SOME ASPECTS OF IRRIGATION DEVELOPMENT IN RAYALASEEMA: C.1858 - 1947

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This is to certify that I, Vundavalli Subbalakshmi have carried out the research embodied in the present thesis for the full period prescribed under Ph.D Ordinances of the University.

I declare to the best of my knowledge that no part of this thesis was earlier submitted for the award of research degree of any University.

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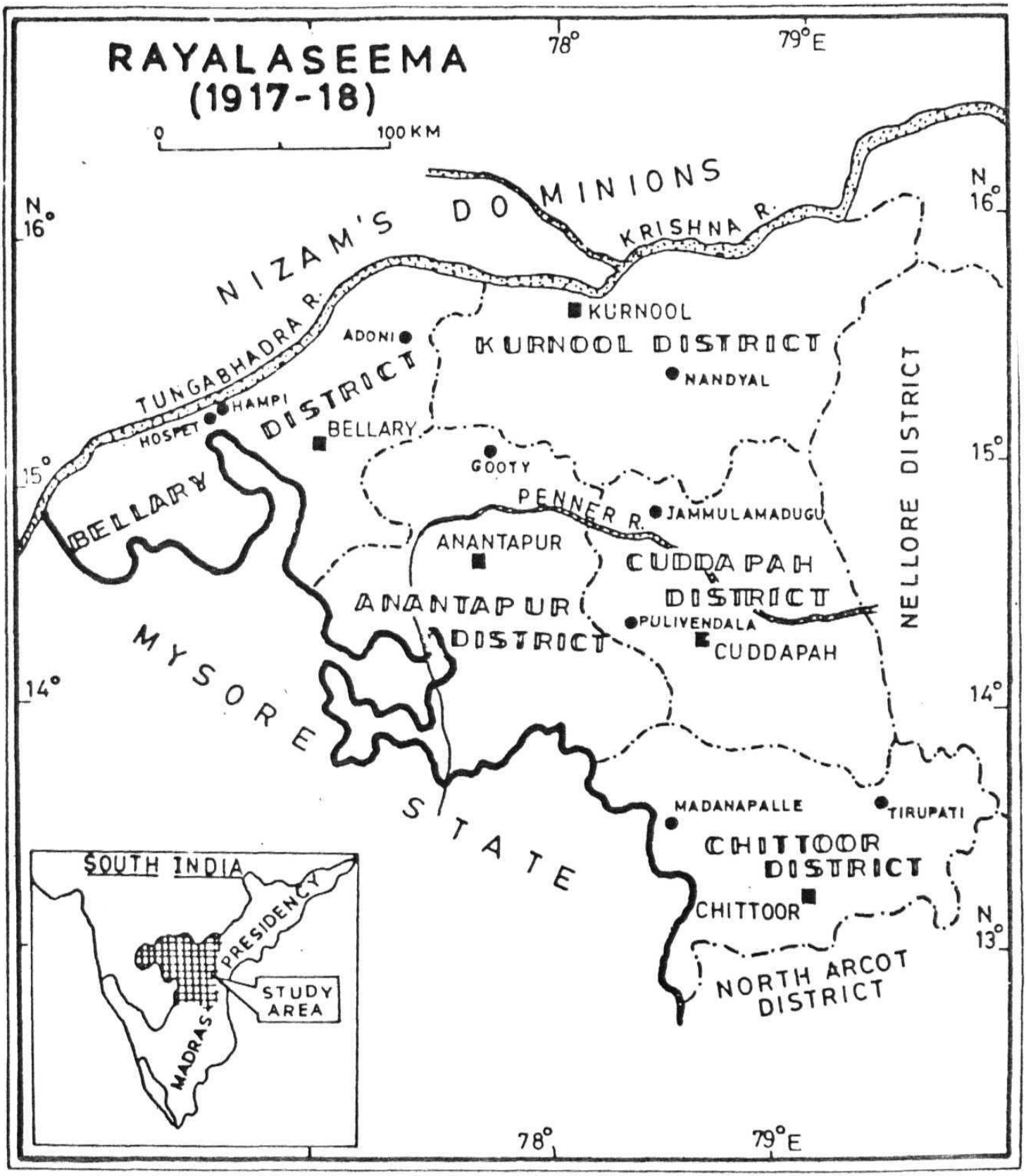
RAYALASEEMA
(1917-18)
0
100 KM
78°
79°E
N 16°
15°
14°
N 13°
NIZAM'S DOMINIONS
KRISHNA R.
TUNGABHADRA R.
KURNOOL
KURNOOL DISTRICT
ADONI
NANDYAL
HAMPI
HOSPET
BELLARY DISTRICT
BELLARY
GOOTY
PENNER R.
JAMMULAMADUGU
ANANTAPUR
ANANTAPUR DISTRICT
CUDDAPAH DISTRICT
PULIVENDALA
CUDDAPAH
NELLORE DISTRICT
MYSORE STATE
MADANAPALLE
TIRUPATI
CHITTOOR DISTRICT
CHITTOOR
NORTH ARCOT DISTRICT
SOUTH INDIA
PRESIDENCY
STUDY AREA
MADRAS

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ABBREVIATIONS USED

CDR	Cuddapah District Records
Confdl.	Confidential
EIC	East India Company
IAP	Inscriptions of Andhra Pradesh
IDB	Irrigation Development Board
Ins.Ced.Dts.	Inscriptions of Ceded Districts
K-C Canal	Kurnool-Cuddapah Canal
KDI	Khandam Dasabandam Inams
LR., Sett., and Agri	Land Revenue, Settlement and Agriculture
MICC	Madras Irrigation and Canal Company
MID	Minor Irrigation Department
Misc.	Miscellaneous
MM	Mackenzie Manuscripts
NDI	Nellore District Inscriptions
PBR	Proceedings of Board of Revenue
PWD(G)	Public Works Department (General)
PWD(I)	Public Works Department (Irrigation)
Rev.Sett.,Sur., L.Rds., and Agri.	Revenue Settlement, Survey, Land Records and Agriculture
RDs	Retained Revenue Disposals of Different District Collectorates
Rev.Sett.,L.Rds., and Agri.	Revenue Settlement, Land Records and Agriculture
SDI	Shamilat Dasabandam Inams
SII	South Indian Inscriptions
SRMG	Selections from the Records of Madras Government
TLIMP	Topographical List of the Inscriptions of the Madras Presidency
TRS	Tank Restoration Scheme

CHAPTER I

1.1 In tropical countries, especially in Asia, irrigation has developed as the roost important productive force. For centuries organisation of production revolved round the development of irrigation facilities. As a result, in India, as elsewhere in Asia, indigenous irrigation systems occupied a central place in the society. And, the State had been playing a vital role in the various phases of development of Irrigation works.

A widely accepted fact is that colonial intervention set in motion a process of degeneration and disintegration of the indigenous institutions in the periphery. What, perhaps, is not so widely accepted relates to the interpretation of the institutions which were replaced. The process of incorporation involved replacement of the institutions of the periphery with those that facilitated subordination of the indigenous interests to that of the metropolitan - a replacement that facilitated extraction and transfer of surplus from the periphery to the centre. The process of modifying, uprooting or displacement, depending upon the context, is an all embracing process reflecting in an 'overdeveloped state' with its ramifications down to the settlement of revenue collection from the peasant. Only understanding these processes of degeneration and disintegration at all levels can unravel the distortions that characterise the present and continue to retard the process of development in the third world countries like India.

Th© present study is one such attempt to explore the impact of the imperial intervention in a dry region of South India during 1858-1947, on irrigation, the most important productive force in any semi-tropical agrarian economy.

1.2 Review of Literature

* Though there are not many studies on the imperial transformation of indigenous institutions harnessing local resources, some interesting work has been done on the impact of British intervention on irrigation and its consequent effects in general for different regions.[1]

Sarada Raju's work deals, in a general way, with the economic conditions in the Madras Presidency during 1800-1850 i.e., during the East India Company's rule. Irrigation is discussed as one of the related aspects of agricultural development. Irrigation policy of the EIC, the sources of irrigation in the Presidency during the Company's rule and working of the Kudimaramat are discussed. The expenditure on irrigation works, on the whole, under the Company was inadequate though it was stated that large sums were spent on account of irrigation. But these large sums really amounted to a few thousand rupees per annum for districts yielding a revenue several times the expenditure. The effectiveness of the voluntary contribution of Kudimaramat labour in the Madras Presidency before the British occupation and the disintegration of Kudimaramat under the EIC, in the context of the decay of village corporate life and the weakening of the power of village officers are discussed. The village itself was no longer **a** little republic, but became a unit of **a** vast centralized system.

'heart and soul' of the indigenous irrigation institutions, in pre-British days.

In her pioneering work on the impact of British irrigation policy, Elizabeth Whitcorobe considers the case of Northwestern provinces and Oudh in Northern India. Her analysis runs as follows:[4] The introduction of the Ganges Canal in the region was a part of the overall modernization programme of the British. The British government sought to superimpose an institutional structure that would subserve their interests. The international finance system could now provide for the ready movement of capital abroad, for large scale construction under contract by means of the joint-stock discount houses, the British development on the lines of the credit mobiliser. Engineers with considerable experience of railways and, to a lesser extent, of canals were readily available. The whole question of investment in India was given unparalleled publicity. After the unhappy experiences of the indigo planters in Bengal, some such entanglement was inevitable in an environment where the land was the prime source of wealth, on which the people depended overwhelmingly for their livelihood, the government for its revenue, and the investors for their dividends. The immediate outlet was the public works like roads, railways and canals.

But the conditions in the North Western Provinces and Oudh, Whitcombe argues, were not such, however, as permitted government to pursue these aims unimpeded. Fundamental and far reaching limitations were inherent in the environment itself - social and ecological - upon which the whole edifice of modernity was constructed. The society which was to be thus improved was long

established and hierarchical; its minute pattern of localized rights to which its small-scale pattern of cultivation had given rise was overlaid by a patchy, disintegrating structure of superior powers.

The inroad of canals had left roost wells in disuse and that well-sinking was not almost entirely abandoned. The well irrigation was replaced by canal irrigation not by choice. The increase in the area irrigated was substantial. The cost, however, Whitcorobe laments, was considerable.

The canals couldn't protect the people from scarcity and famine. In the most extensively irrigated of the canal tracts, the health of the people as well as the condition of the soil on which they depended for their livelihood deteriorated badly under the effects of swamps. Percolation from main channels or distributaries created swamps, the worst consequence of which was the aggravation of malaria.

Thus, canal irrigation in the Doab was an imposed technology from outside, which was inappropriate and caused pronounced environmental and economic disruption.

Writing much later Ian Stone, taking into account the same canal and the same region, in contrast to Whitcorobe, shows how the British irrigation policy had brought fortunes to the people. Ian Stone contradicts Whitcorobe's view with regard to the character of the peasants' response to the canal. He considers canal irrigation to be an appropriate technology which was adopted by the cultivators immediately realizing the benefits it would bring in. The canal was an innovation which met their

requirements, and it did so because it slotted into the productive aspects of the peasant system in a way which made it more advantageous than even the most favourable well irrigation. He even says that where the cultivators were able to combine well and canal irrigation, they could reap the benefits of both systems without incurring the disadvantages of either.[5]

Opposing the view of Whitcombe and other dependency theorists on the shifts from subsistence crops to commercial crops, Attwood argues that in the early 20th century Western India, it was in response to fiscal pressures and cultivators' choices, that the government turned from a policy favouring subsistence crop irrigation to one favouring sugar cane.

David Ludden gives a long term view on irrigation in the Tirunelveli district of Tamil Nadu. He discusses the political economy of the tradition of building of irrigation works, irrigation development in the district upto 1800, financing irrigation under the British rule and modern trends and dilemmas. The emphasis is more on the construction and the parties involved in it, and less on the maintenance and repairing of these works, which deserve particular emphasis when one talks about minor irrigation.

On the institutional front Walter J. Coward deserves particular attention.[6] Though it doesn't refer to institutions in India, his book discusses the Community Irrigation Systems and Bureaucratically Operated Irrigation Systems under two separate parts. Our concern, here, is with the Community Irrigation Systems operating in different parts of the world. Irrigation units may be viewed in a variety of perspectives: as hydrologic

entities, as engineering networks, as farming systems or as organizational entities. Here, the authors are mainly concerned with the last perspective, occasionally in connection with either of the other three entities.

Community irrigation systems are the systems in which the water users are directly responsible for maintaining and operating the system, which they or their predecessors have usually built.

Clifford Geertz's article, 'Organization of the Balinese Subak', is on the community organization and management of local irrigation works in one of the Indonesian islands. The local irrigation society is known as the Subak. It plays a crucial role in the regulation of water supply. A Subak is defined as all the rice terraces irrigated from a single dam and a major canal. All individuals owning such land are citizens of the Subak. The main feature is the one-daro-one Subak relationship. Each Subak under each source of irrigation has its own organization and members to cater to the needs of regular and effective distribution of water.

Richard K. Beardsley and Robert E. Ward, write on Japanese Irrigation Co-operatives. They describe Niiike as a clearly defined, natural socio- cultural unit and also a rice-growing settlement. Besides several other local based agricultural works, the households of Niiike participate in water-use communities of varying sizes. They attend to various water-control problems like irrigation, drainage and protection against flood.

Henry T. Lewis's,'Irrigation Societies in the Northern Philippines', refers to the Zangjeras or cooperative irrigation societies in Philippines as a special development of earlier prevailing societies of the past. The manifest function of these Zangjeras is to procure a stable, reliable supply of water, which can increase crop production. In some Zangjeras the members are all land owners; in some, land owners and tenants, and, in several, all members are tenants. In a few, formal ownership of the land is vested in the Zangjera itself with members owning only rights of use to the land. These Zangjeras constitute relatively large and, at the same time, a stable social grouping with a shared community interest. These groupings generally must protect their water rights and obtain materials to improve upon and maintain the irrigation works.

The above mentioned three societies refer to the organizations as they are operating today in the areas mentioned. Some of them are unit-based organizations, which might have people from the immediate neighbourhood of the unit of irrigation work in a particular village, as its members, as others are canal-based organisations with its members drawn from different villages, but using the water of the same canal, as members of the irrigation organizations.

The other two articles in the book refer to traditional and historical customs of irrigation development in Sri Lanka. Edmund R. Leach's article on 'Village Irrigation in the Dry Zone' of Sri Lanka describes the state of affairs in a particular village by name Pul Eliya in 1954, as a continuity from century to century almost unaffected by the passage of history.

Elsewhere he argues that the general arrangement of the irrigation system in the dry zones of Sri Lanka at the present time is very much the same as it was in the eleventh century A.D.[7] He questions Wittfogel's 'Oriental Despotism' for its presumption of 'full aridity' and the consequent establishment of centralised, bureaucratically maintained "hydraulic society' to manage the large scale irrigation by citing examples of dry zones of ancient Ceylon. He further states that from time immemorial normal repair work to village tanks had been the ordinary work of ordinary villagers. Major repairs and new constructions were traditionally undertaken by a specialised caste groups of Tamil labourers (kularokatti), but these people worked for the villagers on direct contract; they were not employees of the state. It is only since about 1860 that a centralised Irrigation Department has had the right to interfere in matters relating to the maintenance and use of village tanks.[8]

The initiative of the Sinhalese Kings had, by the beginning of the twelth century, brought into being a vast array of irrigation works spread over a substantial part of the dry zone. The gradual development of the irrigation system of Ceylon can be systematically traced over a long period of time and it reflects a high degree of sophistication in technology unparalleled elsewhere in the whole of South Asia. Large scale irrigation works played an important role in the civilization of ancient and early medieval Ceylon. However, the vast multitude of small village tanks, reflecting a less sophisticated

technology, and sponsored mostly by non-governmental enterprise were of vital importance.[9]

In the first half century of British rule in Ceylon there was no worthwhile activity in maintaining and restoring irrigation works. The problem was partly, if not largely, that of the British rulers' own making. In abolishing forced services (rajakariya) in 1832 and in creating minor courts in 1843, they had deprived Velvldanes (irrigation headmen), and gansabhawas (village councils) of the only effective means of compelling obedience to village agricultural customs. Prejudicial effects originating from the abolition of rajakarlya led to a decline in the cooperative spirit. The British government tried to revive the traditional irrigation customs through the Paddy Lands Irrigation Ordinance of 1861. However, the ordinance did not suffice to restore native agriculture to its old position after such a long neglect. In pre-British times village agriculture, in Ceylon, was based on a community of economic action and purpose, built around mudlands held on an individualistic basis. As this corporate structure was undermined by the new forces of trade, individualism, and indiscipline, and as the long endemic virus of litigation prospered in this more congenial habitat, the continuation of traditional agricultural customs became more difficult.[10]

In his roost recent work on irrigation institutions, Wade[11] discusses the village-based corporate institutions as they exist today in the 31 canal irrigated villages in the Kurnool district of Andhra Pradesh. While crop protection and water distribution are the two central services, the council also organizes the

supply of other public goods important to the village life. Referring to the Kottapalle village council which is involved in resource management within the village boundaries, in regulating what can and cannot be done and in sanctioning those regulations, he makes a comparative study of corporate and non-corporate villages and shows why people in corporate villages come together to manage their common property resources unlike people in non-corporate villages. Water scarcity is the main impetus to corporate control. In canal irrigated villages, the tail-enders facing water shortages will push for strong community organisation and formal rules of water allocation, while top-end farmers will be less inclined. This is because the risk of crop water stress and water conflict increases steadily down the length of distributary, or with the proposition that risk increases sharply in the bottom third.

Collective control, Wade states, is concerned primarily with the tasks of (i) getting more water to the village (ii) distributing it within the village land, and (iii) resolving water conflicts. The central variable leading to collective management is the risk of crop loss and social conflict faced by many or all cultivators as a result of the actions of the people. The magnitude of this risk sets the premium on the village's ability to tighten its internal ordering, to create institutions of unitary rule which are continuous, calculable and effective. In short, according to Wade, ecological conditions, scarcity, uncertainty and risk associated with the availability and use of water for irrigation make people to evolve organisations which

manage resources keeping the common interest as the centre of concern.

Another work on indigenous institutions for rural development[12] deals, in its first section, with irrigation tanks and the social organisational arrangements which have traditionally developed around them for the purpose of water allocation, maintenance of infrastructure and arbitration of water related disputes, in the Chengalpattu district of Tamil Nadu. It provides historical details that would present a plausible picture of the functioning of the Ery or tank systems. It describes the essential feature of the technology of tanks and certain historical developments relating to the administration of tanks. Maintenance of these tanks has in the last hundred years come to be vested with the government. Earlier they were more or less completely under the management of user communities. The authors argue that the authority of the user communities over the tanks was however not taken away from them in one stroke. It happened through different stages. First, a revenue hungry colonial government redefined tenurial relations and stopped the flow of local resources to the tanks, meant for their repairs and their upkeep. This led to their neglect which in turn affected the state revenues in the long run which in turn drove the government to take them over for rehabilitation. The post-independence Indian government inherited these administrative structures and did not consider restructuring them.

They further argue that under the British rule, land coming into the market, with the development of individual property rights and the land markets; and with the control of tanks

passing over to the government, with the development of private sources of water such as tube wells, user communities have lost much of their status and prestige. They have in fact ceased to function in many villages. Where they are functioning they do so as "underground" institutions. During the British rule in India, local communities and their participation in the local management of water resources were destroyed. The mechanical continuation of this colonial approach during the post-independence period has succeeded in completely alienating people and their institutions from the state. Irrigation development has been dominated by technocrats whose concern has been merely with quantities, flows and structures.

The most recent work on irrigation institutions by Nirmal Sengupta makes a comparative study of the institutions in India and the Philippines. The second part of this book gives an account of the historical background of the irrigation systems of both the countries. It indicates where more developed organisations may be expected, as well as, why organisations may differ widely in forms. It is argued that the very existence of the indigenous systems, in both the countries, made it necessary for the colonial governments to adopt specific policies towards them. The author discusses the British policy towards the canal management in North India and South India separately. He discusses at length the enforcement of Kudimaramat by the colonial government in South India. In this context, the author points out how the colonial policy of the British in India differed from that of the Spanish in the Philippines. Some

Zanjeras (local institutions for irrigation management) of the Philippines too faced crises of management during the Spanish rule. But there the government did not compel the farmers to contribute unpaid labour while naming it voluntary communal labour. The Spanish colonial government simply remained indifferent to the failing Zanjeras. In contrast, the British government in India could not be so aloof as they suffered the consequent loss of revenue.[13]

The studies reviewed above, in the main, bring out a range of issues involved in the nature and extent of the impact of the colonial intervention on the indigenous resource exploitation and the attendant institutions with particular reference to irrigation. The present study is an attempt to study in detail the British intervention in irrigation development in a dry region in the erstwhile Madras Presidency. Though the relevance of such studies for appropriate policy formulation and implementation regarding the development and utilisation of scarce water resources in these areas can hardly be exaggerated, there are very few studies available.[14]

1.3 The Region

The study is confined to the Rayalaseema region in South India. The choice of the region is deliberate. This dry region, today is categorised as a drought prone area, is dominated mainly by small or minor sources of irrigation. And roost of these sources, like tanks, have a very long history with their own vicissitudes which may be helpful in understanding and managing the current irrigation systems in this region. This is a region

in Andhra Pradesh, partly spilling over to Karnataka, where there existed the traditional irrigation systems and the attendant institutions. Of particular interest is the nature of changes that these systems of irrigation underwent along with the institutions for their construction and management during the period of the British intervention. Understanding this critical phase of transition immediately preceding the post-independence era is essential to set the development agenda in the proper perspective.[15]

Considering the historical context, Rayalaseema here refers to the present five districts of Bellary, Cuddapah, Kurnool, Anantapur and Chittoor. While Bellary is presently in the Karnataka state, the latter four districts form part of Andhra Pradesh.

The region under study was known as the Ceded Districts when it came under British rule in 1800. The Ceded Districts which formed a part of the old Hindu kingdom of Vijayanagar, fell into the hands of a number of petty chiefs called Poligars after the battle of Talikotta in 1565. In 1677-78, these districts were overrun by Shivaji. Later on, they formed a part of the Nizam's dominions but were subsequently incorporated in the kingdom of Mysore by Hyder Ali. By the treaty of 1792, a greater part of the Ceded Districts reverted to the Nizam and the remainder was allotted to him in 1799. In the year 1800, under a treaty of general defensive alliance the Nizam ceded the districts to the East India Company in lieu of the expense of the subsidiary force employed to protect him.[16]

Rayalaseema region went through a series of reorganisation at the district and taluk levels. When these districts were ceded in 1800, these were under the single Collectorate of Bellary. In 1807 the region was divided into two collectorates of Bellary and Cuddapah. Though the rights of sovereignty over Kurnool district were vested with the Company, the Muslim rule continued in the district till 1839. It then consisted of the taluks of Kurnool Proper namely Raroallakot, Nandikotkur, Nandyal and Sirvel.

The Nawab of Kurnool was dispossessed in 1839 for rebellious conduct. It was then placed under a Commissioner with a military assistant, and continued till July 1843, when by the Act X of that year, a government Agent was appointed, subject to special restrictions.[17] The agency administration lasted till 1858-59, when the taluks of Cumbum, Markapur and Koilkuntla from the Cuddapah district and that of Pattikonda from Bellary district were added to Kurnool proper and the whole formed into a Collectorate.[18]

At the time of the cession the district of Bellary had consisted of twenty taluks. By 1870, after the reorganisation of the taluks from time to time, this number had come down to twelve. They are Bellary, Raidurg, Hospet, Gooty, Tadpatri, Alur, Adoni, Anantapur, Dharmavaram, Penukonda, Hindupur and Hadagalli.[19]

The district of Anantapur was carved out of the old Bellary district at the beginning of 1882. It was neither a geographical, historical nor ethnical entity but the product of administrative convenience, the former Bellary charge having been

found to be unworkably large. The district was initially made up of the eight taluks of Anantapur, Dharmavaram, Gooty, Hindupur, Kalyanadurg, Madakasira, Penukonda and Tadipatri.[20] The taluk of Kadiri from the Cuddapah district was incorporated with this district in 1910, thus making the total number of taluks of the district nine.[21] Kadiri taluk was the largest taluk in the region under study.

The Cuddapah district had initially consisted of seven taluks of Jammalamadugu, Proddatur, Budwail, Pullampet, Sidhout, Cuddapah and Pulivendla in the Main- division and the four taluks of Rayachoti, Kadiri, Voyalpad and Madanapalli in the sub-division.[22] As mentioned above, the taluk of Kadiri was transferred to Anantapur. And the taluks of Madanapalli and Voyalpad were absorbed by the new district of Chittoor which came into being on April 1, 1911.[23] Besides the taluks of Madanapalli and Vayalpad, the Chittoor district comprised the taluks of Chittoor, Palamaner and Chandragiri transferred from the North Arcot district as well as the Zamindaris of Punganur, Kalahasti, Puttur and Tiruttani (old Karvetnagar estate). Kangundi taluk of North Arcot district with the exception of 22 villages was transferred to the Chittoor district in 1928.[24]

1.4 The Period of Study

The period 1858 - 1947 has a great significance in the economic history of India. This was the period during which, the consolidation of the British rule was followed by the intervention of the Crown through its various administrative and decentralised policies. This was a period of high water mark, of the British imperial expansion and penetration of capital into

"the Indian periphery. One of the main outlets for the British capital was the public works development. This was a period of some of the worst famines too. The Madras Presidency, particularly the region under study witnessed severe famines for several years during this period. Expansion and development of public works like railways and irrigation works were considered to be an effective means of reducing the impact of famines. This was also the period during which the indigenous institutions were undergoing tremendous changes.

The main thrust of the present study is on the impact of imperial intervention on the development of different sources of irrigation, indigenous institutions for construction and maintenance of irrigation works and the related aspects of the agrarian economy of Rayalaseema.

1.5 Objectives of the Study

The main objectives of the study are:

1. To review the nature and evolution of irrigation policy in the British India with particular reference to the Madras Presidency during the period 1858-1947.
2. To study the process of transition of water resources from being predominantly a public resource to that of a private resource, and with it the emerging alternative technological and institutional forms which influence the resource use.
3. To analyze the process of disintegration of Dasabandam and Kudimaramat - the traditional indigenous institutions for the construction and maintenance of water harvesting systems.

4. To study the causes for and the consequences of private investment in public irrigation works with particular reference to the Kurnool-Cuddapah Canal.
5. To study the origin and development of water rates policy under the British government and
6. To attempt to present a comprehensive view of the nature of the British intervention in the policy relating to the development and use of irrigation in the dry regions and their immediate as well as long run impact.

1.6 The Sources of Data

This study is essentially based on the primary archival sources like the District Records, Proceedings of Board of Revenue of the Madras Presidency, Proceedings of Madras Government in the Revenue Department, Proceedings of the Public Works Department, G.O.s of the different departments, including Revenue, Land Revenue, Board of Revenue, Settlement and PWD which are available at the Archives at Madras, Tirupathi and Hyderabad. Retained Revenue Disposals available at the District Collectorate Offices of Bellary, Anantapur and Kurnool are the other important sources used. Mackenzie Manuscripts available at the Oriental Manuscripts Library at Madras and Telugu University Library at Hyderabad are also used. These are supplemented by the secondary sources including Gazetteers.

1.7 The Chapter Outline

The thesis is divided into seven chapters. The second chapter in the present thesis provides the agrarian background of the region during the Crown's regime. The seasons in the districts under consideration, during different faslis and the data on

rainfall are presented. The land revenue policy of the British is discussed in brief. Changes in the land holdings and cropping pattern are discussed at length. Famines and the famine related policies of the British government are also reviewed.

The third and the fourth chapters form the core of the thesis. The third chapter deals with the evolution of the irrigation policy under the British. The Tank Restoration Scheme and its failure in protecting and restoring the small tanks of the region is discussed in detail. The emergence of 'well' as a private and protective source of irrigation is highlighted.

The fourth chapter in the present thesis discusses the three indigenous irrigation institutions of Dasabandam, Kudimaramat and Irrigation Panchayats. The effective functioning of the institution of Dasabandam during the pre-British days and the process of its disintegration during the British period, particularly under the Crown, is discussed in detail. The formal enactment of Kudimaramat and the emergence of formal bodies like Irrigation Panchayats, as a consequence of the changes in the imperial irrigation policy, are also discussed.

The fifth chapter describes the origin of the private company known as the Madras Irrigation and Canal Company, the construction of the Kurnool-Cuddapah Canal by it, and the causes for its failure. The failure of the canal even under the Madras government is also discussed.

The sixth chapter reviews the origin and development of the water rate policy under the British.

The main conclusions that emerge out of the study are presented in the last chapter.

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CHAPTER II

AGRARIAN CONDITIONS OF THE REGION

2.1 Introduction

The main objective of this chapter is to provide a brief background of the agrarian conditions of the region under study. Land is the basic unit of any agrarian change. Hence an attempt is made to analyse the changes in the land holding and land use pattern over a period of time. Factors like rainfall, land revenue and famines have their influence on the development and use of irrigation facilities particularly in dry areas. Cropping pattern, among other aspects, also reflects the availability or nonavailability of irrigation water.

Besides the introduction, this chapter is presented in five sections. The second section provides the details of the types of soil, seasons and rainfall. The third section deals with the changes in the land use pattern and land holdings, changes in the area available for cultivation, area under holdings and also the number of pattas. The fourth section deals with the origin and development of land revenue policy, particularly under the British. Shift from the annual ryotwari settlement to settlement and resettlement of land revenue once in thirty years, under the Crown, is highlighted. The fifth section tries to analyse the trends in cropping pattern with an emphasis on the shift from food to commercial crops. Since the frequent recurrence of famines had their impact on the shaping of the irrigation policy in several ways in the region of Rayalaseema, the sixth and the

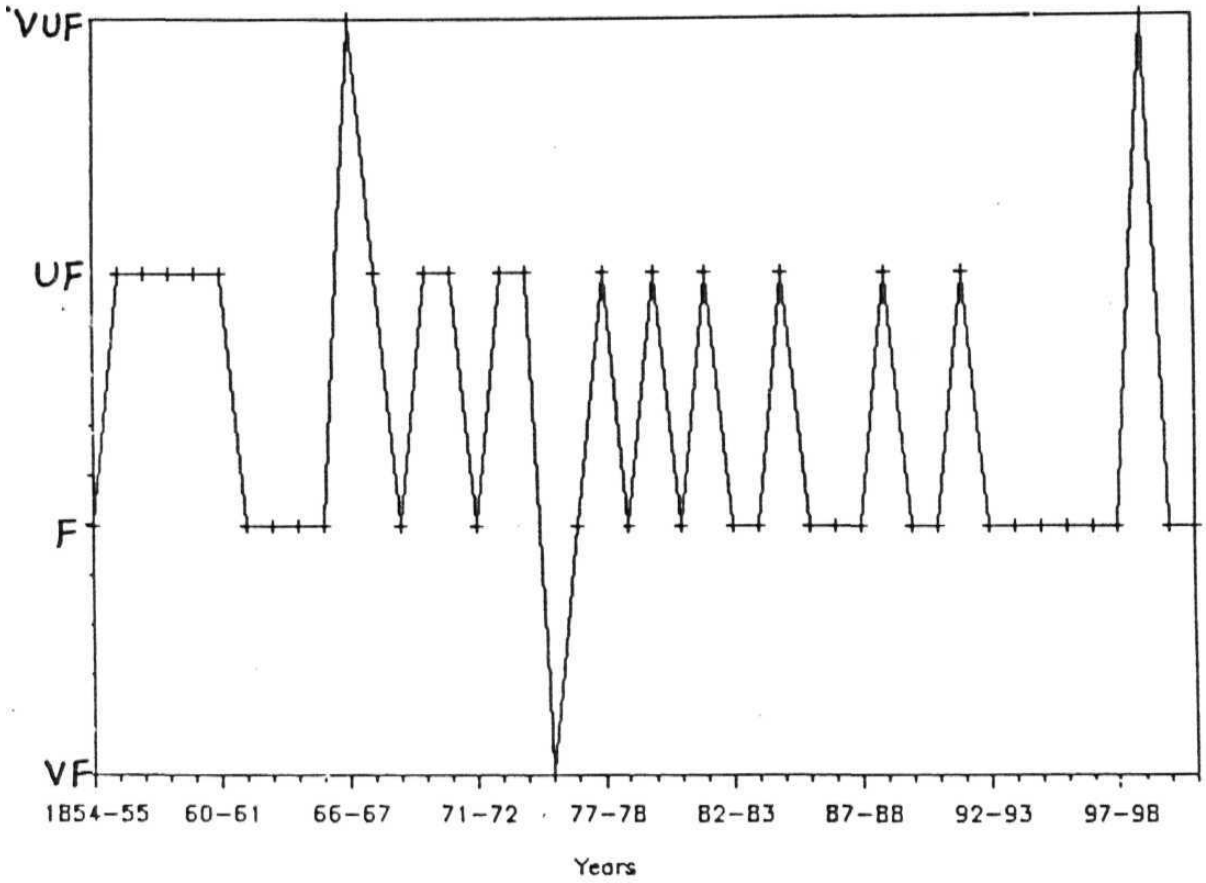
last section reviews famines and the famine policy of the British.

2.2 Soils, Seasons and Rainfall

The most important rivers of this region are Papagni, Pennar, Chitravathi and Sagileru in Cuddapah and Anantapur districts and Tungabhadra, Hundri and Gundlakamma rivers in Kurnool. The monsoons are very unfavourable to these districts due to the situation of the Western Ghats and the strong winds which prevent the clouds from bursting over these districts. The monsoons fail quite often and hence scanty rainfall[1](Graphs 1 to 4 Classification of agricultural seasons - There are four broad classifications of agricultural seasons as i. Very favourable (VF), ii. Favourable (F), iii. Unfavourable (OF), and iv. Very unfavourable (VUF). The basis for classification is not merely the amount of rainfall but also the beginning of the rainy season, variation in the rainfall within the season and also the extent of rainfall and moisture conserved in the previous year. One can interpret the classified seasons as representing the extent of moisture availability for crop sustenance. A favourable season may mean normal crop while unfavourable season implies failure of crops to an extent). Across the districts also there are differences in the variations of the rainfall statistics. Of the four districts of the region, normal rainfall is low in Anantapur district (22.4 inches) and it is in this district that the variations are high. In Chittoor district the normal rainfall is as high as 33.7 inches and the variations are also low compared to the other districts. (Graphs 5 to 8)

Graph 1

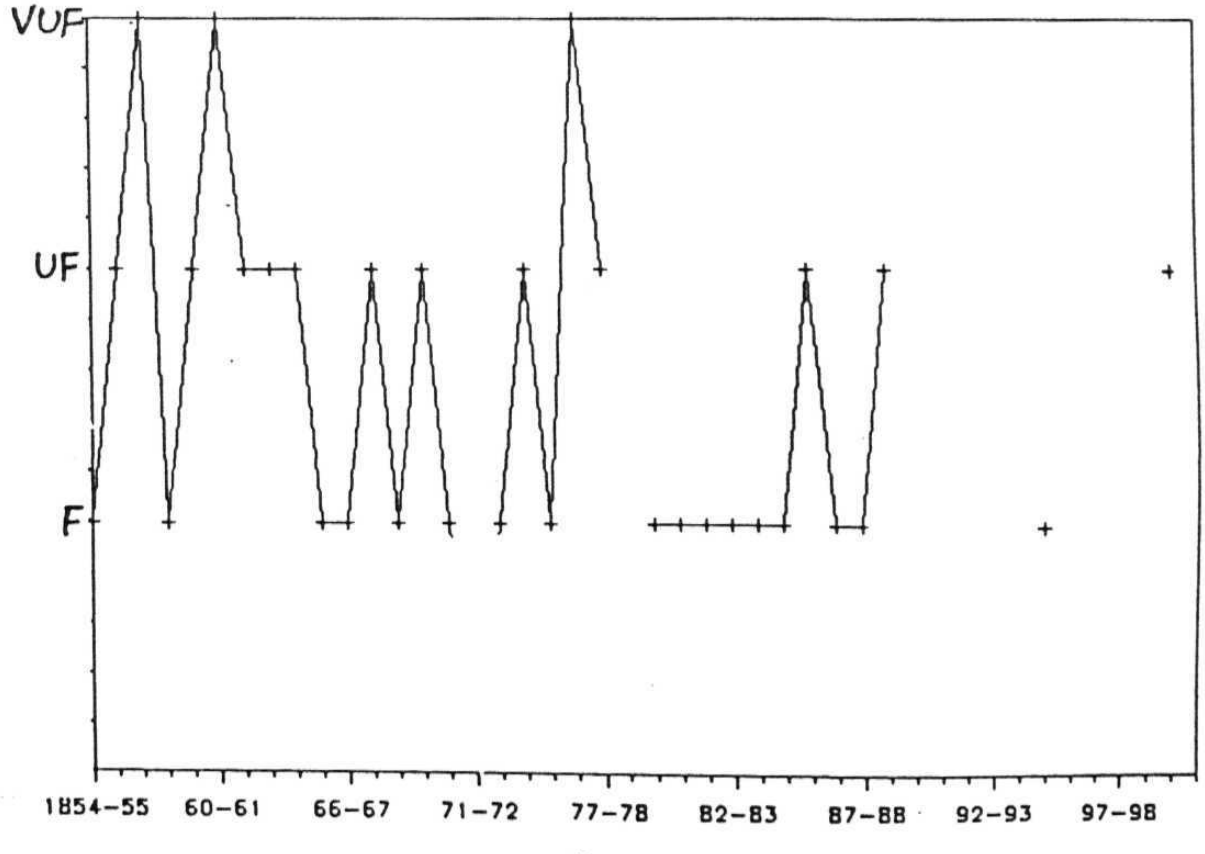
Seasons in Kurnool District



VUF-Very Unfavourable
UF-Unfavourable
F-Favourable
VF-Very favourable

Graph 2

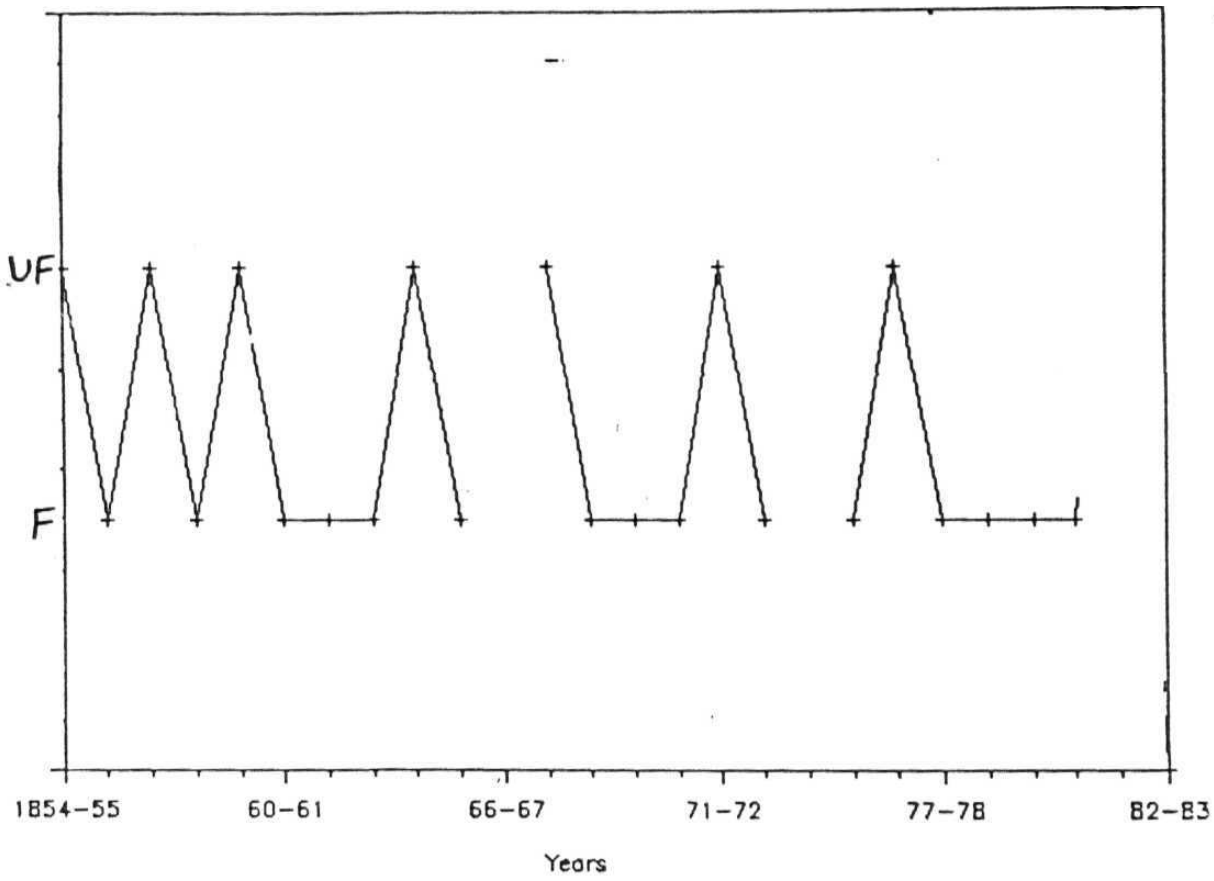
Seasons in Cuddapah District



VUF-Very Unfavourable
UF-Unfavourable
F-Favourable

Graph **3**

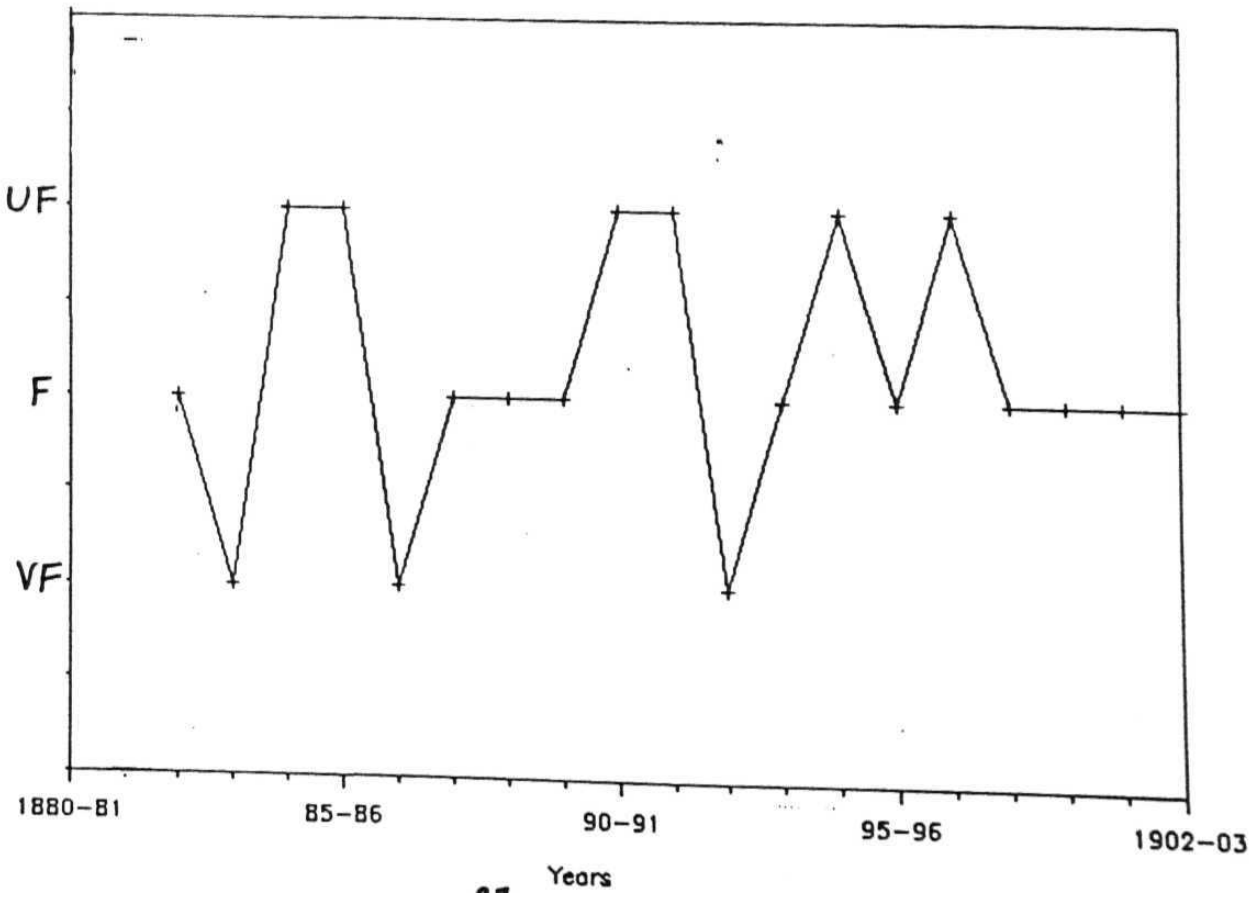
Seasons in Bellary District



UF-Unfavourable
F-Favourable

Graph 4

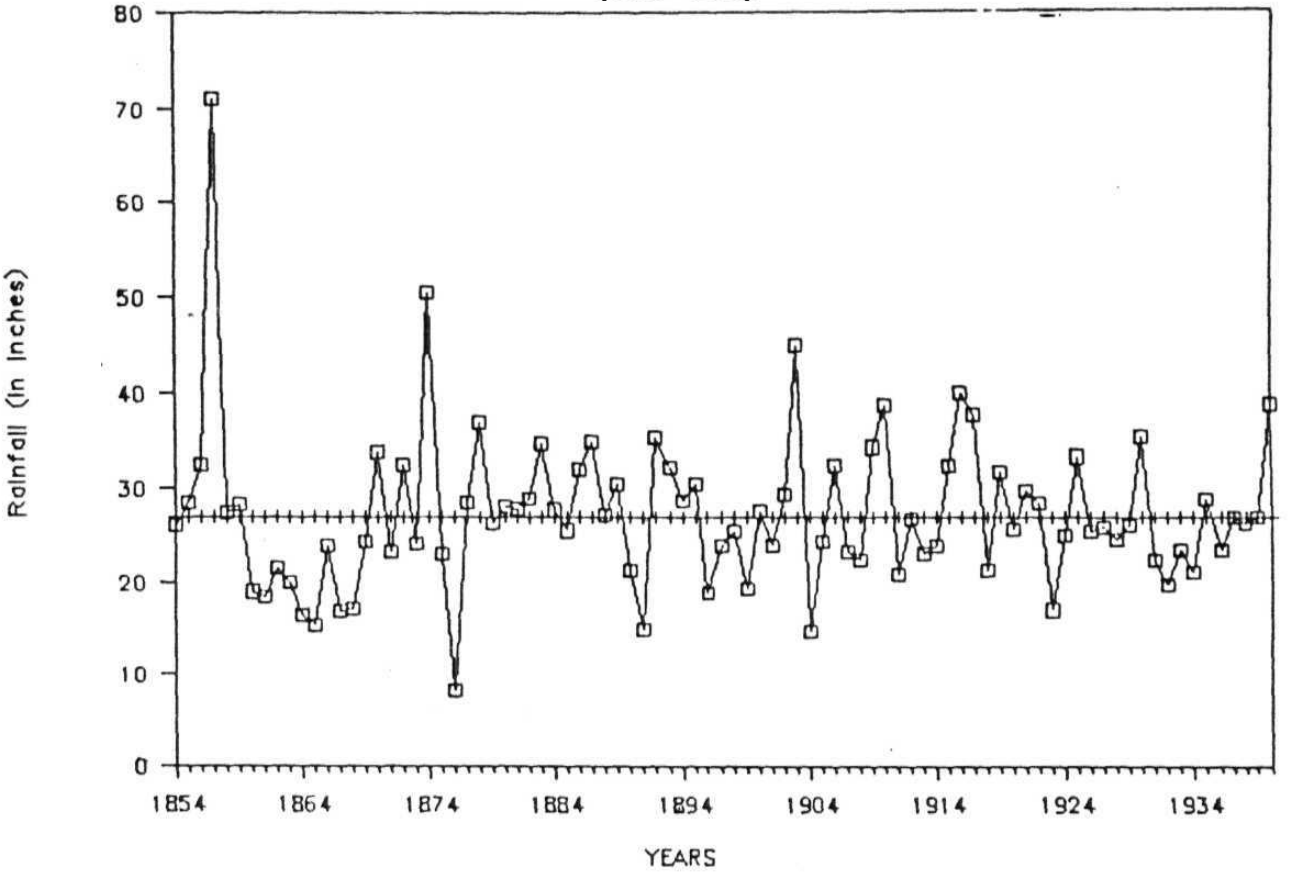
Seasons in Anantapur District



Graph 5

Average Rainfall of Cuddapah District

(1854-1940)

