

IRRIGATION AND LABOUR UNDER THE COLONIAL RAJ: LABOUR REGIMES IN GODAVARY AND KISTNA DELTA FROM 1845-1930

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Introduction

The geopolitics of power and authority derives its strengths from the mastery over the natural resources that creates a sustainable base in empire formation. In the diversified landscape of India, there is tucked in every nook and corner a water body - nourishing, ravaging, distorting and again creating the land, its environment, the population, culture, and the 'total' way of living. The materiality of water, a non-substitutable elixir of life, has always been an intense geo-bio-political agent that established a relationship between power and authority. The narratives of water are intertwined with depictions of interrelationships of human mobilization (as moving for biological requirements from areas of draught to wetlands etc.). The Review of Irrigation in India (1918) describes the role of divinity on the creation of water bodies and emphasizes upon taming of water by those in 'power' for establishing 'order' and draws an analogy from the medieval times which says that "...from water all things are made... (and) consequently ordain that this jungle, in which subsistence is obtained with thirst, be converted into a place of comfort"¹. During the British rule in India this conversion, enmeshed in the dirt and dust of the earth, was done by the immediate confidantes of the land, the part-time agricultural labourers, the itinerant labourers, the 'coolies' of the British Raj, the tribes from the distant forests and so on.

The foremost concern in this study would be to intensely research the 'contours and conditions of informality' inherent in the working of the labourers associated with the irrigation works under the Raj. While doing so, the work plans to follow the invaluable precedents set by various academicians like Jan Breman's work on the 'footloose' labour in post-independence Western India, Geert De Neve's engagement with the 'everyday politics of labour', Radhika Chopra's dealing with the altered notions of masculinity and domestic workers, Nita Kumar's fascinating work on the 'free' 'leisurely' activities of the artisans of Banaras, Tirthankar Roy's detailed study on the traditional artisanal industries, and many more. Apart from that Prabhu P.Mohapatra's article on the 'informalisation of regulation of

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labour relations occurred in India in the 19th and early 20th century' and Dilip Simeon's work on 'the persistence of informality and casualness' will provide important insights for understanding the overall situation.²

Review of Literature

Irrigation in India under the British portrayed, initially, 'a kind of technocratic paternalism'. The White 'civilized' men since the early days of the John Company endeavoured to make their new found 'territory' 'accessible'³. This accessibility necessitated their involvement in various works of 'Public Importance' which was expected to serve the dual purpose of 'opening up' of the territory and also buttressing the Colonial 'illusion' of 'Permanence' in the very 'territory'. At the outset irrigation along with other civil genres of 'Public Works' like roads etc was dealt mostly by the military.

The presence of a numerically strong labour force is generally attributed to the establishment and gradual growth of 'organized industry' in 19th century India. Thus "Dr Thomas Wise observed in 1838 of Bheerboom District, on the Bihar border, 'Labour is so cheap that a native will carry a box or parcel to Calcutta and back again for two and half rupees... There you procure a strong, except daily labourer for two pice a day' (a pice was 1/12 part of an anna: the wage represented about 1/6 of 1d.)" ⁴Certain geographical variations were there and certain regions portrayed a congestion and high availability of labour, while other regions suffered from a scarcity. But despite such variations the 'organized' labour force attained considerable visibility. The quotidian experience of these skilled and unskilled labourers within the factories and mines, gradually became a concern of the Government, which showed considerable loyalty towards the 'Moral and Material Progress' of the country, and passed on 1st July 1881 the Indian Factory Act, 'prescribing minimum age limit and maximum working hours for child labour'.⁵

