

Public Works (1898) Department.

G.O., No.

461 60

DATED

23 February 1898

[Despatch Abstract.]

*Japanese Reservoir Project. Pro. P.W. Dept, Irrigation
Branch, concurring in the opinion of the Chief Engr. for Irrig.
that the — should be fully investigated, and directing
that arrangements be accordingly made for surveying
the proposed reservoir, Recordob.*

G.O.	No.	Department.	Date.

FURTHER PAPERS.			
G.O.	No.	Department.	Date.

IRRIGATION.

Government {1898} of Madras.
PUBLIC WORKS.

Recd. 3. 2. } 1898.
Regd. 3. 2. }

Enclosures

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G.O., No. 53 I., 19th January 1898.

JANUARY.

Papanasam Reservoir Project

Concurring in the opinion of the Chief Engineer for Irrigation that the — should be fully investigated, and directing that arrangements be accordingly made for surveying the proposed reservoir.

...the first mention of any proposals for the construction of reservoirs in the neighbourhood of Pápanásam occurs in Captain Horsley's diary in 1854. His idea was to construct one reservoir at Surumuthyenkovil and another below the Pápanásam falls. In 1856 Colonel Roberts submitted an estimate of Rs. 1,50,000 for a dam at Surumuthyenkovil, but the project was found to have been too roughly drawn up to permit its submission to Government. The project next engaged Captain Oakes' attention, but he was unable to get the necessary surveys made owing to want of establishment. In 1862 Major Paxton attempted to get the surveys made, but orders were given to let the project lie over. The subject was next brought forward by Mr. Puckle in his report on the irrigation of the district in 1868, and orders were issued to take up the investigation. It appears that something was then done, as Mr. Rundall, writing in 1872, states, that on his first arrival in the district, Major Payne informed him that Captain Makgill had been for a long time employed in surveying the river above Pápanásam and had, to a great extent, matured the project; but the papers could not be found, nor have any since been found, though search has been made for them, unless the traced map showing three proposed sites with the extent of the reservoirs above each is Captain Makgill's. In 1872, Mr. Norfor was sent to survey the site of the Surumuthyenkovil reservoir, but it was found that a dam 80 feet high would impound only 22 millions of cubic yards. This disposes of proposals for a reservoir at that place or higher up. In 1875 Colonel Mullins inspected the sites and recorded his opinion in the notes printed with G.O., No. 848, dated 31st March 1875. He came to the conclusion regarding the correctness of which there can be no doubt, that the most suitable site for a dam is that shown as No. 3 on the map about a mile above the falls. In discussing the question he suggested for consideration whether it would not be sufficient to build a regulating dam. The cultivation has, however, increased since 1875, and nothing but a capacious reservoir can now be thought of.

2. In 1882 there was further correspondence and matters got so far that the officer in charge of the D Project division was ordered to take up the investigation as soon as he had completed the Pálar anicut project; but for some reason, which it would be fruitless to enquire about, the investigation was never begun, nor has any attempt been made since to undertake it.

GOVERNMENT OF MADRAS. PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper:—

No. 6 I.

NOTE BY THE CHIEF ENGINEER FOR IRRIGATION. Pápanásam Reservoir Project.

The first mention of any proposals for the construction of reservoirs in the neighbourhood of Pápanásam occurs in Captain Horsley's diary in 1854. His idea was to construct one reservoir at Surumuthyenkovil and another below the Pápanásam falls. In 1856 Colonel Roberts submitted an estimate of Rs. 1,50,000 for a dam at Surumuthyenkovil, but the project was found to have been too roughly drawn up to permit its submission to Government. The project next engaged Captain Oakes' attention, but he was unable to get the necessary surveys made owing to want of establishment. In 1862 Major Paxton attempted to get the surveys made, but orders were given to let the project lie over. The subject was next brought forward by Mr. Puckle in his report on the irrigation of the district in 1868, and orders were issued to take up the investigation. It appears that something was then done, as Mr. Rundall, writing in 1872, states, that on his first arrival in the district, Major Payne informed him that Captain Makgill had been for a long time employed in surveying the river above Pápanásam and had, to a great extent, matured the project; but the papers could not be found, nor have any since been found, though search has been made for them, unless the traced map showing three proposed sites with the extent of the reservoirs above each is Captain Makgill's. In 1872, Mr. Norfor was sent to survey the site of the Surumuthyenkovil reservoir, but it was found that a dam 80 feet high would impound only 22 millions of cubic yards. This disposes of proposals for a reservoir at that place or higher up. In 1875 Colonel Mullins inspected the sites and recorded his opinion in the notes printed with G.O., No. 848, dated 31st March 1875. He came to the conclusion regarding the correctness of which there can be no doubt, that the most suitable site for a dam is that shown as No. 3 on the map about a mile above the falls. In discussing the question he suggested for consideration whether it would not be sufficient to build a regulating dam. The cultivation has, however, increased since 1875, and nothing but a capacious reservoir can now be thought of.

2. In 1882 there was further correspondence and matters got so far that the officer in charge of the D Project division was ordered to take up the investigation as soon as he had completed the Pálar anicut project; but for some reason, which it would be fruitless to enquire about, the investigation was never begun, nor has any attempt been made since to undertake it.

