picturesque gorge clothed with luxuriant tropical vegetation. Some distance below, it leaves the last ranges of the Ghats, enters the plains at Polavaram mundry where it divides into two main branches, the Gautami and the Vasishta Godavari rivers. Between the two arms lies the central delta, while the eastern arms split up into branches, as they approach the sea, dividing the central delta into a number of islands. The river drains about 115,000 square miles and carries as much as $1\frac{1}{2}$ million cubic feet per second in very high floods.



Prior to 1840, the Godavari district was frequently the scene of bad famines. In 1832-33 a terrible famine ravaged the district and the calamitous famine of 1840-4 followed after some more bad years. The recurring famines, the decreasing population and the dwindling revenue spurred the Government to action and Major Cotton (later Sir Arthur Cotton), who had just then completed great improvements in Tanjore, proposed the construction of an anicut across the Godavari at Dowlaiswaram with three canals, one for each of three deltas. The works were sanctioned almost immediately and carried out expeditiously under his guidance. It is to the genius, keenness and intrepidity of Sir Arthur Cotton, that Madras owes these monumental works unprecedented both as to type and magnitude and which have proved to be a veritable gold mine.

The Godavari anicut system consists of an anicut and three main canals irrigating three deltas. The anicut is in four sections, linking the islands in the broad river, the Dowlaiswaram section 4,839 feet long, the Ralli section 2,859 feet long, the Maddur section 1,550 feet long, and the Vazeswaram section 2,601 feet long. It was subsequently found necessary to raise the anicut slightly and fit up falling shutters, 2 feet high on the crest. In 1935, the two feet shutters were replaced by three feet shutters. The shutters which fall automatically during floods are lifted as the flood subsides by means of power-operated ploughs, so as to maintain the requisite water level in the river.

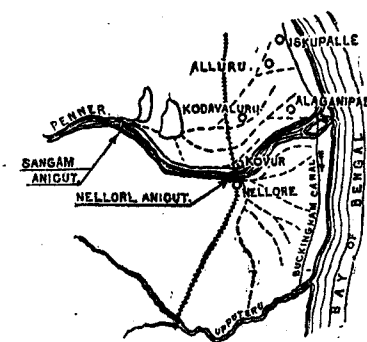
The head works of the canals consist of a head sluice, and under sluice and a head lock for each of the three deltas. The eastern delta is about 450 square miles, the central delta 500 square miles, while the western delta about 1,000 square miles in extent stretches down to the Collair lake.

In the eastern and western deltas, the Samalkota and Ellore canals define the limits of irrigation to the areas enclosed between them and the river Godavari. They also form the link between Cocanada Port and Ellore town where the (Kistna) Ellore canal of the Kistna Delta System joins the (Godavari) Ellore canal. The central delta, particularly the "Nagaram" island, is the "Garden of the Godavari district" and is noted for the Gannavaram aqueduct which was completed in about eight months in the fifties of the last century, a remarkable feat due to Captain Orr. The Polavaram aqueduct at Annampalli is a similar recent construction to irrigate Polavaram island. The river and its branches are banked throughout to protect the deltas from the floods.

The net-work of canals in all the deltas are navigable throughout their length for eleven months in the year and carry annually cargo valued at nearly Rs. 24.71 crores besides timber worth about Rs. 2.40 crores and passengers over a million a year.

The canals irrigate about 820,000 acres but the total area irrigated during the year including the second-crop area is over 1 million acres. The value of crops grown is Rs. 11.71 crores. The capital outlay on the system is about Rs. 2.09 crores and the return is 12 per cent.

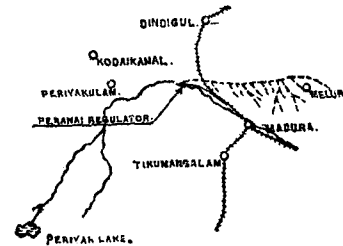
Pennar River Canals System.—The system consists of two anicuts, one at Sangam and the other at Nellore. Two



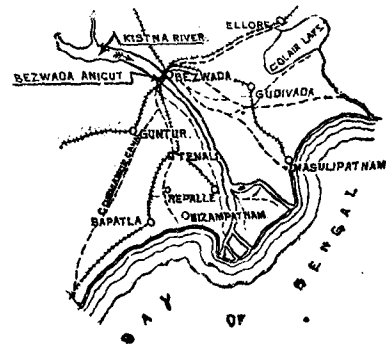
canals take off at the Sangam anicut and the left, one to feed the Duvvur tank and the other the large Kanigiri tank, one of the largest tanks in the Circars. Another channel taking off at right side of the anicut feeds the Nellore tank. At the Nellore anicut about 20 miles down-stream of Sangam, a canal takes off on the right and feeds a number of tanks, the largest of which is the Sarvapalli tank. The Sangam anicut has recently been

raised by 1 foot and with Nellore anicut system irrigates about 146,600 acres; the capital expenditure is Rs. 71 lakhs and the return is 7 per cent.

The Shatiatope Anicut System.—The system is a combined tank and canal system served by the Vellar Rajan channel taking off from the Shatiatope anicut across the Vellar. The old anicut was converted into a bridge and regulator fitted with lift shutters about 1906. The system irrigates about 32,700 acres in South Arcot district and irrigation extends almost as far east as Cuddalore. The Perumal tank is one of the largest tanks and is the terminal tank of the system. The capital expenditure on the system is about Rs. 11 lakhs and the return is about 10 per cent.



The Periyar System.—The main feature of the Periyar system is the diversion across the Peninsula into the Bay of Bengal of a large river which nature had ordained should flow into the Arabian Sea. A huge dam across an inaccessible gorge in Travancore, about 3,000 feet above sea level, in malarial ridden jungle, forms a picturesque lake in the hills with a useful capacity of about 9,800 million cubic feet. The project is due to the genius of Colonel Pennycuik. The dam is of concrete with a masonry facing on the lake side about 170 feet high above river bed at the deepest point. A tunnel 5,700 feet long has been bored through the ridge on the east to carry the waters of the lake to the plains of Madura. The water flows into the Suruliyar, tributary of the Vaigai, and after irrigating about 12,700 acres in the Suruliyar Valley, is again picked up at the Peranai regulator across Vaigai about 80 miles downstream of the tunnel and diverted into the Periyar main canal about 35 miles long. The system irrigates about 126,000 acres in Madura district. The capital expenditure on the system is about 108 lakhs and the return is about 6 per cent.



The Kistna Delta System.—The Kistna rises in the Western Ghats near Mahabaleswar, some 4,000 feet above the sea level and runs southwards through the Bombay Presidency for some distance before it turns east into Hyderabad and receives the Bhima. Further down the Tungabhadra joins it and from here the river is for a considerable distance the boundary between Madras and Hyderabad. The last important tributary to join is the Musi. The river after flowing through a narrow gorge in the Nallamalais enters the plains of the Coromandal coast studded with hills. The last of the three hills is at Bezwada where the river flows between two of them hardly 6 furlongs apart. Stretching away on both sides of the river beyond Bezwada lie the two sections of the delta, the eastern delta lying on the left side and the western delta lying on the right. For 40 miles below the river runs in a single stream. It then throws out the Puligedda branch. Between this and the main river lies the Divi island. The main river then flows for 15 miles and splits into three branches before it empties into the sea. The river drains 97,000 square miles and its flood discharge is about a million cubic feet per second.

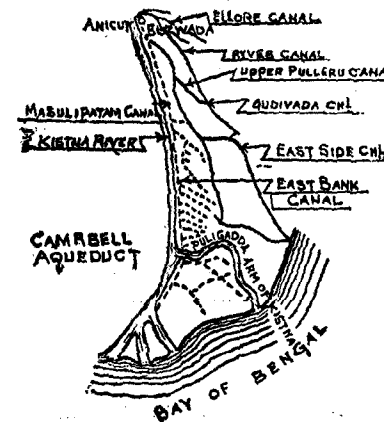
The history of the Kistna anicut follows almost the same course as that of the Godavari. Sir Arthur Cotton, who built the Godavari anicut, was again responsible for the anicut at Bezwada with its two canals, supplying the two sections of the delta on either bank of the river.

The anicut is about 6 furlongs in length; its crest was raised at a later date by one foot and fitted with three feet falling shutters to improve the supplies to the delta. In 1935 even this was found insufficient and 6 feet falling shutters were substituted.

The shutters are tripped by hydraulic pressure to pass floods and a steam plough is used to lift them up as the flood subsides. The head works of each canal consist of head and undersluice and a head lock.

The eastern delta has an area of about 1,160 square miles and stretches as far north as the Collair. The western delta is about 950 square miles and extends to the south as far as Pedda Ganjam. The Kistna-Ellore canal in the eastern delta connects the Godavari-Ellore canal in the north and the Commamur canal of the western delta joins the Buckingham canal in the south. These contour canals and the interior canals form a net-work of irrigation and navigation canals affording means of irrigation and transport for the two deltas. The Divi island was irrigated with water pumped from the river by Diesel engine driven pumps. Pumping from the river was the practice till 1935 when the Campbell aqueduct was built at Puligedda to carry the Kistna East Bank canal across the river to Divi. This canal now irrigates by direct flow the entire ayacut in the Divi island.

The Kistna East Bank canal takes off at about mile 4/0 of the Masulipatam canal.

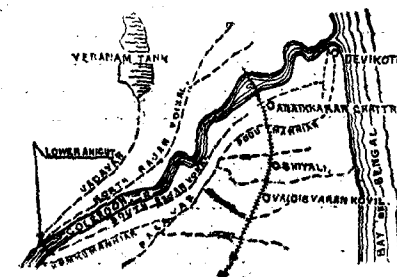


The canal is navigable and runs alongside the river for a considerable distance before it crosses the Puligedda arm of the Kistna river by the Campbell aqueduct. The aqueduct is the longest reinforced concrete aqueduct bridge in India and carries a roadway 16 feet wide and a footpath 4 feet wide. The aqueduct is submersible during the high floods. The capital expenditure on the canal is Rs. 58 lakhs and the return is 7.76 per cent.

The river and its arms forming the Divi island are banked to protect the delta from floods.

The canals are navigable for about 10 months in the year and carry annually cargo valued at about Rs. 16.35 crores, timber worth about Rs. 44.59 lakhs and over 2 lakhs of passengers. The system irrigates about 930,000 acres excluding the Kistna East Bank canal. The value of the crops grown is about Rs. 12 crores. The capital expenditure is Rs. 2.27 crores and the return is 15.67 per cent.

Lower Coleroon Anicut System.—The lower anicut across the Coleroon was built about 1840 by Sir Arthur Cotton



to ensure supply to the areas originally irrigated by river channels. The old works were substantially improved in 1906. The weir was converted into a regulator of 70 vents fitted with lift shutters 33 feet 4 inches span and 8 feet high. The Vadavar and North Rajan channels taking off on the left side irrigate lands in the Chidambaram taluk of the South Arcot district. The Kumikimanniyar and South Rajan channels take off on the right and irrigate lands in the Shiyali taluk of the Tanjore district. The Vadavar is a contour canal supplying the large Veeranam tank, which also supplements supplies in the river valleys through a sluice at its northern end. The system irrigates about 118,700 acres. The capital expenditure is Rs. 30 lakhs and the return is 10 per cent.

Willington Reservoir.—Originally known as the Toludur Project is a comparatively new work in South Arcot district opened in 1923. There is a bridge and regulator fitted with lift shutters across the Vellar at Toludur from which a canal three and a half miles long takes off and feeds the reservoir which has a capacity of about 2,400 million cubic feet. The bridge carries the Great Southern Trunk

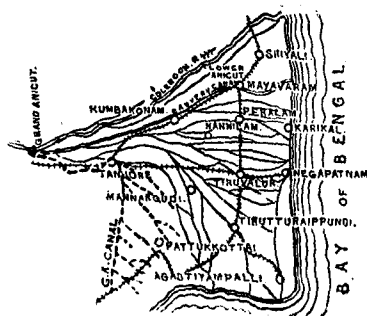
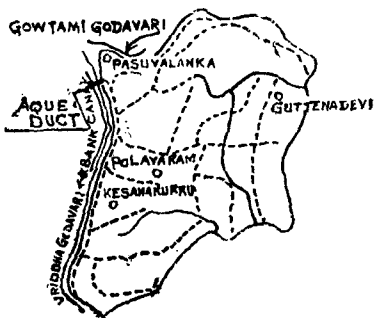
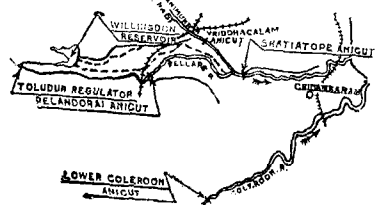
Road from Madras to Trichinopoly. From the reservoir a channel takes off and branches into the high and low level channels a short distance below the head. These are designed to irrigate about 25,000 acres. Irrigation is not yet fully developed and the system now irrigates about 20,000 acres. The capital expenditure on the system is about Rs. 26 lakhs and the return is 3.52 per cent.

Polavaram Island System.—The system consists of a canal taking off the Bank Canal of the Godavar Central delta about half a mile above Annampalli lock. The canal crosses the Vriddha Goutami by a masonry aqueduct and irrigates the Polavaram island enclosed by the two branches of the Goutami Godavari. The system irrigates about 15,200 acres in East Godavari district. The capital expenditure is about Rs. 17 lakhs and the return is 1.93 per cent.

Cauvery-Mettur System.—While the south-west monsoon in the hills is fairly heavy and dependable, the north-east monsoon supplies to the Cauvery are irregular. The caprices of the north-east monsoon have frequently affected cultivation in Tanjore. Moreover, there is usually a break of about six weeks between the two monsoons during which period the supply in the river is very low and insufficient for irrigation requirements. The chief aim of the Cauvery-Mettur system is to remedy this state of affairs by storing the excess water during floods and passing it down later when the natural flow in the river falls below requirements. It is also intended to irrigate 301,000 acres of new land chiefly in the Mannargudi, Pattukkottai and Arantangi taluks of the Tanjore district.

The system consists of a large reservoir at Mettur known as the Stanley reservoir and a canal known as the Grand Anicut canal in Tanjore taking off above the Grand Anicut.

The Stanley reservoir has a waterspread 60 square miles in area and holds 93,500 million cubic feet of water when full. The lake is formed by a masonry dam across the valley of the Cauvery. It is 5,300 feet long and 214 feet high at the deepest point. It is almost the biggest dam in the world and costs Rs. 4.8 crores. There are two sets of sluices in the dam, the high and low level sluices with sills at +720 and +670 while the F.R.L. is +790 and the M.W.L. is 796.00. The river floods are surplussed over an escape at the left flank fitted with lift shutters 60 feet long and 20 feet high and an emergency escape at the right flank. The design however provides for raising these by 10 feet high if it becomes necessary.



The sluices and the surplus shutters are worked by electric power but it is possible to work any of them by hand if required. The dam also incorporates four sets of cast iron lined sluices 8 feet 6 inches diameter. These enable supplies to be drawn for the development of hydro-electric power below the dam and a hydro-electric power station has been built below the dam and is in operation since 1937. Irrigation supplies for the new area under the reservoir are passed into the river below the dam and picked up at the Grand Anicut about 120 miles downstream. The new canal called the Grand Anicut canal is a contour canal about 70 miles long has costed about Rs. 200 lakhs. It runs through Tanjore town, after passing which it throws out the large Kalianodai and Rajamadam branch canals. Down below there is a net work of branch channels and the system irrigates lands as far south as the Narasingha Cauvery.

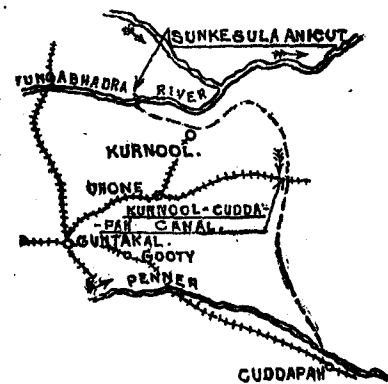
The system is under development. It now irrigates about 232,000 acres. The capital outlay is Rs. 6.5 crores and the present rate of return on capital is 1.75 per cent.

Kattalai System.—The South Bank canal was excavated to replace the four old korambu channels—Marudur nattu voikal, Mahadanapuram channel, Nangam channel and Uyyakondan channel taking off from the right bank of the Cauvery in Trichinopoly district, as irrigation under them was troublesome and uneconomical. Because the river-bed at the head of the South Bank canal had been badly scoured by the 1924 floods a bed regulator was constructed there. Five furlongs below its head, the canal divided into the High Level channel and the South Bank channel. The system irrigates about 50,400 acres. The capital expenditure was about Rs 41 lakhs and return is 3.30 per cent.

Kurnool-Cuddapah Canal.—The Kurnool-Cuddapah canal takes off from the Thungabhadra from an anicut at Sunkesula about 15 miles upstream of Kurnool. The anicut and canal were constructed by the Madras Irrigation and Canal Company, Limited, incorporated in England in 1858 with a guarantee of 5 per cent interest on outlay. The work was completed about 1870 and was handed over to Government on payment of Rs. 3.02 crores. The canal provided for irrigation of 76,500 acres in Kurnool and Cuddapah districts but the irrigated area varies within wide limits from year to year. The canal runs parallel to the river for about 50 miles when it takes a turn southwards towards Cuddapah district and pierces the ridge

between Pennar and Kistna valleys through a cutting called Mittakondala cutting. Below this point the Kali and Kundu rivers are utilized to carry the irrigation supplies, the canal serving mainly as navigation canal. There are anicuts across the Kundu river at Santhajuttur and at Rajoli at which the canal supplies are again picked up and used for irrigation in the Kurnool-Cuddapah canal and its branches. At about mile 180, the canal crosses the Pennar at Adinimeyapalli anicut and is continued on the right as far as Cuddapah town. The Kurnool-Cuddapah canal flows through black cotton soil and irrigates mostly dry crops. These crops do not require canal supply in years of good and well-distributed rainfall but in other years they require occasional irrigation. The canal is maintained at a heavy and recurring loss particularly because of its use in famine years. The canal was navigable throughout till 1934 when the reach below Lockinsula at mile 74/0 was closed to navigation, as there was little boat traffic, and costly replacement of a number of lock gates below Lockinsula was found involved.

The capital expenditure on the canal is about Rs. 234 lakhs and the return is about 0.84 per cent. It is the most expensive project (excluding Cauvery-Mettur project) in Madras.



Barur Tank System.—The system consists of an anicut across the Ponnai at Nedungal, with a supply channel feeding the Barur tank in Salem district. The supply channel also feeds a number of small tanks on the left bank while the two old channels, the Nedungal and Agaram channels, feed small tanks on the right bank.

The work on the tank and the supply channel was commenced as a famine relief work in 1877 and subsequently revised to include the anicut, etc. The work was completed in 1899. The system irrigates an area of about 4,100 acres.

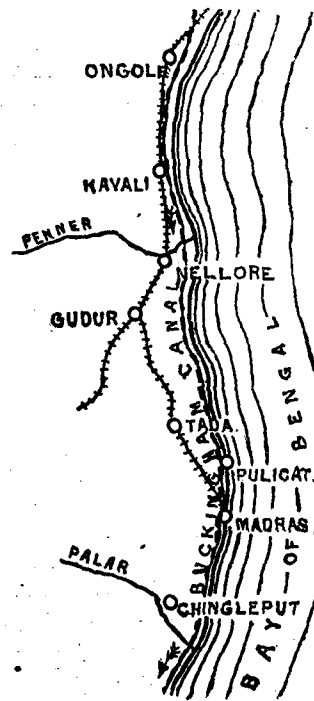
The capital expenditure is Rs. 4.5 lakhs and a return of 2.81 per cent is now obtained.

Nagavalli River System.—At Thottapalli in Vizagapatam district a regulator has been built across the Nagavalli river and a channel about 22 miles long has been dug. The channel irrigates about 27,900 acres. The capital expenditure is about Rs. 18 lakhs return being about 2.58 per cent.

Bhavanasi Tank.—This is a reservoir formed by an earthen bund about 2,500 feet long and 30 feet high across the Bhavanasi river in Guntur district with a capacity of about 175 million cubic feet. The reservoir irrigates about 600 acres. The capital expenditure is Rs. 2.65 lakhs and the return is minus 0.54 per cent.

Mopad System.—The Mopad system consists of a reservoir with an earthen bund about 70 feet high at the deepest point and more than a mile long, built across the Manneru river in Nellore district. The reservoir has a capacity of about 2,100 million cubic feet and irrigates lands in a tract where famines are frequent. The ayacut of the tank fixed at about 7,000 acres has been realized during this year. The capital expenditure on the system is about Rs. 24 lakhs and the return is 2.00 per cent.

Buckingham Canal.—This canal is used entirely for navigation. It runs through Madras parallel and close to the Coromandel coast, joining up a series of natural backwaters and connects all the coastal districts with Guntur and South Arcot at the ends. The canal runs for 196 miles north of Madras and 62 miles south of Madras. At its northern end it is connected with the Commamur canal at the Kistna delta which in turn is connected to the Godavari canals running as far north as Cocanada. Due to its alignment close to the coast, the canal is difficult and costly to maintain. The navigability of the north canal is difficult and costly to maintain. The navigability of the north canal depends on the open sea bars at Ennore and Pulicat. In a bad year, water levels may drop and lead to considerable difficulty in navigation. The canal carries a large traffic in salt, shells, firewood, building materials and food grains and is one of the main feeders to the Madras market. It carries cargo of an estimated value of about Rs. 20.73 crores and about 98,000 passengers every year. The capital expenditure on the system is Rs. 95.58 lakhs and the return is minus 3.86 per cent.



Chapter IV.

IMPORTANT WORKS CARRIED OUT DURING THE YEAR.

The important works under execution during the year are enumerated below under the categories Grow More Food Works and other works along with the particulars of expenditure and ayacut.

Works for which Capital and Revenue Accounts are kept.

I. Cauvery Delta System—A. Grow More Food Works—(1) Providing irrigation facilities to Kambayanatham village and abandoning Motteri tank—(Estimate Rs. 21,500).—Approximate ayacut 140 acres. The expenditure during the year was Rs. 14,435 and to the end of the year Rs. 18,024. The work was completed.

(2) Providing irrigation facilities to Vallamperambur, Nagathi, etc., villages from Pillaivoikal No. 3—(Estimate Rs. 55,700).—Approximate ayacut 653 acres. The expenditure during the year was Rs. 10,300 and to end of the year Rs. 30,396. The work was completed.

(3) Extension of irrigation under Cauvery-Kondanar in Prathaparamapuram, etc., villages (Estimate Rs. 56,000).—Approximate ayacut 445 acres. The expenditure during the year was Rs. 15,660 and to end of the year Rs. 31,074. The work has been completed.

(4) Providing irrigation facilities to certain lands in Rajendran and Narayanapuram villages—(Estimate Rs. 30,300).—Approximate ayacut 253 acres. The expenditure during the year was Rs. 12,048 and to the end of the year Rs. 22,491. The work was completed.

(5) Providing irrigation facilities to certain lands in Vanrangudi and Santhanoor villages—(Estimate Rs. 46,600).—Approximate ayacut 246 acres. The expenditure during the year was Rs. 445 and to end of the year Rs. 13,203. The work has been completed.

B. Other Works—(1) Constructing a regulator across the Korayur and a drainage sluice to Manamkuttankottagam channel (Estimate Rs. 65,580).—The expenditure during the year was Rs. 18,003 and to end of the year Rs. 53,434.

(2) Extensions and improvements to Orathur channel—(Estimate Rs. 15,500).—The expenditure during the year was Rs. 902 and to the end of the year Rs. 14,382.

II. Cauvery-Mettur Project—A. Grow More Food Works—(6) Bringing under irrigation an extent of 40,000 acres in the Cauvery-Mettur Project Area—First Target—(Estimate Rs. 1,50,000).—Expenditure during the year was Rs. 7,500 and to end of the year Rs. 1,43,789. The work was completed.

(7) Bringing under irrigation a further extent of 15,000 acres in the Cauvery-Mettur Project area—Second Target—(Estimate Rs. 50,000).—Expenditure during the year and to the end of the year was Rs. 48,919.

(8) Extension of irrigation south of Narasinga Cauvery in Aranthangi taluk—(Estimate Rs. 1,50,000).—Approximate ayacut 2,500 acres. Expenditure during and to the end of the year was Rs. 90,534.

III. Godavari Delta System—(9) Extension of irrigation under Nimmakayala Kothapalli channel—(Estimate Rs. 51,200).—Approximate ayacut 643 acres. Expenditure to the end of the year was Rs. 13,011. The work was in progress.

(10) Providing irrigation facilities to certain high level lands below Ralli and Lolla locks in Komarajulanka, etc., villages—(Estimate Rs. 2,94,400).—Approximate ayacut 1,660 acres. The expenditure during the year was Rs. 1,07,211 and to the end of the year Rs. 1,22,260. The work was completed during the year.

(11) Providing irrigation facilities to the dry lands in Antervedi village by extending Addalapalam and Mamidithotta channels—(Estimate Rs. 1,93,000).—Approximate ayacut 2,076 acres. The work was started during the year and an expenditure of Rs. 23,410 incurred.

(12) Extension of the Sakshinipalli weir channel and extension of Vasishta left flood bank—(Estimate Rs. 94,800).—Approximate ayacut 671 acres. Expenditure during the year was Rs. 14,724 and to the end of the year Rs. 48,761. The work has since been completed and the scheme is functioning.

(13) Providing irrigation facilities to certain dry lands in Palivela, Avidi and Ganti villages—(Estimate Rs. 31,800).—Approximate ayacut 426 acres. The expenditure during the year was Rs. 11,606 and to the end of the year Rs. 15,625. The work has been completed.

(14) *Kalipatnam Scheme—Extension of irrigation to 1,190 acres—(Estimate Rs. 57,400).—Expenditure during the year was Rs. 4,206 and to end of the year Rs. 31,563. The work was completed and brought to beneficial use during the first crop season of 1945.*

(15) *Remodelling the Kodamanchilli channel of Bank Canal—(Estimate Rs. 82,900).—Approximate ayacut 610 acres. Expenditure during the year was Rs. 11,705 and to the end of the year Rs. 24,937. The work was in progress.*

(16) *Providing irrigation facilities to certain dry lands in Yeditha village under Yeditha channel—(Estimate Rs. 25,200).—Approximate ayacut 382 acres. Expenditure incurred during the year was Rs. 2,214 and to the end of the year Rs. 5,555. The work was in progress.*

(17) *New Wadapalam Scheme—(Estimate Rs. 37,000).—Approximate ayacut 383 acres. The expenditure during the year was Rs. 6,136 and to the end of the year Rs. 11,004. The work was completed.*

(18) *Extension of the Vadlur-Tetali channel—(Estimate Rs. 1,21,550).—Approximate ayacut 649 acres. The work was started during the year and an expenditure of Rs. 20,050 was incurred. The work was in progress.*

(19) *Peravaram Pumping Scheme—(Estimate Rs. 9,75,800).—Approximate ayacut 9,600 acres. Expenditure during the year was Rs. 61,540 and to the end of the year Rs. 5,69,910. The work was completed and irrigation commenced from October 1945.*

(20) *Sankaragupnam Scheme—(Estimate Rs. 1,00,300).—The work was just started and was in progress. The approximate ayacut under the scheme is 663 acres.*

B. Other Works—(3) *Remodelling Pallamkurru Nos. I and II channels—(Estimate Rs. 1,28,834).—An expenditure of Rs. 32,383 was incurred during the year and the total expenditure to end of the year was Rs. 84,857. The work was in progress.*

(4) *Protecting the front and rear aprons of the Gannavaram aqueduct with R.C. sheet piles—(Estimate Rs. 7,67,000).—The expenditure during the year was Rs. 42,766 and to the end of the year Rs. 5,37,901. The three vents of the Gannavaram aqueduct which had fallen and the one vent on the western side which had cracked were reconstructed before the first-crop season, i.e., June 1945 and the aqueduct was opened both for irrigation and navigation. Further work was in progress and nearing completion.*

(5) *Excavating the Kumarigunta distributary—(Estimate Rs. 34,300).—The expenditure during the year was Rs. 3,002 and to the end of the year Rs. 24,959. The work was in progress and nearing completion.*

(6) *Forming flood bank and providing revetment between the heads of Lukulam and Polaki channels—(Estimate Rs. 53,000).—The expenditure during the year was Rs. 31,972 and to the end of the year Rs. 40,751. The work was in progress.*

IV. Kistna Delta System—A. Grow More Food Works—(21) *Improvements to Enekepad aqueduct—(Estimate Rs. 24,050).—Ayacut benefited 20,000 acres. The expenditure during the year was Rs. 8,050 and to the end of the year Rs. 24,066. The work has been completed.*

(22) *Improvement to Bapatla East Swamp drain—(Estimate Rs. 57,500).—Approximate ayacut 400 acres. Expenditure during the year was Rs. 40,001 and to the end of the year was Rs. 43,061.*

(23) *Reconstructing the syphon carrying the Karlapalam channel across the Nallamada drain—(Estimate Rs. 1,10,000).—The work was started during the year and an expenditure of Rs. 4,989 incurred.*

B. Other Works—(7) *Improvements to New Thamarakollu channel—(Estimate Rs. 21,390).—Expenditure during the year was Rs. 9,381 and to the end of the year Rs. 22,667.*

(8) *Providing irrigation facilities to Bandar Fort Block—(Estimate Rs. 24,820).—Expenditure during the year was Rs. 501 and to the end of the year Rs. 16,036.*

(9) *Excavating the new Arthamur channel—(Estimate Rs. 19,600).—Expenditure during the year was Rs. 4,912 and to the end of the year Rs. 17,476.*

(10) *Excavating the new Nidamanur channel—(Estimate Rs. 19,100).—Expenditure during the year and to the end of the year were Rs. 8,303 and Rs. 2,138 respectively.*

(11) *Extending the existing irrigation sources for the irrigation of non-guaranteed wet lands in Mallavole, Rudravaram, etc., villages—(Estimate Rs. 21,150).—Expenditure during the year was Rs. 254 and to the end of the year Rs. 13,498.*

(12) *Improvements to Pedalanka channel—(Estimate Rs. 4,28,690).—Expenditure during the year was Rs. 302 and to the end of the year Rs. 4,08,701.*

(13) *Providing irrigation facilities to newly included lands of Gurzada village—(Estimate Rs. 22,600).—The expenditure during the year and to the end of the year was Rs. 2,010.*

(14) *Remodelling the Bhimnadhi channel—(Estimate Rs. 39,500).—The expenditure during the year and to the end of the year were Rs. 391 and Rs. 7,592 respectively.*

(15) *Excavation of the Kistna Western High Level channel—(Estimate Rs. 5,82,563).—Expenditure during the year was Rs. 27,326 and to the end of the year Rs. 5,92,107.*

(16) *Extending the wharf at Bezvada below girder bridge of the Kistna Eastern Delta main canal—(Estimate Rs. 1,13,200).—The expenditure during the year was Rs. 2,307 and to the end of the year Rs. 88,362.*

V. Kistna East Bank Canal Extension Scheme—(17) *Kistna East Bank Canal Extension Scheme—(Estimate Rs. 28,49,320).—Expenditure during the year and to the end of the year were Rs. 3,332 and Rs. 27,09,420 respectively.*

VI. Mopad Reservoir—A. Grow More Food Works—(24) *Constructing an anicut across the Pillaperu and excavating a channel to improve supply to Mopad main channel—(Estimate Rs. 1,10,000).—Approximate ayacut 603 acres. The expenditure during the year was Rs. 19,492 and to the end of the year Rs. 1,25,912. The work was completed, except for a minor item.*

VII. Kattalai Scheme—(18) *Excavating the Kattalai High Level channel—(Estimate Rs. 15,91,000).—The expenditure during the year was Rs. 9,901 and to the end of the year Rs. 15,23,258.*

VIII. Uduthorahalla Project—A. Grow More Food Works—(25) *Construction of an anicut across the Uduthorahalla river—Kollegal taluk—(Estimate Rs. 2,11,100).—Approximate ayacut 800 acres. The expenditure during the year was Rs. 6,273 and to the end of the year Rs. 1,11,202. The work has been completed. Adjustment of a portion of the land charges alone remained to be done.*

IX. Navigation Works—Buckingham Canal System—(1) *Provision of a wharf between Trevelyan Basin and Basin Bridge. (Estimate Rs. 2,25,000).—Expenditure during the year was Rs. 1,925 and to the end of the year Rs. 2,15,257.*

(2) *Improvements to the Madras wharf at Basin Bridge (Estimate Rs. 2,45,582).—Expenditure during the year was Rs. 45,126 and to the end of the year Rs. 2,07,805.*

(3) *Revetting the banks of the Junction Canal—North Buckingham Canal—(Estimate Rs. 1,34,000).—Expenditure during the year was Rs. 12,523 and to the end of the year Rs. 1,33,011.*

(4) *Deepening the North Buckingham Canal to 16.50 level—(Estimate Rs. 2,80,000).—Expenditure during the year was Rs. 5,946 and to the end of the year Rs. 3,16,871.*

Works for which Capital and Revenue Accounts are not kept.

B. Other Works—Vizagapatam district—(1) *Forming a new tank at Yerakampettah and excavating supply channels—(Estimate Rs. 14,600).—The expenditure during the year was Rs. 1,515 and to the end of the year Rs. 14,030.*

(2) *Construction of wells in Araku Valley—(Estimate Rs. 21,000).—The expenditure during the year and to the end of the year was Rs. 7,265. The work was taken up for irrigation purposes in the Araku Valley.*

A. Grow More Food Works—Anantapur district—(1) Restoration of the Gazulapalli tank—(Estimate Rs. 1,37,830).—Approximate ayacut 130 acres. The expenditure during the year was Rs. 6,524 and to end of the year Rs. 1,31,951. The work was completed.

(2) Formation of a new tank in Motor Chintalapalli village—(Estimate Rs. 36,200).—Approximate ayacut 97 acres. A sum of Rs. 66 representing the balance of land charges was adjusted during the year. The up-to-date expenditure was Rs. 36,217. The work has already been completed.

(3) Restoration of a ruined tank in Titakal village—(Estimate Rs. 32,600).—Approximate ayacut 80 acres. The expenditure during the year was Rs. 3,009 and to end of the year Rs. 32,864. The work was completed.

Bellary district—(4) Restoration of the breaches in Mallapanakeri tank (Estimate Rs. 41,000).—Approximate ayacut 200 acres. Expenditure during the year and to the end of the year were Rs. 14,002 and Rs. 20,492 respectively.

Kurnool district—(5) Chinmathekkur Project—(Estimate Rs. 6,20,000).—Approximate ayacut 500 acres. The expenditure during the year was Rs. 68,715 and to the end of the year Rs. 6,31,687. The work was completed and brought to beneficial use.

(6) Gargeyapuram Reservoir Project—(Estimate Rs. 1,65,740).—Approximate ayacut 200 acres. The expenditure during the year was Rs. 13,618 and to end of the year Rs. 1,65,931. The work was almost completed except for raising the weir to the ultimate F.T.L.

(7) Constructing a reservoir across the Paleru at Owk—(Estimate Rs. 4,74,100).—Approximate ayacut 360 acres. The expenditure during the year and to the end of the year were Rs. 49,264 and Rs. 4,87,677 respectively. The work was practically completed.

Cuddapah district—(8) Vogur-Vakkamada Project—(Estimate Rs. 2,57,400).—Approximate ayacut 1,173 acres. The expenditure during the year was Rs. 17,417 and to the end of the year Rs. 2,21,976. The scheme at present irrigates about 672 acres.

(9) Excavating a supply channel to the Gotur Mallidevaraya cheruvu.—(Estimate Rs. 52,700).—Approximate ayacut 215 acres. A sum of Rs. 164 being the balance of land charges was adjusted during the year bringing the total expenditure to Rs. 52,800. The work has already been completed.

(10) Excavating a spring channel to irrigate lands in Gangavaram, Vibravaram, etc., villages—(Estimate Rs. 23,000).—Approximate ayacut 129 acres. The expenditure during the year was Rs. 2,097 and to end of the year Rs. 23,721. An extent of 156 acres was cultivated during the year.

(11) Improving the supply to Ganganapalli tank by diverting the Jothivagu—(Estimate Rs. 39,500).—Approximate ayacut 200 acres. The expenditure during the year was Rs. 405 and to end of the year Rs. 40,136.

Chittoor district—(12) Restoration of the Beerappacheruvu—(Estimate Rs. 4,15,000).—Approximate ayacut 430 acres. The expenditure during the year and to the end of the year were Rs. 22,414 and Rs. 4,11,872 respectively. During the year under review only 60 acres of lands were cultivated.

Nellore district—(13) Forming a new tank in Mogalicherla village—(Estimate Rs. 1,58,400).—Approximate ayacut 280 acres. Expenditure during the year was Rs. 4,467 and to the end of the year Rs. 1,06,454. The work was completed except for raising of F.T.L.

(14) Pambaleru Project—(Estimate Rs. 70,000).—Approximate ayacut 650 acres. The expenditure during the year was Rs. 2,867 and to the end of the year Rs. 64,134. The work was completed.

B. Other Works—(3) Constructing a dam across Venkatagiri river below Chennai tank supply channel—(Estimate Rs. 23,625).—The work was completed with a further expenditure of Rs. 1,001 during the year bringing the total cost to Rs. 17,130.

A. Grow More Food Works—Chingleput district—(15) Constructing an anicut across the Ninjal maduvu and excavating a supply channel to the Ponvilantha-kalathur tank—(Estimate Rs. 5,34,750).—Approximate ayacut 1,226 acres. Expenditure during the year was Rs. 3,41,076 and to end of the year Rs. 3,71,000.

B. Other Works—(4) Constructing a masonry sluice in Poondi regulator bund and providing a pipe line for supplying water to the Poondi Research Station—(Estimate Rs. 12,200).—The work was started during the year and an expenditure of Rs. 8,420 incurred.

(5) Constructing a high co-efficient wier at the right flank of Cooum tank—(Estimate Rs. 26,000).—The expenditure during the year and to the end of the year was Rs. 23,905.

(6) Constructing a regulator across the Cooum River at its head near Kesavaram anicut—(Estimate Rs. 2,97,000).—The expenditure during the year was Rs. 66,317 and to the end of the year Rs. 2,42,936.