Beyond this glaringly visible world of the 'organized factory worker' a parallel domain was there, occupied by a vast mass of volatile labourers traversing the geographical space of the Colonial rule. Works of public utility like Irrigation and Roads led to the engagement of a number of labourers from diverse areas. Primarily such works had maintained irreversible linkages with 'forced labour'. The local villagers were now and then compelled to take up minor repairing works for maintaining the edifices of public utility. The system permeated through the Colonial policy also and various references of use of 'forced' or 'hired' labour across the country were there. As in the case of the Punjab inundation canals, 'the Sind canal clearances were effected by "cher", or statute labour. Every cultivator was forced to furnish a quota of labourers in proportion to the extent of his cultivation'.⁶ The village authorities were given proper orders in this respect-'It shall be the duty of the village authorities

throughout the Province to enforce the performance of those minor works of conservancy and repair, which are sanctioned by local custom in each District as ascertained and defined by the Superintendent.⁶ There were various terminologies attached with these trends of using 'forced labour', such as 'begar', 'vethi' etc. Debates can be found in many British documents regarding the use of this form of labour as the British law on abolition of slavery was running contrary to these actions. But the traditional power structure prevalent in many of the rural regions led to the continuation of such practices. Thus a 'tributary' form of labour went on parallel to the modern capitalist labour relations of British India. Several instances can be found regarding orders of local Officers calling their particular attention to the preservation of Roads, Irrigation works etc, with the aid of "gratuitous labor".⁸ Forced labour in the form of Convict labour was another such aspect. They were also employed in the construction of various other public works, like the construction of roads and railways. The tour notes of one such Inspector General of Irrigation mentions- 'The experiment of employing prison labor on a large scale has been so successful on this canal that a history of its progress from the commencement up to its present stage of development should, I think, be compiled, both as a record of good administration and a guide to others who may have to employ prison labour under similar circumstances elsewhere.'⁹ The labourers associated with the Irrigation projects are also represented through diverse loose categories from the statistical data regarding the employment of 'Tank-diggers and excavators, Road, Canal, and railway labourers'. The umbrella category of 'Earth Work and General Labour'¹⁰ is also there including both male and female labourers. no irrigation would bring the country to a state of prosperity without the means of conveying the produce to a market: therefore, cheap communications had an immense effect even in enabling one part of the country to help another in the matter of food redistribution in the eventuality of any local crop failure¹¹.

In many cases the labourers were mostly procured from the neighbouring regions. Again, there had been trends of labourers migrating to distant regions. During the British period, mostly by the second half of the nineteenth century huge numbers of labourers migrated from their native places to the gradually evolving urban centres for work opportunities. The irrigation projects also saw the involvement of a number of such labourers. Quite ironically, occurrence of famines (which remained a perennial motive behind Irrigation) accelerated and also disrupted the flow of labour.¹² Mention can be found in various tour notes of the chief irrigation engineers regarding the involvement of male, female and even child labourers. A number of labourers also migrated from the neighbouring princely states in different parts of British India for these works. Advertisements were issued for recruitment of labour by labour contractors for irrigation and other works in British India. Attempts were

made by the British rule to streamline the migratory flow of these workers according to their needs, especially because of the imbalance of labour quantity.¹³

Kudi-Muramut

The department of Public Works under the Board of Revenue for the conveyance had designated it as "Muramut Department" The early English Collectors necessarily assumed the charge of the works of irrigation with that of collecting the revenues. It was essential to the security of the revenue that the works should be kept in repair, and large sums were in fact expended on the account, but being without any professional assistance whatever the Collectors were compelled to entrust the expenditure to native revenue officers. The Public Works Department was first organized on a definite basis in 1854. In succession to the old military boards of the three presidencies, constituted mainly for the purposes of carrying out military works were done away with. In 1866, in order to meet the demands for public works, three separate branches were further formed, the military works branch, the civil works branch including irrigation and the railway branch. To these were added in 1870 the public works accounts branch. In 1893, in accordance with the recommendation of the Atchison Commission on the Indian Public Services, the provincial services were created for the purpose of providing more employment. By 1895 the public works department had become a purely civil department by the separation of military works branch, and in 1905 the railway branch was turned into a separate department. Since this date public works department had responsible only for civil works including irrigation. During the same period, with development of local-self-government, certain classes of public works had been entrusted to different provinces, within the control of district boards and municipalities. In 1910 the public works accounts branch was abolished as a separate entity and merged in the civil accounts department.¹⁴ Why were these administrative changes put in place? My conjecture is, as the colonial state became more stable, and public works were no longer a military requirement, this particular activity of the state was shifted to civil side that it was not confused with the military activities, of the possible public works also lasts some of the funding which the military would demand for its own constructions.

