Public Works (1896) Department.

G.O., No. 1459

DATED 10/2/96

[Despatch Abstract.]

Silt clearance in the Sagore delta — Correspondence on the subject of — Communicated to officers concerned.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
ms	1736	PW	2.7.64				

IRRIGATION.

Govt. of {1896} Madras.

PUBLIC WORKS.

Dated February, 10*th*.

Encl.

Read.

G.O. No. 145 I., 10th Feb. 1896.

FEBRUARY.

Silt Clearance

Correspondence on the subject of — in the Tanjore delta, communicated to the officers concerned for guidance.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following papers:—

G.O., Mis. No. 100, Revenue, dated 10th January 1896.

Read—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), No. 210, dated 13th July 1895:—

Read—again the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 4th March 1895, Mis. No. 1179:—

Read—the following letter from J. THOMSON, Esq., Acting Collector of Tanjore, to the Secretary to the Commissioners of Land Revenue, dated Tanjore, 14th February 1895, Ref. on Cur. No. 2755-Ver.:—

In October last I drafted the following letter to the Board:—

"I have the honour to solicit the orders of the Board in the following case, typical of its kind in regard to the question of silt clearance.

(2) Natesa Iyer and the other ryots of Agara Mangudi, Tanjore taluk, in their petitions to me and to the Board * (transferred to me for disposal) request that the Mangudi voikal, irrigating 1,913 acres in eight villages and once repaired by Government ten or fifteen years ago, may be cleared of silt. The Engineering Department refuses to provide funds for the work and direct the ryots concerned to get it done in kudimaramut. The Superintending Engineer, V Circle, relies on the following extract from paragraph 2 of Colonel Mullins' (Chief Engineer for Irrigation) memorandum, No. 8–111, dated 31st May 1880, in support of his contention that the channel should be cleared by the interested mirasidars:—

* Board's Proceedings, Mis. No. 3588, dated 13th June 1894.

'The general principle to be acted upon is that all irrigation works should be classed as minor which can be maintained in a fair state of efficiency by the villagers or village communities.'

(3) I am not aware that there has been any settlement of the relative duties of the State and the people with regard to channels, and hitherto, I believe, in Tanjore repair or restoration has arranged itself by the Public Works Department doing what they could, with the funds provided, by expenditure where, in the opinion of the department, it was most wanted—therefore naturally on the most important lines which had fallen into disrepair,—the people taking up what self-interest compelled, or combination permitted them, to effect. With resettlement, and the admission by Government of a right to better maintenance, clamour has grown strong, and I am afraid the arrival at a definite understanding of what the State should do cannot much longer be evaded.

That the 'rivers' should be a Government charge and the single village channels fall to kudimaramut will not probably be disputed; the problem lies between those extremes and will not be easy of equitable solution. The Public Works Department will no doubt be ready to undertake the sole expense of the larger distributaries from the rivers, but where that charge should terminate and the ryots' responsibility begin will be difficult to settle. It cannot well be by number of villages served by minor distributaries, nor the length of these nor revenue involved, for these may bear no proportion to cost of repairs now or continuously necessary.

Still some clear understanding should be arrived at as to minor distributaries that are not village channels, and when it is, it would appear advisable that the State put these into order and that their future maintenance should be a joint charge on the State and the villages benefited, the latter's contribution being a cess levied from time to time as expenditure is called for.

(4) Colonel Mullins' general principle has no definiteness and was probably intended only to express the idea that when the department considered the sum involved to be within what its abstention would force the ryots to expend, nothing should be done by the department. Unfortunately from all I can learn the neglect of the department and of the ryots combined goes on with increasingly unsatisfactory results.

(5) Copies of letters from the Executive Engineer and Superintending Engineer are enclosed. I shall be glad if the Board will favour me with some directions as to how the subject is to be dealt with."

2. Before submitting it, it seemed advisable to learn what the two Executive Engineers in the district had to say and application was made to them accordingly. I enclose copies of their replies.

3. The Executive Engineer, Tanjore division, recognizes the responsibility of the department to exclude sand from sluiced main channels and to gradually provide head sluices where they are necessary. The Executive Engineer, Negapatam division, appears to regard silt clearances as generally money wasted, and to consider that the first remedy lies in a well-considered joint scheme of drainage and irrigation after which the relative duties of the department and of the ryots might be considered.

4. It appears necessary therefore that the matter be taken into full consideration by the responsible officers of the Irrigation Department; for at present it is not clear that concerted understanding and action exist; and it is certain that the necessity for such does exist and the people are claiming an attention to their demands which cannot continue to be denied much longer.

Enclosure No. 1.

From J. C. LARMINIE, Esq., Superintending Engineer, V Circle, to the Collector of Tanjore, dated Chepauk, 8th August 1894, No. 273-M.

With reference to your letter, No. 2755-Ver., dated 1st August 1894, I have the honour to state that the only authority I can find on the question is that contained in paragraph 2 of Colonel Mullins' (as Chief Engineer for Irrigation) memorandum, No. 8–111, of 31st May 1880 :—

"The general principle to be acted upon is that all Irrigation works should be classed as minor which can be maintained in a fair state of efficiency by the villagers or village communities."

There are very few of the Tanjore channels which the ryots cannot keep in order as they hitherto have done, and so it has come to be recognized as a principle.

Enclosure No. 2.

From J. C. JOHNSTON, Esq., Executive Engineer, Tanjore Division, to the Collector of Tanjore, dated 10th November 1894, No. 4511.

In reply to your endorsement, No. 2755-Ver. of 1894, dated 27th October 1894, I have the honour to make the following remarks on the subject of silt clearance of channels in this district.

2. The question is what clearance should be done by the Public Works Department and what by the ryots. It is manifestly impossible for the present Public Works Department establishment to deal with all channels, even if doubled or trebled. The question in one way resolves itself then into this: What can the present staff effect within the two months of closures?

3. This department is responsible at least for the exclusion of silt (sand in this district) from the rivers into channels. If by neglecting this duty sand is allowed to choke up the heads of the channels, that is from the head sluice downwards, this department is clearly responsible.

4. Away from the head works, where channels pass through nunjah, ryots do so much in the way of encroachment, putting up mud dams, making cuts wherever they like, that this department cannot be responsible for any silting-up process which takes place there.

5. The heads of main channels then taking off from rivers, beginning from the head sluices, should be cleared by this department and all others by the ryots. It is the general rule in all districts, I fancy, that leading channels should be cleared by ryots. Channels not provided with head sluices, or for which head sluices are not necessary, should be cleared by ryots. My reason for this is that at present ryots are supposed to do all the clearances (for the Public Works Department do not), and it will not do to throw too much work on this department all at once. Time must be given it to construct head sluices wherever necessary.

6. The bulk of the silt from rivers generally accumulates within two miles from the head sluice of the channel, and this silt should be cleared at least once in five years by the Public Works Department, or whenever the accumulation is such that the discharge is reduced to 50 per cent. of the full supply. The Executive Engineer should have power to refuse any silt clearance from the head if, in his opinion, such clearance would be ineffective from neglect of ryots below.

7. On these lines, the cost of clearance by Public Works Department will be annually about Rs. 20,000 and the ryots will not find their part of the duty too oppressive. They will be assured of a better supply of water; and that alone in a great measure will make them more satisfied than under the present system which assures them no relief at all, or at the best at rare intervals.

Enclosure No. 3.

From M.R.Ry. N. RATNASABHAPATI PILLAI, Executive Engineer, Negapatam Division, to the Superintending Engineer, V Circle, dated 12th December 1894, No. C.-45.

With reference to your No. 522-G, dated 29th October 1894, I beg to state that silt clearances don't appear to have been carried out to any great extent of late.

2. The general cry seems to be that lands near heads of rivers are getting gradually raised up, and that several of the rivers are becoming deeper comparatively to admit of the lands being commanded by them without damming up, especially during low water.

3. But in low-lying lands this raising is felt to be advantageous, and the greater the clearances at heads of rivers and main channels, the larger is the quantity of water drawn off to these lands.

4. In the Cauvery delta, where I am inclined to think the cultivated area is in excess of what the capacity of the river can safely supply, the interests of proprietors in the higher and lower reaches of the rivers are conflicting. The upper lands require damming or "no silt clearing" to enable their lands to get their full supply; but this naturally reduces the velocity and consequently the supply, which is wanted for the lower reaches.

5. When there are local rains, however, the defects are somewhat compensated, but frequently the lower lands get flooded, and then the complaints turn from insufficient supply to inefficient drainage.