A. Grow More Food Works—South Arcot district—(16) Excavating a channel on the right side of the Valikannal anicut across the Gomuki river—(Estimate Rs. 97,500).—Approximate ayacut 640 acres. The expenditure during the year was Rs. 1,351 and to end of the year Rs. 98,784. The work was completed.

Trichinopoly district—(17) Constructing an anicut across the Siddamalli odai and improvements to the supply channel to Kovathattai tank—(Estimate Rs. 95,500).—Approximate additional ayacut 192 acres. The expenditure during the year was Rs. 285 and to the end of the year Rs. 66,195. The work was completed.

(18) Restoration of the Ponneri tank in Udayarpalayam taluk—(Estimate Rs. 6,25,000).—Approximate ayacut 1,440 acres. The expenditure during the year was Rs. 36,293 and to the end of the year Rs. 4,24,878. The work was completed with the exception of certain sundry items.

(19) Formation of a tank across the Uppar odai in Omandur village—(Estimate Rs. 2,91,170).—Approximate ayacut 377 acres. The expenditure during the year was Rs. 29,857 and to end of the year Rs. 2,53,067. The work was completed.

Coimbatore district—(20) Restoration of the Nilambur tank—(Estimate Rs. 2,37,600).—Approximate ayacut 400 acres. The expenditure during the year was Rs. 86,317 and to end of the year Rs. 1,71,941. The work was completed in all respects.

B. Other Works—(7) Constructing a head sluice at M. 0/2 at Kolinjivadi channel—(Estimate Rs. 15,500).—The work was started during the year and an expenditure of Rs. 94 was incurred.

Navigation Works—Chingleput district—(1) Forming a flood bank at M. 5/3 of West Bank of North Buckingham Canal to Kudiraikothalam natham—(Estimate Rs. 1,07,500).—Expenditure during the year was Rs. 3,986 and to the end of the year Rs. 80,483.

(2) Improvements to the West Flood Bank of North Buckingham Canal from M. 5/3 to 10/2—(Estimate Rs. 2,33,000).—The expenditure during the year and to the end of the year were Rs. 32,129 and Rs. 2,00,480 respectively.

Malabar district—(3) Improvements to Pooraparamba Cut—(Estimate Rs. 2,85,400).—The expenditure during the year was Rs. 4,617 and to the end of the year Rs. 2,53,421. The work was completed.

Chapter V.

A. SEASON RAINFALL AND SUPPLY.

Character of the season.—The Province is subject to the influence of two monsoons, the south-west and the north-east.

The south-west monsoon set in as usual on the West Coast by the first week of June 1945. The rainfall was below normal in all the districts during the month. In July, however, there was more than normal rainfall in almost all the districts except Trichinopoly and Madura in the south. The rainfall during August was deficient in the plains of Vizagapatam and the Circars in the north, Nellore, Chingleput and Coimbatore in the middle and Tinnevely in the extreme south. The deficiency was made good in Vizagapatam, Nellore and Chingleput districts during September

when the East Godavari, West Godavari, Kistna and Guntur districts also benefited, but the other districts suffered. On the whole the monsoon gave less than the normal precipitation in a large number of districts excepting the East and West Godavaris, Guntur, Kurnool, Chingleput and Chittoor districts.

The north-east monsoon commenced from the second week of October. Except in the Vizagapatam, East Godavari and Guntur districts in the north and Madura, Coimbatore and Ramnad districts in the south rainfall was deficient during October. In November there were considerable showers only in the southern districts of Chingleput, South Arcot, Coimbatore, Tanjore, Madura, Ramnad and Tinnevely. December was disappointing with almost no rainfall in the Godavaris and the Circars while there were very few showers in the other districts. This monsoon was on the whole below normal in several districts.

The following paragraphs give in detail the effect of the monsoons on irrigation under the important systems and in the Ceded districts :—

Godavari Delta System.—Water supply during the first crop season was sufficient and the crops were also generally good till the beginning of the north-east monsoon. In the third week of October 1945, there was a heavy gale and cyclone in the coastal area of the Delta causing a tidal wave which damaged large areas of crop in the coastal belt. Permission to grow a second crop for almost the whole area swept by the tidal wave was granted, and this concession greatly mitigated the loss of first crop. The supply during the second crop season was good during the transplantation period. Proportionate regulation was resorted to, as usual, when the water level fell down to the crest of the anicut. From the middle of April the supply was supplemented by some showers and freshes in the river. The closure of canals was postponed by a few days beyond the due dates so as to give final wetting to the tail end ayacut and late crops.

Chicacole Minor Rivers System.—Water regulation was carried out as usual by turn system without any difficulty. Only in the case of Wadada channel there was short supply during October 1945 but Korambu work was done and the supply restored to the standing crops. Cyclone damage of October 1945 were repaired during the year.

Nagavalli River System.—There was enough water in the main channel for transplantation. The conditions under the project are improving and efforts are being made for adequate supply of water by providing additional works. Waste lands were being brought under cultivation and water supply extended to them to the extent possible. There was no second crop under the system.

Kistna Delta System.—Freshes in the Kistna arrived in the first week of June 1945 and the highest flood level during the year was recorded as 13.0 feet on 15th July 1945. Transplantation was started from the middle of June and completed by the end of August. The severe cyclone that struck the East Coast in October caused heavy damage to the standing crops in the coastal area and submerged the lands bordering the Collair lake. To make up this loss second crop was granted out of turn to about 2,700 acres in the Collair border and to about 2,000 acres in the Collair banks. Further, lands of all categories, i.e., dry, assessed waste, porambokes, etc., were permitted to raise wet crops wherever possible and irrigation facilities were extended at the cost of the ryots to the tail end involuntary flow lands. About 15,000 acres were thus cultivated in the Kistna Western Delta alone, and adequate supply was given for the second crop in the Kistna Eastern Delta by closing supply to Kistna Western main delta.

Kistna East Bank Canal Extension Scheme.—The Kistna East Bank Canal was opened on the usual date, viz., 15th May 1945 at 6 p.m. and water reached the tail end of the Divi island on the 25th May. Transplantation was begun by the middle of June and was completed by the middle of August. Supply in the canal was steady only from the 26th June after the widening of the canal in the first reach. The late freshes affected the progress of transplantation and rainfall during the period was also insufficient. There was however adequate supply for paddy crops and the supply was stopped on the 6th December. The yield of the crop was below normal owing to the cyclonic wind and rain on the 18th October.

Ceded districts.—In Cuddapah and Chittoor districts the seasonal conditions were fair during the year. Rainfall was however below normal and not timely in Kurnool and Bellary districts. The failure of the north-east monsoon affected the rain-fed tanks in Koilkuntla, Sirvel, Markapur and Cumbum taluks. The crops under Kurnool-Cuddapah Canal did not however suffer much. In Bellary and Anantapur districts the Mungari and Hingari crops were adversely affected by the scanty rainfall. In order to relieve the distress among the labour classes silt clearance works, etc., were started.

Pennar River Canals System.—The average rainfall in the Sangam delta was 25.63 inches against 51.63 inches in the previous year. The maximum water level of Nellore tank was 13.8 feet on the 20th November against an F.T.L. of 16.7 feet. The maximum water levels in the Survepalli reservoir and Kannigiri reservoir were 6.4 feet and 21.45 feet respectively, against the F.R.Ls. of 10 feet and 21.45 feet respectively.

Owing to the late arrival of freshes in the river, cultivation was started only in August. The rainfall during the north-east monsoon was scanty and the flow in the river was low. By careful regulation it was possible to save all but a small extent of crop sown late. The yield was little below normal and there was very little second crop cultivation during the year. The season on the whole was not very satisfactory.

Cauvery Delta System and the Cauvery-Mettur Project.—The north-east monsoon was a failure during the year. The inflow into the Mettur Reservoir was phenomenally low and the reservoir which was opened for irrigation on the 25th May when the lake level was 93.65 feet had to be closed for irrigation on the 29th January 1946, when the level was 9.10 feet. The lake level further went down to 6.40 feet the lowest ever recorded. The supply had therefore to be restricted and the distribution carefully regulated throughout the year. The supply was particularly low at the end of the season, and hence the supplies had to be carefully rationed out, and as even this proved inadequate the reservoir was depleted below the level at which power generation was practicable. The Power House had to operate at very low heads for a long time and finally had to be shut down for some weeks to save the irrigated areas from serious damage.

Willingdon Reservoir and the Tobudur Project.—The reservoir which was at 21.68 feet at the beginning of the year fell to 9.0 feet on the 9th November and again rose to 23.10 feet on the 17th November owing to heavy rains during the intervening period. As there were no rains after November the level fell rapidly and the reservoir became practically dry at the end of the year. The irrigation under the reservoir pulled through only with difficulty and with a judicious regulation of turns.

Periyar System.—The irrigation season started with a lake level of 130.50 feet on 1st June 1945. The reservoir level went down to 122.05 feet on 8th October 1945, rose gradually to 151.55 feet on 23rd November 1945 on account of the setting in of the north-east monsoon and subsequently went down to 149.40 feet on 5th December 1945.

The average rainfall in the catchment of the Periyar lake during the year was 71.07 inches against 72.14 inches during 1944-45. In the Periyar Delta proper, it was 26.28 inches as against 37.77 inches in the previous year. The monsoon was below average in the Periyar Catchment, both the monsoons, south-west and north-east being partial failures. The rainfall in the Periyar Delta was much less than the average and in the Cumbum Valley nearly equal to average. The season in the Tinnevely district was not good and supply poor.

In spite of the unusually low level of the Periyar Reservoir till the end of October 1945, a good Kodai crop was successfully raised in the Periyar Delta and Cumbum Valley by careful regulation of supplies and by adopting a system of turns. The Kalam crop cultivation started late in the season owing to the partial failure of the south-west monsoon; the crops were saved by deferring the closure of the Periyar lake from 1st March to 31st March. Even this extension was not sufficient for certain areas which were given supplies by opening the lake again on 7th April 1946 though the lake level was very low.

B. CLOSURE OF CANALS.

The following table shows the dates of closure and reopening of canals in the Godavari and Kistna Deltas :—

Godavari Delta.

Name of canals.	Date of closure.	Date of re-opening.
Eastern Delta canals—		
(a) Main and Samalkota Canals and Bank Canal up to Coopedale lock	16th May 1945, 6 a.m. ..	1st June 1945, 6 p.m.
(b) Other canals	6th May 1945, 6 a.m. ..	Do.

Western Delta canals—

(a) Main Canal Ellore Canal and Attili Canal	4th May 1945. ..	1st June 1945.
(b) Other canals	1st May 1945 ..	Do.

Central Delta Canals—

(a) Gannavaram Canal	(Not closed as material had to be conveyed to the Gannavaram aqueduct works.)	
(b) Other canals, i.e., Amalapuram and Bank Canals	15th April 1945 ..	15th May 1945.

NOTE.—The date of closure of the canals noted against item (a) Eastern Delta was extended beyond the usual date of closure, viz., 1st May 1945, by 15 days for purposes of water-supply to Cocanada Municipality, and that of item (b) by 5 days for giving a final wetting for the Dam. crop.

Kistna Delta.

Kistna Eastern Delta—		
Main Canal	1st May 1945 ..	15th May 1945.
Ryves Canal	1st April 1945 ..	Do.
Bandar Canal	Do. ..	Do.
Ellore Canal	1st May 1945 ..	1st June 1945.
East Bank Canal	1st March 1945 ..	15th May 1945.

Kistna Western Delta—

Main Canal	} Not closed. Kept open all through the year.	
Commamur Canal		
Nizamapatam Canal	31st March 1945 ..	16th May 1945.
Bank Canal	15th March 1945 ..	1st June 1945.

C. INDUSTRIAL CROPS.

The area cultivated with sugarcane during the year was 64,437 acres chiefly in the Trichinopoly and the Ceded Districts. The area under indigo cultivation was 5,860 acres under the Pennar River Canals System against 7,403 acres in the previous year.

Chapter VI.

CLASSIFICATION OF WORKS.

Irrigation works in the Province are classified as (a) Works for which Capital and Revenue Accounts are kept, and (b) Works for which Capital and Revenue Accounts are not kept. Each class is divided into (i) Irrigation Works, and (ii) Navigation, Embankment and Drainage Works. Works under (a) are again subdivided into "Productive" and "Unproductive" the classification being based on the financial results of three consecutive years.

"Productive and Unproductive Works" under "Irrigation" numbered 24 and 33 respectively during the year the same as in the previous year—vide names of the works given in the Statement B-I of Appendix I.

Under "Navigation, etc., works" there are no works at present under "Productive" while there are only two works under "Unproductive"—vide names of the works in the Statement B-I of Appendix I.

The number of works for which Capital and Revenue Accounts are not kept was as shown below :—

	Channels.	Tanks.	Other works.	Total.
In charge of the Public Works Department	671	2,309	118	3,098
In charge of the Revenue Department	5,493	24,243	1,743	31,479
Total	6,164	26,552	1,861	34,577

FINANCIAL RESULTS.

The following paragraphs deal with the Outlay, Revenue and Working expenses, and the area cropped, the area irrigated and remissions during the year for the Province as a whole and under each class of works mentioned above :—

The Provincial results are tabulated below :—

	1945-46.	1944-45.
Capital Outlay (Direct and Indirect)	1,78,02,507	1,78,93,003
Gross revenue	3,56,24,807	3,78,01,827
Working expenses	92,83,264	76,95,980
Net revenue due to improvements	1,70,74,718	1,77,29,055
Total area cropped	35,274,416	36,999,372
Total area irrigated	8,279,019	8,452,555
Remissions	48,21,851	8,00,234

The results under each class of works were as follows :—

I. *Irrigation Works*—(1) *Productive Works*.—The Capital Outlay (Direct and Indirect) during the year was Rs. 7,40,864 as against Rs. 8,95,455 in the previous year. The bulk of the outlay was incurred on the Godavari and the Kistna Delta Systems while the Cauvery Mettur Project had a credit of Rs. 1.40 lakhs by sale of special Tools and Plant. Details of works carried out are given in Chapter IV.

(2) The gross working expenses of the year were Rs. 78,09,635 against Rs. 58,72,949 in the previous year.

(3) The gross revenue of the year was Rs. 2,29,34,910, against Rs. 2,47,84,253 in the previous year. The bulk of the revenue was derived as usual from the Cauvery, the Godavari and the Kistna Delta Systems and the Cauvery-Mettur Project though there was a marked decrease of just over Rs. 10 lakhs of land revenue under Godavari Delta System due to large remissions during the fasli.

(4) The net revenue derived and the net profits after deducting interest charges amounted to Rs. 1,07,84,398 and Rs. 41,20,935 against Rs. 1,32,82,08 and Rs. 66,51,825 respectively in the previous year. The net profit works out to 6.94 per cent on the capital outlay of Rs. 15,53,39,733 against 9.85 per cent 25 years ago.

(5) The total area charged as irrigated was 3,808,191 acres first crop and 726,522 acres second crop against 3,719,054 acres and 827,549 acres respectively in the previous year. The aggregate area irrigated was nearly the same as in the last year.

(6) The estimated value of irrigated crops raised during the year amounted to Rs. 44,16,51,355 against Rs. 52,76,91,836 in the previous year.

(7) The average revenue per acre amounted to Rs. 5.05 on the gross area and Rs. 7.56 on the new irrigation. The working expenses per acre were Rs. 1.72 on the gross area and Rs. 2.57 on the new irrigation.

(8) The remission granted during the year amounted to Rs. 30,83,631 against Rs. 3,40,863 in the previous year. The areas affected were mainly in the Godavari and Kistna Delta Systems.

(9) The total length of main canals and branch channels at the end of the year was 3,264 $\frac{3}{4}$ miles. Of this length 911 $\frac{3}{4}$ miles were for irrigation and navigation combined under the Godavari and the Kistna Delta Systems and the remainder were for irrigation only. The length of the distributaries was 9,528 $\frac{1}{2}$ miles.

(ii) *Unproductive Works.*—(1) The capital outlay (direct and indirect) during the year was Rs. 12,70,517 against Rs. 2,09,508 in the previous year. The outlay was incurred chiefly on the Tungabhadra Project on which the expenditure was Rs. 12.37 lakhs.

(2) The gross working expenses amounted to Rs. 9,16,216 against Rs. 11,17,475 in the previous year.

(3) The gross revenue amounted to Rs. 16,05,419 against Rs. 16,91,282 in the previous year.

(4) The net revenue due to improvements was Rs. 3,58,363 against Rs. 1,71,909 in the previous year. This represents a return of 0.82 per cent on the capital outlay of Rs. 4,33,79,979, to end of the year.

The net revenue fell short of the interest charges by Rs. 15,09,375 of which Rs. 8,53,369 pertain to the Kurnool-Cuddapah Canal and Rs. 3,70,347 to the Palar Anicut System representing the bulk of the deficit. The percentage of the deficit in these cases was 3.67 and 14.88 respectively on the capital outlay.

(5) The area charged as irrigated was 357,871 acres first crop and 51,644 acres second crop against 351,391 acres and 81,994 acres respectively in the previous year. The decrease in the second crop area as compared with the previous year was mainly under the Palar Anicut System and the Kurnool-Cuddapah Canal due to insufficient rainfall during the cultivation season.

(6) The estimated value of crops amounted to Rs. 4,04,27,355 against Rs. 4,24,75,128 in the previous year.

(7) The average revenue per acre amounted to Rs. 3.92 on the gross area and Rs. 6.70 on new irrigation. The working expenses per acre were Rs. 2.23 on the gross area and Rs. 3.82 on the new irrigation.

(8) The remissions granted during the year amounted to Rs. 1,45,853 against Rs. 18,437 in the previous year. The bulk of the remission was granted under the Palar Anicut System.

(9) The total length of the main canals and branch channels at the end of the year was 1,329 $\frac{1}{4}$ miles of which 74 miles were for irrigation and navigation combined under the Kurnool-Cuddapah Canal while the remainder were for irrigation only. The length of the distributaries was 896.15 $\frac{1}{16}$ miles.

II. *Navigation, Embankment and Drainage Works—Unproductive Works.*—The gross working expenses on and the gross receipts from the Buckingham and Vedaranyam Canals were Rs. 5,12,413 and Rs. 1,38,097 respectively in the previous year. The loss on the working on the canals was Rs. 3,74,316 compared to the loss of Rs. 5,26,022 in the previous year. Expenditure was as usual large on the Buckingham Canal owing to the need to maintain it in a condition fit for traffic throughout the year.

The total length of the navigable canals was 293 $\frac{3}{4}$ miles.

WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE NOT KEPT.

I. Irrigation Works.

The following statement shows by minor heads the outlay incurred on works of this class during the year:—

Minor heads.	Ordinary minor works.		Old maintenance charges.	Tank Restoration scheme works.	Total.
	Public Works Department works.	Revenue Department works in charge of the Public Works Department.			
	RS.	RS.	RS.	RS.	RS.
Works	6,42,923	..	..	..	6,42,923
Extensions and improvements.	1,02,738	11	86,342	..	1,89,151
Maintenance and repairs ..	16,21,076	16,328	6,79,110	895	23,17,409
Establishment	5,37,433	4,984	2,09,507	215	7,52,139
Tools and plant	21,503	286	2,693	26	24,503
Miscellaneous expenditure.	6,25,753	..	..	..	(a) 6,25,753
Total	35,51,506	21,609	9,77,652	1,136	45,51,003
Add outlay incurred by Civil officers on Minor Irrigation works.	..	..	..	..	(b) 19,21,014
Grand total					64,72,917

(a) Represents outlay on other charges, establishment and tools and plant.

	RS.
Works	13,358
Maintenance and repairs	15,52,440
Establishment	3,52,900
Tools and plant	2,286
Total	19,21,014

The particulars of revenue derived from the works during the year are compared below with those of the previous year:—

	1944-45. RS.	1945-46. RS.
Receipts collected by the Revenue Department.	1,09,90,332	1,06,65,899
Receipts collected by the Public Works Department.	72,550	1,52,935
Total	1,10,62,882	1,08,18,834

The area irrigated was 2,669,859 acres first crop and 624,932 acres second crop against 2,634,528 acres and 837,839 acres respectively in the previous year.

The following statement compares the results of the year under review with those of the previous year and the average of the previous triennium:—

	Outlay incurred. RS.	Area irrigated. ACS.	Gross revenue. RS.
During 1945-46	64,72,917	3,294,791	1,08,18,834
During 1944-45	79,39,239	3,472,367	1,10,62,882
Average of the triennium ending 1944-45.	65,54,644	3,429,257	1,09,25,023

The decrease in expenditure during the year was due to the fact that the various works taken up under the Grow More Food campaign had been completed in the previous year itself resulting in less expenditure, although expenditure on the investigation of the Ramapadaagar project was large.

The net revenue of the year after deducting working expenses amounted to Rs. 52,66,322 against Rs. 52,98,731 in the previous year.

Tank Restoration Scheme Works.—The area falling within the scope of the Tank Restoration Scheme investigation was 102,500 square miles. Investigation was taken up in the basins comprising an area of 94,660 square miles of which 87,630 square miles had been investigated up to 1931 when the Tank Restoration Scheme divisions and subdivisions were abolished as a measure of retrenchment. Since

April 1931 up to the end of March 1945 an area of 1,329 square miles had been investigated. During the year under review an area of 2.89 square miles only was investigated as the special staff consisting of two subdivisions for investigation and execution of Tank Restoration Scheme works in the Pinchanadhi and Lower Sagileru Minor Basins which were functioning last year were wound up early this year for diverting the staff to more urgent works elsewhere. So the area investigated since 1931 up to the end of March 1946 was 1,332 square miles bringing the total area investigated to 88,962 square miles representing 87.76 per cent of the total area of 102,500 square miles while the percentages to the end of 31st March 1931 and 1945 were 85.49 and 86.79 respectively.

In the areas investigated, works have been completed in 86,002 square miles and works are in progress or are yet to be started in the remaining area of 2,960 square miles.

The amount of estimates sanctioned during the year was Rs. 5,405 and the amount of estimates sanctioned to date Rs. 204.91 lakhs. The expenditure during the year was Rs. 1,136 and to end of the year Rs. 1,72,15,528 exclusive of charges for establishment and tools and plant. The number and amount of estimate sanctioned the area investigated, etc., are tabulated below :—

Tank Restoration Scheme Works.

Circle.	District.	Approximate area investigated.		Number of estimates sanctioned.		Amount of estimates sanctioned.	
		During 1944-45.	To the end of 1944-45.	During 1944-45.	To the end of 1944-45.	During 1944-45.	To the end of 1944-45.
		SQ. MILES.				RS.	
Dowlaiswaram.	Vizagapatam ..	..	1,350	..	503	..	..
	East Godavari ..	..	152	..	928	..	..
	West Godavari ..	..	2,412	..	..	..	15,92,341
Bezawada ..	Kistna ..	..	1,491	..	160	..	2,40,888
	Guntur ..	..	4,411	..	257	..	2,04,724
Anantapur ..	Kurnool ..	..	7,648	..	340	..	3,33,682
	Cuddapah ..	3	4,67	..	1,357	2,380*	12,45,69
	Anantapur ..	..	7,814	..	789	..	1,69,892
	Bellary ..	..	10,518	..	61	..	3,44,321
	Chittoor ..	..	5,142	1	2,101	2,525	33,28,41
Madras ..	Nellore ..	..	7,300	..	474	..	6,13,994
	Chingleput ..	..	2,227	..	602	..	5,86,118
Coimbatore ..	North Arcot ..	..	4,659	..	2,011	..	27,20,767
	Coimbatore ..	..	8,097	..	151	..	3,10,986
	Salem ..	..	6,052	..	1,273	..	11,86,457
Tanjore ..	South Arcot ..	..	850	..	724	..	16,33,215
	Tanjore ..	..	1,140	..	610	..	7,94,940
Trichinopoly ..	Trichinopoly ..	..	4,564	..	601	..	12,37,649
	Madura ..	..	4,836	..	1,664	..	14,95,984
	Tinnevely ..	..	1,969	..	969	..	13,42,766
	Ramnad ..	..	1,643	..	3	..	2,3,325
Total ..		3	88,962	1	15,748	5,405	2,14,91,459

* (Excess sanctioned in a revised estimate.)

II. Navigation, Embankment and Drainage Works.

The outlay incurred on the works of this class was Rs. 12,92,575 against Rs. 10,99,285 in the previous year as detailed below :—

	1945-46.	1944-45.
	RS.	RS.
Works ..	1,04,612	4,63,408
Extensions and improvements ..	9,445	14,356
Maintenance and repairs ..	9,83,676	4,65,782
Establishment ..	1,72,985	1,46,465
Tools and plant ..	19,633	8,587
Other charges ..	2,264	707
Total ..	12,92,575	10,91,285

The receipts realized by sale of plantation and produce of trees along river embankments, etc., amounted to Rs. 1,27,547 against Rs. 1,27,368 in the previous year.

The following statement compares the outlay incurred on and the revenue derived from these works with those of the previous year and the average of the previous triennium :—

	Outlay.	Revenue.
	RS.	RS.
During 1945-46 ..	12,92,575	1,27,547
During 1944-45 ..	10,99,285	1,27,368
Average of the triennium ending 1944-45 ..	8,12,760	1,24,280

Chapter VII.

PROJECTS UNDER CONSIDERATION.

Of the schemes investigated last year, the following were sanctioned for execution : Sankaraguptam and Komaragiripatnam scheme in the Godavari Deltas Romperu Drainage project and the Choragudi-Achampallam scheme in the Kistna Delta : and the Narasinga Cauvery Extension Scheme in the Cauvery Delta. The scheme for improvements to the Peddalanika drain was submitted to Government and was pending sanction with them. The plans and estimates for the Atreru reservoir were scrutinized and have since been submitted to Government for sanction. The detailed investigation of the Gandikota project and the Vaigai Reservoir scheme and the investigation of the scheme for pumping from the Mettur Reservoir were completed. The proposals of the Special Executive Engineer in respect of the Gandikota Project were under scrutiny by the Superintending Engineer and proposals regarding the Vaigai reservoir were under scrutiny, by the Chief Engineer for Irrigation. Plans and estimates pertaining to the new Right Side Canal from the Mettur Dam have since been received from the Superintending Engineer and plans and estimates regarding the Left Side Canal were under preparation by the Executive Engineer.

The progress of investigation in respect of the schemes mentioned in the last year's report is given below :—

(1) *Vizagapatam, East Godavari, West Godavari and Kistna districts.*—During the year under review one subdivision up to 2nd October 1945 continued the exploratory borings left over by the Preliminary Investigation Division and attended to the preliminary proposals for the commencement of the detailed investigation of the Ramapadasagar project. The detailed investigation of the project and an estimate therefor for Rs. 7 lakhs providing for surveying and levelling operations, purchase of special plant, machinery, apparatus, etc., were sanctioned. Two special divisions for the purpose were also sanctioned of which one was formed on 3rd October 1945 and the other on 30th January 1946 at Polavaram and Peddapuram respectively. The Head Works Division was engaged on the work of exploratory borings and percolation experiments pertaining to Cofferdam work in foundations at the dam site and was also carrying on with the water-spread survey. The Canals Division was taking check and block levels along the left canal alignment down to Vizagapatam Harbour. The work on the revenue side had not been started pending the findings of the Technical Commission appointed by the Government of India in respect of the sharing of waters by the Madras and the Hyderabad Governments, which were in progress during the year. Certain experiments on soil mechanics on models of the dam were also being done by the Irrigation Research Station at Poondi. Sri Diwan Bahadur N. Govindaraja Ayyangar, B.A., B.E., Chief Engineer (Special), toured the United States of America and the United Kingdom between October 1945 and March 1946 to study the methods of design and construction of large dams and to contact eminent American and English authorities and collect data on deep foundations for dams.

(2) *East Godavari district.*—The detailed investigation of the scheme for constructing a lock and regulator across the Coringa river was completed by the special staff and plans and estimates costing nearly Rs. 15 lakhs to irrigate about 8,000 acres for the present were submitted to the Superintending Engineer. These were under scrutiny by him.

(3) *East Godavari district.*—The plans and estimates for the Hospital Channel Extension scheme were received and submitted to Government for sanction. Sanction of Government has also since been accorded.

(4) *Kistna district*.—The original proposal for irrigating lands in Vaivaka and Korukollu villages through the Nandiraju Cdd channel was turned down and an alternative proposal for the same ayacut was under consideration by the Superintending Engineer.

(5) *Kistna and Guntur districts*.—Plans and estimates for Rs. 3.8 lakhs for the Kandaleru project submitted by the Superintending Engineer were examined and have since been submitted to Government through the Board of Revenue.

(6) *Guntur district*.—The discharge figures relating to the Mellavagu Project received from the Superintending Engineer were under scrutiny.

(7) *Anantapur district*.—Plans and estimates pertaining to the Pennar-Kumudavathi project were submitted to Government. Meanwhile the question of taking up a portion of the work under famine relief was considered and dropped by the Government.

(8) *Anantapur district*.—The detailed investigation by special staff of the Perur-Pennar project was in progress.

(9) *Anantapur and Chittoor districts*.—Plans and estimates for the Papagni anicut scheme were awaited from the Superintending Engineer.

(10) *Chittoor district*.—The results of the experiments on percolation and evaporation losses pertaining to the Kalyani river scheme were examined and further observations were ordered to be made.

(11) Detailed investigation of the Bhimanadi Reservoir scheme was ordered but it was held up for want of staff.

(12) Plans and estimates submitted by the Superintending Engineer for the Yerri kalva anicut scheme were under scrutiny by the Chief Engineer (Irrigation).

(13) Results of gaugings in respect of the Potlavanka scheme were awaited from the Superintending Engineer.

(14) *Kurnool district*.—The preliminary reports on the Gandivagu and Rallavagu reservoirs were scrutinized and returned to the Superintending Engineer for gauging the streams.

(15) The results of the gauge readings obtained during the past three years in respect of the scheme for restoring the Dokirayadu tank across Peddavanka were received from the Superintending Engineer and were under scrutiny.

(16) The scheme for reclamation of lagoons along the Kurnool-Cuddapah Canal was investigated in detail and plans and estimates prepared. The scheme for reclaiming one of them was proposed to be executed in 1947-48.

(17) Plans and estimates for the restoration of the Gottipadiya tank were submitted to the Government for sanction.

(18) The scheme for forming a new tank across the Kollimagulavagu in Paniem was investigated. It has since been proposed as a Part II Scheme for 1947-48 as a Grow More Food Scheme.

(19) The Ahobilam project has been ordered to be dropped, but a small scheme to restore the Potharaju tank to serve an ayacut of about 90 acres was recommended to the Government for detailed investigation. This was under consideration.

(20) *Cuddapah district*.—The results of the gaugings taken during 1944-45 in respect of the Mekalakunta eru scheme were awaited from the Superintending Engineer.

(21) *Bellary district*.—Plans and estimates relating to the restoration of the Marathi cheruvu were scrutinized and returned to the Superintending Engineer with remarks.

(22) *Nellore district*.—The detailed investigation of the Rallapad project was completed by special staff and plans and estimates therefor were under examination.

(23) *Chingleput district*.—The scheme for constructing a masonry dam across the Cheyyar to supply the Uttiramerur tank was taken up for consideration as a Part II Scheme for 1947-48.

(24) *South Arcot district*.—Proposals regarding the Thambipettai odai scheme were examined and the Superintending Engineer was asked to revise them.

(25) *Tinnevely district*.—The scheme for restoring the Sivalaperi tank was investigated and the Superintending Engineer's preliminary report was under examination.

(26) *South Kanara district*.—Plans and estimates for the Shiriya scheme received from the Superintending Engineer were examined and returned to him with certain remarks.

(27) *Salem district*.—The Executive Engineer's preliminary report on investigation of the Chinnar Reservoir scheme was under examination by the Superintending Engineer.

(28) *North Arcot district*.—Gaugings in respect of the Ponnar dam project were continued. Proposals for the construction of a dam at alternative sites were under examination by the Superintending Engineer.

The progress of investigation in respect of the schemes newly taken up during the year is given below :—

(29) *Vizagapatam district*.—The proposal for providing irrigation facilities to the lands in Araku valley by utilizing the waters of the hill stream, Jillada Vagu was investigated in detail and two alternative estimates for Rs. 91,400 and Rs. 66,500 were prepared. As these estimates exceeded the original approximate forecast of Rs. 16,000 they were returned to the Executive Engineer for clarification and modification if feasible with a view to reducing the cost or improving the return.

(30) *Vizagapatam district*.—Proposals for the construction of a dam across the Sarugudugedda in Vedurupalli village designed to irrigate an ayacut of 232 acres were examined and returned to the Superintending Engineer for attending to certain technical remarks.

(31) *East Godavari district*.—Plans and estimates for restoring the Kalyana Rayadu tank in Erraguntlapalli to irrigate an approximate ayacut of 600 acres were returned to the Superintending Engineer with remarks.

(32) *West Godavari district*.—The scheme for excavating a new channel from the Appa Rao channel to irrigate about 156 acres of lands in the proprietary villages of Timmarajupalam, Sankarapuram and Nidadavole was investigated and plans and estimates were resubmitted by the Superintending Engineer after attending to the Chief Engineer's remarks.

(33) *Kistna district*.—Proposals for providing irrigation facilities to about 720 acres in the Vaivaka-Peddathummi block under the Bantumilli canal were scrutinized and plans and estimates have since been sent to Government.

(34) To relieve submersion of the surrounding irrigated lands, proposals for improvements to the Repalli Main drain, Battiprolu drain and the Tungabhadra drain were under examination. Detailed plans and estimates in respect of the Tungabhadra drain were under preparation by the Superintending Engineer. The Collector's report on the financial aspect of the scheme was awaited.

Besides the above, several Grow More Food schemes intended to irrigate over 10,000 acres under the Bandar, Pulleru, Polraj and Bantumilli canals in the Kistna delta were under different stages of examination or investigation by the local officers.

(35) *Kurnool district*.—Proposals for the restoration of the breached and abandoned tank, Venkatarreddi kunta of Eddavalli, to irrigate an ayacut of 180 acres were examined and plans and estimates were returned to the Superintending Engineer to examine the adequacy of supplies.

(36) *Kurnool district*.—The Superintending Engineer's preliminary report on the scheme for the construction of a reservoir across the Tigaleru at Kotulamuthu to serve an ayacut of 600 acres was examined and detailed investigation recommended to Government. The Government have since sanctioned a special division for the detailed investigation of this and certain other schemes in the Anantapur Circle.

(37) *Cuddapah district*.—The Lower Sagileru project consisting of a reservoir across the Sagileru near Venkamari and designed to irrigate about 5,000 acres at an approximate cost of Rs. 16 lakhs was proposed to be revived. An estimate for gauging the stream for three years was sanctioned. Geological survey of the site is also proposed.

(38) The detailed investigation for the restoration of the Dharbavari Agharam tank showed that the dependable yield would suffice an ayacut of only 90 acres against 329 acres originally contemplated. Plans and estimates for this were awaited from the Superintending Engineer.

(39) The preliminary report for the formation of a new tank across the Goderu near Tippareddipalli, called the Goderu project was examined and further report regarding the availability of supplies was called for from the Superintending Engineer.

(40) Pending the examination of a proposal for the formation of a new tank across the Vanneswaram vanka and excavation of a supply channel to irrigate about 400 acres, an experimental tank for testing the suitability of the soil for forming the tank bund was ordered to be excavated.

(41) The detailed plans and estimates for the Itigundlapad project with an ayacut of 240 acres were scrutinized and in view of the low return anticipated was recommended to be dropped.

(42) The scheme for supplying water to Vettimatta tank by excavating a channel from the Cheyyar river was under investigation and a report thereon was awaited from the Superintending Engineer.

(43) *Anantapur district.*—The Dorigallu project consisting of the construction of an anicut across the Maddileru to irrigate 2,000 acres, which can be developed later into a reservoir by remodelling the channels to irrigate an additional ayacut of 3,000 acres, was considered. To ascertain the availability of supply in the Maddileru river gaugings were being taken.

(44) The detailed investigation of the scheme for restoring the breached Kotha tank to a lower F.T.L. across the Talapulavanka in Peddannavaripalli was ordered by Government. The approximate ayacut under the tank will be 310 acres.

(45) The Bhairavanitippa project which consists of the construction of a reservoir across the Hagari at Bhairavanitippa village with an initial capacity of 1,500 m.c.ft., to irrigate about 15,000 acres with possibilities of increasing it later to 3,000 m.c.ft., was taken up for detailed investigation by the special division formed for the investigation of projects in the Ceded districts.

(46) Gaugings were being taken for restoring the Marutla tank and improving the supplies to Lakkavaram tank to irrigate about 120 acres.

(47) *Nellore district.*—Proposals for the excavation of a channel from Boggeru to Bhimavaram tank and raising the F.T.L. of the tank by 2 feet so as to irrigate about 311 acres were examined and plans and estimates submitted to Government. The scheme has since been sanctioned.

(48) A scheme for extending irrigation under the Chejerla river channel above Sangam anicut was examined by the Superintending Engineer and preliminary report and approximate estimate submitted by him were under scrutiny by the Chief Engineer (Irrigation).

(49) The preliminary investigation for the formation of a tank across the Chowlapallivagu above Bhairavaram village and construction of reservoir across the Kauveryvagu to irrigate about 600 acres was completed and plans and estimate submitted by the Superintending Engineer. Further particulars were called for from him.

(50) The scheme for excavating a supply channel from the Mopad main channel below the Pillaperu aqueduct for irrigating 360 acres in Chintaladevi and Veligandla villages to serve as a Land Colonization scheme for ex-soldiers was formulated and proposals submitted to the Government.

(51) The detailed investigation of a scheme for extension of irrigation to Yellamanchipad village by excavating a supply channel from the Kannigiri reservoir to irrigate about 370 acres was sanctioned by the Government.

(52) *Chingleput district.*—Plans and estimates for improving the Krishnapuram tank to irrigate about 123 acres were prepared by the Superintending Engineer and submitted to the Chief Engineer (Irrigation).

(53) *Tanjore district.*—Proposals for extending irrigation to about 4,000 acres below the tail dam of the Mulliar by constructing a regulator were examined and the preliminary report and a rough estimate for Rs. 2.4 lakhs were submitted to Government through the Board of Revenue. The Collector's opinion was awaited.