Irrigation and Construction labour

Meaning of Irrigation: Irrigation is a method of producing or increasing fertility in soils by an artificial supply of water. This is by aid of the action of gravity, and irrigation by natural flow is the result. Channels are constructed which lead the water from the source of supply, be it well, reservoir or stream ; and they are so aligned and graded that the water shall flow through these and from them into minor channels, and from these again be led by ploughed furrows through the fields. Value of Irrigation: Of the incalculable benefits derived by a

country from irrigation, not the least important are increase of revenue and protection from famine. Irrigation works are consequently classed as Productive or Protective according as they conspicuously fulfill one or other of these great functions. In a productive work the revenue not only pays the cost of maintenance but, in addition it also pays a percentage on the capital expended. This percentage is a profit to the colonial state. In the case of a protective work the revenue is generally insufficient to yield a profit; but the construction of the work is undertaken to protect the inhabitants of the district from scarcity and famine. The full advantage of irrigation works cannot, however, be estimated by their direct results. Works are indirectly profitable in improving the condition of the people, in promoting trade, and in developing the resources of the country¹⁵. The Tahsildars were then the responsible for the execution of the work. They engaged the workmen, and making advances to them. The tahsildars responsibility for engaging the labourers was a necessary part of all ordinary works of moderate size. They were the village officers of the villages where the works were to be carried out. After the first advance had been expended, a second was made, and so on till the work was completed. The work was marked out by and explained by the taluk maistry, who also visited it from time to time while was in progress, and gave reports on it. It was also visited by officers of the Civil Engineering Department, while monthly or bi-weekly progress reports of the works were also sent to the Collector by the tahsildar¹⁶.

The irrigation works administered by the government may be divided into three main classes. In the First of these come what were technically known as 'major works', the outlay which was met from Imperial funds. These included the great delta systems in the deltas of the Godavari, Kistna, Penneru, and Kaveri, and other important undertakings such as the Kurnool- Cuddapah canal and Periar Project. The delta systems depend upon great masonry Anicuts or dams, which had been thrown across the rivers at the head of the deltas, and consisted of a network of channels to distribute the water so rendered available. The second class of irrigation works was financed from provincial funds for 'minor works'. It included chiefly the systems dependent upon the dams across the rivers and few of 'tanks' and artificial reservoirs. The third class included thousands of smaller channels and tanks throughout the presidency, for which no capital accounts were kept. The clearance of smaller channels and similar petty repairs were generally carried out by the cultivators themselves, by what was called kudi-Maramat or Customary labour.¹⁷In this level of developmental activity, we see that the colonial state threw its resources into big projects, while the indigenous systems of irrigation was entrusted to rural communities: we also see the colonial government, in its records carefully demarcating what areas of activity would be controlled by Western technology and know- how, and what would remain in the hands of indigenous knowledge systems.

Immigrant Labour on Canal Works in Godavari and Kistna Districts

Chapter four of the public works code 1861, Rule 11, set out the district engineer will use his all his utmost endeavors to ascertain the exact cost of labour and of materials of all kinds, in different parts of his district¹⁸. This was further extended with the public works department code, in 1870 when under the general rules of execution of works Chapter XIII, Section I, Rule 17, set out Executive Engineers will make their own arrangements for supply labour and materials, without having recourse to civil authority. Further Rule¹⁹, set out Executive Engineers must be careful that labourers and artificers were not forcibly brought to work, that they were well treated and punctually paid, and that they suffer no deduction from the full rate of wages due to them. Rule 20, further protected migrant labourers: labourers and artificers brought from a distance may, when it is expedient, be allowed wages for the number of days consumed in the journey to and from the site of the work. This expense will of course have to be covered by the estimate, in which consequently any such probable expense must be provided for¹⁹. We therefore see that by 1870, both the Engineering Department and the Labour Force (local and Migrating sources of labour) had been tied together, with no shadow of the executive of threatening to cut off funds.