6. Some remedy has to be devised, and it is thought that some of the main branches (rivers as they are called) should be made to catch up as much of the local field drainages as possible and carry the floods straight into the sea, instead of allowing them to spread over the whole *wetted* area commanded by them. This is specially needed in the low-lying reaches, which can be protected from local drainages, and the consequent damage, only if proper provision is made for carrying away floods of upland drainages and preventing overflowing into the lower reaches.

7. In the completion estimates for the delta, proposals will be made detailing what channels are considered necessary to be improved so as to perform these functions. In the meantime, it is thought that although clearances may occasionally be considered necessary, in most cases clearances may not be taken up as they do little or no good.

Enclosure No. 4.

From M.R.Ry. N. RATNASABHAPATI PILLAI, Executive Engineer, Negapatam Division, to the Collector of Tanjore, dated Kalakam, 12th December 1894, No. C.-46.

[*Reference.*—Your No. 2755-Ver., dated 27th October 1894.]

Adverting to your number above, I have the honour to state that enquiries have also been made by the Chief Engineer as to what benefits, if any, are likely to accrue by silt clearances in the Cauvery delta.

2. Though I commenced my service in this district more than twenty years ago, I have not been long here to know much of the working of the Cauvery system. Since my rejoining the district in May last, I have been endeavouring to gather what information I can get and I regret to have to state that much yet remains to be done to enable us to satisfactorily meet the demands of the ryots.

3. The state of things described in paragraph 3 of the communication to the Secretary to the Board of Revenue have already attracted my notice; but as the Cauvery delta irrigation channels were not originally designed on the improved and scientific principles of to-day, drainage and irrigation were then not considered together, with the result that at present most of the irrigation and drainage channels cannot be distinguished one from the other.

4. The rainfall of the hills of the west ghâts is the source from which the rivers of the delta get their supply, and though frequently insufficiency is felt, the demand on the river has in general been met.

5. The rainfall of the Coromandel Coast is, on the other hand, comparatively very small and is only felt during about two months in the north-east monsoons.

6. Occasionally, however, cyclones occur and local drains, combined with the river drainages, spread over the delta, damaging banks and crops.

7. If drainages were kept distinct from the irrigation channels, this state of things would not occur and floods would be conveyed into the sea without overflowing. As it exists however the main rivers branch off into innumerable small channels and dwindle gradually into nothing, while several of these latter channels with local drainages gradually combine to form big drains only as they near the sea.

8. To enable the drainages to be satisfactorily carried down, some orders were issued by my predecessors to keep open some of the bigger branches of the main rivers during floods; but as a matter of fact, this floods up the country in the lower reaches as is evidenced by the state of affairs in Negapatam and Tirutturaippúndi taluks, and ryots are unwilling to open the sluices to allow the floods to spread over the country.

9. This procedure in ordinary floods answers well enough, but with a good 3 or 4 inches of local rains, the main rivers become incapable of discharging the floods and the damages become by sudden burstings of banks even more than they would otherwise have been.

If, however, some of these selected channels could be improved so as to take a fair proportion of the main river waters straight into the big drains, of which I made mention in the latter part of paragraph 7, then the channels can be kept open to pass off the floods without overflowing.

10. The state of things in the delta, it will thus be seen, goes to show that silt brought into the rivers must get deposited in their beds and the lands which their water spills over. Thus gradually the rivers and lands are becoming raised up in the upper reaches of all channels.

11. Similarly a reverse process is going on in the lower reaches, in the beds of rivers, and dams are being put up at all points to counteract the scours, and on the plea of raising water to the offtakes. Unfortunately also permission has been all along granted to utilize the drainage for irrigation purposes.

12. To remedy this state of affairs it is necessary that some complete scheme of drainage and irrigation will require to be proposed before long.

13. Apparently the Chief Engineer for Irrigation has under contemplation some scheme for this and so seems to think that the silt clearances except in rare cases are not likely to prove productive of any good.

14. Copy of my communication No. 45-C, dated 12th December 1894, to the Superintending Engineer in reply to the Chief Engineer's enquiry referred to in paragraph 1 above is herewith forwarded for perusal.

15. I take this opportunity further to bring to your notice that the Revenue Survey has only lately been completed. The settlement does not appear to have been yet finally closed. When this is done we can have complete irrigation and drainage maps got ready and proposals for defining the capacities and duties of each channel drawn up. In several villages it has come to my notice that lands are being shown as supplied by more than one channel and it will be difficult to regulate supply if the ryots must be allowed to have the benefit of all channels. It is imperative that no lands should be permitted to have more than one source of supply and so when any blocks have been supplied by more than one source the proportion supplied by each source should at least be fixed.

16. These informations require to be all collected before satisfactory proposals can be made and approved of. I am further of opinion that the Public Works Department and Revenue Department should come to an understanding on the general scheme before details can be worked out.

17. If suggestions made in paragraph 9 above commend themselves and the scheme referred to in paragraphs 12 and 13 be drawn up, the channels which would require to be maintained by the Public Works Department could be easily decided.

Transferred to the Settlement Department.

(Signed) L. M. WYNCH,
27th February 1895. Secretary.

Resolution—dated 4th March 1895, Mis. No. 1179.

Forwarded to the Chief Engineer for Irrigation for favour of opinion.

2. However unsatisfactory it may be to deal with each channel on its own merits, the number of channels is so great and their circumstances so various that the Board doubts the possibility of laying down any general rule as to how the work of silt-clearance should be shared between the State and the ryot. It is often at the head of large channels not yet provided with head sluices that the most injurious accumulations of silt occur, and Mr. Johnston's opinion that until head sluices can be provided such accumulations should be cleared by the ryots appears to the Board to be incorrect.

The question, as remarked by the Collector, is becoming a burning one.

(True Copy and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Chief Engineer for Irrigation.

Read—also the following letter from Colonel R. R. E. DRAKE-BROCKMAN, R.E., Chief Engineer for Irrigation, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated Madras, 21st March 1895, No. 132-M.:—

In reply to the Proceedings of the Board of Revenue, Mis. No. 1179, dated 4th March 1895, I have the honour to state that it is a difficult matter now to say where responsibility on the part of Government to clear silt from the channels in the Tanjore delta begins and ends, chiefly owing to the kudimaramut system which has more or less been recognized in that district hitherto. The clamour that the Government should now bear the whole of the burden in this direction is clearly due to the introduction of an enhanced assessment. I think the principle must be admitted that the landlord is bound to keep the channels in working order, and this can be done were no interference on the part of the ryot allowed, and the whole of the distribution through the main irrigation channels of the delta rests (*sic in original*) in the hands of the Public Works Department. But, as is well known, the ryots have hitherto done pretty well as they pleased in working the sluices at the heads of those channels, and have resented any interference on the part of the officers of this department. The silting up of channels depends in a great degree upon the manner the sluices are regulated during the seasons of floods, and if this department is responsible for keeping the channels below them in working order, they should *a fortiori* be the responsible agency for working the sluices upon which the well being of the channels depends. The initiative should therefore, it is considered, be taken to give this department sole and undivided control of the sluices irrigating 1,000 acres and over, and it may then be legitimately called upon to keep those channels in a normal degree of efficiency by which is meant a condition whereby all the interests under a channel are equitably served. In the distribution of water through these sluices the decision for arrangement of supply by this department would be final, and no interference on the part of interested kudis could be tolerated. Certain of the channels of the acreage indicated commencing from the Cauvery-Vennar regulators downwards might be thus taken over, and, as a preliminary measure, such clearances as may be considered absolutely necessary be carried out before the next floods. Experience will then show whether any benefit accrues from the new system thus brought into working order and whether it may in consequence be generally established.

Read—the following letter from J. C. JOHNSTON, Esq., Executive Engineer, Tanjore Division, to the Collector of Tanjore, dated 28th March 1895, No. 1114:—

With reference to your No. 940 of 1894 and subsequent four reminders, I have the honour to state that the North and South Rajan channels branching off from the two flanks of the Meratur anicut are silted up, as also nearly every other channel in the district.

2. I beg to refer you to my letter, No. 4511, dated 10th November 1894, to your address, in which I pointed out that the late Superintending Engineer, V Circle, did not approve of much silt clearance, while I on the other hand gave it as my opinion that it was the duty of this department to exclude and remove silt from channels, and that for this purpose a larger grant by Rs. 20,000 would be required. Without definte orders as to removal of silt and without larger funds, I cannot take upon myself the responsibility of incurring large expenditure under this head.

3. The question of exclusion of drift sand into the delta and into channels is a large one and must commence with the consideration of certain alterations to the

upper anicut above Trichinopoly. I am at present experimenting with shutters for excluding silt from small channels, and for framing an estimate for providing the Meratur anicut with shutters and for the removal of the body wall, which body wall naturally acts as a silt trap, but beyond this, I do not see what I can do at present.