(54) *Trichinopoly district.*—Five alternative proposals for extending irrigation to about 14,000 acres in the Pullambadi area from the Peruvalai channel were considered and Government sanctioned the detailed investigation of one of the proposals, viz., excavation of a separate channel from the Iyyar north of Peruvalai channel course at a higher contour and with a separate head sluice to irrigate the area. The investigation was in progress by special staff.

(55) A smaller scheme to irrigate a limited ayacut of 875 acres under the Peruvalai Channel beyond Sengandi tank by improving the existing drinking water-supply course from Sengandi tank to Pullambadi Peria eri was also considered; this was however held up pending the results of the investigation of the bigger Peruvalai channel scheme.

(56) A scheme for excavating a new canal 65 miles long from the Cauvery $1\frac{1}{2}$ miles above Kattalai Bed Regulator at a contour higher than that of the High Level channel to irrigate about 20,000 acres in Trichinopoly taluk was under detailed investigation by special staff.

(57) A smaller scheme to irrigate about 1,500 acres by extending the Kattalai High Level channel for a length of 4 miles only was also under detailed investigation along with the above scheme.

(58) The extension of irrigation to about 1,175 acres of undeveloped lands under the Kattalai High Level channel by providing necessary improvements was also investigated by the special staff referred to above.

(59) The detailed investigation of a proposal to construct a bed regulator across the Cauvery at Jaddarpalayam so as to dispense with the Korambus put up annually was completed and plans and estimates for Rs. 6.32 lakhs were under scrutiny by the Chief Engineer (Irrigation).

(60) *Madura district.*—Plans and estimates for the construction of a tank in Boothipuram village, Dindigul taluk, to irrigate about 169 acres were under examination by the Chief Engineer (Irrigation).

(61) *Tinnevely district.*—Remodelling the Tambraparni channels on scientific lines to give an equitable supply to the whole system even in bad years was taken up; investigation of three channels was completed and preliminary report submitted by the Superintending Engineer.

(62) *Coimbatore district.*—Plans and estimates for a scheme to restore the breached Kothavadi tank in Pollachi taluk to irrigate about 298 acres were submitted to Government. The scheme has since been sanctioned.

(63) A preliminary report regarding the construction of an anicut across the Thattahalla river to irrigate about 3,000 acres was examined and further investigation by special staff was ordered. This was being attended to.

(64) *Salem district.*—A scheme for the construction of a reservoir across the Thoppiyar to irrigate about 5,000 acres was investigated and the Chief Engineer (Irrigation) also inspected the site. The estimate for the work was under revision as per Chief Engineer's (Irrigation) instructions during inspection.

(65) *Malabar district.*—The Malampuzha project which consists of the construction of a dam across the Malampuzha and excavation of two contour channels on either side to serve an ayacut of about 40,000 acres was under detailed investigation by special staff.

(66) Proposals for the construction of a low masonry dam to prevent the entry of tidal water and thus enable irrigation of about 600 acres in Calicut taluk, called the Mampuzha project, were examined. As an experimental measure a temporary earthen bund and a lock were proposed. The plans and estimates therefor were prepared.

(67) *South Kanara district.*—Preliminary investigation for the construction of an anicut across the Gurpur river and excavation of two channels to irrigate 3,000 acres was made and special staff for detailed investigation was also posted.

(68) A scheme to form a tank on the right side of the Kumbla river and to reclaim the marshy lands by constructing an anicut to prevent the entry of saline water into the river was under investigation.

Besides the above major schemes a number of small schemes in Malabar and South Kanara districts were also under investigation by special staff.

Grow More Food schemes.—Several major schemes taken up for execution last year were pushed through vigorously and a number of them were either completed or were in an advanced stage of completion. Nine more schemes at an approximate cost of Rs. 8.39 lakhs intended to irrigate about 6,600 acres were sanctioned during the year—vide list appended.

The scheme of subsidy granted by the Government of India for assisting the Grow More Food Campaign was modified recently. Instead of Rs. 50 per ton for additional foodgrains produced subject to a maximum of 25 per cent of the total cost, the present proposals provide for a subsidy of 50 per cent of the net outlay on the scheme or the average value at current prices of the increased amount of average annual production in terms of foodgrains anticipated as a result of the scheme whichever is less.

Tungabhadra project.—The construction of the project was in its initial stages. To ensure quick progress in the execution of the project another circle called the Head Works Circle was sanctioned by the Government and it has since been formed in April 1946 at Hospet. Preliminary arrangements for surveys and final setting out of alignment of the canal, layout of camps, etc., were made during the year. Construction of quarters for the staff and officers along the low level canal and at the dam-site were in progress. Plans and estimates for the main canal aqueduct, instead of a regulator on the Hagari river were under preparation. Formation of a road from Hospet to the dam-site was in progress. The designs for undertunnel and bridges were settled as also contracts for a few of them. Owing to the failure of the monsoon last year expansion relief works were commenced in January 1946 and famine labour was engaged in excavating the canal in five reaches. The technical aspects of the dam construction were under consideration by the Chief Engineers of the Madras and Hyderabad Governments. Sri Diwan Bahadur N. Govind. raja Ayyangar, Chief Engineer (Special) in charge of the construction of the project, who was deputed to the United States of America and the United Kingdom in October 1945 to study large irrigation works and recent practices returned in March 1946 after placing orders for machinery, etc., required for the project. Orders for other machinery available in local Army Dumps were also placed on the Disposals Directorate. Collection of materials like cement, steel, etc., were also being attended to.

Post-war Reconstruction Schemes.—The early end of the war bringing in its wake the problem of rehabilitation of returning soldiers, and the provision of occupation for other man-power released from the War Service necessitated the launching of big irrigation schemes. Twelve major irrigation schemes including the Tungabhadra project, Ramapadasagar project, drainage improvements to the Godavari, the Kistna and the Cauvery Deltas, the Vaigai Reservoir scheme and the Gandi-kottah project were treated as Post-war Irrigation schemes. Of these, the Tungabhadra project, improvements to the Romperu drain in the Godavari Delta and drainage improvements to the Cauvery Delta were sanctioned and were under execution, while the others were under investigation. Similar schemes for the improvements of inland waterways were also formulated, over-riding the principle of financial consideration that had hitherto stood in the way of their development, as cheap transport of essential commodities like foodstuffs, fuel, and fodder are more important these days, and as there was also no reason why the policy adopted

in respect of development of roads and highways should not be applied to the development of water transport also. Sixteen schemes involving the Buckingham canal, the Vedaranyam canal and the West Coast canals were formulated at an approximate total cost of Rs. 52.95 lakhs. These schemes were under examination.

Contour-bunding.—The investigation of the scheme for dry farming and contour-bunding in the famine-affected areas of the Ceded Districts was completed. An estimate for Rs. 2.94 lakhs for contour-bunding on an area of about 5,500 acres near Guntakal was submitted to the Government through the Board of Revenue during the year. Another scheme for contour-bunding about 2,500 acres near Hagari was also formulated by the Director of Agriculture. Orders of Government on both the schemes were awaited.

Research.—The construction of the Irrigation Research Station Laboratory buildings, static tank and outdoor flumes at Poondi was completed and the laboratory was opened in July 1945. Regular experiments in soil mechanics and hydraulics were commenced from then. Arrangements for the gravitational supply of water to feed the outdoor models and the pumping equipment of the laboratory overhead tank not having been completed, experiments in hydraulics had to be limited to outdoor models requiring small discharges only. Tests on soils with special reference to their suitabilities for the formation of earthen embankments were carried out. Studies were also made on certain problems in applied mechanics and strength of materials, on the designs of dams such as the Tungabhadra and Ramapadasagar projects. Models both on tank weirs and spill-ways were also constructed and studied. Stauching of canals and other such problems were also done.

Dr. V. I. Vaidyanathan, who was the Director of Irrigation Research, reverted to the Punjab Service in February 1946; consequently direction of Research was taken over by the Chief Engineer for Irrigation and the post of Director was held in abeyance.

Floods, breaches and accidents.—The maximum flood level over the crest of the Dowlaishwaram anicut was 13.30 feet on 24th September 1945 at 6 a.m. against 16.00 feet on 24th August 1944 at 6 a.m. and the maximum ever recorded of 17.10 feet during 1942.

There was no serious damage due to floods, but there was a heavy cyclone and tidal wave on 18th October 1945 when the coastal and the uplands area were affected and the flood banks, revetments, etc., were damaged. The heaviest damage caused was to the right margin of the river above the anicut. These have all been repaired and the margins, where narrow and dangerous, have been well protected.

There were two serious accidents in the handling of boring sets and machinery in the Ramapadasagar Investigation Division and these were dealt with as per rules. A boat accident also occurred on the main canal of the Godavari Western Delta near the Executive Engineer's bungalow on 28th February 1946, but fortunately with no serious results.

There was a heavy cyclone on October 1945 causing some breaches in the banks of the Commamur canal. These were repaired promptly.

There was no damage on account of floods, but there were some minor breaches in the Kurnool-Cuddapah canal which were repaired without delay.

The Chadurvedamangalam tank, Valaikulam and Sholankulam supply channels in the Ramnad district breached during the rains of November 1945, but these were restored. Some irrigation tanks and channel banks round about Coimbatore town also breached; these were promptly closed.

ADMINISTRATION REPORT OF THE
PUBLIC WORKS DEPARTMENT (IRRIGATION BRANCH), 1945-46

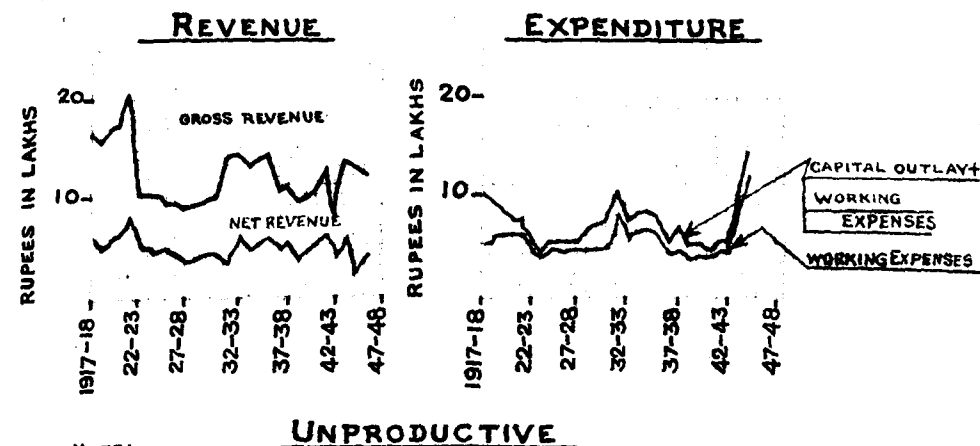
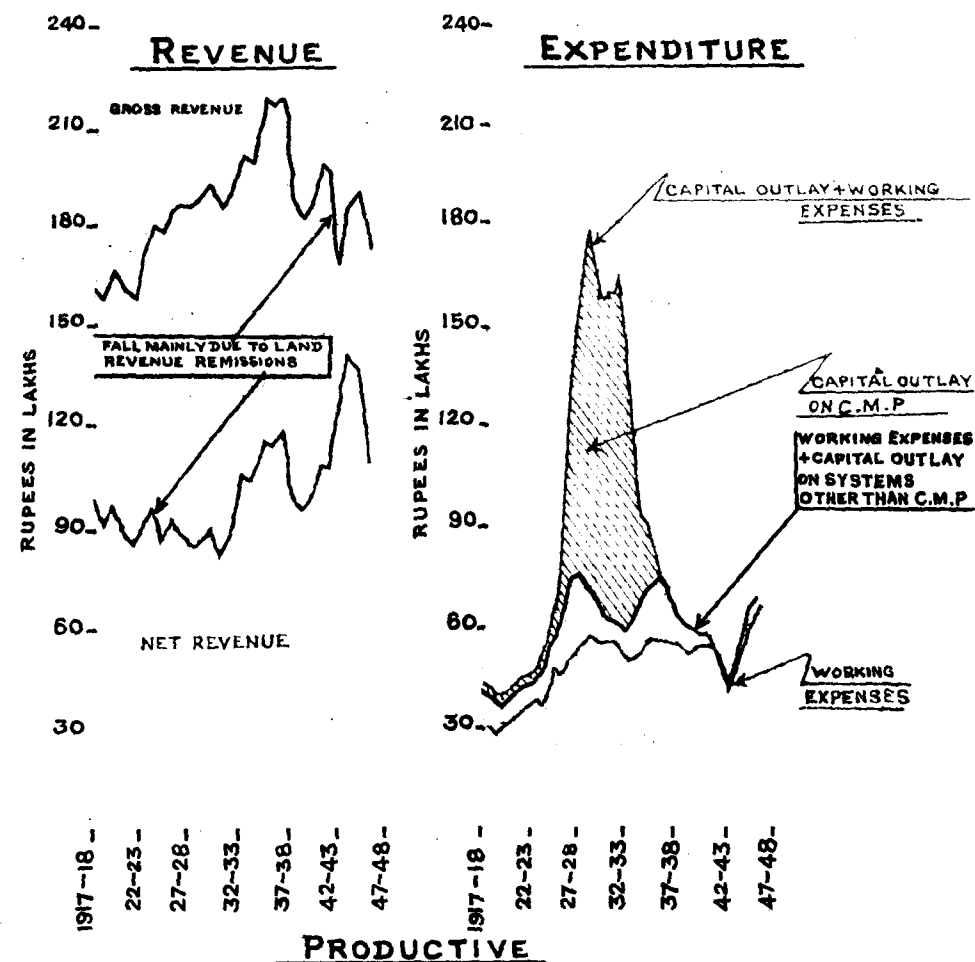
LIST OF SCHEMES SANCTIONED UNDER "GROW MORE FOOD"
CAMPAIGN DURING THE YEAR 1945-46.

Serial number.	Name of scheme.	Cost.	Area benefited.
		RS.	ACS.
1	Gannavaram and Vibrampuram scheme, Block II, Cuddapah district (G.O. Ms. No. 1078, P.W., dated 20th June 1945).	20,900	168
2	Extension of Addalapalam and Mamidithota channels and the Vasista left flood bank from Nuvva drain to Anterved village. East Godavari district, Razole taluk (G.O. Ms. No. 2070, P.W., dated 2nd August 1945).	2,12,000	1,900
3	Reconstructing the syphon carrying the Karlapalam channel across the Nallam da drain, Guntur district, Bapatla taluk (G.O. Ms. No. 966, P.W., dated 9th April 1945).	1,10,100	927
4	Excavation of a supply channel from Boggeru to Bhimavaram tank, Udayagiri taluk, Nellore district (G.O. Ms. No. 2318, P.W., dated 4th September 1945, and Revised Estimate approved in G.O. Ms. No. 767, P.W., dated 24th October 1946).	97,000	311
5	Excavation of a channel for irrigation of Chorugudi, Achampalam villages, Divi and Gannavaram taluks, Kistna district (G.O. Ms. No. 2571, P.W., dated 3rd October 1945).	1,24,640	777
6	Provision of irrigation facilities by extending Battelanka No. 1 channel in Sankaragupam and Ksanapalli villages, Razole taluk, East Godavari district (G.O. Ms. No. 2756, P.W., dated 24th October 1945).	1,00,300	663
7	Providing irrigation facilities to lands in Undrajavaram and other villages, Tanuku taluk, West Godavari district (G.O. Ms. No. 493, P.W., dated 19th February 1946).	59,500	883
8	Excavation of supply channel from Nallavagu and restoring the Gurrappa tank, Nellore district (G.O. Ms. No. 810, P.W., dated 22nd March 1946).	49,750	150
9	Providing irrigation facilities to lands in Soolaikottai, Kambayanatham and Arundavaram villages, Papanasam taluk, Tirunelveli district (G.O. Ms. No. 884, P.W., dated 28th March 1946).	5,000	500
Total ..		8,39,290	6,571

MADRAS,
15th January 1947.

A. R. VENKATA ACHARYA,
Chief Engineer for Irrigation

— FINANCIAL RECORD —



NOTE:-

LARGE VARIATIONS DUE TO TRANSFERS FROM U.P. TO P. & VICE VERSA.

APPENDIX I.

STATISTICAL STATEMENTS (PRESCRIBED BY THE SECRETARY OF STATE).

A.I.—Statement of Canals in the Madras Presidency for the year 1945-46.

Source of supply of water	Canary delta system. (1)	River Cauvery.	Sivakuntam ancient system. (2)	Godavari delta system. (3)	Mohamattur ancient system. (4)	Tadepalli channel. (5)	Kalinga-royan channel. (6)	Vridhdachalam ancient system. (7)	Marudur ancient system. (8)
Minimum discharge of river	1,750	121	121	13,730	163	725	893	351	142
Maximum discharge of main canals as designed	43,750	1,360	1,360	13,730	263	725	893	351	1,595
Maximum discharge during the year	24,016	2,401	2,401	14,978	194	735	645	300	1,260
Average rainfall for the river	38.62	53.45	53.45	121.41	33.95	27.60	35.19	38.47	53.45
Gross area commanded	1,706,923	80,000	80,000	1,379,445	13,792	20,693	23,696	19,992	35,840
Culturable area commanded	909,034	33,500	33,500	877,806	10,651	19,332	12,805	16,359	17,920
Area irrigable by complete project	909,034	26,000	26,000	873,000	5,200	19,332	11,843	15,559	17,920
Area irrigable at present	900,915	26,000	26,000	866,828	5,000	19,332	11,386	8,829	17,920
Sanctioned estimate—									
Direct charges	83,26,762	13,61,520	13,61,520	1,10,89,332	87,184	1,70,380	1,78,780	1,08,204	60,122
Indirect charges	7,49,577	7,49,577	7,49,577	19,34,864	87,184	11,650	4,506	1,08,204	60,122
Interest during construction	88,26,762	22,26,383	22,26,383	2,41,62,248	87,184	1,31,430	1,83,286	1,08,204	60,122
Total, Estimate	83,26,762	22,26,383	22,26,383	2,41,62,248	87,184	1,31,430	1,83,286	1,08,204	60,122
Expenditure to end of 1945-46—									
Direct charges	84,27,882	16,67,450	16,67,450	1,89,09,650	85,091	1,66,383	1,75,980	1,04,144	58,721
Indirect charges	2,73,049	1,07,604	1,07,604	20,87,362	2,093	11,013	4,506	4,060	1,401
Interest during construction	13,37,765	8,67,827	8,67,827	99,82,397	..	..	..	..	..
Total, Expenditure	100,38,696	26,42,880	26,42,880	3,09,79,409	87,184	1,77,446	1,80,486	1,08,204	60,122
Works completed at the end of 1945-46—									
Main canals, irrigation	943½	..	..	506½	7	48	57	17	..
Branch canals, irrigation	..	28	..	..	8	7	5½	16	29
Distributaries	2,798½	46	..	1,925½	9-26	..	..	16	7½
Of above—									
Navigable	..	..	..	498	..	..	..	..	..

APPENDIX I

A.I.—Statement of Canals in the Madras Presidency for the year 1945-46—cont.

Source of supply of water	Palar ancient system.	Muniyuru system.	Sagleru river system.	Nagavalli river system.	Nagavaram ancient supply channel.	Kanyam-palayam ancient.	Vedam-raniyam canal.	Buckingham canal.	Duvvaleru project.
Minimum discharge of river	(25) River Palar.	(26) River Muniyuru.	(27) River Sagleru.	(28) River Nagavalli.	(29) River Gunjaneru.	(30) River Bhavani.	(31) ..	(32) ..	(33) Duvvaleru river.
Maximum discharge of main canals as designed	5,631	338	477	414	78	27-56	..	..	100
Maximum discharge during the year	2,601	292*	387	459	627	..	..	..	100
Average rainfall for the year	27-56	28-12	17-91	..	21-17	35-51	..	..	1,059
Gross area commanded	140,131	14,471	33,576	49,920	894	1,600	..	..	1,355
Culturable area commanded	105,082	13,024	26,576	31,200	894	432	..	..	1,355
Area irrigable by complete project	82,718	10,580	4,500	27,658	894	400	..	..	1,355
Area irrigable at present	78,668	10,000	4,500	27,500	894	392	..	..	1,284
Sanctioned estimate—									
Direct charges	23,71,791	6,09,601	4,47,108	17,47,770	1,07,295	1,36,343	1,32,699	95,81,344	1,50,620
Indirect charges	1,17,484	..	17,619	68,630	2,595	3,787	3,783	..	1,455
Interest during construction	..	..	..	2,93,217	..	..	..	..	..
Total, Estimate	24,89,275	6,09,601	4,64,727	21,09,517	1,09,890	1,40,100	1,36,432	95,81,344	1,52,075
Expenditure to end of 1945-46—									
Direct charges	23,71,791	5,79,336	4,47,108	17,54,611	1,07,295	1,07,221	1,32,699	90,94,355	1,46,233
Indirect charges	1,17,484	30,265	17,619	44,632	2,595	3,853	3,783	4,93,907	1,058
Interest during construction	..	..	..	2,93,217	..	..	..	..	..
Total Expenditure	24,89,275	6,09,601	4,64,727	20,92,460	1,09,890	1,11,074	1,36,432	95,88,262	1,47,291
Works completed to end of 1945-46—									
Main canals, irrigation	157	26½	12	64½	2	10½	45½	262	5½
Branch canals, irrigation	..	..	..	..	..	..	..	..	2½
Distributaries	227	28 7/16	..	47½	..	..	..	..	..

A.II.—Statement of Reservoir Projects in the Madras Presidency for the year 1945-46.

Source of supply of water	Chembaram-bakkam tank.	Cumbum tank.	Periyar system.	Toludur Project (Willington reservoir).	Canvey-Mettur system.	Barur tank.	Madras water-supply and irrigation system.
Area of catchment by rainfall. Average rainfall during the year	100 Sq. miles.	430 Sq. miles.	239 Sq. miles.	50 Sq. miles.	16,300 Sq. miles.	2,082 Sq. miles.	34 Sq. miles.
Contents of tank between levels of surface of full supply and sill of canal head sluice.	31-58 Mils.	12-79 Mils.	71-07 Mils.	49-19 Mils.	.. Mils.	.. Mils.	36-97 Mils.
Area of surface at full supply	3,146 Acres.	2,942-17 Acres.	9,815 Acres.	2,591-53 Acres.	93,500 Acres.	248-63 Acres.	2,729-864 Acres.
Gross area commanded	5,729	5,697	10-20	3,946	52-25	26-35	5,361
Culturable area commanded	32,554	7,860	763,000	38,400	497,200	6,887	16,129
Area irrigable by complete project	24,478	6,000	Not known.	28,800	497,200	6,887	10,165
Area irrigable at present	15,300	6,000	143,000	27,670	332,000	6,887	9,852
Sanctioned estimate—							
Direct charges	6,48,970	83,985	1,08,35,654	29,60,000	7,23,11,000	4,00,000	15,47,123
Indirect charges	1,12,547	2,388	3,71,027	2,60,000	13,97,000	25,300	2,38,945
Interest during construction	..	..	16,06,402	2,10,270	1,42,81,366	41,439	..
Total, Estimate	7,61,517	86,373	1,24,42,056	34,20,270	8,79,89,366	4,66,739	17,86,068
Expenditure to end of 1945-46—							
Direct charges	6,51,348	83,985	1,04,64,627	29,71,023	6,35,23,902	4,28,228	16,28,864
Indirect charges	1,12,795	2,388	3,71,027	2,51,758	10,38,503	23,800	2,40,054
Interest during construction	..	..	16,06,402	..	2,41,45,532	80,175	..
Total Expenditure	7,64,143	86,373	1,24,42,056	26,22,781	8,87,07,937	5,32,212	18,68,918
Works completed to end of 1945-46—							
Dam (height completed)	25 Feet.	56 Feet.	173 (masonry).	50	214	28	30
Canals and branches	10½ Mils.	..	152	31½	113½	11	11½
Distributaries	11	23½	118	40	594½	26	..

A-II.—Statement of Reservoir Projects in the Madras Presidency for the year 1945-46—cont.

Source of supply of water ..	Dondapad tank.	Yerur tank.	Atmakur tank.	Janga-maheswara-puram tank.	Anama-samudram Beeraperu tank.	Hajipuram tank.	Ponnalur tank.
	(8)	(9)	(10)	(11)	(12)	(13)	(14)
If supplied } Area of catchment by rainfall. } Average rainfall during the year ..	Sq. miles. Inches.	60-50 39-00	105 28-81	60 21-20	23-62 14-73	100-20 18-26	32-14 25-81
Contents of tank between levels of surface of full supply and sill of canal head sluice.	Mill. c.ft.	317-69	164	79	90-57	309	180-512
Area of surface at full supply	Acrea.	3,285	575	619	474	1,600	719
Gross area commanded	"	3,176	1,700	960	1,000	2,900	1,973
Culturable area commanded	"	3,176	1,160	960	1,000	2,900	1,973
Area irrigable by complete project	"	3,176	460	290	1,000	700	1,000
Area irrigable at present	"	1,470	460	290	1,000	700	1,000
Sanctioned estimate—							
Direct charges ..	Rs.	61,741	1,25,403	61,253	71,687	2,78,774	2,18,689
Indirect charges ..	"	1,612	1,25,403	10,411	1,886	33,109	2,18,689
Interest during construction	"	63,353	1,25,403	71,664	73,573	3,11,883	2,18,689
Total, Estimate ..	"	1,40,004	1,25,403	71,664	73,573	3,11,883	2,18,689
Expenditure to end of 1945-46—							
Direct charges ..	Rs.	61,741	1,11,969	61,253	71,687	2,78,774	1,92,975
Indirect charges ..	"	1,612	13,444	10,411	1,886	33,109	25,674
Interest during construction	"	63,353	1,25,403	71,664	73,573	3,11,883	2,18,689
Total, Expenditure ..	"	1,40,004	1,25,403	71,664	73,573	3,11,883	2,18,689
Works completed to end of 1945-46—							
Dam (height completed)	Feet.	23	33	24	..	6	214
Canals ..	Miles.	..	..	34	..	..	..
Distributaries ..	"	64	44	5	27	44	7

APPENDIX I

A-II.—Statement of Reservoir Projects in the Madras Presidency for the year 1945-46—cont.

Source of supply of water ..	Markapur tank.	Venkatapuram tank.	Bhavanasi tank.	Yellanor tank.	Panjapatti reservoir.	Siddapur tank.	Thiruvayudam project.
	(15)	(16)	(17)	(18)	(19)	(20)	(21)
If supplied } Area of catchment by rainfall. } Average rainfall during the year ..	Sq. miles. Inches.	270-25 22-42	51 18-21	43 20-79	108 19-10	45 34-27	120 18-12
Contents of tank between levels of surface of full supply and sill of canal head sluice.	Mill. c.ft.	124-62	237	174-64	225	636	2,007
Area of surface at full supply	Acrea.	811	448	650	2,617	1,125	3,100
Gross area commanded	"	1,931	1,700	2,770	2,500	4,900	13,890
Culturable area commanded	"	1,701	1,700	2,448	2,500	4,250	12,500
Area irrigable by complete project	"	1,701	340	841	925	1,000	12,500
Area irrigable at present	"	1,683	340	841	925	1,000	12,500
Sanctioned estimate—							
Direct charges ..	Rs.	1,16,677	3,31,776	2,35,711	3,36,090	9,21,980	5,71,122
Indirect charges ..	"	4,001	14,824	30,009	68,510	26,620	22,221
Interest during construction	"	1,20,658	3,46,600	2,65,491	4,04,600	9,48,600	5,93,843
Total, Estimate ..	"	1,20,658	3,46,600	2,65,491	4,04,600	9,48,600	5,93,843
Expenditure to end of 1945-46—							
Direct charges ..	Rs.	1,24,481	3,72,250	2,54,395	3,27,781	7,91,038	5,72,196
Indirect charges ..	"	4,869	12,671	11,096	11,495	13,448	12,020
Interest during construction	"	1,29,340	3,84,921	2,95,297	3,39,276	8,04,486	5,84,216
Total, Expenditure ..	"	1,29,340	3,84,921	2,95,297	3,39,276	8,04,486	5,84,216
Works completed to end of 1945-46—							
Dam (height completed)	Feet.	22	31	20	40	27-5	714
Canals ..	Miles.	74	34	64	..	64	..
Distributaries ..	"	..	..	..	14	84	..

* The reservoir breached in 1930 and it never had a wet ayacut.

APPENDIX I

B-I.—Capital Accounts of Irrigation, Navigation, Embankment and Drainage Works (classified as "Productive" and "Unproductive") for which Capital and Revenue Accounts are kept in the Madras Presidency for the year ending 1945-46.

APPENDIX I

Works or systems.		Direct charges (net expenditure).							Total excluding interest.		Simple interest.	
		Works.	Establishment.	Tools and plant.	Suspense.	Deduct Receipts on capital account.	Total.	Indirect charges.				
(1)	(2)	RS.	(3)	RS.	(4)	RS.	(5)	RS.	(6)	RS.	(7)	RS.
A. IRRIGATION WORKS.												
1. PRODUCTIVE WORKS.												
Cauvery delta system ...	To end of previous year.	67,50,06	15,15,626	1,35,869	—	14,793	83,86,787	2,72,735	86,59,522	1,17,28,304	3,77,049	41,19,726
Sriekuntam anicut ...	During the year	31,327	9,678	98	—	—	41,065	314	41,479	3,77,049	41,19,726	75,036
Godavari delta system ...	To end of previous year.	13,23,683	3,33,353	10,792	—	369	16,67,459	1,07,604	17,75,063	3,85,35,724	8,30,733	2,09,306
Mohamattur anicut ...	During the year	1,36,55,849	35,59,095	9,80,120	—	10,206	1,81,84,558	20,81,093	2,02,65,951	7,31,061	8,30,733	3,828
Thadepalli channel ...	To end of previous year.	6,26,876	82,198	15,718	—	—	7,24,792	6,269	7,31,061	1,77,446	4,07,961	7,487
Kalingarayan channel ...	During the year	67,745	17,320	26	—	—	85,091	2,093	87,184	1,80,486	3,42,072	7,919
Vridhachalam anicut ...	To end of previous year.	1,36,531	29,836	16	—	—	1,66,383	11,063	1,77,446	1,08,204	2,04,081	4,686
Chembambakkam anicut ...	During the year	1,43,789	32,191	63	—	—	1,76,980	4,506	1,81,486	7,64,143	17,56,358	29,811
Marudur anicut system ...	To end of previous year.	32,956	21,125	—	—	—	53,081	1,12,795	60,122	60,122	1,21,110	2,642
Pennar river canals system ...	During the year	5,14,255	1,28,958	8,249	—	—	6,51,348	1,401	6,52,749	1,38,14,846	2,71,776	3,52,970
Arankota channel ...	To end of previous year.	47,925	10,820	—	—	—	58,745	3,676	62,421	3,99,190	8,72,353	17,514
Tirukottiyur anicut system ...	During the year	48,66,793	10,35,031	1,45,075	—	2,858	60,44,941	10,17,808	70,62,749	10,89,561	14,68,353	46,345
Shalatope anicut system ...	To end of previous year.	1,14,505	26,264	—	—	—	1,40,769	15,201	1,55,969	5,39,999	11,57,566	23,616
Thoyyar anicut system ...	During the year	3,18,375	70,709	105	—	—	3,89,189	2,388	3,91,577	3,91,577	1,74,046	3,779
Jumbun tank system ...	To end of previous year.	9,03,113	1,26,113	660	—	—	10,29,886	59,675	10,89,561	14,68,353	46,345	17,514
Poincy anicut system ...	During the year	4,20,163	1,03,941	744	—	50	5,24,798	15,201	5,39,999	5,39,999	11,57,566	23,616
Veriyar system ...	To end of previous year.	68,701	15,284	—	—	—	83,985	3,812	87,797	3,03,918	7,35,751	13,280
Indus delta system ...	During the year	2,34,293	60,576	267	—	—	2,95,106	3,71,027	3,03,918	1,03,35,654	2,25,97,708	89,824
Landiyar channel system ...	To end of previous year.	80,28,303	16,90,738	7,66,397	—	21,311	1,04,64,627	12,43,264	1,17,07,891	1,17,07,891	1,10,234	2,845
over Coleroon anicut ...	During the year	1,65,48,182	41,26,123	7,25,123	—	43,984	2,13,55,444	2,484	2,16,03,928	30,01,669	46,81,478	1,31,104
Indus Kasi Bank canal ...	To end of previous year.	70,940	17,684	491	—	—	88,115	1,07,259	89,194	58,48,641	46,26,222	2,57,906
extension scheme ...	During the year	51,476	11,755	—	—	—	63,231	705	63,936	17,03,088	13,74,585	75,838
clayaram island project ...	To end of previous year.	24,57,252	4,42,566	16,780	—	3,175	29,13,423	38,246	30,01,669	15,45,58,669	19,43,15,174	66,13,463
Works—1. Productive.	During the year	5,95,89,312	61,42,427	2,92,488	—	28,60,774	6,36,13,452	10,39,311	6,47,12,763	4,73,20,703	28,61,481	10,49,196
Total, A. Irrigation.	To end of previous year.	35,00,945	4,96,873	52,779	—	63,765	40,40,168	98,217	41,38,275	25,59,550	9,12,445	19,264
Works.	During the year	9,101	3,679	29	—	10,540	13,809	19	13,808	1,51,119	1,51,119	—

APPENDIX I

2. UNPRODUCTIVE WORKS.												
Kannal-Cuddapah canal ...	To end of previous year.	1,91,04,532	3,82,879	40,84,103	—	2,44,283	2,33,27,221	73,552	2,34,00,773	5,30,45,760	10,49,196	19,264
Barur tank ...	During the year	3,42,783	78,506	6,961	—	22	4,23,228	23,809	4,47,037	9,12,445	19,264	—
Vallur anicut system ...	To end of previous year.	60,662	13,679	25	—	—	74,366	1,916	76,282	1,97,413	3,346	—
Medras water-supply system ...	During the year	13,92,995	2,30,243	6,928	—	1,302	16,28,864	2,40,054	18,68,918	44,70,697	73,552	23,949
Pelandur anicut system ...	To end of previous year.	5,20,687	1,17,426	6,037	—	798	6,43,902	48,772	6,92,674	14,21,707	28,949	—
Palar anicut system ...	During the year	18,08,029	4,74,387	30,047	—	672	23,71,791	1,17,484	24,89,275	62,13,868	1,06,674	4,55,296
Chicacole minor river system ...	To end of previous year.	2,27,662	50,107	427	—	1,732	2,78,196	11,030	2,89,226	12,519	12,519	—
Muziyar system ...	During the year	4,70,796	1,06,584	3,748	—	7	5,79,336	30,265	6,09,601	10,03,591	26,064	2,35,159
Dondapad tank ...	To end of previous year.	1,05,848	18,945	—	—	—	1,24,786	15,218	1,40,004	5,615	5,615	—
Yerur tank ...	During the year	50,219	11,522	—	—	—	61,741	1,612	63,353	89,685	2,778	—
Sagilera system ...	To end of previous year.	3,54,321	80,339	12,449	—	1	4,47,108	17,619	4,64,727	8,13,290	1,62,210	5,038
Atmakur tank ...	During the year	92,765	19,191	—	—	—	1,11,956	13,444	1,25,403	91,570	2,756	—
Jangamabeswarapuram tank ...	To end of previous year.	52,564	8,689	—	—	—	61,253	10,411	71,664	98,485	3,226	—
Anamasudram Bera-pur tank ...	During the year	58,421	13,286	—	—	—	71,687	1,866	73,573	3,97,017	12,545	—
Hallipuram tank ...	To end of previous year.	2,80,686	48,308	—	—	220	2,78,774	33,109	3,11,883	2,80,485	16,751	—
Ponnalur tank ...	During the year	1,61,263	31,658	—	—	—	1,92,975	25,074	2,18,049	2,65,491	11,448	—
Markapur tank ...	To end of previous year.	1,01,374	23,066	—	—	—	1,24,481	4,859	1,29,340	1,42,146	5,602	—
Nagavalli river system ...	During the year	13,75,616	2,90,064	98,708	—	5,308	17,51,140	44,002	17,95,742	22,29,810	78,778	—
Venkatapuram tank ...	To end of previous year.	3,05,994	64,539	4,236	—	519	3,72,550	12,671	3,85,221	4,10,379	16,751	—
Bhavanasi tank ...	During the year	1,85,879	43,103	25,710	—	297	2,54,395	11,056	2,65,491	2,65,491	11,448	—
Yellapur tank ...	To end of previous year.	1,91,292	41,156	7,087	—	348	2,39,192	30,515	2,69,707	2,69,707	10,764	—
Panjapatti reservoir project ...	During the year	2,24,998	43,411	60,075	—	703	3,27,781	11,495	3,39,276	3,39,276	14,750	—

Works or systems.		Direct charges (net expenditure).					Indirect charges.		Total excluding interest.		Simple interest.	
Works or systems.		Works.	Establishment.	Tools and plant.	Suspense.	Receipts on capital account.	Total.					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	RS.	RS.	RS.
A. IRRIGATION WORKS—cont.												
2. UNPRODUCTIVE WORKS—cont.												
Siddapur tank	To end of previous year.	5,22,751	96,255	1,72,474	..	442	7,91,038	13,448	8,04,486	9,13,328	9,13,328	9,13,328
	During the year..	..	..	..	..	..	..	..	..	35,567	35,567	35,567
Nagavaram aicut and supply channel.	To end of previous year.	88,757	18,538	..	..	..	1,07,295	2,595	1,09,890	1,28,19	1,28,19	1,28,19
	During the year..	17,73,781	3,28,570	2,34,370	..	27,894	23,08,227	97,494	24,06,721	27,06,838	27,06,838	27,06,838
Mopad reservoir system.	To end of previous year.	12,456	1,803	25	..	..	21,384	106	21,580	1,04,81	1,04,81	1,04,81
	During the year..	97,891	27,085	495	..	17,700	1,07,221	3,868	1,11,074	1,45,843	1,45,843	1,45,843
Kanlampalayam aicut.	To end of previous year.	15,99,890	4,75,288	3,05,960	..	9,815	23,71,023	2,51,758	26,22,781	28,03,685	28,03,685	28,03,685
	During the year..	..	..	..	..	..	..	..	..	1,06,622	1,06,622	1,06,622
Toludur reservoir project.	To end of previous year.	4,41,041	1,80,844	967	..	656	5,72,196	12,020	5,84,216	2,81,244	2,81,244	2,81,244
	During the year..	..	..	..	..	..	..	..	..	25,480	25,480	25,480
Tippasvapakam project.	To end of previous year.	4,68,889	1,12,166	2,197	..	..	5,83,202	6,578	5,89,780	4,45,808	4,45,808	4,45,808
	During the year..	..	..	..	..	..	..	..	..	26,230	26,230	26,230
Basavannah channel.	To end of previous year.	1,01,385	44,860	230	..	..	1,46,455	1,060	1,47,515	31,974	31,974	31,974
	During the year..	150	67	5	..	..	232	2	234	6,594	6,594	6,594
Duvvaluru project	To end of previous year.	1,04,920	36,782	1,494	..	..	1,43,206	1,050	1,44,256	3,358	3,358	3,358
	During the year..	6,273	1,535	54	..	..	7,866	63	7,929	6,252	6,252	6,252
Udanthorahalla Scheme.	To end of previous year.	10,128	4,137	55	..	..	14,320	101	14,421	695	695	695
	During the year..	..	..	..	..	..	..	..	..	609	609	609
Mahadevapuram tank project.	To end of previous year.	32,281	9,800	..	..	..	42,081	323	42,404	894	894	894
	During the year..	..	..	..	..	..	..	..	..	27,919	27,919	27,919
Fungabhadra Project	To end of previous year.	7,98,773	3,64,961	68,225	1,057	3,585	12,29,431	7,958	12,37,419	8,11,68,157	8,11,68,157	8,11,68,157
	During the year..	3,27,15,119	34,75,743	50,59,941	..	3,12,714	4,09,39,089	11,71,373	4,21,09,462	..	..	..
Total.	To end of previous year.	8,27,664	3,68,773	68,831	1,057	3,585	12,62,240	8,277	12,70,517	18,67,738	18,67,738	18,67,738
	During the year..	..	..	..	..	..	..	..	..	27,54,83,801	27,54,83,801	27,54,83,801
A. Irrigation Works—A. Unproductive Works.	To end of previous year.	15,81,50,073	2,46,79,474	88,99,434	1	28,84,473	18,83,44,723	78,63,008	19,67,08,331	27,54,83,801	27,54,83,801	27,54,83,801
	During the year..	14,89,920	4,89,349	88,505	1,057	67,350	19,96,481	14,900	20,11,881	85,31,201	85,31,201	85,31,201

**B. NAVIGATION, EMBANKMENT
AND DRAINAGE WORKS.**

2. UNPRODUCTIVE WORKS.										
Madaranyam canal	...	To end of previous year.	1,07,805	24,814	..	..	1,32,699	3,793	1,36,432	3,91,910
		During the year.	72,18,609	16,67,083	1,81,631	..	24,365	4,98,487	95,36,245	5,971
Isackingham canal	...	To end of previous year.	47,051	4,326	60	..	51,447	470	51,917	2,07,735
		During the year.	73,26,494	16,91,847	1,81,631	..	24,365	4,97,170	96,72,777	4,07,767
Total, B. Navigation, etc., Works—2. Un- productive Works.	...	To end of previous year.	47,051	4,386	60	..	51,447	470	51,917	2,11,63,263
		During the year.	73,26,494	16,91,847	1,81,631	..	24,365	4,97,170	96,72,777	4,13,738
Total, B. Navigation, etc., Works.	...	To end of previous year.	47,051	4,386	60	..	51,447	470	51,917	2,11,63,263
		During the year.	73,26,494	16,91,847	1,81,631	..	24,365	4,97,170	96,72,777	4,13,738
Total, Construction of canals, etc., Works.	...	To end of previous year.	16,54,76,567	2,63,71,321	90,81,065	— 1	19,80,20,330	83,60,778	20,63,81,108	29,66,46,624
		During the year.	15,31,00,07	4,98,685	83,565	1,067	20,47,928	15,370	20,63,298	89,44,939

C.I.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works (classified as “Productive” and “Unproductive”) for which Capital and Revenue Accounts are kept in the Madras Presidency for the year 1945-46.