3. It is evident that the want of a reservoir to store flood water has been very much felt and has been a matter of concern to many officers who have been in charge of the irrigation works and to the officers of the Revenue Department. I do not think an earthen dam could have been constructed, and it was just as well that the construction of a masonry dam was not attempted in the early days when the design of such dams was not understood. The great difficulty which has been in the way of getting a reservoir estimated for and sanctioned was the feeling that it cannot be proved that the work would bring in returns sufficient to cover the interest on its cost, and there was therefore little chance of getting it sanctioned by the Government of India. It cannot be shown what the returns are likely to be until an estimate is made for the work.

4. The discharges at the Nathiyuni anicut which is only a few miles from Pápanásam cannot be very different from the discharges at the proposed reservoir site. Gauge readings have been recorded at the Nathiyuni head sluice from 1877 to date, and these will enable a calculation of discharges for twenty years to be made as soon as the corresponding depths on anicut crest and in rear of the anicut are ascertained. It is evident that a good deal of water passes down the river in excess of what can be used at the time. The returns for the seventeen years (1877 to 1894, excluding 1893 for which there are no returns) show that, during the south-west monsoon or June to August, the water level was between the anicut crest and half a foot above it, on an average 30 days between $\frac{1}{2}$ and $1\frac{1}{2}$ feet on 20.5 days, and above $1\frac{1}{2}$ feet on 2.5 days. For the north-east monsoon, October to December, the corresponding figures are 37.7, 15 and 4.4.

5. The Superintending Engineer should have gauges fixed at once at either end of the anicut (which is very oblique to the river). The upper gauges being somewhat in front of the anicut and the lower sufficiently in rear to be beyond the disturbed water, special arrangements will have to be made for recording the water levels at the right flank. The observations of a few months should supply the information which will enable us to make use of the readings of the last twenty years.

6. The total area of occupied wet under the Tambaraparni channels is 73,403 acres, and the highest area cultivated 70,360 acres. The assessment on the occupied area is Rs. 8,81,615. The average remissions for the 23 faslis (1283 to 1305) is Rs. 22,763, of which all but Rs. 844 is in the Srivaikuntam taluk. The remissions on lands under the Marudur anicut have averaged Rs. 4,030 and under the Srivaikuntam anicut Rs. 21,919. Most of the lands under the latter anicut are compounded for double crop, yet about 6,000 acres, or 35 per cent. of the whole, have to be left waste during the south-west monsoon. The large remissions merely represent the revenue on land on which either no crop at all or only one very short crop is raised. This indicates a most lamentable state of things. The channels are very large for the area under them and the tanks to be filled, but the supply in the river so precarious and the freshes so short that the ryots never know what they can depend on getting, although there has been such a difficulty in supplying the comparatively small area under the anicut and the tanks are partly supplied by local drainage, the average quantity which has annually passed waste to the sea, during the last twenty years is 47,274 millions of cubic feet or sufficient to irrigate 236,000 acres, but the surplus has varied from 2,559 millions in 1892-93 to 1,22,868 millions in 1877-78. All this shows the need for large reservoirs, but I fear there are very few places in which they can be made. The plain country is generally too flat or the land too valuable to acquire, or there is not much soil fit for making high bunds, while at the foot of the hills the slopes are too great to allow of large reservoirs being formed without bunds of excessive height. The Pápanásam site is the only really good one discovered so far, and although the catchment area is only 160 square miles, the country is so favourable to a large run off and the rainfall over a great part of it so heavy, I think there is reason to expect that the project will prove, on the calculations being made, to be well worth carrying out. It is estimated by the Revenue officers that if the water-supply were materially increased, there would be an increase of direct revenue of Rs. 56,800 and a saving of Rs. 22,763 in remissions. Of the direct revenue, it would perhaps be safer to omit Rs. 11,250 entered for a proposed tank at

Trichendúr. This reduces the possible increase of revenue to Rs. 68,313, but I think it must be also taken into consideration that, if the present state of things continues, the Srivaikuntam ryots will not accept at the settlement which is now near at hand, compounded assessment on lands when there is not a fair expectation of two crops.

7. Nothing can be done towards surveying the proposed reservoir until June—the hills being very feverish in the hot weather, but I think that a survey should be then put in hand. It will be rather difficult surveying, the forest having been so carefully conserved that one can scarcely go any where off the forest paths. There will, consequently, be a good deal of jungle-clearing for the survey lines and the work will take some months.

5th January 1898.

(Signed) W. HUGHES,
Chief Engineer for Irrigation.

ORDER—No. 53 L, dated 19th January 1898.

The Government concurs in the opinion expressed by the Chief Engineer for Irrigation that the Pápanásam reservoir project should be fully investigated. Arrangements will therefore be made for surveying the proposed reservoir, a proposition statement for the necessary Survey establishment and an estimate for preliminary expenses being submitted by the Superintending Engineer, VI Circle, in due course, for the sanction of Government.

(True Extract.)

Hughes
Under Secretary to Government,
Irrigation Branch.

To the Chief Engineer, Public Works Department. ✓
" Chief Engineer for Irrigation.
" Superintending Engineer, VI Circle.
" Examiner of Public Works Accounts.
" Revenue Department.

Ed. T. K. Narayana Aiyangar.