4. Unless some means are devised for excluding silt, it is simply waste of labour and money, effecting clearances. But as I said above, I am now experimenting and time is needed for the experiments.

Endorsement by the Acting Collector of Tanjore, dated 28th April 1895, Ref. on Cur. No. 940-Ver.

Submitted to the Board of Revenue, Land Revenue, with copy of this office reference on Cur. No. 940-Ver. of 1894, dated 2nd March 1894, in continuation of this office letter, dated 14th February 1895, Ref. on Cur. No. 2755-Ver. of 1894.

ENCLOSURE.

From G. P. CLERK, Esq., Deputy Commissioner, Revenue Settlement Party No. III, Tanjore, to the Collector of Tanjore, dated 18th February 1894, No. 135.

At the time of hearing objections yesterday, the Mirassidars of Velur village, Kumbakónam taluk, complained to me that the North Rajan Voikal from Vettar river has silted up. The channel irrigates some eleven villages and the ryots of these villages also complained to me of the precarious nature of the supply. It appears that the Public Works Department officers have for some years admitted that improvements were requisite, but nothing has yet been done. Now that ample funds are, or ought to be available, for improving the irrigation works of the district, I request you will be good enough to have this channel put in order if possible.

Endorsement by the Collector of Tanjore, dated 2nd March 1894, Ref. on Cur. No. 940-Ver.

Forwarded to the Executive Engineer, Tanjore Division, for remarks.

Endorsement.

Transferred to the Settlement Department.

(Signed) R. C. C. CARR,
Acting Secretary.

11th May 1895.

Resolution—dated 13th July 1895, No. 210.

The correspondence read above, on the difficult subject of silt clearance in the Tanjore delta, will be submitted for the orders of Government.

2. There are 28 large rivers, and over 1,300 large channels classed as "(3) distributaries," in the Tanjore delta. Very many of the distributaries are as yet unprovided with head-sluices, and it continually happens that at the point where one channel bifurcates into two, deposits of sand obstruct the flow of water down one or other of the off-takes, with disastrous results to the cultivators, holding lands, which depend upon the obstructed channel for their irrigation.

3. The Board believes that it is correct in stating that of recent years an opinion has gained ground amongst the Engineers that it is useless to struggle, with coolies and baskets, against ever-recurring deposits of sand, and that little or nothing can be done to remove accumulations of silt until some large scheme for the better irrigation and drainage of the delta has been devised. If this be a correct representation of professional opinion, the Board would venture to remonstrate against it.

In some instances (as for example in the Vennar immediately below its regulator at the grand anicut) the deposit of sand is so enormous that its removal no doubt forms an engineering problem of great difficulty, in respect of which the Board is in no wise competent to say what should be done; but in other numerous instances, well-known to the local officers, obstructions with which it is impossible for the ryots to deal, could be easily removed at a moderate outlay; and, in the Board's opinion,

justice and expediency alike require that the discovery of some new scheme for excluding silt should not be awaited, but that such obstructions should be removed, without delay in all cases where it is obviously beyond the power, or duty, of the ryot to do the work.

4. The Board would earnestly advise that a liberal allotment for silt-clearance should be made, and that the excuse of want of funds with which the ryots have been put off for the last five years should be no longer advanced.

The objection that the clearances do no permanent good but must be repeated year after year is not a valid one, if a proper flow of water cannot be otherwise secured.

5. The Chief Engineer considers that the first step should be to place the Public Works Department in complete control of all sluices irrigating 1,000 acres and over. This would not improve the position as regards the many channels without head-sluices, to which the Board has above referred. And, unfortunately (as the Chief Engineer is aware) many of the sluices are ancient, and the distribution of water is governed by old customs, or agreements, which assign the "morai," or turn, of each village or holding, irrigated. If these "morais" be respected by the Public Works Department, and if the water-distributors whom the Public Works Department will have to employ, do their duty honestly, the ryots will probably be glad to relinquish the control. But if, and when, an attempt is made to keep all the sluices open in time of flood, or otherwise to alter existing arrangements, the question will at once arise whether the ryots under any particular sluice have acquired a prescriptive right to have it kept open or closed at particular periods, and the Public Works Department may thus find itself involved in much unprofitable and vexing litigation.

6. The Board doubts whether the effective control, desired by the Chief Engineer, can be attained without legislation. The Collector, however, will be requested to ascertain from the Executive Engineer what channels he would propose to take over, and to report whether there is any, and if so what, obstacle or objection, to the proposed transfer of control being tried as an experiment.

7. The Board would, however, strongly deprecate any delay on this account in carrying out the clearance of silt where its removal is admittedly urgent and feasible, for the Board believes that the recent cessation of silt-clearing furnishes the Tanjore ryots with a real grievance, which ought to be removed.

(True Copies and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

Order—Mis. No. 100, Revenue, dated 10th January 1896.

The Government shares the Board's doubt whether the effective control desired by the Chief Engineer for Irrigation cannot be obtained without legislation, but will await the results of Colonel Smart's investigations in the delta and the report called for from the Collector in paragraph 6 of the Board's Proceedings read above before taking action in the matter. Meanwhile, the Chief Engineer will be requested to state what, in his opinion, should be done by Government to remedy the existing state of affairs.

(True Extract.)

(Signed) F. GIBSON,
Secretary to Government.

No. 25 I.

Note by the Chief Engineer for Irrigation.

Before the next irrigation season commences Colonel Smart, R.E., proposes to clear silt in two or three large channels in the Cauvery system. He will then take careful observations as the channel silts up, and see what effect the silt has on the discharge.

2. The question of clearing silt from irrigation channels is a most important one, and the Chief Engineer for Irrigation deprecates any hasty action in spending any large sums of money until the result of Colonel Smart's observations is known. Meanwhile, the Superintending Engineer, V Circle, will be instructed to carry out such clearances as may be urgently required.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

30th January 1896.

ORDER—No. 145 I., dated 10th February 1896.

Communicated to the officers concerned for information and guidance.

(True Extract.)

Under Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle.
" " " VI "
" " " on special duty, Cauvery completion estimates.
" Examiner, Public Works Accounts.
" Revenue Department.

Exd. T. K. Narayana Aiyangar.
Spare Copies.

PUBLIC WORKS DEPARTMENT,
IRRIGATION BRANCH.

No 145 I of 10 February 1896

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

Print Resn. G No 100 Miscellaneous, Revenue, dated 10 January /96
" Note by the Chief Engineer for Irrigation } (H.E.NO 25 I dated 30th Jan:1896)

Before the next irrigation season commences Colonel Smart R.E. proposes to clear silt in two or three large channels in the Cauvery system. He will then take careful observations as the channel silts up andsee what effect the silt has on the discharge.

2 The question of clearing silt from irrigation channels is a most important one and the Chief Engineer for Irrigation deprecates any hasty action in spending any large sums of money until the result of Coll Smart's observations is known. Meanwhile the Superintending Engineer V Circle will be instructed to carry out such clearances as may be urgently re-quired.

Order thereon

Communicated to the officers concerned for information and guidance.

But this does not contain any reply to the question asked in the G.O. of 10/1/96 above read, nor touch the matter of the [illegible] [illegible] which was discussed in the letter in that order.

[illegible]
5/2/96

These are different questions. In the meantime urgently required clearances may be carried out

DESPATCHED
21 FEB. 96

6/2/96
3 Feb

To The Chief Engr for Irrn
" Supt Engr V Circle
" " VI "
" " on Special duty Cauvery Completion Estimates.
The Examiner of PW Accts
The Revenue Department.

30/1

~~H. E. the Governor~~

~~The Honorable Mr. H. W. Bliss C. S. I.~~

The Honorable Mr. J. Grose C. S. I.

Clearing Silt from Irrig^n. Channels.

To

Please see remarks ...

...

Rncd...

...

E. I. Form No 1—1,000—27-11-95.

C. No. 5417

E

For C. No. 5417/95

MEMORANDUM.

Requested for reference the undermentioned papers :—

Border at Madras. G. O. 1118 W., dated 5th May 1894.

"Copy of the same supplied to the Registrar Rev. Dept. Ag. on 27.8.95."

D. L.
12-9-95

W. B. ...
Assistant Secretary.

Government Office,
Revenue Department,
9th Sept. 1895.

To

The Under Secretary to Govt.
P. W. Dept.

Nw.

... of ... This
for the DPW to consider what

—feel

C. No. 5417. 12

The Board of Revenue submits for orders certain correspondence relating to silt-clearance in the channels in the Tanjore delta.