A Letter from Lieutenant A.R.F. Dorward, Assistant Engineer in charge Western Delta Division, Godavari District, to superintending Engineer, Godavari District, dated Ellore Canal, 28th April 1878, No.47 showed the attendant :

"His progress report on the more important works in this division during the late closure of the Canal. The Ellore Canal earth work, up to about the 10th March had made good progress, in the words of the officer, I then had little doubt of being able to finish it off before the 15 of May. In March small pox broke out on the work site and there was immediate stampede of buntadars. Two hundred men, who with considerable difficulty had been from the Central Delta, returned to that delta at once and steadily refused to return. The only buntadars left on the work were the local tank-diggers, who are very poor and could not afford to leave till they obtained employment elsewhere. This they were gradually obtaining and their numbers had diminished from about 350 to 150"²⁰.

The agricultural economy immediately exerted its own pull, and labourers turned to an alternative source of employment, with a psychological advantage: They could now compare rates and tell the public works officers that in agricultural works they stood to get higher wages. The options for the public work officers would be to either raise their wages, which might or might not bring the labour back, or they could ask the tahsildars to ask the

labour to return. The tahsildars either would not or could not persuade the labourers to return.

"They were being employed by ryots in manuring and lowering fields and in digging field channels. They say the ryots pay them very much higher rates than we do, but he did not consider raising our rates would do much good, as the ryots would not allow their labourers to leave their own works. The Ellore Tahsildar issued notices to the ryots pointing out the state of affairs and asking them to assist in getting labour for the canal. This they have not done, he had again brought the matter to the notice of the Revenue Department. Small-pox was now very prevalent on the work, and all the labourers employed on it will leave as soon as they were assured of work elsewhere. Under these circumstances he see no chance of the canal work being finished by the 15th of May"21.

There were more such examples and the British public work officers occasionally conferred for they did not understand the labourers and just giving them wages might not keep the labourers happy. There could also be the counter-pull of agriculture work. Possibly therefore of the interplay of several reasons, the public works department officers had begun to lose optimization of the 1850s.

"The Lutchmipalem weir foundations had given great trouble, where the scarcity of labour and frequent strikes that took place among labourers. In dealing with foundations where much water was met with an ample supply of labour was essential, as the excavating work should go on as quickly as possible to save expence in baling. Till well into March a sufficient supply of labour could not be procured. In February a good many labourers were got from Coconada and Rajumundry, but they disliked the slush work and left after a few days. The reasons for the strikes of labour that took place he did not quite understand. The work was dirty and labourers were in the water more or less all day; but they were getting ample rates and regular payments. My emphasis the weir foundations were put in nearly 6 inches higher than intended. Throughout the range great difficulty had been experienced in getting labour. This was partly due to our sanctioned rates being insufficient to purchase it, the price of labour as well as of every other commodity had been raised by the famine, and partly to fact that ryots were employing labour in much greater quantity than usual in lowering and manuring their fields and in excavating their channels"22.

There could also have been a raise in agricultural productions:

"Many ryots, who in former years were obliged to come on works for some months in the year, now found it no longer necessary to do so, and many men who were almost sole dependent on works for food had become cultivators on a small scale and had earned enough from their crops to allow of their remaining idle between the irrigation seasons, or of employing their time in preparing new land for cultivation. We had hitherto attempted to prevent any general rise of rates in expectation that the effects of the famine would pass away and normal rates be reverted to. I think it was now quit time to recognize that we can no longer carry out work at rates hitherto found sufficient, and that a permanent rise of rates of wages had taken place owing to the great quantity of money which the famine had thrown into the district"²³.