- Revenue (actual receipts).

Works or systems.		Irrigation.		Navigation.		Plantation.		Miscellaneous.		Total.	Less refunds of revenue.	Gross revenue less refunds.	Deduct Share of old irrigation revenue.	Total revenue due to improvements.
		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	RS.	RS.
A. IRRIGATION WORKS.														
1. PRODUCTIVE WORKS.														
1	Canvey delta system	52,19,858	1,63,631	53,83,489	6,110	25,409	13,223	42,742	368	54,25,865	37,86,987	16,38,876	16,38,876	
2	Sirvaikuntam ancient system	2,29,222	1,490	2,30,712		4,018	7,520	11,538	78	2,42,172	79,000	1,63,172	1,63,172	
3	Godavari delta system	43,47,004	2,80,733	46,27,737	2,87,419	4,260	75,675	2,67,54	10,982	49,31,809	1,24,000	48,07,809	48,07,809	
4	Mehamati ancient system	25,641	196	25,837		91	72	163	25	25,975	4,000	21,975	21,975	
5	Thalipalli channel system	1,69,874	2,929	1,72,803			3,929	3,929	107	1,76,425	76,000	99,455	99,455	
6	Kallangarsan channel system	1,37,031	463	1,37,514			4,711	4,711	1:3	1,42,062	85,000	57,062	57,062	
7	Vridhachalam ancient system	46,196	339	46,535		944	22	966		47,431	8,500	38,931	38,931	
8	Chembarambakkam tank system	57,333	957	58,290			715		1,612	57,383	16,000	41,383	41,383	
9	Marudur ancient system	2,09,622	279	2,09,901		279	3,237	3,516		2,13,417	1,15,000	98,417	98,417	
10	Pennar river canal system	8,14,470	73,367	8,87,837	800	94	5,647	6,582	100	8,94,278	2,56,000	6,38,278	6,38,278	
11	Arikotta channel system	40,231	498	40,729			1,582	1,582		42,311	19,000	23,311	23,311	
12	Thirukoilur ancient system	1,37,245	3,269	1,40,514		1,000	748	1,478		1,42,362	60,000	82,362	82,362	
13	Shattoree ancient system	1,58,129	17,031	1,75,170	11	563	304	878		1,76,043	20,000	1,56,043	1,56,043	
14	Cheyyar ancient system	1,08,782	4,732	1,13,517		247	1,633	1,880		1,15,397	39,000	76,397	76,397	
15	Cumbum tank system	21,382	475	21,857						31,854	30,000	1,854	1,854	
16	Polney ancient system	70,219	5,468	75,707		100	155	255		75,962	38,100	37,862	37,862	
17	Periyar system	10,43,131	94,263	11,37,394	90		18,494	25,176	483	11,2,667	2,04,000	9,58,667	9,58,667	
18	Karna delta system	48,35,232	1,02,210	50,27,442	2,09,187	7,826	1,16,416	3,33,431	5,804	53,55,069	71,000	52,84,069	52,84,069	
19	Nandiyar channel system	8,837	250	9,087		31	84	1,001		35,068	17,000	18,068	18,068	
20	Lower Coleroon ancient system	5,98,312	51,549	6,44,861	166		7,440	13,969	1:02	6,52,028	1,55,000	5,03,028	5,03,028	
21	Kistna East Bank canal extension scheme.	5,28,019	87,205	6,15,224	2,115		19,184	21,990	175	6,36,348	20,300	6,16,048	6,16,048	
22	Pollavaram Irrigation Project	1,17,740	28,740	1,46,480	17		885	1,248		1,19,017		1,19,017	1,19,017	
23	Canvey Mettur Project	16,46,952		16,75,092	9,378		1,10,445	1,19,877	187	17,95,342	99,971	16,95,371	16,95,371	
24	Kattalai scheme			4,24,156	146		2,558	9,567	81	4,33,642	2,54,000	1,79,642	1,79,642	
Total, A. Irrigation Works.—1. Productive Works.		2,10,21,666	9,60,865	2,19,82,531	5,06,176	72,671	3,93,769	9,72,616	20,237	2,29,34,910	55,77,858	1,77,57,052	1,77,57,052	

2. UNPRODUCTIVE WORKS.

[illegible]

C.I.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works (classed as “Productive” and “Unproductive”) for which Capital and Revenue Accounts are kept in the Madras Presidency for the year 1945-46—cont.

Works or systems.	Revenue (actual receipts).										
	Irrigation.										
	Irrigation revenue.	Share of land revenue.	Total.	Navigation.	Plantation.	Miscellaneous.	Total.	Less refunds of revenue.	Gross revenue less refunds.	Deduct share of old irrigation revenue.	Total revenue due to improvements.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
A. IRRIGATION WORKS—cont.											
2. UNPRODUCTIVE WORKS—cont.											
11 Seelaru system	13,292	26	13,246	..	6	140	146	..	13,392	17,800	—
12 Atmakur tank	1,771	..	1,771	..	10	190	200	..	1,971	..	4,408
13 Janamabeswarapuram tank	1,165	..	1,165	..	..	..	..	..	1,165	500	1,971
14 Anamasundram-Bearapur tank	872	1	873	..	..	..	..	..	873	3,600	2,727
15 Hefpuram tank	806	70	876	..	..	..	..	..	876	..	876
16 Markapur tank	4,356	..	4,356	..	..	..	..	..	4,356	..	4,356
17 Nagavalli river system	7,087	1	7,088	..	..	..	..	..	7,112	2,130	4,982
18 Nagavalli river system	1,06,225	21,804	1,28,029	..	..	44	44	..	1,30,365	37,400	92,965
19 Venkatasapuram tank	2,913	..	2,913	..	..	1	1	..	2,944	..	2,944
20 Rayanasi tank	5,916	..	5,916	..	..	..	..	..	5,916	..	5,916
21 Vellamur tank	2,017	1,104	3,121	..	..	..	..	..	3,121	..	3,121
22 Pandipatti reservoir project	..	..	..	..	..	635	635	..	635	..	635
23 Sidiapur tank	6,946	..	6,946	..	..	5	5	..	6,951	..	6,951
24 Nagavalli reservoir project	2,681	1,017	3,698	..	..	..	..	..	3,698	2,256	1,442
25 Mored reservoir system	54,717	5,170	59,887	..	..	141	141	..	60,028	433	59,595
26 Kannirampakkam ancient	2,608	..	2,608	..	..	..	..	..	2,608	..	2,608
27 Telur reservoir project	1,51,217	448	1,51,665	..	1,216	1,884	3,100	42	1,54,723	10,590	1,44,133
28 Basavanahalli project	2,672	..	2,672	..	..	1	1	..	2,673	..	2,673
29 Basavanahalli channel	1,04,065	..	1,04,065	..	114	..	114	..	1,04,169	..	1,04,169
30 Durravur project	..	..	..	..	..	34	34	..	..	..	34
31 Uththaravalli scheme	..	..	..	..	..	..	..	..	..	..	..
32 Mahadevarapuram tank project	..	..	..	..	..	..	..	..	..	..	..
Total, A. Irrigation Works—2. Unproductive Works.	14,62,570	60,211	15,22,781	204	8,957	73,738	82,899	261	16,05,419	3,58,406	12,47,013
Total, A. Irrigation, etc., Works	2,24,84,236	10,21,076	2,35,05,312	5,06,380	81,028	4,67,507	10,55,515	20,498	2,45,40,329	59,36,264	1,86,04,065
B. NAVIGATION, EMBANKMENT AND DRAINAGE WORKS.											
2. UNPRODUCTIVE WORKS.											
1 Vedaranyam canal	..	..	..	1,089	15	10,476	1,054	..	1,054	..	1,054
2 Buckingham canal	..	..	..	1,26,335	1,135	..	1,37,043	903	1,37,043	..	1,37,043
Total, B. Navigation, etc., Works—2. Unproductive Works.	..	..	..	1,27,374	1,150	10,476	1,39,000	903	1,38,097	..	1,38,097
Total, B. Navigation, etc., Works	..	..	..	1,27,374	1,150	10,476	1,39,000	903	1,38,097	..	1,38,097
Total, Construction of Irrigation, etc., Works.	2,24,84,236	10,21,076	2,35,05,312	6,33,764	82,778	4,77,983	11,94,515	21,401	2,46,78,496	59,36,264	1,87,42,162

C.I.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works (classed as “Productive” and “Unproductive”) for which Capital and Revenue Accounts are kept in the Madras Presidency for the year 1945-46—cont.

Works or systems.	Working expenses—Revenue										
	Working expenses—Revenue										
	Direction.	Establishment.	Civil officers.	Revenue management.	Establishment.	Execution.	Total.	Extensions and improvements.	Maintenance and repairs.	Tools and plant.	Deduct Total cost of maintenance.
(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
A. IRRIGATION WORKS.											
1. PRODUCTIVE WORKS.											
1 Convery delta system	..	2,67,529	2,67,529	70,518	2,82,073	3,62,591	65,178	7,40,164	2,335	..	14,27,797
2 Srivaikuntam ancient system	..	7,586	7,586	7,218	28,875	36,093	166	92,407	327	..	1,36,579
3 Godavari delta system	..	2,20,655	2,20,655	69,502	2,78,009	3,47,511	3,98,047	12,53,327	41,299	..	22,56,339
4 Mahamattur ancient system	..	1,088	1,088	518	2,073	2,591	57	6,327	19	..	10,082
5 Tridapattur ancient system	..	4,815	4,815	1,118	4,469	5,587	..	17,643	155	..	28,210
6 Kalligayam channel system	..	2,626	2,626	1,207	4,828	6,085	240	20,206	178	..	29,235
7 Vridhachalam ancient system	..	1,897	1,897	702	2,806	3,508	..	13,962	93	..	13,939
8 Chembarambakkam tank system	..	2,114	2,114	393	1,573	1,966	..	13,962	17	..	13,939
9 Marudur ancient system	..	4,745	4,745	1,595	7,580	9,475	..	21,397	75	..	35,622
10 Pennar river canal system	..	30,424	30,424	6,493	21,973	27,466	5,994	1,40,608	194	..	2,10,776
11 Arankota channel system	..	1,083	1,083	393	1,571	1,964	..	6,438	57	..	9,585
12 Trunkoyilur ancient system	..	4,031	4,031	5,296	21,185	26,481	160	70,572	923	..	1,07,587
13 Shattope ancient system	..	7,758	7,758	2,658	10,754	13,442	237	27,778	80	..	48,855
14 Chettyr ancient system	..	3,654	3,654	3,678	14,715	18,393	1,005	63,139	560	..	36,791
15 Chembur tank system	..	92	92	353	1,412	1,765	..	3,487	120	..	5,484
16 Polney ancient system	..	1,877	1,877	3,136	12,545	15,681	135	57,008	408	..	75,199
17 Periyar system	..	42,974	42,974	19,940	79,758	99,498	9,152	2,26,624	333	..	3,79,281
18 Kistna delta system	..	2,44,133	2,44,133	78,359	3,13,438	3,91,795	73,346	10,00,210	7,933	..	17,16,042
19 Nandiyar channel system	..	846	846	600	2,400	3,000	..	8,172	82	..	12,042
20 Lower Coleroon ancient system	..	24,492	24,492	10,408	41,631	52,039	13,287	1,18,435	382	..	2,08,635
21 Kistna East Bank canal extension scheme.	..	26,253	26,253	7,762	31,046	38,808	2,419	1,07,745	793	..	1,76,083
22 Polavaram Island project	..	5,888	5,888	2,419	9,634	12,043	12,689	63,296	1,684	..	1,85,550
23 Cauvery-Mettur Project	..	77,521	77,521	26,168	1,04,689	1,30,837	76,713	2,87,508	1,351	..	5,74,210
24 Kattalai scheme	..	8,503	8,503	6,420	21,680	27,110	11,033	59,070	203	..	1,05,909
Total, A. Irrigation Works—1. Productive Works.	..	9,92,584	9,92,584	3,25,174	13,00,695	16,25,369	6,64,898	44,16,067	58,783	..	77,58,201
2. UNPRODUCTIVE WORKS.											
1 Kurnool-Cuddapah canal	..	17,981	17,981	11,312	45,246	56,558	2,131	96,018	3,392	..	1,76,080
2 Barur tank	..	912	912	372	1,489	1,861	270	5,527	51	..	3,621
3 Valur ancient	..	214	214	73	292	365	..	2,278	3	..	2,860
4 Madras water-supply and irrigation system.	..	678	678	461	1,844	2,395	129	19,716	25	..	22,561
5 Palanadri ancient system	..	3,061	3,061	1,321	5,282	6,603	12,086	18,022	40	..	25,732
6 Palar ancient system	..	6,001	6,001	13,700	54,803	68,503	31,973	3,03,916	2,056	..	3,95,662
7 Chittoor minor river system	..	5,150	5,150	2,698	10,553	13,191	38,694	38,694	1,772	..	90,780
8 Maniyem ancient system	..	2,678	2,678	807	3,226	4,033	1,405	9,938	79	..	18,133
9 Pondapad tank	..	94	94	265	1,139	1,424	..	5,443	38	..	6,999
10 Yerur tank	..	28	28	42	170	212	..	400	1	..	636

[Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works (classified as "Productive" and "Unproductive") for which Capital and Revenue Accounts are kept in the Madras Presidency for the year 1945-46—cont.]

Works or systems.	Working expenses—Revenue management—cont.				Working expenses—cont.						
	Direc- tion.	Exe- cution.	Civil officers.	Total Revenue manage- ment.	Establishment—cont.		Extensions and improve- ments.	Maine- nance and repairs.	Tools and plant.	Deduct re- covers and revenue account. (23)	Total cost of main- tenance. (24) RS.
					Direction.	Execution.					
(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
A. IRRIGATION WORKS—cont.											
2. UNPRODUCTIVE WORKS—cont.											
11 Saffernu system	..	228	—	228	375	1,501	1,876	5	4,025	139	5,177
12 Anmakur tank	..	89	89	89	58	233	291	6	899	3	1,285
13 Anmakur tank	..	33	33	33	24	98	122	3	40	..	558
14 Anmakur tank	..	136	136	136	15	136	151	1	801	..	778
15 Rajapuram tank	..	43	43	43	48	191	239	1	495	..	1,231
16 Rajapuram tank	..	218	218	218	45	182	227	..	745	..	3,660
17 Marapur tank	..	217	217	217	231	925	1,156	153	2,039	75	4,058
18 Marapur tank	..	3,729	3,729	3,729	1,371	5,482	6,853	506	37,452	974	40,584
19 Vengal river system	..	147	147	147	66	266	392	..	637	32	1,128
20 Vengal river tank	..	296	296	296	119	1,461	2,025	..	3,486	62	7,306
21 Vengal tank	..	131	131	131	176	705	881	..	1,793	4	2,873
22 Vengal reservoir project	..	347	347	347	79	318	397	938	1,683	50	2,624
23 Suddapur tank	..	29	29	29	155	620	775	69	1,383	55	2,426
24 Nagavaram ancient and supply channel	..	2,747	2,747	2,747	150	602	752	..	1,590	9	10,872
25 Koppad reservoir system	..	135	135	135	283	1,133	1,416	65	6,615	..	810
26 Koppad reservoir project	..	7,054	7,054	7,054	34	136	170	..	501	4	51,523
27 Tondur reservoir project	..	134	134	134	2,605	10,422	13,027	1	28,262	88	1,898
28 Rasavaram channel	..	5,203	5,203	5,203	123	490	613	..	1,112	222	14,786
29 Rasavaram channel	..	..	..	..	577	2,300	2,877	235	6,424	72	3,079
30 Duvvur project	..	..	..	..	186	744	930	..	1,842	..	..
31 Uththambala scheme	..	..	..	..	..	..	..	..	..	..	..
32 Mahadevapuram tank project	..	..	..	..	..	..	..	..	..	..	..
33 Tungabhadra project	..	..	..	..	..	..	..	..	..	..	..
Total, A. Irrigation Works—2. Unproductive Works	..	57,008	57,008	57,008	3,904	1,51,119	1,89,523	55,170	5,98,667	9,310	9,09,678
Total, A. Irrigation, etc., Works	..	10,49,592	10,49,592	10,49,592	3,63,078	14,72,314	18,15,312	7,20,068	50,14,734	68,933	86,67,879
B. NAVIGATION, EMBANKMENT AND DRAINAGE WORKS.											
2. UNPRODUCTIVE WORKS.											
1 Vedaranyam canal	..	..	..	249	995	1,244	..	..	4,031	12	5,287
2 Buckingham canal	..	..	..	8,473	33,890	42,363	22,047	..	4,37,499	581	5,02,490
Total, B. Navigation, etc., Works—2. Unproductive Works	..	..	..	8,722	34,885	43,607	12,047	..	4,41,530	593	5,07,777
Total, B. Navigation, etc., Works	..	..	..	8,722	34,885	43,607	27,047	..	4,41,530	593	5,07,777
Total, Construction of Irrigation, etc., Works	..	10,49,592	10,49,592	3,71,00	14,87,199	18,58,999	7,42,115	..	54,56,264	68,686	91,75,656

C.I.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works (classified as "Productive" and "Unproductive") for which Capital and Revenue Accounts are kept in the Madras Presidency for the year 1945-46—cont.

Working expenses—cont.									
Works or systems.	Deduct old maintenance charge.				Total.		Total working expenses on improvements.	Net revenue.	
	Direct charges.	Indirect charges.	Total.		Total.				
(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	RS.	RS.
A. IRRIGATION WORKS—cont.									
1. PRODUCTIVE WORKS.									
1 Cauvery delta system	8,668	14,46,485	10,04,704	6,100	10,10,804	39,39,398	12,13,215		
2 Srirangapatna tank	925	1,37,504	7,578	55	7,633	1,04,668	33,301		
3 Godavari delta system	16,469	22,72,808	7,578	..	7,633	26,59,901	25,35,001		
4 Mahamathi tank	64	10,146	4,475	6	840	15,929	12,669		
5 Kallur tank	177	29,490	5,004	36	5,044	1,46,998	75,529		
6 Kallur tank	205	35,835	5,004	40	5,044	1,12,602	25,523		
7 Vaddachalam tank system	79	13,408	5,984	..	5,988	13,408	29,192		
8 Chembarambakkam tank system	140	35,835	8,405	54	8,459	39,184	69,034		
9 Marudur tank system	213	2,12,312	32,423	47	32,470	1,77,582	4,58,686		
10 Marudur tank system	1,536	1,08,935	1,120	297	1,429	6,81,966	14,720		
11 Ankota channel system	65	1,08,935	1,120	9	1,089	34,027	19,454		
12 Ankota channel system	798	1,08,935	1,120	49	1,147	1,28,917	1,09,091		
13 Chittarpet tank system	278	87,433	2,157	17	2,174	27,964	6,981		
14 Chittarpet tank system	642	87,433	2,157	32	2,189	26,355	2,482		
15 Gundam tank system	35	5,499	1,175	8	1,183	71,809	33,947		
16 Ponnai tank system	571	75,770	3,950	31	3,981	7,81,028	6,12,583		
17 Ponnai tank system	2,353	8,91,639	36,296	250	36,546	36,274,27	35,56,427		
18 Kallur tank system	10,785	17,27,642	4,907	..	4,907	7,885	10,203		
19 Kallur tank system	82	1,12,124	9,551	32	9,583	4,48,076	3,02,000		
20 Lower East Bank canal extension scheme	1,317	2,09,952	15,302	73	15,375	4,59,157	4,54,281		
21 Kallur tank system	1,108	1,77,191	15,302	122	15,424	32,807	32,807		
22 Ponnai tank system	660	86,210	14,955	..	14,955	12,17,487	11,32,585		
23 Cauvery-Mettur project	3,845	5,77,855	63,625	114	63,739	3,27,032	1,37,142		
24 Kallur tank system	701	1,06,610	12,29,115	485	12,36,981	1,51,25,275	1,07,84,398		
Total, A. Irrigation Works—1. Productive Works.	51,434	78,09,635	12,29,115	7,866	12,36,981	6,72,654			
2. UNPRODUCTIVE WORKS.									
1 Kurnool-Cuddapah canal	982	1,77,062	4,432	30	4,462	1,72,600	2,27,737		
2 Barur tank	58	8,679	..	..	..	8,679	18,587		
3 Vallur tank	23	2,883	1,425	13	1,438	1,415	6,680		
4 Madras water-supply and irrigation system	198	25,049	4,156	38	4,194	15,855	45,549		
5 Palar canal system	160	25,892	163	1	164	25,738	40,540		
6 Palar canal system	3,160	3,96,722	3,878	31	3,909	3,911	1,42,577		
7 Chittoor minor river system	707	91,437	5,82	47	5,869	86,058	1,07,667		
8 Munjery canal system	113	18,246	279	2	281	17,965	41,373		
9 Dondapad tank	54	7,053	..	..	..	7,053	5,174		
10 Yerur tank	4	640	..	..	..	640	247		

C.I.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works (classified as "Productive" and "Unproductive") for which Capital and Revenue Accounts are kept in the Madras Presidency for the year 1945-46—contd

Working expenses—contd.

Works or systems.	Indirect charges.	Grand total of working expenses.	Deduct old maintenance charges.		Total working expenses on improvements.	Net revenue	
			Direct charges.	Indirect charges.		Total.	Due to improvements.
	(25)	(26)	(27)	(28)	(29)	(31)	(32)
RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
A. IRRIGATION WORKS—cont.							
2. UNPRODUCTIVE WORKS—cont.							
11 Sagileru system ..	40	5,857	3,239	22	3,261	7,535	7,004
12 Almakur tank ..	9	1,294	..	..	..	677	677
13 Jagannatheswarapuram tank ..	4	562	..	..	..	68	108
14 Annesamudram-Beesaperu tank ..	8	747	701	6	707	126	2,767
15 Rajapuram tank ..	5	783	..	..	..	93	93
16 Ponnalur tank ..	8	1,299	..	..	..	3,117	3,117
17 Marapur tank ..	22	3,682	..	..	..	3,480	1,661
18 Nagavalli river system ..	3-0	49,964	359	2	3,375	80,401	46,376
19 Venkateswaram tank ..	6	1,184	3,346	29	..	1,810	1,810
20 Rayanah tank ..	55	7,361	..	..	..	1,445	1,445
21 Vellalur tank ..	18	2,891	..	..	..	2,891	280
22 Panjapatli reservoir project ..	11	1,518	..	..	..	883	883
23 Sidiyur tank ..	15	2,639	..	..	..	4,312	4,312
24 Nagavaram anicut and supply channel ..	16	2,442	..	..	..	1,256	1,000
25 Kandi reservoir system ..	67	10,939	..	..	..	49,089	48,656
26 Kandi anicut system ..	5	815	..	..	..	1,883	1,883
27 Toludur reservoir project ..	314	51,837	..	..	..	1,02,886	92,96
28 Thrippayapattin project ..	11	1,909	..	..	..	1,909	764
29 Bagevina channel ..	64	14,790	..	..	..	89,379	89,379
30 Davuluru project ..	21	3,100	..	..	..	3,066	3,066
31 Uthirachathala Scheme ..	..	..	..	..	..	..	..
32 Mahadevapuram tank project ..	..	..	..	..	..	..	..
33 Tumbabhadra project ..	..	..	..	..	..	..	..
Total, A. Irrigation Works—2. Unproductive Works.	6,538	9,16,216	27,345	221	27,566	6,89,203	3,58,363
Total, A. Irrigation, etc., Works ..	57,972	87,25,851	12,56,460	8,087	12,64,547	1,58,14,478	1,11,4,761
B. NAVIGATION, EMBANKMENT AND DRAINAGE WORKS.							
2. UNPRODUCTIVE WORKS.							
1 Vedaranyam canal ..	40	5,327	..	..	..	5,327	4,273
2 Buckingham canal ..	4,596	5,07,086	..	..	..	5,07,086	3,70,043
Total, B. Navigation, etc., Works—2. Unproductive Works.	4,636	5,12,413	..	..	..	5,12,413	3,74,316
Total, B. Navigation, etc., Works ..	4,636	5,12,413	..	..	..	5,12,413	3,74,316
Total, Construction of irrigation, etc., Works.	62,608	92,38,264	12,56,460	8,087	12,64,547	70,73,717	1,07,88,445

C.II.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works for, and up to the end of, 1945-46.

General financial results to end of 1945-46.

Name of works.	Mileage in operation.		Estimated cost of construction (direct and indirect).	Date when completion of work.	Date when system first came into operation.	Total capital outlay (direct and indirect).	Accumulated arrears of interest.	Accumulated surplus revenues.	Total sum-at-charge (column (7) plus column (8)).
	(1)	(2)							
	(3)	(4)	(5)	(6-a)	(6-b)	(7)	(8)	(9)	(10)
	MILES.	MILES.	RS.			RS.	RS.	RS.	RS.
A. IRRIGATION WORKS.									
1. PRODUCTIVE WORKS.									
1 Carvery delta system ..	943½	2,798½	87,08,498	31-3-1889	..	87,00,931	..	5,32,21,310	87,00,931
2 Srivalkuntham anicut system ..	28	46	17,75,063	31-3-1889	..	17,75,063	..	1,25,515	17,75,063
3	509-5/8	1,887	2,28,05,155	31-3-1890	1877-78	2,09,97,012	..	16,01,55,150	2,09,97,012
4	15	9½	87,184	March 1891	..	87,184	..	4,03,413	87,184
5	85	..	1,77,446	1893	..	1,77,446	..	21,26,926	1,77,446
6 Kalingarayana anicut system ..	62½	..	1,80,486	1893	..	1,80,486	..	8,53,643	1,80,486
7 Vridhachalam anicut system ..	33	16	1,08,204	31-3-1893	..	1,08,204	..	7,29,739	1,08,204
8 Chembarambakkam anicut system ..	10-7/8	7½	7,64,143	31-3-1893	..	7,64,143	..	4,07,553	7,64,143
9 Marudur anicut system ..	29	7½	60,122	1893	..	60,122	..	43,88,626	60,122
10 Pennar river canal system ..	26½	455-1/3	70,81,444	31-3-1894	1860-61	70,62,724	..	1,23,45,495	70,62,724
11 Arankota channel system ..	24	..	1,44,445	31-3-1894	..	1,44,445	..	1,43,009	1,44,445
12 Tirukkoyilur anicut system ..	137	28½	3,99,190	31-3-1895	..	3,99,190	..	8,11,366	3,99,190
13 Shattatope anicut system ..	41	149	10,89,561	31-3-1895	..	10,89,561	..	49,43,603	10,89,561
14 Cheyyar anicut system ..	61	120	5,89,999	31-3-1896	..	5,39,999	..	62,840	6,02,689
15	104	78	3,08,918	31-3-1896	..	86,373	..	20,563	86,373
16	152	118	1,08,35,654	31-3-1897	..	3,08,918	..	13,49,458	3,08,918
17	388	2,115	2,30,89,729	31-3-1898	1896-97	1,08,35,654	..	42,11,221	1,08,35,654
18	6½	16½	65,715	1899	1895-96	2,26,88,532	..	18,83,19,663	2,26,88,532
19 Nandiyar channel system ..	383	620½	30,01,669	30-6-1903	..	30,01,669	..	53,622	65,715
20 Lower Coleroon anicut system ..	37	294	58,57,175	31-10-1913	..	58,52,861	..	1,44,12,594	30,01,669
21 Kistna East Bank canal extension scheme ..	..	44-5/8	17,12,876	28-2-1934	1917-18	17,03,913	..	16,65,349	58,52,861
22 Polavaram island project ..	..	594½	6,81,60,501	30-0-1934	1929-30	6,45,62,405	..	..	18,89,609
23 Carvery-Mettur project ..	..	74½	45,24,782	..	1932-33	41,62,183	..	..	10,29,96,912
24 Kattalai scheme ..	..	..	..	..	1929-30	21,28,378	..	..	62,80,556
Total, A. Irrigation—1. Productive Works.	3,264-3/8	9,528-7/12	16,15,59,292	..	..	15,53,39,733	4,08,11,21½	38,07,27,418	19,61,50,949

C-II.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works for, and up to the end of, 1945-46—*cont.*

Number work.	Name of works.	A. IRRIGATION WORKS—cont.										1. PRODUCTIVE WORKS—cont.			
		Gross receipts (direct and indirect).	Working expenses (direct and indirect).	Net revenue.	Percentage on capital outlay (column (7)).	Percentage on sum-at-charge (column (10)).	Interest.	Net profit.	Net loss.	Area irrigated.	Percentage of working expenses to receipts (column (12) to (11)).				
		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)				
		RS.	RS.	RS.			RS.	RS.	RS.	ACS.					
1	Canvey delta system	16,32,876	4,25,661	12,13,215	13-94	13-94	3,77,049	8,36,166	..	10,70,361	25-97				
2	Srivalkuntam ancient system ..	1,63,172	1,29,871	53,301	1-88	1-88	75,036	..	41,735	38,725	79-50				
3	Godavari delta system	48,07,809	22,72,808	25,35,001	12-07	12-07	3,30,733	17,04,268	..	12,29,095	47-27				
4	Mahamathur ancient system ..	21,975	9,306	12,669	14-53	14-53	3,828	8,841	..	4,900	42-35				
5	Thadapalli channel system	99,425	23,916	75,509	42-55	42-55	7,487	68,022	..	23,598	24-05				
6	Kalingasayan channel	57,092	24,446	32,646	18-09	18-09	7,019	24,727	..	22,914	42-82				
7	Vridhaachalam ancient system ..	38,931	13,408	25,523	23-59	23-59	4,686	20,837	..	9,894	34-44				
8	Chembarambakkam tank	41,383	12,261	29,122	3-81	3-81	29,311	..	1-9	19,600	29-63				
9	Marudur ancient system	98,417	29,383	69,034	11-58	11-58	2,642	66,392	..	27,870	29-84				
10	Pennar river canal system	6,38,278	1,79,592	4,58,686	6-49	6-49	2,71,776	1,86,910	..	1,77,805	28-14				
11	Arunkotes channel	23,241	8,521	14,720	10-19	10-19	6,335	8,385	..	5,797	36-66				
12	Tirukkoyilur ancient system ..	82,362	1,01,316	— 19,454	— 4-87	— 4-87	17,514	..	36,968	34,706	1-3-62				
13	Shattatope ancient system	1,56,048	46,957	1,09,091	10-01	10-01	46,345	62,746	..	40,019	30-09				
14	Cheyayr ancient system	76,397	83,381	— 6,984	— 1-20	— 1-16	23,616	..	30,600	32,753	109-14				
15	Cumbum tank	1,854	4,316	— 2,462	— 2-85	— 2-85	3,779	..	6,241	6,086	232-80				
16	Polveiy ancient system	37,862	71,809	— 33,947	— 11-17	— 11-17	13,280	..	47,227	25,871	189-66				
17	Petiyar system	9,58,667	3,46,084	6,12,583	5-65	5-65	4,70,908	1,41,675	..	2,01,852	36-10				
18	Kistna delta system	52,84,089	17,27,642	35,56,427	15-67	15-67	9,90,521	25,95,906	..	20,02,337	43-70				
19	Nandiyar channel system	18,068	7,868	10,203	15-53	15-53	2,845	7,358	..	9,940	48-59				
20	Lower Coleroon ancient system ..	5,08,028	2,00,328	3,02,700	10-08	10-08	1,31,104	1,71,596	..	1,23,161	39-32				
21	Kistna east bank canal extension scheme ..	6,16,048	1,61,767	4,54,281	7-76	7-76	2,57,906	1,96,375	..	99,864	26-26				
22	Pokavaram island project	1,19,017	86,210	32,807	1-93	1-74	75,393	..	42,586	23,277	72-43				
23	Canvey-Metiar project	16,95,371	5,62,766	11,32,585	1-75	1-10	28,61,481	..	17,28,896	2,31,963	33-19				
24	Kattalal scheme	1,79,642	42,500	1,37,142	3-30	2-17	1,31,969	..	44,527	72,265	238-77				
	Total, A. Irrigation—1. Productive Works.	1,73,57,052	65,72,654	1,07,84,398	6-94	5-50	66,83,463	41,20,985	..	45,34,713	37-87				

C-II.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works for, and up to the end of, 1945-46—cont.

General financial results to end of 1945-46.