2. The correspondence arose in connexion with certain complaints from the ryots concerned that the Mangudi Vaikal and the North Rajan Vaikal (+) which had not been touched by the P.W.D for years had silted up, and badly wanted clearance. It appears from the Correspondence that these are not isolated cases and that almost all channels require clearance. The Executive Engineer, Tanjore Division, says "The North and South Rajan Vaikal branching off from the two flanks of the Mera. Ayar ~~two~~ Anicut* are silted up as also nearly every other channel in the district." The condition of these distributary channels also formed a subject

As the Board puts it, there are 2 large rivers & over 1300 large channels in the Tanjore Delta. Mr. Johnston says that the N. & S. Rajan channels are silted up* as also nearly every other channel in the district. This constitutes a

* called Sir's letter on page 1 of the current

Both taking from the Vettar

(+) Mr. Clerk's letter at page 6 of the current

real grievance & calls for remedy & the only remedy that can be given now is to grant a special allotment for the purposes of "clearing". Mr. Johnston thinks that R 20,000 a year will be enough for clearing rivers and the Heads

Para 1 of Mr. Johnston's letter at page 5

of channels provided with Head Sluices. as the ND says, we must

* Across the Vettar

also clear some channels which are now provided with Head Sluices, & this will probably necessitate a further allotment & an increase of establt. This

P. W. CURRENT No. 6930

Recd. 12-9-95

986 D. 14-9-95.

Original file forwarded

2. Returns requested

C. H. D. Burlton.
Under Secretary to Govt
P.W.D.

GOVERNMENT OF MADRAS
14 SEP 95
PUBLIC DEPARTMENT

P.W.S.3
637/96

O.L.S. 373

11 18 W d/ 5-5-94
11 70 C d/ 15-3-94
26 71 W d/ 20-10-93
25 60 W d/ 10-10-93
3 4 8½ W d/ 20-12-92
14 21 W d/ 6-5-92
12 9½ W d/ 23-4-92
21 9 4 C d/ 21-4-91
10 29 W d/ 13-4-91

-ject of complaint during His Excellency's visit to the district in 1892 and the matter was then brought to the notice of the P. W. D at His Excellency's instance. There seems to be no doubt that what His Excellency's Memorialists referred to was the repairs (mostly clearance) of distributary channels, but it would appear from G.O. $\frac{691\ I}{5-8-93}$ sent to the Memorialists in reply to their complaints that the P. W. D were then thinking of new works and improvements, and not of repairs and clearances which had been altogether neglected in recent years on the supposition that it was the business of the ryots. The matter is also prominently noticed in the correspondence relating to the settlement of the district.

3) The Chief Engineer admits the obligation of Government in the matter and

has been done in this way. In many cases it is doubtful whether the duty of effecting clearances devolves on Govt. or kudimaramat

G.O. $\frac{887}{4-3-93}$

But there are some in wh. as the Bd says, "it is obviously beyond the power or duty of the ryots to do the work". In such obvious cases the work shd be done by Govt. as speedily as possible

vide marked portions at pages 31 & 33 of the addresses stitched with the G.O.

There are obvious cases such as those of rivers and the heads of big distributaries. With regard to the lower reaches of big distributaries and small

Para 6 of the Supdg Engineer's letter with the G.O.

channels irrigating more than one village, each case must be decided on its merits. There are also cases in wh. it is

Para 5 of Mr Johnston's letter at page 2 of the current

certain that the work shd be done by kudimaramat; there

marked portions at pages 6, 79 & 139 of G.O. $\frac{697}{31-7-93}$. The Board refers more to unequal distribution than to want of annual clearance.

are single village channels where all the work shd be done by the villagers & the matters referred to

His letter at page 5 of the current

in I, II, III, VI, VII, VIII of S.O. 54. I think the cases shd

Mr Tarrant's letter at page 2 of the current

have the power of deciding (subject to an appeal to the Bd) in any disputed case as to whether the work is to be done by kudimaramat or by Govt. At all

Paras 12 & 13 at page 4

events a special allotment for clearances must be provided.

Paras 3 & 4 of Mr Johnston's letter at page 5

Govt. have admitted their increased responsibility in this matter now that the new settlement has been introduced, and I think a substantial allotment shd be granted. It is true that the question as to what clearances shd be effected depends to a great extent on the general schemes for distribution and drainage wh. are under consideration, but some cannot be effected thereby & shd be undertaken at once.

The C.E. for I. thinks that as a beginning his Depts shd be given the sole control over the sluices irrigating 1000 acres & more, & then shd keep the channels in an efficient state, i.e. "in a condition whereby all interests under a channel

and it is therefore unnecessary to consider the attitude of the local Engineering officers. The Chief Engineer apparently means that silt clearance is to be undertaken at once without waiting for the combined scheme of drainage and irrigation referred to in the Negapatam Engineer's letter or the introduction of arrangements to exclude sand from the delta, and the only question that need be considered here is what is the extent of the Government's obligations.

4) The Chief Engineer says that "it is a difficult matter to say where responsibility on the part of Government to clear silt from the channels in the Tanjore Delta begins and ends, chiefly owing to the Kudimaramat System which has more or less been recognized in that district and that the clamour that the Government

should

should now bear the whole burden in this district is due to the introduction of an enhanced assessment." He, however, thinks that "the principle must be admitted that the landlord is bound to keep the channels in working order," provided no interference is allowed on the part of the ryots in the distribution of water. It is submitted that the obligations of the landlord depend upon custom or implied or express agreement and ~~[illegible]~~ it is doubtful whether according to custom Government is ~~not~~ bound to bear the whole of the burden of channel clearance in Tanjore. The Board is of opinion that Govt. should undertake silt clearance where it is obviously beyond the power or the duty of the ryot to do the work. But what is the duty of the ryot in the matter? There seems to be

no

are equitably served." This wd necessitate legislation. I believe that the existing law as expounded by the H.C. is that a ryot is entitled to all the facilities for getting water wh he has now, whether his land actually requires them or not. I don't think it wd be unjust to legislate to the effect that "the greatest happiness of the greatest number" shd be the guiding principle, compensation being paid only for proved damage. I am afraid the general scheme for distribution &c will necessitate similar legislation.

J.G.

16/11/95

Apparently the only thing that can be done at once is to provide funds. None have been asked for, that I am aware, for this special purpose – A liberal provision is however made in the current year's budget, ~~[illegible]~~ but I am not sure how far this affects these Tanjore works – I mean I am not sure whether they fall under 42 for which Impl. finds the money or under 43 for which Prov. finds the money. But it is not of much use to provide money, whether Impl. or Prov., unless the P.W.D. will spend it. At present, for what reason I have as yet been unable to ascertain, they seem unable to spend the money they have –

As to the future we must see what improvements

the P.W.D. thinks needed before we can make any definite move. It is rather curious that yesterday before I had seen these papers, ~~the~~ Mr. Justice Subramani Ayer, who is a large land holder in Tanjore, came to see me & we were talking about the state of the works in Tanjore & the difficulties placed in the way of dealing with them in a comprehensive manner by the state of the law; and I gathered that his opinion was that legislation was not only necessary but would not be objected to by the more intelligent among the ryots, provided that they had the opportunity, in cases of dispute, of submitting their views to a suitably constituted tribunal. He

Paras 5 & 6 of Tanjore Collector's letter in B.P. 152/11-1-69

× Memo sent to Board

9/9 Rect. submitted

16/9

seemed to think that an irrigation board" or Court might be formed, composed of an Engr. officer, a Revenue officer & a Jud. officer whose decisions would give satisfaction" & might be final – We have promised to consult the persons interested when the P.W.D. has worked out its schemes – Mr. Justice Subramani Ayar should, I think, be one of the

no definite understanding on the point, each officer having a view of his own; but now that the matter is being taken seriously in hand, it seems necessary as pointed out by Mr. Thompson to come to some understanding as to what clearances should be done by the ryots themselves. The records available in the Office on the subject have been looked up but they do not settle the point definitely. The available information is given in the next paras.

5/. In 1868 when reporting on the question of commuting Kudimaramat into a money cess, Mr. Morris the then Collector of Tanjore wrote as follows:-

Hence it is that the repairs of river embankments, and the periodical clearing of all channels of irrigation branching therefrom, with the exception of minor ones of internal dis

tribution

-tribution, have always been"
regarded and termed 'Cir"
-car Maramut' which the"
Government are bound to"
execute at their expense;"
while the repairs of minor"
branch channels, by which"
the water drawn from a"
main channel is distributed"
between two or more villages"
dependent thereon, as well as"
among the different portions"
or sections of the same village,"
as also the repair of the minor"
internal channels of drainage,"
constitute Kudimaramut."