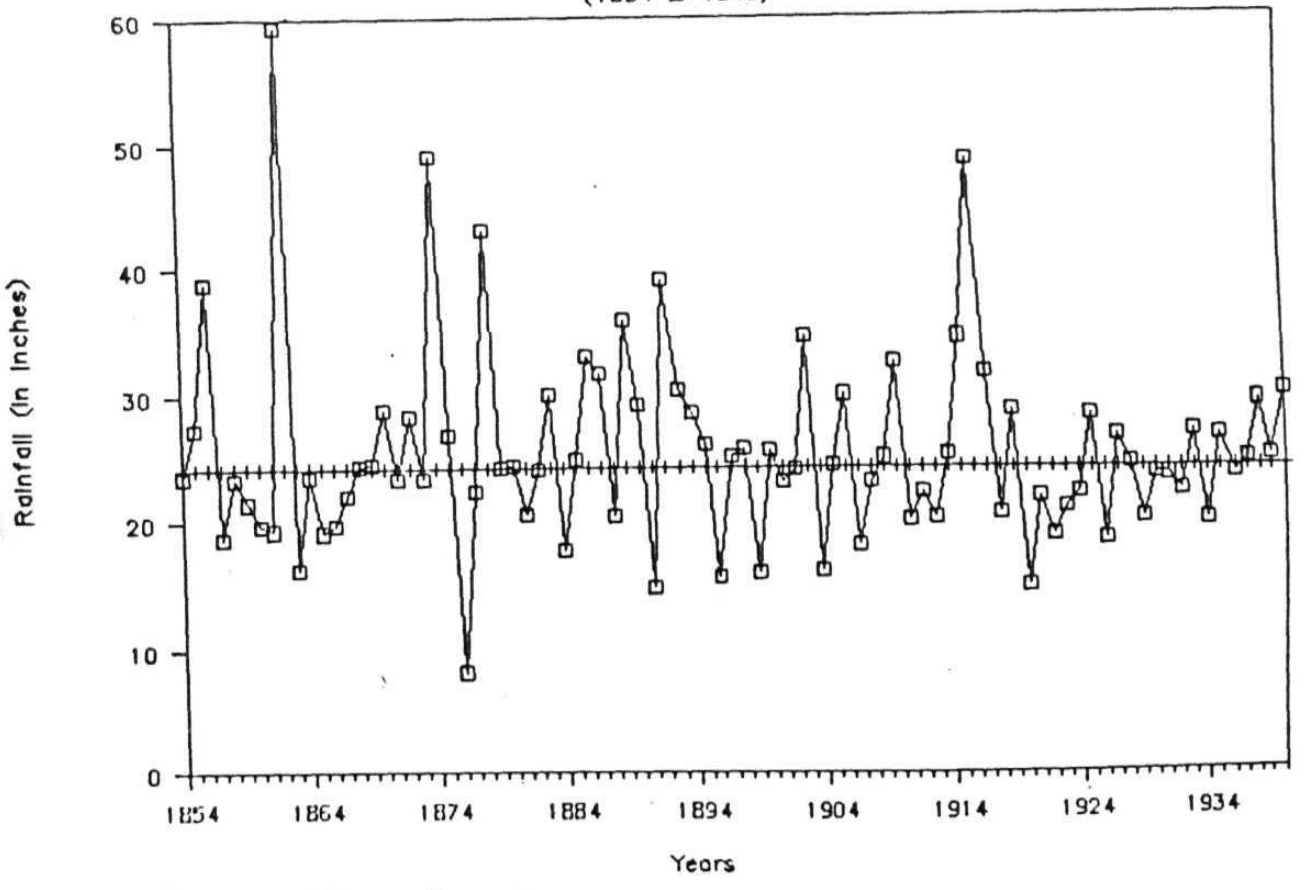


Normal **Rainfall** - 27.1

Graph 6

Average Rainfall of Kurnool District

(1854 to 1940)

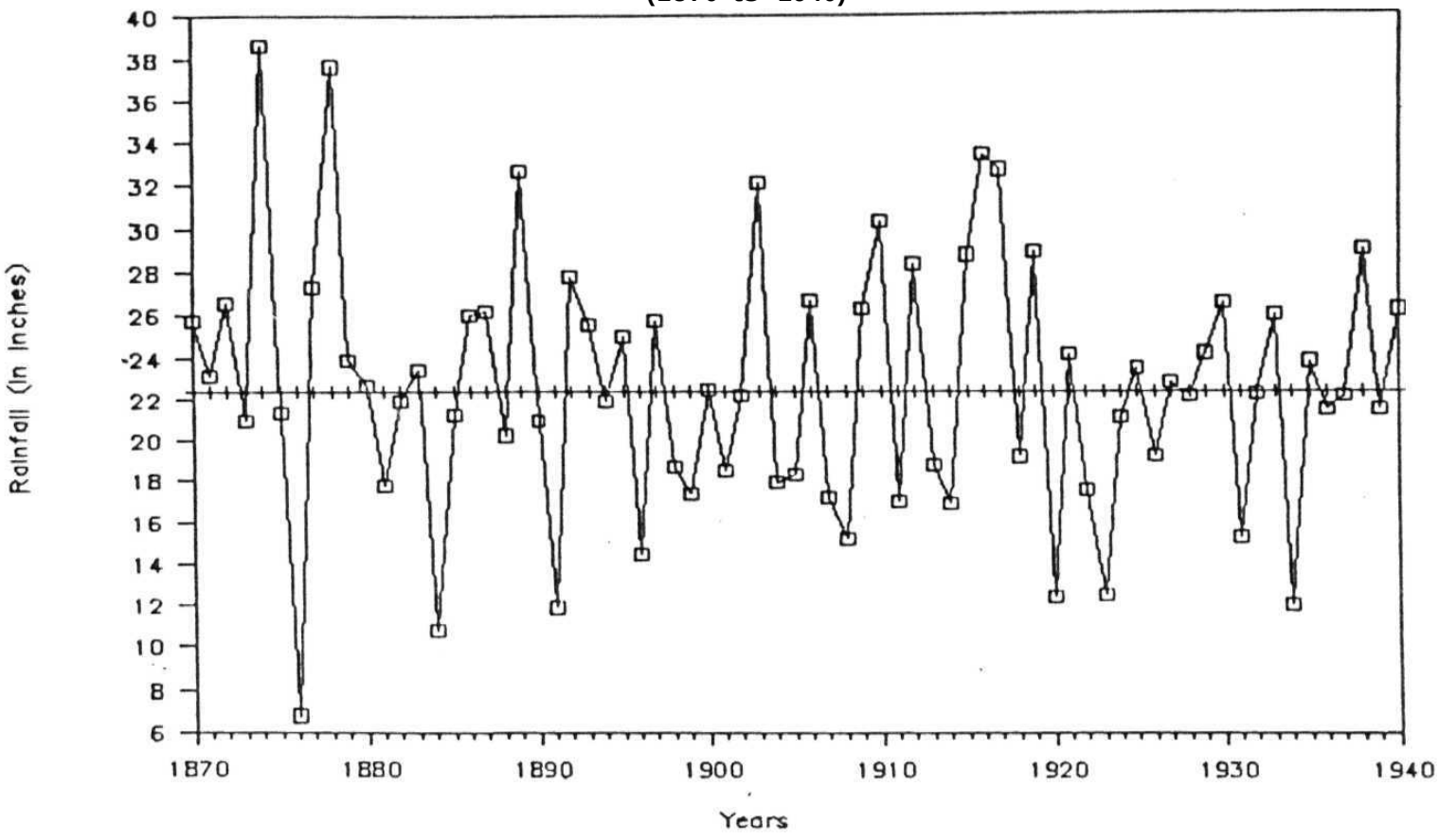


Normal Rainfall - 24.2

Graph 7

Average Rainfall of Anantapur District

(1870 to 1940)

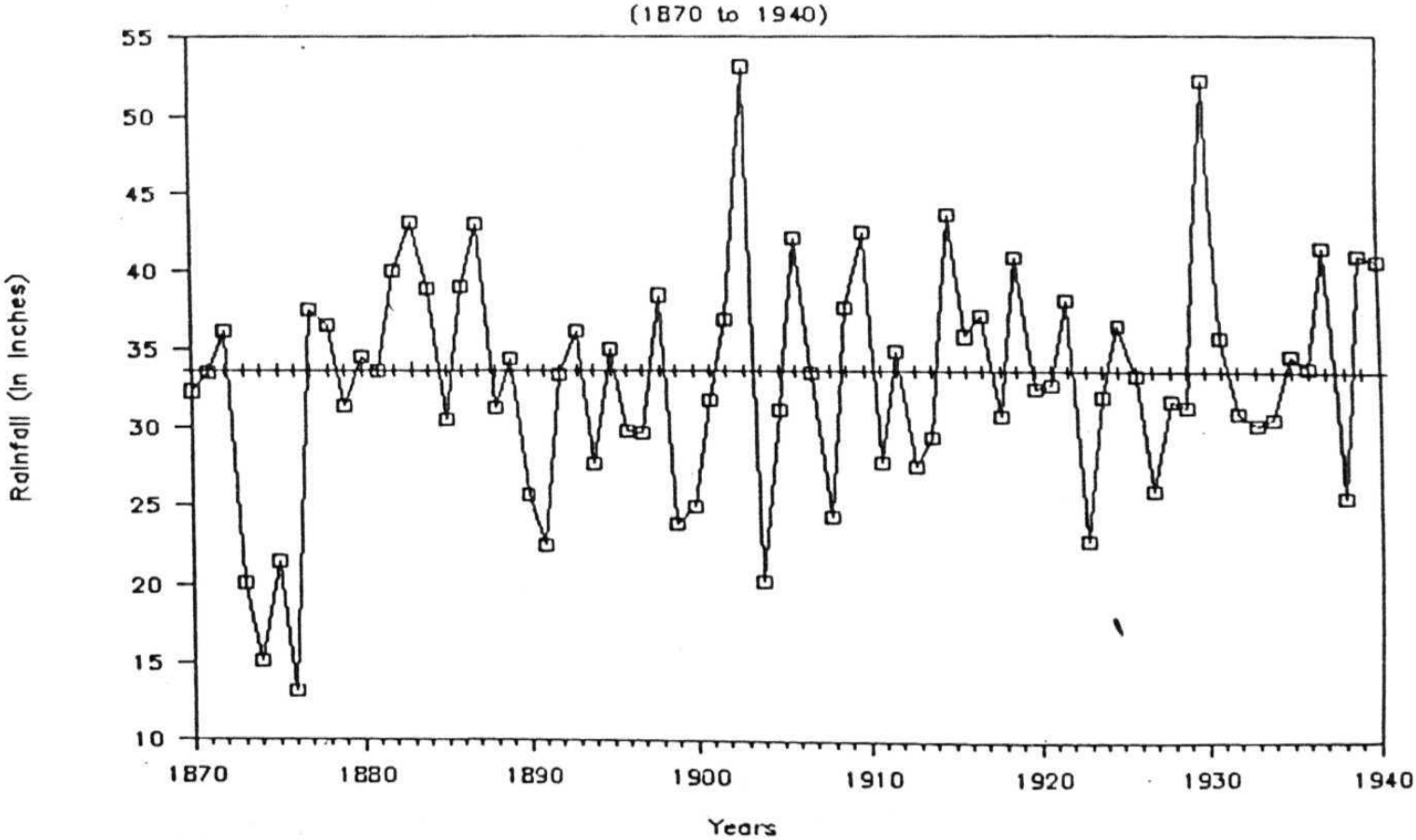


Normal Rainfall - 22.4

Graph 8

Average Rainfall of Chittoor District

(1870 to 1940)



Normal Rainfall - 33.7

The soils of the region are mainly of two types-red soils and black or Regada soils, which are in turn classified into several varieties depending on the nature and fertility of the soil. The black soil is usually considered the best, the mixed, especially the darker loams as the next best, and the red as average. These soils are not uniformly distributed. Table 2.1 shows the types of 3oils in the different districts of the region. The Settlement Department had adopted a scientific classification of the soils.[2]

Table 2.1

TALUK-WISE SOIL PROFILES OF RAYALASEEMA DISTRICTS

Soil Type	Anantapur	Bellary	Chittoor	Cuddapah	Kurnool
Red Soil	Anantapur Kalyandurg Dharmavaram Penukonda	Hadagalli Harpanahalli Hospet Kudligi	Vayalpad Madanapalli	Sidhout Budwel Pullampet Rayachoti	Koilkuntla Markapur Pattikonda
Black Cotton Soil	Gooty Tadpatri	Adoni Alur Bellary Rayadurg		Cuddapah Jammalamadugu Proddatur Karnalapur Pulivendla	Koilkuntla Cumbum Sirvel Nandyal Ramallakot
Red Loam & Sand Soil	Madakasira Hindupur Kadiri		Chandragiri Chittoor Palamaner	Cuddapah Pulivendla	

Source: Compiled from various Resettlement Reports - Revenue, 6 June 1872, No. 915; PBR, 31 March 1879, No. 828; PBR,11 October 1880, No. 1496; Board of Revenue (Sett.. L.Rds. , and Agri.). 27 June 1887, No. 172; Revenue, 21 October 1887, Nos. 998 & 998A; Board of Revenue (Rev.Sett., L.Rds., and Agrl.), 14 November 1887, No.447; Board of Revenue (Rev. Sett., L,Rds., and Agrl.), 14 March 1888, No.134; Board of Revenue (Rev.Sett., L.Rds., and Afiri), 27 February 1890, No. 50; Board of Revenue (Rev. Sett., L.Rds. . and Agri.) , 2 October 1895, No. 303; Revenue, 22 July 1897, No.606; Board of Revenue (Rev. Sett..Sur., L.Rds., and Aflri)., 29 November 1909, No. 428; Board of Re_yenue (Rev., Sett, Sur. L.Rds. , and Agri,), 18 July 1910, No.340; Revenue, 28 June 1911, No. 1968.

Table 2.2

LAND USE PATTERN IN CUDDAPAH DISTRICT (1875-76 - 1930-31)

Sl. No. (1)	Land Use (2)	Fasli 1285 (1875-76) (3) Acs.	Fasli 1312 (1902-03) (4) Acs.	Fasli 1322 (1912-13) (5) Acs.	Fasli 1335 (1925-26) (6) Acs.	Fasli 1340 (1930-31) (7) Acs.
1.	Govt.- (Ryotwari) Land	NA	4852051 (86.91)	3215066 (85.24)	3206464 (86.09)	NA
2.	Minor Inam	NA	454022 (8.13)	323981 (8.59)	303251 (8.14)	NA
3.	whole Inam		276687 (4.96)	232922 (6.18)	214980 (5.77)	NA
4.	Forests	NA	1518943 (27.21)	1163436 (30.84)	1155050 (31.01)	1152250 (30.94)
5.	Not available for cultivation	1568832 (30.45)	1594153 (28.55)	759206 (20.13)	5413300 (14.72)	497065 (13.35)
b.	culturable waste other than fallow	NA	417173 (7.47)	469760 (12.45)	619318 (16.63)	692687 (18.60)
7.	Current Fallows	73848 (1.43)	322327 (5.77)	270947 (7.18)	317016 (8.51)	314254 (8.44)
8.	Net Area Cropped	1225082 (23.78)	1721988 (30.84)	1099871 (29.16)	1085011 (29.13)	1068439 (28.69)
9.	Area Shown in Village Accounts	NA	5574584	3763220	3724695	3724695
10.	Total Area by Survey	5151704 (100.00)	5582760 (100.00)	3771969 (100.00)	3724695 (100.00)	3724695 (100.00)

Note: In the reorganisation of districts, during the first decade of the present century, three taluks representing an extent of 2839 square miles, nearly 33 percent of its total area were transferred to other districts from Cuddapah. Hence the decrease in the total area of the district after 1910.

Source: For fasli 1285, J.D.B. Gribble, Cuddapah District Manual, Madras, 1875, (Rpt. 1992), p. 394; For fasli 1322, C.F. Brackenbury, Cuddapah District Gazetteer, Madras, 1915, (Rpt. 1993), p.311-13; For fasli 1335, MDG, Statistical Appendix for Cuddapah District, Madras, 1930, Vol.11, p.19-21; For fasli 1340, MDG. Cuddapah District. 1933, Vil.III, P.16-18.

Table 2.3

LAND USE PATTERN IN KURNOOL DISTRICT (1882-83 - 1930-31)

Sl. No (1)	Items (2)	Fasli 1292 (1882-83) (3) Acs.	Fasli 1322 (1912-13) (4) Acs.	Fasli 1335 (1925-26) (5) Acs.	Fasli 1340 (1930-31) (6) Acs.
1	Govt.(Ryotwari) land including minor inams	3505539 (77.95)	4892626 (97.54)	4728781 (97.46)	4728785 (97.46)
2	Whole Inam	991472 (22.05)	123309 (2.46)	123309 (2.61)	123359 (2.54)
3	Forests	322526 (7.17)	1687471 (33.64)	1642782 (33.86)	1642270 (33.85)
4	Not available for cultivation	MA	337551 (6.73)	325149 (6.70)	320938 (6.61)
5	Culturable waste other than fallow	NA	376595 (7.51)	529007 (10.90)	500145 (10.31)
6	Current fallows	NA	229350 (4.57)	270814 (5.58)	292588 (6.03)
7	Net area cropped	NA	2068480 (41.24)	2056984 (42.39)	2087817 (43.03)
8	Area shown in village accounts	NA	4699447	NA	4843758
9	Total Area by Survey	4497011 (100)	5015935 (100)	4852090 (100)	4852144 (100)

Source: For fasli 1292, N.G. Chetty, Kurnool District Manual, Madras, 1886, Rpt. 1992, P. 348-352; For fasli 1322, MDG,Kurnool District. Madras,1915, Vol.11, P. 14-16. For fasli 1335, MDG, Kurnool District. Madras, 1928, Vol.11, P.20-21; For fasli 1340, MDG,Kurnool District, Madras, 1932, Vol.III, P.18 - 20.

Table 2.4

LAND USE PATTERN IN ANANTAPUR DISTRICT (1902-03 - 1930-31)

Sl. No (1)	Land Use (2) Acs.	1902-03 (3) Acs,	1912-13 (4) Acs.	1925-26 (5) Acs.	1930-31 (6) Acs.
1	Gbvt.(Ryotwari) land	2999425 (84.29)	3715283 (86.89)	3726140 (87.07)	NA
2	Minor Inams	423056 (11.89)	429385 (10.04)	423647 (9.90)	NA
3	Whole Inams	136051 (3.82)	131212 (3.07)	129513 (3.03)	NA
4	Forests	325665 (9.15)	475321 (11.12)	451958 (10.56)	448162 (10.39)
5	Not available for cultivation	530720 (14.91)	790782 (18.49)	375022 (8.76)	522887 (12.12)
6	Culturable waste other than fallow	682779 (19.19)	596820 (13.96)	957328 (22.37)	735789 (17.05)
7	Current Fallows	328134 (9.22)	419777 (9.82)	545630 (12.75)	549049 (12.73)
8	Net area cropped	1675615 (47.09)	1993180 (46.61)	1819849 (42.53)	2051228 (47.54)
9.	Area shown in village accounts	3542913	4275880	4149787	4307115
10	Total Area by Survey	3558532 (100)	4275880 (100)	4279300 (100)	4314470 (100)

Note: In 1911, the taluk of Kadiri was transferred from Cuddapah to Anantapur District. Hence the increase in the total area.

Source: For fasli 1312, W. Francis, Anantapur District Gazetteer, Madras. 1905, (Rpt. 1993), P.275-276; For fasli 1322, MDG, Anantapur District, Vol II, Madras, 1915, P.11-13. For fasli 1340, MDG,Anantapur District, Vol.III, Madras, 1933, P.15-16.

2.3 Land Use Pattern

The early part of the period under study saw substantial expansion of area under private holdings and cultivation. Land was relatively abundant. There was much room to expand into culturable waste, even into forest lands and lands which were not properly surveyed and accounted for. This was also a period of firm establishment of private alienable property rights on land through "Pattas" (document right of possession) issued by the state revenue authorities through systematic survey and settlement.

Table 2.3 shows an enormous increase in the percentage of land that was being brought under ryotwari tenure from one decade to the other. It also shows a drastic decline in the area under inams.[3] The percentage area under forests was on the increase in the three districts of Cuddapah, Kurnool and Anantapur (Tables 2.2, 2.3, and 2.4). The percentage area under both the current fallows and culturable waste other than fallow, was also on the increase in all the three districts. Current fallows were lands ploughed and harrowed but left uncropped or uncultivated for a short period. This was mainly due to the relinquishment of land by farmers either due to high land revenue rates charged by the State or due to seasonal failure of monsoons.

Waste lands were most common in the predominantly dry areas, for here lands were often left uncultivated because of seasonal failures. All lands regarded as cultivable waste in the British records were not of the same type, nor were they waste for the same causes. First of all, lands ware left waste for periods

ranging from one to two years to fifteen or more. Secondly, considerable lands were also included as waste which were locally useful for grass fallow or short fallow purposes.

The causes for the non-occupation of culturable lands are - some lands were reserved for fuel and fodder, sometimes because of considerable distance from the villages, paucity of cultivating ryots, want of facilities of water, interruption of Vankas or Nalas, heaviness of assessment, Tsoudu or alkaline soil, tank beds, inaccessibility owing to interruption of jungles, gravelly soil, temporary relinquishment, overgrown with prickly pear, date and palmyra trees, use for storing manure, inferior soil, containing topes, breach of tanks, sandy soil adjoining grazing reserves, pits, kept for compensation, lying within half a mile of the railway station.[4]

Land Holdings and Tenurial Systems

During the period under study there had been an enormous increase in the number as well as the extent of ryotwari land holdings in the region of Rayalaseema. Tables 2.5 and 2.6 show the changes in the extent of land holdings in the districts of Kurnool and Cuddapah respectively during 1859-1947. Excepting the famine years, there had been an overall increase in the total area, both wet and dry, that had been brought under the holdings. This was mainly due to the fact that more and more of land was being systematically brought under the ryotwari tenure. In Kurnool district, there was a sudden spurt in the wet holdings since 1910-1911 may be due to regularisation of the area under the Kurnool-Cuddapah Canal.

Table 2.5

LAND HOLDINGS IN KURNOOL DISTRICT 1859-60 - 1946-47

Fasli (year)	Extent of Holdings				Index of Holdings			
(1)	Dry (2) Acs	Wet (3) Acs	Misc. (4) Acs	Total (5) Acs	Dry (6)	Wet (7)	Misc. (8)	Total (9)
1269(1859-60)	1039687 (98)	21225 (2)	-	1061012 (100)	100	100	-	100
1270(1860-61)	1030550	21189 (2)	-	1051839 (100)	99	100	-	99
1280(1870-71)	1173590 (98)	27264 (2)	-	1200954 (100)	113	128	-	113
1290(1880-81)	935585 (96)	26538 (3)	7456 (1)	969678 (100)	90	125	89	91
1300(1890-91)	1139936 (96)	27062 (2)	24359 (2)	1191455 (100)	110	128	291	112
1310(1900-01)	1261188 (94)	28783 (2)	51769 (4)	1341836 (100)	121	136	619	126
1320(1910-11)	1364027 (93)	38261 (3)	68123 (5)	1470506 (100)	131	180	815	139
1330(1920-21)	1417075 (93)	39155 (3)	71803 (5)	1528128 (100)	136	184	859	144
1340(1930-31)	1526138 (92)	39869 (2)	99759 (6)	1665860 (100)	147	188	1193	157
1350(1940-41)	1542289 (92)	37906 (2)	102981 (6)	1683270 (100)	148	179	1232	159
1351(1941-42)	1541922 (98)	37936 (2)	NA	1579958 (100)	148	179	-	149
1356(1946-47)	1540549 (98)	37975 (2)	NA	1578624 (100)	148	179	-	149

Note: Figures in the Parentheses represent the percentages; For the indices under Miscellaneous cultivation fasli 1281 (1871-72) is taken as the base since data under that particular head is available only since then.

Source: From fasli 1269 to 1275, N.G. Chetty, Kurnool District Manual, Madras, 1886, (Rpt. 1992), P.345; From fasli 1276 to 1350, A Statistical Atlas of the Madras Province Revised and Brought upto the End of Fasli 1350 (1940-41),Madras, 1949, Kurnool District, P.30; From fasli 1351 to 1356, Statistical Atlas of the Andhra State Revised and Brought upto the End of Fasli 1360(1950-51). Bureau of Economics and Statistics, Hyderabad, 1959, P.418-19.

Table 2.6

LAND HOLDINGS IN CUDDAPAH DISTRICT 1866-67 - 1946-47

Fasli (Year) (1)	Extent of Holdings				Index of Holdings			
	Dry (2) Acs	Wet (3) Acs	Misc. (4) Acs	Total (5) Acs	Dry (6)	Wet (7)	Misc. (8)	Total (9)
1276(1866-67)	1121706 (88)	146978 (12)		1268784 (100)	100	100	-	100
1280(1870-71)	1201564 (91)	115650 (9)		1317314 (100)	107	79	-	104
1290(1880-81)	1045031 (89)	116151 (10)	10877 (1)	1172158 (100)	93	79	84	92
1300(1890-91)	1118925 (89)	118891 (9)	20487 (2)	1258401 (100)	100	81	159	99
1310(1900-01)	1183594 (86)	128469 (9)	59119 (4)	1371278 (100)	106	87	458	108
1320(1910-11)	765918 (87)	76254 (9)	36344 (4)	878612 (100)	68	52	281	69
1330(1920-21)	810316 (89)	71479 (8)	30412 (3)	912304 (100)	72	49	235	72
1340(1930-31)	846811 (88)	72902 (8)	40591 (4)	960400 (100)	75	50	314	76
1350(1940-41)	836776 (87)	83324 (9)	42869 (4)	963065 (100)	75	57	332	76
1351(1941-42)	837042 (91)	83290 (9)	NA	920432 (100)	75	57	-	73
1356(1946-47)	837560 (87)	83358 (9)	41253 (4)	962267 (100)	75	57	319	76

Note:Figures in the Parentheses represent the percentages; For the indices under miscellaneous cultivation fasli 1281 is taken as the base (1871-72=100) since data under that particular head is available only since then.

Source: Same as in Table 2.5

Table 2.7

LAND HOLDING "PATTAS" IN ANANTAPUR DISTRICT

Fasli(Year)	Number Of pattas
1292(1882-83)	61944
1293(1883-84)	63486
1294(1884-85)	63042
1295(1885-86)	65656
1296(1886-87)	67643
1297(1887-88)	69738
1298(1888-89)	69851
1299(1889-90)	72686
1300(1890-91)	70811
1301(1891-92)	70939
1302(1892-93)	72633
1303(1893-94)	76813
1304(1894-95)	83565
1305(1895-96)	85779
1306(1896-97)	84006
1307(1897-98)	83136
1308(1898-99)	82465
1309(1899-1900)	82205
1310(1900-01)	80654
1311(1901-02)	82068
1312(1902-03)	83060

Source: Annual Settlement Reports of Anantapur District.

Table 2.8

LAND HOLDING "PATTAS" IN KURNOOL DISTRICT

Fasli(Year) (1)	Fresh or Newly Issued (2)	Altered (3)	Old (4)	Total (5)
1271(1861-62)	-	15691	—	71426
1272(1862-63)	-	—	38676	73145
1276(1866-67)	27143	—	—	—
1277(1867-68)	27194	-	—	87257
1278(1868-69)	41406	567	46562	88535
1279(1869-70)	32140	—	—	88430
1280(1870-71)	14271	2444	71820	88535
1281(1871-72)	29842	—	—	85590
1282(1872-73)	27230	—	—	86923
1283(1873-74)	15053	4124	71103	90280
1284(1874-75)	29425	3537	55937	88899
1285(1875-76)	27335	4355	59602	91292
1286(1876-77)	38796	8374	43545	90715
1287(1877-78)	32684	6202	48160	87046
1288(1878-79)	16284	13800	56290	86374
1289(1879-80)	21161	24119	35097	80377
1290(1880-81)	30259	17255	31758	79272
1291(1881-82)	20732	13143	45141	79016
1292(1882-83)	31102	11457	40118	82677
1293(1883-84)	35867	19908	32872	88647
1294(1884-85)	86928	890	3029	90847
1295(1885-86)	19833	28646	44376	92855
1296(1886-87)	18942	28718	50236	97896
1297(1887-88)	—	-	—	95505
1298(1888-89)	-	-	-	94450
1299(1889-90)	—	—	—	96808
1300(1890-91)	—	—	—	98779
1301(1891-92)	—	—	—	98675
1302(1892-93)	23602	19071	72360	115033

1303(1893-94)	63466	49138	5714	118318
1304(1894-95)	43025	70509	—	113534
1305(1895-96)	23403	45513	44059	112975
1306(1896-97)	25711	59757	25945	111413
1307(1897-98)	64926	37874	10751	113551
1308(1898-99)	16717	23102	75403	115222
1309(1899-1900)	39606	30590	46108	116304
1310(1900-01)	12580	40538	68288	121406

Source: Annual Settlement Reports of Kurnool District.

In Cuddapah district, the decline in overall holdings and much steeper decline in wet holdings was due to reorganisation of the districts in 1910-1911. The extent of holdings under miscellaneous cultivation, both in absolute and relative terms, had been increasing significantly. The term miscellaneous holdings would refer to all that land which was not definitely categorised as either dry or wet in settlement registers for paying the regular and continuous land assessment.

The increase in the miscellaneous holdings was due to the increase in the occupied area when the monsoons were favourable and the weather conditions were normal. The increase in miscellaneous cultivation during the first quarter of the present century was chiefly due to the cultivation of groundnut and other commercial crops which fetch reasonably ready cash prices. This was also due to the conditional assignment of holdings to the scheduled classes.[5]

During the period under study, besides the extent of holdings, there had been an enormous increase in the number of

land holding pattas as well. Over a period of time the number of pattas had increased tremendously. Through table 2.7, 2.8 and 2.9 we can analyze the changes in the number of ryotwari Pattas issued every year in the districts of the region under study.

Table 2.9

PERCENTAGE DISTRIBUTION OF PATTAS AND REVENUE ASSESSED IN KURNOOL DISTRICT (1866-67 - 1940-41)

Assessment, Class of Pattas		Percentage of	Pattaa	Percentage of Revenue Assessed			
		Fasli	[Year)		Fasli (year)		
(Rs.)	1276 (1866-67)	1296 (1886-87)	1318 (1908-09)	1350 (1940-41)	1276 (1866-67)	1296 (1886-87)	1318 (1908-09)	1350 (1940-41)
1	2	3	4	5	6	7	8	9
< 10	59.38	62.50	67.8	78.78	17.86	20.68	25.7	38.28
10 to < 30	28.16	27.02	24.6	17.16	29.53	32.69	33.2	34.19
30 to < 50	6.74	6.04	6.8	3.79	16.19	16.09	28.9	21.90
50 to < 100	3.99	3.27			17.86	16.03		
100 to < 250	1.53	1.06			13.90	11.14	12.2	5.63
250 to < 500	0.18	0.10	0.8	0.27	3.81	2.53		
500 to < 1000	0.02	0.01			0.77	0.66		
> 1000	-	-			0.08	0.18		

Source: For faslis 1276 and 1296, C.Benson, An Account of the Kurnool District Based on an Analysis of Statistical Information Relating Thereto, and On Personal Observation, Madras, 1889, P.102; For fasli 1318, C.Benson, A Statistical Atlas of the Madras Presidency, Madras, 1908, P.171; For fasli 1350, A Statistical Atlas of the Madras Province Revised and Brought upto the End of Fasli 1350 (1940-41). Madras, 1949, Kurnool District, P.17.

The last quarter of the nineteenth century witnessed **a** rapid increase in the number of pattas in the Rayalaseema region. This indicates not only an increase in the land holdings and the area cultivated but also an increase in the Ryotwari Tenure under which land holding is a private alienable property and the revenue is assessed and collected from the Patta holder directly by the state. There are a number of factors which explain the increase in the number of land holding pattas and the area held there under.

First, land was not still very scarce. Additional extent of land was being brought under ryotwari tenure and new pattas were being granted.

Second, certain minor inams were resumed by the state in the Shrotriem villages for which pattas were issued later. Sometimes the increase was due to the assignment of pattas for village service and artisan inams and incorporation of these lands with the government ayacut. The government had also undertaken the revision of the registers which had the details of different types of inams enjoyed by the people. Some lands unauthorisedly enjoyed as inams were incorporated with the government lands.[6]

Third, the more favourable character of the season had sometimes encouraged the ryots to come forward to take the pattas . The increase under new pattas was due to larger renewals and to the reoccupation by former holders of lands which had been thrownout of cultivation during the famine.[7]

Fourth, owing to the introduction of survey areas and the new settlement rates there was a large increase in the number of

fresh pattas and of those modified by new entries. These alterations after 1892 were sometimes due to the imposition of the Village Cess Act which required modification of the old pattas.[8]

Fifth, due to the partition of family property amongst several heirs., and transfers, voluntary or by sale, also the larger holdings were being broken up and different pattas were being granted which would in turn increase the number of pattas.

In addition to the trend increase in Pattas, there were few years in which there was a decrease in the number of pattas. This decrease could be attributed to the following factors:-

First, increase in the number of relinquishments made on account of the bad season and sometimes due to high rates of assessment.[8] Second, transfers among the ryot's holdings also would reduce the number of pattas.

Third, after the introduction of new survey areas and settlement rates, a new village manual was introduced. According to the rules incorporated in this manual, several single pattas were revised. In doing so several pattas held by the same ryot were amalgamated into one.[10]

Fourth, cancellation of the pattas of defaulters whose lands had been sold for arrears of revenue and bought in by government had also reduced the number of pattas held during some years.[11]

Table 2.9 shows the percentage of the number of land holding pattas as well as the revenue under different classes of pattas. There had been a steady increase in the number of holdings on which the assessment was Rs. 10 and less and decrease in the other heads over a period of time. This increase, might, to some

extent, be attributed to the gradual disappearance of the joint family system and hence subdivision and fragmentation of joint holdings.

2.4 Land Revenue Administration

Of the details of the ancient Revenue systems little is known. When Vijayanagar became the paramount power it became entitled by immemorial custom to a share in the produce of all cultivated land. This share, as much as half the gross produce, was as far as wet crops were concerned, collected in kind, while in respect of dry and garden crops it was converted for a money payment. The village officers or the villagers jointly were responsible for the due payment of the amount fixed for each village, while a hierarchy of revenue officials attended to the details of the annual settlement.[12]

Under the Muslim rulers, a much more elaborate method for ascertaining and fixing the assessment was adopted. This method was known as the "Kamil" and the "Kamil" assessment was arrived at by means of a cadastral survey, by the ascertainment of grain values and by the conversion of the grain value of one-half of the gross produce into a money payment. The system was, however, vitiated by the method of collection, which remained in the hands of powerful middle men instead of being entrusted to the servants of the State. The "Kamil" assessment was adopted as the basis of taxation by the succeeding powers, both Moghul, Mahratta and Mysorean. During the latter part of the reign of Hyder and the greater part of that of Tippu the assessment was collected without trouble. Tippu's authority at length declined

and the descendants of the exiled poligars, together with many fresh and upstart Chieftains, once again asserted their independence and ravaged the country-side with uncontrolled license. A similar situation continued under the Nizam's rule also.[13] .

'In the political disturbances of the 18th century the details of the settlement of land revenue disappeared. Thus the region was, on the advent of the British, in a very unsettled state and one of the first things that Thomas Munro did was to introduce a Ryotwari Settlement. In connection with this a survey of the lands was undertaken by which the actual extent of land cultivated was ascertained, the different descriptions of it, both with regard to the tenures under which it was held, and the kinds of produce which it yielded, what quantity a given portion of seed would yield of a particular produce; and what was the extent of land either uncultivated or waste. When introducing the new assessment, alterations were gradually made as the circumstances of the cultivation and the state of agriculture improved. The survey commenced in 1802 and finished in 1805. The classification of the land began in 1804 and was completed in 1806.[14]

The ryotwari system thus inaugurated by Major Munro was viewed with disfavour by the Supreme Government, and not withstanding the objections raised by Munro and the Madras government, they insisted on the introduction of a village war triennial lease which lasted from fasli 1219(1809-10) to 1221 (1811-12) Though this lease did not prove a success, it was thought that better results would follow if a longer term was fixed, and so the triennial was exchanged for a decennial

villagewar lease. This continued in force till fasli 1231(1821-22).[15]

Before the village lease in Bellary came to an end, Thackeray, the Collector, in his report in 1819 strongly urged that the 25% reduction in assessment proposed by Munro in 1807 should be carried out. In 1820, the Governor ordered that the reduction of 25% on dry and 33% on wet lands should be carried out immediately.[16] With these modifications the ryotwari settlement was reintroduced in the region.

The assessment rose and fell with reference to the varied seasons, till the 1850's, when further reduction of assessment was sanctioned and the rates were modified.[17]

The ryotwari settlement generally included the two distinct processes of classification of land and its assessment on the basis of classification. The basic principle of the settlement would be made with the ryots without the intervention of intermediaries. Its essence was the individuality of contribution and responsibility and a fixed rate of demand or a fixed amount in money on each portion of land occupied for cultivation by an individual.[18]

After the transfer of power from the East India Company to the Crown fresh settlement of land revenue (under the Ryotwari System) was undertaken by the British government in the region. A group of taluks having similar types of soils in each district was settled at a time. The surveys of the groups of villages had taken into account several factors like population, season and rainfall, irrigation sources, communications and grain outturns. Under the Crown the first settlement of revenue in all the taluks of the region was completed during the 1880s.

Depending on the financial results of these settlements, the annual settlement of each district was carried out. The first settlement rates of revenue were to be in force for the next thirty years. Hence the first resettlement of all the taluks of the region was undertaken during the first two decades of the present century. It lasted for another thirty years and the second resettlement of Kurnool district and Cuddapah district was completed during 1940s. This time the resettlement of the district as a whole was conducted, unlike the earlier resettlement wherein a group of taluks or sometimes each taluk was resettled separately. The present work reviews the irrigation policy of the British in the light of these resettlements of land revenue that were taking place once in thirty years.

2.5 Cropping Pattern

Cropping pattern here means the particular crops cultivated in a specific area, as well as the timing of such crop production. The increase in population, particularly the rise in the number of pattas created the initial conditions for an increase of cultivation, particularly in those areas where agriculture was rainfed and cultivable land abundant. This condition was, however, checked by the limitation in the supply and availability of capital resources like ploughs and bullocks, while the availability of irrigation water determined the scope of the extension of irrigated cultivation.

The most primary distinction of the cultivated area was a three-fold division of land into Punjah (Dry), Nanjah (Wet) and Bagayat (garden), traditionally developed on the basis of a

certain range of cropping pattern controlled mainly by the relative availability of water.

The south-west monsoon assisted the growth of the Moongari or early crops, and the north-east monsoon in July and August that of the Hingari. or later crops, whose maturity was further aided by the heavy fall of dew.[19] The cultivation of dry crops, was more extensively carried on between June and September, and the successive crops were sown by the end of January and reaped upto the following June.[20] The dry crops that were being grown included Sajja, Lamp oil seeds, Korra, Arika, Ragi, Horsegram, Chitta Jonna, Cotton, Bengalgram, wheat, Indigo and Greengram. The garden crops included Indigo, Gingelly, Turmeric, Jonna or Cholam and Korra. Paddy, Sugar-cane, Indigo and Ragi were the main wet crops grown when there was a sufficient availability of irrigation water, mostly drawn from tanks, which further depended on a favourable monsoon.

The nature of the soil would basically decided the crops to be grown.[21] On the superior black cotton soil of the region Jonna, Indigo and cotton were mainly grown. The natural fertility of this soil, its power of retaining moisture, such that even a very light rainfall would secure a heavy crop, assured the owners of a good return year after year.