Number of work (1)	Name of work.	Mileage in operation.		Estimated cost of construction (direct and indirect).	Date of completion of work.	Date when system first came into operation.	Total capital outlay (direct and indirect).	Accumulated arrears of interest.	Accumulated surplus revenues.	Total sum-charge column (7) plus column (9).
		Main canals and branches.	Distribution.							
		(3)	(4)	(5)	(6-a)	(6-b)	(7)	(8)	(9)	(10)
		MILES.	MILES.	RS.			RS.	RS.	RS.	RS.
A. IRRIGATION WORKS—cont.										
2. UNPRODUCTIVE WORKS.										
1	Turnool-Candapah canal	417-5/8	294-7/8	2,34,01,082	Not known.	1882-83	2,34,01,052	4,77,37,059	..	7,11,38,141
2	Barur tank	11	26	4,52,087	31-3-1891	1897-88	4,52,087	4,60,730	..	9,12,76,767
3	Vallur anicut	5-5/8	8	18,66,282	31-3-1893	..	18,66,282	60,147	..	19,26,429
4	Madras Water-supply and Irrigation system.	11 1/2	25	6,92,074	1893	..	6,92,074	30,90,772	..	49,19,690
5	Pelandarai anicut system	39	227	24,89,275	31-3-1896	..	24,89,275	4,73,586	..	11,65,910
6	Palar anicut system	167	279-3/8	2,89,226	31-3-1900	..	2,89,226	17,74,521	..	42,61,986
7	Chinnole minor rivers system	261	28-7/16	6,09,601	31-3-1902	1898-99	6,09,601	2,71,111	..	2,89,226
8	Muniyera system	..	6-7/8	1,40,004	31-3-1903	1898-99	1,40,004	2,61,102	..	8,31,012
9	Dondapah tank	12	..	63,353	31-3-1907	1912-13	63,353	8,60,578	..	3,16,196
10	Yerur tank	..	..	4,04,727	31-3-1907	1898-99	4,04,727	8,60,578	..	1,21,911
11	Sactetur system	..	..	1,31,143	31-3-1907	1912-13	1,31,143	1,58,484	..	13,44,902
12	Aznakur tank	3 1/2	4 1/2	71,664	31-3-1908	1912-13	71,664	1,80,489	..	2,23,657
13	Jangamaeswarapuram tank	..	2-7/8	3,11,883	31-3-1910	1911-12	3,11,883	1,80,482	..	1,55,153
14	Anamasamudram-Beraseru tank	..	..	2,18,649	31-3-1911	1910-11	2,18,649	3,24,601	..	2,04,025
15	Hallipuram tank	7 1/2	..	1,29,340	31-3-1911	1909-10	1,29,340	2,87,203	..	6,36,484
16	Ponnalur tank	..	..	18,02,487	31-12-1913	1909-10	17,99,343	4,99,812	..	4,99,812
17	Mazavall river system	64 1/2	47 1/2	3,84,921	31-3-1918	1921-22	3,84,921	1,89,587	..	2,68,827
18	Venkaturam tank	..	..	2,65,491	31-3-1919	1921-22	2,65,491	4,62,217	..	23,28,386
19	Bhavanasi tank	6-3/8	..	2,69,707	31-3-1919	1920-21	2,69,707	2,87,893	..	8,47,138
20	Pellapur tank	..	..	3,39,276	31-3-1919	1920-21	3,39,276	2,64,682	..	5,58,384
21	Panpathi reservoir	..	..	8,04,486	31-10-1919	1924-25	8,04,486	6,10,132	..	6,34,338
22	Siddapur tank	6-7/8	9	1,09,890	31-10-1919	1927-22	1,09,890	9,04,293	..	17,09,279
23	Nagavaram anicut and supply channel	2	..	24,20,610	31-12-1919	1927-22	24,20,610	2,19,202	..	2,19,202
24	Kopad reservoir system	..	..	1,11,074	30-4-1921	1927-22	1,11,074	4,62,013	..	4,62,013
25	Kanayamkulayam anicut	10 1/2	84	24,20,610	30-4-1921	1924-25	24,20,610	2,71,751	..	2,71,751
26	Toludur reservoir project	31 1/2	40	24,20,610	31-10-1925	In progress.	24,20,610	4,173,889	..	4,173,889
27	Tippur canal project	..	..	5,93,900	Do.	In progress.	5,93,900	16,11,068	..	16,11,068
28	Tippur canal project	..	..	5,92,100	Do.	In progress.	5,92,100	2,78,594	..	8,63,210
29	Tippur canal project	..	..	1,52,075	Do.	Do.	1,47,291	4,95,578	..	10,85,668
30	Tippur canal project	..	..	2,11,068	Do.	Do.	1,52,183	9,610	..	1,98,516
31	Tippur canal project	..	..	1,12,459	Do.	Do.	14,475	1,61,793	..	1,61,793
32	Maladevarpuram tank project	..	..	9,11,34,000	Do.	Do.	12,79,823	15,729	..	15,729
33	Tungabhadra project	..	..	..	..	..	..	28,813	..	13,08,636
Total, A. Irrigation Works—2. Unproductive Works.		1,329-7/8	896-15/16	13,34,08,226	..	..	4,83,79,979	6,41,38,960	7,95,384	10,75,18,939
Total, A. Irrigation Works.		4,594 1/2	10,425-25/48	29,49,68,508	..	..	19,87,19,712	10,49,50,176	39,15,22,302	30,36,69,888
B. NAVIGATION, EMBANKMENT AND DRAINAGE WORKS.										
2. UNPRODUCTIVE WORKS.										
1	Vedaranyam canal	31 1/2	..	1,36,492	31-3-1893	..	1,36,492	8,21,440	..	9,57,932
2	Buckingham canal	262	..	96,44,500	March 1897	..	96,44,500	2,79,49,267	..	3,76,37,529
Total, B. Navigation, etc., Works—2. Unproductive Works.		293 1/2	..	97,80,992	..	..	97,84,694	2,87,70,707	..	3,84,95,401
Total, B. Navigation, etc., Works.		293 1/2	..	97,80,992	..	..	97,84,694	2,87,70,707	..	3,84,95,401
Total, B. Navigation, etc., Works.		4,888	10,425-25/48	30,47,49,440	..	..	20,84,44,406	13,37,20,883	39,15,22,802	34,21,66,269

C-II.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works for, and up to the end of, 1945-46—cont.

Financial results of the year 1945-46.

Name of works.	Gross receipts (direct and indirect).	Working expenses (direct and indirect).	Net revenue.	Percentage on capital outlay [column (7)].	Percentage at-chance [column (10)].	Interest.	Net profit.	Net loss.	Area irrigated.	Percentage of working expenses to receipts [columns (12) to (14)].
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
A. IRRIGATION WORKS—cont.										
2. UNPRODUCTIVE WORKS—cont.										
1 Kurnool-Cuddapah canal	3,68,927	1,72,600	1,96,327	0.84	0.28	10,49,686	..	8,53,369	88,289	46.78
2 Barr tank	21,866	8,679	12,987	2.87	1.35	18,264	..	6,577	5,385	40.62
3 Vallur ancient	4,563	1,445	3,018	2.09	0.28	7,329	..	228	5,022	31.69
4 Madras Water-supply and Irrigation system.	64,404	18,848	45,556	2.44	0.12	73,299	..	27,750	10,381	29.28
5 Pelandari ancient system	63,432	25,738	37,694	3.45	0.23	25,949	8,745	..	15,420	40.58
6 Palur ancient system	1,28,145	3,91,818	-2,63,675	-10.59	-6.19	1,06,674	..	3,70,347	98,913	305.76
7 Chittoor minor rivers system	1,03,725	86,088	17,637	6.11	0.11	12,519	5,148	..	90,871	82.97
8 Munyuru system	57,119	17,965	39,154	6.42	0.44	26,064	13,090	..	10,171	31.45
9 Dondapad tank	1,879	7,083	-5,204	-3.70	-1.41	5,615	..	10,789	438	375.36
10 Yeru tank	4,408	2,506	1,902	0.28	0.14	20,120	..	2,966	935	135.53
11 Sagile u system	1,294	1,294	..	0.64	0.27	5,088	..	27,124	3,700	-58.89
12 Attakur tank	665	562	103	0.14	0.07	2,756	..	4,361	504	65.65
13 Jangamaheerapuram tank	2,727	40	2,767	0.03	0.07	3,226	..	2,693	270	84.51
14 Anamasamudram-Berapur tank	876	783	93	0.03	0.015	12,545	..	12,452	585	39.38
15 Hajipuram tank	4,858	1,939	3,117	1.43	0.62	8,684	..	3,567	771	28.44
16 Markapur tank	4,982	8,291	-3,309	1.28	0.62	78,778	..	32,402	1,403	66.66
17 Nagavalli river system	92,963	46,583	46,380	2.58	0.20	16,751	..	14,941	333	50.11
18 Venkatapuram tank	2,944	7,384	-4,440	0.47	0.26	11,448	..	12,803	617	124.42
19 Bhavanasi tank	3,120	9,891	-6,771	0.54	0.04	10,764	..	10,534	551	92.63
20 Yellatur tank	4,351	1,891	2,560	0.09	0.09	14,750	..	15,633	..	239.06
21 Pallepatti reservoir	6,951	2,639	4,312	0.26	0.09	35,597	..	31,285	972	37.37
22 Siddapur tank	1,442	2,442	-1,000	0.54	0.25	4,828	..	5,628	999	169.35
23 Nagavalli ancient and supply channel	59,595	10,839	48,756	2.00	0.46	1,04,081	..	56,425	7,007	18.44
24 Kanyampalayam ancient	2,808	1,815	1,093	1.70	0.69	4,825	..	4,825	30.21	30.21
25 Tholud reservoir project	1,438	51,857	-50,419	2.21	0.09	1,06,652	..	14,356	25,543	35.96
26 Tippayapalem project	1,438	1,409	29	0.13	0.09	25,480	..	24,716	377	71.42
27 Basavanahalli channel	1,04,769	14,760	89,379	15.15	8.23	26,230	63,149	..	15,955	14.20
28 Duvuluru project	34	3,100	-3,066	-2.08	-1.58	6,599	..	9,665	..	9117.65
29 Unthorahalli scheme	..	..	..	..	..	6,252	..	6,252	..	..
30 Mahadevarpuram tank project	..	..	..	..	..	609	..	609	..	..
31 Mahadevarpuram tank project	..	..	..	..	..	27,919	..	27,919	..	..
32 Tungabhadra project	..	..	..	..	..	18,67,738	..	15,09,375	4,09,515	71.26
Total, A. Irrigation Works—2. Unproductive Works	12,47,013	8,89,650	3,58,363	0.83	0.33	85,31,201	28,11,560	..	49,44,228	40.11
Total, A. Irrigation Works	1,86,04,065	74,61,304	1,11,42,761	5.61	3.67	..	..	..	..	..
B. NAVIGATION, EMBANKMENT AND DRAINAGE WORKS.										
2. UNPRODUCTIVE WORKS.										
1 Vedaranyam canal	1,064	5,327	-4,273	-3.13	-0.45	5,971	..	10,244	..	504.25
2 Buckingham canal	1,37,043	5,07,086	-3,70,043	-3.86	-0.99	4,07,767	..	7,77,310	..	370.27
Total, B. Navigation, etc. Works—2. Unproductive Works	1,38,097	5,12,413	-3,74,316	-3.85	-0.97	4,13,738	..	7,88,054	..	371.05
Total, B. Navigation, etc. Works	1,38,097	5,12,413	-3,74,316	-3.85	-0.97	4,13,738	..	7,88,054	..	371.05
Total, Construction of Irrigation, etc. Works	1,87,42,162	79,73,717	1,07,68,445	5.17	3.15	89,44,939	18,23,506	..	..	42.54

C-III.—Demands and Realizations during the year 1945-46 in the Madras Presidency—Irrigation, Navigation, Embankment and Drainage Works (classified as "Productive" and "Unproductive") for which Capital and Revenue Accounts are kept.

Serial number and works or systems.	Balance of demands unrealized at the commencement of the year.	Demand for the year.	Total.	Deduct remissions including cash refunds.	Net total.	Deduct amount realized at the close of the year.	Actual total receipts of the year.	Deduct share due to old irrigation.	Net amount due to improvements.
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A. IRRIGATION WORKS.									
1. PRODUCTIVE WORKS.									
1 Cauvery delta system	..	53,35,229	53,35,229	60,634	54,25,863	..	54,25,863	37,86,987	16,38,876
2 Srivallur ancient system	..	21,40,447	21,40,447	1,725	2,42,172	..	2,42,172	79,000	1,3,172
3 Godavari delta system	..	31,12,867	31,12,867	17,38,952	49,31,819	..	49,31,819	1,24,000	48,07,809
4 Mahanadi ancient system	..	25,348	25,348	627	25,975	..	25,975	4,000	21,975
5 Tadapalli channel system	..	1,75,413	1,75,413	12	1,75,425	..	1,75,425	70,000	99,425
6 Kallagur-an channel system	..	1,41,840	1,41,840	212	1,42,052	..	1,42,052	86,000	57,052
7 Vridhachalam ancient system	..	45,988	45,988	1,443	47,431	..	47,431	8,600	38,831
8 Chemburam tank system	..	51,442	51,442	5,441	56,883	..	56,883	16,000	40,883
9 Pennar ancient system	..	2,12,955	2,12,955	462	2,13,417	..	2,13,417	1,16,000	98,417
10 Pennar river canal system	..	8,78,804	8,78,804	15,474	8,94,278	..	8,94,278	2,56,000	6,38,278
11 Arkonota channel system	..	42,241	42,241	566	42,807	..	42,807	19,000	23,807
12 Tirukoyilur ancient system	..	1,41,766	1,41,766	1,108	1,42,874	..	1,42,874	60,000	82,874
13 Shattope ancient system	..	1,74,940	1,74,940	3,051	1,77,991	..	1,77,991	20,000	1,57,991
14 Cheryar ancient system	..	1,12,346	1,12,346	3,715	1,16,061	..	1,16,061	39,000	77,061
15 Chembur tank system	..	27,641	27,641	4,213	31,854	..	31,854	30,000	1,854
16 Pomey ancient system	..	34,567	34,567	41,395	75,962	..	75,962	30,000	45,962
17 Periyar project system	..	11,66,426	11,66,426	6,241	11,72,667	..	11,72,667	2,04,000	9,68,667
18 Kistna delta system	..	43,47,246	43,47,246	10,06,323	53,53,569	..	53,53,569	71,000	52,82,569
19 Nandiyar channel system	..	34,631	34,631	457	35,088	..	35,088	17,000	18,088
20 Lower Coleroon ancient system	..	6,55,489	6,55,489	2,689	6,58,178	..	6,58,178	1,55,000	5,03,178
21 Kistna East Bank canal extension scheme	..	5,43,840	5,43,840	98,008	6,36,348	..	6,36,348	20,300	6,16,048
22 Polavaram Island project	..	1,15,272	1,15,272	3,715	1,19,017	..	1,19,017	..	1,19,017
23 Cauvery-Mettur project	..	17,31,229	17,31,229	64,113	17,95,342	..	17,95,342	99,971	16,95,371
24 Kattali scheme	..	4,31,802	4,31,802	2,340	4,34,142	..	4,34,142	2,54,000	1,79,142
Total, A. Irrigation Works—1. Productive Works	..	1,88,43,279	1,88,43,279	40,91,631	2,29,34,910	..	2,29,34,910	55,77,858	1,73,57,052
2. UNPRODUCTIVE WORKS.									
1 Kurnool-Cuddapah canal	..	4,04,151	4,04,151	647	4,04,799	..	4,04,799	35,872	3,68,927
2 Barr tank	..	26,582	26,582	704	27,286	..	27,286	5,900	21,386
3 Vallur ancient	..	8,931	8,931	632	9,563	..	9,563	5,000	4,563
4 Madras water-supply and irrigation system	..	74,937	74,937	467	75,404	..	75,404	11,000	64,404
5 Pelandari ancient system	..	64,534	64,534	1,605	66,139	..	66,139	8,000	58,139
6 Palur ancient system	..	1,41,394	1,41,394	1,171	1,42,565	..	1,42,565	1,25,000	1,19,565
7 Chittoor minor rivers system	..	1,95,756	1,95,756	2,969	1,98,725	..	1,98,725	95,000	1,03,725
8 Munyuru ancient system	..	56,935	56,935	2,684	59,619	..	59,619	2,500	57,119
9 Dondapad tank	..	1,879	1,879	2,684	3,563	..	3,563	425	3,138
10 Yeru tank	..	2,668	2,668	3,689	6,357	..	6,357	17,800	-11,443
11 Sagile u system	..	9,768	9,768	..	..	..	..	..	..

C-III.—Demands and Realizations during the year 1945-46 in the Madras Presidency—Irrigation, Navigation, Embankment and Drainage Works (classified as "Productive" and "Unproductive") for which Capital and Revenue Accounts are kept—cont.

Serial number and works or systems.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Balance of demands realized at the commencement of the year.	Demand for the year.	Total.	Deduct remissions including cash refunds.	Net total.	Deduct amount unrealized at the close of the year.	Actual total receipts of the year.	Deduct share due to old irrigation.	Net amount due to improvements.
		RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
A. IRRIGATION WORKS—cont.										
2. UNPRODUCTIVE WORKS—cont.										
13. Almar tank	..	..	7,096	7,096	275	1,971	..	1,971	..	1,971
14. Jangamaheswarapuram tank	..	..	1,165	1,165	..	1,165	..	1,165	..	1,165
15. Anamasamudram-Beraperu tank	..	..	3,080	3,080	3,007	873	..	873	..	873
16. Balipuram tank	..	..	2,643	2,643	1,767	876	..	876	..	876
17. Ponalur tank	..	..	4,356	4,356	..	4,356	..	4,356	..	4,356
18. Markapur tank	..	..	7,089	7,089	..	7,112	..	7,112	..	7,112
19. Nagavalli river system	..	..	1,28,769	1,28,769	1,596	1,30,365	..	1,30,365	..	1,30,365
20. Venkatapuram tank	..	..	2,944	2,944	..	2,944	..	2,944	..	2,944
21. Bhavanasi tank	..	..	5,916	5,916	..	5,916	..	5,916	..	5,916
22. Vellalur tank	..	..	2,647	2,647	..	3,121	..	3,121	..	3,121
23. Padmapati reservoir project	..	..	635	635	..	635	..	635	..	635
24. Nagavaram anicut and supply channel	..	..	5,558	5,558	1,393	6,951	..	6,951	..	6,951
25. Moped reservoir system	..	..	3,698	3,698	..	3,698	..	3,698	..	3,698
26. Kaniyampalayam anicut	..	..	60,028	60,028	..	60,028	..	60,028	..	60,028
27. Theolur reservoir anicut	..	..	2,698	2,698	..	2,698	..	2,698	..	2,698
28. Thiruvananthapuram project	..	..	49,812	49,812	4,911	54,723	..	54,723	..	54,723
29. Thiruvananthapuram channel	..	..	2,673	2,673	..	2,673	..	2,673	..	2,673
30. Duvaluru scheme	..	..	99,651	99,651	4,518	1,04,169	..	1,04,169	..	1,04,169
Total, A. Irrigation Works—2. Unproductive Works.	..	..	14,56,491	14,56,491	1,18,928	16,05,419	..	16,05,419	3,58,406	12,47,013
Total, A. Irrigation Works	..	..	2,02,99,770	2,02,99,770	42,40,559	2,45,40,329	..	2,45,40,329	59,36,264	1,86,04,065

B. NAVIGATION EMBANKMENT AND DRAINAGE WORKS.

2. UNPRODUCTIVE WORKS.

1. Vedaranyam canal	..	..	1,054	1,054	..	1,054	..	1,054	..	1,054
2. Buckingham canal	..	..	1,37,043	1,37,043	..	1,37,043	..	1,37,043	..	1,37,043
Total, B. Navigation, etc., Works—2. Unproductive Works.	..	..	1,38,097	1,38,097	..	1,38,097	..	1,38,097	..	1,38,097
Total, B. Navigation, etc., Works	..	..	1,38,097	1,38,097	..	1,38,097	..	1,38,097	..	1,38,097
Total, Construction of Irrigation, etc., Works	..	..	2,04,37,867	2,04,37,867	42,40,559	2,46,78,426	..	2,46,78,426	59,36,264	1,87,42,162

C-IV.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works (classified as "Productive" and "Unproductive") for which Capital and Revenue Accounts are kept in the Madras Presidency for the year 1945-46 based on the assessment for the year.

Capital outlay (direct and indirect) to end of the year.	Revenue assessed during the year.									
	Works or systems.			Direct revenue.			Indirect revenue and land revenue due to operations of canal.			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
A. IRRIGATION WORKS.										
1. PRODUCTIVE WORKS.										
1 Cauvery delta system	87,00,831	..	..	23,409	6,110	13,223	42,742	53,83,489	368	54,28,863
2 Srivakuntam anicut system	17,75,063	..	..	4,018	..	7,520	11,538	2,30,712	78	2,42,172
3 Godavari delta system	2,09,97,012	..	..	4,280	2,87,419	76,675	3,67,354	45,75,437	10,982	49,31,809
4 Mahanadi anicut system	87,184	..	..	91	..	72	163	25,837	25	25,915
5 Thadepalli channel system	1,77,446	..	..	..	..	3,229	3,229	1,72,303	107	1,76,425
6 Kallinarayan channel system	1,80,486	..	..	..	..	4,711	4,711	1,37,514	133	1,42,092
7 Vridhachalam anicut system	1,08,204	..	..	..	..	22	966	46,465	..	47,431
8 Chembarambakkam tank system	7,64,143	..	..	..	..	705	705	58,290	1,612	59,893
9 Marudur anicut system	60,122	..	..	279	..	3,237	3,516	2,09,901	..	2,13,417
10 Pennar river canals system	70,62,724	..	..	94	800	5,647	6,541	8,87,837	100	8,94,278
11 Arunkola channel system	1,44,445	..	..	..	..	1,582	1,582	40,659	..	42,241
12 Tirukoyilur anicut system	3,96,190	..	..	1,000	..	1,748	1,748	1,40,614	..	1,42,362
13 Shadatope anicut system	10,89,561	..	..	563	11	304	878	1,75,170	..	1,76,948
14 Chervay anicut system	5,89,999	..	..	247	..	1,633	1,880	1,13,517	..	1,15,397
15 Cumbum tank system	86,373	..	..	..	..	..	..	31,854	..	31,854
16 Polney anicut system	3,03,918	..	..	1,000	..	155	255	75,707	..	75,962
17 Periyar system	1,08,35,654	..	..	6,572	90	18,494	25,156	11,37,994	483	11,62,667
18 Kistna delta system	2,26,88,532	..	..	7,823	2,09,187	1,16,416	3,33,431	56,27,442	5,804	53,55,069
19 Nandiyar channel system	65,715	..	..	886	31	84	1,001	34,087	..	35,088
20 Lower Coleroon anicut system	80,01,669	..	..	5,663	166	7,440	13,269	6,44,861	102	6,58,028
21 Kistna east bank canal extension system	58,52,861	..	..	2,115	2,115	19,184	21,299	6,15,224	175	6,36,348
22 Polavaram island system	17,05,913	..	..	276	87	885	1,248	1,17,769	..	1,19,017
23 Cauvery-Mettur system	6,45,62,405	..	..	9,378	146	1,10,445	1,19,837	16,75,092	187	17,95,342
24 Kattalai system	41,52,183	..	..	7,068	146	2,358	9,567	4,24,156	81	4,33,642
Total, A. Irrigation Works—1. Productive Works.	15,53,39,733	..	..	72,671	5,06,176	3,93,769	9,72,616	2,19,82,531	20,237	2,29,34,910

C-IV.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works (classified as "Productive" and "Unproductive") for which Capital and Revenue Accounts are kept in the Madras Presidency for the year 1945-46 based on the assessment for the year—cont.

Works or systems.	Revenue assessed during the year.									
	Capital outlay (direct and indirect) to end of the year.		Direct revenue.			Indirect revenue and land revenue due to operations of canal.		Less refunds of revenue.		Grand total.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A. IRRIGATION WORKS—cont.										
2. UNPRODUCTIVE WORKS—cont.										
8 Muniyeri system ..	6,09,601	..	..	669	..	2,880	3,549	56,070	..	59,619
9 Dondapad tank ..	1,40,004	..	..	..	..	..	..	1,879	..	8,879
10 Yerur tank ..	68,363	..	..	..	..	..	..	887	..	887
11 Sagileiru system ..	4,64,727	..	..	6	..	140	146	13,246	..	13,392
12 Annakur tank ..	1,25,403	..	..	10	..	190	200	1,771	..	1,971
13 Jangamaheswarapuram tank ..	71,664	..	..	..	..	..	..	1,165	..	1,165
14 Anamasamudram-Beraperu tank ..	73,573	..	..	..	..	..	..	873	..	873
15 Hajipuram tank ..	3,11,833	..	..	..	..	..	..	876	..	876
16 Ponnalur tank ..	2,18,649	..	..	..	..	..	..	4,366	..	4,366
17 Markapur tank ..	1,29,840	..	..	..	..	..	..	7,088	..	7,112
18 Nacavalli river system ..	17,99,243	..	..	..	..	..	..	1,28,019	..	1,31,869
19 Venkatapuram tank ..	3,84,921	..	..	..	..	2,336	2,336	2,943	..	2,944
20 Bhavanasi tank ..	2,65,491	..	..	..	..	..	..	5,916	..	5,916
21 Yellanur tank ..	2,69,707	..	..	..	..	..	..	3,121	..	3,121
22 Panjapatti reservoir system ..	3,39,276	..	..	..	..	..	..	..	..	635
23 Suddapur tank ..	8,04,486	..	..	..	..	635	635	6,946	..	6,951
24 Nacavaram anicut and supply channel ..	1,09,890	..	..	..	..	5	5	2,698	..	2,698
25 Mopad reservoir system ..	24,28,01	..	..	..	..	141	141	59,887	..	60,028
26 Kanniyampalayam anicut ..	1,11,074	..	..	..	..	..	..	2,698	..	2,698
27 Toludur reservoir system ..	26,22,781	..	..	1,216	..	1,884	3,100	1,51,665	42	1,54,723
28 Tippeyapalem project ..	5,84,216	..	..	..	..	1	1	2,672	..	2,673
29 Basavan a channel ..	5,89,780	..	..	114	..	..	114	1,04,055	..	1,04,169
30 Duvvaleri project ..	1,47,291	..	..	..	..	34	34	..	..	34
31 dithorabalis scheme ..	1,58,183	..	..	..	..	..	..	..	..	..
32 Mahadevapuram tank project ..	14,425	..	..	..	..	..	..	..	..	..
33 Tungabhadra project ..	12,79,823	..	..	..	..	..	..	..	..	..
Total, A. Irrigation Works—2. Unproductive Works ..	4,33,79,79	..	8,967	8,967	204	73,738	82,869	16,22,781	261	16,05,419
Total, A. Irrigation Works ..	19,87,19,712	..	81,628	81,628	5,46,380	4,67,507	10,55,515	2,35,05,312	20,498	2,45,40,329
B. NAVIGATION, EMBANKMENT AND DRAINAGE WORKS.										
2. UNPRODUCTIVE WORKS.										
1 Vedaranyam canal ..	1,36,432	..	..	15	1,039	10,476	1,054	..	..	1,054
2 Buckingham canal ..	95,88,262	..	..	1,185	1,26,335	..	1,37,946	..	903	1,37,043
Total, B. Navigation, etc., Works—2. Unproductive Works ..	97,24,694	..	..	1,150	1,27,374	10,476	1,39,000	..	903	1,38,097
Total, B. Navigation, etc., Works ..	97,24,694	..	..	1,150	1,27,374	10,476	1,39,000	..	903	1,38,097
Total Construction of Irrigation, etc., Works ..	20,84,44,406	..	82,778	82,778	6,33,764	4,77,983	11,94,515	2,35,05,312	21,401	2,46,78,426

C-IV.—Statement showing the Financial Results of Irrigation, Navigation, Embankment and Drainage Works (classified as "Productive" and "Unproductive") for which Capital and Revenue Accounts are kept in the Madras Presidency for the year 1945-46 based on the assessment for the year—cont.

Works or systems.	Revenue assessed during the year—cont.									
	Capital outlay (direct and indirect) to end of the year.		Direct revenue.			Indirect revenue and land revenue due to operations of canal.		Less refunds of revenue.		Grand total.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A. IRRIGATION WORKS.										
1. PRODUCTIVE WORKS.										
1 Cauvery delta system ..	37,86,987	..	16,38,876	14,37,465	10,10,804	4,25,661	39,89,398	12,18,215	..	13,94
2 Srivalkuntam anicut system ..	79,000	..	1,63,172	1,37,504	7,633	1,29,871	1,04,668	33,301	..	1,38
3 Godavari delta system ..	1,24,000	..	48,07,809	22,72,308	..	22,72,308	26,59,001	25,35,001	..	12,07
4 Mahanadi anicut system ..	4,000	..	21,975	10,146	..	840	15,829	12,669	..	14,53
5 Tadepalli channel system ..	76,000	..	99,425	28,427	4,511	23,916	1,46,998	75,609	..	42,85
6 Kallangarayan channel system ..	85,000	..	57,092	29,430	5,044	24,416	1,12,602	32,646	..	16,09
7 Vridhachalam anicut system ..	16,000	..	38,931	18,408	..	13,408	34,023	25,523	..	23,39
8 Chembrambakam tank system ..	1,15,000	..	41,883	18,199	..	12,261	39,184	28,122	..	3,81
9 Pennar anicut system ..	2,56,000	..	93,417	35,835	6,452	29,383	1,77,582	69,034	..	115,85
10 Pennar river canals system ..	19,000	..	6,33,278	2,12,312	32,720	1,79,592	6,51,966	14,720	..	6,49
11 Arunkota channel system ..	20,000	..	82,262	1,08,355	1,129	8,521	1,01,316	4,58,686	..	10,19
12 Tirukkoyilur anicut system ..	39,000	..	1,56,048	49,131	2,174	46,957	34,027	19,454	..	4,37
13 Shattatope anicut system ..	20,000	..	76,397	87,483	4,052	83,381	1,26,917	1,09,091	..	10,01
14 Cheyyar anicut system ..	30,000	..	1,854	5,499	1,183	4,316	27,984	6,984	..	2,85
15 Oombun tank system ..	30,000	..	37,862	75,770	3,961	71,809	26,355	33,947	..	11,17
16 Periyar system ..	2,04,000	..	9,58,667	3,81,639	17,27,642	3,46,084	7,81,028	6,12,683	..	5,65
17 Nandiyar channel system ..	17,000	..	52,84,069	17,27,642	..	17,27,642	36,27,427	35,56,437	..	15,67
18 Nandiyar channel system ..	17,000	..	18,083	12,124	4,239	7,835	22,964	10,203	..	15,53
19 Lower Ockeron anicut system ..	1,55,000	..	5,03,028	2,06,952	9,624	2,00,328	4,48,076	3,02,700	..	10,08
20 Kistna East Bank canal extension scheme ..	20,300	..	1,19,017	86,210	15,424	1,01,707	4,59,157	4,54,281	..	7,76
21 Polavaram Island project ..	..	..	1,19,017	86,210	..	86,210	32,307	2,807	..	1,93
22 Cauvery-Mettur project ..	99,971	..	16,95,371	5,77,355	15,069	5,02,756	12,17,487	11,32,585	..	1,75
23 Kattalai scheme ..	..	..	1,79,642	1,06,610	64,110	42,500	3,27,032	1,37,142	..	3,30
Total, A. Irrigation Works—1. Productive Works ..	55,77,858	..	1,73,57,952	78,09,635	12,36,981	65,72,654	1,51,25,275	1,07,84,398	6,94	1,51,25,275
2. UNPRODUCTIVE WORKS.										
1 Kurnool-Cuddapah canal ..	35,872	..	3,68,927	1,77,062	4,462	1,72,600	2,27,737	1,96,327	..	0,84
2 Barru tank ..	5,900	..	21,366	8,679	..	3,679	18,387	12,067	..	9,81
3 Vallur anicut system ..	11,000	..	64,404	28,838	1,438	1,438	6,680	3,118	..	4,09
4 Madras water-supply and irrigation system ..	3,000	..	63,432	4,194	..	4,194	52,355	45,549	..	5,45
5 Palair anicut system ..	1,25,000	..	1,28,145	3,95,722	154	25,738	40,340	37,694	..	10,59
6 Chittoor anicut system ..	95,000	..	1,03,725	91,487	3,904	3,904	1,42,577	17,667	..	6,41
7 Chittoor minor rivers system ..	2,500	..	57,119	18,246	..	17,965	41,373	39,154	..	8,72
8 Muniyeri system ..	..	..	1,179	7,053	..	7,053	..	5,174	..	3,70
9 Dondapad tank ..	..	..	425	640	..	640	247	178	..	0,28
10 Yerur tank ..	..	..	4,405	5,857	..	5,857	7,535	7,004	..	1,21
11 Sagileiru system ..	..	..	1,971	1,294	..	1,294	677	..	..	0,34
12 Annakur tank ..	..	..	..	..	..	..	..	..	..	..

2. UNPRODUCTIVE WORKS—cont.

2. a. ... on the Principal Navigable Canals in the Madras Province during the year 1945-46.

[illegible]

APPENDIX I

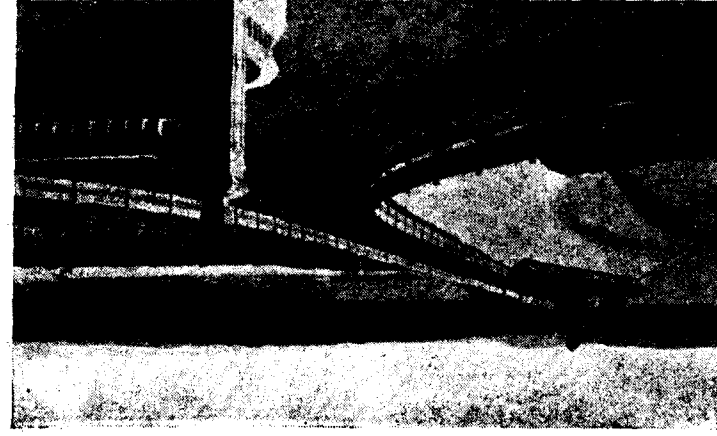
Description.	Godavari canals.										Kistna canals.									
	Total, Government and private.					Private.					Total, Government and private.					Private.				
	Quantity.					Quantity.					Quantity.					Quantity.				
	Up. (2)	Down. (3)	Total. (4)	Value. (5)	RS.	Up. (2)	Down. (3)	Total. (4)	Value. (5)	RS.	Up. (8)	Down. (9)	Total. (10)	Value. (11)	RS.	Up. (8)	Down. (9)	Total. (10)	Value. (11)	RS.
Boat traffic.																				
Cotton, raw and manufactured	450	395	845	6,85,500		845	457	1,302	6,85,500		166	405	561	10,07,686						
Woolen goods	140	417	557	32,63,700		557	457	1,014	32,63,700					79,608						
Dyes and tans	194	800	994	68,85,000		994	994	1,988	68,85,000		23	2	25	1,40,700						
Rice and paddy	70,590	19,706	90,296	2,11,45,760		90,296	90,296	1,80,592	2,11,45,760		61,631	29,598	91,229	2,06,47,391						
Other foodgrains	34,691	6,568	41,259	1,04,96,000		41,259	41,259	82,518	1,04,96,000		4,342	6,155	10,527	60,84,608						
Grains and skins	56	143	199	6,56,500		199	199	398	6,56,500		611	334	945	22,74,065						
Liquors	78	514	592	32,56,000		592	592	1,184	32,56,000		1,798	801	2,599	1,23,16,861						
Minerals	1,066	745	1,811	34,86,350		1,811	1,811	3,622	34,86,350		1,578	322	1,900	17,31,294						
Oils	10,970	6,561	17,531	3,85,68,200		17,531	17,531	35,062	3,85,68,200		1,578	322	1,900	1,40,42,340						
Oil-seeds	4,807	5,061	9,868	1,98,37,000		9,868	9,868	19,736	1,98,37,000		7,140	20,649	27,789	1,94,62,800						
Provisions	50,685	16,976	67,661	10,14,81,500		67,661	67,661	135,322	10,14,81,500		21,501	24,222	45,723	5,42,73,795						
Salt	17,145	1,370	18,515	14,81,280		18,515	18,515	37,030	14,81,280		1,211	234	1,445	1,66,175						
Spices	128	521	649	37,64,200		649	649	1,298	37,64,200											
Sugar and jaggery	4,880	10,617	15,497	47,66,140		15,497	15,497	30,994	47,66,140		3,151	805	3,956	20,72,294						
Tobacco	2,178	4,518	6,696	1,07,63,700		6,696	6,696	13,392	1,07,63,700		1,837	1,534	3,371	81,37,862						
Building materials	113,960	190,435	304,395	19,47,562		304,395	304,395	608,790	19,47,562		17,123	1,394	18,517	20,42,688						
Miscellaneous goods	36,096	23,871	59,967	3,34,96,860		59,967	59,967	119,934	3,34,96,860		22,499	45,773	68,272	81,70,575						
Timber	8,809	41,033	49,842	2,66,05,200		49,842	49,842	99,684	2,66,05,200		4,533	1,533	6,066	30,51,450						
Firewood	27,183	11,106	38,289	24,88,785		38,289	38,289	76,578	24,88,785		11,300	4,384	15,684	5,64,624						
Bamboos	202	23,583	23,785	47,57,000		23,785	23,785	47,570	47,57,000		4,683	2,210	6,893	11,35,335						
Coal and coke	431	144	575	15,62,250		575	575	1,150	15,62,250		432	18,874	19,306	28,95,900						
Iron and steel	85	214	299	2,46,675		299	299	598	2,46,675			72	72	3,5136						
Treasure																				
Kerosene oil																				
Cotton seeds																				
Poles																				
Scrapings																				
Total, Boat traffic.	379,434	324,026	744,808	27,75,47,762		744,808	744,808	1,489,616	27,75,47,762		165,699	246,609	432,310	16,03,25,430						
Raft traffic.																				
Timber in logs	40	40,329	40,369	2,01,84,500		40,369	40,369	80,738	2,01,84,500		2,208	3,280	5,488	28,37,280						
Square timber		3,175	3,175	6,35,000		3,175	3,175	6,350	6,35,000											
Peppers, broad gauge																				
Do, metre gauge		20	20	9,000		20	20	40	9,000											
Handings		15	15	4,950		15	15	30	4,950											
Sticks		24	24	1,440		24	24	48	1,440											
Firewood	24	22,780	22,804	45,60,800		22,804	22,804	45,608	45,60,800		1,173	435	1,608	2,44,416						
Timber and reeds																				
Total, Raft traffic.	64	66,343	66,407	2,53,09,690		66,407	66,407	132,814	2,53,09,690		3,381	4,290	7,671	28,45,596						
Grand total	379,498	390,371	811,215	30,29,43,412		811,215	811,215	1,622,029	30,29,43,412		169,080	270,899	439,979	16,31,71,026						



TUNGABHADRA SPILLWAY MODEL.



IRIGATION RESEARCH STATION, POONDI BUILDING (DURING CONSTRUCTION).



POONDI RESERVOIR.