If the foregoing defi"
-nition of Circar and Kudi"
-maramut, which accords"
with the theory as well as"
the generally recognized usage"
of this district (though the"
line of separation between"
the two has not always"
been strictly observed) be"
admitted to be correct, it"
is the Circar Maramut and"
not the Kudimaramut, that,"
as a rule, is now neglected."

Early

persons constituted.
If we decide to legislate,
as I imagine we eventually
must, a Committee constituted
as above would appear to be
necessary to advise on what
lines legislation should be
undertaken.

[illegible]
18/11/95

Things are undoubtedly in a bad way -
and we should ask the C. E. for I.
to tell us what in his opinion
should be done at once to remedy
the existing state of affairs, by the
State. We can on getting his report
decide what to do in the coming
dry months.
There is no doubt that legislation
will be required eventually - and
as soon as Col. Smart has thoroughly
investigated the whole subject and
reported, the Govt. will have to
consider what should be done, and
the proposed Committee representing
all interests concerned ought to be
able to devise measures wh. will
put the Tanjore delta on a proper
footing.

W
21 Nov

G.6 143/18-1-69

Page marked with ~~[illegible]~~ white label in the volume (Customary labor).

C.f. Dalyell's Edition B.S.G. No. 54 : IV

Such money limits were subsequently disapproved. Vide G.O. 986/29-3-67 P.W.D.

18

6) Early in 1869 a
Commission was appointed
by Government to consider
and report on the expediency
of re-entrusting the execution
of minor irrigation works to
the Revenue Department; and
in ~~his~~ evidence before ~~the~~ this
Commission Mr Morris
stated that the undermen
-tioned descriptions of repairs
were and had always been
executed by Kudimaramut-
(i) The clearance of Branch
channels not passing throu
-gh villages other than those
they irrigate
(ii) Channels which irri
-gate less than 25 velis
(163 acres)
(iii) All minor channels when
the estimate ~~was~~ fell within 5 p.c. of the
revenue.
(iv) Large channels when the
estimate was less than
$1\frac{1}{2}$ p.c of the revenue.
(v) Repairs to minor tanks or
channels if the estimate
was less than Rs 25.

(VI)

(vi) Repairs to tanks or channels if required oftener than once in five years.

It would appear from his answers in cross examination that the last four of the above clauses were instituted by the P.W.D.

7/ It must be mentioned here that the P.W.D in its present form came into existence in 1858 when it took charge of the execution of the minor irrigation works which were previously being executed by the old Maramut establishments under Talsildars. In 1865 Captain Oakes, Superintending Engineer, Tanjore and Trichinopoly appears to have framed a set of rules for systematizing Kudimaramut in the districts under his charge, and to have published them in the Tanjore District Gazette; the rules were to the effect that items ii to vi noted above should be executed by the ryots themselves. These rules were also placed before the Collector of Trichinopoly who, however, refused to countersign them; and they were apparently not brought into force in this district. It is not known for certain what was recognized as Kudimaramut before 1865 in Tanjore, and whether any of the rules published in 1865 were innovations. But that some of them were new seems probable from Mr Bamber's refusal to countersign them.

8/ In 1871 when passing orders on the report of the above Commission the Govt called for information as to "the exact nature of the works that have hitherto or in former years been carried out by enforced customary labour in each district." In replying to this reference Mr Cadell the then Collector of Tanjore referred with approval to Mr Morris's report of 1868 and

Portion marked at page indicated by red tape in volume (Customary labor). This statement, however, is not quite clear

Vide Mr Bamber's evidence in the volume.

Madras Manual of Adl I page 365. Foot note.

Marked portion at page indicated by slip of paper in the volume

G.O 2603 12-10-71

Mr Cadell's letter in 1871-73 file put up

and mentioned only the under mentioned clearances as coming within Kudimaramut.

(1) The clearing of all minor channels of irrigation and drainage within the limits of the villages to which they appertain.

(2) The clearing of such channels also beyond the limits of the villages concerned, where they happen to have their course beyond those limits. This, however, rarely happens.

(3) The repair as well as con-struction, of masonry sluices by which the water is distri-buted among the several Kattais or collections of fields on the same level within the village.

(4) The repairs of village boundary banks to prevent the cul-tivation from being flooded.

(5) When the rivers are unusually low the throwing of Koramlus or temporary earthen banks at the heads of channels to divert the

Para 9 of his letter

the available water therein.

"It has I fear" wrote Mr. Cadell in another part of his letter, "of late become "too much the fashion to assume "that a great deal of the work "which really appertains to the "Government ought to be treated, "and its execution enforced, as "Kudimaramut or "Customary "labour", and to base upon "this assumption an assertion "that the latter is much neg-"lected. Captain Oakes, the "Superintending Engineer of the "6th Division in his answers "viva voce to the questions of "the Public Works Commission, "asserts that "Kudimaramut "for actual purposes of Conser-"vancy may be said to have "ceased to exist," but what-"ever is his idea or standard "of Kudimaramut"? After enumerating the various des-criptions of repairs which in his evidence before the Com-mission Captain Oakes had stated should be done by Kudi-

Vide evidence at page marked with slip in the volume

Kudimaramut, Mr. Cadell continued "The Board may well imagine that after so many and such stringent restrictions, there would be ordinarily left but little for the Department Public Works, and it will be readily seen that it is the mistaken idea of what "Kudimaramut" really is that has given rise to the assertion that the form of labour has ceased to exist." He was writing evidently in ignorance of the P.W.D notification of 1865 as ~~did~~ was Mr. Morris in 1868. Both of them probably stated what had long been recognized as Kudimara-mat.

9/ The next mention of Kudimaramut occurs in a letter from Mr H.S. Thomas in 1876 written in reply to a reference from the Board and Government as to the expediency of legislating for enforcing the obligation of the ryots. The letter stated

Vide Mr. Thomas's letter in 1875-76 file portrup

Kudi

that Kudimaramut was coming to be a thing of the past but did not contain any description of what Kudimaramut was.

Vide Colonel Cautley's Speech introducing it

G.O. 95 Legislative 28-9-82

10/ The question of Kudimaramut again came up for discussion in 1882-83 in connexion with the report of the famine Commissioners who had recommended that it was expedient to pass an Act making customary labour compulsory on the ryots. The Bill introduced into the Legislative Council on that occasion which appears to have been drawn up mainly on the evidence taken before the Public Works Service Commission of 1869 mentions the following as one of the items of Kudimaramut:-

"The clearance of silt from sluices, supply and distributing channels of tanks, spring channels and also when not maintained by the State from river channels

Section 3 (4) of bill in G.O. 95 28-9-82

It

11/ It will be seen from paras 6, 7 & 8 above that the present difference of opinion between the Local Revenue and Engineering officers as to what constitutes Kudimaramut is not a new one, and that the tendency of the P. W. D has been to throw on the ryot much of the work that properly belongs to Government, with the result that the channels have fallen into a state of disrepair. The Board doubt the possibility of laying down any general rule as to how the work of silt clearance should be distributed between the State and the ryot, but some rule is necessary unless Government adopts the Chief Engineer's proposal and principle that the landlord is bound to keep the channels in repair. The Board's rule that obstruction should be removed

12/ The next point for consideration is the C. E's demand that the P. W. D should have unquestioned control over the distribution of water in the channels & repairing by it. "The silting up of channels" he says "depends in a great degree upon the manner the sluices are regulated during seasons of floods, and if this department is responsible for keeping the channels below them in working order, they should a fortiori be the responsible agency for working the sluices upon which the well-being of the channels depends. The initiative should therefore be taken to give this department sole and undivided control of the sluices irrigating 1000 acres & more, and it may then be legitimately called upon to keep these channels in a normal degree of efficiency, by which is meant a condition wherein all the interests under a channel are equitably served. It is not quite clear what the underlined words mean, but

if their meaning is that the water do be allowed to each village is to be proportional to the area to be irrigated therein, the P.W.D as stated by the Board "will find itself involved in much unprofitable and vexing litigation"

13/ The general opinion is that the water available for the delta is not equitably distributed. In so far as this inequality can be remedied by the provision of regulators at the off takes of main rivers the ryots are not likely to object as they would probably be unaware of the alterations made. When however the P.W.D proceed to adjust the rents of head and other sluices in proportion to the area supplied by them, or otherwise to alter existing arrangements at main & branch channels, the ryots who have acquired rights in the channels by prescription are sure to object. In the office note in G.O $\frac{2660}{9-7-94}$ the Chief Engineer refers to a decree of the High Court judgement of 1893 which recognises the right of the P.W.D

† marked portion at page 189 of G.O $\frac{697}{31-7-93}$

(ii) Para 11 of Mr. Clerk's letter at page 5 of G.O $\frac{263}{11-5-95}$

(iii) Para 6 of Dulpatty Engineer's letter in G.O $\frac{691}{5-8-93}$

G.O $\frac{1118 W}{5-5-94}$ is not available in Madras. The only office has been asked to put it up.