The extent of each particular crop grown in any season, leaving out of consideration any extraordinary inducement on account of increase in price, depended on the date of rainfall. If the monsoon breaks early, Sajja, yellow Jonna, Korra and Arika will be largely cultivated. If the rains are late, more Horsegram, Cotton, white Jonna, which are sown in August and September, will be putdown, and if there is some rainfall late

in October there will be an unusual growth of wheat and Bengalgram, with other insignificant grains that can be grown rapidly and reaped within three months.[22]

Jonna or Cholam: The Pedda Jonna (Jowar) was grown only under wells, and thus the crop universally raised was the Chitta Jonna (Jowar) which was rainfed, sown in September and reaped in February and March. The moisture needs of Chitta Jonna are low. One down-pour to enable the seed to sprout and a couple of good showers to maturity are ample. Jonna could also be grown year after year upon the same field, although it was found that the best plan was to have a crop of cotton every third year.

Cotton: Cotton was mainly grown on black soil or Regada. It was sown in August, the first picking would began in February and would go on until May; during which period the Cotton was gathered once in eight days. This crop was also raised on the red tracts; but even if the rains were abundant, the outturn on these red lands, was stated to be only half of what it was on the best kind of Regada.

Indigo - Indigo was not only a profitable but a wholesome crop for the land, and was raised under both dry and wet cultivation. When grown on the best dry Regada, it would last for three years without manuring, provided the rains were tolerably favourable. During this period five cuttings could be obtained. After Indigo came Jonna, and the crop would be heavy owing to the strength the land has received from the decaying roots and fallen leaves of its last occupant. On wet lands it was generally put in as a second crop around March, and lasted 5 months, when the roots were ploughed in. It flourished under well cultivation and one good well usually sufficed for 8 acres.

Sugar-Cane: Sugar-cane was largely cultivated under the numerous small tanks, and also under wells. This crop occupies the land for about a year, and as a consequence it was always rated as a double crop. It was planted in two seasons, either just before the June rains or else after the north-east monsoon. It requires a large and constant supply of water.

Paddy- Paddy occupied the most prominent place among the crops grown on irrigated lands. When Indigo was more extensively cultivated this crop was used in rotation with paddy over large areas.

Ragi: Ragi was either grown as a second crop on irrigated lands which possessed a good water-supply or as a substitute for paddy when the supply was sufficient for a wet crop. It could be successfully grown even if the tanks did not receive a full supply. For similar reasons it was a favourite crop under wells.

An analysis of the changes in the cropping pattern of the region during the period 1800 and 1900 reveals that till mid-nineteenth century, agriculture in the region was of subsistence in nature.[23] Though crops such as Cotton and Indigo were cultivated, the area under these crops remained small. This was due to the subsistence nature of the farmers, the exorbitant land revenue rates, and the prevailing low prices of the agricultural produce.

Table 2.10

CROPPING PATTERN IN RAYALASEEMA (1871-72 TO 1942-43)

Year*	Rice	Jowar	Other food crops	Total food crops	Indigo	Ground nut	Cotton	Other non food crops	Total non-food crops	Total Cultivated area('000) acres
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	10)	(11)
1872-73	3.92	34.97	44.13	83.00	1.36	–	9.96	5.56	16.96	7151
1874-75+	6.02	34.85	42.93	83.80	1.29	–	8.22	6.69	16.18	7496
1877-78	5.28	39.50	42.06	86.83	0.62	–	7.71	4.82	13.16	4679
1880-81	4.72	34.23	42.48	81.43	2.32	–	10.35	5.90	18.56	5616
1885-86	4.06	30.16	47.23	81.43	2.03	–	9.00	7.52	18.66	6531
1889-90	5.76	28.33	42.76	81.43	2.59	–	11.67	8.89	23.16	7204
1893-94	4.90	31. 19	41 .48	77.57	–	–	9.93	12.50	22.43	6908
1896-97	4.38	30.00	42.21	76.59	–	–	9.60	13.82	23.42	7287
1899-1900	4.60	31.68	42.90	79.18	-	-	10.51	10.30	20.81	7195
1902-03	3.87	30. 12	45.80	79.79	–	–	9.40	10.82	20.22	7735
1905-06	4.58	27.87	44.39	76.84	–	–	12.12	11.04	23.16	7757
1908-09	4.03	27.97	46.23	78.23		–	10.79	10.98	21.77	7896
1909-10+	5.28	27.85	46.35	79.48	–		10.77	9.76	20.53	7741
1912-13	6.26	25.09	46.27	77.62	–	–	12.37	10.01	23.38	8427
1915-16	5.24	26.84	43.04	75.12	-	6.02	11.99	8.89	26.90	8514
1918-19	7.52	24.04	40.96	72.52		5.13	14.57	7.78	27.58	8121
1921-22	6.76	29.77	40.88	77.41		4.16	11.69	6.73	22.58	7958
1924-25	5.15	25.94	40.88	71.97	–	7.52	14.77	5.74	28.03	7890
1927-28	5.22	22.10	41.10	68.42	–	13.74	12.10	5.73	31.57	8595
1930-31	6.10	22.28	39.78	68.16	–	15.96	11.16	4.73	31.85	8720
1933-34	5.90	20.73	40.86	67.49	–	17.08	10.07	5.36	32.51	8733
1336-37	5.78	25.00	39.68	70.46	–	11.99	12.03	5.52	29.54	8535
1939-40	6.37	21.26	39. 17	66.80	–	17.32	10.75	5.12	33.19	8878
1942-43	6.44	21.86	40. 25	68.55	-	15.09	11.23	5. 13	31.45	8597

Note - Rayalaseema hero includes the districts of Bellary, Cuddapah, Kurnool and Anantapur.
*Three Year Average
+0ne Year Figure
Source: Namerta, Growth of Market Towns in Andhra: A Study of the Rayalaseema Region C.1890 - C.1945. Thiruvananthapurani, 1994,p.52.

The share of food crops in the total cropped area in the famine and immediate post-famine years i.e. 1877-78 and the next three years, was about 85 percent in Cuddapah district. Between 1881-82 and 1885-86, a period of readjustment, on an average the share of food crops in the total cropped area dropped to a little over 80 percent. It was between the mid-eighties and mid-nineties that the share of food crops in the total cropped area further went down to 78 per cent.[24]

Table 2.11

STATEMENT SHOWING THE SOWING OF GROUNDNUTS IN THE DECCAN DISTRICTS *OF* MADRAS PRESIDENCY (1887-88 - 1896-97)

Year	Deccan Districts Acs.
1887-88	508
1888-89	665
1889-90	731
1890-91	712
1891-92	609
1892-93	3263
1893-94	1119
1894-95	1261
1895-96	2014
1896-97	1452

Note: Deccan Districts include the districts of Anantapur, Cuddapah and Kurnool.

Source:Board of Revenue (Rev. Sett.. L.Rds., and Agri.), 29 June 1898, No.226, P.7.

Table 2.12

CULTIVATION OF GROUND NOT IN CUDDAPAH DISTRICT AND MADRAS PRESIDENCY (1916-17 TO 1933-34)

Year	Cuddapah	Madras Presidency	Percentage of Col. 2to 3
(1)	(2)	(3)	(4)
1916-17	201633	1796000	11.23
1917-18	62944	1415000	4.45
1918-19	36106	1001000	3.61
1919-20	103407	1144000	9.04
1920-21	144298	1600000	9.02
1921-22	130094	1459000	8.92
1922-23	194925	1754000	11.11
1923-24	170378	1812000	9.40
1924-25	137539	1904000	7.22
1925-26	223598	2599000	8.60
1926-27	251366	2680000	9.38
1927-28	270264	3337000	8.10
1928-29	272134	3679000	6.58
1929-30	163593	3209000	5.10
1930-31	235673	3572000	6.60
1931-32	183390		—
1932-33	264805		—
1933-34	229478	-	-

Source: For Column 2, Revenue, 9 July 1938 (Confdl.), No. 1744, Misc., P.22; For Column 3, Census of India. 1931, Vol. XIV, Madras, Part I, Madras, 1932, P.239.

The area under the non-food crops was increasing at the expense of the area under food crops during the period 1900-1947. Among the non-food crops, Cotton (till mid 1920s) and Groundnut (from early 1920s onwards) were important.[25] Ground nut was not widely known in the region until the end of the 19th century. (Table 2.11)

It gained prominence within a short time, during the second decade of the present century. (Table 2.12) It became the most important commercial crop of Cuddapah and Kurnool districts. In Cuddapah district it claimed the largest extent of land next to Jonna.[26]

The development of rail and road transport by the colonial government facilitated the trade between the regions and hence the expansion of cash crops production. Moreover the high price that obtained for Ground nut and the ready market for it even in remote villages had induced the ryots to prefer this crop to others.[27]

The decline in the area under Cotton both in terms of absolute figures and percentages, from mid 1920s was due to several factors. From mid 1920s onwards, the over-production of Cotton in the USA resulted in a decline in the prices of American cotton. Foreign markets were dislocated during the depression period and external exports of Cotton had sharply declined.[28] Oil-seeds like Gingelly, castor, and Linseed besides Groundnut, were also being introduced during the 1900s. Tobacco was also gaining importance as a commercial crop.[28]

However, these trends were not uniform across the taluks of the region. This might be because of the differences in soil conditions across the taluks. The percentage area under the food crops of Cholam had come down in almost all the taluks, from the time of one settlement of land revenue to the other i.e. in thirty years of time. The area under Cotton had comedown by over 2 percent in the three taluks of Cuddapah, Proddatur and Jammalamadugu of Cuddapah district. In these three taluks the area under paddy and Ragi which are both irrigated crops show an increase of about fifty percent.[30] In the Pattikonda taluk of Kurnool district the area under Cholam had come down by 50 percent, whereas the area under oil-seeds was increasing during the first decade of the present century. The area under Cotton had also increased by two percent.[31] In the neighbouring taluk of Koilkuntla in the same Kurnool district, the percentage of area under Cholam remained almost the same between the 1860s and the 1900s. The area under Cotton shows a slight increase. Oilseeds like Castor which were unknown during the 1860s were being slowly introduced during the early 1900s.[32] In the four taluks of Ramallakot, Nandikotkur, Nandyal and Sirvel of Kurnool Proper, there had been a decrease in the percentage of area cultivated with the staple food crop of Cholam, but the percentage area under other food crops like Korra and Arika show some increase. Excepting the taluk of Sirvel, the percentage area under cotton in the other three taluks had increased by more than 50 percent between 1855 and 1893.[33] In the group of taluks of Madanapalli, Rayachoti, Kadiri and Vayalpad, which were settled at a time, the percentage area under Cholam shows

slight increase between 1881 and 1911. Oil-seeds, which were not there before, were being introduced during 191l.[34]

2.6 Famines and Famine Belief

The region under study, also forms part of the Deccan Districts, which constitute the rain shadow famine zone. The region was frequented by several famines, the immediate cause of which was almost invariably failure, deficiency or unseasonal rains. The agrarian history of this period, for the region, on closer examination turns out to be a history of a series of famines. Famines, famine relief policy and the consequent measures to mitigate the effects of visitations of famines dominated the State intervention in this region. Paradoxically the frequency and intensity of famines had a great deal to do with the blind considerations of revenue extraction and the neglect of networks of centuries old public works like tanks. The severity and the intensity of distress caused were determined by a variety of social and economic factors. Of these the most important were the state of existing food stocks in the affected locality, the extent of the rise in prices and the availability or otherwise of alternative employment in the famine tract or in its immediate neighbourhood. The earliest famine of the region on record is that of 1792-93. There was scarcity amounting to famine in 1803, 1823, 1832-33, 1838, 1844-45 and 1853-54, during the East India Company regime.[35]

Under the Crown, till 1865 there appears to have been no famine, but towards the end of that year the distress began to be felt in Ganjam, though no serious apprehensions were entertained regarding the distress till the end of the January

1866. In March the administration of relief commenced there, and soon after, distress was felt by the poorer classes in parts of the Deccan and Central districts. From 1867 to 1876 no serious dearth occurred, but in the later year the Madras Presidency came under the influence of the most serious famine that, had been known.[36] By the duration and intensity of the distress, it was the most grievous calamity of its kind that the country had experienced till then, since the beginning of the 19th century.[37] According to B.M. Bhatia, the nature of famine in the later half of the 19th century had changed from a shortage of food supply, as in the past, to lack of purchasing power with those who suffered from starvation clubbed with a sharp increase in prices.[38]

The south-west monsoon rains of 1884 were also very deficient over a great part of the Madras presidency. In Bellary and Anantapur the crop failure was serious, though due to the differences in soils and rainfall, different taluks were affected differently. Thus, a state of distress though not of famine existed.

With the failure of the north-east monsoon of 1890 a period of severe agricultural distress commenced and prevailed for over two years throughout the Madras Presidency. On the heels of this shortage, the late and sparse south-west monsoon of 1891 led to a large failure of crops in the Deccan Districts also. There was a severe distress owing to the failure of crops in parts of the Rayachoti and Sidhout divisions of the Cuddapah district. Relief works opened on a considerable scale.[39] The effects of the famine were alleviated to a certain extent by the excellent harvest consequent on the good rainfall of 1892. But

oven before the people could recover fully from the distress of 1891-92, the people were again thrown back by the greater calamity of 1896-97. During this period the distress was very severe. This was the first famine year which seriously affected the lives of cattle. The areas generally protected from such droughts are those under rivers, springs, channels, tanks and wells. In the famine of 1896-97 there were little or no freshes either in the Pennar or the Chitravathi river and most of the tanks received no supply and even the supply in wells was insufficient to mature dry crops raised on wet lands. Both dry and wet remissions had to be granted in subsequent faslis on account of unfavourable seasons.[40] The failure of two monsoons in any year is bound to result in severe conditions of scarcity and 1896-97 witnessed yet another severe famine.

The impact of this famine was so severe that the government appointed a Famine Commission to look into the effects of famine, review the famine relief measures and give suggestions to meet any such grave calamity in the future. The Famine Commissioners of 1898 remarked in their report that "among the means that may be adopted for giving India direct protection from famine arising from drought the first place must unquestionably be assigned to works of irrigation".*[1]

In 1900, parts of the taluks of the region were affected. In 1901-02, distress prevailed in some of the taluks.*[2]

Table 2.13

FAMINES AND FAMINE RELIEF IN RAYALASEEMA DISTRICTS: (1876-78 -1901-02)

Famine Year (1)	Bellary (2) Rs.	Anantapur (3) Rs.	Kurnool (4) Rs.	Cuddapah (5) Rs.
	Amounts Spent on Relief Works			
1876-78	3857461	—	—	1434600
1891-92	8769	717	10575	
1896-98	1966366	966578	541458	879655
1900-01	6513	—	1458	—
1901-02	—	—	—	27863
	Gratuitous Relief			
1876-78	1419481			568922
1891-92	1165	1822	—	—
1896-98	168422	49969	58760	109494
1900-01	—	445	—	—
1901-02	-	-	—	2157
	Weavers			
1876-78	—	—	—	17766
1891-92	—	—		—
1896-98	878	8493	127783	73180
1900-01	—	—	-	—
1901-02	—	—	-	1068
	Total			
1876-78	5276942	—	—	2021288
1891-92	9934	2539	10575	-
1896-98	2135666	1025040	728001	1062329
1900-01	6513	445	1458	-
1901-02	-	-	-	31088

Source: PWD(I). 12 August 1905, No.726, P.40-41.

Famine Belief

Table - 2.13 shows the expenditure on famine relief during the famine years in the districts of the region. Amounts spent on relief works was the highest during the famine years of 1896-98. The expenditure on relief included, besides wages of labour, the cost of supervision and tools and other incidental charges. Able bodied people were employed on relief works and others were helped under gratuitous relief. In 1901-02, due to severe distress in the taluks of Cuddapah, Pulivendla, Proddatur and Jammalamadugu of Cuddapah district considerable amounts were spent on both relief works and gratuitous relief.

Table - 2.14 shows the remissions granted in the districts of the region, during 1876-77 to 1902-03, which was a period of frequent famines. The talukwise details in Annexures 2.2 and 2.3 reveal that even within the same district the impact of famine was not uniform. Some taluks were affected severely and hence were granted large amounts of remissions.

The frequent recurrence of famines alarmed the government to go deep into the question of famine relief. In December 1900, the Government of India, with the concurrence of the Secretary of State, appointed a Commission to enquire into the administration of relief during the famine of 1899-1900, with instructions to examine the light thrown by the fresh experience upon the recommendation of the Commission of 1898, upon the working of the various systems of relief works or gratuitous relief, and upon the assistance given by Government by means of takkavi loans and the suspension or remission of revenue.

Table 2.14

LAND REVENUE REMISSIONS IN LIEU OF BAD SEASON IN RAYALASEEMA DISTRICTS: (1876-77 TO 1902-03)

Year	Bellary Acs	Cuddapah Acs	Kurnool Acs	Anantapur Acs
1876-77	-	—	119049	—
1877-78	-	14796	53827	
1878-79	-	9342	152	—
1879-80	5420	8016	228	
1880-81	1895	5649	546	—
1881-82	87107	5752	806	7684
1882-83	8612	2793	152	
1883-84	12691	1815	299	13576
1884-85	482331	6060	1148	236253
1885-86	2689	1857	683	3634
1886-87	24777	1626	844	—
1887-88	11600	443	628	—
1888-89	91391	614	17300	—
1889-90	3404	492	729	—
1890-91 .	3781	3041	2411	—
1891-92	608923	10273	56505	98655
1892-93	9236	64	1307	—
1893-94	6517	5832	3053	—
1894-95	3905	16	3138	—
1895-96	3175	1839	6303	—
1896-97	635228	125125	186728	275721
1897-98	282	9776	4118	—
1898-99	9752	17214	17168	34993
1899-1900	21749	71395	33221	66132
1900-01	8923	41834	13924	19114
1901-02	112948	36832	-	—
1902-03	273	3031	-	-

Source: Board of Revenue (Rev. Sett., L.Rds., and Agri.), 29 August 1904, No 324, P42.

The Commission was also asked to investigate the question of famine mortality and to record any recommendations or opinions that might be of use in case of future famines. The following are the most important observations of the 1901 Famine Commission:

(l)if the government is watchful and prepared, relief measures need not be undertaken till clear evidence is forthcoming of the existence of distress,

(2) admission to relief should be regulated somewhat more strictly than has always been the case in the past,

(3) the rates of famine wages and gratuitous allowances may reasonably be reduced,

(4) able-bodied workers should be compelled to earn their wage, being paid in proportion to work done, and that, save in the case of the weakly, the grant of a minimum wage irrespective of work done should be abolished,

(5) small village works should be preferred in certain circumstances to the large public works which have hitherto been regarded as the backbone of relief schemes,

(6)for the distribution of gratuitous relief money doles are preferable to cooked food,

(7)an effort should be made to enlist more largely the services of non-officials in the distribution of relief, and that

(8)there should be special provision for the executive control of famine by the appointment in the Presidency or province affected of a Famine Commissioner with practical duties of inspection and control in the affected Presidency or Province.[43]

The Government of India was in general agreement with them and considered that, in view of the weight of experience and authority by which they were supported, they might, with one or two reservations, be accepted as principles of famine policy for the future.[44] One is struck by the bureaucratic tone of the report and the mechanical way of looking at the relief work and relief provisions with more emphasis on what should be got in return for the relief by way of work and works rather than treating the situation more as rescuing people in distress.

There was no declared year of famine from 1910 to 1931, though there were some bad years of deficient rainfall. From 1931 to 1934, the rainfall was continuously below normal and this culminated in the distress of 1935. In 1934, there was a failure of both the south-west and north-east monsoons. Distress was so acute that even in parts of the districts where famine had not been officially declared a number of District Board Works on semi-test conditions had to be kept open throughout the period of famine. This famine was the severest of the famines experienced in the region since 1896-97. The area affected was extensive. To relieve the ryot population of this distress, Government had to grant remission of 75 percent on dry assessment in 32 villages of Pulivendla taluk and a suspension, till fasli 1345, of four annas in a rupee in the dry assessment in the remaining villages of the taluk.[45]

The picture that emerges from the above descriptive account is that, during 1858-1947, in the region of Rayalaseema, there was an agrarian expansion. Ryotwari tenure was the prevailing mode of land revenue administration. Under this system land

holding was a private alienable property and the revenue was assessed and collected from each individual cultivator directly by the State. Revenue from land was the roost important source of state income. Maximization of revenue was the sole goal of the colonial government. In pursuit of this major objective, within the ryotwari tenure, settlement and resettlement of land revenue rates was carried out once in thirty years. Classification and reclassification of soils was also carried out. During this period, land was relatively abundant. Hence, more and more of the existing land was brought under the ryotwari tenure. As a result there was an increase in the total extent of ryotwari land holdings. Within these holdings, the area under miscellaneous holdings (ie., holdings other than the wet and dry) increased substantially. This was also a period of firm establishment of private alienable property rights of land through the pattas issued by the British revenue authorities. There was an enormous increase in the number of pattas as well. Within these pattas, there was an increase in the number of pattas paying an assessment of ten rupees and less.

Minor irrigation sources like tanks and wells were the dominant sources of water supply for irrigation. Under wells, when there was sufficient water, crops like Indigo and Ragi were grown. However, the rainfall being scanty, most of the time dry crops like Chitta Jonna, Sajja, Lamp oil seed, Cotton, Indigo, Groundnut etc. were predominantly grown. The nature of the soil decided the crops to be grown. Factors like agricultural prices and soil conditions were playing a vital role in determining the cropping pattern. Hence it is difficult to say anything about the specific impact of irrigation on cropping pattern. By the

turn of the 19th century there was a shift from food crops to commercial crops. Among the commercial crops Cotton till 1920s and Groundnut since 1920s, were the dominant crops. However, these trends were not uniform across the taluks. The region of Rayalaseema was characterized by repeated failure of monsoons and hence frequent recurrence of famines. This had necessitated the British government to undertake relief measures and also grant remissions in lieu of bad seasons. As part of the famine relief measures the imperial government was forced to have a look into the protective aspect of the minor irrigation development of this dry region.

Notes

1. Graphs 1 to 4 are drawn based on the information available in the Annual Settlement Reports of the respective districts; For rainfall statistics, from 1854-55 to 1905, Revenue, 11 September 1908, No. 2550, p.50-52, from 1906 to 1940, A Statistical Atlas of the Madras Province Revised and Brought upto the End of Fasli 1350 (1940-41). Madras, 1949 (Henceforth Statistical Atlas of 1940-41)

2. Refer to Annexure 2.1.

3. The term Inam refers to the grant of land as a gift from a superior to an inferior(Danam). Inams were given even by governments during the medieval period for various purposes including religious and charitable purposes. Inams were given in various forms - grant of land, assignment of the government share of the produce - in return for services to be rendered to the community or society. Sometimes a whole village was given as a Shrotriem Inam - assignment of land or revenue of an entire village - to Brahmins learned in the Vedas. Whole inam village also refers to a village held at a favourable rate.

4. Letter from F.A. Nicholson, Collector of Anantapur, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated 1 March 1895, Board of Revenue (Rev. Sett.. L.Rds.. and Agri.). 1 May 1895, No. 103, P.7.

5. Statistical Atlas of 1940-41, Anantapur District, P.11.

6. Annual Settlement Report of Kurnool District for Fasli 1312 (1902-03). Madras, 1904.

7. Annual Settlement Report of Kurnool District for Fasli 1293 (1883-84). Madras, 1886.

8. Annual Settlement Report of Anantapur District for Fasli 1305(1895-96). Madras, 1897.

9. Annual Settlement Report of Anantapur District for Fasli 1294(1884-85), Madras, 1883.

10. Annual Settlement Report of Kurnool District for Fasli 1297 (1887-88). Madras, 1889.

11. Annual Settlement Report of Kurnool District for Fasli 1290(1880-81), Madras, 1883.

12. Board of Revenue (Rev. Sett., Sur., L.Rds., and Agrl.), 29 November 1909, No.428; Cuddapah Rds, August 1910, No.429.

13. Revenue, 28 June 1911, No.1968.

14. Board of Revenue (Rev. Sett., L.Rds., and Agri.) 14 March 1888, Nol34; Nilmani Mukherjee, The Ryotwari System in Madras, Calcutta, 1962, P.17-40.

15 Ibid.

16 Nilmani Mukherjee, The Ryotwari System. P.116.

17 Board of Revenue (Rev. Sett.,L.Rds., and Agri.), 3 October 1899, No.305.

18 Nilmani Mukherjee, The Ryotwari System,P.150.

19 Letter from A. Hathaway, Collector of Bellary, to R.A. Dalyell, Acting Secretary to the Board of Revenue, dated 26 September 1865, No.194, PBR, 23 October 1865, No.6767, P.5965.

20. CROPPING PATTERN IN ANANTAPUR DISTRICT

Crop	Sowing Season	Reaping Season
Cotton	August and September	March and April
Wheat	November	End of February
White Cholam	October	End of March
Bengal-gram	November	End of February
Korra	August and September	End of December
Horse-gram	November	End of February
Paddy (Vysakam)	January	April

Source:Board of Revenue (Sett., L.Rds., and Agri. ,) , 27 June 1887, No. 172, p.5.

21. Refer to Appendix I

22. Letter from J.I. Minchin, Collector of Kurnool, to R.A. Dalyell, Acting Secretary to the Board of Revenue, dated 3 November 1865, No.156, PBR , 8 December 1865, No.7834, P.6995-96.

23. Namerta, Growth of Market Towns in Andhra: A Study of the Rayalaseema Region C. 1890-C.1945, Centre for Development Studies, Thiruvananthapurani, 1994.

24. G.N Rao, "Railways and the Development of Commodity Markets: A Case Study of Cotton Cultivation in the Cudddapah District of Andhra, C.1860- C.1900," Mimeo, Centre for Development Studies, Trivandrum.

25. D. Rajasekhar, "Economic Mobility of Rural Households: A Study of Kurnool District in Andhra Pradesh (C.1860-1989)",Ph.D. Thesis, Centre for Development Studies, Trivandrum, 1991.

26. Revenue, 9 July 1938(Confdl.), No.1744, Misc.

27. Statistical Atlas of 1950-51, P.548.

28. Namerta, Growth of Market Towns.

29. Board of Revenue (Land Revenue and Settlement), 5 November 1934, No.3981 (Misc.,)

30. Revenue, 21 August 1907, No.2108, P.15.

31. Revenue, 25 July 1906, No.710, P.9.

32. Revenue, 11 September 1906, No.882, P.8.

33. Board of Revenue, (Rev. Sett., L.Rds., and Agri.), December 1894, Kurnool Rds, 26 May 1894, No.768.

34. Revenue, 28 June 1911, No.1968, P.24.

35. John Kelsall, Manual of the Bellary District, Madras, 1872, P.77-80.

36. C. Benson, A Statistical Atlas of the Madras Presidency, Madras, 1908, P.9.

37. Report of the Indian Famine Commission of 1880, Part I, P.16.

38. B.M. Bhatia, Famines in India - A Study in Some Aspects of the Economic History of India with Special Reference to Food Problem 1860-1900, New Delhi, 1991, P.9.

39. Cuddapah Rds, 22 November 1892, No.2102.

40. Annual Settlement Reports of Anantapur, Cuddapah and Kurnool Districts for Faslis 1306-1308.

41. Report of the Indian Famine Commission of 1898. (Rpt. 1979), New Delhi, P.331.

42. Annual Settlement Reports of Anantapur, Cuddapah and Kurnool for Faslis 1310-1311.

43. Extract from the Proceedings of the Government of India in the Department of Revenue and Agriculture (Famine), Dated 26 August 1901, Revenue, 24 March 1902, No.290A, P.388-89.

44. *Ibid.*

45. Statistical Atlas of 1940. Cuddapah District, P.16.

SCIENTIFIC CLASSIFICATION OF THE SOILS ADOPTED BY THE SETTLEMENT DEPARTMENT

Description of Soils			Corresponding Description of Soils as existing in Bellary
Kinds	Classes	Sorts	
1. Alluvial and Exceptional Series	2.Permanently improved Totacal or Jareeb and other lands	1st 2nd	III.b. Lal loamy, good. II. Masab, good, III.b.Lai, loamy, bad.
2. Regud Series	3.Clay Regud containing upwards of two thirds of clay	1st 2nd	I.Regud, very best Regud, best,
	4. Mixed loamy Regud, containing from one-third to two-thirds of clay	1st 2nd	I.Regud, good. Regud, Ordinary.
	5.Sandy Regud, containing not more than one-third clay	1st 2nd	I.Regud, inferior Regud, Very do.
3. Red Ferruginous Series	6.Clay containing upwards of two-thirds clay	1st 2nd	III.a.Lal, good. Lal, bad.
	7. Mixed or loamy, containing from one-third to two thirds clay	1st 2nd	III.B.Lal Loamy, good. Lal loamy, Bad.
	8.Sandy or gravelly, containing not more than one-third clay	1st 2nd	III.C. Lal, sandy, good. Lal, sandy, bad.
4.White and Grey Calcareous Series	9.Clay, upwards of two-thirds clay 10.Mixed or loamy, one-third to two-thirds clay	1st 2nd 1st	IIa. Masab, good Masab, ordinary II.a. Masab, bad.
5.Arenacious Series...	12.Loamy or mixed, one-third to two-thirds clay 13.Sandy, from one-third to one-tenth clay 14.Sand, under one-tenth clay		II.b. Sandy Masab, good. II.b.Sandy Masab, Ordinary. II.b.Sandy Masab, bad.

Source: PBR, 23 October 1865, No.6767, P.5964.

Annexure 2.2

LAND REVENUE REMISSIONS IN LIED OF BAD SEASONS IN THE TALUKS OF CUDDAPAH DISTRICT: 1877-78 TO 1902 - 03.

Year	Cuddapah Acs	Proddatur Acs	Jammalamadugu Acs	Pulivendla Acs
1877-78	—	—	14796	—
1878-79	-	-	9342	
1879-80	-	-	8016	
1880-81	—	—	5649	
1881-82	—		5752	
1882-83	—	—	2793	—
1883-84	—		1815	
1884-85	—	—	6060	
1885-86	—	—	1857	—
1886-87	-	-	1626	-
1887-88	—	—	443	—
1888-89	—	—	448	166
1889-90		—	492	—
1890-91	—	—	3	3038
1891-92		—	6029	4244
1892-93		—	13	51
1893-94		—	1886	3946
1894-95		—	—	16
1895-96		—	—	1839
1896-97	4165	22787	39871	58302
1897-98	—	865	8268	643
1898-99	132	1096	8496	7490
1899-1900	9374	2295	5890	53836
1900-01	7436	422	9139	24837
1901-02	1039	780	8766	26247
1902-03	257	157	2448	169

Source: Board of Revenue (Rev. Sett., L.Rds., and Agri.), 29 August 1904, No.324, P. 42.

Annexure 2.3

LAND REVENUE REMISSIONS IS LIED OF BAD SEASONS IN THE TALUKS OF KURNOOL AND ANANTAPUR DISTRICTS: 1876-77 TO 1900 - 01

Years	Kurnool District		Anantapur District	
-	Pattikonda Acs.	Ramallakot Acs.	Gooty Acs.	Tadpatri Acs.
1876-77	47367	71682		—
1877-78	3443	50384	—	—
1878-79	-	152	—	
1879-80	-	228	—	—
1880-81	298	248	—	—
1881-82	649	157	5070	2614
1882-83	4	148		—
1883-84	299	—	11302	2274
1884-85	1148	—	131707	104546
1885-86	466	217	1716	1918
1886-87	234	610	—	-
1887-88	184	444	—	—
1888-89	12958	4342		—
1889-90	227	502	—	—
1890-91	1922	489		—
1891-92	38902	17603	50956	47699
1892-93	662	645	—	-
1893-94	2013	1040	—	—
1894-95	1873	1265	—	—
1895-96	3234	3069	-	-
1896-97	120643	66085	157336	118385
1897-98	2348	1770	—	-
1898-99	14396	2772	19983	15010
1899-1900	14254	18967	23031	43101
1900-01	11252	2672	9710	9404

Source: Same as in Annexure 2.2.

CHATTER III

THE STATE POLICY AND IRRIGATION WORKS

3.1. Introduction

" The importance of irrigation and its revenue fetching prospects were very well understood by the British towards the end of the East India Company rule itself. Under the Crown (1858-1947), development of irrigation was looked upon as one of the priority fields for revenue maximization. The result was the establishment of the Public Works Department, with the objective of undertaking profitable irrigation development. The frequent recurrence of famines also had necessitated the British to look into the protective aspects of irrigation development. The recommendations of various famine commissions had in many ways shaped the policies of the British towards irrigation. A detailed study of the irrigation policy during the British period is needed to understand the intricacies of the imperial policies.

The main objective of this chapter is to trace the evolution of the irrigation policy of the British India government during the last hundred years of its rule. This chapter is divided into six sections. The following section begins with a brief review of the irrigation policy under the native rulers before the entry of th© British. Such a resume is necessitated by the fact that the colonial intervention in irrigation had brought about drastic changes in the then functioning local irrigation systems. This is followed by the third section on irrigation policy of the East India Company. The fourth part describes the policy changes

which brought about various classifications and reclassifications of the irrigation works during the Crown's regime.

The fifth section deals exclusively with the Tank Restoration Scheme (TRS) of the British. This section while analyzing the changes in the British irrigation policy brings out the origin of the TRS in the Madras Presidency. A detailed study of the TRS is needed not only because of the importance of minor irrigation works in this Presidency but also because of the fact that the travails of the TRS provides ample scope to unravel the overriding revenue considerations at the root of the irrigation policy which resulted in the total neglect that befell the smaller irrigation works and abandonment of thousands of small tanks. It also documents the revealing debate between the Government of India representing the imperial interest on the one hand, and the collectors of different districts who were close to the ground realities, over the abandonment of the small tanks, on the other.

The sixth and the last section deals with the irrigation works of Rayalaseema. It shows the declining trend in the number of tanks in the districts of the region and the increase in the number of wells as well as the area irrigated under them. It also reviews the liberal policy adopted by the British in extending loans towards the construction and maintenance of wells, particularly during famines, and the consequent rapid increase in the number of wells constructed by private individuals. This chapter throughout argues that the emergence

of revenue oriented irrigation policy of the British had led to the neglect of small tanks in the dry regions like Rayalaseema

3.2 Pre-British Irrigation Policy

Though there are not many thematic studies on the irrigation systems of the pre-British India, an analysis of some of the inscriptions does provide an account of the role of the State and the people in the construction and maintenance of irrigation works.[1] For centuries preceding the British rule, the native rulers had taken great interest in the construction and the maintenance of various minor irrigation works especially tanks. Besides directly undertaking the construction of larger tanks and diversion works,[2] the rulers had encouraged local initiatives for the construction as well as maintenance of minor irrigation works by encouraging local institutions like Dasabandam and Kudimaramat. These institutions and their role in promoting irrigation works are discussed at length in a separate chapter.

The inscriptional evidence available in the study region of Rayalaseema, dates back to the eleventh century and a detailed account of some of these works and institutions are dealt with in the following chapter. Some later period instances are mentioned here. The Vijayanagara rulers, particularly, had undertaken the construction of several irrigation works. In 1369 A.D. Bhaskara Bavadura, constructed a huge tank with many sluices in an area which comes under the present Cuddapah district.[3] Krishna Deva Raya constructed in 1521 the great dam and channel at Korragal, and the Basavanna channel.[4] Another great work of his was the construction of an enormous tank near the Vijayanagar capital, which was intended partly for irrigation purposes, and

partly for the supply of water to the then new city, Nagalapuram[5] The Vijayanagara sovereigns realized the value of converting valleys into tanks for irrigation purposes. Thus during the time of Narasingaraya Maharaya, a valley in the Anantapur district was converted into a tank and named Narasambudhi. Similarly, in 1533 A.D.a big tank was formed from the river Arkkavati, and it is interesting to note that this tank is now one of the sources of water supply to Bangalore.[6] There was an interregnum of almost a century beginning with the late seventeenth till the end of the eighteenth century, which saw the transition of political power first from the erstwhile Hindu dynasties to the invading Muslim and local chiefs like Poligars and then to the East India Company. This period presents no clear picture regarding the irrigation policy or irrigation works in this region.However, from the Mackenzie Manuscripts, we can conjecture that the same systems had more or less continued in the region under study.[7]

3.3 The British Intervention: The Company Years 1800 - 1857

It is clear from Thomas Munro's letters that during the period of rule by the East India Company, the government did not undertake any new constructions, as far as the minor irrigation works were concerned. The main reason appears to be that by the time the British annexed this region, there was an extensive network of irrigation works with not much scope for any more new works.[8] All that was to be done was to maintain the already existing works. And so it seemed. The Company government did incur expenditure on repairs to tanks and watercourses, especially in situations where there were no Dasabandams for

their maintenance.© But it was always the revenue surplus as **a** difference between the estimated cost and the expected revenue that decided the choice of works. Provision of irrigation was looked upon as a lucrative source of revenue. The limited resources made available for repairs, often were drawn in favour of tanks of considerable size. The pursuit of economic gain at the cost of serious damage to the network of irrigation works due to negligence could be seen from the fact that while 60 to 70 percent of land revenue came from wet land, the expenditure on repairs of minor irrigation works was less than eight per cent of the land revenue, at any time.[10]

Private Wells

Though there were no new constructions undertaken at government cost during the first half of the nineteenth century, construction of wells at private cost was very much encouraged.[11] The Company government granted even takkavi loans for this purpose.[12] The shift from viewing irrigation as a community resource to considering it as a private property had its seeds sown during the Company rule itself. This shift is the obvious reflection of the change in the policy of the State.

Large Works

Another significant fact to be noted is that it was during the Company rule itself that a policy of encouraging larger works with greater revenue potential to smaller works was initiated. After 1840, there was a steep decline in the expenditure on minor irrigation works. As a consequence, the share of Rayalaseema in

the irrigation expenditure of the Presidency which stood around twenty percent for many decades before 1840s, steeply declined to six per cent by 1847.13 This might have been due to the diversion of larger shares of funds earmarked for irrigation works, more in favour of those areas where major irrigation projects were being constructed. The Krishna and the Godavari anicuts were constructed in the 1850s.

The Court of Directors by their letter of 22 June 1852, allowed the ryots in the Madras Presidency the full benefits of their own improvements, the lands so improved being subjected to no additional assessment on that account so long as the general rates of the districts remained unaltered. This principle was given more effect later under the Crown. Besides the construction of wells by several ryots, on the same principle, several ruined tanks were also repaired by many ryots at their own expense and they were enjoying the benefits of their improvement.[14]

The British East India Company was basically a trading company which entered into India looking out for better prospects of trade and profit. It was more concerned with military and political interests till the 1820s. Thus, the early years of the 19th century were, for the most part, given to the investigation of rights and ownership. The question of land tenures required more than a quarter of a century to settle itself. The Company government was busy laying the foundation for future administration, and had no time or experience of looking into the details of minor irrigation systems. It is possible that

laissez-faire notions also might have contributed to the government inaction towards small works of irrigation.

3.4 The Imperial Tears 1858 - 1947

After the transfer of power from the EIC to the Crown, there were several changes in the policies relating to irrigation. The first half of the Crown's administration was mainly a period of experimentation. Many Commissions and Committees were appointed to go deep into the issue of Irrigation. Based on their recommendations and the suggestions of the government officials at various levels, classification and reclassification of the irrigation works were tried out. Settlement and resettlement of land revenue also guided the irrigation policy under the Crown. The entire period may broadly be divided into the following five periods each marking an important phase in the evolution of the irrigation policy: i) 1857-1880, ii) 1880-1901, iii) 1901 - 1919, iv) 1919-1935, and v) 1935-1947.

i) The Spell of Public Works Commission (1857-1880)

The year 1857 signifies the transfer of power from the East India Company to the British Crown. The policies during this period were influenced by the recommendations of the Public Works Commission appointed in 1851. On the basis of the recommendations of the Public Works Commission, the Public Works Department (PWD) was formed in 1856 and this department became more active under the Crown in looking after the irrigation works. In 1867, an irrigation branch was first constituted as a part of the PWD, and a Chief Engineer was newly appointed. The irrigation branch was made a distinct entity in 1877 in direct

communication with government. In 1881 a large increase was made in the Engineer and Upper Subordinate Public Works staff.

The British government, under the Crown, tried to implement some of the recommendations made during the last years of the Company rule. In continuation of the system of making over of unremunerative and ruined irrigation works, the government had further declared in 1862 that,[15]

> in consideration of the ryots agreeing to pay a certain rate of assessment, government would make the tanks over to them, for repair and maintenance at their own cost. Whether all the Ryots unite to repair the tank or leave the work to one or more of their number or even to a stranger is a matter of no consequence to the Government, provided that all have the option of joining in the work, and all agree to pay and do pay the stipulated rates of assessment to government. Where the Ryots prefer having the work performed by one or more of their number or by a stranger, they must be left to arrange the rate of payment for the water and other conditions by mutual agreement. The interference of government is unnecessary and should be avoided.

There was a proposal, in 1863, of either abandoning or handing over the tanks irrigating not more than 10 Kanis or 13 acres. Ruined and abandoned tanks were already being made over to the ryots for private repair and maintenance on special dry rates of Rs. 3 per acre.[16] This might have prompted the government to make over to the ryots even good but small works whose ayacuts were less than 10 acres since that would reduce both the burden and cost to the PWD, of maintaining the small and scattered tanks. On the reorganization of the PWD, the Committee of Engineer Officers at Madras, recommended that, "all tanks with an Ayacut, including Inam of 500 acres and under, should be made over to the ryots on a reduction of assessment equal to the average expenditure on repairs during the last five years, this

measure if sanctioned would indeed relieve us of many small works which now take up much of the time of our subordinates."[17] But the then members of the PWD opined that for the above recommendation to be acted on, collectors must have the power to force the ryots to keep the tanks so transferred in perfect order.[18] The then acting collector of Cuddapah, H.G. Smith, was also against the proposal of handing over the tanks with ayacut of 10 Kanis or 13 acres. His argument was based on revenue considerations as can be seen in table 3.1.[18]

Table 3.1

PARTICULARS OF TANKS IRRIGATING NOT MORE THAN 13 ACRES (10 KANIS) IN CUDDAPAH DISTRICT: 1863

1.	Number of Tanks	652
2.	Extent of Area Irrigated by the Tanks (Acs.)	3118
3.	Average Extent of Occupied Land under Each Tank	5
4.	Annual Average of Nunjah Revenue Derived from these Tanks during the Last Ten Years (Rs.)	16001
5.	Total Nunjah Assessment on the Whole Ayacut under these Tanks (Rs.)	29533
6.	Annual Revenue Derivable at Punjah Rates from the Entire Ayacut under these Tanks, Calculated at 25 percent of the Nunjah Assessment	7383
7.	Annual Average Cost of Maintaining these Tanks, Calculated on the Actual Expenditure of the Last Ten Years	1369
8.	Percentage of 7 to 4	8

Source: PBR, 29 May 1863, No.3212, P.3079.

From the above data it is clear that the average cost of maintaining these small tanks for the pervious ten years was only 8 percent of the revenue whereas if they were given up at once

for Punjah or dry cultivation, the loss would be 50 percent. For some years the debate was set aside.

One of the important events of the period, symptomatic of the emerging imperial capital, was the initiation of private investments in canals. The Madras Irrigation and Canal Company (MICC), incorporated in England for the construction and operation of a navigation and irrigation canal system in South India, was one such attempt. But the experiment of private investment in canals through MICC did not prove to be a success for reasons which are described in detail in the chapter on the Kurnool-Cuddapah canal.

Classification of Irrigation Works

The period between 1864 and 1880 saw a series of efforts with regard to the classification and reclassification of irrigation works as if that would itself provide a solution to their maintenance. In 1864, the government classified the works of irrigation into two categories.[20]

a) Minor Works costing about Rs. 5,000 to Rs.20,000 (or in some cases Rs.30,000) and

b) Major Projects

In 1867 Sir Richard Strachey was appointed as Inspector - General of Irrigation. In the same year, after a prolonged correspondence with the provincial governments, the government of India grouped the irrigation works into two broad categories:[21]

a). Extraordinary Works, which were financed from loans and

b). Ordinary Works, financed from regular revenues.

They were further reclassified into four classes: Class I -

Capital Extraordinary, Class II - Capital Ordinary, Class Ill-Revenue Works and Class IV - Agricultural Works.