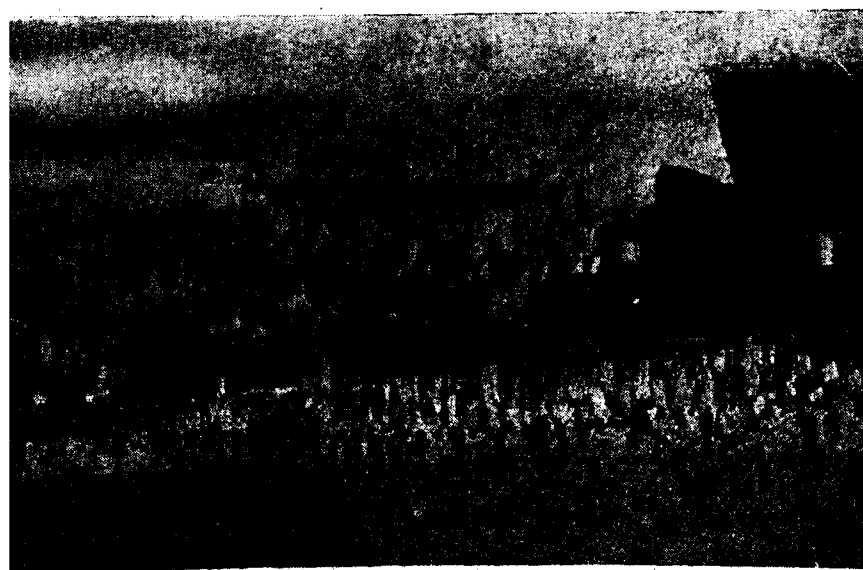
LAYOUT OF IRRIGATION RESEARCH STATION, POONDI.

the foreground is seen one of the measuring weirs for calculating the discharge of the pumps. In the center is the experimental trench No. 2 with lateral and central wells and the pumps and pipe lines discharging into common cisterns which are noted to measuring weirs. The shear leg in the distance indicates the position of the 36" pipe from which pumping experiments were carried out.

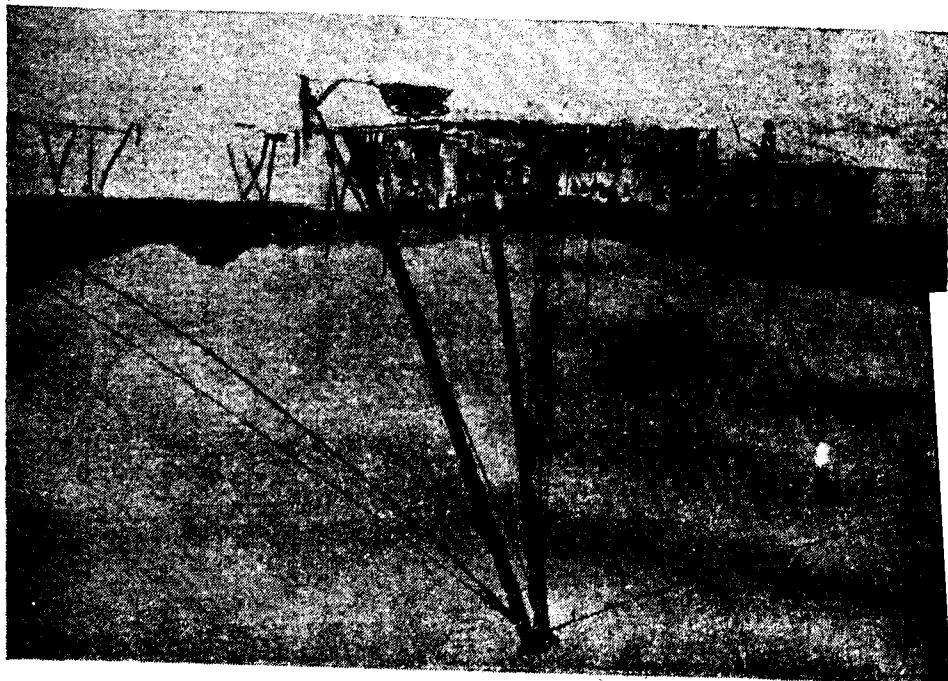
FROM TOP OF MAHARAJESWAR HILL (MIDDLE HILL) FACING UPSTREAM.



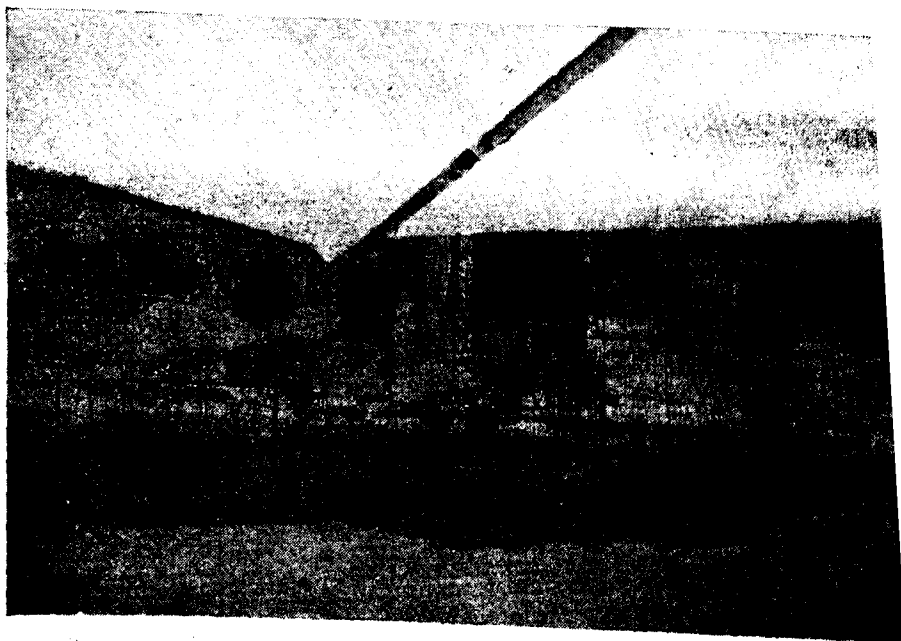
CANAL EXCAVATION AT MILE 162/5/330.

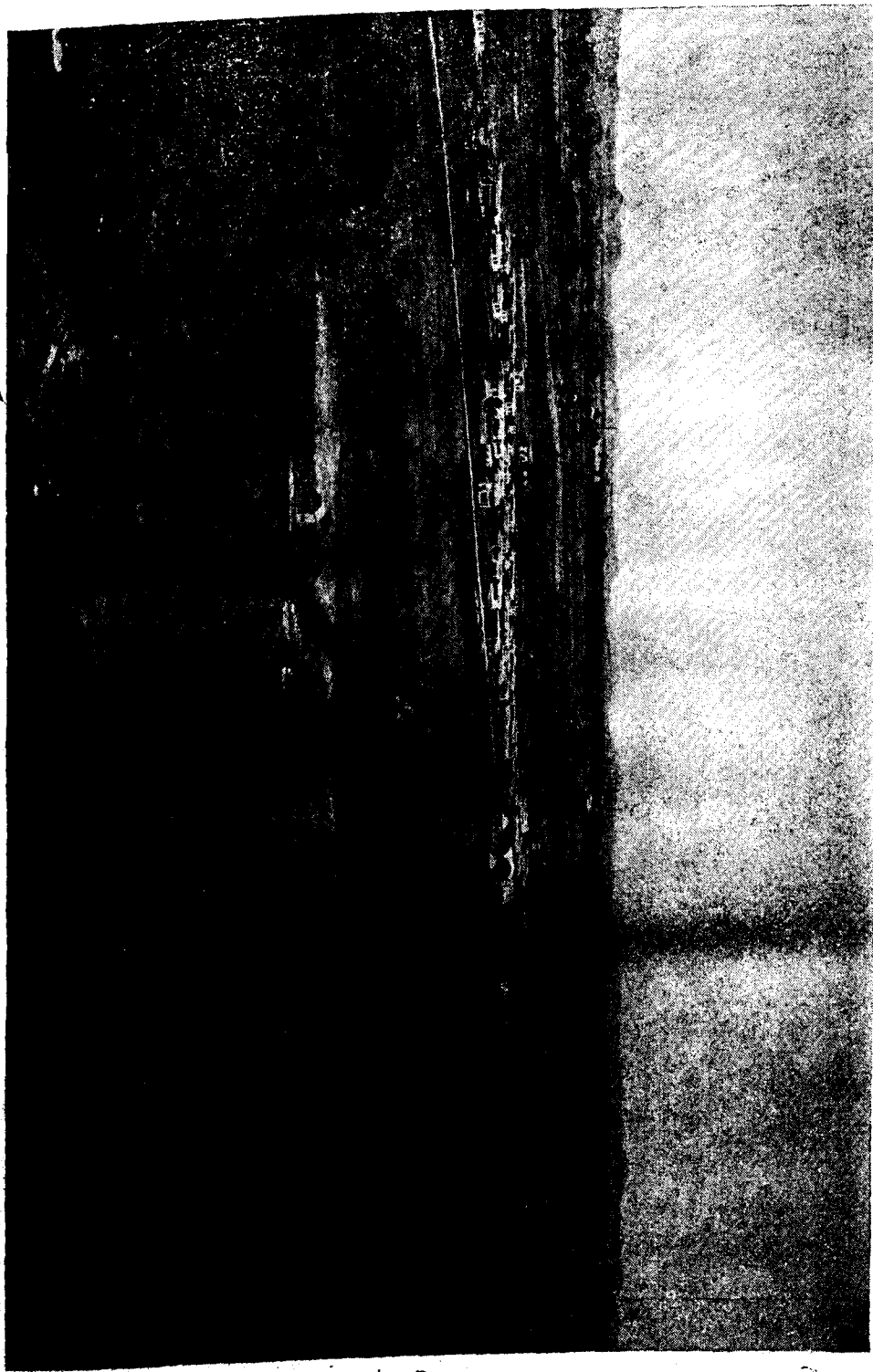


36" PIPE SHAFT TAKEN 64 FT. INTO SAND WITH 24" PIPE LET IN FOR PUMPING TESTS. TWO ELECTRICALLY DRIVEN PUMPS DELIVERING 1,200 GALLONS PER MINUTE.

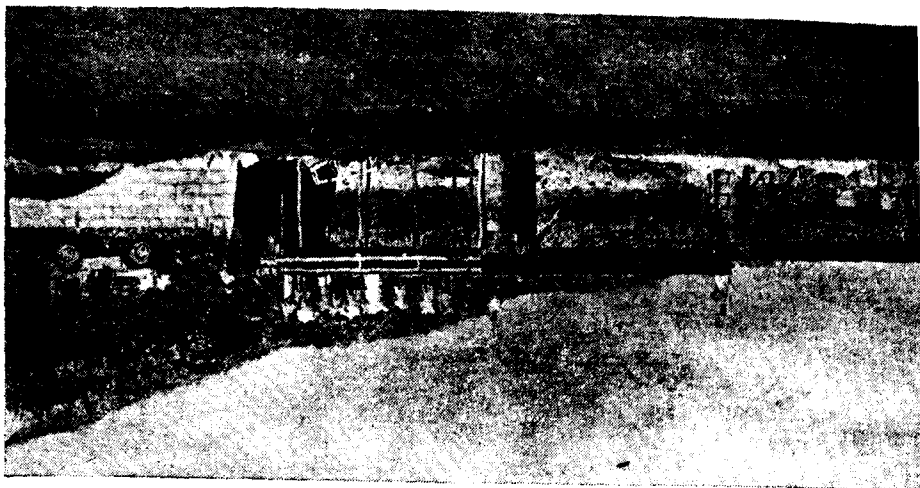


TRENCH NO. 2 SEEN FROM SOUTH WESTERN CORNER (I.E., NEAR WELL NO. 9).





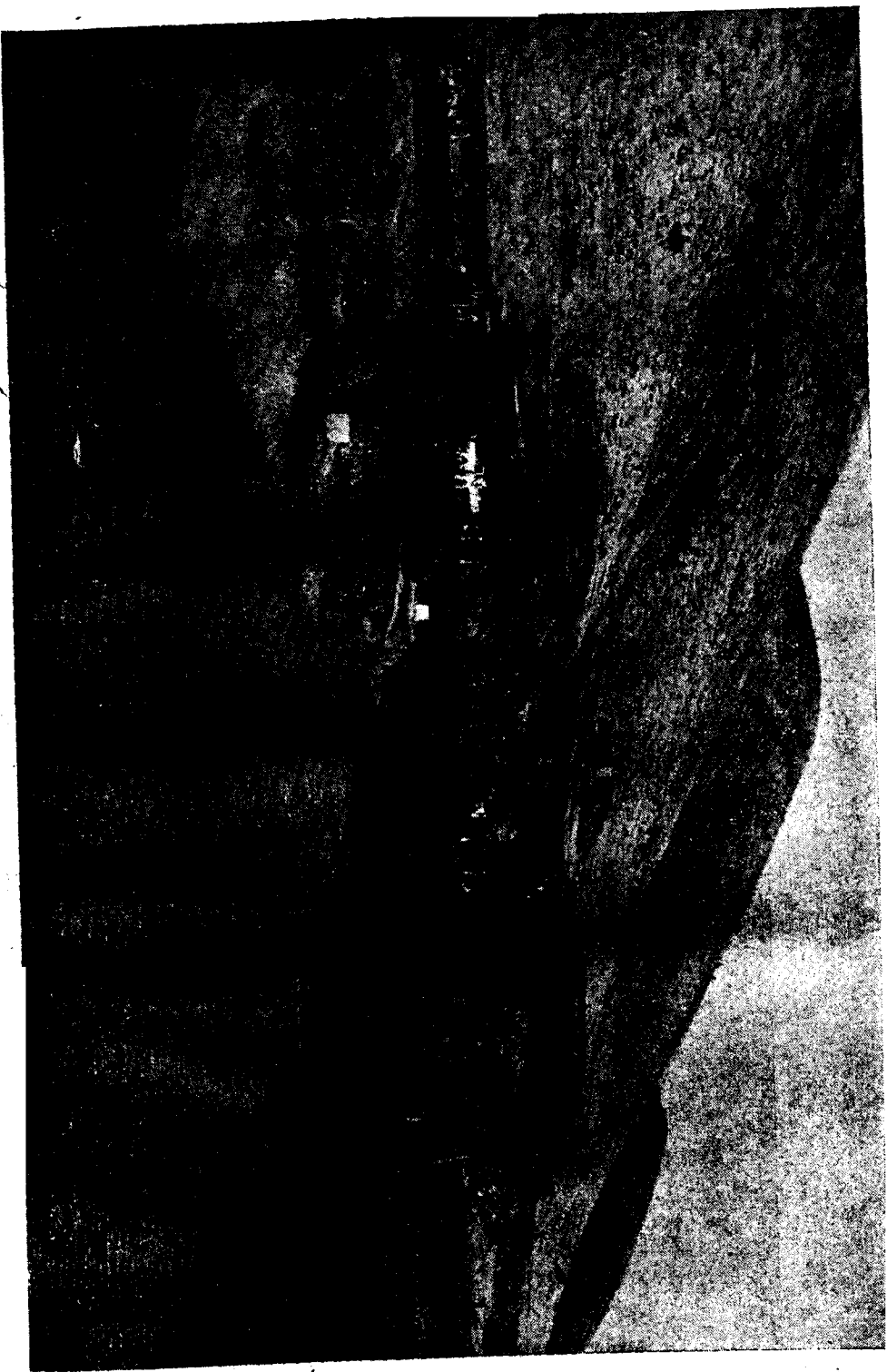
CAMP BUILDINGS, BIRD'S EYE VIEW, T.R.P. HEADWORKS.



B CLASS BRIDGE AT MILE 122/7/360.



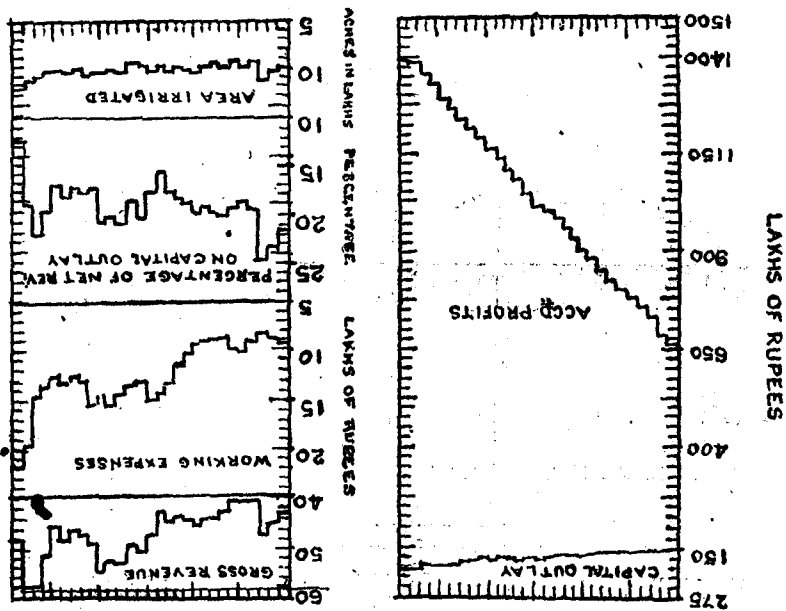
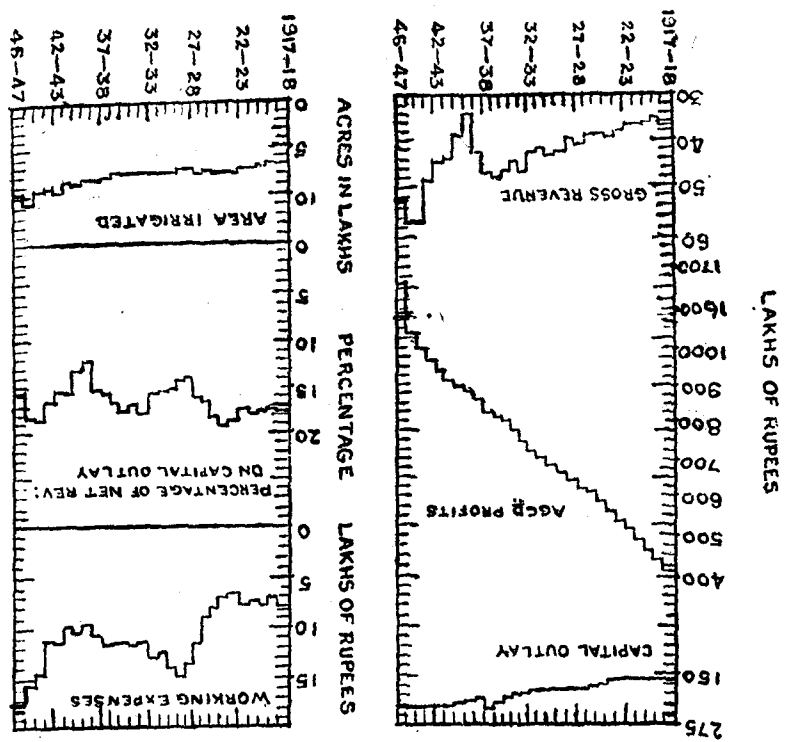
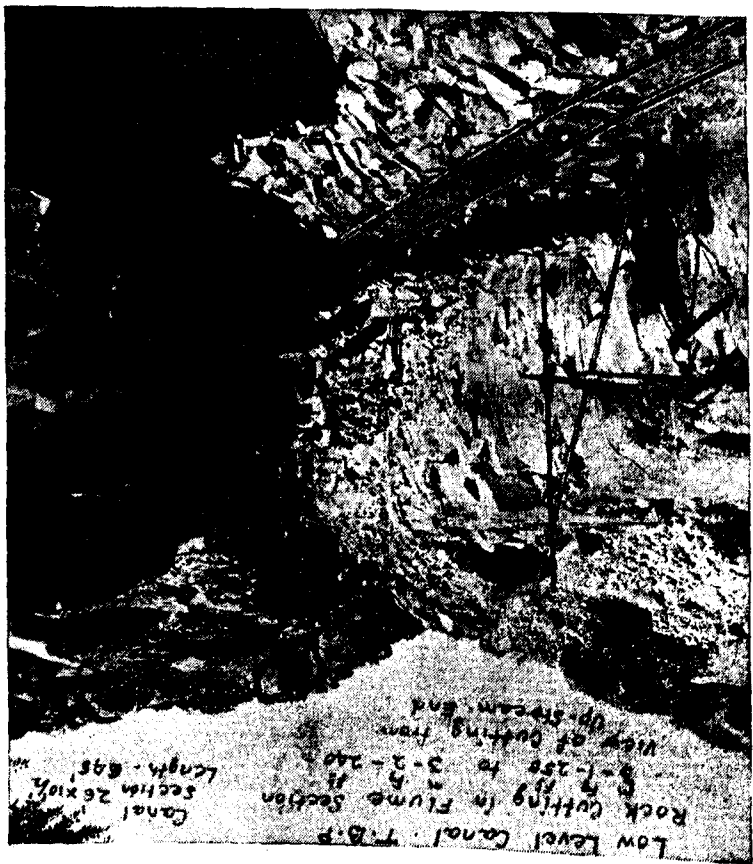
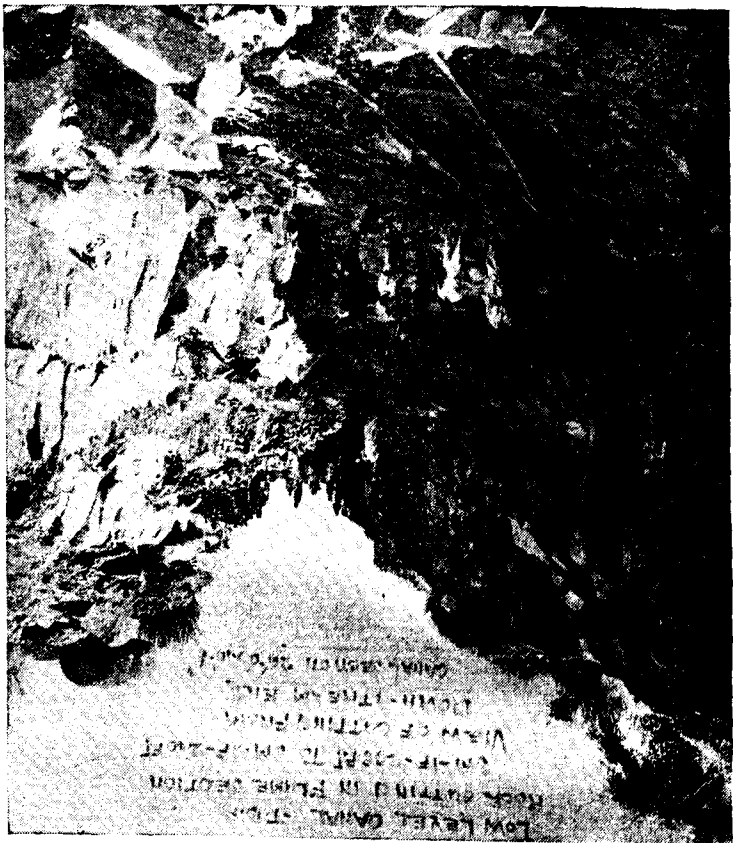
NORTHERN FACE OF THE MAHANANDSWAR HILL.
The pylon on top of the hill is the terminal tower of the electric transmission line from Rajshundry Paper Mills (11 K.V.).



DAM LINE EXCAVATION, T.B.P. HEADWORKS.

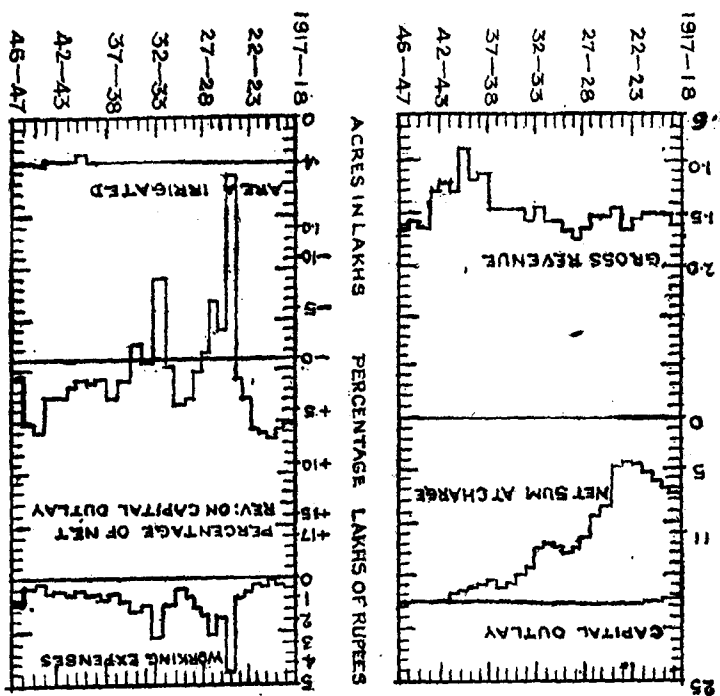


DAM LINE EXCAVATION—VIEW FROM RIGHT FLANK END, T.B.P. HEADWORKS.



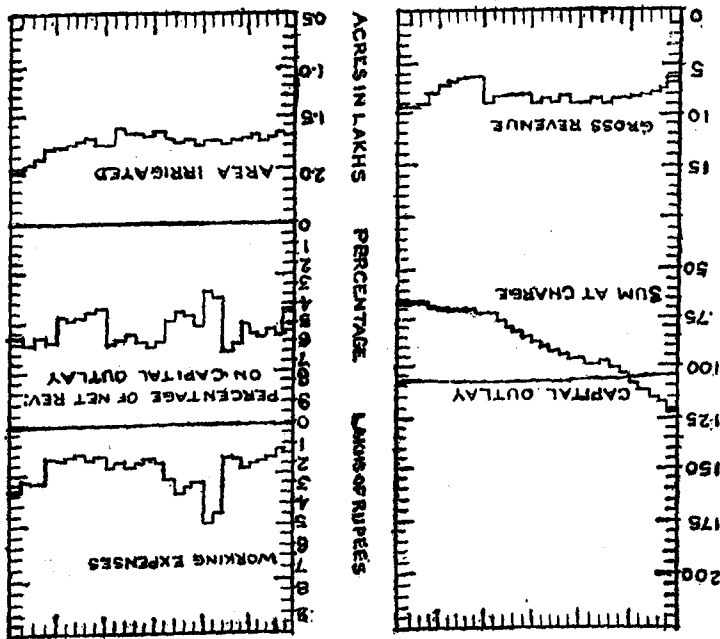
—FINANCIAL RECORD—

LAKHS OF RUPEES



—SRIVAIKUNTAM ANICUT SYSTEM—

LAKHS OF RUPEES



—PERIYAR SYSTEM—
—FINANCIAL RECORD—

AREA IRRIGATED IN LAKHS OF ACRES

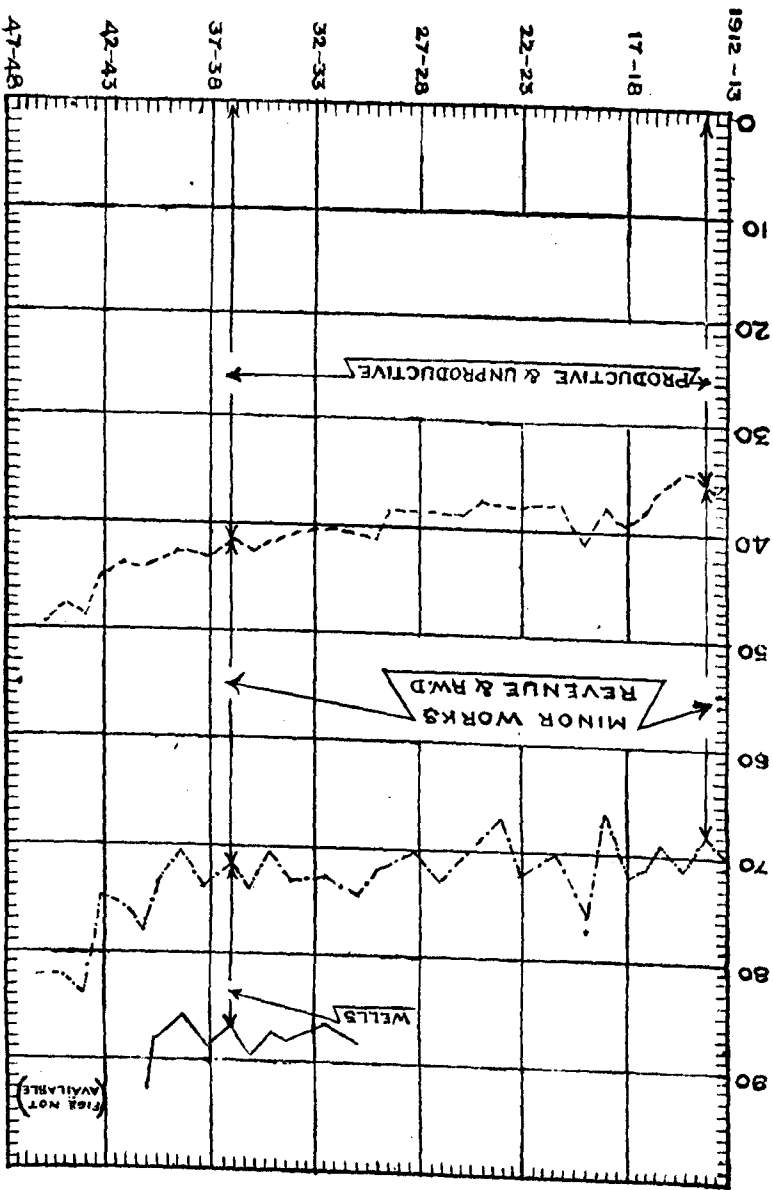


DIAGRAM SHOWING THE AREA IRRIGATED
IN MADRAS

D-II.—Description and Quantity of Goods, etc., carried on the Principal Canals in the Madras Province during the year 1945-46—cont.

APPENDIX I

Description.	Buckingham canal.					West Coast canals.				
	Total, Government and private.			Private.		Total, Government and private.			Private.	
	Up. (26)	Down. (27)	Total (28)	Value. (29)	Quantity (30)	Up. (32)	Down. (33)	Total (34)	Value. (35)	Quantity (36)
<i>Boat traffic.</i>	TONS.	TONS.	TONS.	RS.	TONS.	TONS.	TONS.	TONS.	RS.	TONS.
Cotton, raw and manufactured	62	19	81	4,06,134	81		170	170	10,85,980	170
Woolen goods										
Dyes and tans										
Rice and paddy	52,157	9,141	61,298	1,34,66,700	61,298	4,588	27,214	31,802	1,00,76,078	31,802
Other foodgrains	25,946	2,876	28,822	1,90,04,992	28,822	1,536	4,744	6,280	33,28,400	6,280
Hides and skins										
Liquors	522		522	28,71,000	522	3,485		3,501	42,75,960	3,501
Metals	2,005	3,986	5,991	2,57,61,300	5,991	3,833	224	4,057	12,09,516	4,057
Oils	548	2,688	3,236	58,24,800	3,236	2,438	581	3,819	55,75,062	3,819
Oil-seeds	14,149	13,900	28,049	1,68,29,400	28,049	4,490	6,239	10,729	69,09,476	10,729
Provisions	76,579	21,417	97,996	13,22,94,600	97,996	3,615	13,416	17,031	1,66,90,380	17,031
Stuffs	41,637	56,549	98,186	1,20,22,320	100,186	1,244	5,382	6,626	6,46,096	6,626
Sugar and jaggery						398	105	503	28,90,701	503
Timber	637	21,580	22,217	55,57,950	22,217		6,242	6,242	24,29,152	6,242
Building materials	15,276	2,044	17,320	3,11,76,000	17,320	2,982	3,108	6,090	90,32,160	6,090
Miscellaneous goods	37,425	18,565	55,990	88,54,773	55,990	1,803	4,226	6,029	1,20,00,000	6,029
Timber	47,013	40,853	87,866	20,27,556	87,866	16,215	40,250	56,465	1,12,56,123	56,465
Firewood	14,397	569	14,966	1,51,50,200	15,446	7.6	272	280	4,65,754	280
Bamboos	66,149	1,143	67,292	1,05,55,052	68,292	988	28	1,016	36,576	988
Coal and coke	50	53	103	39,140	103		386	386	43,232	386
Fire	451	237	688	1,74,720	728					
Treasure										
Kerosene oil										
Cotton seeds										
Poles										
Scantlings										
<i>Raft traffic.</i>										
Timber in logs	326		326	32,600	326					
Squared timber										
Sleepers, broad gauge										
Do., metre gauge										
Scantlings										
Poles										
Firewood										
Bamboos and reeds	175		175	52,500	175					
<i>Total, Raft traffic</i>	501		501	85,100	501					
<i>Grand total</i>	392,034	183,019	575,053	27,34,51,481	575,053	45,286	121,612	166,898	7,49,86,716	166,898

D-II.—Description and Quantity of Goods, etc., carried on the Principal Canals in the Madras Province during the year 1945-46—cont.

APPENDIX I

Description.	Dumaguigan canal.					Vedaranyam canal.				
	Total, Government and private.			Private.		Total, Government and private.			Private.	
	Up. (38)	Down. (39)	Total (40)	Value. (41)	Quantity (42)	Up. (44)	Down. (45)	Total (46)	Value. (47)	Quantity (48)
<i>Boat traffic.</i>	TONS.	TONS.	TONS.	RS.	TONS.	TONS.	TONS.	TONS.	RS.	TONS.
Cotton, raw and manufactured										
Woolen goods										
Dyes and tans										
Rice and paddy	55	309	364	17,605	364	3		3	600	3
Other foodgrains	47	12	59	42,400	59					
Hides and skins	13		13	36,000	13					
Liquors	1		1	71,500	1					
Metals	5		5	3,000	5					
Oils										
Oil-seeds	7	114	121	2,20,000	121	8	7	15	14,700	15
Provisions	252	72	324	1,18,500	324	8	38	46	4,416	46
Stuffs						249		249	14,31,008	249
Sugar and jaggery										
Timber	34		34	6,69,375	34					
Building materials	393		393	20,327	393	14	46	60	4,568	60
Miscellaneous goods	72	27	99	1,65,04,800	99	957	4,145	5,102	1,95,805	5,102
Timber										
Firewood										
Bamboos										
Coal and coke										
Fire										
Treasure										
Kerosene oil										
Cotton seeds										
Poles										
Scantlings										
<i>Total, Boat traffic</i>	884	30,207	31,091	1,82,53,047	31,091	1,241	4,257	5,498	16,79,017	5,498
<i>Raft traffic.</i>										
Timber in logs										
Squared timber										
Sleepers, broad gauge										
Do., metre gauge										
Scantlings										
Poles										
Firewood										
Bamboos and reeds										
<i>Total, Raft traffic</i>										
<i>Grand total</i>	884	33,358	34,241	1,98,28,547	34,241	1,241	4,257	5,498	16,79,017	5,498

E-I.—Statement of area irrigated under Irrigation Works classed as Productive and Unproductive for which Capital and Revenue Accounts are kept in the Madras Province during the year 1945-46.

Name of canals.	Area charged as irrigated in acres.						Percentage of double cropped area [columns (4) and (5)] on the first crop area [columns (2) and (3)].
	First crop.		Second crop.		Total.	Both seasons.	
	Flow.	Lift.	Flow.	Lift.			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Productive.</i>							
1 Cauvery delta system	847,980	27,189	15,030	5,098	1,088,297	16,724	18.64
2 Srivaikuntam anicut system.	24,018	1,070	10,789	1,476	37,853	1,759	48.80
3 Godavari delta system	845,753	23,111	319,021	16,215	1,204,100	16,877	38.58
4 Mohmatpur anicut system.	4,609	71	153	..	4,833	69	3.27
5 Thadepalle channel	16,316	575	4,587	449	21,957	385	29.82
6 Kalingarayan channel	9,995	2,501	7,445	2,467	22,808	2,123	83.21
7 Vriddhachalam anicut system.	9,780	330	409	5	10,524	117	4.00
8 Chembarambakkam tank	13,018	653	4,638	38	18,347	286	34.85
9 Marudur anicut system	16,988	288	9,793	334	27,403	554	58.61
10 Pennar river canals system.	160,338	4,396	3,964	226	168,924	1,277	2.54
11 Arankota channel	4,637	159	948	36	5,780	1	20.52
12 Tirukkoyilur anicut system	28,188	1,300	5,288	29	35,055	614	18.88
13 Shattatope anicut system	32,249	471	5,092	192	38,004	187	16.15
14 Cheyyar anicut system	19,428	621	10,641	369	31,059	343	54.92
15 Cumbum tank	5,422	114	386	52	5,974	908	7.91
16 Poincy anicut system	17,538	774	4,561	117	22,990	62	27.02
17 Periyar system	129,527	4,566	54,084	2,260	190,446	5,978	42.02
18 Kistna delta system	928,974	31,656	13,407	1,797	975,834	10,892	1.58
19 Nandiyar channel system	6,443	939	2,096	292	9,770	1,049	32.35
20 Lower Coleroon anicut system.	106,428	4,043	8,524	507	119,500	904	5.18
21 Kistna East Bank Canal extension scheme.	94,352	752	70	3	95,177	530	0.08
22 Polavaram Island project	14,322	86	7,549	5	21,962	31	52.43
23 Cauvery-Mettur project	129,088	8,917	45,042	4,594	187,641	9,508	35.97
24 Kattalai scheme	50,335	2,761	16,381	1,530	71,007	5,474	33.75
<i>Unproductive.</i>							
1 Kurnool-Cuddapah canal	76,424	1,310	8,215	408	86,357	1,852	11.00
2 Barur tank	3,893	175	794	60	4,922	574	20.94
3 Vallur anicut system	3,201	1,029	403	46	4,679	71	10.61
4 Madras water-supply and irrigation system.	6,463	291	2,080	206	9,040	163	33.85
5 Pelandora anicut system	10,595	3,029	817	46	14,487	119	6.33
6 Palur anicut system	62,282	2,948	18,165	1,023	84,478	696	29.42
7 Chicacole minor rivers system.	77,007	2,805	5,372	1,452	86,636	88	8.55
8 Muniyeru anicut system	9,800	258	83	7	9,957	1	0.91
9 Dondapad tank	428	..	4	..	432	..	0.93
10 Yerur tank	317	..	109	..	430	..	33.96
11 Sagileru system	3,484	16	48	1	3,549	4	1.04
12 Atmakur tank	432	..	1	..	433	..	0.23
13 Jangamaheswarapuram tank.	218	..	2	..	220	..	0.91
14 Anamasamudram Becraperu tank.	798	..	..	..	798	..	..
15 Hajipuram tank	215	209	9	..	523	..	1.75
16 Punalur tank	666	82	..	..	748	..	..
17 Markapur tank	1,364	..	3	..	1,367	12	..
18 Nagavalli river system	26,373	551	1,020	340	28,284	20	0.22
19 Venkatapuram tank	310	6	..	..	316	..	5.05
20 Bhavanasi tank	601	3	116	4	724	121	19.87
21 Yellanur tank	521	..	..	..	521	2	..
22 Panjapatti reservoir	..	..	..	..	..	..	..
23 Siddhapur tank	62	..	2	..	64	..	..
24 Nagavaram anicut and supply canal.	547	4	410	9	970	73	3.23
25 Mopad reservoir	6,337	5	344	..	6,686	..	76.04
26 Kanniyampalayam anicut	308	..	134	..	442	..	5.60
27 Toludur reservoir system	18,248	480	6,475	260	25,489	644	48.51
28 Thippayapalem project	211	..	164	..	375	..	36.00
29 Basavannah channel	12,177	85	3,346	5	15,568	..	77.73
30 Duvvaleru project	..	..	..	..	..	..	27.44

II.—Statement showing the incidence of Working Expenses and Assessed Water Revenue on Irrigation Works (classed as "Productive" and "Unproductive") for which Capital and Revenue Accounts are kept in the Madras Province during 1945-46.