* an urgent memo has been sent for the omitted

Vide G.O $\frac{2925}{22-7-95}$

to alter the rents of irrigation sluices, but in the judgment in the Sattanad Lapuram case the High Court have held that though Govt is entitled to make such reference arrangements it likes for regulating the distribution of water in channels, yet this right is subject to the right of the ryots to receive their customary supply of water without diminution.

14/ If the control of the sluices is taken up by the P.W.D it must respect the rights where such have been established by long

morais or dums long established, and should give up all idea of equitable distribution in such cases. The Board has called upon the Collector to ascertain from the Executive Engineer what channels he would take over, and to report what objection or obstacle there is to the C.E's proposal being tried as an experiment. This report may be awaited before a decision is come to on the point. Meanwhile orders should be issued

(1) as to what clearances

clearances should be undertaken

by the P.W.D (1)
(2) and for a liberal allotment of funds for such clearances.

RS
6-9-95

What is required immediately is a substantial allotment - (Rs 20000 or such other sum as can be utilized) for clearing silt in main distributaries - beyond to minor distributary channels - viz, taking off from a main channel, irrigating not more than a single village, the P.W.D. could not, in the present state of the law, undertake their control. and the silt-clearance, as well as the distribution of water by means of these channels, must, for the present, be kept to the villagers themselves -

The Chief Engineer is now, I believe, engaged in elaborating a scheme for regulating all the Kaveri water throughout the Delta - I have told him that any such scheme must be abortive unless the law is altered - In this case equity is not supplementary to law, but is opposed to it, and without such legislation, it is idle to talk of equitable distribution of

30

the water of the Kaveri -

It is also, in my opinion, equally futile to talk now about "Kudimaramath" The word means at the present time - whatever it may have connoted 50 years ago - merely this - that if the Government cannot or will not execute repairs, the ryots in any area will carry them out if possible - The question of fresh legislation on this subject has rightly been given up -

Lt 5/10.

With this I cannot agree. I have always thought that Kudimaramat should be defined & enforced by legislation

RS
18/11/95

31

C. No. 5417

Note

Silt clearance in the Tanjore Delta

Hon. Mr. Grose –
Hon. Mr. Bliss –
H. E. the Govr.

Received for draft 26-11-95

" " 30-12-95

1459

0451 / 1637/5/6

C. 7/10
R 24/11

PROCEEDINGS OF THE BOARD OF REVENUE

(REVENUE SETTLEMENT, LAND RECORDS AND AGRICULTURE).

READ—again the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 4th March 1895, Mis. No. 1179 :—

Read—the following letter from J. THOMSON, Esq., Acting Collector of Tanjore, to the Secretary to the Commissioners of Land Revenue, dated Tanjore, 14th February 1895, Ref. on Cur. No. 2755-Ver. :—

In October last I drafted the following letter to the Board :—

"I have the honour to solicit the orders of the Board in the following case, typical of its kind in regard to the question of silt clearance.

(2) Natesa Iyer and the other ryots of Agara Mangudi, Tanjore taluk, in their petitions to me and to the Board * (transferred to me for disposal) request that the Mangudi voikal, irrigating 1,913 acres in eight villages and once repaired by Government ten or fifteen years ago, may be cleared of silt. The Engineering Department refuses to provide funds for the work and direct the ryots concerned to get it done in kudimaramut. The Superintending Engineer, V Circle, relies on the following extract from paragraph 2 of Colonel Mullins' (Chief Engineer for Irrigation) memorandum, No. 8–111, dated 31st May 1880, in support of his contention that the channel should be cleared by the interested mirasidars :—

'The general principle to be acted upon is that all irrigation works should be classed as minor which can be maintained in a fair state of efficiency by the villagers or village communities.'

(3) I am not aware that there has been any settlement of the relative duties of the State and the people with regard to channels, and hitherto, I believe, in Tanjore repair or restoration has arranged itself by the Public Works Department doing what they could, with the funds provided, by expenditure where, in the opinion of the department, it was most wanted—therefore naturally on the most important lines which had fallen into disrepair,—the people taking up what self-interest compelled, or combination permitted them, to effect. With resettlement, and the admission by Government of a right to better maintenance, clamour has grown strong, and I am afraid the arrival at a definite understanding of what the State should do cannot much longer be evaded.

That the 'rivers' should be a Government charge and the single village channels fall to kudimaramut will not probably be disputed; the problem lies between those extremes and will not be easy of equitable solution. The Public Works Department will no doubt be ready to undertake the sole expense of the larger distributaries from the rivers, but where that charge should terminate and the ryots' responsibility begin will be difficult to settle. It cannot well be by number of villages served by minor distributaries, nor the length of these nor revenue involved, for these may bear no proportion to cost of repairs now or continuously necessary.

Still some clear understanding should be arrived at as to minor distributaries that are not village channels, and when it is, it would appear advisable that the State put these into order and that their future maintenance should be a joint charge on the State and the villages benefited, the latter's contribution being a cess levied from time to time as expenditure is called for.

(4) Colonel Mullins' general principle has no definiteness and was probably intended only to express the idea that when the department considered the sum involved to be within what its abstention would force the ryots to expend, nothing should be done by the department. Unfortunately from all I can learn the neglect of the department and of the ryots combined goes on with increasingly unsatisfactory results.

(5) Copies of letters from the Executive Engineer and Superintending Engineer are enclosed. I shall be glad if the Board will favour me with some directions as to how the subject is to be dealt with."

* Board's Proceedings, Mis. No. 3588, dated 13th June 1894.

2. Before submitting it, it seemed advisable to learn what the two Executive Engineers in the district had to say and application was made to them accordingly. I enclose copies of their replies.

3. The Executive Engineer, Tanjore division, recognizes the responsibility of the department to exclude sand from sluiced main channels and to gradually provide head sluices where they are necessary. The Executive Engineer, Negapatam division, appears to regard silt clearances as generally money wasted, and to consider that the first remedy lies in a well-considered joint scheme of drainage and irrigation after which the relative duties of the department and of the ryots might be considered.

4. It appears necessary therefore that the matter be taken into full consideration by the responsible officers of the Irrigation Department; for at present it is not clear that concerted understanding and action exist; and it is certain that the necessity for such does exist and the people are claiming an attention to their demands which cannot continue to be denied much longer.

Enclosure No. 1.

From J. C. LARMINIE, Esq., Superintending Engineer, V Circle, to the Collector of Tanjore, dated Chepauk, 8th August 1894, No. 273-M.

With reference to your letter, No. 2755-Ver., dated 1st August 1894, I have the honour to state that the only authority I can find on the question is that contained in paragraph 2 of Colonel Mullins' (as Chief Engineer for Irrigation) memorandum, No. 8-111, of 31st May 1880 :—

"The general principle to be acted upon is that all Irrigation works should be classed as minor which can be maintained in a fair state of efficiency by the villagers or village communities"

There are very few of the Tanjore channels which the ryots cannot keep in order as they hitherto have done, and so it has come to be recognized as a principle.

Enclosure No. 2.

From J. C. JOHNSTON, Esq., Executive Engineer, Tanjore Division, to the Collector of Tanjore, dated 10th November 1894, No. 4511.

In reply to your endorsement, No. 2755-Ver. of 1894, dated 27th October 1894, I have the honour to make the following remarks on the subject of silt clearance of channels in this district.

2. The question is what clearance should be done by the Public Works Department and what by the ryots. It is manifestly impossible for the present Public Works Department establishment to deal with all channels, even if doubled or trebled. The question in one way resolves itself then into this: What can the present staff effect within the two months of closures?

3. This department is responsible at least for the exclusion of silt (sand in this district) from the rivers into channels. If by neglecting this duty sand is allowed to choke up the heads of the channels, that is from the head sluice downwards, this department is clearly responsible.

4. Away from the head works, where channels pass through nunjah, ryots do so much in the way of encroachment, putting up mud dams, making cuts wherever they like, that this department cannot be responsible for any silting-up process which takes place there.

5. The heads of main channels then taking off from rivers, beginning from the head sluices, should be cleared by this department and all others by the ryots. It is the general rule in all districts, I fancy, that leading channels should be cleared by ryots. Channels not provided with head sluices, or for which head sluices are not necessary, should be cleared by ryots. My reason for this is that at present ryots are supposed to do all the clearances (for the Public Works Department do not), and it will not do to throw too much work on this department all at once. Time must be given it to construct head sluices wherever necessary.