All expenditures on the construction of works in Class I were regarded as capital outlay and was carried to capital account. For works under Class II, funds were appropriated from current revenue. Works in Class III included minor extensions, improvements and repairs to the works in the first two classes. Class IV included works for which no capital or revenue accounts were kept. This in turn, had two types of minor works, i) Rainfed tanks or Reservoirs and ii) Channels from rivers and streams.

In 1867, again, on the suggestion of the Secretary to the Government of India, the maintenance of petty irrigation works, those whose estimated cost ranged between Rs. 400 and Rs. 500, were transferred from the PWD to the Revenue Department in the districts of Nellore, Madras, North Arcot, Visakhapatnam and Tanjore.[22] PWD would be in charge of i) the maintenance and repair of major anicuts and ii) the construction of new works - both major and minor.

As a result of all the exercises of classification and reclassification, by 1878, there were public works under six heads,[23]

i) Capital Productive Public Works (with loan capital)

ii) Ordinary Public Works (capital outlay on productive public works, charged against ordinary revenues)

iii) Ordinary Productive Public Works, with two sub-categories of cost viz.,

et) Expenses of working and maintenance and

b) Interest

iv) Capital Works

v) Revenue Works

vi) Agriculture and Irrigation Works, for which capital and -revenue accounts were not kept.

The period 1854-1903 is noted for: a) a greater concentration of constructional effort in the principal British works in the country; b) the report of the Famine Commission of 1880 and the consequent establishment of the Famine Fund, c) emergence of a criterion for judging the advisability of investment outlays on irrigation development; and d) emergence of the 'protective' category of irrigation.[24]

ii) The Spell of Famine Commission (1880-1901)

As mentioned earlier the Madras Province witnessed two severe famines during the second half of the 19th century - one in 1866-67 and the other in 1876-78. The intensity of the famine of 1876-78 was so severe, that a thorough investigation of the problem was sought through the appointment of the Famine Commission, which submitted its report in 1880. The Commission explicitly recommended that the irrigation works,especially in drought areas be properly maintained. The Commission drew attention to the fact that the prevalent well developed irrigation network was a rich heritage of the Madras Province, requiring special attention with regard to the maintenance of the works.

On 5 May 1880, the PWD of the Madras Presidency came out with a scheme for the upkeep of the numerous minor irrigation

works. First, it classified all irrigation works into two categories, viz., Imperial and Minor works, the former to be permanently under the purview of the PWD and the latter after restoration to be assigned to a non-professional department.[25] Second, it went on to indicate a system that the government might adopt for the future management of the minor works.

The Imperial works included -

1. The systems classed as productive public works;
2. The systems for which capital and revenue accounts were ordered to be kept, but which were not classed as productive public works;
3. The systems or individual works for which a continuous record was to be maintained;
4. Tanks irrigating 200 acres or more, with such exceptions as might from time to time be approved;
5. Tanks irrigating less than 200 acres, which from their position or circumstances, might affect the safety of important irrigation or other works, or towns, and which therefore might require to be retained in charge of the professional department.

All the irrigation works not classed as Imperial would be considered as minor irrigation works. The minor irrigation works, as regards tanks, were subdivided into three classes:[26]

1. Those tanks which were required to maintain a fixed standard, as necessary for their efficiency and for the security of other works commanded by them. It may be assumed generally that tanks irrigating more than 50 acres would be included in this class,

2. Tanks which must be kept in good order generally but for which it was not necessary to maintain a fixed standard. This class consisted of tanks irrigating ten to fifty acres.

3. Tanks irrigating less than ten acres, the conservation of which was considered as not of much importance.

Collectors were in charge of the maintenance of all minor irrigation works irrigating less than 200 acres, excepting such of them as have for special reasons been kept under the control of the PWD. For the proper discharge of their responsibility collectors should maintain a complete list of the irrigation sources which were actually under the control of the Revenue Department. It should be kept upto date, by including in it sources newly brought under the control of the revenue department from time to time.[27]

During this period, one of the major policy outcomes of the British government, was the initiation of the Tank Restoration Scheme. This scheme is discussed in detail in the fifth section.

In 1881 irrigation works were further divided into productive and protective works. The former included remunerative and large irrigation systems, financed from loan funds. The latter included works of protection against famine and were financed from the grant for famine relief and insurance.

The famine of 1896-98 was so severe that the Government of India had appointed another commission to look into the various aspects of famine relief. The Famine Commissioners, in Chapter V, Part II, of their report, remarked that, "among the means that may be adopted for giving India direct protection from

famine arising from drought the first place must unquestionably be assigned to works of irrigation."[28] The Famine Commissioners further stated that,[29]

> Viewing the provision of irrigation works as a means of affording an insurance against drought, the Government may, we think, properly regard them as a class of undertakings which should be treated as a whole, so that any unusual facilities obtained in one direction may be set off against special difficulties in another, and the general financial outcome of the entire class may be accepted as a sufficient test of the policy that should regulate their treatment. Thus considered, and bearing in mind that it has never been the desire of Government to manage these works with a view to show great profits, the actual results which have been stated appear to us entirely satisfactory, and such as to justify their continued prosecution with all suitable precautions to ensure economy of construction.

The Famine Commissioners had further divided the irrigation works into three classes - i) Productive Works ii) Protective Works and iii) Minor Works. The capital cost of Productive Works was not charged to Revenue, but was provided for out of loan funds. These works included all the large irrigation systems. Although some works had been included in this class which were never likely to be remunerative, no works had for many years been sanctioned under it unless there was reason to believe that they would prove remunerative in a strictly financial sense. Protective Works were those which had been constructed as a protection against famine out of the grant for Famine Relief and Insurance. Minor works were those which were constructed out of ordinary revenues, other than the Famine grant.[30]

111) The Spell of the First Irrigation Commission (1901-1919)

The first Indian Irrigation Commission was appointed in 1901, which submitted its report in 1903. The Irrigation Commission took into account the then prevailing classifications

of irrigation works. It also reeraphasized the distinction between 'Productive WorKs' and 'Protective Works' and the need to encourage the latter. However, the value of works was considered in terms of their financial burdens.

> It has been laid down in our instructions that the main question as regards new works is not whether they will be likely to prove directly remunerative, but 'whether the net financial burden which they may impose on the state, in the form of charges for interest and maintenance, will be too high a price for the protection against famine which they may be relied on to afford; and that it is from this point of view that we should consider proposals for the extension of irrigation in districts in which cultivation is very insecure and precarious. This instruction renders very carefully the financial prospects of all proposals, with a view to determining the actual prices which the State will have to pay for the protection which they will afford, and the real value of that protection.[31]

This reads like a 'swan song' on minor works in dry regions and the fact was it did initiate a policy of neglect of the smaller works. Protective Works that were important for their function of providing insurance against famine, could not be financed out of the current revenues, or borrowed funds. The Famine Insurance Fund, which was the only source of finance for such works, was too meagre to support any considerable programme of protective irrigation works. Moreover, the Commission, because of its pre-occupation with the financial considerations, kept the minor irrigation works out of the purview of protection.

The Commission felt that it was but natural that attention should first be directed to schemes which promised not only the best financial results, but also assured a much larger measure of protection to the country at large, than could be attained by works of a less remunerative character.[32]

Even in the case of major works, considered to be protective, it was the productive aspect that decided the sanction of these works. In the Madras Presidency for example, the Tungabhadra project was disapproved for not showing sound financial returns. To quote the Commission itself:

> From the information laid before us regarding the 'Tungabhadra Project, we can hardly hope that it will prove a productive work, although it is urgently needed for protective purposes. It is possible that, in spite of its great cost and the doubtful character of the demand for irrigation, it may in time prove less unremunerative than many of the works proposed in Bombay and the Central Provinces, but we cannot at present classify it as anything but an unproductive work.[33]

The First Irrigation Commission (1903) also recommended the vigorous implementation of TRS works in the Madras Presidency. The term 'Minor Works' embraced all works which were not of a sufficiently important nature to be placed in the category of 'Major Works' and were lumped together both in budgets and accounts. The limit of Rs. 2500 had been in force for over forty years. So the government had declared in 1909, that the limit for 'Minor Works' should, with effect from 1909-1910, be increased to Rs. 5000.[34]

iv) Irrigation as the Provincial Subject (1919-1947)

The next stage in the history of irrigation was reached when under the Montague-Chelmsford Act of 1919, irrigation became a provincial subject. The greater initiative rested with the provincial governments which were also assigned some sources of revenue. However, sanction of the Government of India and of the Secretary of State was required in the case of irrigation works costing over Rs.50 lakhs.

The Irrigation Development Board (IDB) was constituted in 1930 to look after the development of irrigation in the Madras Presidency. The Board consisted of two members of the Board of Revenue (in charge of Land Revenue and Settlement) the senior of whom was the Chairman and President, the Chief Engineer (Irrigation) and the Director of Agriculture. It was to meet once a quarter. All irrigation proposals and projects were expected to be examined and reported upon by the IDB before they were submitted to the government for their consideration and orders.[35]

The Government of India Act of 1935, which placed the Irrigation Department under the control of popular ministries, came into effect from April 1937. In view of the economic depression and consequent unemployment among the rural population, government had under consideration, a scheme for capital expenditure on public works which would not impose a recurring liability in the future, and which could be financed from balances to the extent available, and from loan funds, and at the same time prove of direct benefit to the rural population. The government[36] had decided that the best course was the adoption of an accelerated programme of minor irrigation works by the Revenue Department and also of minor works by the PWD. On a three year plan, the expenditure was to be debited to a capital head. The programme was primarily directed at strengthening the bunds, and where necessary other parts of irrigation works, so that the expenditure on ordinary maintenance would be greatly reduced for sometime hereafter.[37]

The final classification of irrigation works went along with the second resettlement of land revenue in several districts of the Presidency. In Cuddapah district, for example, all irrigation sources were to be grouped under five classes in accordance with their condition and capacity as follows:[38]

First Class:- The Kurnool-Cuddapah Canal and tanks fed by it.

Second Class:- (i) The Pennar, Chitravathi and Papagni rivers and all channels issuing there from except those placed in the third and fourth classes as shown below.

(ii) All rain-fed tanks affording a supply of not less than eight months and other sources of equal capacity.

Third Class:- (i) The Kunder river (ii) The Chitravathi channels in that part of the Jammalamadugu taluk west of the Gandikota gorge before the junction of the Chitravathi and the Pennar,

(iii) Minor river channels, spring channels and rain-fed tanks affording more than five and less than eight months' supply.

Fourth Class:- (i) River channels rising in the Anantapur district, (ii) Rain-fed tanks of three to five months supply and sources of similar capacity.

Fifth Class:- All rain-fed tanks and other sources of less than three months' capacity.

From the preceding account of the irrigation policy one gets the impression that the Crown's government did take interest in the construction and maintenance of both the major and minor irrigation works whatever the considerations might be. The aims and ends of the British irrigation policy under the Crown, according to some scholars, might be summarised as follows:[39]

1. An extension in the irrigation area increases agricultural production and improves the material well-being of the peasantry.
2. A general increase in the wealth of a country as brought about through irrigation works raises the tax paying capacity of its inhabitants.
3. Irrigation works are a good safeguard against famines and droughts.
4. Greater agricultural production could stimulate traffic on the railways.
5. The canals constructed, apart from irrigation, are often useful for navigation.

The motives and objectives which prompted the British authorities to take up the improvement and restoration of irrigation works reveal an amalgam of self-interest and paternalism. They also indicated a process of environmental acculturation in which the problems of government forced the British, however partially and slowly, to adjust their thinking to local conditions. Political motives also roust have played their part. It must have been felt that the restoration of irrigation works would bring credit to the government in the eyes of the local people.[40]

3.5 The Tank Restoration Scheme

The major policy outcome of the Famine Commission of 1878-80 was the initiation of a comprehensive Tank Maintenance Scheme which was aimed at solving the problem of maintenance. The Commission recommended that a comprehensive scheme should be framed for systematically repairing the tanks in the Madras

Presidency. A beginning was made in 1883 to pursue this recommendation. Initially the scheme was called the Tank Maintenance Scheme. This Scheme was later renamed as the Tank Restoration Scheme (TRS) in 1886. The Finance Committee of the Famine Commission defined the scheme as being, "work undertaken not through immediate pressure, but as part of a general scheme for improving a whole series of tanks, increasing the storage of water and thereby increasing the irrigated area and the land revenue arising from it."[41]

Under the name of restoration of small tanks the proposal of handing over tanks irrigating 10 acres and less to the ryots was being considered.

Initially, there was a suggestion to abandon all tanks irrigating not more than 10 acres. Abandonment meant only that the government would no longer retain the works at its expense as a means of deriving special revenue, but would abandon them for the people to keep up if they like.[42]

The villagers themselves would be entrusted with the work of maintenance of i. tanks irrigating 50 to 200 acres and ii. tanks irrigating 10 to 50 acres, while tanks irrigating less than 10 acres would be handed over to the ryots. The proposal suggested that since the villagers should be required to keep these irrigation works in more complete order than was formerly customary, a moderate remission of assessment by way of compensation for such extra work was called for; and this remission might be more for the first category than the second, because the former required a higher standard of work.[43]

It later appeared to the government, that the above referred order was of too sweeping in nature, and that the abandonment of the upkeep of irrigation works, on which such large areas depended, might seriously jeopardise the revenue. The question, therefore, whether it would not be expedient to retain all works irrigating upwards of 50 acres under professional supervision was under consideration in the Irrigation Department.[44]

In 1880, A.J.B. Atkinson, acting sub-collector of Cuddapah was very much in favour of handing over the tanks irrigating 10 acres and less. His proposals are briefly these (a) to make over the small kuntas and their ayacuts to the ryots on a fixed assessment and on certain conditions, which, while securing the interest of the state, shall still be of benefit to the Pattadars; (b) to fix that assessment at such a figure that would for ever do away with the necessity of giving remissions.[46]

In 1882, it was proposed to handover to the ryots sources of irrigation watering less than 10 acres, at rates ranging between Rs. 3 and Rs. 1 - 8 - 0, on condition that,[46]

a. no remission would, in any circumstances, be granted;
b. the whole area must be paid for whether cultivated or not;
c. the ryots should be at liberty to grow any and as many crops as they like without any extra charge.

During the settlement of the sub-division in Cuddapah district, applications on the above proposed terms for 1605 acres under 411 sources of irrigation were received.[47] In the other districts of the region also several small tanks, unprofitable tanks, and in some cases ruined tanks were made over to the ryots for private repair and maintenance.[48]

Table 3.2

SOURCES OF IRRIGATION UNDER SPECIAL RATE ASSESSMENT IN ANANTAPUR DISTRICT:1928

		Tanks	Nalas
1.	Number of Sources	29	53
2.	Extent of Area Involved (Acres)	490	528
3.	Assessment (Rs)	826	833

Source: Revenue, 31 July 1928, NO.1700, P.8.

Where tanks irrigating small areas were isolated, no objection to their being made over to the ryots cultivating under the tank was likely to arise. But where they formed a portion of a series, the government had advised, in view of the security of more important works below, to retain even petty sources of irrigation under professional supervision.[49]

Later, this transfer was proposed to be extended to tanks irrigating 50 acres and less also. In the region under study there were several tanks which were irrigating less than 50 acres.(Tables 3.3, 3.4 and 3.5)

In 1893, when the Board of Revenue, Government of Madras, wrote to the collectors for information as regards the financial effect of abandoning tanks irrigating less than 50 acres, along with the Government of India communication, which was seen as "Modified TRS". However, the reaction of the collectors was one of vehement opposition. Fourteen out of the eighteen collectors were against the Government of India modified TRS which involved abandoning tanks irrigating less than 50 acres.

Table 3.3

SIZE-WISE DISTRIBUTION OF IRRIGATION TANKS, AREA IRRIGATED, REVENUE ASSESSED AND COST OF UPKEEP: CUDDAPAH DISTRICT 1893

S. No.	Number, Cost, and Revenue	Tanks with an Ayacut of '							All Tanks
		10Acs and Less	>10 to 15 Acs	>15 to 20 Acs	>20 to 25 Acs	>25 to 30 Acs	>30 to 40 Acs	>40 to 50 Acs	Irrigating 50 Acs or Less
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Number of Tanks	2126	309	207	138	118	173	108	3179
2.	Area Irrigated (Acres)	8945	3759	3533	2910	3282	6011	4301	32741
3.	Assessment on Area Irrigated (Rs.)	39894	17436	17916	14804	17536	24380	20962	152928
4.	Dry Assessment Leviable if the Ayacut be Transferred to Dry	9111	4693	4538	3401	3575	7373	5701	38392
5.	Dry Assessment of Tank bed if Transferred to Dry	7768	8409	4994	2968	11145	5289	3754	44327
6.	Loss of Revenue: Difference Between [(3-(4+5)]	23015	4334	8384	8435	2816	11718	11507	70209
7.	Cost of Upkeep from Minor Irrigation Fund During Ten Years (1880-81 to 1890-91)	1122	2473	2144	1540	1413	8114	4094	20900
8.	Average Annual Cost of Upkeep	112	247	214	154	141	811	409	2088

Source: Board of Revenue (Rev. Sett., L . Rds . , and Agri .) 14 November 1893,No.452, P.22-28.

Table 3.4

SIZE-WISE DISTRUCTION OF IRRIGATION TANKS, AREA IRRICATED, REVENUE ASSESSED AND COST OF UPKEEP: KURNOOL DISTRICT 1893

S. No.	Number, Cost and Revenue	Tanks with an Ayacut of							All Tanks
		lOAcs and Less	>10 to 15 Acs	>15 to 20 Acs	>20 to 25 Aca	>26 to 30 Acs	>30 to 40 Acs	>40 to 50 Acs	Irrigating 50 Acs or Leas
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		(10)
1.	Number of Tanks	74	19	23	15	10	26	16	182
2.	Area Irrigated (Acres)	342	237	412	364	266	902	720	3243
3.	Assessment, on Area Irrigated (Rs.)	1236	851	1479	1508	1136	3182	2572	11964
4.	Dry Assessment Leviable if the Ayacut be Transferred to Dry	308	229	468	425	422	991	994	3837
5.	Dry Assessment of Tank bod if Transferred to Dry	1144	563	680	514	618	819	1372	6010
6.	Loss of Revenue: Difference between [(3-(4+5)]	516	59	331	569	96	1372	206	3149
7.	Cost of Upkeep from Minor Irrigation Fund During ten Years (1880-81 to 1890-91)	1166	142	358	476	1737	1361	1437	6677
8.	Average Annual Cost of Upkeep	117	14	36	48	174	136	144	668

Source: Same as in Table 3.3

Table 3.5

SIZE-WISE DISTRIBUTION OF IRRIGATION TANKS, AREA IRRIGATED, REVENUE ASSESSED AND COST OF UPKEEP: ANANTAPUR DISTRICT 1893

S. No. (1)	Number, Cost and Revenue (2)	Tanks with an Ayacut of							All Tanks
		lOAcs and Less (3)	>10 to **15 Acs** (4)	**>15 to 20 Acs** (5)	**>20 to 25 Acs** (6)	**>25 to 30 Acs** (7)	>30 to 40 Acs (8)	>40 to **50 Acs** (9)	Irrigating 50 Acs or Less (10)
1.	**Number of Tanks**	71	**27**	**26**	**33**	22	**32**	**34**	245
2.	**Area Irrigated (Acres)**	618	388	**548**	**939**	697	**1417**	**2063**	6670
3.	**Assessment on Area Irrigated (Rs)**	1979	1381	**2026**	**3119**	2874	5495	7698	24572
4.	Dry Assessment Leviable if the Ayacut be Transferred to Dry	471	360	602	1046	879	1310	1693	6361
5.	Dry Assessment of Tank bed if Transferred to Dry	1237	497	597	1249	1043	1254	1868	7745
6.	Loss of Revenue: Difference Between [(3-[(3-(4+5)]	271	524	827	824	952	2931	4137	10466
7.	Cost of Upkeep from Minor Irrigation Fund During Ten Years (1880-81 to 1890-91)	544	978	-	728	408	713	2366	5737
8.	Average Annual Cost of Upkeep	54	98	-	73	41	71	236	574

Source: Same as in Table 3.3

All the collectors were pointing out that, first of all there was no clear idea, as to what the Government of India had meant by 'abandonment', whether it was total abandonment in the sense of discarding all those tanks which were irrigating less than 50 acres and transferring those tank ayacuts to dry, on special rates of assessment or handing over such tanks to ryots for private repair on some contract. The Government of India did not spell out clearly what it had meant by abandonment at this stage because in the pervious orders of 1880s abandonment was given to be understood as transferring those tanks irrigating small ayacuts to ryots for repair. On the same ground now the government wanted to make over those tanks whose ayacut was less than 50 acres.

Many of the fourteen collectors were against the proposal of the government of abandoning tanks irrigating less than 50 acres since it was not financially viable to let them to the ryots for repair. Moreover, by then, roost of them had a fair idea about the non-cooperation of the ryots, under Kudimaramat, in undertaking the necessary repairs to the minor sources. So they all felt that there was no point in further imposing the additional responsibility of transferring a large number of tanks the maintenance of which would be beyond the capacity of the ryots. The ryots might come forward to take the tanks on special dry rates, but they would not effect timely repairs, which would ruin the tanks.

Besides the heavy revenue losses and other financial considerations, a few collectors were against the proposal on

other grounds. The collector of Krishna, A.T.Arundel, pointed out that the destruction, caused by abandonment, would be a permanent disaster and would bring misery to thousands of villages as the water was used not only for the irrigation of lands but also for domestic purposes and as it saturated the sub-soil by percolation and replenished the invisible springs from which the water table in the wells were improved. The climatic influence of the storage of water was also a factor that must be considered.[50]

The collector of Nellore, C D. Macleane, who was against the absolute abandonment of the tanks, argued: "(a) small tanks feed wells by percolation; (b) they fertilise the surrounding country and encourage tree growth and vegetation; (c) they provide water for men and cattle; (d) they keep open the network of small streams and channels; (e) they hold up water and, more generally, distribute it so as to prevent larger tanks from breaching; (f) as irrigation works proper, they cost comparatively little in upkeep."[51] As for partial abandonment, his chief objection was that the ryots would not keep up the tanks even with the inducement offered. He was opposed to the surrender of the government control, as the works appeared to him to be the most precious heirloom handed down from former generations and dynasties.

The collector of Tinnevelly, F.A. Nicholson, did not think it would be impossible for the government to maintain these numerous small tanks in a state of efficiency if each collector was given his annual grants of 7 percent on the revenues and entrusted with the estimating for and the carrying out of repairs. He felt that the same minor irrigation establishment,

which looked after the works irrigating between 50 and 200 acres, could, with little difficulty, look after these petty works which required only repairs of an ordinary nature. If the idea was that it was too troublesome from a revenue point of view, he pointed out that the trouble had been undergone for many years and that the difficulties were likely to be less in the future with a better staff and simpler rules. But his roost serious objection to the dismantling of the tanks was that it would deprive the ryot, especially the one who grew plantations of betel and sugarcane, of the advantage which he prised most and the large share of produce which he enjoyed, not to say anything of the loss of water storage for cattle and other communal purposes. He also thought that the proposal would lead to water disputes of the bitterest nature arising from each ryot trying to take as much advantage as he could of the water in the streams which fed these tanks.[52]

The Board of Revenue on the basis of the replies of the collectors decided,[03] (1) that tanks irrigating upto 50 acres should not be abandoned as proposed by the Government of India, (2) that they should be maintained not by the ryots, but by the State, and (3) that the duty of maintaining them must rest with the Revenue Department.

But the ideas of the collectors and the decision taken by the Board of Revenue were not appreciated by the Government of India. In 1894 the Government of India passed a resolution under which it was declared that small tanks irrigating 50 acres and less, though not in a ruined condition, might be made over to the holders of the ayacut in cases in which such ayacuts were held

by a single ryot, and in which the imposition of dry assessment on the water-spread and ayacut together would not involve any loss of revenue to government. It was also stated that the tank in question should not be one of a chain of irrigation works, or the up-keep of which had to be retained in the hands of government in view of the safety of other tanks. Its dangerous proximity to railway lines, or other important communications was another feature that needed to be taken note of. The provisions of this order did not apply to the tanks maintained by the PWD, though they might irrigate areas of less than 50 acres. For the purpose of judging the financial effect of the proposed surrender in each case, the revenue derived under the tank during the previous ten or twenty years should be compared with what would be the annual assessment of the bed and ayacut together, if both were assessed at the appropriate dry rates.[54]

In practice tanks having small ayacuts which were not accepted by the ayacutdars on special rates and which the government thought were not worthy of maintaining at their own cost were abandoned altogether in several parts of the region under study.[55] The ayacuts under these tanks were given off on fresh pattas to the applicants.

In Cuddapah district, there was a tank by name Nallacheruvu, in Jammalamadugu taluk. Its ayacut was 10.74 acres and assessment Rs. 48-6-0. This tank had breached about 20 years ago and its ayacut noted above had been lying waste since then. It was originally a Dasabandam tank and its inam was incorporated with the government having been sold for arrears of revenue in 1885. The ayacut could not be irrigated by any other source of

irrigation. The probable cost of restoration of this tank was roughly estimated as Rs. 2000/-. Considering the small ayacut under the tank it was not considered profitable for the government to lay out its money on the repairs of the tank. There were no applicants to take this particular tank on the special rate. Hence the tank was abandoned as a source of irrigation and its ayacut was transferred to dry and granted on patta to the applicant.[56]

It was not always only the small tanks that were abandoned. Even tanks having larger ayacuts were abandoned when the cost of restoring them was very high compared to the expected revenue they would derive to the government after repair.

There was a tank by name Jangamanayanipalli tank, in the Srirangarajani Tank group in the Anantapur Minor Basin which was to be restored. The proposed outlay on the tank was Rs. 410, which was about 16 times the expected revenue or 20 1/2 times the average collection of revenue during the 5 years of (1895-1899). The anticipated revenue when the tank was restored was only Rs. 26, or Rs. 6 in excess of the actual collection, and this bore the value of below 1.5 percent on the outlay proposed. Although the tank had a large capacity sufficient to command about 42 acres, hardly 5 acres were now being cultivated owing to the porous nature of the bed and consequent waste of water. Some of the ryots were willing to takeup the bed for dry cultivation at one rupee per acre to the extent of about 50 to 60 acres. The arrangement of giving out the bed for dry cultivation was considered to be more profitable than repairing the tank at such a heavy cost and hence given over to the ryots.[57]

Table 3.6

THE RUINED AND ABANDONED TANKS IN THE VARIOUS TALUKS OF KURNOOL DISTRICT TILL 1915

Sl.No.	Taluk	No. of Tanks
1.	Pattikonda	14
2.	Kurnool	36
3.	Cumbum	12
4.	Markapur	27
5.	Dhone	10
6.	Nandikotkur	13
7.	Sirvel	27
8.	Koilkuntla	20
	Total	159

Source: Kurnool RDs, 25 December 1915, No.370.

The reasons given for abandonment included tank bunds affecting the supply of water to other bigger tanks and the siltingup of tank beds whose repair and recovery was not financially viable for the government.

From Table 3.7 it is clear that there were tanks recommended for restoration, whose ayacuts were less than fifty acres. At the same time there were tanks irrigating more than 200 acres also which were recommended for abandonment. We can discuss some of the tanks in detail to understand the cost-benefit strategy of the imperial government. One tank by name Oota Kunta in Dhone taluk was abandoned thirty years ago because the tank had breached. Later, in 1915, the bund was to be strengthened and the sluice constructed at a cost of Rs. 1000/-. The expected area irrigated if the tank was repaired was 25 and the expected revenue was Rs.100. Hence the Tahsildar had recommended the tank for repair. Another tank by name Nallareddy Kunta in Pattikonda taluk needed the repair of closing the breach and revetment at

a cost of Rs.1000/-. It could irrigate only ten acres and fetch a revenue of only Rs.40 after restoration and hence abandoned.

Table 3.7

RUINED TANKS, RESTORATION AND ABANDONMENT IN KURNOOL DISTRICT: 1915

Size of the Ruined Tanks (Ayacut in Acres) (1)	Ruined Tanks		
	Total No.of Tanks in a State of Ruin (2)	Tanks Recommended for Restoration (3)	Tanks Recommended for Abandonment (4)
Less than 30 acres	16	6	10
30 to < 50 Acres	23	8	15
50 to < 100 Acres	14	2	12
100 to < 150 Acres	16	10	6
150 to < 200 Acres	3	2	1
200 and More Acres	23	9	5
Total	95	37	49

Source: Kurnool RDs, 25 December 1915, No.370.

Nagula Kunta in Sirvel taluk required a repair of removing the silt in the tank at a cost of Rs.30/- and could irrigate 10 acres and could fetch Rs.50/- as revenue after the repair, and hence recommended for restoration. Reddipalle tank in the Sirvel taluk required earth work in the bed of the tank and also the strengthening of the tank bund. The cost of repair is Rs.1000/- After restoration it could irrigate 200 acres and could fetch Rs. 1000/- as revenue and hence was restored. Vadira Cheruvu in

Koilkuntla taluk was abandoned sometime ago on account of a breach in the bund. Construction of the bund in the breached portion in 1915 was to cost Rs. 10000/-. After restoration the tank could irrigate as much as 200 acres, but the expected revenue was only Rs. 500/-. So the tank was not repaired and hence was abandoned. Under the category of tanks irrigating 200 acres and more, all those which were not recommended for restoration were not immediately abandoned. Some of them were kept aside by the Tahsildar for PWD's suggestions. Hence the discrepancy in the total number of tanks. While considering the restoration or abandonment of a particular tank the British government was considering the immediate cost and returns which obviously ignored the capital cost already incurred on it by the previous rulers and which was more important for long terra progress. Abandonment of tanks and transferring the tank beds to dry pattas would in the future affect the percolation of water into the wells in the neighbourhood of these tanks, in the long run.

The British government did spend money on the restoration of tanks as shown in table 3.8. But the amounts spent were meagre and the way they were spent were discriminatory. The TRS which was originally conceived to restore and maintain all the tanks in the Presidency, was totally transformed into a programme which was directed at those tanks whose size and revenue was very attractive for repair and was least bothered about the other small tanks. This ruined several of the thousands of small tanks scattered across the regions like the one under study.

Table 3.8
TANK RESTORATION SCHEME IN THE MADRAS PRESIDENCY: 1883-84 - 1900-1901

Year (1)	Area Investi-gated (2) Acs.	Estimates Sanctioned for Government Works and sent for Execution (3) Rs.	Cost of Restoration per Acre Investigated (4) Rs.
1883-84	5485	819871	149
1884-85			
1885-86			
1886-87			
1887-88	1748	204525	117
1888-89	4993	494309	99
1889-90	8525	607407	71
1890-91	1482	723517	488
1891-92	2895	553572	191
1892-93	1746	351930	202
1893-94	2794	404025	145
1894-95	1709	407047	238
1895-96	1799	277861	154
1896-97	1011	182437	180
1897-98	1827	223712	122
1898-99	2381	378730	159
1899-1900	1879	430147	229
1900-01	5106	471252	92

Source:H.E. Clerk, Preliminary Report on the Investigation of Protective Irrigation Works in the Madras Presidency, Madras, 1901, P.130.

The method adopted was such that investigation was kept distinct from execution which was done by the regular staff. Investigation was first under the supervision of a special Superintending Engineer and later under the Chief Engineer for Irrigation himself assisted by an executive engineer.

The Irrigation Commission of 1901-03 strongly recommended that the tank repairs should be more vigorously prosecuted. They thought that an annual expenditure of Rs. 13 lakhs should be incurred on it. This led to the abolition of the post of the Assistant to the Chief Engineer for Irrigation and the creation of four Tank Restoration Scheme Divisions in 1906. The limit of expenditure fixed by the Irrigation Commission was never reached. The annual expenditure rarely exceeded Rs. 6 lakhs which showed that inspite of the Irrigation Commission's recommendation the TRS continued to receive less priority. The question was examined in 1908 and as it was thought that a prolonged trial would give better results no change was made in the system. The question was reviewed again in 1912 owing to the continued slow rate of progress. A fifth division was sanctioned in that year and facilities were given to local officers. The arrangement continued for four years, but in 1916 two divisions were abolished owing to financial stringency during the war, and although they were revived in 1918 all the five divisions were abolished in 1922. The TRS divisions were revived after much discussion in July 1928, only to be abolished in December 1931, owing to retrenchment.[58]

Thus, the TRS which had all the potential of being a major boon to the minor works ended up in bits and pieces over more than seven decades. And it is difficult to say whether it did any good at all. But the whole episode compels us to emphatically Point out that the minor irrigation works like tanks had fallen into a calculated neglect in the last hundred years of British rule in India.

3.6 Irrigation Works in Rayalaseema

The region of Rayalaseema was dominated by minor sources like tanks, river channels and spring channels and wells. Tables 3.9, 3.10, and 3.11 give an idea about the minor irrigation works in Cuddapah and Kurnool districts.

Table 3.9

STATEMENT SHOWING THE DIFFERENT SOURCES OF IRRIGATION IN CUDDAPAH DISTRICT

Source of Irrigation	Number of Works in Fasli(Year)		
	Fasli 1264 (1854-55)	Fasli 1276 (1866-67) Quinquennial	Fasli 1298 (1888-89)
Tanks	5447	4290	4691
River Channels	457	586	805
Spring Channels	877	629	599
Anicuts	23	40	
Wells:			
Old Wells	22441		
Government		8696	
Private	16274	23771	33285

Source: For fasli 1264, Annual Settlement Report of Cuddapah District for Fasli 1264 (1854-55), Madras, 1857; For fasli 1276, Annual Settlement Report of Cuddapah District for Fasli 1276 (1866-67), Madras, 1869, P.88; For fasli 1298, Cuddapah RDs, No. 6515, 22 November 1890.

Table 3.9 shows the different sources of irrigation in Cuddapah district at different points of time. The number of tanks, over a period of thirty years had come down by 756. The number of tanks had further gone down by 1893 (Table 3.12). This might be partly due to the reorganization of the district boundaries and partly due to the abandonment of several of the small tanks under the TRS.

Table 3.10

QUINQUENNIAL STATEMENT SHOWING THE DIFFERENT SOURCES OF IRRIGATION IN KURNOOL DISTRICT

Source of Irrigation	Number of Works in Fasli(Year)		
	Fasli 1262 (1852-53)	Fasli 1268 (1858-59)	Fasli 1276 (1866-67)
Tanks	150	247	502
River Channels	4	71	41
Spring Channels	44	75	190
Anicuts	16	25	34
Wells: Government	1241	2777	
Private	32	313	7732

Source: For fasli 1262 and 1268 PBR, 24 July 1858, No. 2799, P.908; For fasli 1276, Annual Settlement Report of Madras Presidency for Fasli 1276 (1866-67), Madras, 1869, P.88.

Table 3.10 shows that there was a significant increase in the number of private wells in Kurnool district. Table 3.11 shows the disappearance of government wells altogether and a decline in the number of Dasabandam wells in Kurnool district, over a period of five years. Among the tanks, the number of government tanks decreased by 77. The number of private tanks increased by 18. This increase was due to the handing over of ruined tanks by the government to the private individuals or parties, on concessional rates, for maintenance and repair.

Among the tanks, the number irrigating small ayacuts was very high in the districts of the region (Table 3.12). Table 3.13 gives an idea about the classification of irrigation works under Imperial and Minor in the districts of Cuddapah, Kurnool and Anantapur and the areas irrigated and the revenue derived from the respective works.

Table 3.11

DIFFERENT SOURCES OF IRRIGATION IN KURNOOL DISTRICT: 1866-67 - 1871-72

Source of Irrigation	Fasli 1276 (1866-67)				Fasli 1281 (1871-72)				Difference
	Govt.	Pvt.	Das.	Total	Govt.	Pvt.	Das.	Total	
Tanks	487	94	79	660	410	112	78	600	- 60
River Channels	50	4	-	54	89	12	-	101	+ 47
Spring Channels	193	-	10	203	155	43	-	198	- 5
Anicuts	37	2	1	40	49	4	10	63	+ 23
Old Wells		7775	38	7813	-	7051	34	7085	- 728
New Wells		1454		1454		2402		2402	+ 948

Note: Govt.- Government; Pvt.- Private; Das.-Dasabandam

Source: Annual Settlement Report for Fasli 1281 (1871-72), Madras, 1874.

Table 3.12

TANKS UNDER DIFFERENT CAPACITIES IN THE DISTRICTS OF RAYALASEEMA:1893

Districts (1)	**10 Acres and Less** (2)	Between 10 and 15 Acres (3)	Tanks Irrigating Between 15 & 20 Acres (4)	Tanks Irrigating Between 20 & 25 Acres (5)	Between 25 & 30 Acres (6)	Between 40 & 40 Acres (7)	Between 40 & 50 Acres (8)	Total
Cuddapah	2126	309	207	138	118	173	108	3179
Anantapur	71	27	26	33	22	32	34	245
Bellary	106	18	16	12	9	26	7	194
Kurnool	74	19	23	15	10	26	15	182
Total	2377	373	272	198	159	257	164	3800

Source: Board of Revenue (Rev. Sett.. L.Rds., and Agri.). 14 November 1893, No. 452, P. 10.

Table 3.13

IMPERIAL AND MINOR IRRIGATION WORKS IN RAYALASEEMA DISTRICTS: 1887

	Cuddapah District			Kurnool District			Anantapur District		
	No. of Works	Area Acs	Revenue Rs.	No. of Works	Area Acs	Revenue Rs.	No. of Works	Area Acs	Revenue Rs.
"Imperial" Kurnool Canal		14404	48050		5270	19986	100	4727	226832
Works lor which Capital and Revenue accounts are not kept	135	47616	287594	63	22172	144623			
"Minor"	1142	32414	168882	1289	26192	82900	1728	66393	272636
Total		94433	504526		53634	247509		113840	499468

Source: Land Revenue (Misc.), 4 July 1887, No. 1694.

The discrepancy in the figures cited in tables 3.9, 3.10, 3.11 on one hand and 3.12 on the other is quite significant. Apart from the reasons mentioned above, this discrepancy might be due to the documentation of only the government tanks, that too only those irrigating less than fifty acres in 1893. Reorganization of district boundaries might be a reason, to some extent. (Part of the discrepancy could be due to the difference in the sources used).

There were also some tanks whose ayacuts exceeded 200 acres, under the category of Imperial works. (Table 3.14).

Table 3.14

THE NUMBER OF IRRIGATION WORKS IN THE SUB-DIVISION OF CUDDAPAH DISTRICT HAVING AYACUTS EXCEEDING 200 ACRES IN 1892

Taluk	No. of Irrigation Works
Rayachoti	3
Kadiri	7
Vayalpad	8
Madanapalli	16
Total	34

Source: Cuddapah Rds. 28 December 1892, No.2257.

In the region of Rayalaseema there were only five very big tanks whose ayacuts were over and above 1500 acres. (Table 3.15).

Table 3.15

AYACUT UNDER EACH OF THE FIVE LARGE TANKS IN ANANTAPUR 1867-68

Name of the Tank	No.of Villages Irrigated	Ayacut					
		Circar		Inam		Total	
		Acs.	Dem. Rs.	Acs.	Dem. Rs.	Acs.	Dem. Rs.
Bukkapat-nam Tank	7	2779	16741	727	5487	3506	22228
Singanaro-ala Tank	4	1929	9959	1119	8170	3048	18129
Pagri Tank	5	2349	9188	499	2372	2848	11560
Dharmava-ram Tank	3	773	4697	724	5693	1497	10390
Anantapur Tank	2	2475	11241	321	2317	2796	13558

Note: Acs.- Acres; Dem.- Demand.
Source: Annual Settlement Report of Bellary District for Fasli 1277 (1867-68), Madras, 1869 .

Nells

By the end of the Company's rule 'well' had become, more or less, a private source of irrigation. There were several wells constructed by ryots themselves. Under the Crown, well was very well recognized as a protective source of irrigation during famine. It was recognised that digging fresh tanks and channels would benefit the country in ordinary seasons, but they were of no good in preventing a famine, when they contained no water and there were no rains to fill them.[59] The government had encouraged the construction and maintenance of wells, by ryots, by granting several loans.[60]

Table 3.16

BOMS SPENT ON PRIVATE WELLS IN CUDDAPAH DISTRICT IN FASLI 1277 (1867-68)

Taluk	No. of Wells Dug and Improved	Amount of Outlay	
		Rs.	A P.
Kadiri	73	4135	8 10
Budwel	9	1160	6 10
Rayachoti	8	348	12 0
Vayalpad	1	53	9 6
Jammalamadugu	1	100	0
Total	92	5798	5 2

Note: The taluk of Kadiri was later included in Anantapur district and Vayalpad in Chittoor district when these two districts were formed in the years 1882 and 1911 respectively.
Source: Annual Settlement Report of Cuddapah District for Fasli 1277 (1867-68), Madras, 1869, P.2.

Table 3.16 shows the amount of money spent on the construction and improvement of wells by private initiative in Cuddapah district. In fasli 1277 (1867-68), there was a total failure of north-east monsoon. Hence a considerable outlay was recommended for the purpose of digging and deepening the wells.

In 1871 the Government of India enacted the Land Improvement Act the object of which was to define the 'improvements' for which State loans could be granted, to provide for the security of a first charge on the land improved and to lay down the conditions on which advances were to be made. After ten years, the Famine Commission observed that this Act, amended as to the Procedure by Act XXI of 1876, had failed to realise the intention

of promoting improvements and that there was a general reluctance to make use of its complicated provisions. To remove the obstacles which deterred agriculturists from availing themselves of the loans and to simplify the procedure relating to their grant and recovery, the Land Improvement Loans Act was enacted in 1883, repealing the Acts of 1871 and 1876. This Act was followed by the Agriculturists' Loans Act of 1884. Till 1898 four sets of rules framed under the two Acts were in force in the Madras Presidency. They were[61]

(1) Ordinary rules under the Land Improvement Loans Act,

(2) Special well rules,

(3) Ordinary rules under the Agriculturists' Loans Act, and

(4) Special rules for tiroes of distress.

Table 3.17

AMOUNTS ADVANCED FOR THE CONSTRUCTION AND REPAIR OF HELLS IN KURNOOL DISTRICT: 1895-1906

Fasli(Year)	For Construction RS.	For Repairs RS.
1305(1895-96)	1680	1282
1306(1896-97)	23190	12772
1307(1897-98)	12012	5958
1308(1898-99)	3540	2600
1309(1899-1900)	26065	32635
1310(1900-01)	14490	14813
1311(1901-02)	5244	3337
1312(1902-03)	3075	2077
1313(1903-04)	695	775
1314(1904-05)	4842	7135
1315(1905-06)	4687	3387

Source: Revenue. 27 June 1907, No,1639, P.8.

Table 3.18

NUMBER OP NELLS CONSTRUCTED AND REPAIRED WITH LOAN MONEY IN CUDDAPAH, ANANTAPUR, BELLARY AND KURNOOL DISTRICTS

District	No.of Wells Constructed by Loans during (1890-1900)	No.of Wells Repaired or Improved by Loans During (1890-1900)
Cuddapah	1772	3534
Anantapur	628	1030
Bellary	452	317
Kurnool	566	906
Total	3418	5787

Source: H.E. Clerk, Supplementary Report on Irrigation under Wells in the Madras Presidency. Madras, 1901, P. 2.

Table 3.17 shows the amounts advanced for the construction and repair of wells for eleven years in Kurnool district. Out of the eleven years, faslis 1306 (1896-97), 1309 (1899-1900) and 1314 (1904-05), were years of unfavourable seasons and hence the increase in the amounts granted as loans.

Table 3.18 shows the number of wells constructed and repaired with the money taken as loans in the four districts of Rayalaseema.

Besides granting takkavi loans, the government also had formulated several liberal rules in order to encourage the construction of private wells.[62]

(1) The ryots should receive the most distinct assurance that the tax on lands cultivated by means of wells constructed by them at their own cost will never be enhanced, except on **a** general revision of the district rates.

(2) Government abolished all restrictions on the sinking of

wells in the proximity of government irrigation works, provided only that they are sunk in land which belongs to the person sinking the well.

(3) No water-rate will be charged on dry lands irrigated solely from private wells as long as they are situated on lands which are private property, or constructed prior t 20 August 1884, within whatever distance the wells may be from a public irrigation source.