Name of canal.	Water assessed, 1945-46.				Total of direct and indirect.	Working expenses, direct and indirect.	Gross of assessed revenue from all sources.	Area charged as irrigated during the year 1945-46, first and second crops.			Working expenses.		Total water rate, direct, indirect, per acre irrigated.					
	Average discharge of the year at canal head in cubic feet per second.	Direct.	Indirect.	(1)				(2)	(3)	(4)	(5)	(6)		(7)	(8)	(9)	(10)	(11)
Productive.																		
1 Cauvery delta system	..	..	..	52,19,858	1,03,631	53,83,489	54,25,868	14,36,465	1,070,361	26.47	1.34	5.03						
2 Srivaikuntam anicut system	..	..	..	2,29,222	1,490	2,30,712	2,42,172	1,37,504	38,725	56.77	3.55	5.95						
3 Godavari delta system	..	..	..	43,44,704	2,30,733	46,75,437	49,31,809	22,72,808	1,229,095	46.09	1.84	3.72						
4 Mohamatpur anicut system	..	..	..	25,641	196	25,837	25,975	10,146	4,900	39.06	2.07	5.27						
5 Thadepalli channel	..	..	..	1,89,374	2,929	1,92,303	1,75,425	28,427	23,598	16.20	1.20	7.36						
6 Kalingarayan channel	..	..	..	1,37,031	483	1,37,514	1,42,092	29,490	22,914	20.75	1.28	5.55						
7 Vriddhi achalam anicut system	..	..	..	46,126	389	46,465	47,431	13,408	9,894	28.05	1.35	4.70						
8 Chembambakkam tank	..	..	..	57,338	957	58,290	57,383	18,199	19,600	31.71	0.92	2.97						
9 Marudur anicut system	..	..	..	2,09,622	279	2,09,901	2,13,417	35,835	27,870	16.78	1.27	7.53						
10 Pennar river canals system	..	..	..	8,14,470	73,367	8,87,837	8,94,278	2,12,312	177,805	23.74	1.19	5.00						
11 Arankota channel	..	..	..	40,231	428	40,659	42,241	9,660	5,797	22.84	1.66	7.01						
12 Tirukkoyilur anicut system	..	..	..	1,37,245	3,369	1,40,614	1,42,362	1,08,335	34,766	76.09	3.11	4.04						
13 Shattakope anicut system	..	..	..	1,58,139	17,031	1,75,170	1,76,048	49,131	40,019	27.90	1.22	4.37						
14 Cheyyar anicut system	..	..	..	1,08,782	4,735	1,13,517	1,15,397	87,433	32,753	75.76	2.36	3.46						
15 Cumbum tank	..	..	..	31,832	472	31,854	31,854	5,499	6,086	17.26	0.90	5.23						
16 Poincy anicut system	..	..	..	70,219	5,488	75,707	75,962	75,770	25,871	99.74	2.54	2.92						
17 Periyar system	..	..	..	10,43,131	94,863	11,37,994	11,62,687	3,81,639	201,852	32.82	1.88	5.64						
18 Kistna delta system	..	..	..	48,35,282	1,92,210	50,27,442	53,55,069	17,27,642	1,002,337	32.26	1.73	5.02						
19 Nandiyar channel system	..	..	..	33,837	250	34,087	35,088	12,124	9,940	34.55	1.22	3.43						
20 Lower Coleroon anicut system	..	..	..	5,93,312	51,549	6,44,861	6,58,028	2,09,952	123,161	31.90	1.72	5.32						
21 Kistna East Bank canal extension scheme	..	..	..	5,28,019	87,205	6,15,224	6,36,348	1,77,191	99,864	27.84	1.79	6.17						
22 Polavaram Island project	..	..	..	1,17,769	..	1,17,769	1,19,017	86,210	23,277	72.43	3.70	5.06						
23 Cauvery-Mettur project	..	..	..	16,46,952	28,740	16,75,692	17,95,342	5,77,855	231,963	32.18	2.48	7.22						
24 Kattalai scheme	..	..	..	4,24,036	121	4,24,156	4,33,642	1,06,610	72,265	24.58	1.47	5.57						

APPENDIX I

E.II.—Statement showing the incidence of Working Expenses and Assessed Water Revenue on Irrigation Works (classified as "Productive" and "Unproductive") for which Capital and Revenue Accounts are kept in the Madras Province during 1945-46—cont.

Name of canal.	Average discharge of the year at canal head in cubic feet per second.	Water assessed, 1945-46.			Gross of assessed revenue from all sources.	Working expenses, direct and indirect.	Area charged as irrigated during the year 1945-46, first and second crops.	Working expenses.		Total water rate, direct and indirect per acre irrigated.
		Direct.	Indirect.	Total of direct and indirect.				Percentage on gross revenue.	Per acre irrigated.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Unproductive.										
1 Kurnool-Cuddapah canal ..	..	3,92,799	3,277	3,96,076	4,04,799	1,77,062	88,289	43.74	2.00	4.52
2 Barar tank ..	..	23,946	787	24,733	27,266	8,679	5,385	31.83	1.61	4.60
3 Vellur anicut system ..	..	8,204	1,074	9,278	9,563	2,883	5,622	30.14	0.51	1.65
4 Madras water-supply and irrigation system ..	..	24,069	462	24,531	75,404	23,049	10,331	30.56	2.23	2.37
5 Pelandurai anicut system ..	..	64,138	86	64,224	66,432	25,892	15,420	38.97	1.67	4.16
6 Palar anicut system ..	..	2,29,188	16,852	2,46,040	2,53,145	3,95,722	93,913	156.32	4.21	2.62
7 Chittoor minor rivers system ..	..	1,90,204	7,874	1,98,078	1,98,725	91,437	90,371	46.03	1.05	2.18
8 Munjuru anicut system ..	..	56,008	62	56,070	59,619	18,246	10,171	30.80	1.78	5.52
9 Dondapad tank ..	..	1,869	10	1,879	1,879	7,053	438	375.35	13.81	4.19
10 Yeru tank ..	..	801	86	887	887	640	935	72.15	0.68	0.94
11 Sagfurn system ..	..	13,220	26	13,246	13,392	5,837	3,700	43.73	1.57	3.58
12 Attakur tank ..	..	1,771	..	1,771	1,971	1,294	504	65.65	2.56	3.82
13 Jangamathewarapuram tank ..	..	1,165	..	1,165	1,165	562	270	48.24	2.82	4.31
14 Anamasandram-Beerapur tank ..	..	872	1	873	873	747	896	85.56	0.83	0.97
15 Hajipuram tank ..	..	806	70	876	876	783	585	89.38	1.34	1.50
16 Ponnalur tank ..	..	4,356	..	4,356	4,356	1,289	771	28.44	1.60	5.65
17 Marapur tank ..	..	7,067	1	7,068	7,112	3,682	1,403	51.77	2.62	5.04
18 Nagavalli river system ..	..	1,06,225	21,804	1,28,029	1,30,365	49,984	27,115	38.32	1.84	4.72
19 Venkatapuram tank ..	..	2,943	..	2,943	2,544	1,134	338	38.51	3.35	8.41
20 Bhavanasi tank ..	..	5,916	..	5,916	5,916	7,361	617	124.42	1.19	9.58
21 Vellaur tank ..	..	2,017	1,104	3,121	3,121	2,891	551	92.63	5.24	5.66
22 Panjapatli reservoir ..	..	..	..	..	635	1,518	..	239.05	..	..
23 Siddhapur tank ..	..	6,946	..	6,946	6,951	2,639	972	37.76	2.71	7.15
24 Nagavaram anicut and supply channel ..	..	2,681	1,017	3,698	3,698	2,442	999	66.03	2.44	3.70
25 Moped reservoir ..	..	54,717	5,170	59,887	60,028	10,939	7,007	18.22	1.56	8.54
26 Kannyampalayam anicut ..	..	2,698	..	2,698	2,698	815	442	30.20	1.84	6.12
27 Totudur reservoir system ..	..	1,51,217	448	1,51,665	1,54,723	51,887	25,543	33.50	2.02	5.93
28 Thippapalem project ..	..	2,672	..	2,672	2,673	1,909	377	71.41	5.06	7.09
29 Bessavanah channel ..	..	1,04,055	..	1,04,055	1,04,169	14,790	15,955	14.19	0.93	6.66
30 Devvaluru project ..	..	..	..	..	34	3,100	..	..	..	..

C.III.—Statement showing the area irrigated by flow and lift under "Productive" and "Unproductive" works and the value of crops raised thereon for fasli 1355 (1945-46).

E-III.—Statement showing the area irrigated by flow and lift under for fasli

Districts.	Names of systems.	Area actually irrigated.					
		First crop.		Second crop.		Total.	Both seasons.
		Flow.	Lift.	Flow.	Lift.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		ACS.	ACS.	ACS.	ACS.	ACS.	ACS.
1. Productive Works.							
East Godavari.	Polavaram island system	14,322	86	7,540	5	21,962	31
	Godavari delta system	389,992	9,041	127,102	9,192	535,327	9,558
West Godavari.	Do.	454,695	14,070	191,876	7,016	667,657	7,319
Kistna ..	Do.	1,066	..	43	7	1,116	..
	(Godavari delta) Total	845,753	23,111	319,921	16,215	1,204,100	16,877
West Godavari.	Kistna delta system	36,851	127	123	60	37,161	..
Kistna ..	Do.	505,827	17,664	5,468	393	529,352	6,406
Guntur ..	Do.	356,996	13,865	7,316	1,344	409,321	4,486
	(Kistna delta) Total	928,974	31,656	13,407	1,797	975,834	10,892
Kistna ..	Divi cum Kistna East Bank canal.	94,352	752	70	3	95,177	530
Nellore ..	Pennar river canals	180,388	4,396	3,964	226	189,024	1,277
Coimbatore	Arakenkota channel	4,637	159	948	36	5,780	1
	Tadepalli channel	16,316	575	4,587	449	21,927	385
	Kalingarayan channel	9,995	2,501	7,845	2,467	22,808	2,128
Chingleput	Chembrambakkam tank	13,018	653	4,638	38	18,347	286
North Arcot	Poincy anicut system	16,091	758	3,872	111	20,892	49
Chittoor ..	Do.	1,447	16	689	6	2,158	13
	(Poincy anicut) Total	17,538	774	4,561	117	22,990	62
South Arcot	Tirukkoyilur anicut system	28,188	1,300	5,288	279	35,055	614
	Shatlatope anicut system	32,249	471	5,092	192	38,044	137
	Mehamattur anicut system.	4,609	71	153	..	4,833	69
	Vriddhachalam anicut system.	9,780	330	409	5	10,524	117
	Lower Coleroon anicut system.	82,932	3,436	5,815	328	92,511	713
Tanjore ..	Do.	23,494	807	2,709	179	26,989	191
	(Lower Coleroon) Total	1,64,426	4,043	8,524	507	119,500	904
Tanjore ..	Cauvery delta system	301,124	24,981	131,314	3,510	960,929	13,450
Trichinopoly	Do.	46,56	2,208	26,716	1,588	77,368	3,274
	(Cauvery delta) Total	847,980	27,189	158,030	5,098	1,038,297	16,724
Tanjore ..	Cauvery-Mettur Project	129,088	8,917	45,042	4,794	187,641	9,508
Trichinopoly	Nandiyar channel system	6,448	939	2,096	292	9,770	1,049
	Kattalai scheme	50,385	2,711	16,381	1,580	71,007	5,474
Madura ..	Periyar system	129,527	3,785	54,084	2,269	189,615	5,978
Ramnad ..	Do.	..	831	..	..	831	..
	(Periyar system) Total	129,527	4,616	54,084	2,269	190,446	5,978
Tinnevely ..	Sriyakkuntam anicut system.	24,018	1,070	10,789	1,476	37,353	1,759
	Marudur anicut system	16,988	288	9,793	84	27,403	554
Kurnool ..	Cumbum tank	5,422	114	306	52	5,974	908
North Arcot	Cheyyar anicut system	19,029	621	10,595	369	30,614	343
Chingleput	Do.	399	..	46	..	445	..
	(Cheyyar Anicut) Total	19,428	621	10,641	369	31,059	343
	Total, of Productive works	3,515,721	117,343	603,298	38,350	4,364,715	76,602

‘Productive’ and ‘Unproductive’ works and the value of crops raised thereon 355 (1945-46).

Value of crops.							
Paddy.		Ragi.		Other crops.		Total.	
Area irrigated.	Estimated value.	Area irrigated.	Estimated value.	Area irrigated.	Estimated value.	Area irrigated.	Estimated value.
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
ACS.	RS.	ACS.	RS.	ACS.	RS.	ACS.	RS.
2,514	10,78,905	4	318	444	7,200	21,962	19,81,423
498,873	5,89,23,765	58	5,797	36,896	25,89,984	535,327	6,15,19,546
593,431	5,32,19,627	1,534	38,036	70,044	28,08,320	665,000	5,60,65,988
1,116	73,772	..	..	..	..	1,116	73,772
1,092,920	11,22,17,164	1,592	43,333	1,06,940	53,98,304	1,201,452	11,76,59,301
36,950	36,25,352	..	..	211	1,140	37,161	36,26,492
523,034	5,68,59,011	38	2,497	6,285	1,64,200	529,352	5,70,25,708
402,950	3,87,41,796	141	8,081	6,280	9,41,800	409,321	3,96,91,677
962,934	10,92,20,159	174	10,578	12,726	11,07,140	975,834	10,03,43,877
77,773	90,88,257	251	16,347	17,193	3,43,860	95,177	1,02,98,494
151,995	1,79,66,226	1,786	1,43,338	15,143	65,820	168,924	1,61,75,384
5,682	10,93,788	14	2,442	84	33,492	5,789	11,29,722
2,559	39,21,932	104	20,470	1,264	5,05,600	21,927	44,48,002
18,850	32,04,718	1,482	2,20,876	2,476	31,600	22,808	34,57,194
17,332	13,21,154	446	28,792	569	71,936	18,347	14,21,882
15,128	10,94,508	3,633	4,91,951	2,071	10,355	20,832	15,96,814
1,594	1,93,768	227	34,555	337	4,330	2,158	2,32,693
16,722	12,88,276	3,860	5,26,546	2,408	14,685	22,990	18,29,507
25,049	25,32,536	5,625	5,56,675	4,381	1,84,002	35,055	33,23,213
36,040	37,61,280	787	75,467	1,177	1,01,635	38,004	39,38,382
4,162	4,00,177	52	4,098	619	18,570	4,833	4,22,845
10,132	12,14,153	32	2,770	360	12,020	10,524	12,30,943
89,311	84,60,339	1,100	51,768	2,100	21,000	92,511	85,83,077
24,429	25,70,459	245	29,890	2,315	2,45,150	26,989	28,45,499
113,740	1,10,30,768	1,345	81,658	4,415	2,66,150	119,500	1,13,78,576
917,770	8,60,86,761	4,152	3,85,559	38,958	3,09,060	980,875	8,67,81,380
72,353	1,08,48,085	406	58,223	4,578	5,37,894	77,337	1,14,44,202
990,123	9,69,34,846	4,558	4,43,782	43,531	8,46,954	1,038,212	9,82,25,582
178,641	1,65,79,055	1,500	92,572	7,400	4,16,400	187,541	1,70,87,027
8,254	10,29,791	242	2,77,819	1,265	3,94,625	9,761	17,02,235
57,273	67,24,138	345	19,038	13,389	13,30,735	71,007	80,78,911
156,079	2,32,06,227	8,048	7,31,896	25,488	26,39,336	189,615	2,65,75,549
789	1,79,098	20	3,468	22	300	831	1,82,866
156,868	2,33,85,326	8,068	7,35,454	25,510	26,39,636	190,446	2,67,60,415
34,128	40,86,286	190	19,487	3,935	2,06,100	37,353	43,11,878
26,270	4,18,900	209	18,190	924	1,12,266	27,403	5,49,356
4,022	4,56,591	852	81,107	1,101	21,165	5,974	5,58,868
23,273	30,77,305	1,790	2,21,366	552	12,656	30,614	33,11,327
423	30,152	20	1,439	2	430	445	32,021
28,695	31,07,457	1,110	2,22,805	554	13,086	31,059	33,43,348
4,059,688	42,38,63,912	35,328	36,44,462	266,907	1,41,42,981	4,861,873	44,16,51,355

E-III.—Statement showing the area irrigated by flow and lift under for fasli 1355

Districts.	Names of systems.	Area actually irrigated.						Both seasons.
		First crop.		Second crop.		Total.		
		Flow.	Lift.	Flow.	Lift.			
		(3)	(4)	(5)	(6)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
		ACS.	ACS.	ACS.	ACS.	ACS.	ACS.	
Unproductive Works.								
Vizagapatam ..	Chicacole minor river system.	77,007	2,805	5,372	1,452	86,636	88	
	Nagavalli river project ..	26,373	551	1,020	340	28,284	26	
Kistna ..	Muniyeru anicut system ..	9,609	258	83	7	9,957	1	
Guntur ..	Jangamaheswarapuram tank.	218	..	2	..	220	..	
	Atmakur tank	432	..	1	..	433	..	
	Dondapad tank	428	..	4	..	432	..	
	Bhavanasi tank	601	3	116	4	724	121	
Nellore ..	Mopad reservoir	6,337	5	344	..	6,686	..	
	Hajepuram tank	215	290	9	..	528	..	
	Ponnalur tank	666	82	..	..	748	12	
	Annamasamudram-Biraperu tank.	798	..	..	..	798	..	
	Yerur tank	317	4	100	..	430	..	
Cuddapah ..	Sagileru system	3,484	16	48	1	3,549	4	
	Chepad channel	9,907	60	394	..	10,367	56	
	Nagavaram anicut and supply channel.	547	4	410	9	970	73	
Kurnool ..	Markapur tank	1,364	..	3	..	1,367	..	
	Siddapur tank	62	..	2	..	64	..	
	Venkatapuram tank ..	310	6	..	..	316	..	
	Tippayapalem project ..	211	..	164	..	375	..	
	Kurnool-Cuddapah canal ..	35,285	188	4,848	174	40,495	224	
Cuddapah ..	Do.	3,232	1,056	2,973	234	85,495	1,572	
(Kurnool-Cuddapah canal) Total ..		66,517	1,244	7,821	408	75,990	1,706	
Bellary ..	Basavanna and Raya channel.	12,177	35	3,346	5	15,568	..	
Anantapur ..	Yellanur tank	521	..	..	..	521	2	
Salem ..	Barur tank	3,893	175	794	60	4,922	574	
Coimbatore ..	Kanniyampalayam anicut ..	308	..	134	..	442	..	
Chingleput ..	Madras water-supply and irrigation system.	6,463	291	2,080	206	9,040	163	
	Vallur anicut system ..	3,201	1,029	403	46	4,679	71	
	Palar anicut system	17,145	337	2,266	349	20,097	3	
North Arcot ..	Do.	45,137	2,611	15,899	674	64,321	693	
(Palar anicut system) Total ..		62,282	2,948	18,165	1,023	84,418	696	
South Arcot ..	Pelandora anicut system ..	10,545	3,029	817	46	14,437	119	
	Willingdon reservoir ..	18,243	480	6,475	266	25,469	644	
Total, of Unproductive works.		323,091	13,330	48,116	3,873	388,410	4,446	
Total, of Productive works.		3,515,724	117,343	693,298	33,350	4,364,715	76,602	
Grand total ..		3,838,815	130,673	7,41,414	42,223	4,759,125	81,048	

NOTE.—(1) The area "under both seasons"
(2) The area columns (3) to (6) include
(3) The area of "withered crops"

"Productive" and "Unproductive" works and the value of crops raised thereon (1945-46)—cont.

Value of crops.							
Paddy.		Ragi.		Other crops.		Total.	
Area irrigated.	Estimated value.	Area irrigated.	Estimated value.	Area irrigated.	Estimated value.	Area irrigated.	Estimated value.
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
ACS.	RS.	ACS.	RS.	ACS.	RS.	ACS.	RS.
76,689	75,03,488	9,160	4,95,797	479	5,248	86,328	80,04,533
26,781	26,61,393	1,344	70,758	1,153	25,03,440	28,278	62,41,591
9,466	12,51,933	1	..	109	7,327	9,576	12,59,260
203	23,856	1	..	16	1,250	220	25,106
392	28,978	..	..	41	3,300	433	32,274
372	57,083	52	14,021	8	300	432	71,908
724	1,14,166	..	..	..	..	724	1,14,166
6,116	6,88,961	210	22,414	360	16,970	6,086	7,28,345
10	133	467	18,599	46	320	523	19,052
595	19,999	60	5,001	153	32,000	748	37,000
..	..	386	30,495	409	21,000	795	51,495
428	15,410	1	..	1	..	430	15,410
2,553	2,24,177	424	37,276	557	3,760	3,534	2,70,218
8,117	9,14,136	690	58,517	1,503	1,18,393	10,310	10,91,846
731	33,532	56	5,265	183	2,400	970	46,197
1,020	1,89,516	218	18,888	120	4,238	1,367	1,62,643
972	1,11,863	..	..	..	..	972	1,11,863
316	58,057	..	..	..	..	316	58,057
193	14,494	..	..	182	4,000	375	18,494
25,322	36,96,075	84	7,374	15,089	1,60,027	40,495	38,63,476
21,328	24,15,033	2,429	1,79,540	11,723	6,02,242	35,480	31,96,815
46,650	61,11,303	2,513	1,86,914	26,312	7,62,269	75,975	70,60,291
4,795	7,09,918	97	8,808	10,671	1,25,087	15,563	8,43,813
505	74,330	7	489	9	5,625	521	80,444
3,813	6,59,724	327	67,018	782	1,67,621	4,922	8,94,863
321	61,813	2	448	119	51,010	442	1,13,271
8,657	9,78,632	313	22,121	70	3,500	9,040	10,04,253
3,685	2,96,716	922	71,771	..	..	4,607	3,68,487
17,686	18,73,327	1,268	83,145	1,193	50,482	20,097	20,11,954
54,188	48,76,407	8,033	8,94,519	2,050	30,750	64,321	58,01,676
71,824	67,49,734	9,351	9,82,664	3,243	81,232	84,418	78,13,630
14,013	19,27,536	105	7,353	369	11,010	14,437	19,46,399
21,713	27,42,029	191	1,493	3,564	1,54,430	25,469	28,97,952
310,594	3,42,02,715	26,898	21,82,910	50,963	40,91,730	388,460	4,04,27,355
4,050,638	42,83,63,912	35,323	36,44,462	266,907	1,41,42,981	4,361,873	44,16,51,355
4,370,232	45,80,66,627	62,226	57,77,372	317,875	1,82,34,711	4,750,333	48,20,73,710

is included under the first and second crops, extent under "withered crops" but exclude "waste charged." is 2,792 acres.

E-IV.—Comparative statement of irrigation and rainfall in the

Civil districts.	Of the civil districts.			Works supplying irrigation— Number and name.	Cultivable area com- manded by the irrigation works in column (5).
	Total area in acres.	Cultivable area in acres.	Cultivated area in acres.		
(1)	(2)	(3)	(4)	(5)	(6)
Vizagapatam	..	..	..	1 Chicacole minor river system .. 2 Nagavalli river system .. 3 Minor works ..	70,000 31,200 121,767 Total .. 222,967
East Godavari	..	..	..	1 Godavari delta system .. 2 Polavaram island system .. 3 Minor works ..	396,253 18,648 94,862 Total .. 509,763
West Godavari	..	..	..	1 Godavari delta system .. 2 Kistna delta system .. 3 Minor works ..	565,000 43,129 608,129 Total .. 608,129
Kistna	..	..	..	1 Kistna delta system .. 2 Godavari delta system .. 3 Divi system .. 4 Muniveru anicut system .. 5 Minor works ..	543,000 80,000 13,024 20,903 Total .. 656,927
Guntur	..	..	..	1 Kistna delta system .. 2 Bhavanasi tank .. 3 Dondapad tank .. 4 Atmakur tank .. 5 Jangamaheswarapuram tank .. 6 Minor works ..	357,000 2,448 2,880 1,160 960 26,534 Total .. 390,982
Kurnool	..	..	..	1 Kurnool-Cuddapah canal .. 2 Venkatapuram tank .. 3 Cumbum tank .. 4 Markapur tank .. 5 Siddhapur tank .. 6 Thippayapalem project .. 7 Minor works ..	319,869 1,700 6,000 1,701 4,250 47,146 Total .. 380,666
Bellary	..	..	..	1 Basanna and Raya channel .. 2 Minor works ..	55,406 55,406 Total .. 55,406
Anantapur	..	..	..	1 Yellanurtank .. 2 Minor works ..	1,641 163,233 Total .. 164,874
Cuddapah	..	..	..	1 Kurnool-Cuddapah canal including Chepad channel .. 2 Sagileru system .. 3 Nagavaram anicut and supply channel .. 4 Minor works ..	37,700 894 26,576 894 102,629 Total .. 167,790
Nellore	..	..	..	1 Pennar river canal system .. 2 Mopad reservoir .. 3 Ponnalur tank .. 4 Anamasamudram-Bitaperu tank .. 5 Yerur tank .. 6 Hajipuram tank .. 7 Minor works ..	190,000 18,890 1,973 1,000 3,176 2,900 186,956 Total .. 349,395
Chingleput	..	..	..	1 Palar anicut system .. 2 Chembarambakkam tank .. 3 Vallur anicut system .. 4 Cheyyar anicut system .. 5 Madras water-supply and irrigation system .. 6 Minor works ..	24,102 24,473 6,794 540 10,165 368,578 Total .. 424,657

Madras Presidency for the revenue year ending with 30th June 1946.

Area at present estimated as annually irrigable by the works specified in column (5).	Area irrigated in acres.						Rainfall.	
	Revenue year ending with June 1945.			Revenue year ending with June 1946.			1944-45.	1945-46.
	Kharif I crop.	Rabi II crop.	Total.	Kharif I crop.	Rabi II crop.	Total.	(14)	(15)
* (7)	(8)	(9)	(10)	(11)	(12)	(13)	INCHES.	INCHES
ACS.	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.		
66,800	77,459	8,969	86,428	79,812	6,824	86,636		
27,500	26,302	1,008	27,310	26,924	1,360	28,284		
121,767	121,674	16,113	137,787	126,199	14,586	140,785		
216,067	225,435	26,090	251,525	232,935	22,770	255,705	34.8	39.7
877,000	336,090	122,008	508,098	399,034	126,293	525,327		
17,500	15,201	6,467	21,668	14,408	7,554	21,962		
94,862	80,066	17,225	97,991	118,296	19,072	137,368		
489,362	482,057	145,700	627,757	531,738	162,919	694,657	40.5	46.1
414,500	435,692	172,250	607,942	468,765	198,892	667,657		
43,120	41,064	398	41,462	36,979	182	37,161		
457,620	43,783	1,377	45,160	44,423	1,123	45,546		
445,300	492,194	4,169	496,363	521,490	5,962	529,352		
42,000	1,116	178	1,294	1,068	50	1,116		
10,000	88,939	8	88,947	95,104	73	95,177		
20,903	7,391	84	7,475	9,867	90	9,957		
518,203	20,799	38	20,837	22,682	211	22,893		
380,000	610,439	4,472	614,911	652,209	6,286	658,495	38.8	32.6
841	408,381	5,046	413,427	400,161	9,160	409,321		
250	601	1	602	604	120	724		
460	518	199	717	428	4	432		
290	369	8	377	432	1	433		
26,534	220	48	268	218	2	220		
358,375	26,233	2,740	28,973	26,779	1,183	27,962		
103,743	436,317	8,037	444,354	428,622	10,470	439,092	36.0	32.2
340	7,908	48,760	35,473	5,022	40,495			
5,980	803	194	497	816	816			
1,583	5,579	4,548	10,127	5,536	438	5,974		
3,780	1,422	1,129	2,551	1,864	3	1,867		
802	1,007	8	1,015	62	2	64		
47,146	802	284	1,086	211	164	375		
162,522	44,907	9,087	53,994	45,973	2,808	48,781		
55,406	89,872	23,158	113,030	88,935	8,437	97,372	25.7	25.5
55,406	47,813	12,040	59,853	12,212	3,351	15,563		
925	47,813	12,040	59,853	47,616	7,798	55,414		
153,233	494	8	497	521	521			
154,158	121,962	44,116	166,078	113,148	25,530	141,678		
10,676	122,456	44,119	166,575	118,669	28,530	142,199	22.0	14.7
4,500	31,874	4,339	36,213	32,788	3,207	35,995		
894	9,870	1,118	10,988	9,973	394	10,367		
102,629	2,602	10	3,612	3,500	49	3,549		
127,669	595	504	1,099	551	419	970		
162,500	102,017	35,293	137,310	90,440	18,180	108,620		
12,500	147,958	41,264	189,222	137,052	22,249	159,301	31.0	21.3
1,000	162,167	38,666	195,533	164,784	4,190	168,924		
1,000	4,277	498	4,775	6,342	844	6,686		
1,000	754	612	1,366	748	..	748		
1,470	938	8	946	798	..	798		
700	927	849	1,709	821	109	430		
1,000	860	27,025	157,779	514	9	523		
3,176	136,956	27,025	157,779	184,862	9,650	184,512		
2,900	816,126	62,668	868,080	308,319	14,303	312,621	44.7	24.8
24,102	19,824	11,214	31,038	17,483	2,615	20,097		
18,000	13,356	6,899	20,255	13,671	4,676	18,347		
5,216	4,380	284	4,664	4,280	449	4,679		
494	408	79	483	899	46	445		
9,852	6,365	2,655	9,020	6,764	2,386	9,040		
353,578	329,753	136,044	465,797	328,618	81,193	409,811		
416,242	374,031	157,175	531,206	371,154	91,265	462,419	56.9	41.5

E-IV.—Comparative statement of irrigation and rainfall in the

Civil districts.	Of the civil districts.			Works supplying irrigation— Number and name.	Cultivable area com- manded by the irrigation works in column (5)
	Total area in acres.	Cultivable area. in acres.	Cultivated area. in acres.		
(1)	(2)	(3)	(4)	(5)	(6)
					ACS.
South Arcot ..				1 Lower Coleroon anicut system ..	86,000
				2 Shattatope anicut system ..	48,965
				3 Vriddhachalam anicut system ..	16,859
				4 Mehamattur anicut system ..	10,651
				5 Tirukkoyilur anicut system ..	45,977
				6 Pelandurai anicut system ..	16,877
				7 Willingdon reservoir ..	28,800
				8 Minor works ..	300,198
				Total ..	548,627
North Arcot ..				1 Palar anicut system ..	80,930
				2 Cheyyar anicut system ..	28,921
				3 Poiney anicut system ..	28,824
				4 Minor works ..	281,647
				Total ..	365,322
Chittoor ..				1 Poiney anicut system ..	118,903
				2 Minor works ..	118,903
				Total ..	118,903
Salem ..				1 Barur tank ..	6,887
				2 Minor works ..	105,998
				Total ..	112,885
Coimbatore ..				1 Tadepalli channel ..	16,000
				2 Arakkankottai channel ..	6,000
				3 Kalingarayan channel ..	15,000
				4 Kannyampalayam anicut ..	1,600
				5 Minor works ..	72,862
				Total ..	111,462
Trichinopoly ..				1 Cauvery delta system ..	44,667
				2 Nandiyar channel system ..	9,480
				3 Kattalai scheme ..	40,000
				4 Minor works ..	120,808
				Total ..	214,955
Tanjore ..				1 Cauvery delta system ..	864,867
				2 Lower Coleroon anicut system ..	31,283
				3 Cauvery-Mettur project ..	528,487
				4 Minor works ..	65,961
				Total ..	1,490,048
Madura ..				1 Periyar system ..	181,046
				2 Minor works ..	181,046
				Total ..	181,046
Mamnad ..				1 Periyar system ..	88,862
				2 Minor works ..	88,862
				Total ..	88,862
Tinnevely ..				1 Srivalkuntam anicut system ..	38,500
				2 Marudur anicut system ..	17,920
				3 Minor works ..	187,167
				Total ..	243,587
				Total of productive and unproductive works.	4,758,167
				Total of minor works ..	2,528,595
				Grand total ..	7,286,762

Madras Presidency for the revenue year ending with 30th June 1946—cont.

Area at present estimated as annually irrigable by the works specified in column (5).	Area irrigated in acres.						Rainfall.	
	Revenue year ending with June 1945.			Revenue year ending with June 1946.			1944-45.	1945-46.
(7)	Kharif I crop.	Rabi II crop.	Total.	Kharif I crop.	Rabi II crop.	Total.	(14)	(15)
ACS.	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.	INCHES.	INCHES.
84,244	84,913	9,951	94,864	86,368	6,143	92,511		
32,000	32,811	10,623	43,439	32,720	5,284	38,004		
8,829	9,743	527	10,270	10,111	418	10,524		
5,000	4,994	621	5,618	4,680	153	4,833		
28,000	28,563	5,994	34,557	29,488	5,567	35,055		
12,887	13,336	1,452	14,788	13,644	865	14,487		
25,000	20,852	5,407	26,259	18,728	6,741	25,469		
300,198	291,384	89,394	380,778	304,259	74,802	379,061		
496,108	486,596	123,077	610,573	499,978	99,966	599,944	48.0	37.1
54,566	53,402	30,176	83,578	47,748	16,573	64,321		
22,193	19,728	14,169	38,892	19,650	10,964	30,614		
22,462	20,098	9,415	29,513	16,849	3,988	20,832		
281,647	204,220	98,571	297,791	187,759	62,377	250,136	40.6	31.6
330,868	297,443	147,381	444,774	272,006	93,897	365,903		
118,903	1,463	695	2,158	1,463	695	2,158		
101,579	50,320	151,899	151,899	86,707	30,409	117,146		
118,903	103,042	51,015	154,057	88,200	31,104	119,304	43.0	26.4
3,750	4,077	1,395	5,472	4,068	854	4,922		
105,998	102,285	41,200	143,485	96,880	35,365	134,195		
109,748	106,362	42,595	148,957	102,898	36,219	139,117	37.9	26.5
15,400	14,280	4,520	18,780	16,891	5,086	21,927		
4,845	4,778	537	5,310	4,796	984	5,780		
12,239	12,439	13,308	25,742	12,496	10,812	22,808		
213	308	134	442	13	13	442		
72,862	72,467	28,091	100,558	69,313	27,469	96,782		
106,559	104,247	46,585	150,832	103,804	43,935	147,739	38.2	20.6
44,008	48,395	27,111	75,506	49,064	28,304	77,368		
7,084	7,280	2,878	10,153	7,332	2,388	9,770		
36,623	50,140	18,348	68,488	58,097	17,910	71,007		
120,808	124,799	61,770	186,569	117,316	52,257	169,573		
208,023	280,614	110,102	340,716	226,859	100,859	327,718	40.1	25.1
856,918	822,785	127,305	950,090	826,105	134,824	960,929		
23,685	23,404	3,799	27,208	24,101	2,488	26,589		
177,000	192,908	56,743	249,646	188,005	49,686	187,641		
65,961	43,538	3,513	47,046	48,002	1,668	45,470		
1,128,564	1,082,625	191,360	1,278,985	1,082,013	189,016	1,221,029	55.3	35.6
143,000	133,432	57,189	190,621	134,093	55,522	189,615		
181,046	127,149	48,298	175,447	121,729	43,310	165,039		
274,046	260,581	105,487	366,068	255,822	98,832	354,654	43.7	30.0
88,862	34,921	19,075	53,996	35,572	11,194	46,766		
88,862	34,921	19,075	53,996	35,572	11,194	46,766		
25,885	25,029	14,200	39,235	25,083	12,265	37,348		
17,920	16,988	10,192	27,175	17,276	10,127	27,403		
187,167	187,990	92,369	280,359	198,441	91,107	284,548		
280,772	230,002	116,667	346,669	236,805	113,499	349,304	33.2	33.4
3,774,147	3,983,239	824,328	4,757,567	3,970,322	782,803	4,753,125		
2,528,595	2,340,788	823,599	3,169,387	2,343,094	614,292	2,962,386		
6,802,742	6,294,027	1,652,927	7,046,954	6,313,416	1,397,095	7,710,511	39.4	30.6

N-1.—Statement showing the water-rates per acre which were in force under certain "Productive" and "Unproductive" Works in the Madras Presidency during the year ending 30th June 1946.