6. The bulk of the silt from rivers generally accumulates within two miles from the head sluice of the channel, and this silt should be cleared at least once in five years by the Public Works Department, or whenever the accumulation is such that the discharge is reduced to 50 per cent. of the full supply. The Executive Engineer should have power to refuse any silt clearance from the head if, in his opinion, such clearance would be ineffective from neglect of ryots below.

7. On these lines, the cost of clearance by Public Works Department will be annually about Rs. 20,000 and the ryots will not find their part of the duty too oppressive. They will be assured of a better supply of water; and that alone in a great measure will make them more satisfied than under the present system which assures them no relief at all, or at the best at rare intervals.

Enclosure No. 3.

From M.R Ry. N. RATNASABHAPATI PILLAI, Executive Engineer, Negapatam Division, to the Superintending Engineer, V Circle, dated 12th December 1894, No. C.-45.

With reference to your No. 522-G, dated 29th October 1894, I beg to state that silt clearances don't appear to have been carried out to any great extent of late.

2. The general cry seems to be that lands near heads of rivers are getting gradually raised up, and that several of the rivers are becoming deeper comparatively to admit of the lands being commanded by them without damming up, especially during low water.

3 But in low-lying lands this raising is felt to be advantageous, and the greater the clearances at heads of rivers and main channels, the larger is the quantity of water drawn off to these lands.

4. In the Cauvery delta, where I am inclined to think the cultivated area is in excess of what the capacity of the river can safely supply, the interests of proprietors in the higher and lower reaches of the rivers are conflicting. The upper lands require damming or "no silt clearing" to enable their lands to get their full supply; but this naturally reduces the velocity and consequently the supply, which is wanted for the lower reaches.

5 When there are local rains, however, the defects are somewhat compensated, but frequently the lower lands get flooded, and then the complaints turn from insufficient supply to inefficient drainage.

6. Some remedy has to be devised, and it is thought that some of the main branches (rivers as they are called) should be made to catch up as much of the local field drainages as possible and carry the floods straight into the sea, instead of allowing them to spread over the whole *wetted* area commanded by them. This is specially needed in the low-lying reaches, which can be protected from local drainages, and the consequent damage, only if proper provision is made for carrying away floods of upland drainages and preventing overflowing into the lower reaches.

7. In the completion estimates for the delta, proposals will be made detailing what channels are considered necessary to be improved so as to perform these functions. In the meantime, it is thought that although clearances may occasionally be considered necessary, in most cases clearances may not be taken up as they do little or no good.

Enclosure No. 4.

From M.R.Ry. N. RATNASABHAPATI PILLAI, Executive Engineer, Negapatam Division, to the Collector of Tanjore, dated Kalakam, 12th December 1894, No. 46-C.

[*Reference.*—Your No. 2755-Ver., dated 27th October 1894.]

Adverting to your number above, I have the honour to state that enquiries have also been made by the Chief Engineer as to what benefits, if any, are likely to accrue by silt clearances in the Cauvery delta.

2. Though I commenced my service in this district more than twenty years ago, I have not been long here to know much of the working of the Cauvery system. Since my rejoining the district in May last, I have been endeavouring to gather what information I can get and I regret to have to state that much yet remains to be done to enable us to satisfactorily meet the demands of the ryots.

3. The state of things described in paragraph 3 of the communication to the Secretary to the Board of Revenue have already attracted my notice; but as the Cauvery delta irrigation channels were not originally designed on the improved and scientific principles of to-day, drainage and irrigation were then not considered together, with the result that at present most of the irrigation and drainage channels cannot be distinguished one from the other.

4. The rainfall of the hills of the west ghâts is the source from which the rivers of the delta get their supply, and though frequently insufficiency is felt, the demand on the river has in general been met.

5. The rainfall of the Coromandel Coast is, on the other hand, comparatively very small and is only felt during about two months in the north-east monsoons.

6. Occasionally, however, cyclones occur and local drains, combined with the river drainages, spread over the delta, damaging banks and crops.

7. If drainages were kept distinct from the irrigation channels, this state of things would not occur and floods would be conveyed into the sea without overflowing. As it exists however the main rivers branch off into innumerable small channels and dwindle gradually into nothing, while several of these latter channels with local drainages gradually combine to form big drains only as they near the sea.

8. To enable the drainages to be satisfactorily carried down, some orders were issued by my predecessors to keep open some of the bigger branches of the main rivers during floods; but as a matter of fact, this floods up the country in the lower reaches as is evidenced by the state of affairs in Negapatam and Tirutturaippúndi taluks, and ryots are unwilling to open the sluices to allow the floods to spread over the country.

9. This procedure in ordinary floods answers well enough, but with a good 3 or 4 inches of local rains, the main rivers become incapable of discharging the floods and the damages become by sudden burstings of banks even more than they would otherwise have been.

If, however, some of these selected channels could be improved so as to take a fair proportion of the main river waters straight into the big drains, of which I made mention in the latter part of paragraph 7, then the channels can be kept open to pass off the floods without overflowing.

10. The state of things in the delta, it will thus be seen, goes to show that silt brought into the rivers must get deposited in their beds and the lands which their water spills over. Thus gradually the rivers and lands are becoming raised up in the upper reaches of all channels.

11. Similarly a reverse process is going on in the lower reaches, in the beds of rivers, and dams are being put up at all points to counteract the scours, and on the plea of raising water to the offtakes. Unfortunately also permission has been all along granted to utilize the drainage for irrigation purposes.

12. To remedy this state of affairs it is necessary that some complete scheme of drainage and irrigation will require to be proposed before long.

13. Apparently the Chief Engineer for Irrigation has under contemplation some scheme for this and so seems to think that the silt clearances except in rare cases are not likely to prove productive of any good.

14. Copy of my communication No. 45-C, dated 12th December 1894, to the Superintending Engineer in reply to the Chief Engineer's enquiry referred to in paragraph 1 above is herewith forwarded for perusal.

15. I take this opportunity further to bring to your notice that the Revenue Survey has only lately been completed. The settlement does not appear to have been yet finally closed. When this is done we can have complete irrigation and drainage maps got ready and proposals for defining the capacities and duties of each channel drawn up. In several villages it has come to my notice that lands are being shown as supplied by more than one channel and it will be difficult to regulate supply if the ryots must be allowed to have the benefit of all channels. It is imperative that no lands should be permitted to have more than one source of supply and so when any blocks have been supplied by more than one source the proportion supplied by each source should at least be fixed.

16. These informations require to be all collected before satisfactory proposals can be made and approved of. I am further of opinion that the Public Works Department and Revenue Department should come to an understanding on the general scheme before details can be worked out.

17. If suggestions made in paragraph 9 above commend themselves and the scheme referred to in paragraphs 12 and 15 be drawn up, the channels which would require to be maintained by the Public Works Department could be easily decided.

Transferred to the Settlement Department.

(Signed) L. M. WYNCH,
Secretary.

27th February 1895.

Resolution— dated 4th March 1895, Mis. No. 1179.

Forwarded to the Chief Engineer for Irrigation for favour of opinion.

2. However unsatisfactory it may be to deal with each channel on its own merits, the number of channels is so great and their circumstances so various that the Board doubts the possibility of laying down any general rule as to how the work of silt-clearance should be shared between the State and the ryot. It is often at the head of large channels not yet provided with head sluices that the most injurious accumulations of silt occur, and Mr. Johnston's opinion that until head sluices can be provided such accumulations should be cleared by the ryots appears to the Board to be incorrect.

The question, as remarked by the Collector, is becoming a burning one.

(True Copy and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Chief Engineer for Irrigation.

READ—also the following letter from Colonel R. R. E. DRAKE-BROCKMAN, R.E., Chief Engineer for Irrigation, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated Madras, 21st March 1895, No. 132-M.:—

In reply to the Proceedings of the Board of Revenue, Mis. No. 1179, dated 4th March 1895, I have the honour to state that it is a difficult matter now to say where responsibility on the part of Government to clear silt from the channels in the Tanjore delta begins and ends, chiefly owing to the kudimaramut system which has more or less been recognized in that district hitherto. The clamour that the Government should now bear the whole of the burden in this direction is clearly due to the introduction of an enhanced assessment. I think the principle must be admitted that the landlord is bound to keep the channels in working order, and this can be done were no interference on the part of the ryot allowed, and the whole of the distribution through the main irrigation channels of the delta rests (*sic in original*) in the hands of the Public Works Department. But, as is well known, the ryots have hitherto done pretty well as they pleased in working the sluices at the heads of those channels, and have resented any interference on the part of the officers of this department. The silting up of channels depends in a great degree upon the manner the sluices are regulated during the seasons of floods, and if this department is responsible for keeping the channels below them in working order, they should *a fortiori* be the responsible agency for working the sluices upon which the well being of the channels depends. The initiative should therefore, it is considered, be taken to give this department sole and undivided control of the sluices irrigating 1,000 acres and over, and it may then be legitimately called upon to keep those channels in a normal degree of efficiency by which is meant a condition whereby all the interests under a channel are equitably served. In the distribution of water through these sluices the decision for arrangement of supply by this department would be final, and no interference on the part of interested kudis could be tolerated. Certain of the channels of the acreage indicated commencing from the Cauvery-Vennar regulators downwards might be thus taken over, and, as a preliminary measure, such clearances as may be considered absolutely necessary be carried out before the next floods. Experience will then show whether any benefit accrues from the new system thus brought into working order and whether it may in consequence be generally established.