In 1884, the government had declared that irrigation from private wells should be free from charge for water, either in the shape of water-rate on crops in dry lands irrigated, or of water-rate or wet assessment on crops, whether first or second, raised in wet lands, and they pointed out that to prevent fraud or dispute, the concession roust be restricted to cases where no supply whatever was received in the government work.[63]

Amongst the various recommendations made by the First Irrigation Commission for the development of irrigation, the roost important was the extension of irrigation wells by all possible means. The Commission pointed out that the supply of water by wells constituted more than one-fourth of the total irrigated area, and to nearly one-half of the total area irrigated by private works, taking all the provinces together, except Burma; and that, in many cases, they "supply the only efficient means of protection against severe and frequently recurring drought in vast tracts, into which, except at prohibitive expense, it is Physically impossible to take canals, or if taken, to assure them a supply of water when it is roost needed."[64] The immense value of wells in years of drought was fully exemplified by the "fact

that in the famine year of 1896-97, the area under well-irrigation rose at once by nearly two and a half million acres, while that under tanks fell by nearly one and a half million. And again in 1899-1900, not withstanding that in many parts the well supply had begun to fail owing to the succession of dry years, well-irrigation rose by more than a million acres, while irrigation from tanks diminished."[65]

The chief measures recommended for encouraging the construction of wells were - (1) A careful survey and mapping of the sub-soil water facilities and the supply of boring instruments for testing the level of sub-soil water and the nature of the supply; (2) the grant of liberal takkavi advances and free grants in special localities; and (3) exemption from taxation.[66]

The Irrigation Commission also recommended more liberal treatment towards the doruvu and Supplemental wells. Doruvu wells are those wells sunk on the banks of rivers and streams.[67] Supplemental wells are wells sunk in the wet ayacut land.

With a view to encourage the utilisation of the water of rivers and streams for protective purposes, the Irrigation Commission suggested the entire waiver of all royalty or, in the alternative, the levy of a mere nominal rate, for irrigation from doruvu wells, in those tracts of the Deccan, Carnatic and Central districts which were frequently subject to famine and in which the staple crops were insecure in the absence of irrigation.[68] The charge for the irrigation of second crop from such wells, anyway, had been abolished.

Regarding the waiver of all royalty, the Board of Revenue was of the opinion that, "it is not possible to materially increase their number, (doruvu wells) whatever concessions the government may make. The real cause of its state of things is that the ordinary cost of such irrigation to the ryot is very high and the reduced water-charge paid to Government is a mere trifle in comparison with that cost. In these circumstances the Board does not recommend that any change be made in the rules for charging irrigation under doruvu wells."[69] The government also agreed with the Board of Revenue.

In regard to supplemental wells, the government had declared that "In wet land only the dry assessment will be charged in cases where the crops are irrigated solely with the aid of private wells and the supply in the tank is so insufficient that, had there been no private well, the field would have obtained remission of the wet assessment." "In similar circumstances when a second crop is raised solely with the aid of well water on land classed as single crop wet, no second crop charge shall be made for such second crop. A similar wet assessment only should be charged in cases in which two crops are raised on registered double crop land, and one of such crops is raised with aid solely of well water when the supply in the government source is insufficient in the circumstances described above.'"[70]

Pumping Schemes

With regard to pumping schemes, at the instance of Mr. Chatterton, the officer in-charge of the local school of Arts, who was taking a great interest in such schemes, an experiment was started in March 1902 at Melrosapuram. a mission settlement

near Chingleput, for irrigation by means of water pumped from the wells in the mission compound. Later encouraged by the results of the experiment, the scheme was extended to the other parts of the Presidency also.[71]

There had been an increase not only in the number Wells but also the area irrigated by them by the turn of the 19th century. Annexures 3.4 and 3.5 show the areas irrigated from various sources of irrigation in Cuddapah and Anantapur districts respectively. Around 20 percent of the net area under cultivation was being irrigated in Cuddapah district. Nearly half of the irrigated area was under the wells. This was mainly due to the increase in the number of wells as a result of the liberal policies adopted by the British towards encouraging the construction of more and more wells at private initiative. In Anantapur district only 10 to 15 percent of the net area cultivated was being irrigated. Here the percentage area irrigated from tanks seems to have been more than that irrigated from wells.

Thus, during the pre-British days, the Native rulers had taken great interest in the construction and maintenance of minor irrigation works particularly tanks. After the British intervention, right from the East India Company days, and later under the Crown, maximization of revenue was the guiding objective of the development of irrigation works. In pursuit of this one and only objective, classification and reclassification of irrigation works was undertaken quite often during the Crown's administration. Under the separate department of PWD, several bureaucratic changes were also made from time to time. The

frequent recurrence of famines had brought in several famine commissions and their recommendations had shaped the policies of the British to some extent. As far as tanks were concerned the Tank Restoration Scheme was a major policy of the period under study. However, under this Scheme, the imperial government was very categorical in restoring and developing only tanks of considerable size and benefit. This had led to the neglect and sometimes abandonment of thousands of small tanks, with small ayacuts, in several areas like the one under study. In the dry regions, well had started emerging as the most dominant source of minor irrigation. Construction of thousands of wells at private initiative from takkavi loans was the most significant feature of the British minor irrigation policy during the period under study.

Notes

1. Krishnaswamy's study gives the details of the inscriptions showing the role of the State and also people's participation in developing irrigation systems during the Medieval period in Tamil Nadu, Karnataka and some districts of Andhra Pradesh. For more details refer to Krishnaswamy's "Agriculture and Rural Life in Ancient India - South India", Unpublished Monograph, Indian Council of Agricultural Research, New Delhi, 1984.

2. Inscriptions of Andhra Pradesh (Hereafter IAP) Cuddapah District, 97, 208; South Indian Inscriptions (Hereafter SII) X, 603, 633; Topographical Li3t of the Inscriptions of Madras Presidency (Hereafter TLIMP), V.1, for Anantapur 132, for Cuddapah 12,19,177, 411, 705, for Kurnool 13, 30; T.V. Mahalingara, Economic Life in the Vijayanagar Empire, Madras, 1951, P.49.

3. Mahalingam, Economic Life in the Vijayanagar Empire, Madras, 1951, P.50.

4. John Kelsall, Manual of the Bellary District, Madras, 1872, P.231.

5. Robert Sewell, A Forgotten Empire (Vijayanagar): A Contribution to the History of India, London, 1900, P.162.

6. T.V. Mahalingam, "Irrigation under the Vijayanagara Kings" in S.P. Gupta (ed.) T.V. Mahalingam: Readings in South Indian History, Delhi, 1977, P.150.

7. Colonel Mackenzie was employed in the investigation of the geography of the Deccan and in mapping the country from 1796 to 1806. He extensively surveyed the Ceded Districts, as Rayalaseema was known during that period, and compiled the local literary tracts in the form of Kaifiyats. These are known as Mackenzie Manuscripts. These Manuscripts describe the origin of some of the minor irrigation sources. These accounts provide a general and overall description of the source, occasionally with years referring to the construction of some of the sources. While going through some of the volumes of these Manuscripts one gets an impression that even under the Muslim rulers, there was a continuation of state initiated construction of minor irrigation works and the existence of the attendant institutions. For more details on the Mackenzie Manuscripts refer to H.H.Wilson, The Mackenzie's Collections (A Descriptive Catalogue of the Oriental Manuscripts and Other Articles), Calcutta, 1828. (Second Edition 1882).

8. V. Subbalakshmi, "Irrigation in the Ceded Districts: 1800-1857", Unpublished M.Phil Dissertation, University of Hyderabad, Hyderabad, 1988.

9. Letter from James Cochrane, Sub-Collector to Major Thomas Munro, Superintendent, Ceded Districts, 26 March 1802, Cuddapah District Records(Hereafter CDR), V. 630, P.356; Letter from A. Mellor, Acting Principal Collector to C.R. Cotton, 31 January 1840, SPORBD, Bellary, 1909, P.5; Letter from Lieut G.W. Walker, Civil Engineer, 3 Division (Bellary) to Major J.H. Bell, Secretary to the Board of Revenue, Department of Public Works, SRMG, No. XI RIPW for 1853, Madras, 1854, P.80; Similar references are found in Proceedings of Board of Revenue(Henceforth PBR), 18 March 1819, V. 818, No. 49; CDR.. V. 662, P.184-185; CDR. V. 664, P.114-127; CDR. V. 674, P.185 (1812); CDR. V. 682, P.423; CDR, V.4600, P. 405-406, 471-509.

10. V. Subbalakshmi, Irrigation, P.71-77.

11. In Bellary wells dug by ryots and assessed were 1776 whereas wells dug by ryots and free from assessment were 1641, SRMG. No.X RIPW for 1852, Madras, 1853, P.58.

12. PBR. 31 March 1836, V. 1498, P.5173.

13. J.D Bourdillon, Fred. C. Cotton, G. Balfour, First Report of the Commissioners Appointed to Enquire into and Report upon the System of Superintending and Executing Public Works in the Madras Presidency, Madras, 1856, Appendix V, P. 88-89.

14. Letter from V.Vencatachellum, Deputy Collector, to the Acting Collector of Bellary, dated 22 August 1870, No.184, PBR, 30 Nov.1870, p.8744-48.

15. PBR, 23 Dec.1862, No.2673; PBR, 13 June 1864, No.1006.

16. Letter from W.Hudleston, Secretary to the Board of Revenue, to J.D.Sim, Secretary to Government, Revenue, 16 May 1864, No.3003, PBR, 21 June 1864, No.3817.

17. Letter from Captain E.Hemery, District Engineer of Cuddapah, to A. Wedderburn, Collector of Cuddapah, dated 7 January, 1863, No.925 of 1862-63, PBR, 29 May 1863, No.3212, P.3080.

18. Ibid.

19. Letter from H.G. Smith, Acting Collector of Cuddapah, to W.Hudleston, Secretary to the Board of Revenue, dated 23 April 1863, No.60, PBR.29 May 1863, No.3212, P.3079.

20. Secretary of State to Government of India, Despatch No.266, Public Works, 30 November 1865.

21. Annual Report on the Administration of the Madras Presidency. 1875-76, P.287-88.

22. Letter from G. Vans Agnew, Collector of Cuddapah, to the Acting Secretary to the Board of Revenue, dated 23 November 1869,No.192, PBR, 22 April 1870, No.2653, P.3268.

23. Annual Report on the Administration of the Madras Presidency. 1878-79, P.288-296.

24. B.D. Kanetkar, "Pricing of Irrigation Service in India (1854-1959)", Artha Vijnana, V.2, 1960, No.l, P.158.

25. PWD(I), 5 May 1880, No.284; PBR, 19 November 1880, No.1763, P.7894.

26. Ibid.

27. Standing Orders of the Board of Revenue (LR., Sett., and Misc.), Madras, 1958, Vol.11, P.136.

28. Report of the Indian Famine Commission of 1898, (Rpt.) New Delhi, 1979, P.331-335.

29. Ibid.

30. Ibid.

31. Report of the Indian Irrigation Commission 1901-03, P.27, Para 92.

32. Report of the Indian Irrigation Commission 1901-03, P.36, Para 116.

33. Report of the Indian Irrigation Commission 1901-03, P.40 Para 132.

34. Kurnool Rds, 4 September 1909, No.132. PWD(G), 28 April 1909, No.491; PBR(LR), 9 July 1909, No.142.

35. PWD, 3 February, 1939, No.253.

36. The government had carefully considered various proposals and also suggestions made by the Board of Revenue and the Chief Engineers for Irrigation, and after discussing them at a conference with the Commissioner for Land Revenue and Settlement and the Chief Engineer for Irrigation before taking a decision.

37. The total amount of estimates sanctioned for the improvement of minor irrigation works under special accelerated and widespread scheme of improvements was Rs. 75000/- in Cuddapah district and Rs. 30000/- in Kurnool district, Kurnool Rds, 24 May 1935; No.1032; PWD(I), 27 May 1935, No.1231.

38. Revenue (Misc.), 9 July 1938 (Confdl.), No.1744.

39. N. Benjamin, "Irrigation Policy of the British Government of India 1850-1900", The Quarterly Review of Historical Studies, 1976-77, Vol.16, No.1, P.23-33.

40. These arguments are drawn from Michael Roberts, "Irrigation Policy in British Ceylon during the Nineteenth Century", South Asia, August 1972, No.2.

41. PWD(I), 6 June 1891, No.4775.

42. Ibid.

43. PWD(I), 5 May 1880, No.284.

44. Revenue, 23 October 1882, No.1165.

45. Letter from A.J.B. Atkinson, Acting Sub-Collector, to S.T. Mc Carthy, Acting Collector of Cuddapah, dated 3 November 1880, No.377, PBR, 19 January 1881, No.75, P.217-221.

46. Revenue, 23 October 1882, No.1165.

47. Ibid.

48. Anantapur RDs, 7 March 1901, No.84, 18 February 1904, No.60; 15 January 1905, No.150; 9 April 1907, No.141; 12 February 1927, No.806; 6 January 1931, No.2410; 9 April 1938, No.5153; 23 December 1938, No.271, 10 January 1939, No.3917; 22 January 1939, No.3276, 12 July 1939, No.2557, Chittoor RDs, 20 December 1927, No.8002.

49. Revenue, 8 January 1883, No.10.

50. Board of Revenue (Rev. Sett.,L.Rds.. and Agri.), 14 November 1893, NO.452, P.15.

51. Ibid.

52. Ibid., P. 20.

53. Ibid, P.13.

54. Revenue, 9 February 1894, No.101; Board of Revenue (Rev. Sett., L.Rds., and Agri.), 16 May 1894, No.202.

55. Anantapur RDs, 11 October 1938, No.4528; 25 Nov. 1938, No.3479; 22 January 1939, No.3276; Cuddapah RDs, 18 January 1894, No.5877; 7 May 1898, NO.2092; 3 December 1903, No.206; 22 April 1904, No.246; 21 June 1904, No.361, 21 June 1904, No.362; 4 July 1904, No.2328; 14 June 1905, No.448; 11 December 1906, No.909; 29 December 1915, No.991; 27 June 1930, No.298.

56 Cuddapah RDs, 13 November 1894, No.5877.

57. Anantapur RDs, 22 July 1901, No.246.

58. FWD(I), 4 September 1905, Nos. 807, 808; PWD(I), 22 November 1933, No.2542; H.E. Clerk, Preliminary Report on the Investigation of Protective Irrigation Works In the Madras Presidency. Madras, 1901, P.119-130.

59. J,D.B. Gribble, East India Report of Famine Commission 1881 Appendix V Memorandum on Wells in the Cuddapah District and . Their Use as Preventive against Famine.

60. PBR, 7 July 1870, No.4726, P.5596-5598; PBR, 7 October 1870, No.6028, P.7566-7568.

61. The Madras Loans (Takkavi) Manual, Madras 1951, P.I

62. Ma Clean, Manual of Administration of the Madras Presidency in Illustration of the Records of Government and the Yearly Administration Reports. Madras, 1885, Vol.11, P.87; Standing Orders of the Board of Revenue (LR. Sett., and Misc.) , Revised upto 31 December 1912, Madras, 1913, Vol.1 P.8; P. Rama Reddi; The Andhra Pradesh Board of Revenue Standing Orders, Hyderabad, 1985, Vol.1. P.111.

63. Board of Revenue, 17 July 1884, No. 2450.

64. Report of the Indian Irrigation Commission 1901-03, Part I, P.52. Para 167.

65. Report of the Indian Irrigation Commission 1901-03, P.48, Para 154.

66. Report of the Indian Irrigation Commission 1901-03, P.54, Para 172.

67. Refer to Annexures 3.1, 3.2 and 3.3 for details of the doruvu wells in the districts of the region.

68. PBR (Rev.Sett., L.Rds., and Agri.), 5 August 1906, No.2899.

69. Revenue, 20 May 1908, No.1402, P.31.

70. Revenue, 20 May 1908, No.1402, P.36.

71. PWD(I), 4 May 1904, No.487.

Annexure 3.1

STATEMENT SHOWING THE NUMBER AND AYACUT OF "DORUVU" HELLS IN THE KURNOOL DISTRICT IN 1906

Taluk	Doruvu Wells with Wet Ayacut		Doruvu Wells without Wet Ayacut		Total	
	No.	Extent Acs	No.	Extent Acs	No.	Extent Acs
Pattikonda	138	853	39	140	177	993
Ramallakota	63	337	35	92	98	429
Nandikotkur	28	129	17	44	45	173
Nandyal	10	37	——		10	37
Sirvel	3	11	6	10	9	21
Koilkuntla	22	76	7	22	29	98
Cumbum	23 107	74 473	81 68	320 339	104 175	394 812
Markapur	3 11	7 88	36 190	221 1227	39 201	228 1315
Total	408	2085	479	2415	887	4500

Note: The figures appearing in block type against the Cumbum and Markapur taluks relate to the doruvu wells on the banks of the Gundlakamma and its tributaries.

Source: Kurnool RDs, 18 September 1906, No. 451.

Annexure 3.2

STATEMENT SHOWING THE NUMBER AND AYACUT OF "DORUVU[11] WELLS IN THE ANANTAPUR DISTRICT IN 1908

Taluk	Doruvu Wells on the Banks of Rivers		Doruvu Wells on the Banks of Streams	
	Number	Govt. Ayacut Acs.	Number	Govt. Ayacut Acs.
Anantapur	2	7.00	1	5.00
Kalyandurg	95	679.97	11	105.51
Tadpatri	3	8.29	1	4.04
Gooty	3	80.56		-–
Penukonda	4	29.00	3	9.00
Dharmavaram	27	137.00	40	41.00
Hindupur	38	161.00		
Madakasira	––		14	48.00
Total	172	1102.82	70	212.55

Source: Revenue, 20 May 1908, No. 1402.

Annexure 3.3

STATEMENT SHOWING THE NUMBER AND AYACUT OF "DORUVU" WELLS IN THE CUDDAPAH DISTRICT

Taluk	Number	Ayacut **Acs.**
Proddutur	28	156
Pulivendla	5	24.64
Jamraa1amadugu	31	184.85
Cuddapah	75	383.6
Madanapalli	43	50
Vayalpad	7	20.10
Kadiri	3	15.84
Rayachoti	22	48
Pullampet	142	_—
Budvel	340	1073.73
Sidhout	258	973.97
Total	954	2930.73

Source: Cuddapah RDs. 6 December 1906, No. 3925

Annexure 3.4

STATEMENT SHOWING THE AREA IRRIGATED FROM VARIOUS SOURCES OF IRRIGATION IN CUDDAPAH DISTRICT FOR SEVERAL YEARS

Year	% Area Irrigated from					Total Area Irrigated	Net Area under Cultivation during the year
	Govt. Canals	Private Canals	Tanks	Wells	Other Sources		
1	2	3	4	5	6	7	8
1890-91	19.53	1.23	29.11	44.98	5.15	310071	1605405
1891-92	17.48	0.99	20.03	57.20	4.30	330268	1521216
1892-93	17.70	1.02	34.49	42.98	3.82	387677	1648688
1893-94	14.91	1.08	34.66	43.33	6.01	338734	1661184
1894-95	14.31	1.45	32.53	45.88	5.84	305229	1657941
1895-96	16.09	1.39	35.27	43.60	3.64	315607	1671421
1896-97							
1897-98	17.61	1.32	30.56	46.48	4.03	282702	1586665
1898-99	17.61	1.32	30.56	46.48	4.03	282702	1586665
1899-1900	14.01	1.13	33.06	46.39	5.41	293636	1574089
1908-09	22.09	0.26	30.23	42.69	4.73	293295	1635670
1909-10	18.89	0.22	34.13	41.34	5.42	292657	1454425
1911-12	24.68	0.71	23.59	47.04	3.98	206482	1024242
1912-13	22.83	0.85	29.36	40.67	6.29	208795	1096289
1913-14	26.21	1.16	24.15	42.53	5.95	203948	1079115
1915-16	23.51	1.12	30.22	42.70	2.45	212524	1090874
1918-19	26.02	0.55	28.23	41.98	3.22	206497	962845
1919-20	27.16	0.73	29.84	38.74	3.53	216249	1021721
1920-21	30.17	1.04	25.92	41.42	1.46	219940	1013702
1921-22	30.01	1.13	30.08	37.14	1.64	223634	1042685
1922-23	28.67	0.97	29.62	38.03	2.70	208180	1014181
1923-24	30.50	0.68	23.58	41.56	3.67	180775	1012631
1924-25	26.00	0.52	28.30	42.01	3.17	221767	1059466
1925-26	26.77	0.15	27.41	42.26	3.41	228315	1078023
1927-28	28.53	0.76	24.67	40.71	5.34	217209	1065542
1930-31	17.72		35.19	32.96	14.14	224800	
1938-39	21.91		26.77	38.46	12.96	226496	1068853
1939-40	19.12		28.75	37.29	14.84	236122	1068597
1940-41	16.55	0.27	30.95	33.27	18.95	243433	1051491
1941-42	27.03	0.29	25.29	38.67	8.73	239380	1044737
1942-43	29.73	0.57	20.40	42.14	7.15	243897	1040510
1943-44	27.41	0.19	34.37	34.90	3.14	317752	1035156
1944-45	28.78	0.12	31.09	35.12	4.89	214972	978617
1945-46	30.81	0.45	22.25	42.30	4.19	208900	961628

Note: Wells include wells having independent ayacuts and wells supplementing recognized sources of irrigation.

Source :For figures from 1890-91 to 1899-1900, Report of the Indian Irrigation Commission. 1901-1903. Minutes of Evidence. P.33-34; For 1930-31, MDG Cuddapah District, Madras,1933, Vol III,P.16. For the rest of the years Season and Crop Reports of the respective years

Annexure 3.5

STATEMENT SHOWING THE AREA IRRIGATED FROM VARIOUS SOURCES OF IRRIGATION IN ANANTAPUR DISTRICT FOR SEVERAL YEARS

Year	% Area Irrigated from					Total Area Irrigated	Net Area Under Cultivation During the year
	Govt. Canals	Private Canals	Tanks	Wells	Other Sources		
1	2	3	4	5	6	7	8
1890-91	24.70	1.84	44.46	28.64	0.36	165894	1296220
1891-92	23.67	2.67	24.41	48.50	0.74	121635	1105039
1892-93	22.90	1.66	50.64	23.76	1.05	174481	1338139
1893-94	22.21	1.64	47.18	28.57	0.40	141584	1378067
1894-95	24.23	1.09	37.89	35.99	0.80	132219	1514955
1895-96	22.36	1.11	46.72	29.00	0.82	144369	1589300
1896-97							
1897-98	20.47	1.41	50.27	27.05	0.80	169655	1428404
1898-99	20.47	1.41	50.27	27.05	0.80	169655	1428404
1899-1900	25.47	1.08	36.26	36.54	0.65	139260	1374307
1908-09	20.66	0.37	33.61	43.38	1.98	123349	1633500
1909-10	19.28	0.77	50.62	28.96	0.37	166595	1643473
1911-12	21.97	0.86	35.47	40.96	0.74	153690	1749547
1912-13	20.23	0.90	45.47	31.86	1.53	186206	1958923
1913-14	18.73	1.79	44.84	33.96	0.68	183279	1818906
1915-16	13.27	0.27	46.18	32.56	7.71	185501	2011426
1918-19	20.86	0.26	32.66	38.28	7.94	172099	1423571
1919-20	15.23	0.51	51.59	24.88	7.79	256989	1658378
1920-21	15.11	0.25	29.51	49.56	5.57	166944	1693470
1921-22	15.30	0.26	48.08	31.52	4.83	196457	1770769
1922-23	15.88	0.48	36.72	41.40	5.53	172725	1591821
1923-24	14.96	0.32	30.08	50.34	4.31	145820	1538769
1924-25	14.33	0.25	43.79	38.48	3.14	178852	1695487
1925-26	17.53	0.70	36.96	43.17	1.64	159728	1854335
1927-28	16.77	0.60	44.36	37.74	0.53	170320	2047139
1930-31	16.19	0.73	51.24	29.87	1.97	193777	
1938-39	17.66	0.37	52.68	29.69	2.03	226341	2031970
1939-40	23.22	0.37	45.80	30.21	1.41	187709	1974896
1940-41	19.74	0.41	46.80	32.62	1.21	183352	1985460
1941-42	19.30	0.45	45.67	35.25	0.26	170978	1998826
1942-43	13.13	0.35	36.14	51.05	3.77	179134	1841170
1943-44	13.44	0.24	55.11	28.22	3.72	193423	1896085
1944-45	13.61	0.37	55.23	28.61	2.86	195867	2024638
1945-46	13.51	0.29	51.90	33.34	3.03	172836	1875907

Source: For figures from 1890-91 to 1899-1900, Report of the Indian Irrigation Commission. 1901-03. Minutes of Evidence. P33-34; For 1930, MDG. Anantapur District. Madras, 1933, Vol. III P. 15; For the rest of the years, Season and Crop Reports of the respective years

CHAPTER IV

INDIGENOUS INSTITUTIONS AND IRRIGATION MANAGEMENT

4.1 Introduction

For centuries organization of agricultural production in dry regions revolved round the development of irrigation facilities. As a result, in India, as elsewhere in Asia, indigenous irrigation systems occupied a central place in the society. In several parts of South India, there were traditional institutions, operating for centuries, for the construction and maintenance of minor irrigation works. These institutions were more prominent in the dry areas like Rayalaseema.

The emergence of these institutions could be attributed to the nature of the minor irrigation sources itself. In areas where there is scanty rainfall and consequently very little water available for irrigation purposes it is but natural for the people in a particular neighbourhood to come together and organise themselves to undertake the construction and maintenance of small sources like tanks and wells in order to conserve the very little water available. This arrangement would also minimize the risk and uncertainty of availability of water to each user.

During the pre-British days people's participation through the local institutions was very well recognized by the rulers. After the intervention of the British these institutions had undergone tremendous changes. These changes were partly due to the changes of time and mainly due to the overall changes in the

British irrigation policy. Hence what is needed is a detailed discussion of some of these institutions as they existed before and after the advent of the British rule.

The present chapter discusses the three indigenous irrigation institutions namely the Dasabandam,Kudimaramat and Irrigation Panchayats. The following section of this chapter deals with the evolution of and practice of Dasabandam institution during the pre-British period, while the third section deals with the state of Dasabandam during the British period. The fourth section deals with the customary participation of people in irrigation management through the institution of Kudimaramat and how it was made a compulsory contribution under the Crown. The formation of Irrigation Panchayats and their role in irrigation management are discussed in the fifth section.

4.2 Dasabandam System In the Pre-British Period

The institution of Dasabandam was associated with the construction and maintenance of minor irrigation sources particularly in dry areas. The word Dasabandam is spelt in different ways - Duswandham, Duswundum and Dasbandam[1]. For centuries it had been in the form of an inam tenure. The word inam refers to the grant of land free of rent either by rulers or other chiefs to others in lieu of the performance of a specific service or task. A person in the possession of rent-free, or favourably assessed lands was an inamdar. The available inscriptional evidence shows that the Dasabandam grants had been made right from the ninth century onwards. Inams granted for the construction and maintenance of various minor irrigation works

such as tanks, wells, river channels and spring channels were termed as Dasabandam inams. The gift of land is deemed as the most meritorious of charities, and every sovereign was therefore ambitious of distinguishing his reign by the extent and value of the land he alienated in inam to the people. Inam grants were generally made by the rulers and their subordinates in the most solemn and impressive manner. It is said that some religious merit was also attributed to them.[2]

The practice of granting Dasabandam inams had been prevalent in most of the areas of South India, though it had been prominent in the Ceded Districts, the Western portions of Guntur, Nellore, North Arcot and Salem.[3] In Andhra this practice had been introduced by the Kakatiyas[4] and was continued by the Vijayanagara rulers and others in the later period.[5]

These Dasabandam grants were of two kinds - (i) Khanda Dasabandams or inams given in specific localities and (ii) Shamilat Dasabandams or the allowances as inams of a certain proportion of each year's cultivation under the work in question.[6] In other words, under Khanda Dasabandam inams (KDI), a portion of the land commanded by the particular irrigation source will be given off, rent-free, to the inamdar. He can enjoy his inam land as a free gift without paying any revenue to the government.

In the case of Shamilat Dasabandam inams (SDI), instead of grant of land, a certain proportion of the revenue from the irrigated land is allocated to the person maintaining the tank in a fit position. The share in the revenue varied from half, one third, one fourth, one eighth, three eighth(3/8) to one

sixteenth of the revenue,(or produce) of the land cultivated under the irrigation work was granted as an inam, which thus consisted of no specific land.[7] SDIs were otherwise known as Shamilat remissions, since they were a kind of remission granted on each year's revenue and would keep changing along with the revenue under the particular irrigation work. Besides these two kinds of grants, there was ready money remission called Nagad Muzara which was a kind of Dasabandam remission in Cuddapah district.[8] It was in the form of remission of revenue for only a particular year for undertaking the construction of a particular irrigation work and would not be carried forward for the consecutive years, nor did it have any land given as inam under it.

Construction Grants

Most of the time construction of tanks and wells was undertaken along with the establishment of new villages and settlements in the early pre-British days. Hence the grant of Dasabandam inams along with Pallekattu Manyams. Manyam like inam, was a grant of tax-free land in return for services to be rendered to the community. Thus Pallekattu Manyams were granted by the then rulers to those who had undertaken the establishment of new villages. Dasabandam Manyams were granted along with the Pallekattu Manyam whenever the people had constructed the irrigation sources along with the establishment of new villages. Mackenzie Manuscripts mention many such instances.[9] For instance, in 1642 a village was constructed by one Badi Reddi. He also constructed a tank in the village for which he enjoyed Dasabandam along with Pallekattu Manyam.[10] Wells were dug along

with the establishment of villages of Uppuluru, Allidona, Channampalli and Rajupalem. Dasabandam Inams were granted along with Pallekattu Manyams to those who built the tanks.[11]

The following account gives an idea about the grant of Dasabandam Inams under various rulers, during the medieval period.

An inscription of eleventh century A.D. records that the King (Vikraroaditya VI) granted several lands out of the dasavanda and other lands set for himself for a tank and a well.[12] In 1055 A.D. a Raja in Bellary district caused the construction of a well for which a gift of 12 Mattars of land was made.[13] During the reign of later day Vijayanagara rulers we find many more instances of such grants.[14] Some of them can be mentioned here. King Varadarajayya got a canal excavated in Pattapi village by granting Dasabandam inam to Rasilingareddy and Karanam Panduranga Anantayya.[15]

During the reign of Hari Hara Deva Raya the inhabitants of Brahroanapalli village in Siddavatam taluk requested a visitor to that village by name Tanchireddi to construct a tank in their village in return for a grant of Dasabandam inam. Tanchi Reddi constructed a tank and obtained Dasabandam inam. After some days Tanchireddi migrated from this village and constructed another village by name Gattupalli and started staying there. His Dasabandam inam in Brahmanapalli village was resumed during the later day Nawabs' rule.[16]

During the reign of Srirangaraya (around 1504) a Dasabandam inam was granted for constructing a canal.[17] In 1513 Sri Krishna Deva Raya granted a Dasabandam inam to Pedda Thimma

Reddi, son of Nagi Reddi, for reconstructing a ruined well in Kakaravada village in Renatiseeraa.[18] In 1523 a Dasabandam inam of one-fourth share in revenue was granted for constructing an anicut to Gundlakamma at Aravidukota village and also for constructing a canal to it for making the water from the anicut flow into a kunta. This inam continued under the Muslim rule also.[19] In 1524 a Dasabandam inam was granted for reconstructing a ruined tank in Uppuluri Agraharam in Kamalapuram taluk.[20] Around 1530 a Dasabandam inam was granted to Reddis and Karanams for constructing a canal from the banks of Pinakini in Kallur village, Duvvur taluk.[21]

In 1550 Dasabandam grants were made for digging canals and kuntas. The inscription states that violation of the obligation of maintaining these sources would amount to "killing their fathers, cows and Brahmins in Varanasi."[22] Invoking such a moral and social code of conduct was to ensure proper maintenance of the public works religiously.

Around 1558 Dasabandam Inams were granted for constructing a well and a canal in Hanumadgundam village in Koilkuntla taluk.[23] Varadaraju Yellamaraju gave sixty kuntas of land to certain people for digging a canal in a village.[24] Chinnaraju and Kondaraju granted to a Boye some land for digging a water channel in a village in the Ceded Districts.[25]

Dasabandam grants were made on the occasion of lunar eclipse to Appalareddi, Gangireddi, Pedapolreddi and Chinna Polreddi for digging a tank on the streams of Tummalayeru in the Ramapuram village in the Siddavatam taluk of Cuddapah district.[26]

From the above description of certain instances of Dasabandam grants, it is clear that the minor irrigation works were undertaken by a variety of people - the rulers, philanthropists, traders, cultivators and others.

Maintenance Grants

The Dasabandam inam holders or the Dasabandamdars were usually responsible for the proper maintenance and repair of the Dasabandam works. The maintenance of tanks included annual repairs of tank-bunds, canals and sluices, and removal of silt deposits on the tank beds. In certain cases separate inams just for the repair of the tanks, for the maintenance and upkeep of the tanks and for constructing sluices to the tanks were also made, as shown below. Grant of Dasabandam inams just for the maintenance and repair of the various sources of minor irrigation might also have been because of the ruined state in which the previous Dasabandamdars had left the sources due to their improper maintenance, a point to which we shall pay more attention in the section - Dasabandam under the Crown.

In the reign of the Nolamba Pallava king Ayyapadeva, Bittuvata was granted for the upkeep of a tank.[27]

Similarly grants of land for the upkeep of the tanks were made during the 10th and 11th centuries also.[28] During the year 1146, in Bellary district, a gift of land for the upkeep and repairs of a tank was made by Soyidevaraja.[29]

An inscription of 1747 registers the grant of a Dasabandam inam of three tumus of land to the Kapus and Kammas of Chintakommudinne village by the Settis and Karanams of that

village for repairing a tank bund, which work they got done by the Vodderas.[30]

Nature of Dasabandam Grants

With regard to the nature of grants made, those made for the purpose of construction of tanks, wells, etc. were mostly in the form of land only. For other purposes like maintenance and repair, the grants were given in different forms.

Inscription of Parakesarivarman Parantaka I (907 A.D. - 955 A.D) registers a gift of gold made by a military officer for strengthening the bund of a tank, by depositing on it the silt removed from that tank.[31] Sometimes endowments of land were made so that from their income the bunds of the tanks might be repaired and maintained every year.[32]

In 1115 A.D. an officer in charge of the toll revenue in Bellary district made a grant of a part of the toll revenue to the Mahajanas of Ammele for repairs to the tank Hiriyakere, giving some land, free of taxes. In the same year, the Mahajanas of the agrahara town Partiyamattavuru made a gift of the income derived from various taxes, for effecting repairs to the tank Devimgere. It is also recorded that similar gifts of money and land were made to the same tank by many others.[33]

Another inscription of 1184 records the gift of income derived from the Pannaya tax on all the gardens (excepting those endowed as sarvamanya to the deity Mailabesvara) for dredging and repairs in stone and wood to the sluice of the local tank called Gonasamudram. The work was entrusted to sixteen Settis of the village.[34]

The Recipients of the Grants

The receivers of these Dasabandam grants belonged to different sections of the local society. People from different castes and communities had undertaken the construction and maintenance of the minor irrigation works in return for Dasabandam grants. Mackenzie Manuscripts mention various Dasabandam sources, constructed by persons belonging to different sections of the society.[35]

For instance one particular Kaifiyat records that the Dasabandam inams were granted to the following groups of people for constructing wells.[36]

1. To Yerram Reddi Venkatapati, Chinnakompalli Chinnapureddi, Naruva Pantulu, Karanam Narasanna 70 years ago.
2. To Lavudi Potaya, Karanam Narasanna, Kaluva Chalarmnna, Tota Chalamgadu - two Muntas 60 years ago.
3. To Telinakula Venganna (Linga Balija Setti) - 30 years ago.
4. Gurvi Reddi (Aravam Kapu). Tatimakula Pedapapayya (Aravam Kapu). Butchi Timmappa Tipparaju (Karanam). Karanam Bukkaraju - 65 years ago.
5. Mukka Narayana [Telugu Balija Setti], Tatimakula Pedapapayya (Aravam Kapu) - 50 years ago.
6. To Komatisetti Pedda Guruvappa, Karanam Benakaraju.
7. To Basavaraju (Prince), Karanam Narasanna - 80 years ago.

There are instances which show the same person being the dasabandamdar of more than one well. In several cases the wells were named after the persons who had constructed them. Some times they give us an idea about the communities to which the

dasabandarodars of some of the wells belonged.[37]

What was the state of the institution of Dasabandam in the decades preceding the advent of British rule in the region under study poses a very ambivalent question. This is because of the paucity of information on the events during the period spanning seventeenth and eighteenth centuries. Here again Mackenzie Manuscripts throw some light on this gap.[38]

During the reign of Tipu Sultan, Adda Reddi, Gangi Reddi, Peda Polreddi, Venga Reddi, China Polreddi, constructed a big tank to the east of Chandrapadiya village and got a Dasabandam grant.[39] A person by name Patti Bayyana was granted a Dasabandam inam for digging a well in Sunkesula village in Kurnool district.[40] Around 1646 in the village of Tappatu where the canals were in a ruined state, Syed Mirza Hussain made Reddis and Karanams of that village construct a tank and granted them Dasabandam inam.[41] During the rule of Abdul Nabi Khan Saheb, village Karanam Subbaiah and Gangireddi constructed a tank to the south of Kotapadu village in Siddavatam taluk and got the Dasabandam inam.[42] During the same period, the tank constructed by Rayareddi, Channureddi and Chennareddi in the past in Vetapalli village, had breached. Their family members were called to undertake the necessary repairs. Since they did not have the capacity to repair the source at that time they gave half of the Dasabandam to one by name Chavulli Lingareddi and got it repaired.[43] Around the same time, a canal in Thumroaluru village, which was constructed by the inhabitants of the village in the past, was ruined obstructing the flow of water. The person in charge of this taluk (by name Ramachandrarayudu) got

it repaired by Narayana Reddi and gave him Dasabandam.[44]

In 1653, during the rule of Nawab Mirjumla Syed Mohammad, a Dasabandam inam was granted for constructing a bund to a tank.[45] Around 1746 a Dasabandam inam was granted for repairing a tank bund. It was stated that the inam could be enjoyed by their descendants also with usual caveat.[46]

In 1761 a Dasabandam inam was granted for constructing an anicut and digging a canal in Chintapallipadu village.[4*7] Several wells were also constructed in return for Dasabandam grants by persons belonging to different communities in various villages under different Amals.[48] Grant of Dasabandam inams for the construction of various wells under different Amaldars was attributed to the expected and ultimate increase in the tirvajasti (water tax) to the government,[49] There were instances of resumption of some of the Dasabandam inams when the Dasabandamdars failed to undertake the necessary repairs.[50] The available evidence suggests that the practice of encouraging and ensuring the construction and maintenance of minor irrigation works through granting of different types of Dasabandam inams by the native rulers continued into the eighteenth century regardless of whether the rulers were of the Hindu or Islamic faith. The overwhelming concern appears to be of harnessing the scarce rain water for crop production. There was complete recognition of the fact that such works would predominantly be small and scattered and the construction and maintenance would be best done by the local interest and initiative. The State would nurture these initiatives by enacting appropriate institutional arrangements like Dasabandam. In fact the system

of Dasabandam and Wittfogel's thesis on Public Works run in diametrically opposite directions.

4.3 Dasabandam Under the British Rule

A. The East India Company Tears (1800 - 1857)

The region under study was Ceded to the East India Company in 1800 and remained under the Company governance until 1857. The primary concern of the company was the maximisation of revenue and this made it look into the various revenue related aspects of the rural economy under its rule.

The Company government had very well recognized the existence of the Dasabandam works though it did not have a clear idea about the origin and development of such works. First the government had tried to look into the condition of the already existing works. The Company government had realised that some of these Dasabandam works were not being repaired regularly by the Dasabandamdars. It was to a large extent due to a lack of adequate financial resources at the disposal of the inamdars. Most of the time the season was unfavourable as a result of which people could hardly have any savings to undertake the repairs. Even where people were able to make the repairs, they did not[61] or they undertook only a few repairs that would enable them to cultivate their own inam land.[52]

The functioning of the Dasabandam network should be discussed in the context of the evolving land revenue policies of the British government during the first half of the 19th century. In the region of Rayalaseema, Ryotwari Settlement of land revenue was introduced. Under this settlement the annual land revenue was fixed for each individual cultivator. Moreover

land revenue was to be paid in cash to the government. After paying his land revenue in cash the ryot hardly had enough money left with him to undertake the repairs of the community based Dasabandam works. Moreover the attitude of the ryots, given the changes in the tenurial systems, also changed. Effective functioning of Dasabandam required vigilant and responsible peoples' organisation at the village level. The roots of such community organizations would tend to be undermined with the evolving Ryotwari revenue settlement which replaced community interest in the productive forces of land and in the supply of irrigation water by contractual revenue obligations.

The Company government did not want to lose any revenue in connection with the maintenance and repairs of irrigation works. So it had thought of undertaking the repairs first at its cost and then collecting it from the Dasabandam inamdar. Hence, the Company government had made the following rules in 1820s with regard to the cost of undertaking the repairs; and consequent assumption of the Dasabandam inam when the Dasabandamdars failed to undertake the repair of those tanks under which they held certain portions of land as inam.[53]

1. If the cost borne by the Circar was to be made good by the produce of Inamdars' lands in two years, the lands were to be placed under government till the amount was made good, and after that restored to the owner.
2. If the cost borne by the Circar amounted to so much as the produce of three years of the Inamdars' lands to make it good, three fourths of the inam was to be continued to the Inamdar from the year the repair was made, and the

remaining one fourth to be appropriated to the Circar.

3. If it would require four years' produce of the inamdar's lands to make good the cost of the repairs a half of his inam land was to be sequestrated and the remainder continued with the inamdar.

4. If it would require five or more years' of produce of the Inamdars' lands to make good the cost of the repair, three fourths of the inam was to be sequestrated and the remaining one fourth continued with the Inamdars.

These rules were adopted for the various tanks. However, the kind of rules that the government tried to implement spread the burden on the Dasabandamdars over a period of time. Given the uncertainty of realising the expected produce, there was always the fear on the part of the Dasabandamdars as to how to repay their debt, which was equivalent to the amount spent by the government on repairs, on their behalf. Hence many Dasabandamdars did not come forward to undertake the repairs. Nor did the government undertake repairs to all these tanks. The result was a gradual increase in the number of Dasabandam works which were out of repair, as shown in the table.4.1

Table 4.1

THE STATE OF DASABANDAM WORKS IN CUDDAPAH DISTRICT: 1834

Source	In Repair	Out of Repair	Total
Tanks	2384	313	2697
Nallahs	438	134	572
Wells	8819	1655	10474
Total	11641	2102	13743

Source: PBR, 4 December 1834, V. 1432, No.35, P.13588

The rules of 1920s were largely an outcome of lack of appreciation of the system of Dasabandam inams in the construction and preservation of minor irrigation works. It took almost thirty years for the Company to understand the system of Dasabandam inams and to come out with its own rules. In the meantime there were hardly any new Dasabandams either for construction or maintenance. The Company promulgated the following rules relating to Dasabandams in the 1830s.[54]

1. If a large tank is formed at the private charge of an individual, one fourth of the land brought into wet cultivation by means of its water shall be held as inam as long as the tank is kept in repair.
2. If watercourses, anicuts are dug from a river and through their means and by the use of which, land is brought under cultivation, one fourth extent of such land shall be granted as long as the works are kept in good repair.

3.a. If a well is dug at the private charge of an individual and the expense incurred is from 750 to 1500 Rupees, one fourth extent of such garden land as is cultivated under it shall be granted as inam.

b. If the expenses incurred is between 1500 and 3000 Rupees, one third of the area of each garden land as is cultivated under it shall be granted as inam.

c. The inams are to be held as long as the wells are kept in perfect repair.

4. Persons wishing to undertake works of this nature must, prior to commencement, give information to the taluk

authority, who is to visit the spot and report to the collector.