We thus see that migrating labour could no longer be employed at very low wages. Even the miserly public work department officers were forced to concede that wages had to be permanently raised. Without offering labour more attractive terms of hire, labour would remain the same. The statistical data was produced to show cause and effect, for the labourers had learned to bargain collectively- they had learned to strike work:

"None of the labourers seemed at all willing to work at Latchmipalem. Although very high rates were paid and many advantages offered them which they would not have got on other works, yet they could not be induced to come of themselves. Most of the labourers, who were brought to the works, after staying for few days and then receiving their pay, ran away and were never heard of again"²⁴.

The officers were also trying to gauge the impact of state aid to the local economies after the famine of 1876, that had given migrating labour other options:

"It was perhaps too soon yet to form any conclusive opinion as to the effect of the famine and of the consequent high prices realized for agricultural produce on the labour rates in the delta. Labour had been becoming scarcer year by year owing principally to extension of cultivation and to the professional work people taking to cultivation on their own account. Increase of rates for work may therefore be considered inevitable, especially as it was essential that the great bulk of annual work should be done in the short period between the middle of January and the beginning or middle of May. The requisite increase will, however, require very careful consideration, for there will be considerable risk of paying more for work done without obtaining any material augmentation

of labour. It was difficult to induce those, who found it easy to obtain a living otherwise, to take up earth work for which most labour of labour was indeed"²⁵.

There was a distinct need to get labour from districts that did not have high agricultural productivity. Also small -time labour contracts would have to be employed, while permanent settlements of migrant labour were looking like good for the public works department, who could then have an assured supply of labour, raised through a commission paid to the contractors:

"No reasonable increase of rates will attract such labour and the delta will have in some way to get labour required from neighboring and less favored districts. Recruiting by the aid of petty contractors will probably in the long run be the most successful means. Kurnool for instance contains thousands of people who greatly need remunerative work, and that district was at no great distance. If some of these people could be induced to take up work in the Godavari and Kistna their circumstances would be here long much improved, and no doubt many would settle permanently. It will it was thought be better in every respect to seek to attract outside labour than to induce the local labour, which had found more remunerative occupation to resume delta canal work"²⁶.

These difficulties were soon garnered for policies, and there was an official order to the public works department and based on these proceedings:

"My emphasis these proceedings will be communicated to the revenue department with reference to the remarks contained in the papers on the prosperous conditions of the ryots and with a view also to the aid of the revenue authorities in Kurnool being given in widely notifying, especially in the Cumbum and MarkapurTaluqs, the demand for labour in the Kistna districts"²⁷.

In a letter from the officiating Superintending Engineer, 2nd division to the Secretary to the Government, regarding the importation of labourers for more vigor's prosecution of the works under construction from the extra ordinary grant in Kistna district, there was a detailed account of the need to attract migrating labourers, I had the honour to solicit permission, as an experimental measure, to offer a commission of 10 percent. on all work done, at the present estimated rates, to parties willing to collect laborers and to undertake similar contracts on these terms. If this arrangement succeeds it will, be more economical than the direct importation of labour by executive officers of the department. A considerable addition could very likely be made to the working parties here by sending agents into the

Hyderabad country and the adjacent zamindaries to collect people. In proposing to offer a premium of 10 percent on work done under the extraordinary grant to persons willing to undertake the risk and trouble of collecting labourers (there is no risk). Purpose of this experiment would be for the widening of main canals only, as the time available for working economically at these ducts was limited to about three months annually, and, of course, every possible precaution would be taken to prevent our usual labourers taking work under wealthy ryots and influential persons; I believe the premium referred to would attract the contractors²⁸.

As the irrigation sites were identified as really important, labour was no longer available at next to nothing wages. We see this acknowledgement in the note by the Acting Chief Engineer for Irrigation to the Superintending Engineers.