READ—the following letter from J. C. JOHNSTON, Esq., Executive Engineer, Tanjore Division, to the Collector of Tanjore, dated 28th March 1895, No. 1114:—

With reference to your No. 940 of 1894 and subsequent four reminders, I have the honour to state that the North and South Rajan channels branching off from the two flanks of the Meratur anicut are silted up, as also nearly every other channel in the district.

2. I beg to refer you to my letter, No. 4511, dated 10th November 1894, to your address, in which I pointed out that the late Superintending Engineer, V Circle, did not approve of much silt clearance, while I on the other hand gave it as my opinion that it was the duty of this department to exclude and remove silt from channels, and that for this purpose a larger grant by Rs. 20,000 would be required. Without definite orders as to removal of silt and without larger funds, I cannot take upon myself the responsibility of incurring large expenditure under this head.

3. The question of exclusion of drift sand into the delta and into channels is a large one and must commence with the consideration of certain alterations to the

upper anicut above Trichinopoly. I am at present experimenting with shutters for excluding silt from small channels, and for framing an estimate for providing the Meratur anicut with shutters and for the removal of the body wall, which body wall naturally acts as a silt trap, but beyond this, I do not see what I can do at present.

4. Unless some means are devised for excluding silt, it is simply waste of labour and money, effecting clearances. But as I said above, I am now experimenting and time is needed for the experiments.

Endorsement by the Acting Collector of Tanjore, dated 28th April 1895, Ref. on Cur. No. 940-Ver.

Submitted to the Board of Revenue, Land Revenue, with copy of this office reference on Cur. No. 940-Ver. of 1894, dated 2nd March 1894, in continuation of this office letter, dated 14th February 1895, Ref. on Cur. No. 2755-Ver. of 1894.

Enclosure.

From G. P. CLERK, Esq., Deputy Commissioner, Revenue Settlement Party No. III, Tanjore, to the Collector of Tanjore, dated 18th February 1894, No. 135:—

At the time of hearing objections yesterday, the Mirassidars of Velur village, Kumbakónam taluk, complained to me that the North Rajan Voikal from Vettar river has silted up. The channel irrigates some eleven villages and the ryots of these villages also complained to me of the precarious nature of the supply. It appears that the Public Works Department officers have for some years admitted that improvements were requisite, but nothing has yet been done. Now that ample funds are, or ought to be available, for improving the irrigation works of the district, I request you will be good enough to have this channel put in order if possible.

Endorsement by the Collector of Tanjore, dated 2nd March 1894, Ref. on Cur. No. 940-Ver.

Forwarded to the Executive Engineer, Tanjore division, for remarks.

Endorsement.

Transferred to the Settlement Department.

(Signed) R. C. C. CARR,
Acting Secretary.

11th May 1895.

Resolution—dated 13th July 1895, No. 210.

The correspondence read above, on the difficult subject of silt clearance in the Tanjore delta, will be submitted for the orders of Government.

2. There are 28 large rivers, and over 1,300 large channels classed as "(3) distributaries," in the Tanjore delta. Very many of the distributaries are as yet unprovided with head-sluices, and it continually happens that at the point where one channel bifurcates into two, deposits of sand obstruct the flow of water down one or other of the off-takes, with disastrous results to the cultivators, holding lands, which depend upon the obstructed channel for their irrigation.

3. The Board believes that it is correct in stating that of recent years an opinion has gained ground amongst the Engineers that it is useless to struggle, with coolies and baskets, against ever-recurring deposits of sand, and that little or nothing can be done to remove accumulations of silt until some large scheme for the better irrigation and drainage of the delta has been devised. If this be a correct representation of professional opinion, the Board would venture to remonstrate against it.

In some instances (as for example in the Vennar immediately below its regulator at the grand anicut) the deposit of sand is so enormous that its removal no doubt forms an engineering problem of great difficulty, in respect of which the Board is in no wise competent to say what should be done; but in other numerous instances,

well-known to the local officers, obstructions with which it is impossible for the ryots to deal, could be easily removed at a moderate outlay; and, in the Board's opinion, justice and expediency alike require that the discovery of some new scheme for excluding silt should not be awaited, but that such obstructions should be removed, without delay in all cases where it is obviously beyond the power, or duty, of the ryot to do the work.

4. The Board would earnestly advise that a liberal allotment for silt-clearance should be made, and that the excuse of want of funds with which the ryots have been put off for the last five years should be no longer advanced.

The objection that the clearances do no permanent good but must be repeated year after year is not a valid one, if a proper flow of water cannot be otherwise secured.

5. The Chief Engineer considers that the first step should be to place the Public Works Department in complete control of all sluices irrigating 1,000 acres and over. This would not improve the position as regards the many channels without head-sluices, to which the Board has above referred. And, unfortunately (as the Chief Engineer is aware) many of the sluices are ancient, and the distribution of water is governed by old customs, or agreements, which assign the "morai," or turn, of each village or holding, irrigated. If these "morais" be respected by the Public Works Department, and if the water-distributors whom the Public Works Department will have to employ, do their duty honestly, the ryots will probably be glad to relinquish the control. But if, and when, an attempt is made to keep all the sluices open in time of flood, or otherwise to alter existing arrangements, the question will at once arise whether the ryots under any particular sluice have acquired a prescriptive right to have it kept open or closed at particular periods, and the Public Works Department may thus find itself involved in much unprofitable and vexing litigation.

6. The Board doubts whether the effective control, desired by the Chief Engineer, can be attained without legislation. The Collector, however, will be requested to ascertain from the Executive Engineer what channels he would propose to take over, and to report whether there is any, and if so what, obstacle or objection, to the proposed transfer of control being tried as an experiment.

7. The Board would, however, strongly deprecate any delay on this account in carrying out the clearance of silt where its removal is admittedly urgent and feasible, for the Board believes that the recent cessation of silt-clearing furnishes the Tanjore ryots with a real grievance, which ought to be removed.

(True Copies and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department.
" Chief Engineer for Irrigation.
" Collector of Tanjore.

Ext. J. P. Oliver.

REVENUE DEPARTMENT.

1895.

Board of Revenue

(Revenue Settlement, Land Records and Agriculture),

MADRAS.

Printed July 23th.

Proceedings, 13*th July* 1895, *No.* 210.

Silt-clearance in the Tanjore delta.—Submitting for the orders of Government, correspondence on the subject of —.

Revenue Department

PROCEEDINGS OF THE MADRAS GOVERNMENT.

*Copy attached

Read Proceedings* of the Board of Revenue, Revenue Sett. &c. dated 13th July 1895, No. 210.

Order thereon, 10th January 1896, No. 100Misc.

The Government shares the Board's doubt whether the effective control desired by the Chief Engineer for Irrigation ~~cannot~~ be obtained without legislation, but will await the results of Colonel Smart's investigations in the delta and the report called for from the Collector in para 6 of the Board's Proceedings read above before taking action in the matter. Meanwhile the Chief Engineer will be requested to state what in his opinion should be done by Government to remedy the existing state of affairs.

(True Extract)

W. Gibson
Secretary to Govt.

To the Public Works Department, with file & Notes.

Copy to the Board of Revenue, Revenue Settlement &c.

P. W. CURRENT No. 437

F 21 1,000 -6-12-95.

Govt. of {1896} Madras.

REVENUE.

Encl: 15

Read: 17-1-96

To The P. W. Dept

Dated
Read. } Encl.

Mis. / R. G.O., 10 January 1896, No. 100.

SUBJECT.

Awaiting the results of Colonel Smart's investigations in the Tanjore delta and the report called for from the Collector in regard to the transfer of the control of the sluices irrigating 1000 acres and over to the P. W. Dept. as an experiment and requesting the Chief Engineer to state in the mean-while what in his opinion should be done by Govt. to remedy the existing state of affairs in the matter of silt clearance.