As it is clear from the above rules, the Company government wished the continuance of Dasabandam works. An interesting feature of the above rules is that the onus of maintaining the work is necessarily on the person constructing the work, which was not so in the pre-British period. Further, there was considerable flexibility and local specificity in the earlier arrangements which was being replaced by a set of centralised rules and bureaucratic procedures. Moreover, the available evidence pertaining to that period does not give us any idea about the new works being placed under the Dasabandam tenure. In respect of wells, none were constructed as to fall under the rules of 3a and b, in these districts. The usual cost was from Rs. 100 to Rs. 500. The privilege of digging wells in dry lands without being subjected to any additional assessment, a provision offered by the Company government itself might have rendered the grant of Dasabandams altogether unnecessary to works of this nature.[55] Hence, whatever Dasabandam works were there in Rayalaseema in the early half of the nineteenth century might have been those of the earlier century.

With no new Dasabandam works coming up and the already existing ones falling into disrepair, there was a decline in the number of Dasabandam works. (Table 4.2) Part of the decline might also have been because of the resumption of the Dasabandam inams by the government and the consequent conversion of inam land into circar land. The process of resumption and causes for it are well discussed in the forthcoming pages.

Table 4.2

DASABANDAM WORKS IN BELLARY DISTRICT

	1836	1856	Difference
Tanks	277	145	132
Nallahs	50	14	36
Wells	366	150	216

Source: For 1836 figures, PBR, 17 November 1836, V. 1533, Nos. 49,50, P.16443; For 1856 figures, PBR, 14 February 1856, V.2514, P.2446.

In 1844 the Company government declared that, "the Governor in Council. . ., is of the opinion with the Board of Revenue, that it is not necessary to extend the Duswandum Rules to Districts where they are now unknown, or even to apply them to new works where the system obtains. In respect of existing Duswandums, His Lordship in Council approves of the proposition that they should continue undisturbed as long as the original terms on which they were granted are fulfilled; but in all cases of neglect, or failure, either past or future, that they should be permanently resumed, and the repairs entrusted to the Maramut Department."[56]

B.Dasabandam Under the Crown (1858 - **1947)**

The year 1858 marked the transfer of power from the East India Company to the Crown. By 1858 some of the Dasabandam inams had been resumed by the Company government, some had fallen into disrepair. But still there were thousands of Dasabandam works existing on the eve of Crown's administration. These were a legacy of the pre-British community, based on local initiatives only. There were no additions during the period 1800-1857, because of the overall changes brought about by the imperial

government in revenue administration and also the policies relating to minor irrigation works.

Between 1858 and 1947, the Crown tried to consolidate its power over the Indian subcontinent in several ways. Maximization of land revenue was still the prime factor influencing the agricultural policies of the Crown's government. 1858-1947 was a period of settlement and resettlement of land revenue. Along with land revenue, other tenures were also being settled from time to time. Dasabandam was not an exception to this resettlement. There was a systematic survey of inam Fair "B" registers which give particulars like the name of the Dasabandam work, village in which it was situated, extent of the inam and government ayacuts and the names of the Dasabandamdars. In 1860 an inam Commissioner was appointed to look into the matters dealing with various kinds of inams of which Dasabandam was one. Shamilat Dasabandam inams (SDI) were not brought under the inam settlement. However, it was decided not to alter the nature of SDI as it was considered that this system was a more powerful inducement to the inamdar to keep irrigation work in repair, than the grant of a specific area as inam.

The Crown's government formulated various policies, from time to time, with regard to the Dasabandam works. In 1875, the government decided that when the water of a Dasabandam well irrigated dry land beyond the actual ayacut of the work, the Dasabandamdar should be given a share in the enhanced revenue.[57] In 1879 the principle was extended to the case of dasabandam tanks and the Board was asked to give it a general effect.[56] These could be interpreted as frantic efforts to

restore the tanks but the damage was already done. These efforts could be seen as immediately preceding the TRS as well. In 1880 it was declared that the concession was applicable to dasabandam works of every description.[59] The Inamdars were allowed a share not only in the tirvajasti revenue derived from dry lands but also in fassaljasti revenue realised from wet lands.[60] A limitation on this rule was imposed in 1908 in which the Board prohibited the grant of a share of tirvajasti charged on the irrigation of dry lands if remission had been granted in respect of any part of the recognised ayacut of the source in question. The object of this limitation was to prevent the Dasabandamdars from improperly diverting water to dry lands to the prejudice of the holders of wet lands who had a legitimate right to the use of the water.[61]

However, there was a petition in 1901 (fasli 1311) by one Chapa Srinivasa Rao against the Collector's order of disallowing enhanced revenue to which he was legally entitled on the assessment of the lands irrigable under Chapa Chenchal Rao's channel of the village of Pedda Chappalli in Kamalapuram taluk of Cuddapah district.[62] This petition gained so much of importance that the Board had to ultimately pass an order withdrawing the prohibition of a share to the Dasabandamdars in the enhanced revenue. The Board added later that "They are not however entitled to any share of any enhanced water rate that may be levied for irregular irrigation from the sources maintained by them."[63]

Table 4.3

DASABANDAM WORKS IN BUDWEL, SIDHOUT AND PULLAMPET TALUKS OF CUDDAPAH DISTRICT 1874

Taluks	Source	No.	Area under Each			Dasabandam Granted	
			Govt.	Inam	Total	Inam	Remission of Asst.
(1)	(2)	(3)	(4) Acs.	(5) Acs.	(6) Acs.	(7) Acs.	(8) Rs. A. P.
	Tanks	27	711	215	926	163	234 15 0
l.Budwel	Channels	7	7	3	10	11	— — —
	Wells	97	225	10	235	219	— — —
	Total	131	943	228	1171	393	234 15 0
	Tanks	15	659	204	863	146	300 10 3
2.Sidhout	Channels	1	21	—	21	5	— — —
	Wells	169	548	121	669	225	46 0 9
	Total	185	1228	325	1553	376	346 11 0
	Tanks	11	399	113	512	71	10 8 9
3.Pullampet.	Channels	5	99	68	167	49	— — —
	Wells	2	6	6	2	-	— — —
	Total	18	504	187	681	120	10 8 9
Grand	Total	334	2675	740	3405	889	592 2 9

Source: PBR, 10 August 1874, No. 2168, p.6173.

Table 4.4

DASABANDAM WORKS IN CUDDAPAH DISTRICT: 1890 (WHICH WERE IN REPAIR)

S.No	Taluk	Dasabandam Works by Ayacut				
		<50 Acs.	>50 to <100 Acs.	>100 <200 Acs.	>200 to <300 Acs.	>300 to <400 Acs.
1.	Sidhout	141	3	2		
2.	Proddatur	121	—	—		—
3.	Budwel	101	2	1	—	
4.	Cuddapah	657	8	2	1	—
5.	Jammalamadugu	22	—	—	—	—
6.	Pulivendla	309	—	—	—	—
7.	Rayachoti	3332	4	1	—	—
8.	Kadiri	2027	5	4	—	—
9.	Vayalpad	2921	48	6	2	1
10.	Pullampet	8	—	—	—	—
11.	Madanapalli	1146	38	17	—	—
	Total	10785	108	33	3	1

Note: Kadiri Taluk also had two river channels whose ayacut was under 200 acres. Madanapalli had two river channels and two spring channels each having an ayacut of 200 acres.

Dasabandam works vis-a-vis other types of works are found in Appendix II.

Source Cuddapah RDs. 22 November 1890, No.6515.

Table 4.5

SHAMILAT DASABANDAM INAMS IN THE CUDDAPAH DISTRICT:1899

Taluks	Number of Villages	Number of Cases	Extent Acs.
Madanapalli	80	1282	3208.14
Kadiri	103	1769	1675.47
Vayalpad	108	3009	6100.92
Rayachoti	85	3680	5933.97
Pulivendla	24	330	256.94
Sidhout	1	19	21.84
Total	401	10089	17197.28

Source: Board of Revenue (Rev. Sett,, L.Rds., and Agri.), No. 351, 1 November 1899, P.2, Revenue, 26 December 1899, No.868, Cuddapah Rds, 17 September 1900, No.315.

Over a period of time the Dasabandam works came to be looked upon as government sources. This was partly because of the indifferent attitude shown by the Dasabandamdars towards such works. Many times either the Minor Irrigation Department (MID) or the Revenue Department would prepare an estimate for the repair of a Dasabandam work and the cost was to be shared between the government and the Dasabandamdars.[64] The actual repair work would in many cases be undertaken by the MID, the share of Dasabandamdars being collected by the department from them. Sometimes, the Dasabandam works would be granted to the largest shareholders of the Dasabandam on request, on contract and on the condition of receiving the government's share of cost of repair and the amount collected from the rest of the Inamdars, if any.[65]

Regarding the Dasabandam tanks irrigating more than 200 acres, the government declared that while the Dasabandamdars cannot be required to carry out "special improvements" to their tanks at their own expense, they should be held liable to maintain them in a proper state of repair. The duty of enforcing this obligation would of course devolve upon the Collector of the district, and it would be the duty of the PWD to move that officer to enforce the obligation of repairing it. As Dasabandam tanks were not in any sense private works, all those irrigating 200 acres and upwards were to be included in the lists of Imperial Works.[66]

Regarding the repair and maintenance of all the other Dasabandam works, it was the intention of the government that the cost of all ordinary repairs should be borne in full by the dasabandam inamdar, but that when any construction or re-construction of sluices and surplus escapes was involved, the cost of such structural alterations should be divided between the government and the inamdars, in the ratio of their respective interests.[67]

From the preceding account it is very clear that the government under the Crown had to interfere with the repair and maintenance of the Dasabandam sources of irrigation. Dasabandam works, by their nature were public sources, for the maintenance of which the Dasabandamdars enjoyed some inams. Why did they have to be looked upon as government sources? How far the Dasabandamdars were able to maintain their respective sources? What made them lose interest in the maintenance of tanks and

other sources? Answers to these questions could be sought from the analysis of the process of resumption of the Dasabandam inams.

After the consolidation of its power, the British government tried to expand its bureaucratic structure to all the possible fields. Several new departments were established and the PWD was one. In 1870, Irrigation Department was made a separate branch of the PWD. Later came Minor Irrigation Department. The government had thought that these departments could very well take care of all the aspects of irrigation. The guiding policy right from the East India Company days, and later under the Crown, was the maximisation of land revenue to which irrigated land contributed substantially. So, naturally the irrigation works that would fetch more revenue were sought to be taken care of whether they were government sources or Dasabandam sources, by the Irrigation Department. The Dasabandam works having small ayacuts were to be maintained by the Dasabandamdars. There were several reasons for the improper maintenance of these smaller works. The period 1890-1930 witnessed several petitions by and against the Dasabandamdars.[66]

As pointed out earlier the government initially, had thought that it would not have much problem with the SDIs. But very soon it was realised that in dealing with the cases of Khandam Dasabandam inams (KDI) there was no difficulty. But the position of the SDIs was unsatisfactory. The right to enjoy a fraction of every field under a well or tank was attended by a number of complexities.[69]

There were instances of both the KDIs and SDIs being resumed by the State. In the case of wells those with ayacut less than one acre were more in number.

It was declared by the government that "Dasabandam inams may be resumed and fully assessed by the Collector without reference to the Board or the government, in cases where the original grant is subject to the condition that the works for which inams were granted, should be kept in repair failed to do so. Where the grant is not subject to such a condition, the order of the Governor, in the exercise of his individual judgement, should be obtained."[70]

During the resettlement of one of the taluks of the region it was recommended that "the government consider that the dasabandam tenure, regarded as a means of keeping irrigation works in repair, is out of date, but having referred to the immense protective value of these wells and other irrigation works in the Ceded districts they accept the Board's recommendation to waive the claim of government to these wells, converting them into private property, discontinuing the remissions and registering their ayakats as "dry". These concessions should however be given effect to only in those cases in which the inamdars agree to the resumption of the inam by the government. Where agreement cannot be arrived at, the land should be classed as "wet" and allowed a baling remission of one-fourth of the assessment, the wells being classed as third-class sources. These orders apply both to Shamilat and to khandam dasabandam wells."[71] This was equally applicable to the other taluks of the region as well. The Retained Revenue Disposals of

the different district collectorates of the region under study give hundreds of such cases.[72]

The available evidence shows that right from the beginning of the British rule, Dasabandam as an institutional arrangement, which served so well in the construction and maintenance of a network of public works for the utilisation of the scarce water resources, was under pressure of disintegration. The growing transactions in land, the emergence of a land market, the limits on the expansion of cultivation on new arable land, and the division of Dasabandam land by inheritance and sale, the slow but growing mobility of people away from land based livelihood activities brought about instability in the institution of Dasabandam. There was a clear need for an alternative institutional arrangement for harnessing the insitu water resources. But instead what was emerging was a centralised bureaucratic system which was hardly an answer to the emerging crisis. But one thing that was clear in evidence was the decay of the Dasabandam, the reasons for which were innumerable. The following account documents some of the circumstances leading to the resumption of Dasabandam inams.

Dasabandam inam lands, in the case of Khandam Dasabandams and the right for remission, in the case of SDIs, were undergoing several transfers either through inheritance or sale. So the enjoyers of these inams, in almost all the cases, during the later half of the 19th century and early half of the 20th century were not the original grantees, but only the enjoyers by virtue of inheritance or sale.[73] In the process of sale transactions

or inheritance rights being passed down from one person or persons to the others, the inam lands were getting more and more fragmented with too many shareholders, making it difficult for the government to maintain the inam "B" registers and identifying the particular enjoyers of the inam at a point of time. In some cases roost of these enjoyers would belong to the same family (specially in case of inheritance) - like sons, grandsons, brothers and wives. Sometimes the relation of one enjoyer to the other was shown clearly in the statement itself or it can be made out by looking at their surnames.[74]

Each shareholder would not necessarily feel the obligation of maintaining the source in question in good repair as the original grantee would have felt. Absentee (non-resident) inamdars did not show any interest in repairs since they would hardly be seen in the particular village. The result would be resumption of the Dasabandam inams.[76] Sometimes the resumption was due to the out-migration of the Dasabandamdars without giving any notice to the government or when the whereabouts of the Dasabandamdars could not be traced.[76] Sometimes resumption was due to the disputes among the Dasabandamdars each one claiming the inam for himself and in the process not caring for the repairs.[77]

There were also instance of voluntary surrender. The enjoyers of the inams themselves stated that they could not repair the source and their inams, could be resumed.[78] In some other cases the inamdars said that they did not have enough finances to repair the sources immediately and would ask for an extension of time to repair the source. If they failed to

undertake the repair at the expiry of the extension period also, then the inams were resumed.[79]

If an inam was held by a group of people, and if there was a lack of understanding among the shareholders to undertake the necessary repairs, then it would lead to resumption.[80] Difficulties in coordinating the repair works because of share holders residing in various places also led to resumption of the inams.[81] Too many share holders for very small ayacut lands also resulted in each shareholder feeling disinterested towards undertaking the repairs. Table 4.6 gives an idea about a few of such extreme cases.

Table 4.6

RESUMPTION OF SOME OF THE DASABANDAM INAMS IN CHITTOOB DISTRICT

S.No	Name of the Source	No. of Dasabandamdars	Dasabandam Inams	
			Extent	Asst. Rs.
1.	Patha Cheruvu, Kosavari Palli village, Madanapalli Taluk	41	12.57	62.13.0
2	Ankalamma Cheruvu, Kalakada village, Vayalpad Taluk	42	7.37	44.3.0
3	Buragala Cheruvu, Karahalkata village, Madanapalli Taluk	72	8.82	35.4.0

Source: Chittoor RDs (1) No. 529, 24-6-1926.
(2) No. 6461, 20-7-1922.
(3) No. 3849, 12-10-1918.

The Dasabandamdars could be grouped under two classes. First, those whose shares were few in number, like two brothers

or cousins, and who agreed to undertake the necessary repairs. The second class was the ordinary Dasabandamdar. The inam here was divided into ten, twelve, fifteen, or more shares, some of which had been mortgaged or sold. Many share-holders were in different places or the others quarrelled among themselves over the repair of the irrigation sources in question. The burden was ultimately thrown on the resident larger share holders. The smaller share-holders, were often either not found, or were ready to surrender their share of the inam. If the larger share-holders had the means, they did all the work and bore all the expenses; but generally they could not, and this class of inam was the class which was continually under attachment, sometimes seeking extension of time, and finally they were either relinquished or incorporated with the government ayacut for failing to keep to the terms of the agreement under which it was given.[82] This, in a way, sums up the causes for the resumption of Dasabandam inams.

A significant fact to be noted is that most of the Dasabandam sources that were being resumed were wells. Annexure 4.2 gives the details of a few such wells resumed.

An important aspect of the pre-British water resource institutions is their community character. This may be better appreciated by a look at the large number of Dasabandam wells. A Dasabandam well was essentially a kind of community well, the maintenance of which was looked after by a Dasabandamdar. The preponderance of Dasabandam wells in the early British Rayalaseema and its disappearance by the turn of the 19th century and the first few decades of the present century, is an adequate

reason to believe that with the land, water also **increasingly** turned from being a public resource to a private resource.

Besides the above mentioned causes there were some administrative inconveniences also for the government while dealing with the Dasabandam inams. One of the major problems that confronted the Crown's government while reviewing the inam Fair 'B' Registers (pertaining to Dasabandam inams) was that in many cases no distinction was shown between the Khandam and SDIs. KDIs were the inams which should have specifications of lands granted as inams. SDIs, on the other hand, did not have by their nature, any spatial location since they were only remissions on land revenue assessed and collected. This distinction was not observed in inam registers. Even in the case of SDIs the extent of Dasabandam inam and its corresponding assessment was shown. This led to a confusion on the part of the government officials in distinguishing and dealing with these inams separately.[83]

Even in cases where SDI remissions were shown clearly, dealing with the remissions themselves gave a lot of inconvenience since these remissions were paid to the Dasabandamdars after the land revenue was collected. The calculation of the mode of payment, recovery of remissions etc. every year proved to be an extra burden on the existing bureaucratic structure since special provisions had to be made for these remissions after every harvest.[84] Over a period of time the entire exercise became difficult and impracticable for the government.[85] So the easiest way out was to resume these inams and grant fresh pattas.

There were difficulties in granting pattas since the ayacut land under SD sources was not of uniform type. There were cases (i) where the inamdars and the pattadars were the same individuals, (ii) where the inamdar was different from the Circar pattadar and (iii) where the Circar portion was government waste.[86]

Confirming the ownership of these inams was also a problem for the government as many Dasabandamdars were not able to produce the original orders of granting Dasabandam. Those who had submitted the orders sanctioning the grant of one-fourth Dasabandam were allowed to continue the enjoyment of the remission and in other cases the proposal of resumption was considered.[87] As a result of some of the Dasabandamdars claiming superior authority over the sources of irrigation, there were petitions to the government against them.[88]

Thus, the failure on the part of the Dasabandam holders to carry-out the repairs as and when the need arose, together with the practical problems realised by the government while dealing with these inams intensified the process of resumption of these inams during the Crown's regime. However, in a few of the cases where the repairs were carried out properly the inams continued to be enjoyed by the Dasabandamdars.[89]

After the resumption of the Dasabandam inams, the ayacut under these sources was normally transferred as dry land. In some cases where there was an alternative source and its ayacutdars were willing for the transfer, these ayacuts were also

transferred to the other sources. This was possible because in some cases both the sources had one or two common dasabandam enjoyers.[90]

Resumption of Dasabandam inam and granting the same source to others, on the same tenure, on a petition that the particular source be made over to them under the Dasabandam tenure, was also found in some cases. In such cases the pattadars of the Dasabandam inam lands in question agreed in writing to relinquish the same if the petitioners undertook the repair of the Dasabandam source.[91] In Kurnool district most of the resumed Dasabandam inam lands were granted to the Taluk Boards for either maintenance of the same Dasabandam source or for the maintenance of water pendals.[82] What is to be noted here is, in earlier tiroes the solutions for the multiplication of the Dasabandamdars with the natural division of their households were perhaps found at the village level where as with the British regime it had assumed centralised rule making.

In a general way the government had directed that the resumed Dasabandam wells should be sold by auction and the purchasers were left to make their own terms with the holders of the lands under the wells. However, this did not gain much importance since roost of the tiroes it was not profitable to buy such wells.[93]

4.4 Kudimaramat

Kudimaramat or Customary Labour or literally 'collective repair,' was yet another institution that played a very important role in maintaining the minor irrigation sources in several parts of South India from the remote past. It was more effective in

areas where river and spring channels were the dominant sources of irrigation. Under Kudimaramat repairs to the various sources of minor irrigation were carried out by the ryots in the neighbourhood of a particular source.

Why do people in some regions come together to undertake the necessary repairs either under Kudimaramat or under some other local institution? Lack of continuous flow of water increases its value for irrigation purposes, which in turn necessitates continuous and sometimes immediate care of the irrigation works including tanks. This has to be undertaken by the ryots in the neighbourhood of these irrigation works, in the absence of which the crops would face the effects of improper water management. This sort of necessity brings about co-operation among the ryots, so as to minimise the negative impact of the constraints imposed by geography. Kudimaramat roust have been an outcome of one of such necessities in South India from ancient times. Even today we find such local institutions operating in several parts of the world. 'Subaks' in Indonesia, and 'Zangjeras' in Philippines, are the best institutional examples for the effective management of irrigation sources and distribution of irrigation water. Local conditions, social structures, ecology and government's role might alter the ways of functioning of these institutions but one common feature among them all is the community participation in the management of irrigation sources.[94] According to some, scarcity and risk are the two most important factors that make people form cooperative and community organizations.[95]

A.Kudimaramat During the Pre-British Days

Inscriptions mention a *very* large number of instances where people's participation in irrigation management was customary during the medieval times in several parts of South India.[96] In cases where the ryots did not put in physical labour, they contributed their share through other means.

In Nellore, it is found that, for the proper maintenance of irrigation tanks contributions of grain were levied on each cultivator at the rate of a Kuncha of grain on every Futti annually. The grain so collected was to be entirely spent upon the repairs and upkeep of the concerned tank. Woddars [tank-diggers] were employed for that purpose. Moral obligations and religious sentiments also played an important role in its effective implementation. It was proclaimed that, "Whoever misappropriate the grain, not carrying out the provisions of their edict, if Muhammadans, will incur the sin of killing a pig at Mecca, if Brahmans or Sudras, will incur the sin of killing cows and Brahmans on the Ganges. If any one does this (ie., obstructs the charity), of whatever caste he be, his wife will be considered to have been given to a vetti."[97]

Where the repair and maintenance of irrigation works was done in partnership, the distribution of water was regulated in proportion to expenses met by individual parties. When disputes concerning such distribution of water took place, they were often amicably settled by the cultivators themselves, or through the arbitrators and the decision of the arbitrators was generally accepted.[98] One of the very common methods of arranging for

the maintenance of irrigation works was the provision of servants and necessary materials for such works.[99]

As in the case of the construction of tanks, native governments encouraged community efforts in the maintenance and repair of irrigation works. In 1541 when the residents of Tirumadadihalli (Anantapur district) repaired the breaches in the tank in their village, the government granted them one Kanduga and Kattukodage.[100]

From the way the system of operation of the indigenous institutions like Kudimaramat was understood by the early East India Company servants also, one can have an idea about their functioning in the pre-British days.

Thomas Munro, the Principal Collector of the Ceded Districts writing as early as 1803 stated that, "It is usual in many places when the damages of Tanks are trifling not amounting to above ten, twenty or thirty pagodas, for the cultivators themselves to make the necessary repairs either by their own labour or by an assessment of grain for the help of Waddiwars."[101] Thomas Munro further stated:[102]

> The repair of watercourses is still more common than that of Tanks by the labour of the Cultivators. In every part of the country (Ceded Districts) watercourses are annually cleared out by them and the performance of such works is not regarded as any extra duty more than the payment of their rents. In my own division all the watercourses from the Pennah and the smaller rivers are kept in repair by the cultivators,those from the Toombudderah being upon a greater scale and more exposed to damage may perhaps have been roost frequently cleared out at the expense of the Sirkar but even in those I imagine that a part of the work had always been done by the cultivators. There is nothing in the expense that ought to be too heavy for them to bear, but it is possible that the work is chiefly required near the heads of the

> watercourses, that it is too much for the Inhabitants of the adjacent villages to perform and that those of the villages lower down could not assist on account of the distance without suffering great inconvenience. All watercourses from Tanks ought invariably to be kept in good order by the cultivators themselves. It is only in cases where they may have been choaked up from the neglect of many years that they ought to be cleared out at the public expence.

B.Kudimaramat under the East **India Company**

The system of Kudimaramat or collective repairs to irrigation and drainage works which by local custom had to be performed by the joint labour of the village community continued to be in practice even in the first quarter of the 19th century in almost all the regions of the Madras Presidency, excluding the districts of Madras, Malabar, South Kanara, the Nilgiris and Anjengo.[103]

In the Ceded Districts the kind of work performed, under Kudimaramat, by the ryots included filling up gutters at all tiroes, repairing tanks when there was a breach, raising the bund to prevent any possible breach and turf work to leaky parts of the bunds, opening the Calingulah, making a passage for surplus water when Cuttacalwah or supplying channel had abundance of water and closing the same when the supplies were limited, constructing a bund across the supplying channel in order to divert water, opening and closing of the bund and tamping.[104]

We don't have much information available on the way of functioning of Kudimaramat during the first half of the 19th century, except some reference to it in the later day reports. A Report of 1879 states that during the first half of that century the ryots were admittedly under the obligation to watch over the safety of their tanks and to carryout the petty repairs

necessary from month to month. They received no pay for their labour, nor was any deduction made from the land assessment on account of it.[105] Sometimes Tahsildars were being expected to enforce it.[106] Thus, Kudimaramat, which was supposed to be voluntary contribution of labour seems to have been made obligatory by the British government. That means people were not coming forward voluntarily to undertake the repairs, as they used to do before.

This could be because of several reasons. The advent of the British had brought in several changes in the land tenurial systems. With land coming into the market, with the development of individual property rights, with the control of tanks passing over to the government, with the development of private sources such as wells, the local institutions like Kudimaramat seemed to have lost much of their status and importance.[107]

C.Kudimaramat under the Crown

By the time the Crown had taken over the power from the East India Company, Kudimaramat of the pre-British days ie., people of a village coming together to repair their irrigation works, was dying down. Faced with the problem of thousands of small tanks and channels being in disrepair all over the province, the Madras government realised the importance of local institutions and initiatives in maintaining the scattered system of small irrigation works.

Since voluntary contributions were not forthcoming, the government felt that, "This long established custom has wanted only a formal enactment to give it the force of law, and that formality being refused; the government are of opinion that, at

no distant day, the custom itself will cease; with its cessation, the expense of all the repairs hitherto made by the people roust be provided by the State, and the expenditure of this government in the Department of Public Works will in consequence be much increased."[108]

An Act providing for the enforcement of customary labour was passed in 1858. While the land tenure and revenue policy of the British government took away all surplus resources from the hands of the village communities and asserted that common resources such as the tanks belonged to the State, in actual practice it was impossible for the PWD to maintain thousands of small tanks without any cooperation from the locally based village communities. Hence, the government had tried to give impetus to the provisions of the Act of 1858.

Under the Act the government had declared that,[109]

> Whenever by local custom any work for the purpose of irrigation or drainage, or connected therewith, is usually executed by the Joint labour of a village-community, any person bound by such custom to contribute labour to such work, who neglects or refuses without reasonable cause to comply with a requisition for such customary aid made to him by the head of the village under the orders of the tahsildar or other superior Revenue-officer, shall be liable to pay a sum equal to twice the value of the labour which he is bound to contribute.
>
> The amount so payable shall, in case of dispute, be determined summarily by a Village Panchayat assembled by order of the Collector through the Village Munsif...
>
> Such amount shall be payable on demand; and on nonpayment, the same may be recovered by the same means by which arrears of land-revenue are recoverable.
> All sums paid or recovered under this section shall be applicable to the expenses of any works for the purpose of irrigation or drainage executed for the benefit of the village-communities to which the defaulters respectively belong.

Still the government felt that the enforcement of the liability of the ryots to perform customary labour on irrigation works had become a matter of increasing difficulty, in later years, and that the unsatisfactory state of many of the tanks and channels was in a great measure attributable to this cause. Ryots showing indifference or carelessness in the preservation or repair of their tanks was noticed by the irrigation officials in several instances.[110] Hence, the expediency of imposing a cess in lieu of customary labour on irrigation works required from ryots was being considered by the Collectors of various districts, and also the Board of Revenue and ultimately the Irrigation Cess Act of 1865 was passed.[111] Under this Act, the government would first undertake the repairs at its cost and later collect from the ryots their due share.

The Commission on Minor Irrigation Works, reported in 1870 that Kudimaramat in respect of minor repairs to small tanks had died out, in respect of minor repairs to channels was fast dying, that there was a general agreement as to the necessity for providing more definite powers for the enforcement of the obligation than were conferred by Section 6 of Act I of 1858, that it was necessary to make a careful enquiry in each district to ascertain what kinds of Kudimaramat works had been customary and to make such works compulsory.[112]

A Bill was drafted to legalise Kudimaramat and was introduced into the Legislative Council of Madras in June 1883 but it was subsequently dropped. The first Irrigation Commission (1901-1903) talked of the "Cultivators losing all sense of responsibility for the maintenance and upkeep of tanks, which

custom had formerly imposed on them" and recommended that all routine maintenance work be handed over to the ryots after persuading them to undertake Kudimaramat. The Commission further recommended that if Kudimaramat could not be enforced without legislation, then legislation should be undertaken. If Kudimaramat did not work, then legislation should provide for a cess on land irrigated from tanks whose funds would be administered by local Panchayats. In accordance with the recommendation of the Irrigation Commission, attempts were made again and again to bring in legislation for enforcing Kudimaramat or for imposing an irrigation cess in its place. But all these attempts proved abortive. The Irrigation Bills of 1906, 1922, 1924, 1928 and 1934-36 were all such abortive attempts.[113]

However, the functioning of the institution of Kudimaramat was not uniform throughout the Madras Presidency. In some districts it was working very well whereas in some other districts it was fast dying out. Even in the four districts of the region under study there was variation. In the Kurnool district, the following works were expected to be done by Kudimaramat labour in the first half of the 20th century:[114]

a) Clearance of deposits from river and spring channels,
b) Clearance of silt and bushes from distributary channels under tanks,
c) Closing small breaches in supply channels to the tanks,
d) Clearance of bushes from supply channels to tanks,
e) Removal of prickly-pear and other undergrowth from tank bunds, and

f) Cutting open the bund at the site of sluices for the examination of sluices, when necessary.

In Anantapur district river and spring channels were the more dominant sources of irrigation. River channels were those which were dug in the beds of rivers. Spring channels were those which issued from the beds of hill streams, and these channels depended for their supply on frequent freshes in the streams during the rainy season as well as the surplus of upper tanks. Kudimaramat work, here, generally consisted of the removal of prickly pear or scrub jungle on tank and channel bunds, clearance of silt and vegetation from the bed and banks of channels and earth work for the inspection of sluices when required. The holders of lands under each river channel formed themselves into a committee (locally known as "Gonchi") with a headman called 'Gonchidar' or Pinnapedda. He enforced the work from the ayacutdars. The clearance of silt was made all along the course almost everyday to tap sufficient supply during the cultivation season when the river was not in floods. Besides, channels were dug in the bed of the rivers. One man for every acre of land had to contribute labour; the defaulters were fined by the "Gonchidar" . It was more of a Panchayat functioning than Kudimaramat.

In almost all the taluks of Cuddapah district Kudimaramat (of British sense) repairs were being carried out by the farmers, in some form or the other. The obligation of the ryots to furnish labour for the repairs of petty injuries to tanks and for the removal of silt from minor channels was fully recognised and endorsed. If the ryots failed to do so the labour was contributed

in the form of money, failing which notices were issued for the money value of the labour and collected and credited to the Treasury. It was in the matter of removal of vegetation from tank bunds that the ryots were found reluctant and very frequently the penal provisions of the act had to be put in operation for getting the work done. The reason is that while neglect to clear channels produced an immediate result which affected their living,a similar neglect in respect of removing vegetation had only a distant effect which they did not perceive as an immediate impediment to their water needs.[115]

In 1927, the Ceded Districts Irrigation Committee had made the following observations regarding the manner of working of the Kudimaramat Act with respect to spring channels - the manner of working of the Customary Labour Act rules, was extremely illiberal, resulting in considerable loss and hardship to the ryots concerned. In several cases rock had to be blasted. The illiberal and unsympathetic interpretation of rules had resulted in the abandonment of several channels.[116]

As mentioned above there were instances where people in the neighbourhood of a particular minor irrigation source were coming together on and off to undertake the necessary repairs. It was largely due to the pressure brought about by the British officials. It could also be due to the fear that not undertaking the repairs when called for would result in the payment of huge amounts as fine by the farmers. But it was definitely not the kind of voluntary contribution of labour by the farmers of the pre-British days. Contribution of labour which was supposed to be voluntary was made compulsory, still with little impact.

The causes for the unsatisfactory working of Kudimaramat in the Madras Presidency in general, and in some areas of the region under study in particular, can be summed up as follows.[117]

1. There was often an inadequate co-operation by the ryots with officials and a want of co-operation among the ryots themselves;
2. There were factions in many villages;
3. There was absenteeism of some of the landowners who were expected to participate through their own or hired labour;
4. The general growth of the individualistic spirit in villages;
5. The cumbrous nature of the procedure under the Madras Compulsory Labour Act of 1858, and
6. The absence of a regular system of obtaining information regarding the condition of irrigation works.

Above all, was the nature of the State itself. During the pre-British days, the Native rulers had encouraged the system of voluntary contribution of labour for Kudimaramat by granting concessions in land revenue payments and such other incentives. The imperial policies of the British tried to enforce Kudimaramat through laws and procedures in order to enhance their revenues. There was already the existence of a complex bureaucratic structure serving the imperial interests in the periphery. PWD was supposed to look after the matters relating to irrigation development. Over a period, this department had taken greater responsibility for irrigation management into its hands to ensure improved land revenue collections. As a result community action, based on local initiatives, on the part of the cultivators diminished. Seeking legal remedies for the preservation of an

institution based on community spirit had to face the inevitable failure.

4.5 Irrigation Panchayats

The first quarter of the present century witnessed the development of Irrigation Panchayats in the various districts of the Madras Presidency, by the British. They were also known as Irrigation Boards in some areas.

F.W. Schonemann, Superintending Engineer of Punjab made a tour of inspection of certain engineering works in France and Spain in 1913. On his return, in his report, he advocated the introduction in India of the system obtaining in Spain and elsewhere, of entrusting to village communities, absolutely and without interference by government officials, the management of the internal distribution of water for purposes of irrigation. The total quantity of water which each community was entitled to utilise was to be allotted in bulk by the officers of government. [118]

In the wake of Schonemann's proposals, the Government of India wanted to know the existing community based practices in various parts of the country, regarding the distribution of irrigation water and also the opinion of the different district collectors on the feasibility of introducing Schonemann's proposals in their respective districts.

However, it was found that Schonemann's proposals were not suitable for adoption in the Madras Presidency. Informal Irrigation Boards had already been formed in several of the districts of this Presidency, at the government's initiative.

In the region under study, the applicability of Schonemann's recommendation was limited. In this region water as such was not

sold to ryots, as a commodity to be marketed; the charge for water was supposed to be based upon the settlement classification of each field. The system here dealt with each individual pattadars with whom the annual demand was fixed, and not with the village community, as suggested by Schonomann. In this region there were already some Panchayats looking after some of the minor irrigation works.

The nature of the constitution of the Irrigation Boards or Panchayats might differ from one village to the other depending on the local circumstances . However, the overall aims and objects of these Panchayats can be summarized as follows.[118]

1. to manage efficiently the irrigation under each of the sources,
2. to see that the irrigation channels get adequate supply,
3. to exercise a general supervision over the work of the members elected for the management of supply channels and sluices,
4. to guard specially that the richer ryots are not benefited at the expense of the poor ones,
5. to execute necessary repairs to the supply channels etc.,
6. to secure a fair distribution of water of the tank, under each sluice, and settle disputes that may arise,
7. to settle what lands are to receive irrigation when the supply in the tanks is insufficient for the whole ayacut and
8. to supply labour when urgently required for repairs to the tanks by the Public Works Department or Revenue authorities.

Each Irrigation Panchayat would perform those of the above mentioned duties as its particular source demands in its neighbourhood.

The number of members also differs from Panchayat to Panchayat, depending on the size of the source and the ayacut under it. The Boards will meet twice a year at the beginning of every working season or as often as there is a necessity for them to meet.

In some parts of some of the divisions like Rayachoti and Jammalamadugu taluks of the Cuddapah district, the distribution under smaller works and under river and spring channels was managed under the supervision and control of a manager who was a locally influential man appointed in some cases by the Tahsildar with the consent of the ryots and in others by the ryots themselves. This manager was known as "Kalvapedda". This system had been working well and needed no alteration. A.R.Banerji, the Collector of Cuddapah, had, however, felt that in other parts of the district the spirit of cooperation and self-help had not much developed among the ryots. Any official initiative in such matters might not give successful results.[120]

In the Kurnool district there were a number of Irrigation Panchayats already looking after the working of various minor irrigation works.[121]

There was no need for the formation of Irrigation Boards in the villages commanded by the K-C canal. An Irrigation Board was considered necessary only when there was a deficit supply of

water, in consequence of which economic use and efficient management of water would become indispensable. As under the canal there was no likelihood of a deficient supply, the formation of an Irrigation Board was not considered necessary.

In Anantapur district, as mentioned earlier, "Gonchidars" or "Pinnapeddas"' were playing a very important role in looking after the minor irrigation works, and the distribution of water under them.[122]

Thus, during the pre-British days, the local institutions of Dasabandam and Kudimaramat had played a very important role in the construction and maintenance of minor irrigation works, in the region of Rayalaseema. Under Dasabandam, the construction of a majority of the minor irrigation works like tanks and wells was undertaken from time immemorial. Kudimaramat was taking care of the maintenance of the minor irrigation works, particularly river and spring channels. These institutions which had evolved through indigenous initiatives as well as State patronage required a grassroots level involvement of the people for their survival.

The British government, under the Company, had recognised the existence of these local institutions and wished them to continue to serve their revenue interests better, but with little success. Voluntary participation of people at the grass root level in irrigation management was not forthcoming in the newly emerging environment. Hence, the imperial government, under the Crown, tried to make the functioning of these locally managed informal institutions more formal as part of the overall changes in the irrigation policy as well as the irrigation bureaucracy.

The work which was supposed to be voluntary contribution was made compulsory contribution through various Bills and Acts. Formation of Irrigation Panchayats was one of such bureaucratic reforms. Thus, the imposition of the British rule and the process of incorporation had brought about certain strong but gradual alterations in the tenurial relations, which had struck at the very roots of the indigenous institutions. The incorporation and the resulting process of subordination of all institutions to subserve the metropolitan interests brought a revenue orientation to the utter neglect of the regional specifications in the evolved productive forces.

Notes

1. The derivation is either das=ten, and bandam, from the Sanskrit root signifying a compact; or else das = ten and vanda, a pure Telugu word signifying one hundred. The former seems more probable, as the combination would be of two Sanskrit roots, whereas the latter has one Sanskrit and one Telugu word. J.D.B. Gribble, Manual of the District of Cuddapah in the Presidency of Madras, Madras, 1875,(Rpt.) Hyderabad, 1992, p.19; According to MaClean's Glossary, the term Das refers to Dasha in Sanskrit or Das in Hindi, Bundh in Sanskrit refers to bind. Hence Dasabandam is abatement of ten in hundred or one-tenth of the revenue on account of compensation for some public work, as the construction of a tank.

2. Tank -digging was looked upon as one of the seven meritorious acts which a man ought to perform during his life time: (the procreation of) a son, the composition (of a poem) (the hoarding of) a treasure, (the planting of) a grove, the marriage (of a girl to a Brahmana), (the consecretion of) a tank. The Ganapavaram Inscription of Ganapati, Epigraphia Indica, III, P.88, A. Appadorai Economic Conditions in Southern India (1000 - 1500 AP), Vol.1, Madras, 1936, P.201.

3. Report by W.T. Blair on the entire operation of the Inam Commission, Madras, 1868 in A Collection of Papers Relating to the Inam Settlement in the Madras Presidency, Selections from the Records of the Madras Government New (Revenue) Series, No.1, Madras, 1948, P.320. (Hereafter Papers on Inam Settlement)

4. K. Satyanarayana, A study of the History and Culture of the Andhras, Volume Two, Consolidation of Feudalism, New Delhi, 1983, P. 29. For a detailed discussion on the origin and development of irrigation during the Kakatiyas see G.A.L. Satya Rani, "Economic Dimensions of Tank Irrigation and Temple Constructions under the Kakatiyas'[1], M.Phil Dissertation, Department of History, University of Hyderabad, 1983.

5. N. Venkata Ramanayya, Studies in the History of the Third Dynasty of Vijayanagara, Madras, 1935; T.V. Mahalingam, Economic Life in the Vijayagar Empire, Madras, 1951.

6. Papers on Inam Settlement, P.320.

7. Chittoor RDs, 4432, 3 August 1928, 4433, 3, August 1928, 4435, 23 November 1928, 9402, 21 December 1927, 9403, 10 January 1928; PBR, 17 November 1836, V. 1533, Nos. 49, 50, P.16443.

8. A Scheme for the Settlement of the Rayachoti Taluk of the Cuddapah District. Letter from J.H.M. Cox, Deputy Director of Revenue Settlement, Cuddapah, to W. Wilson, Director of

Revenue settlement dated 15 march 1879, No.176, Revenue,
5 Feb. 1880.No.140, para 30; Revenue. 18 July 1908,No.1965.

9. While documenting the Mackenzie Manuscripts, the information available in Telugu Kaifiyats is translated into English, to the extent possible. The details of each Kaifiyat are retained as they are in the original.

10. Mackenzie Manuscripts (Hereafter MM), V. 136, Koppolu Kaifiyat, Kamalapuram Taluk, P.122 -125.

11. MM, V.97, Allidona Kaifiyat, P.108; MM, V. 97, Uppuluru Kaifiyat, P.133-134; V.106 Rajupalem Kaifiyat, Chinta Kunta Taluk, P.327-330; V.118, Channampalli Shrotriem Village, Jammalamadugu Taluk, P.45-59.

12. SII, XX, 93.

13. SII, IX, Part I, 116.

14. MM, V. 98 - II, Maniraropalli Kaifiyat, P.52- 53; V.100 Ahobilam Kaifiyat, P.10; V. 124, Gandikotadurgam Kaifiyat, P. 49 - 50; V. 263, Laws in various villages of Chitvel Taluk, P.25; V.267, Channoor Kaifiyat, P.59 - 60.

15. MM, V. 145, Chitvel Kaifiyat, P.102 - 103.

16. MM, v.125, Brahroanapalli Kaifiyat, P.34-36.

17. MM, V. 109, Siriyavaram Village Kaifiyat, P.284-286.

18. MM. V.127, Some of the Laws in Koilkuntla Taluk, P.112.

19. MM, V. 129, Akavidu Village Kaifiyat, Griddalur, P. 45-49.

20. MM, V.127, Some of the Laws in Kamalapuram Taluk, P.50-54.

21. MM, V. 115, Duvvuri Paragana Kaifiyat, Cuddapah Taluk, P.34-36.

22. MM. V. 265-II, Badvel Taluk, P. 65-66. Similar obligations are found in MM, V. 265-1, P.61; V. 98-II, Chilaraakuru kaifiyat, P. 43, 44, 109. Cow is a sacred animal to the Hindus. Varanasi is religiously considered to be the roost important place of pilgrimage by the Hindus. Brahmins are respected a lot since they perform all the religious activities for the Hindus. So doing anything against a cow or a Brahmin, that too in Varanasi, is considered to be a big sin by any Hindu. This must have been the reason for the Hindu rulers during the medieval period to pass such statements as social codes to be observed by the people. It might have been thought that observing such religious norms would reduce irresponsibility among the people in community work.

23. MM, V. 12, Hanumadgundam Village Kaifiyat, P.68 - 73.

24. Inscriptions of Ceded Districts (Hereafter Ins. Ced. Dts.,) 46; Topographical List of the Inscriptions of Madras Presidency, (Hereafter TLIMP) 860.

25. Ins. Ced. Dts., 85; TLIMP, 414.

26. IAP, Cuddapah District, Part III, 239.

27. SII, IX, Part I, 21; Also in Andhra Pradesh Archaeological Series, 3, P.47; Hyderabad Archaeological Series. 18, P.44-46. Bittuvata or Bhattavarti was basically an assignment of revenue or lands granted to Brahmins at a low rent, or rent-free, for their subsistence; the lands in such cases being mostly held in severalty. The term sometimes designates a village, the lands of which are permanently distributed among hereditary shares. In the present context it simply refers to the free gift of land for the upkeep of a tank.