"They were informed that if the labour within the Kistna and Godavari districts proved to be insufficient to admit of extraordinary works in those districts being pushed on with sufficient rapidity to admit of all allotments being fully expanded they should endeavor to import labour from neighboring districts. That there would be no guarantee that any labour was imported, and that an increase of rate 10 percent. for one class of works would soon render it necessary to increase the rate for all; that it was believed that much might be done in the way of increase the labour of the district were it notified in the less wealthy portions of the neighboring districts that continuous work, or work for a stated number of months, might be obtained at particular localities, and that, before applying for an increase of 10 percent. to the rates, a clear and concise account should be submitted of all circumstances connected with the deficiency of labour and of the steps which had been taken to attract labour to the district"²⁹.

Further there was the difficulty of undertaking large public works, like Godavari and Kistna with no certainty of labour availability. Moreover, canal work could be carried out for widening of the main canal, in which work can be carried out only during three months in the year, which made labour very important, every possible precaution had to be taken to prevent the usual labourers taking the work, for they had become conscious of this importance. However, this kind of selective choosing of groups of labour was not easy. The usual labourers, conscious of their chances of getting higher wages, and also of the importance of finishing their work in the "dry" period, when the waters of the canal would be low enough to allow the widening of the channel. Yet the moment, rates had to be compulsorily raised to attract and keep labour, the usual labourers would also arrive. There was an

anticipation of a great deal of complicated haggling:

"It was difficult to conceive what precautions could be taken to prevent the labour in the neighborhood from flocking to the single work on which an abnormal rate was being paid for work turned out; if the neighboring labour was not received, rumour would get abroad that labourers had been refused work, and labour would not be attracted from distances"³⁰.

Mr Smith, chief Engineer for irrigation stated that he was addressing the principal Zamindars on the subject of labour, and suggests that the resident at Hyderabad should be requested to notify that the officers in the Kistna district were prepared to employ permanently 3,000 labourers, and that a further 6,000 could be provided with work from March to June. He further suggested that notices had to be issued relative to the requirement of labour in the Kistna district in the Local Gazettes of Vizagapatnam, Godavari, Kurnool, and Cuddapah. However, there was an imperative need for caution as large sums of money was involved. Before permanently increasing the rates in Kistna district, it was important that the effect of such a proposed notice would have assessed. And limited range of and the available labour would therefore be mobilized initially to actually assess if there would be a surge of labour supply that public works department would find very difficult to effectively harness to the project, while keeping the project cost-effective. Thus it was suggested that resident at Hyderabad should insert a notice in the Local Gazette for a number of labourers for whom permanent employment was to be provided. Further the rates for labour which prevailed in the neighborhood in which the labour was required had to be furnished by Superintending Engineer. The Madras Presidency Governor would ask the Resident at Hyderabad for these details, before conducting the measures, publicizing the demand for labour on the Kistna works. Thus, district Engineer of Kistna, public works department, furnished the resident Hyderabad with a statement of the rates for labour which prevailed in the neighborhood³¹.

Since the introduction, however, of their admirable system of irrigation in the Godavari Delta, famine was unknown; the people were prosperous and contented. It was the garden of the great Northern Province. Its revenue, instead of being reduced, as it once was, to the verge of bankruptcy, was more elastic than it has ever been; its population had more than doubled; the material prosperity of its inhabitants was proved by their being better fed, better clothed, and better educated than formerly; its commerce has flourished, and its trade has developed to a marvelous degree; and it may confidently be asserted that it was in as peaceful, happy, and prosperous condition as any part of Her Imperial Majesty's Dominions. The actual collections in the Godavari district under all items of revenue, from

1820 to 1875-76, the total revenue raised in the district had in forty-one years increased from 24 lakhs to 88 lakhs. The Census of 1861 gave a total of population 1,366,831, whilst the last one of 1891 gave 2,011,982 (exclusive of The Badrachalm - Rekalally Taluk, and Kottapalle Taluk not included in the count of 1861) an increase of slightly over 47 percent in 30 years. The area of irrigated land in the delta in 1861 had increased from less than 150,000 acres of precarious cultivation, to 640,744 acres of 'first' crop, and 80,966 acres of 'second' crop by 1893-94. Communications now in the delta was intersected by nearly 500 miles of excellent navigable canal affording the cheapest of all means of inland carriage, and there was also another 500 miles or so, of well-made roads for wheeled traffic, constructed chiefly from Local funds, which the great prosperity of the district has rendered it possible to collect within itself³².