Description of crop.	Godavari and Krishna canals.		Munivara project.		Periyar system.*		Bhavamsi tank.		Venkata-puram tank.		Mopad. reservoir.		Willingdon reservoir.		Panja padu reservoir.†		Siddapur tank.		Other systems (in tracts where the differential water-rate system does not prevail). ‡
	RS.	A.	RS.	A.	RS.	A.	RS.	A.	RS.	A.	RS.	A.	RS.	A.	RS.	A.	RS.	A.	
1 Single wet crop	6	4	6	4	5	0	9	6	4	3	7	13	6	4	8	4	8	4	..
2 Second wet crop	3	2	3	2	3	0	4	11	2	1	3	15	3	2	3	2	3	2	..
3 Second wet crop (if compounded for two crops for a term of not less than five years).	10	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4 Second dry crop on irrigated land except where the landholder has compounded under clause 2.	3	2	3	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5 For sugarcane, betel and other garden produce remaining on the ground for the time of two crops.	9	6	9	6	8	0	14	1	6	4	11	12	9	6	..	..	..	9	0
6 For sugarcane, betel and other garden produce remaining on the ground for the time of two crops, if compounded for a term of not less than five years.	10	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7 For a dry crop, whether first or second, grown on land for which irrigation has never been supplied or having been once supplied has been since discontinued.	3	2	..	..	..	..	4	11	2	1	3	15	..	..	..	..	..	..	..
8 For a third irrigated crop (wet)	2	8	3	2	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..
9 Do. (dry)	1	4	3	2	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..
10 Dry crop systematically irrigated	6	4	4	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11 Second wet crop in the case of zamindari and inam lands	6	4	3	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12 Second wet crop in the case of zamindari and inam lands where the cultivator has compounded for two crops for a term of not less than five years.	10	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13 For sugarcane, betel and other garden produce in zamindari and inam lands remaining on the ground for the time of two crops.	12	8	9	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14 For sugarcane, betel and other garden produce in zamindari and inam lands remaining on the ground for the time of two crops, if the cultivator has compounded for a term of not less than five years.	10	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15 For a first dry crop systematically irrigated	..	..	..	..	5	0	..	..	..	..	..	..	..	..	..	..	..	..	..
16 For a second dry crop systematically irrigated	..	..	..	..	3	0	..	..	..	..	..	..	..	..	..	..	..	..	..
17 For a first or second dry crop occasionally irrigated	..	..	..	..	2	8	..	..	..	..	..	..	..	..	..	..	..	..	..

15 Special crops like onions, sweet potatoes, chilies, tobacco (the same as for a dry crop systematically irrigated).

16 Mango totes, coconut totes and other tope plantations—

(a) If they take water for term of two wet crops

(b) In other cases

NOTE.—When the water used for irrigation cannot be obtained without raising it by boring or by some mechanical contrivance a deduction of one-fourth of the water-rate will be made.

* Double the rates are levied when Periyar water is supplied to Government and minor inam dry lands to the Cumbum Valley, Periyakulam taluk, to which extension of irrigation has been sanctioned.

† Standard scale of water-cess has been ordered to be adopted until further orders—Vide G.O. Ms. No. 1277, Revenue, dated 29th June 1934.

	First crop on dry land.		Second crop on dry land.		Charge for First crop.		Second crop.		Total charge.	
	RS.	A.	RS.	A.	RS.	A.	RS.	A.	RS.	A.
1 Wet	..	..	..	..	4	2	0	6	0	..
2 Do.	..	..	..	..	4	1	8	5	8	..
3 Do.	..	..	..	..	4	1	0	5	0	..
4 Dry, systematically irrigated	..	..	..	..	3	2	8	5	8	..
5 Do.	..	..	..	..	3	2	0	5	0	..
6 Do.	..	..	..	..	3	1	8	4	8	..
7 Dry, occasionally irrigated	..	..	..	..	2	3	0	5	0	..
8 Do.	..	..	..	..	2	2	8	4	8	..
9 Do.	..	..	..	..	2	2	0	4	0	..

N.B.—The rates fixed in the Tanjore District Cauvery Water-cess Rules are not incorporated in this statement.

APPENDIX II.

I

Statement showing the financial results of irrigation under Productive and Unproductive Systems for fasli 1355 (1945-46).

Systems.	Area charged as irrigated and area irrigated free of charge.				Direct receipts.			
	First crop.		Second crop.		Total land and irrigation revenue.		Share due to irrigation.	
	Old irrigation.	New irrigation.	Old irrigation.	New irrigation.	(7)	(8)	(9)	RS.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
I. Productive Works.								
1 Godavari Delta system	156,150	746,055	902,205	ACS.	326,890	326,890	75,54,462	60,83,656
2 Krishna Delta system	70,710	910,378	981,088	..	21,249	21,249	63,97,185	58,41,055
3 Divi cum Krishna East Bank canal	9,900	86,928	99,828	..	36	36	6,24,041	6,21,027
4 Pennar river canals system	99,080	74,184	173,264	1,050	3,491	4,541	9,82,155	8,29,944
5 Arakkankottai channel	2,730	2,083	4,813	10	974	984	46,614	40,231
6 Tadepalle channel	9,990	8,572	18,562	170	4,866	5,036	1,94,281	1,69,386
7 Kalincarayan channel	8,300	4,303	12,603	8,350	1,961	10,311	1,55,554	1,37,243
8 Chembrambakkam tank	11,370	3,704	15,074	2,500	3,866	4,526	86,193	62,774
9 Polney anicut system	15,550	5,843	21,393	1,160	2,178	4,678	1,47,579	1,11,614
10 Cheryar anicut system	14,960	6,783	21,743	1,630	9,380	11,010	1,56,517	1,11,833
11 Tirukkoyilur anicut system	16,080	13,383	29,463	30	5,273	5,303	1,34,538	1,37,811
12 Shadiyatope anicut system	7,160	27,575	34,735	..	5,284	5,284	2,15,615	1,59,247
13 Mahanathur anicut system	990	3,757	4,747	..	153	153	36,361	26,268
14 Vriddhachalam anicut system	2,430	7,051	9,481	..	413	413	67,554	47,569
15 Lower Coleroon anicut system	44,760	62,234	113,994	170	8,997	9,167	8,73,924	5,95,901
16 Cauvery Delta system	743,647	163,947	907,594	33,919	123,848	162,767	67,14,103	58,10,492
17 Nandiyar channel system	4,830	2,872	7,702	1,570	818	2,338	44,969	34,294
18 Periyar system	66,600	79,056	144,656	16,100	41,096	57,196	11,56,848	10,49,372
19 Srivasthikuntam anicut system	14,530	11,622	26,202	5,850	6,673	12,523	2,72,488	2,30,947
20 Marudur anicut system	17,020	571	17,591	590	9,689	10,279	2,43,869	2,10,084
21 Cambum tank	4,350	797	5,147	2,670	2,231	439	39,583	35,595
22 Kattalai scheme	27,360	26,829	54,189	8,250	17,576	17,576	5,09,240	4,26,735
23 Polavarani Island system	..	15,368	15,368	..	7,909	7,909	1,21,514	1,21,514
24 Cauvery-Mettur Project	69,257	116,842	186,099	1,730	44,134	45,864	17,54,959	17,11,065
Total, Productive Works	1,417,654	2,390,537	3,808,191	85,749	640,773	726,522	2,85,79,646	2,41,05,297

II. Unproductive Works.

25 Chicoole minor rivers system	51,260	32,736	83,996	..	6,875	6,875	2,85,499	1,93,173
26 Willingdon reservoir	2,500	16,302	18,802	280	6,431	6,741	1,59,998	1,56,123
27 Nagavalli river system	10,800	15,712	26,512	5,200	-4,297	903	1,34,724	1,07,821
28 Muniyer anicut system	600	9,481	10,081	..	90	90	68,897	58,692
29 Jangamabeswarapuram tank	150	118	268	7	-5	2	1,685	1,165
30 Atmakur tank	..	503	503	..	1	1	2,495	2,046
31 Dondapad tank	..	434	434	..	4	4	2,094	1,869
32 Bhavanasi tank	..	615	615	..	2	2	5,916	5,916
33 Mopad reservoir	..	6,593	6,593	..	414	414	54,394	54,717
34 Hajipuram tank	..	576	576	..	9	9	3,175	2,573
35 Ponnatur tank	..	771	771	..	..	..	5,547	4,356
36 Anamasamudram-Bhaperu tank	..	..	..	..	..	..	4,389	3,879
37 Yerur tank	900	-4	896	..	-80	..	4,711	3,567
38 Saglari system	80	746	826	..	109	109	19,269	16,859
39 Markapur tank	3,600	51	3,651	700	-651	49	7,737	7,090
40 Yellapur tank	450	960	1,400	..	50	3	2,013	2,491
41 Siddhapur tank	..	551	551	..	..	..	6,946	6,946
42 Nagavaram anicut and supply channel	..	970	970	..	2	2	4,791	4,074
43 Venkatapuram tank	..	128	580	235	134	419	2,990	2,943
44 Kurnoor-Cuddapah canal	..	333	338	..	..	..	3,77,962	3,40,997
45 Chepad channel	6,643	62,535	69,228	..	8,284	8,284	59,375	52,474
46 Barur tank	1,406	8,965	10,371	56	350	406	37,113	24,650
47 Kanniyampalayam anicut	1,760	2,771	4,531	540	314	854	2,698	2,698
48 Madras water-supply and irrigation system	..	308	308	..	134	134	32,877	24,536
49 Vallur anicut system	5,630	2,330	7,960	780	1,591	2,371	12,861	8,836
50 Palar anicut system	4,030	1,009	5,039	10	573	583	4,54,680	3,40,939
51 Pelandoral anicut system	53,390	21,052	74,442	16,070	2,901	13,971	88,145	65,743
52 Panjapatti reservoir	2,120	12,397	14,517	100	803	903	..	..
53 Thippayyakam project	..	..	..	..	..	..	2,672	2,672
54 Basavanna and Raya channel	..	213	213	..	164	164	1,19,156	1,08,573
Total, Unproductive Works	146,071	211,300	357,371	24,088	27,556	51,644	10,65,159	10,08,423
Grand total	1,563,725	2,602,337	4,166,062	109,837	668,329	775,166	3,05,44,805	2,57,13,720

NOTE.—The revenue due to old irrigation and new irrigation under the Cauvery Delta System fixed by the Accountant-General with reference to G.O. No. 763 (Irrigation), dated 25th March 1936, is shown below :—

	Direct receipts.	Indirect receipts.	Total
RS.	RS.	RS.	RS.
Old irrigation	36,71,882	1,15,105	37,86,987
New irrigation	15,47,976	48,526	15,96,502
Total	52,19,858	1,63,631	53,83,489

APPENDIX II

Systems.	Net receipts direct and indirect.				Gross indirect receipts.		
	Average for five years 1943-44.	Actuals, 1944-45.	1945-46.		Actuals 1944-45.	1945-46.	
			Revised estimates.	Actuals.		Revised estimates.	Actuals.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	RS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Productive Works.							
1 Godavari Delta system ..	44,80,541	52,44,808	50,14,000	42,30,782	2,30,783	2,22,572	2,30,783
2 Kistna Delta system ..	42,41,570	51,44,081	48,78,000	47,12,309	1,92,210	1,75,507	1,92,210
3 Diyi cum Kistna East Bank canal.	5,42,800	6,44,942	6,04,000	5,68,671	87,205	83,119	87,205
4 Pennar River Canals system.	6,13,941	6,87,320	6,92,000	6,01,413	73,367	69,656	73,367
5 Arakkankottal channel ..	16,477	21,409	27,000	20,576	428	372	428
6 Tadepalli channel ..	61,308	79,489	98,000	91,488	2,929	2,890	2,929
7 Kalingarayan channel.	33,131	46,438	33,000	49,888	483	419	483
8 Chembarambakkam tank.	26,886	47,272	28,000	40,175	957	898	957
9 Poincy anicut system ..	51,950	83,558	86,000	35,730	5,488	5,357	5,488
10 Cheyyar anicut system ..	43,041	75,999	76,000	70,863	4,735	4,681	4,735
11 Tirukkoyilur anicut system.	58,198	78,943	57,000	76,583	3,369	3,293	3,369
12 Shatlatope anicut system.	1,23,401	1,61,320	1,44,000	1,47,411	17,081	16,713	17,081
13 Mehamathur anicut system.	18,223	22,250	21,000	20,749	196	173	196
14 Vriddhachalam anicut system.	25,187	36,084	32,000	36,068	389	322	389
15 Lower Coleroon anicut system.	3,28,001	4,76,309	4,97,000	4,65,339	51,549	51,231	51,549
16 Cauvery Delta system ..	8,82,752	10,56,550	15,29,000	18,95,261	1,62,127	1,58,060	1,63,681
17 Nandiyar channel system.	12,348	15,717	15,000	16,240	250	232	250
18 Periyar system ..	7,08,543	8,77,004	8,87,000	8,91,020	94,863	..	94,863
19 Srivalkuntam anicut system.	1,13,779	1,40,605	1,35,000	1,44,126	1,490	1,423	1,490
20 Marudur anicut system.	64,382	89,095	78,000	90,156	279	237	279
21 Cumbum tank ..	4,327	13,160	7,000	1,762	472	454	472
22 Kattalalscheme ..	85,672	1,56,463	1,57,000	1,61,653	121	121	121
23 Polavaram Island system.	94,962	1,01,675	1,01,000	1,11,881	..	..	..
24 Cauvery-Mettur Project.	14,14,354	15,60,535	15,81,000	14,98,200	28,990	28,740	28,740
II. Unproductive Works.							
25 Chicacole minor rivers system.	44,242	94,945	96,000	97,928	7,874	7,136	7,874
26 Willingdon Reservoir ..	1,20,713	1,45,304	1,40,000	1,34,021	448	448	448
27 Nagavalli river system.	86,186	1,04,537	1,05,000	86,900	21,804	20,712	21,804
28 Maniyeru anicut system.	37,322	39,176	45,000	50,891	62	4	62
29 Janamahaswarapuram tank.	506	790	1,000	632	..	..	..
30 Atmakur tank ..	1,669	1,931	2,000	1,682	..	..	..
31 Dondapad tank ..	2,204	2,591	2,000	1,785	10	8	10
32 Bhavanasi tank ..	4,351	5,508	5,000	5,620	..	..	..
33 Mopad reservoir ..	33,973	48,420	43,000	56,707	5,170	5,170	5,170
34 Hajipuram tank ..	3,639	5,231	5,000	833	70	55	70
35 Ponnalur tank ..	8,574	6,942	6,000	4,138	..	..	..
36 Anamasamudram Biraperu tank.	722	504	..	2,868	1	..	1
37 Yerur tank ..	1,398	3,160	3,000	439	86	22	86
38 Sagliru system ..	2,019	— 833	2,000	4,782	26	22	26
39 Markapur tank ..	5,364	8,578	6,000	4,691	1	..	1
40 Yellanur tank ..	2,641	2,966	3,000	2,989	1,104	1,104	1,104
41 Siddhapur tank ..	4,086	6,924	5,000	6,599	..	..	..
42 Nagavaram anicut and supply channel.	2,378	3,217	3,000	1,413	1,017	1,017	1,017
43 Venkatapuram tank ..	1,312	3,364	2,000	2,796	..	..	..
44 Kurnool-Cuddapah canal.	2,63,469	3,08,343	3,58,000	2,99,077	2,723	1,797	2,723
45 Chepad channel ..	38,359	44,614	43,000	43,146	554	528	554
46 Barur tank ..	17,091	19,133	19,000	17,921	787	787	787
47 Kanniyampalayam anicut.	350	2,698	3,000	2,568	..	..	..
48 Madras water-supply and irrigation system.	7,237	18,808	9,000	12,854	462	441	462
49 Vallur anicut system ..	1,373	4,086	3,000	4,064	1,074	1,067	1,074
50 Palar anicut system ..	1,36,013	2,58,779	2,16,000	1,15,739	16,352	16,532	16,352
51 Pelandoral anicut system.	72,688	58,794	58,000	58,163	86	66	86
52 Tippyapalem project ..	11,084	6,186	5,000	2,538	..	..	..
53 Panjapatti reservoir project.	..	..	..	..	..	..	..
54 Basavanna and Raya channel	..	..	..	98,352	..	..	..

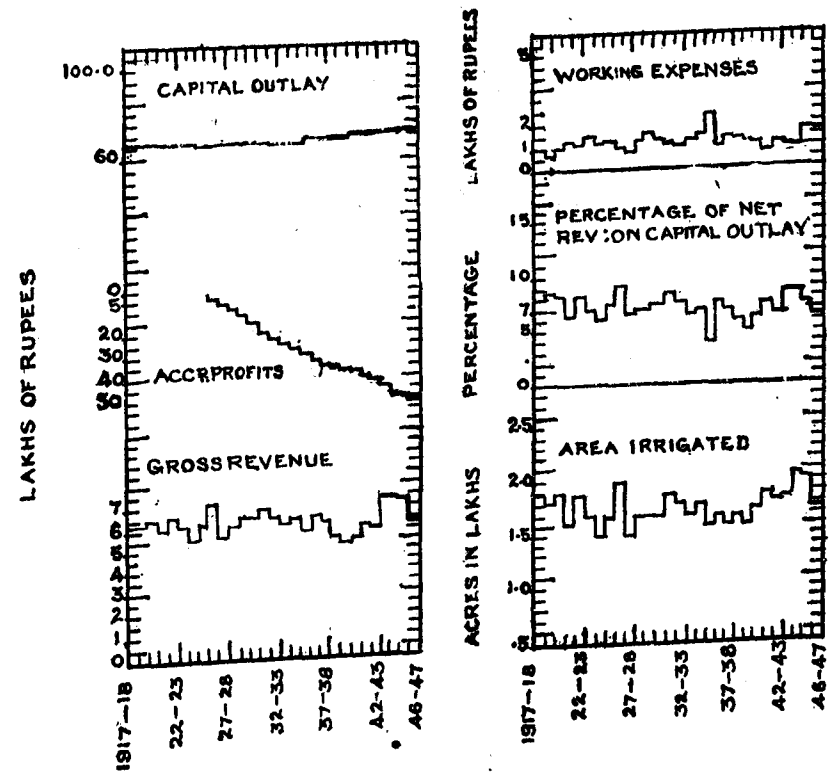
APPENDIX III

APPENDIX III.

Statement showing the extent irrigated and the revenue derived under "Minor Works" for fasli 1355 (1945-46).

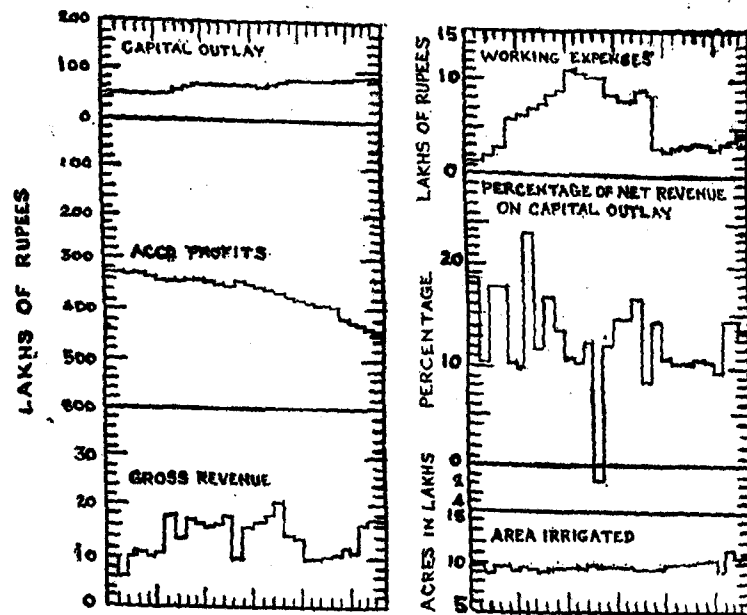
Districts.	Area irrigated and charged and area irrigated free of charge.		Total land and irrigation revenue.	Share due to irrigation.	Deduct remissions and deductions.	Net revenue due to irrigation.
	First crop.	Second crop.				
	(1)	(2)	(3)	(4)	(5)	(6)
Works in charge of the Revenue Department.						
	ACS.	ACS.	RS.	RS.	RS	RS.
Vizagapatam ..	75,845	7,367	2,77,633	1,87,908	22,712	1,65,191
East Godavari ..	85,075	6,637	4,06,251	3,14,448	15,002	2,99,446
West Godavari ..	31,101	1,092	1,11,266	94,200	13,951	80,249
Kistna ..	23,073	211	81,329	77,497	9,376	68,121
Guntur ..	26,896	1,133	1,48,123	1,14,779	10,362	1,04,417
Nellore ..	81,079	7,626	4,15,860	3,46,198	1,19,383	2,26,815
Cuddapah ..	76,186	13,484	3,28,431	2,74,794	70,672	2,04,122
Anantapur ..	106,946	23,770	4,45,365	3,85,927	1,39,693	2,46,234
Bellary ..	27,150	4,719	1,53,217	1,37,126	14,005	1,23,121
Kurnool ..	41,872	2,402	2,10,364	1,75,402	26,882	1,49,020
Chittoor ..	94,014	26,250	5,41,078	4,35,047	1,22,382	3,12,665
Chingleput ..	177,401	35,715	6,92,166	4,93,465	48,286	4,45,179
North Arcot ..	169,989	48,718	10,68,337	7,57,559	1,80,049	5,77,510
South Arcot ..	231,907	52,216	23,67,266	19,85,716	66,620	19,19,096
Tanjore ..	43,451	1,671	1,17,878	89,249	31,020	58,229
Trichinopoly ..	32,417	27,111	3,88,394	2,93,450	31,058	2,62,392
Madura ..	117,317	33,882	6,25,788	5,14,098	71,154	4,42,944
Ramnad ..	21,758	7,017	1,30,666	1,10,313	3,060	1,07,253
Tinnevelly ..	118,430	42,779	6,23,050	5,32,550	11,934	5,20,616
Coimbatore ..	38,855	11,016	2,29,648	1,95,639	14,879	1,80,760
Salem ..	86,087	24,772	5,39,302	3,69,003	96,562	2,72,441
Total of Minor Works — Revenue Depart- ment.	1,756,679	379,068	99,01,212	78,84,363	11,18,542	67,65,821
Works in charge of the Public Works Department.						
Vizagapatam ..	65,027	7,801	3,08,880	2,11,714	30,142	1,81,572
East Godavari ..	67,896	12,977	2,38,588	1,92,520	7,899	1,84,621
West Godavari ..	16,985	161	36,624	78,937	7,392	71,545
Kistna ..	2,354	9	18,043	11,587	..	11,587
Guntur ..	3,423	50	18,766	14,731	89	14,642
Nellore ..	53,900	2,645	3,34,224	2,76,237	86,706	1,89,531
Cuddapah ..	26,968	4,791	1,49,893	1,28,621	28,186	1,00,435
Anantapur ..	34,049	4,734	1,77,082	1,52,418	78,214	74,204
Bellary ..	29,175	4,160	2,20,255	1,95,492	22,091	1,78,401
Kurnool ..	8,463	411	45,815	39,654	8,910	35,744
Chittoor ..	12,654	3,998	84,611	68,109	19,255	48,854
Chingleput ..	193,926	45,032	8,19,518	5,83,754	51,004	5,32,750
North Arcot ..	45,111	13,702	2,97,864	2,13,201	49,084	1,64,117
South Arcot ..	98,601	22,178	6,08,119	4,39,390	18,437	4,20,953
Tanjore ..	12,202	432	35,907	26,617	15,630	10,987
Trichinopoly ..	47,601	24,974	4,23,311	3,16,981	16,273	3,00,658
Madura ..	23,847	11,574	1,60,604	1,29,379	1,957	1,27,522
Ramnad ..	14,506	4,021	1,04,800	87,033	2,597	84,436
Tinnevelly ..	93,953	55,259	9,93,678	8,35,972	3,627	8,32,345
Coimbatore ..	34,849	16,519	2,30,141	2,29,739	7,377	2,21,362
Salem ..	27,790	10,436	2,08,042	1,41,551	23,239	1,18,262
Total of Minor Works — Public Works Department.	918,180	245,864	56,09,770	43,73,637	4,73,559	39,00,078
Grand total, Minor Works.	1,756,679	379,068	99,01,212	78,84,363	11,18,542	67,65,821
Revenue Department.	1,756,679	379,068	99,01,212	78,84,363	11,18,542	67,65,821
Public Works Department.	2,669,859	624,932	1,55,10,982	1,22,53,000	15,92,101	1,06,65,899

—FINANCIAL RECORD—
—PENNER RIVER CANAL SYSTEM—

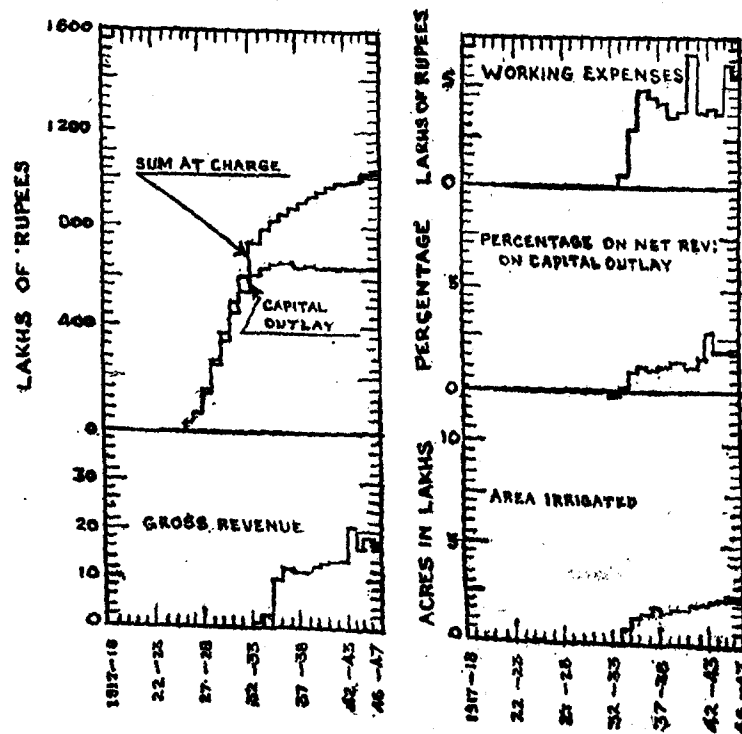


— FINANCIAL RECORD —

— CAUVERY DELTA SYSTEM —

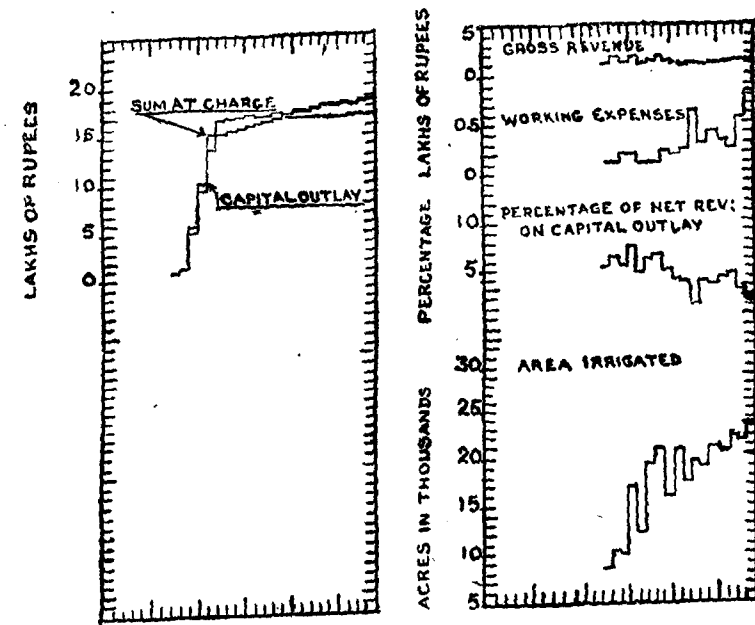


— CAUVERY METTUR PROJECT —

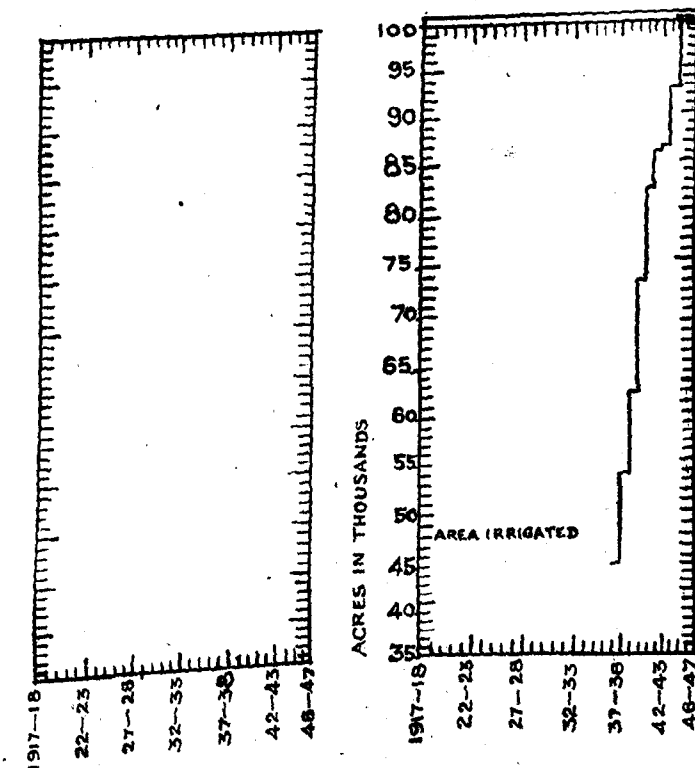


— FINANCIAL RECORD —

— POLAVARAM ISLAND —

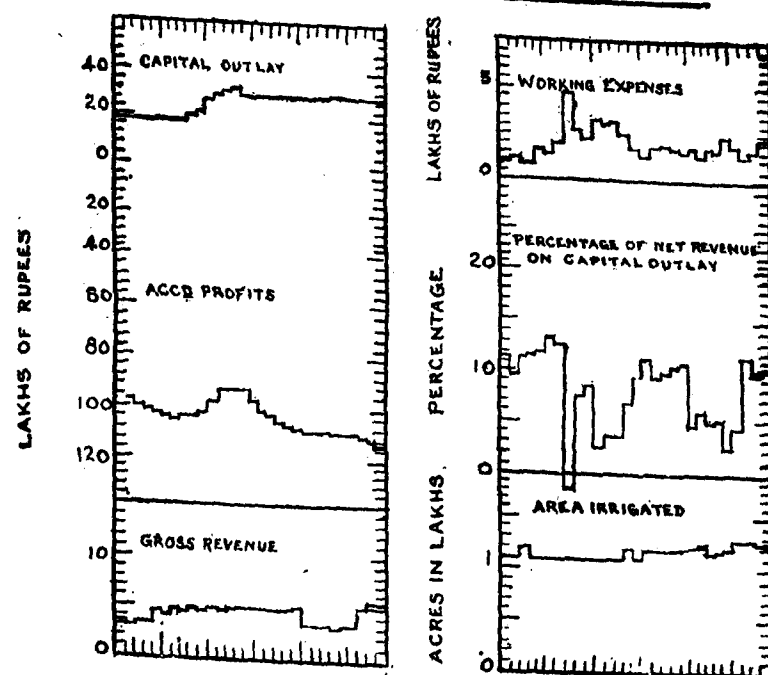


— KISTNA EAST BANK CANAL —

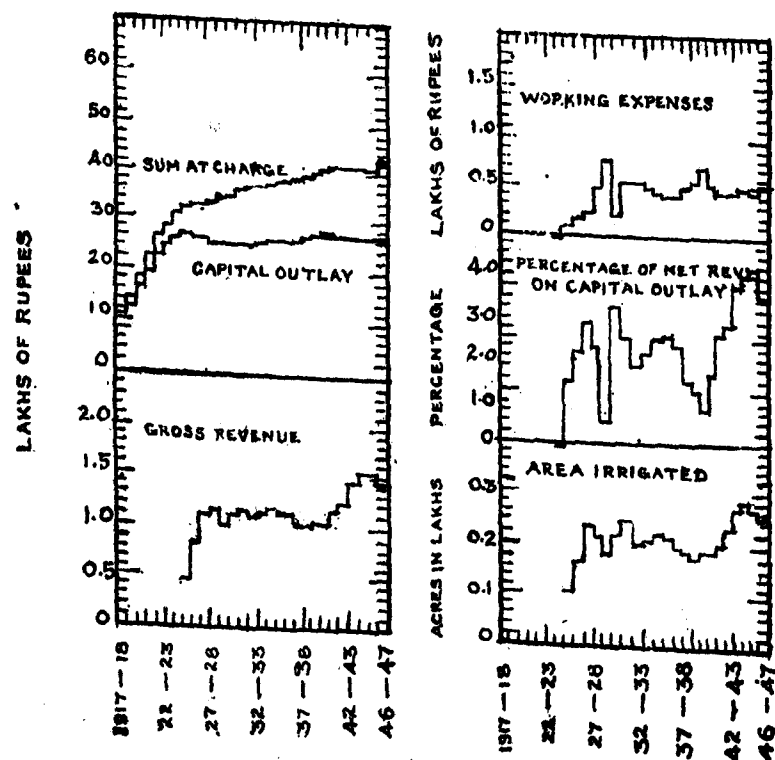


— FINANCIAL RECORD —

— LOWER COLeroon ANICUT SYSTEM —

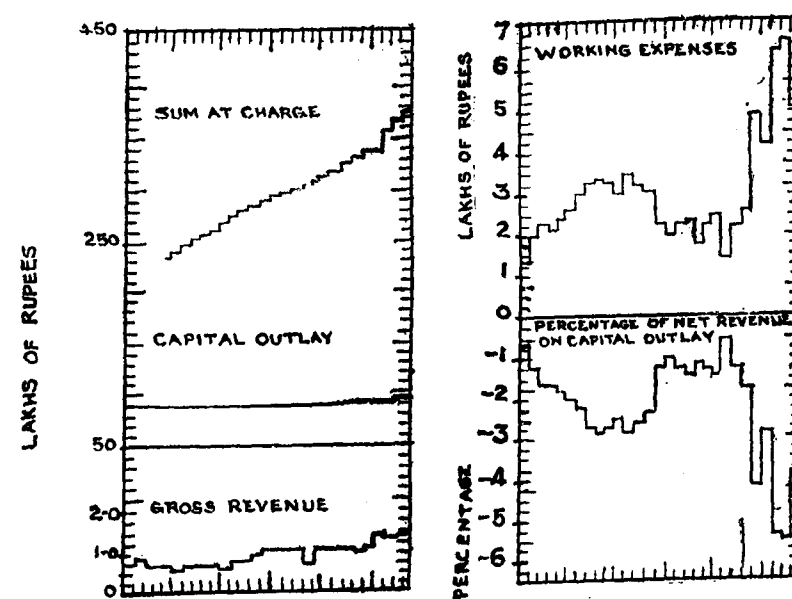


— TOLUDUR PROJECT —

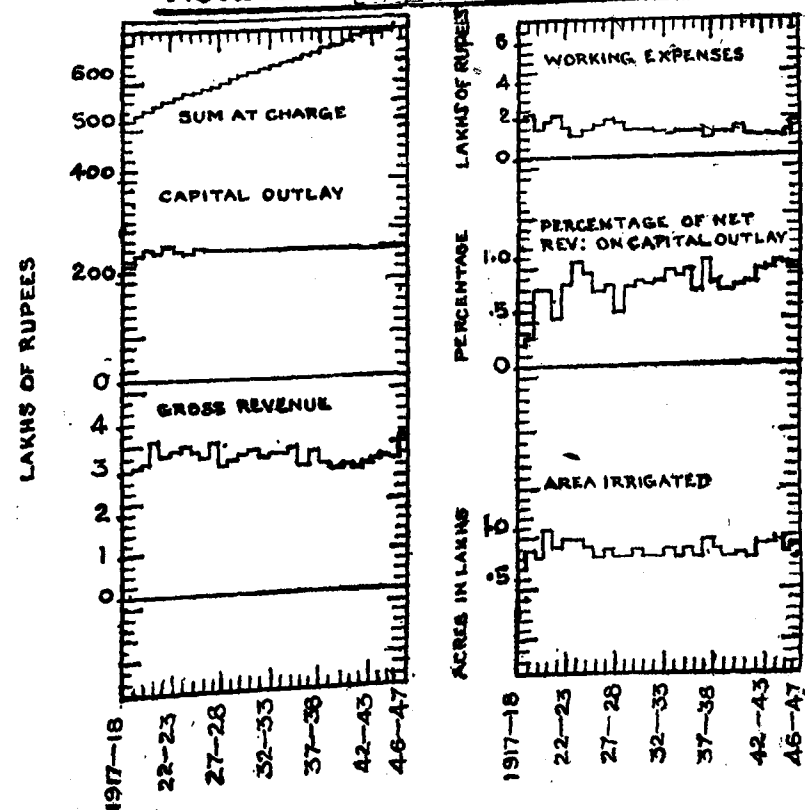


— FINANCIAL RECORD —

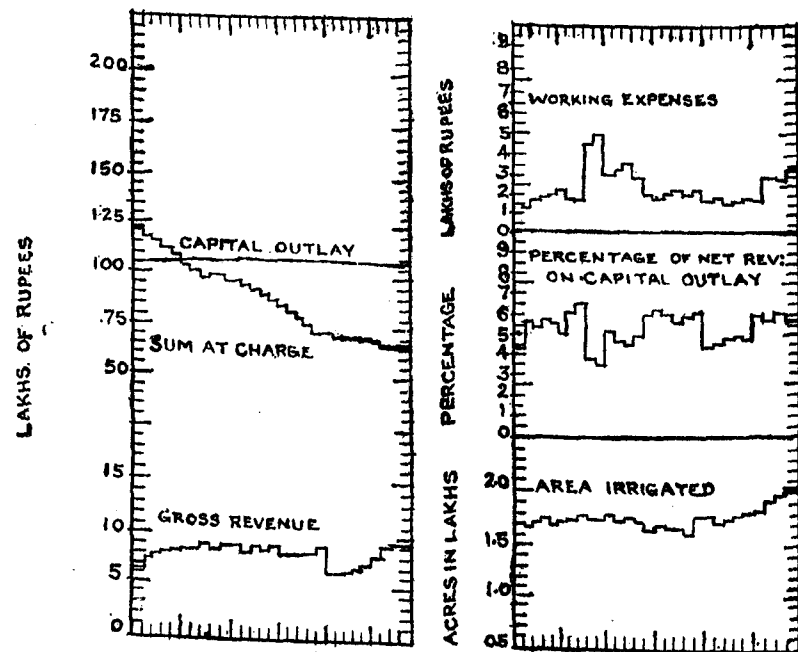
— BUCKINGHAM CANAL —



— KURNOOL CUDDAPAH CANAL —



— FINANCIAL RECORD —
— PERIYAR SYSTEM —



— SRIVAİKUNTAM ANICUT SYSTEM —