28. SII, XV, 53; XIII, 308; XI, Part - II, 151.

29. SIX, XX, 116.

30. IAP, Cuddapah District, Part-Ill, 61.

31. SII, III. 99.

32. SII., XIV, 231; XIII, 173A.

33. SII, XVIII, 65, 111.

34. SII, XV, 57.

35. MM, V.106, Avudur Kaifiyat, Chintakunta Taluk, P.305 - 308, 319 - 320; V.118, Toollamadugu Kaifiyat, P.179-191; V.136, Podathurthi Kaifiyat, P.40; V. 142, Pedavenuthurla Kaifiyat, P. 5; V. 142, Yerragudigramam Kaifiyat, P.42; V.145, Chitvel Kaifiyat, P.51 - 79.

36. MM, V.106, Nandimandalam Kaifiyat, Chintakunta Taluk, P.141 - 146.The reference point is sometime between 1796 and 1806.

37. Chittoor RDs, 3 March 1917, No.98.

38. Dasabandam inams did find their place in the Kaifiyats of the Mackenzie Manuscripts. They record not only the grant of Dasabandam inams but also resumption of some of these inams wherever the Dasabandamdars were not properly carrying out their repairs.

39. MM, V.125, Ramapuram Kaifiyat, P.49, Mallinenipattanam Kaifiyat, P.61, 68-71.

40. MM, V.138, Sunkesula Kaifiyat, P.82.

41. MM V.140, Channurusaram Kaifiyat, P.119.

42. MM, V. 114, Kotapadu Kaifiyat, P.53.

43. MM, V.136, Vetapalli Kaifiyat, P.32-33.

44. MM, V. 136, Thummaluru Kaifiyat, P.1-4.

45. MM, V.109, Nelandalur Kaifiyat, Chitvel Taluk, P.26-27.

46. MM, V.265-II, Some of the Laws in Griddalur Village, P.88.

Violation of the obligation of maintaining the source in good repair would amount to killing a cow in the city of Kasi (Varanasi). Though it was a period of Muslim rule, the social code and the popular belief system was not interfered with by the rulers.

47. MM, V.128, Chintapallipadu Kaifiyat, P.27-35.

48. MM, V.106, Kaluvepalli Kaifiyat, Chintakunta Taluk, P. 233-240.

49. MM, V.106, Animela Samatu Vempalli Kaifiyat, Chintakunta Taluk, P.83-90, Palagiri Samatu Vempalli Kaifiyat, P. 107-117.

50. MM, V.106, Nandimandalam Kaifiyat, Chintakunta Taluk, P.131-146; V.114, Juvvalapalli Kaifiyat, Siddavatam Taluk, P.113-114; V.118, Channampalli Shrotriem Village, Jammalamadugu Taluk, P.45-59; V.136, Pedda Cheppalli, Chinna Cheppalli, Kamalapuram Taluk, P.98-99, 102.

51. CDR, June 1823, V. 4595, P.262.

52. Extract from the Diary of General Observations for the Month of March 1857 made by Lieutenant Palmer, Executive Engineer in Cuddapah, PBR, 30 June 1857, V.2602, No.1231, P.10788, 10791.

53. CDR, March 1822, V.4573, P.53; PBR, 6 Nov. 1834, V.1427, No.63, P.11984; PBR 17 July 1856, V.2538, No.785, P.12935-12936.

54. PBR, 6 November 1834, V. 1427, No.63, P.11982; PBR, 24 December 1846, Vol. 2057, Nos. 21.22,P.17005.

55. RBR, 4 December 1834, V. 1432, Nos. 34, 35, P.13588.

56. Extract from a General Letter from the Court of Directors, 22 September, 1846, PBR, 24 Dec. 1846, V.2057, P.17005; John Maskell, Circular Orders of the Board of Revenue from A.P. 182" to 1850 inclusive, Madras, 1855, P.351.

57. Revenue. 13 October 1875, No. 1491.

58. Revenue, 17 July 1879, No.1489.

59. Revenue, 19 March 1880. No.342.

60. Revenue, 18 November 1904, No. 1285.

61. Revenue, 18 July 1908, NO.1965.

62. Revenue, 21 June 1913, No. 1842 (Misc.)

63. Revenue. 4 January 1933, No.24.

64. Revenue. 9 September 1919, No.2100.

65. PWD(I) . 10 September 1892, No.772.

66. PWD(I). 3 May 1884, No.451.

67. For details of the rules made by the government see Annexure 4.1.

68. Some of these petitions are found in Land Revenue (Misc.). 19 Jan.1891, No.436; Land Revenue(Misc.). 15 June 1893, No. 3560; Land Revenue. 18 March 1911, No.1133; Land Revenue. 19 June 1911, No.2346.

69. Papers on Inam Settlement, p.186.

70. Standing Orders of the Board of Revenue (Land Revenue, Settlement and Miscellaneous) Revised upto 30 September 1930. Madras, 1931, P.414.

71. Resettlement of Pulivendla Taluk of Cuddapah District, (Rev. Sett. Sur.. L. Rds. . and Agri.) . 29 Nov. 1909,No.428, P.50; Cuddapah RDs. No.429, 30 Aug. 1910. Third class sources are minor river channels, spring channels and rainfed tanks affording more than five and less than eight months' supply. Resettlement of Rayachoti Taluk of Cuddapah District, PBR (Rev. Sett.. Sur.. L.Rds.. and Agri.). 13 September 1913,No.256, P. 4, Cuddapah RDs. No 440, 27 Oct. 1913.

72. To mention some of them, North Acrot RDs - No. 374, 6-2-1894, 388, 6-2-1894, 675, 24-2-1894, 2070, 26-5-1894, 3075, 6-7-1895, 3879, 26-8-1895, 3415, 26-7-1898, 1652, 19-9-1896, 1620, 15-9-1896, 1734, 27-9-1896, 1765, 3-10-1896, 1813, 10-10-1896, 1828, 13-10-1896, 1857, 17-10-1896, 130, 19-1-1898, 162, 21-1-1898, 856, 16-4-1898, 854, 16-4-1898, 204, 10-4-1899, 23, 17-1-1903, 43, 31-1-1903, 44, 31-1-1903, 46, 31-1-1903, 60, 10-2-1903, 91, 25-2-1903, 245, 4-5-1903 716, 7-12-1903, 15, 7-11-1904, 724, 10-10-1904, 746, 24-10-1904, 747, 24-10-1904, 794, 9-11-1904, 12,6-1-1904, 124, 20-2-1909, 152, 5-3-1909, 184, 17-3-1909, 428, 30-6-1909, 429, 3-7-1909, 529, 5-8-1909, 569,17-8-1909 682, 3-10-1909 792 9-11-1909, 130, 1-2-1910, 305, 4-4-1910, 306, 4-4-1910, 337, 21-4-1910, 359, 26-4-1910, 707, 23-9-1910,

731, 27-10-1910, 756, 13-11-1910, 758, 15-11-1910, 789, 21-12-1910, Chittoor RDs - No. 67, 26-2-1911, 110, 10-4-1911, 122, 30-4-1911, 132, 16-15-1911, 102, 15-4-1912, 119, 3-7-1912, 121, 23-7-1912, 122, 23-7-1912, 179, 19-9-1912, 187, 24-9-1912, 197, 29-4-1915, 198, 29-4-1915, 236, 4-6-1915, 241, 7-6-1915, 257, 17-6-1915, 453, 11-10-1916, 573, 5-12-1916, 624, 25-12-1916, 650, 11-3-1916, 395, 25-7-1917, 491, 19-6-1918, 4, 8-1-1919, 12473, 21-2-1921, 559, 24-1-1922, 1938, 6-3-1922, 6058, 13-10-1922, 10555, 3-11-1923, 12, 1-8-1924, 2376, 31-3-1924, 6722, 25-12-1925, 4050, 15-6-1926, 4388, 3-7-1926, 4694, 18-10-1926, 2252, 14-5-1927, 9681, 10-11-1927, 54, 14-3-1928, 219, 29-1-1928, 848, 19-5-1928, 5509, 17-7-1928, 7568, 13-9-1928, 7180, 25-11-1929, 8584, 16-2-1930-.Anantapur RDs -No. 437, 16-11-1901, 26, 19-1-1901, 141, 9-4-1907, 44, 30-1-1908, 112, 31-5-1909, 144, 28-6-1909, 298, 19-10-1909, 346, 29-11-1909, 36, 3-2-1910, 94, 23-3-1911, 238, 12-8-1911, 285, 11-9-1911, 49, 26-7-1918, 34, 18-6-1918, 72, 31-8-1918, 845, 3-9-1921, 157, 11-7-1923, 341, 21-6-1923, 1036, 30-11-1923, 4395, 3-11-1924, 83, 15-1-1924, 1759, 27-7-1925, 1930, 31-12-1925, 4230, 12-10-1925, 5961, 27-9-1925, 1425, 7-3-1927, 8332, 29-3-1928, 4542, 28-6-1928,5903, 11-10-1928, 8230, 23-11-1928, 2197, 29-3-1929, 2167, 30-4-1930, 2672, 30-4-1930, 8322, 25-11-1930, 7973, 26-11-1930, 7520, 25-5-1931, 2191, 22-7-1931, 4495, 3-8-1931, 5971, 18-9-1931, 2574, 19-5-1933, 1969, 25-3-1935, 4526, 2-10-1936, 41, 7-6-1937, 3923, 6-12-1938, 1015, 1-5-1939, 5458, 15-5-1939, 249, 17-7-1940.Kurnool RDs., No.1134, 5-3-1895, 4202, 15-11-1896, 4203, 15-11-1896, 4207, 18-11-1896, 4209, 19-11-1896, 207, 15-11-1903, 8, 4-1-1905, 6, 11-1-1905, 92, 15-7-1905, 124, 19-6-1907, 160, 31-9-1908, 346, 29-1-1910, 182, 10-6-1910, 295, 26-9-1910, 114, 24-6-1911, 250, 6-11-1911, 427, 27-1-1914, 1322, 31-12-1925, 3423, 5-8-1929, 2852, 7-7-1935, 2099, 30-6-1937. Most of these inams, were in Alur and Adoni taluks of Bellary district. These two taluks were later transferred to Kurnool district.

73 Kurnool RDs. No.3423, 5-8-1929, 124, 19-6-1907, 313, 29-9-1917; Anantapur RDs. No. 845/20-A-10, 3-9-1921, 2474/40, 3-2-1942; The details of the enjoyers of the Dasabandam Inams are found in Appendices III & IV.

74, Cuddapah RDs. No 168, 24-3-1908; 323, 29-6-1909; 185, 16-5-1914; 127, 27-3-1714; Chittoor RDs, No. 9984, 20-1-1928, 219, 29-1-1928, 7042, 12-12-1929.

75 Anantapur RDs. No.2230, 17-11-1925, 2672, 30-4-1930, Chittoor RDs. No.4186, 8-6-1920.

76 Kurnool RDs. No. 1134, 5-3-1895; North Arcot RPs, No.4812, 24-9-1894.

77 Kurnool RDs. No. 4202, 15-11-1896.

78 Cuddapah RDs. No. 579, 14-7-1905.

79. Cuddapah RDs, No. 452, 1-12-1912' Anantapur RDs. No.201, 25-6-1901, No.2118, 19-1-1929.

80. Chittoor RDs, No. 4859, 11-11-1918, 10583, 26-11-1920, 12477, 8-1-1922, 10556, 3-11-1923.

81. Chittoor RDs, No.4186, 8-6-1920.

82. Letter from A.J.B. Atkinson, Acting Sub-Collector, to S.T. Mc Carthy, Acting Collector of Cuddapah, dated 7 Aug. 1880, No.268, Revenue. 15 Nov. 1880, No.1495.

83. Resettlement of Pulivendla Taluk, PBR (Rev. Sett.. Sur. . L.Rds. . and Agri.) , 29 Nov. 1909, No.428; Cuddapah RDs. No.429, 30-8-1910, P.23.

84. It is quite possible that when the SDI was conceived, the inamdar himself was responsible for the collection of the revenue and transferred the same after retaining his Shamilat share. The new tenurial system with the revenue collecting bureaucracy made matters very cumbersome.

85. Cuddapah RDs. No.315, 17-9-1900.

86. Cuddapah RDs. No. 3136, 6-12-1899; No.429, 25-9-1902.

87. Anantapur RDs. No.444, 13-12-1907.

88. Land Revenue (Misc.). 19 Jan. 1891, No.436; Land Revenue. 18 March 1911, No.1133.

89. Land Revenue (Misc.), 20 Dec. 1892, No.8382.

90. Cuddapah RDs. No. 4255, 12-7-1897.

91. Letter from W.S. Whiteside, Collector of North Arcot, to the Secretary to the Board of Revenue, dated 13 July 1881, No. 251, Revenue. 30 Aug. 1881, No.1296.

92. Kurnool RDs. No. 1134, 5-3-1895, 4203, 15-11-1896, 4209, 19-11-1896, 160, 31-9-1908, 346, 29-11-1910, 295, 26-9-1910, 182, 10-6-1910, 114, 24-6-1911, 1322, 31-12-1925.

93. Revenue. 17 Aug. 1871, No.140.

94. A detailed discussion on the various aspects of these institutions is found in E.Walter J. Coward's Irrigation and Agricultural Development in Asia: Perspectives from the Social Sciences. Cornell, 1980.

95. Robert Wade, Village Republics: Economic Conditions for Collective Action in Sounth India. Cambridge, 1987.

96.

591.

97. NDI,Part I, 117, Part II, 47, 48, 50, Part III, 18.

98. Appadorai, Economic Conditions, p.228.

99. Mahalingam, Economic Life, p.154.

100. Mahalingam, Economic Life, p.57; Kanduga means a field of corn and kattukodage, a large channel for irrigating the land and supplying reservoirs, according to Wilson's Glossary.

101. Letter from Thomas Munro, to the Collectors of Harpanhally and Cumbum, CDR. V.648, p. 170.

102. Letter from Thomas Munro, to the Collectors of Harpanhally and Cumbum, CDR, V.648, p.172-173.

103. PBR, 26 Nov. 1917, No.279, P.1.

104. Extract from a Letter of Colonel Munro to the Private Secretary to the Governor, dated 20 June 1806, PBR, 17 July 1856, V.2538, No.62, P.12917.

105. Report of the Committee Appointed under the Famine Commission to Enquire into the Management of Irrigation Works in Madras. Orissa and Midnapur. together with a Supplement on the Irrigation System of the Soane Canals. Behar, Calcutta 1879, P.8.

106. A.Sarada Raju, Economic Conditions in the Madras Presidency 1800 - 1850. Madras, 1941, P.124.

107. Similar arguments are found in A.V. Balasubramaniam, T.M. Mukundan, Uma Shankari, "Indigenous Institutions for Rural Development." Mimeo, Institute of Public Enterprise, Hyderabad, 1988.

108. Letter from the Acting Secretary to the Government of Fort St. George, to the Member of the Legislative Council of India for the Madras Presidency, No.294, dated 26 March 1857, Revenue,27 Nov. 1857,No.1233, P.13.

109. Government of India, Legislative Department, The Madras Code: Consisting of the Unrepealed Madras Regulations. Local Acts of the Governor General in Council in Force in Madras, and Acts of the Governor of Fort St.George in Council, with Chronological Tables, and Appendix Containing Notifications, Rules and Orders, Issued under the Scheduled Districts Act. 1874 and Act XXIV of 1839 for Certain Scheduled Districts, together with an Index. Third Edition, Vol.1, Calcutta, 1902, p.127.

110. Letter from Capt. J. Mullins, Deputy Engineer, Nellore, to Lt. Col. E. Lawford, Deputy Chief Engineer, 10 Oct. 1859, No. 2396, PBR, 27 Oct. 1859, No.4376, P.469.

111. PBR, 18 Sept. 1861, No. 5068, P.458 - 460; PBR, Oct. 1868, No.7571, P.7578 - 7586; Proposal for the commutation of customary labour to water-cess was made as early as 1858, Letter from J.D. Sim, Secretary to the Board of Revenue to all Collectors, PBR, 19 November 1858, No. 4294, P.1535.

112. B.S. Baliga, Compendium History of Various Irrigation Bills and the Need for an Irrigation Act. Madras, 1961, P.7.

113. T.M. Mukundan, "The Ery Systems of South India", PPST Bulletin (Patriotic and People Oriented Science and Technology Bulletin). Sept. 1988, Serial No.16, P.15.

114. Revenue. 5 Nov. 1917, No.3485, P.7.

115. Cuddapah RDs. 7-7-1905, No.553.

116. The Ceded Districts Irrigation Committee's Observations, Anantapur RDs. 13-9-1927, No.896.

117. Revenue, 5 Nov. 1917, No.3485,P.17.

118. PBR (Rev.Sett..Sur.. LRds.. &Agri.).10 Nov. 1915.No. 297; Revenue. 2. April 1917, No.976.

119. Extracted from the aims and objectives of different Irrigation Panchayats in the region under study.

120. Letter from A.R. Banerji, Collector of Cuddapah, to the Secretary to the Commissioner of Rev. Sett., Sur., L.Rds., & Agri., dated 8 March 1916, Revenue. 3 April 1917, No.976. P.9. Cuddapah RDs.17-7-1916.No.391.

121. Kurnool Taluk- 1. Kalwa Irrigation Board 2. Chakirevu Kalwa Irrigation Board 3. Ulindakonda Irrigation Board 4. Belagal Irrigation Board; Nandyal Taluk- Nandyal Irrigation Panchayat for the Nandyal tank; Sirvel Taluk- Rudravaram Irrigation Panchayat;Markapur Taluk- Cumbum Tank Irrigation Board,Kurnool RDs. 23-9-1916,No.263; 23-11-1916, No.304.

122. Nirmal Sengupta's study reveals the existence of similar kind of institutional framework in some areas of the Anantapur district even today though with little variation. Neither the caste nor the village panchayat presides over irrigation tasks as there is a specific irrigation organisation for that. Each main distributary is under the supervision of a leader locally called Penna Pedda. For actual works, there are water distributors called Neeru Kattudar. The Penna Peddas must not be confused with the water distributors. The Neeru Kattudars are paid in kind by the farmers. The Penna Peddas do not receive any compensation and hold their position in an honorary capacity. Nirmal Sengupta, Managing Common Property: Irrigation in India and the Philippines, New Delhi, 1991, p.118.

Annexure 4.1

RULES MADE BY THE BRITISH GOVERNMENT UNDER THE CROWN, REGARDING THE REPAIR AND MAINTENANCE OF DASABANDAM WORKS:

1. In as much as dasabandam inams were originally granted to encourage the construction of irrigation works in districts ill-supplied with means of irrigation (and the amounts of the inams were presumably calculated on the assumed capital 'cost and annual cost of maintenance), the dasabandamdars should be required to maintain the works in a due state of repair.

2. When a dasabandam irrigation work is reported to be in a bad state of repair and the restoration involves the construction or re-construction of sluices and surplus escapes, the Collector, or, in the case of works included in the list of minor works in charge of the PWD, the Executive Engineer, shall cause an estimate to be prepared for the thorough repair of the work.

3. The cost of restoration of a dasabandam irrigation work, as provided in rule 2, shall be divided so far as it relates to the construction, or re-construction of sluices and surplus escapes, between government and the dasabandam inamdars in proportion to the interest each has in the work, this interest being determined by the ratio of the value of the inams to the average annual collection of revenue during the previous five years, but the inamdars should be first asked to give their consent to the execution of the necessary works, the cost of ordinary repairs included in the estimate being met wholly by the inamdars. If they refuse to consent, or, having consented, subsequently fail to pay their share of the cost, the inam will be resumed.

4. When a dasabandam irrigation work is reported to be in need of ordinary repairs, which do not involve the construction of any masonry work, the Collector shall call upon the dasabandam Inamdars to execute the repairs necessary to bring the work upto the standard of efficiency ordinarily considered necessary in the case of ordinary government irrigation works and shall fix a reasonable time within which the repairs shall be carried out, failing which the inam should be fully assessed.

5. The restoration of dasabandam irrigation works, as provided for in rule 2, shall be carried out by the PWD, or by the establishment under collectors, the actual execution of the work being entrusted to the dasabandara Inamdars. If they fail to execute the work in a satisfactory manner, the inam may be fully assessed.

6. In the case of dasabandam irrigation works, a fixed charge of 16.5 per cent on "works" outlay - 12 percent for establishment, 1 percent for audit and account establishment, 2.5 percent for pensionary charges - should be levied, where the cost amounts to Rs.1000 or over. Percentage charges should also be levied on such works costing less than Rs.1000 unless the levy is specifically remitted by the State government..

Source: Kurnool RDs, No.49, 2 April 1900; G.O.No 154, PWD(I), 10 Feb. 1900, PBR (Rev. Sett., L.Rds, and Agri.), No. 103, 12 March 1900; For rule 6, Standing Orders of the Board of Revenue (LR. Sett.. & Misc.), Vol.11, Madras, 1958, P.77.

STATEMENT SHOWING THE KHANDAM DASABANDAM INAM LANDS TRANSFERRED TO CIRCAR AT THE RESETTLEMENT IN THE SEVERAL VILLAGES OF THE CH1TTOOR TALUK OF CHITTOOR DISTRICT (1916)

Sl. No.	Village	Name of the Source
1.	Kothakota	Kukkala Nagireddi Bhavi
2.	Kothakota	Palepalle Papireddi Bhavi
3.	Bytapalle	Errakamayya Bhavi
4.	Potu Kanama	Andhra Muthyalu Bhavi
5.	Potu Kanama	Gorantla Chengana Bhavi
6.	Potu Kanama	Vodlamudi Chengamma Bhavi
7.	Potu Kanama	Karnam Cholappa Bhavi
8.	Polakala	Vadlachutarayadu Bhavi
9.	Polakala	Dasabandam Niru Katta Raraigani Bhavi
10.	Polakala	Bhesroineni Venkatappa Bhavi
11.	Erracheruvapalli	Gorju Bhavi
12.	Erracheruvapal1i	Kumara Bhavi
13.	Erracheruvapalli	Pedda Bhavi
14.	Erracheruvapalli	Dasabandam Bhavi
15.	Erracheruvapalli	Morrapu Bhavi
16.	Erracheruvapalli	Ippamani Bhavi
17.	Erracheruvapalli	Veerappa Bhavi
18.	Mudugdam	Peddartam Bhavi
19.	Thenebanda	Dasabandam Bhavi
20.	Dyavamasapalle	Muni Reddi Bhavi
21.	Velker	Perumal Reddi Bhavi
22.	Velkur	Papireddi Bhavi
23.	Velkur	Narayanareddi Bhavi
24.	Velkur	Peyan Reddi Bhavi
25.	Velkur	Narasa Reddi Bhavi
26.	Velkur	Karnam Bhavi
27.	Velkur	Sidda Reddi Bhavi
28.	Sam Reddipalle	Abbireddi Bhavi
29.	Pulikallu	Ayya Kondayya Bhavi
30.	Pulikallu	Bayyareddi Bhavi
31.	Vezzupalle	Mangala Chandrigani Bhavi
32.	Vezzupalle	Sannagunta Bhavi
33.	Vezzupalle	Mangala Venkatrayani Bhavi
34.	Vezzupalle	Peddavandla Bhavi
35.	Vezzupalle	Erra Chinnayya Bhavi
36.	Vezzupalle	Erra Reddigari Bhavi
37.	Vezzupalle	Gudavandla Bhavi
38.	Vezzupalle	Seemalavandla Bhavi
39.	Vezzupalle	Gollavani Bhavi
40.	Vezzupalle	Chakalavandla Bhavi
41.	Vezzupalle	Erram Reddigari Rendu Etala Bhavi
42.	Vezzupalle	Mala Kantigani Bhavi
43.	Nandanur	Kamilreddigari Bhavi
44.	Kaligivedu	Dasabandam Well
45.	Gangadaranellore	Mothranapalle Koneru
46.	Gangadaranellore	Dasabandam Koneru
47.	Kondapalle	Dasabandam Bhavi
48.	Veerakanellore	Guntur Vandla Bhavi
49.	Veerakanellore	Mangala Vandla Bhavi
50.	Vasanthapuram	Dasabandam Pedda Bhavi
51.	Pedda Kalva	Dasabandam Bhavi
52.	Pedda Kalva	Dasabandam Bhavi

Note: The remaining villages contain no cases
Source: Chittoor RDs. No. 98, 3-3-1917.

CHAPTER V

THE KURNOOL-CUDDAPAH CANAL

5.1 Introduction

The importance of developing major irrigation projects and their revenue fetching prospects were very well recognised by the British towards the end of the Company rule itself. It was given top priority after the transfer of power from the East India Company to the Crown, as well. During the Crown's regime, British capital started penetrating into the Indian periphery. One of the main outlets for the British capital was the public works development. Thus, one of the important events of the Crown's period, symptomatic of the emerging imperial capital, was the initiation of private investment in canals. The Madras Irrigation and Canal Company incorporated in England for the construction and operation of navigation and irrigation canal systems in South India, was one such attempt. The construction of Kurnool-Cuddapah Canal by the Madras Irrigation and Canal Company was first of its kind in India and a first ever attempt to construct any major irrigation work in the region of Rayalaseema.

The second section in the present chapter deals with the origin of the Madras Irrigation and Canal Company, the construction of the Kurnool-Cuddapah Canal by it and the causes for its failure. It argues that entrusting the construction and maintenance of an irrigation canal to an overseas private company was bound to be *a* failure because of the Company's limited knowledge about the local agricultural practices and agrarian

conditions. The third section in this chapter deals with the functioning of the canal under the government. It is argued that the canal did not prove to be a success even under the government largely due to the inherent problems carried forward from the previous private company.

5.2 The Madras Irrigation and Canal Company

The construction of the Godavari Anicut in 1847-52 and of the Krishna Anicut in 1853-55, and the evidence of the very large profits that would accrue to the government from the resulting irrigation, attracted very general attention to the chances that existed in the Southern India for profitable irrigation engineering enterprise. After spending considerable sums from its exchequer on the above mentioned works and also on the Pennar and Cauvery works, the government of the Madras Presidency had little surplus revenues to undertake any more and particularly not for remunerative works. Hence, the Government of India, was prepared to encourage any private investment on the development of the resources of the country, both by means of irrigation schemes and the construction of railways. For such companies the state was prepared to provide a certain minimum guarantee on the returns. The Madras Presidency also possessed an enthusiastic supporter of irrigation schemes in Sir Arthur Cotton, who was chiefly instrumental in starting the Godavari and Krishna works, and who was of the opinion that there were many other favourable openings in the Presidency for the extension of irrigation, if only there was the necessary capital. The immediate alternative available to the Government of India at that time, was to attract private investors from England. The

principle of capital being subscribed in England for investment in India under a state guarantee having been admitted, several companies entered the fray for construction and operation of railways. The formation of private canal company for irrigation and navigation was also mooted under a similar principle. The state encouraged such investments. The Madras Irrigation and Canal Company (Limited) (MICC) was the first of its kind proposed in Southern India.

In a letter dated 4th February 1857, Mr. Westwood, on behalf of MICC addressed the Court of Directors on the objects of the Company, which proposed to raise considerable capital for the purpose of constructing canals for irrigation and for internal navigation within the Madras Presidency. The objects the Company had in view were (1) to provide irrigation and canal transit in portions of the districts of Bellary, Kurnool, Cuddapah and Nellore, also Raichore, (2) to provide the means of irrigation in the districts of Coimbatore and South Malabar, and water communication between those districts and the sea-coasts. After a considerable correspondence, the Court of Directors addressed the Government of India on this subject. Their despatch laid down generally that such Companies could never be started without a guarantee, but that they roust conform to conditions similar to those imposed on the Guaranteed Railways, ie., they must be •wholly subject to government supervision and control, and that the right of the government should be reserved to take over the works at a valuation on the expiration of a specified term of years. It was also stated that, to protect the interests of the ryots, the returns of the Companies from irrigation must be

exclusively confined to the sale of water, and must not be connected in any way with the land assessment.[1]

One stipulation was that the MICC had to get its schemes approved by the local government. As Tungabhadra and Coimbatore were in the Presidency of Madras, the Government of Madras was asked for its permission. The Government of Madras wrote to its district collectors in 1858 soliciting their opinion on the merits and demerits of entrusting major irrigation works in the Ceded Districts and Coimbatore to a private company and got unfavourable reports from many of its collectors. It received positive reports only from some engineers. The Madras government itself doubted the abilities of a private company to execute and maintain such large works spread over vast tracts of the province, and strongly objected to the grant of a minimum rate of interest since the expected returns were very high.[2] Further it was doubtful whether, considering that the returns from irrigation works were always considerable and often immense, the assistance of a third party was really needed. The advantage to be gained by making such undertakings over to a private Company, when difficulties and complications were sure to follow, was said to be not very apparent, while capital and skill could be obtained more cheaply and employed more usefully for the country and the people if the government was to act for itself. It was also observed that "great objections exist to the guarantee of a minimum rate of interest; the measure acts as a direct premium upon extravagance and delay, and the interference of the Government, which is necessary in such a case, is unpalatable to a private Company and a constant source of irritation."[3]

The Secretary of State for India, who had in the meantime, taken the place of the Court of Directors, replied to the above arguments. He admitted the weight of the objections raised, but believed that arrangements might be made which would in a great degree obviate them, and stated that it was deemed so important to encourage the introduction into India of British capital and enterprise, that it was resolved to accept the co-operation of the MICC and to meet its proposals with the offer of liberal terms. The Madras government was accordingly requested, if it did not consider the Tungabhadra Project a suitable one, to select some other from among the various irrigation projects which had, from time to time, been brought to its notice, which might be executed at a cost not exceeding one million sterling.[4]

In 1859, the question of the work to be chosen was referred to Arthur Cotton for his opinion, and in his reply, he gave his reasons at great length for preferring the Tungabhadra project. Briefly stated, these reasons were:[5]

1. It would be the most profitable, utilising for seven months in the year a large quantity of water that then ran to waste into the sea.
2. It would affect a very large population.
3. It met the desideratum of having portions which might be quickly executed, and would form complete projects in themselves, yielding almost immediate returns. Nothing was wanted but an anicut across the Tungabhadra, and, it was supposed, about 20 miles of canals, to turn the water of that river into the Pennar.

4. The scheme was capable of great extension. A canal, Colonel Cotton said, might easily be cut to Puna, 600 miles off, at a cost of Rs. 1000 per mile; an extension might be made to the West Coast down to the harbour of Beiteal, said to be one of the best in India, and finally communication might be established by a line of navigation, 200 miles long, with the East Coast Canal running from the Krishna Delta to Madras.

Thus though the Madras Government was not in favour of the work being undertaken by a private Company, the Government of India was desirous of attracting private capital to such enterprises and the highly successful results of irrigation works in the delta tracts and the warm support lent by Sir Arthur Cotton and other irrigation experts to the proposal seemed to have contributed to the decision of the Secretary of State to accept the Company's proposal to start its work on Tungabhadra project. Thus originated the construction of the Kurnool-Cuddapah Canal by the MICC as part of its major project on Tungabhadra. The Kurnool-Cuddapah Canal formed only a section of the original ambitious design undertaken by the MICC in accordance with the contracts between the Secretary of State and the Company. The work was to be carried out by the MICC subject to the supervision and control of the Madras government which guaranteed interest at 5 per cent on a capital outlay of 1,000,000.

The then Secretary of State, Lord Stanley, granted most of the concessions the Company had asked for but laid down the following conditions:[6]

1. The operations of the Company were to be confined to one work or project approved by the local government at an estimated cost of 1,000,000,
2. a minimum interest of 5 percent per annum was to be guaranteed,
3. within six months after the expiry of 25 years from the commencement of this present arrangement, the Secretary of State for India would have the option of purchasing the works constructed at a sum equal to the average market price at which the shares had been selling in London during the three preceding years,
4. the plans for the various works were to be approved by the local government, and efficiently maintained by the Company,
5. the government would decide in what manner the returns from the works constructed were levied, and would have the option of purchasing the water supplied for irrigation at a price to be agreed upon with the Company,
6. all surplus returns after the payment of expenses and of the guaranteed minimum interest was to be divided equally between the government and the Company,
7. all the land required would be provided free by the government and,
8. the Secretary of State for India would have the same powers of supervision and control over the proceedings, preliminary expenses, and the future expenditure of the MICC as he did over those of the guaranteed Indian railway companies.

Table 5.1

IRRIGATION POTENTIAL UNDER THE K-C CANAL

District (1)	Taluk (2)	Area Commanded and Arable (3) Acs.	Area for which Distributaries Provided (4) Acs.
Kurnool	Ramallakot	2946	2607
	Nandikotkur	102141	64487
	Nandyal	58602	49550
	Koilkuntla	62632	26824
	Sirvel	57885	3503
Cuddapah	Jammalamadugu	2145	2145
	Proddatur	10860	7680
	Cuddapah	24304	7895
Total		321515	164691

Source: PWD(I). 10 June 1882, No.455, 456, P.31; Board of Revenue (Rev.Sett.. L.Rds.. and Agrl.), 8 February 1895, No.28, P. 21; Revenue. 18 January 1896, No.18.

The construction of the Kurnool-Cuddapah Canal (K-C Canal) was sanctioned in 1860. It runs through the five taluks of Kurnool, Nandikotkur, Nandyal, Sirvel and Koilkuntla in the Kurnool district and through the three taluks of Jammalamadugu, Proddatur and Cuddapah of the Cuddapah district. The head sluice is at Sunkesula 17 miles west of Kurnool town, in the Kurnool taluk where there is an anicut constructed across the Tungabhadra. The entire length of the canal is 190 miles of which 136 miles lie in the Kurnool district. Table 5.1 gives the taluk- wise irrigation potential under the K-C Canal. The Canal was practically completed in 1871. The Canal was intended for irrigation as well as for navigation, though there **was** no effort to pursue the latter objective.

The water-rate at first was settled by the MICC at Rupees 4 per acre but it was raised in 1866 to rupees 6, and certain crops (such as sugarcane) were charged rupees 12, though it was admitted that water could not be supplied to them (except under tanks) for double the time than to paddy, or for a whole year.[7]

The rules under the MICC for the distribution of water under the K-C Canal were as follows.[8]

Rule I. Before the 1st day of April in each year the Agent of the Company shall inform the Collectors of the districts what portions of each village, under the influence of the Canal, he is prepared to irrigate during the ensuing irrigation season, and the Collectors shall have the above information duly posted up and publicly notified in each village concerned through the Karanams before the 1st day of May following. The Canal Administration shall, at the same time, send a notice to the Karanams of each village in anticipation of the Collector's, order.

Rule II. No water shall be taken from the Canal for irrigation purposes without a written application through the Canal officers to the village karanams. The Canal officers will then be at liberty to supply water immediately on the receipt of applications and these on transmission to the karanams will be completed with regard to the revenue details by the latter and transmitted to the Tahsildars.

Rule III. Applications will be recorded for whole revenue fields, or recorded sub-numbers of survey fields, however small they may be. Sub-divisions of fields when necessary will be made by the revenue authorities. The charge will be on the recorded

extent of the field. This rule will be subject to relaxation under circumstances beyond the control of the ryots.

Rule IV. If water is taken without application, the cultivator will not be entitled to remission, and he will be required to pay a rate of 8 annas an acre for the first offence, 1 Rupee an acre for the second offence in addition to the regular rate, and thereafter such an addition not exceeding double the rate as may be considered requisite by the settling officers.

Rule V. The Company would not, except under their tanks, guarantee a supply of water beyond the 31st December, but, so far as water may be available in the Tungabhadra or other streams feeding the Canal, it will be supplied at the rate of 1 Rupee a month so long as the supply lasts until the annual closing of the Canal which will be notified not later than the 1st December.

Rule VI. The full charge for water on application shall be from Rs.2 to Rs. 6.[9]

Table 5.2 gives the details of the area irrigated, revenue derived and the expenditure spent, during the years when the Canal was under the MICC. Per acre revenue throughout (excepting the famine years) was less than the per acre expenses spent on the Canal. Except during the Great Famine years of 1876-78, the area irrigated under the Canal was very low, and much below the capacity of the Canal. Thus, the Canal under the privately maintained MICC did not prove to be a success. There was not much demand for irrigation water under the Canal. The Madras government had realised the problem and was convinced that the appointment of a special revenue officer of standing was necessary to ascertain the facts and accordingly appointed

Table 5.2
IRRIGATION REVENUE AND CHARGES UNDER THE K-C CANAL: 1863-64 - 1879-80

Year Ending 30th June	Area Irrigated	Revenue			Charges				
		Irrigation Receipts	Other Receipt	Total	Repairs	Establishment	Total	Per Acre Revenue	Per Acre Expenses
(1)	(2) Acs.	(3) Rs.	(4) Rs.	(5) Rs.	(6) Rs.	(7) Rs.	(8) Rs.	(9) Rs.	(10) Rs.
1863-64	18	73	-	73	-	2460	2460	4.06	136.67
1864-65	192	766	-	766	-	2392	2392	3.99	12.46
1865-66	816	3714	-	3714	-	2068	2068	4.55	2.53
1866-67	1396	10162	57	10219	115	1791	1906	7.32	1.37
1867-68	1138	11214	-	11214	238	1544	1782	9.85	1.57
1868-69	1078	10967	211	11178	3902	463	4365	10.37	4.05
1869-70	1164	10491	152	10643	9684	4390	14074	9.14	12.09
1870-71	1516	7827	306	8133	1156	13625	14781	5.36	9.75
1871-72	7536	33566	849	34415	1931	73851	75782	4.57	10.06
1872-73	9405	50017	871	50888	11206	97808	109014	5.41	11.59
1873-74	13355	69767	1310	71077	25243	140456	165699	5.32	12.41
1874-75	13408	50713	2194	52907	64254	122788	187042	3.95	13.95
1875-76	14763	57587	1719	59306	42689	109086	151775	4.02	10.28
1876-77	90285	247434	1354	248788	42498	116503	159001	2.76	1.76
1877-78	50918	153243	2066	155309	33679	109581	143260	3.05	2.81
1878-79	18361	89501	1521	91022	52518	181161	233679	4.96	12.73
1879-80	18655	75746	1734	77480	4676	100805	105481	4.15	5.65
1st Half of 1880	12051	51746	2910	54656	12866	62096	74962	4.54	6.22

Source : PWD(I), 10 June 1882, No.455, 456, P.31.

Mr. A. Lister for the Job. According to Lister, the failure of the Company was due to the following causes.[10]

1. The absence of a good revenue administration in the taluks traversed by the Canal.
2. The unsatisfactory relations which have existed between revenue officers and the Company.
3. The feeling of antagonism which has arisen between the Company and the ryots.
4. The high rates demanded for water before the advantages of irrigation were known.
5. The uncertainty of the sufficient supply of water and the unsatisfactory arrangements for its distribution.
6. The whole system of management which exposes the ryots to worries and exactions.
7. The large amount of regada soil in the commanded lands.

The extension of irrigation has been affected but not to such an extent as to make an appreciable difference between success and failure by

1. The sparseness of population.
2. The want of communication and the absence of local markets for rice.
3. The unfitness of the large bullocks of Kurnool for deep ploughing.
4. The lack of manure.
5. The low level of village roads.
6. Soudoo or efflorescence of salt lands.
7. The general ignorance of the method of wet cultivation in Kurnool.

The neglect with regard to the issue of irrigation pattas for each fasli, the general withdrawal of the karanams for lengthened periods from their villages, accounts hurriedly cooked up on plain paper at the last moment for the creation of settlement figures, the entirely neglected collection of water-rates, revenue collections made with an extortionate process fees, unchecked field measurements, the worthlessness of the work done by the Special Revenue Inspectors, the non-detection by Karanams and revenue Officers of no surreptitious irrigation, the general indifference of the Tahsildars and their subordinates, are the indicators of the absence of a good revenue administration in the taluks traversed by the Canal. Within such an administrative structure the arrangement that the government buy the water first from the Company and then sell it to the ryots, didn't work out well. It also failed to inspire the Company with the confidence that all irrigation was properly brought to account.

From the ryots' point of view, the applicants for water had to satisfy both the revenue authorities and the Company authorities by greasing their palms. Many ryots were generally unwilling or unable to pay through. As there was no co-operation between the revenue personnel of the government and the water personnel of the Company, they squeezed the cultivators.[11]

The Company decisions were unpopular with the ryots; from the beginning the Company had refused to believe that the ryots would not take the water simply because they did not want it at the price; it was the indifference of the Collector, the non-publication of rules, the indolence of the Tahsildar, or the

opposition of the village officers; anything but the plain unpalatable truth that a Canal had been made in a country where the ryots did not appreciate or understand the advantages of irrigation. The high initial prices demanded for water(before the advantages of irrigation were known) made ryots more determined to stick to their old methods of dry cultivation than use irrigation water from the Canal. The Company was possibly misled that the ryots would avail themselves of the water as soon as they could get it. Hence they fixed what they considered a fair price for water with reference to the cost of their works and the area they could irrigate, without taking into account that there was no demand for the commodity they had brought into the market.

The system of application for water was a great annoyance to the ryots. As mentioned earlier, under the rules under MICC, the potential users of water were required to apply in advance for irrigation water. Moreover they didn't guarantee the supply of water beyond a point of time. In addition to this insecurity of sufficient supply while water was in the Canal, there was also the doubt about when the Canal would be closed. In such a situation, it would be discouraging to the ryots, to cultivate wet crops which needed continuous irrigation, sometimes beyond the time, given by the Company.

Above all, the great irremediable reason why irrigation did not expand was the large amount of Regada soil among the lands commanded by the Canal. Jonna, which was the staple crop of the region, grew luxuriantly on these lands in ordinary seasons. It required but little watching during its growth. So the ryots

would not convert their splendid gannet lands into paddy fields until it was clear to them that they would get large profits from doing so. The black regada soils were suitable for cotton cultivation also. The cotton boom of the 1860s resulted in an unprecedented rise in price of cotton and consequently the ryots were encouraged to grow more of cotton in the tracts traversed by the Canal. The project authorities therefore, could not persuade the cultivators to switch over to other wet crops.

The Committee appointed under the Famine Commission in 1879, to enquire into the management of irrigation works in Madras, Orissa and Midnapur, pointed out the following causes for the failure of the MICC.[12]

1. The excessive cost of the works in relation to the capacity of the Canal. Increasing expenditure on establishment, year after year, shows the lavishness in spending by the Company.
2. The nature of a large portion of the soil commanded and the circumstances of the people.

Obstacles to the success of the Canal, which could be removed, the Committee pointed out, may be included under the term "faulty administration". The Committee found it necessary to have an officer in special charge of irrigation for better results, which of course was not realised even as late as 1893.

The officials of the Company, throughout, tried to project to the government the best side of their performance and uplift the prestige of the Company so that it would catch the good favours of the government for its future development, made

imaginary calculations about the high rates of profit from the wet cultivation under the Canal. As a result the government could not get a correct picture of the happenings.[13]

From the preceding account it is quite clear that the irrigation under the Canal did not prove successful. Owing to the scanty use made of the irrigation afforded by the Canal and in view of the increasing loss entailed, the Government of Madras Presidency assumed charge of the Canal on 1st July 1882.

5.3. K-C Canal under the Government

As soon as the Canal was taken over by the government, Colonel J.O. Hasted, the then Acting Chief Engineer for Irrigation, was sent to the site of the Canal to inspect the condition of the Canal works. He declared: "I visited the works for the first time with an impression on my mind that they must be considered a gigantic failure, and I believe that this is the general impression. It was therefore satisfactory to find a very fine Canal in fair order throughout, with masonry works of a type equal, and in some respects superior, to all but the quite recent works in the great Delta Systems. I have nothing to say regarding the design and laying out of the canal, or the older masonry works on it; judged by the sight of recent experience, it is supposed that there were faults in design and careless works, which has led to an expenditure far in excess of what the works should have cost, but the Canal is efficient and in working order, and may be, in my opinion, kept so at a reasonable cost. The failure is in the expectation that water for irrigation would be greedily taken, and that a cheap line of water communication would be immediately taken advantage of."[14]

Further he observed: "Navigation has not failed, but it has not yet fully commenced. The Company only put boats on the Canal in the year 1880, and their fleet numbering altogether 26 boats are all that ply on it. The people of the country have never seen boats, and know nothing about them, yet during the time the Company's boats have been running they have shown a disposition to take advantage of the canal, and I believe that before long there will be traffic to a considerable extent. It has been decided that the Government should not continue the navigation, and various suggestions have been made as to its future working and disposal of the boats."[15]

With this encouraging note by the Chief Engineer, the Government of Madras was convinced that extended cultivation and a consequent increase of revenue under the Canal was probable, though it might be a long time before the receipts would cover the charge for interest on capital outlay.