Results of Kistna Delta irrigation works had raised the district from poverty and deterioration to Prosperity and progress; they had converted hundreds of square miles of its barren lands into fruitful fields, and secured it against famines which used to ravage it, so that besides growing sufficient food grains for its own inhabitants provides a surplus for less favored regions, and this has been accomplished with the happiest financial results, for the direct returns alone had far more than rapid to the state all the capital expended on the works, and they yield a yearly surplus revenue, after paying all expanses, of upwards of 17 lakhs of Ruppies. Amongst all the district of the Madras presidency, the Kistna stands second regards Land Revenue from all sources, coming next after the two other extensively irrigated district of Tanjore and Godavari. The following statement gives the income from various sources of revenue of the Kistna district at intervals of ten years since the year in which the Anicut was began. From this it will be seen that the total revenue raised by government from the district has, in less than 50 years, raise from 30 1/3 lakhs to nearly 76 lakhs. The population of the district has in 25 years increased by about 43 percent. The effect of irrigation on the density of the district of population was very marked. The cultivation of the irrigated land in the Delta has since the construction of Anicut increased from some 40,000 acres of precarious cultivation, to upwards of half a million of acres of wet crops grown annually. Communication before the Anicut was begun the deltaic portions of the district were almost entirely without internal means of communication worthy of the name, and such traffic as there was, had to be carried on chiefly by means of labourers and pack cattle; now the Delta was intersected by nearly 300 miles of excellent navigable canals furnishing the cheapest of all means of inland carriage, and there were some 350 miles of well-made roads for wheeled traffic, constructed and maintained from local funds, which the great prosperity of the district has made it possible to collect within itself³³.

The Population of Kistna and West Godavari increased by 14,15 and 7 percent during the three decades from 1891 to 1921 respectively, similar figures for East Godavari being 10,13 and 2 percent respectively. From the Census Report for 1921, it was seen that the average increase in Godavari district during the decade 1901-11 was 14.5 percent, while in Kistna it was 13.9 percent. The settlement officer in trying to explain the check in population during the decade 1911-21 says that this result was in the main due to the influenza epidemic of 1918. From the following facts, however, it seems obvious, that there must be other causes operating to account for the very large check in increase of population in the decade 1911-21. From the Census Report for 1921, it was seen that the increase in death-rate due to the influenza epidemic of 1918 was 13.1 per thousand or 1.31 percent of the population. Besides the increase in death-rate, there was a fall in birth rate, at about 5 per thousand or 0.5 per cent, so that the total loss of population due to influenza epidemic may be taken as 11.8 or, say 2 percent. The difference in percentage increase during the decades 1901-11 and 1911-21 for the two districts of Godavari and Kistna were 7.7 and 7.3 per cent respectively so that on an average the influenza epidemic cannot be an explanation for the diminution of (7.7-2) 5.7 and 7.3-2 percent of the population respectively of the district. We must therefore look for other causes. From the Census Report of 1921, giving figures for immigrants and migrants, in the case of Godavari District, 5.3 it was learnt that the excess of immigrants over migrants has dwindled to 28,000 in 1921. In the case of the Kistna district while the excess of the immigrants over migrants in 1911 was 120,000, in the year 1921 there was actually an excess of 23,000 migrants over immigrants. Increase of population versus increase in cultivation, between the years 1901 and 1929, the population of three district has increased by about 21 percent³⁴.

G.N. Taylor, esq., Sub- Collector in charge, Rajahmundry district, in his report on direct and indirect effects of the Anicut works, the employment of many thousands of people at seasons when they could not find the work elsewhere, opened out to the laboring class a new and profitable means of livelihood, and secured to the ryot, the tradesman, and the merchant, a large and certain market for agricultural products and merchandised of all kinds. No proof was wanting of improved condition of the laboring class; many of them had risen from a state approaching to slavery, to be independent cultivators, that was to say, that instead of working as before for an inadequate daily hire, some of them now possess small holdings of their own, paying land tax to government, while others were content to sell their labour to government for the amply pay they receive at the public works. It must be admitted that the change bears very hard upon individuals among the better and more wealthy class of ryots, accustomed and entitled by long pre-scripture right to the services

of their serfs or under labourers, who in return had enjoyed certain rights and immunities, and even the site upon which they live, at the will of their lord: those proprietors now find themselves deserted in favor of the government works, and were frequently in want of hands for the tillage of their fields at the proper seasons. The natural effect has been a raise in the wages of labour, but, as the compulsory attendance at the government works was no longer enforced, the better class of ryots has no real grievance on the score. He admits that after a temporary absence, his under- labourer returns to the village with a bag of money, but because the latter surrenders no portion of his gains, he finds it difficult to realize the principle, that the money does find its way to him in some shape or other, and that the servants prosperity was undoubtedly conducive to the benefit of the master. It will take some little time, perhaps, to impress this truth upon the natives generally, but in some villages they were already beginning to understand it³⁵.

Conclusion

The present work aspires to delve into the intricacies of a particular branch of the Public Works, Irrigation, undertaken in India under the British rule and in turn map the contours of labouring space generated surrounding this. The timeframe of this work roughly starts from 1830 when the Military Board was recognized and a separate 'Canal and Embankment Department' came into being. This department became one among the five departments that were under the administrative control of the Board and continued with certain reorganizations till 1920s when Irrigation was transferred as a subject of the provincial list. The employment of labourers in the irrigation works drawing from the neighbouring areas have impacted the population of the districts in the later years. The geographical space of this work will include mainly the coveted 'presidencies' under the British Raj, viz; the Bengal, Bombay and the Madras Presidency, not only because of their supposed notions of administrative importance but also to portray a comparative framework of the public works done, maintaining a proper chronology but not necessarily with a teleological notion of progression towards a well fixated 'civilized' order.

End note:-

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4. Hugh Tinker-*A New System of Slavery-The Export of Indian labour Overseas 1830-1920*, Published for the Institute of Rare Relations by Oxford University Press, London, New York, Bombay, 1974.
5. International Council on Archives Guide to the Sources of Asian History India 3.1 National Archives of India Ministry of labour and Employment.
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8. Madras Record office, Government of Madras, Political Department G.O.No.578.
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11. Sir Arthur Cotton, *Public Works in India , Higginbotham and Co.,Madras,1885,p22* (Henceforth Sir Arthur Cotton, *Public Works in India,*)
12. Frequent references were there regarding the employment of famine labour in the Irrigation projects-'The earliest possible sanction of the Government of India may be obtained to the first 50 miles of the Nira Right Bank Canal Project so that advantage may be taken of the famine labour available in the Deccan for the commencement of the earthwork at latest by March next, under ordinary Public Works Department rules'
13. The coolies working under me are leaving the work and hurrying to get to the New Famine Work. The men believe that they have to work low there than here and even the infants who cannot work are paid @-/-3 each. If the coolies continued to go away

from my work I believe the cutting work will suffer a good deal and hence I will not be able to finish it in the fixed. Irrigation Ken Canal-Correspondence with states regarding the supply of labour irrigation works in British India- Bundelkhand Agency- English Files-1906-Progs no. 450.

14. First Report on Public Works, pp2-3. And also see A.T. Arundel, Irrigation and communal Labour in the Madras Presidency, Lawrence Asylum Press, Madras, 1879. p29 and also see David Mosse, "Colonial and Contemporary Ideologies of 'Community Management': The case of Tank Irrigation Development in South India," *Modern Asian Studies*, Vol.33, No.2 (May, 1999) pp 303-338
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