After taking over, the government introduced the following principal changes in the administration of the Canal.[16]

a. The conservancy of the Canal and distributary channels supplying more than one village was entrusted to special Canal officers; while channels irrigating only a single village were left to the management of ryots under the supervision of the village revenue officers.

b. The scale of water-rates was thoroughly revised and considerably lowered.

TABLE 5.3

A COMPARATIVE STATEMENT OF WATER RATES CHARGED BY THE MICC AND REVISED GOVERNMENT RATES

Company's Rate per Acre							Revised Rates by the Madras Government						
Class	Crops	Irrigation by					Description of Crop	Irrigation by					
		Flow			Lift			Flow			Lift		
		Rs.	A.	P	Rs.	A. P		Rs.	A.	P	Rs.	A.	P
1. Equal to two ordinary crops	Sugar, Betel, Coconuts, Safron, Plantains, and other fruits	12	0	0	8	0 0	1.Sugarcane, Betel gardens, and other garden produce remaining on the ground for the time of two crops.	6	0	0	4	8	0
2. First-class crops	Rice field sown	6	0	0	4	0 0	2.Single wet crop	4	0	0	3	0	0
	First Year						Second wet crop	3	0	0	2	4	0
	Second Year												
	Third Year	3	0	0	2	0 0	If compounded for two	6	0	0	4	8	0
	subsequent Year	4	0	0	2	10 8	crops for a term of not						
		5	0	0	3	2 0	less than five years						
		6	0	0	4	0 0							
3. Second-class*	Garden***	4	0	0	2	10 0	3.Garden Crops (Second class) under MICC	3	0	0	2	4	0
4. Third-class**	Cholum, field ragi, field Korra, field tobacco, field chillies, cotton, grain, and oil seeds	2	5	4	1	0 0	4. Single Dry Crop	1	0	0	0	12	0
							Second dry crop on						
							irrigated land (if not	1	0	0	0	12	0
							compounded)						
5.	Series of crops	6	0	0	4	0 0	Dry crop on land for which irrigation has never been supplied, or if supplied, discontinued.	1	0	0	0	12	0
	First-calss crop irrigated partly	Per month 1	8	0	1	0 0							
	Second-class crop irrigated partly	1	0	0	0	10 8							
	Irrigation after 1st January	1	0	0	0	10 8							

* Crops requiring frequent floodings
** Crops requiring occasional floodings
*** Ragi, Onions, Chillies, Sweet-potatoes, Tobacco, Maize, Garden Korra, Indigo and Brinjals.

Source: C. Benson, An Account of the Kurnool District Based on an Analysis of Statistical Information Relating Thereto, and on Personal Observation, Madras, 1890, P.55.

Table 5.3 gives a comparative statement of water rates charged by the MICC and rates revised by the Madras government. Under several heads the Madras government had reduced the rates to be collected from the ryots for making use of Canal water for different crops.

- The government also extended liberal concessions to persons, who having capital at command, were desirous of taking up blocks of fifty acres of waste land under the Canal. They were allowed water free of charge for five years and at half rates for another five years, after which they were charged full rates.[17]

Another concession put forward was when the Canal water is taken for converting into wet, dry lands which have not been cultivated with wet crops during the previous ten years, only half the full water-rate is to be charged for the first five years and three fourths for the next five; the full rate being charged after ten years.[18] Perhaps, it was in response to this concession that in Kurnool district alone, in 1884, Canal water was taken at half rates for dry crops for 1922 acres of which 1533 were situated in the Nandikotkur taluk.[19]

In 1883, the following rules were passed with regard to the charging of Canal water-rate:[20]

1. The charge for Canal water rate will be on the area actually irrigated, and not on the estimated area entered in the B and C registers, which are usually prepared by Karanams without instructions from ryots.
2. The half-acre rule should be applied in the way in which it is applicable in cases of ordinary tirvajasti cultivation.
3. When ayacut wet lands, the authorized water supply of which

is sufficient, whether circar or inam, receive water direct from the canal, the Canal water-rate will be ordinarily charged in addition to the wet assessment.

4. When the authorized water-supply of such lands is deficient and Canal water is taken direct, the ordinary wet assessment only will be charged to the ryot. In the Jamabandi accounts the Canal will be credited with water-rate upon the area irrigated, and the corresponding amount deducted from wet assessment as credited to canal.

5. When circar wet lands under Doruvu and Dasabandam wells receive a direct supply from the canal, the deduction of one-fourth the assessment usually made for lift will be disallowed for the first crop, and the amount so disallowed will be credited to the Canal as "disallowance of deduction on account of lift." For a second crop full second crops Canal water - rate will be charged.

6. On inam wet lands under Dasabandam and Doruvu wells full rates will be charged for both first and second crop in addition to the quit-rent.

The liberal concessions previously accorded to persons desirous of taking up blocks of unoccupied waste lands of 50 acres and upwards in extent under the Canal for irrigated cultivation were modified by the government in August 1896 as shown below:[21]

1. When blocks of 10 acres and upwards of unoccupied waste are taken up for irrigation, no water-rate will be charged for the first five years. Only the ordinary dry assessment will be levied.

2. In the next five years, half the full water-rate shall be charged on the entire area of the block in addition to the dry assessment.
3. After ten years, full water- rate shall be charged on the entire area of the block in addition to the dry assessment.
4. The charge for water shall be liable for revision, at the discretion of government on the expiry of the current term of settlement, provided, however, that the change shall not take effect before the expiration of ten year period allowed under the rules.

Inspite of the several concessions and the reduction in the scale of water rates, there was only a marginal improvement in the area irrigated under the Canal or in the revenues derived from it. Tables 5.4,5.5 and 5.6 confirm this.(Graphs 9,10 and 11).

As in the period when the Canal was under the MICC, water was drawn extensively during years of famine and drought, increasing the area irrigated under the Canal. After the government had taken over the Canal from the Company, one positive aspect was the gradual reduction in the working expenses of the Canal and thus turning the long standing deficit into surplus at least for a few years (Table 5.4). Nonetheless the success of the government cannot be considered much when one takes into account the persistence of the gap between the total capacity created under the Canal and the extent of capacity that was being used.

Table 5.4

IRRIGATION REVENUE AND CHARGES UNDER THE K-C CANAL: 1882-83 - 1900-1901

Year	Area Irrigated	Working Expenses (Direct Charges)	Revenue	Deficit	Surplus	Per Acre Revenue	Per Acre Expenses
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Acs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1882 - 83	17834	133410	76023	57387		4.26	7.48
1883 - 84	19675	181710	42896	138814		2.18	9.24
1884 - 85	25651	202520	132286	70234		5.16	7.90
1885 - 86	21572	190944	85000	105944		3.94	8.85
1886 - 87	20956	184921	65964	118957		3.15	8.82
1887 - 88	21927	141440	65518	75922		2.99	6.45
1888 - 89	34999	143046	77727	65319		2.22	4.09
1889 - 90	21851	119566	78959	40607		3.61	5.47
1890 - 91	24848	150439	123566	26873		4.97	6.05
1891 - 92	73417	123199	142722		19523	1.94	1.68
1892 - 93	30767	158105	148281	9824		4.82	5.14
1893 - 94	31758	132472	129440	3032		4.08	4.17
1894 - 95	32542	101081	113056		11975	3.47	3.11
1895 - 96	32903	98824	139731		40907	4.25	3.00
1896 - 97	87226	86387	143098		56711	1.64	0.99
1897 - 98	47104	112140	156220		44080	3.32	2.38
1898 - 99	48810	106273	162315		56042	3.33	2.18
1899 -1900	77216	-	-		-	0.00	0.00
1900 - 01	62159	109993	187647		77654	3.02	1.77

Source: Compiled from the Administration Report of the PWD (I), 1897-98, p.30 and A.Sivasankaran, 'A History of the Public Works Department in the Madras Presidency 1858-1947', Ph.D. Thesis, Department of Indian History, University of Madras, Madras, 1985, p.110.

Table 5.5

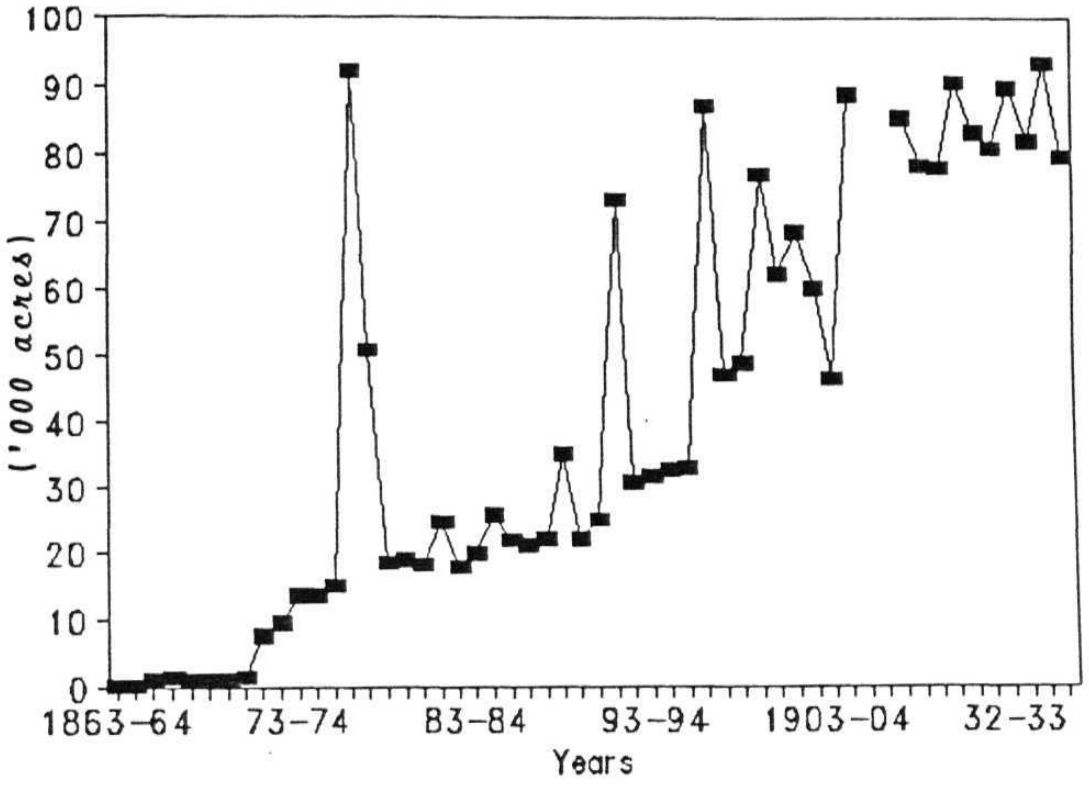
IRRIGATION AND REVENUE PERFORMANCE OF THE K-C CANAL SINCE INCEPTION

Years (1)	Area Irrigated (2) Acs.	Revenue Derived (3) Rs.	Per Acre Revenue (4) Rs.
	After Opening		
First Period :			
1863-64(a)	18	73	4.06
1864-65	192	766	3.99
1865-66	816	3714	4.55
1866-67	1396	10219	7.32
1867-68	1138	11214	9.85
1868-69	1078	11178	10.37
1869-70	1164	10643	9.14
1870-71	1516	8133	5.36
	After Completion		
Second Period :			
1871-72	7536	34415	4.57
1872-73	9405	50888	5.41
1873-74	13335	71077	5.33
1874-75	13408	52907	3.95
1875-76(b)	14763	59306	4.02
1876-77(c)	92276	252446	2.74
1877-78(c)	50918	155309	3.05
	After the Great Famine		
Third Period :			
1878-79	18361	81326	4.43
1879-80	18655	73641	3.95
1880-81	18001	58057	3.23
1881-82(d)	24684	77436	3.14
	After Transfer of the		
Fourth Period :	Canal to Government		
1882-83	17834	59255	3.32
1883-84	19675	67946	3.45
1884-85	25651	81315	3.17
1885-86	21572	71664	3.32
1886-87	20956	68240	3.26
1887-88	21927	69986	3.35
1888-89	34999	90552	2.59
1889-90	21851	79301	3.63
1890-91	24848	88738	3.57
1891-92(c)	73417	148153	2.02
1892-93	30767	99527	3.23
1893-94	31758	111111	3.50
1894-95	32542	-	
1895-96	32903	-	
1896-97(c)	87226	-	
1897-98	47104	-	
1898-99	48810	-	
1899-1900	77216	-	
1900-01	62159	-	
1901-02	68532	-	
1902-03	60154	-	
1903-04	46306	-	
1904-05	88919	-	
1926-27	85355	-	
1927-28	78300	-	
1928-29	78042	-	
1929-30	90566	-	
1930-31	83284	-	
1931-32	80869	-	
1932-33	89989	-	
1933-34	82006	-	
1934-35	93408	-	
1935-36	79721	-	

Source: From 1863 to 1894, Board of Revenue (Rev.Sett,, L,Rds., and Agri.), 27 Jan. 1905, No. 31, p. 31; For the year 1894-95, Indian Irrigation Commission. 1901-03. Minutes of Evidence, p.34; From, 1895 to 1905, Revenue, 15 February 1906, No 145; From 1926 to 1936, Board of Revenue (Land Revenue and Settlement), Misc., 11 Sept! 1941, No.2525.

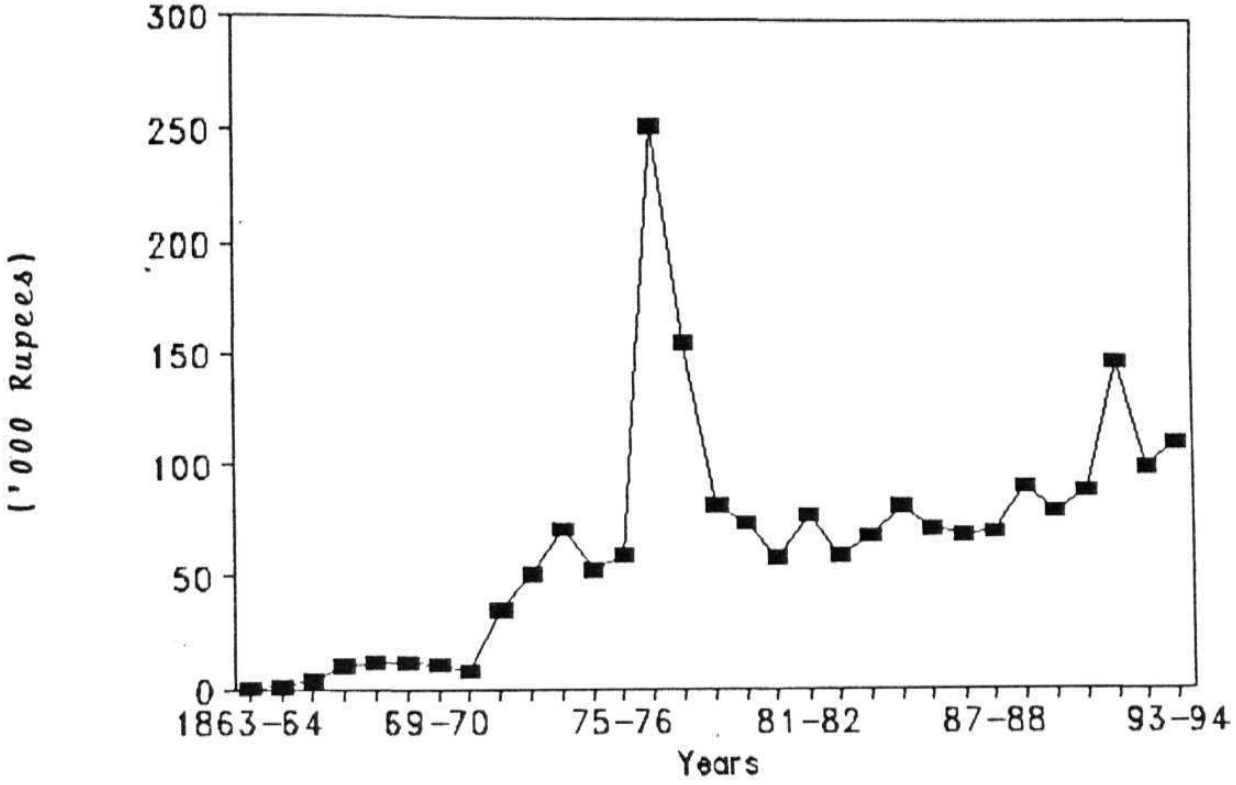
Graph **9**

Area Irrigated Under the Kurnool-Cuddapah Canal



graph 10

Revenue Derived Under the Kurnool-Cuddapah Canal



Graph 11

Per Acre Revenue Under the Kurnool-Cuddapah Canal

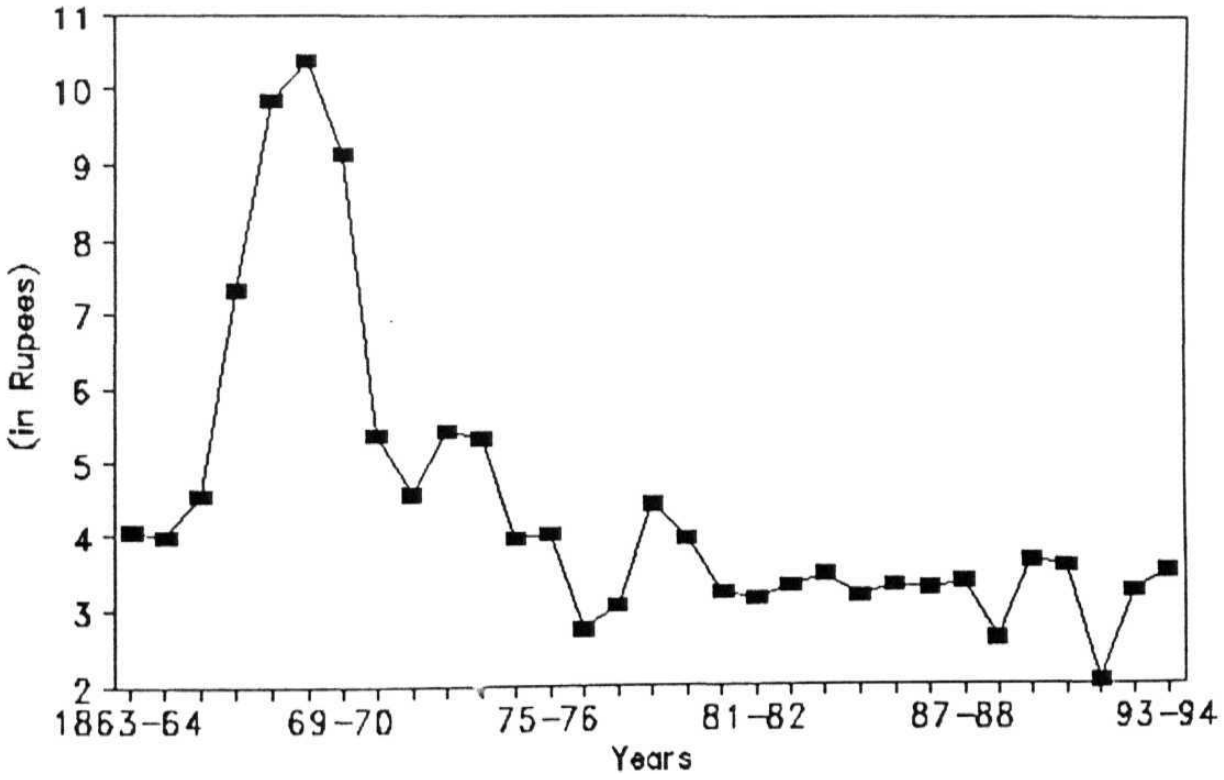


Table 5.6

AREA IRRIGATED BEFORE AND AFTER THE TAKEOVER OF K-C CANAL BY THE GOVERNMENT (ANNUAL AVERAGE)

Taluks	Average Annual Area Irrigated During the Last of MICC Years*	Average Annual Area Irrigated after Government Takeover**	Percentage of	
(1)	Acs. (2)	Acs. (3)	Rise (4)	Fall (5)
1. Proddatur	5486	4819		**12.1**
2. Cuddapah	5707	7820	37.0	
3.Jammalamadugu	76	55	——	27.6
4. Nandyal	2846	1860	——	34.6
5. Sirvel	907	1337	47.4	—
6. Koilkuntla	324	190	—	41.3
7. Ramallakot	1259	1583	25.7	——
8. Nandikotkur	3839	2820		26.5
9. Total	20444	20484		

Note: * The average is struck in the case of column(2) on the figures for the years 1879 to 1881 and ** in column(3) for the years 1882, 1883, 1885, 1886, 1887 and 1889 (years 1884 and 1888 are omitted as exceptional years in the Kurnool district).

Source Board of Revenue (Rev.Sett L.Rds.. and Agri.). 25 May 1893, No.204, P.6.

The Government of Madras wished to have the causes for the poor utilisation of the capacity of the Canal further investigated and to ascertain if there were any methods by which the irrigation under the Canal could be extended. For this purpose a Deputy Collector,[22] was deputed in August 1890. He made a report in 1891 examining the causes which prejudicially

affected the prosperity of the Canal and offered a number of suggestions. He felt that some of the causes mentioned by Lister didn't exist now, while there are others that deserved mention. Later the Deputy Collector who investigated was himself appointed as the Special Officer in-charge of K-C Canal, under the designation of Special Deputy Collector, in charge of Kurnool-Cuddapah Canal. The term of the special establishment in charge of the Canal was initially only for two years. Still, may be because of its importance in enforcing the above mentioned rules, its term was extended from time to time between 1893 and 1907. After the incumbent entered upon his duties in 1894 surreptitious irrigation was considerably checked and irrigation was also somewhat extended.[23] Part of the increase was due to close supervision and the special exertions of the special officer and to the correct enforcement of the block and cowle rules. It was only after 1894, ie. , after the establishment of Special Deputy Collector's office that the details under the various rates of water charge were recorded (Table 5.7).

Compared with the year 1893-94 the area irrigated in 1898-99 shows an increase of 16,507 acres or 50 percent of which 9,500 acres or more than half was in Kurnool and 7,000 acres in Cuddapah. About 40 percent of the increase appears under dry crops irrigated and 26 percent under garden crops. The increase under paddy cultivation was about 23 percent.[24] Changes in the market prices of some of the crops also seem to have altered the areas irrigated under different categories.[25]

Table 5.7

CROPS IRRIGATED UNDER THE K-C CANAL: 1893-94 - 1904-05

Fasli/Year	Rupees 6	Rupees 4	Rupees 3 Second Crop Paddy	Rupees 3 Bagayat Crop	Rupees 2	Rupee1	Total
	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	2	3	4	5	6	7	8
KURNOOL							
1303 (1893-94)	Details not available						15581.20
1304 (1894-95)	196.38	8041.07	829.98	3197.14	2203.63	2507.97	16976.17
1305 (1895-96)	203.78	8120.91	708.70	1813.24	1764.13	2679.35	15290.11
1306 (1896-97)	180.19	8541.00	990.86	3975.95	3073.40	48856.98	65618.38
1307 (1897-98)	174.92	9808.70	1823.72	3815.00	3551.04	7183.14	26356.52
1308 (1898-99)	173.31	9795.41	1181.72	3829.07	3333.70	6736.24	25049.45
1309 (1899-1900)	265.82	9798.81	422.66	5861.06	3435.48	37686.99	57470.82
1311 (1901-02)	531.33	11321.58	9167.35		3788.34	19822.88	
1312 (1902-03)	367.72	11753.23	4852.00		3986.01	10062.18	
1313 (1903-04)	267.78	11265.95	1750.93		3881.11	3593.16	
1314 (1904-05)	305.65	10929.02	7024.06		3507.86	28611.72	
CUDDAPAH							
1303 (1893-94)	Details not Available						16176.94
1304 (1894-95)	52.09	8423.97	3.35	6818.93	58.63	1183.96	16540.93
1305 (1895-96)	45.56	8525.35	3.51	6903.59	111.01	1899.82	17488.84
1306 (1896-97)	141.34	8186.40	14.96	7269.48	10.71	5935.69	21558.58
1307 (1897-98)	138.41	8658.60	4.25	7694.05	48.79	4111.56	20655.66
1308 (1898-99)	217.44	10029.23	1.53	10125.14	33.02	2809.04	23215.40
1309 (1899-1900)	399.91	9251.78	6.10	7313.11	15.55	2905.73	19892.18
1311 (1901-02)	1244.97	10345.45	8637.27		15.61	3656.59	
1312 (1902-03)	582.46	12380.55	11262.41		77.31	4690.64	
1313 (1903-04)	394.73	11356.95	1747.56		11.54	501.27	
1314 (1904-05)	531.07	7461.51	6770.14		95.26	3984.47	

Note: Figures of column four for faslis 1311-1314 include the area under column five also

Source: From fasli 1304 to 1308, Board of Revenue (Rev. Sett., L. Rds. and Agri.), 9 October 1899, No. 315, P.17; For fasli 1309, Revenue, 17 November 1900, No.1153, P.239-240; For faslis 1311 and 1312, Revenue, 17 November 1903, No.114 P.340-341; For faslis 1313 and 1314, Revenue, 3 May 1905, No. 385, P.156-157.

Regarding the practical working of the block rules granted, there were very big as well as small blocks taken up for cultivation. The Special Deputy Collector seems to have played a *very* important role in effecting some improvements in the irrigation under the Canal under the block rules. However, in 1896, the concessions that holders should have unrestricted liberty to grow any crops they pleased was withdrawn.[26] Most of the applicants for lands under block rules for cultivation were from the other parts of the Presidency, other than the area commanded by the Canal.[27] In the majority of cases the then applicants for blocks seem to have sent down middlemen as their agents to look after their blocks, and as a natural consequence, the majority of the applicants failed and were obliged to give up their blocks, the middlemen having presumably deceived them in different ways. There seem to have been only two or three instances where poor people came from outside and tookup the blocks and themselves cultivated the lands, and they seem to have held out longer than the well-to-do applicants who chose to put in middlemen. Among those who tookup blocks in the beginning some seem to have been also public servants holding appointment elsewhere, and it would be a matter of no surprise if such block-holders also failed and gave up their blocks. Those who actually settled down on their blocks uninterruptedly and continuously held their holdings.[28]

Table 5.8

THE STATE OF BLOCKS OF LANDS ALLOTTED UNDER

THE K-C CANAL (1896)

District	Lands takenup from the time the rules were introduced. Acs	Lands relinquished and sold Acs	Lands still under holding Acs
Kurnool	5190	4044	1146
Cuddapah	1409	82	1327
Total	6599	4126	2473

Source: Board of Revenue (Rev .Sett. . L.Rds. . and Agri . .) . 19 June 1896, No.139, P.8.

T.E. Moir, Special Settlement Officer, strongly felt that the block rules proved to be a failure. He remarked that "where outside capital was available, labour supply were wanting, and where local cultivating ryots were willing to take up lands under such rules they had no sufficient capital."[29]

Moir had been, right from the beginning, against the idea of a separate establishment for the K-C Canal management. He strongly felt that surreptitious irrigation could be identified even by the regular and ordinary revenue staff, without being under the supervision of the Special Deputy Collector. It was around this time that the taluks of the Kurnool district were being resettled for land revenue, under the supervision of Moir. The Board of Revenue had also endorsed a similar idea and stated, "that the special staff was intended to be temporary from the very beginning, that the extension of the period of its retention from time to time was generally recommended for reasons other than the detection and prevention of surreptitious irrigation and

that it would be necessary to have a special staff for the Canal after completion of the resettlement of the taluks through which it passes."[30] This, however, does not reduce the importance of the special establishment in improving the area irrigated under the Canal, as we had seen in the preceding pages. The government also agreed with the Board that there was no need to revive the appointment of the Special Deputy Collector for the K-C Canal. As a result the office of the Special Deputy Collector was abolished in 1907 and the control of the Canal - revenue administration devolved on the ordinary revenue staff.

Regarding the water-rates to be charged under the Canal, several changes were made after the resettlement of the Canal irrigated taluks. It was around this time that there was a shift, in the general water rate policy of the British, to the trial of the differential water rates. This had its direct bearing on the water rates charged under the Canal also.

If lands registered as dry were irrigated, they were to be liable to a water rate - for a single crop, the difference between the wet and the dry rates at which the land was assessed, and for a second or third wet crop one-half of the charge of the first crop. [31]

Special concession were granted to the Canal lands as follows:[32]

In order to enable the ryots in government villages to meet the expenses of converting dry lands into wet, the following remissions will be allowed in the case of lands which have not been cultivated with wet crops within the last ten years:

Fifty percent of the difference between the wet and dry rates for the first five years. Twenty five percent of the same for the second five years.

After ten years the land will be liable to the full wet rate. Application must be made for the registration of the land as wet before the concession can be taken advantage of. The government reserved the right to refuse compliance with any such application if, owing to the absence of wet lands in the neighbourhood or other causes, it is considered inconvenient to supply water to small isolated areas.

As far as the administrative procedures and water rules are concerned the ryots under the K-C Canal seem to have been equally confused now also as they were when the Canal was under the MICC. The ryots might not even have tried to understand what was going on at the bureaucratic level and its impact on the rules framed under the Canal.

In an official correspondence in 1934, the Board informed the Collector of Kurnool as follows:[33]

"...The Kurnool-Cuddapah Canal is the only large system under which there is considerable irrigated dry crops cultivation. The irrigated area under dry crop is generally greater than the area under wet. After transfer of land to wet the tendency will be for the ryots to raise only wet crop. This may mean a considerable shrinkage in the area served by the canal. Consequently there may not only be appreciable increase in revenue but the usefulness of the system from the point of view of protection may be impaired to some extent. The Kurnool-Cuddapah Canal is primarily a protective system and the greater

the extent on which irrigated crops, whether dry or wet, are raised the greater is the protective value. The agricultural department has been repeatedly pressing for the encouragement of the dry crop irrigation as opposed to the usual wet paddy cultivation. It is therefore necessary that government should be careful in giving an artificial stimulus to wet crop cultivation at the expense of the irrigated dry cultivation."

The ryots under the Canal did not need encouragement from the agricultural department to grow irrigated dry crops at this stage since they were already accustomed to growing their own pattern of crops. Sometimes the dry crops would be irrigated also. Generally the early sowings commence about the end of June when the dry crops such as Korra, Arika and Groundnut and the wet crop paddy will be sown. Though water in the K-C Canal became available for irrigation in the first week of July, the ryots did not utilise it till about the middle of September unless there were no sufficient rains in the meanwhile. Even in the registered wet lands, the paddy crops, unless it was the kind raised by the process of transplantation, was not watered from the Canal till it was 1 1/2 to 2 months old. The same was the case with regard to the paddy crop raised in the dry lands. The object in so doing was to conserve the manurial strength, which was likely to get deteriorated with each flooding. The ryots were therefore reluctant to use water for the tender crop immediately when it was available in the K-C Canal. As regards the dry crops in the dry lands the irrigation depended on seasonal rains. If there were timely rains the ryot did not go in for Canal water. The cultivator took advantage of the Canal water only when he

found no help from the rains. Sometimes the ryot took to the cultivation of Groundnut which paid him well with the least trouble involved. The raising of wet crops demanded greater attention on the part of the ryot and he was therefore disinclined to the cultivation of such crops.[34]

In 1935 while reviewing the irrigation works in the Madras Presidency, the Government of India realised the problem of the non-utilisation of the K-C Canal water by the ryots and remarked that the position of the Canal was in the last degree unsatisfactory and the cost of irrigation was very high at Rs. 65 per acre for a return of Rs. 2.5 with no prospect of any material improvement and that it would be economical to close the Canal though keeping it in repairs so as to be ready to be put it in working order again if a season of drought should create a sudden demand for water.[35]

In 1938, the Famine Code Revision Committee observed that, "the contributory if not the main cause for the failure of the Canal is a policy of laissez-fair which the government have adopted towards it, ie., apart from allowing a private Company to construct it and charge exorbitant rates of water-cess, when the government were compelled to take it over they continued the option to the ryots to take the water with the result that no pressure was put upon the ryots to make full use of the irrigation resources at their disposal."[36]

While the success of other major projects like Krishna and Godavari anicuts was the guiding spirit behind the introduction of the Tungabhadra works in this dry region, there is a lot of difference between the irrigation works on the great rivers of

Godavari and Krishna on the one hand and that of the Tungabhadra works on the other. On the former there were already old irrigation systems, and this helped the British to reap high rate of profits on their limited capital expenditure, thus the new works enhancing the value of the old works. The Tungabhadra works, on the other hand, were entirely a fresh venture to be undertaken.[37] Entrusting them to an overseas private company, despite the opposition from the local collectors, was another mistake committed by the imperial government. This private company (MICC) did not have a sufficient knowledge about the local agricultural and irrigation practices of the region. This led to the wrong choice of the regada tracts to be traversed by the K-C Canal. Besides several other reasons discussed above, the high initial prices demanded for water, was the major disincentive for the cultivators not to take the Canal water for irrigation. Thus the K-C Canal under the private company was an utter failure. After taking over, the imperial government had drastically reduced the water rates to be charged under the Canal, granted several concessions and brought in additional bureaucratic establishments with the hope of improving the performance of the Canal. There was marginal improvement in the utilisation of the Canal water for irrigation, but the full capacity of the Canal was never utilised, during the imperial rule.

The lowering of irrigation rates induced farmers from the wet areas of the neighbouring districts to migrate to some of the K-C Canal ayacut areas but that had to wait till much after independence and considerable expenditure by way of improvements

to the Canal system was made. In pursuance of the recommendations made by the Khosla and the Bhattacharya Committees and also with a view to provide immediate relief to the drought affected areas in Rayalaseema, in 1950s permanent improvements were made to the K-C Canal at a cost of Rs. 6.95 crores.[38] Farmers from the wet districts who started migrating into this area from 1960 onwards brought with them the necessary capital, organisational and technical skills for wet cultivation which not only improved their economic status, but also improved the performance of the Canal.[39]

Motes

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2. M.Atchi Reddy, "Travails of an of an Irrigation Canal Company in South India, 1857-1862", Economic and Political Weekly, March 24,1990, P.619. (Hereafter Travails of an ICC).

3. Monograph on the MICC, para 9.

4. Monograph on the MICC, para 11.

5. Monograph on the MICC, para 12.

6. M. Atchi Reddy, Travails of an ICC.

7. Revenue, 17 March 1874, No.354.

8. PBR, 30 August 1876, No.2226.

9. Refer to Annexure 5 .1

10. Letter from A.L.Lister, on Special Duty, Kurnool and Cuddapah, to the Collectors of Kurnool and Cuddapah, dated 15 August 1878, No.252, PBR, 21 May 1879, No.1370, P.4490-4511.

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12. Report of the Committee Appointed under the Famine Commission to Enquire into the Management of Irrigation Works in Madras. Orissa and Midnapur: together with a Supplement on the Irrigation System of the Soane Canals. Behar. Calcutta, 1879, P.24-25.

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14. Letter from Colonel J.O. Hasted, Acting Chief Engineer for Irrigation, to the Acting Joint Secretary to Government, PWD(I), 26 February 1883, No.184.

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16. Letter from W.H. Glenny, Collector of Kurnool, to the Secretary to the Board of Revenue, dated 29 May 1883, No.221, Board of Revenue. 6 June 1883, No.1619.

17. PWD(I). 6 June 1882, No. 448; Revenue, 24 June 1886, NO.3737, PBR, 28 May 1886, No. 1204.

18. PWD(I)' 6 June 1882, No.448; Board of Revenue (Rev.Sett.. L.Rds., and Agri), 24 January 1890. No 20

19. Revenue, 20 January 1885, No.84.

20. Board of Revenue, 21 September 1883, No.2862.

21. Administration Report of the PWD(I), 1897-98, P.29.

22. By name Rao Bahadur Subbarayadu Pantulu.

23. Board of Revenue (Rev. Sett., L.Rds.. and Agri.), 27 January 1905, No.31, P.32.

24. Board of Revenue (Rev. Sett.. L.Rds.. and Agri.), 9 October 1899, NO.315, P.17.

25. Revenue, 17 November 1900, No.1153; Revenue. 17 November 1903, No.1147; Revenue. 3 May 1905, No.385.

26. Revenue. 24 August 1896, No.418.

27. Refer to Appendix V.

28. Board of Revenue (Rev. Sett.. L.Rds.. and Agri.). 19 June 1896, No.139.

29. Settlement-Resettlement - Kurnool District - Kurnool-Cuddapah Canal Note on Revision of Ayacut, Kurnool RDs. 17 August 1935, No.1188/34, P.3.

30. Revenue. 22 October 1909, No.2907, P.4.

31. The Standing Orders of Board of Revenue. Vol.11, Appendices, 1920, P.19.

32. Ibid.

33. A Note on the Kurnool-Cuddapah Canal, Kurnool RDs. 17 August 1935, P. 23-24.

34. Letter from D.V. Ramanayya Pantulu, RDO, Kurnool, to the Collector of Kurnool, Kurnool RDs. 25 July 1928, No.616.

35. Kurnool RDs. 17 August 1935.

36. Note by Joint Secretary, Board of Revenue (LR and Sett..), 11 September 1941, No.2525, (Misc.) P.17.

37. M.Atchi Reddi, Travails of an ICC.

38. M.V.Raja Gopal, Kurnool District Gazetteer, Hyderabad, 1974.

39. For more details on immigration of farmers into the K-C Canal area, refer to V.Maddulety, 'Agrarian Change and Peasant Migration: A Case Study of Migration to Kurnool-Cuddapah Canal Area', M.Phil Dissertation Department of Economics, University of Hyderabad, Hyderabad, 1988.

Annexure 5.1

IRRIGATION CHARGES **UNDER THE MICC**

	Rate per Acre Rs.
1st Class -	
Clause (1) crops+ requiring continuous supply first crop	6
Clause (2) crops requiring continuous supply -second crop (under tanks)	6
* Rice	
Sugar Cane (Double)	
Betel (Double)	
Coconuts do	
Plantains do	
Saffron do	
Fruit trees, various do	
Clause (3). Second - class crops* requiring frequent floodings	4
* Maize	
Garden Raggi	
do Korra	
do Chillies	
do Tobacco	
Indigo	
Sweet Potatoes	
Onions	
Brinjals	
Clause (4) Dry crops* requiring occasional floodings	2
* Choiam	
Field Raggi	
do Korra	
do Chillies	
do Tobacco	
Cotton	
Gram (various)	
Oil-seeds (do)	
Clause (5) double crops or those requiring irrigation for more than six months to pay double the rates specified for their class, unless supplied after 31 st December at the monthly rates.	

Source: PBR, 30 August 1876, No.2226.

CHAPTER VI

IRRIGATION CHARGES

6.1 Introduction

Throughout British India the basis of charges for water supplied by State works for irrigation, was the area irrigated, but different systems of charging were in operation in different parts of the country, at different points of time. Hence an attempt is made here to trace the origin and evolution of the water rates, under the British.

In the pre-British times, there was no separate water charge for irrigated land but there were separate rates for wet lands and dry lands. There was a higher wet land assessment which was a consolidated payment including assessment of land and charges for water. The incidence of this assessment varied according to the nature of the soil and the character and influence of the irrigation. During the British period the practice of charging for irrigation separately was introduced. Since extensive systems of river and channel irrigation, commanding large tracts of the country, had been undertaken both by the government and by private companies, a water-rate, distinct from the land tax, was viewed as the roost convenient form of realizing the return on the money expended in constructing the extensive and costly works necessary to ensure and distribute the water supply.[1]

6.2 Separate and Uniform Water Rates

During the first decade of the Crown's administration, there was a lot of correspondence regarding the introduction of separate water rates in the Madras Presidency.[2] The driving

force behind the efforts to evolve separate water rates for irrigation was one of revenue maximisation particularly in the tracts irrigated by the new works on the Krishna,the Godavari and the Pennar. Another urgent issue that necessitated a separate water rate was the plans of privatisation of the major irrigation works in India, as indexed by the favour that was showered both by the Government of India and the British Home government on the newly and privately established MICC in 1857. Yet another reason was to estimate the amount of remission of assessment whenever the water source failed or the ryot could not take the water due to any reason.[3]

Accordingly, the Government had declared in 1865 that, "whenever water is supplied or used for purposes of Irrigation from any river, stream, channel, tank or work belonging to or constructed by Government, it shall be lawful for the government to levy at pleasure on the land so irrigated a separate cess for the use of the water, which cess shall be additional to any land assessment that may be leviable on the said land as unirrigated or Punjah."[4]

In the Madras Presidency, the practice of charging for irrigation was to make a compulsory rate; this rate being either a specific separate addition to the ordinary land revenue, or a portion of lumpsum levied as revenue on irrigated land. All land classed as "Nunjah" or irrigable, had to pay the irrigated rate if it was cultivated at all.[5]

The two instruments through which the British government made out of the irrigated lands were Tirvajasty and Fasaljasti. Tirvajasty was a charge for water from a government source taken

to dry or to garden lands. Fasaljasti, on the other hand, was a charge for irrigating a second crop raised on land registered as single crop. The charge was usually one half of the original assessment of Tirvajasty. Whether it was government channel or small tank or large tank the general rule was the same.[6]

Prior to the introduction of the system of survey and settlement of land revenue, there were several systems of charging irrigated water in the Madras Presidency. In no two districts was the same system pursued, while in some there was little or no system at all. In the region under study, the rates of Tirvajasty were as numerous and complicated as the wet and dry rates.(Tables 6.1 and 6.2)

Annexure 6.1 shows the numerous dry and wet rates prevailing in the Bellary district on the eve of the Crown's assumption of the administration. For the wet there were 41 rates, ranging from one rupee per acre to as much as 12 Rupees.

Table 6.1

LAND ASSESSMENTS IN CUDDAPAH DISTRICT:C. 1860

Description of the Land	Rates of Assessments			
	Highest Rs. A. P.	Lowest Rs. A. P.	Average Rs. A. P.	No. of Rates
Punjah (Dry)	10 15 0	0 0 7	2 7 0	148
Nunjah(Wet)	39 6 0	0 1 9	10 0 0	196
Garden	31 1 10	0 4 8	8 8 9	173

Source: PBR, 29 May 1863, No. 3187, p.3060.

Table 6.2

WATER RATES IN THE THREE TALUKS OF CUDDAPAH DISTRICT C.1860

	Taluk	No. of Rates	Minimum Rs.	A.	P.	Maximum Rs.	A.	P.
1	Budwel	208	0	2	4	21	4	0
2	Sidhout	179	0	4	8	18	15	4
3	Pullampet	198	0	2	4	23	3	0

Source: PBR, 10 August 1874, No.696, P.6170

Table 6.3

EXTENT OF DRY LANDS IRRIGATED AND ADDITIONAL ASSESSMENT IN BELLARY DISTRICT: 1858-59 - 1868-69

Fasli (year)	Extent	Assessment		
(1)	(Acres) (2)	Dry Rate Rs. (3)	Tirvajasti Rs. (4)	Total Rs. (5)
1268(1858-59)	3682	1914	11348	13262
1269(1859-60)	5192	2553	17454	20007
1270(1860-61)	7835	3723	26243	29966
1271(1861-62)	8591	3950	28740	32690
1272(1862-63)	11852	5369	41221	46590
1273(1863-64)	10293	4771	34007	38778
1274(1865-65)	12203	5356	41786	47142
1275(1865-66)	14062	6002	46613	52615
1276(1866-67)	13003	5569	43338	48907
1277(1867-68)	9319	4226	30968	35194
1278(1868-69)	10814	4681	35449	40130

Source: PBR, 10 June 1872, No.955, P.2599.

Table 6.1 shows the various dry and wet rates prevailing in the Cuddapah district on the eve of Crown's administration. Table 6.2 shows exclusively the numerous water rates prevailing in Budwel, Sidhout and Pullampet taluks of Cuddapah district. The extent of variation, as may be noticed from this table, were very great. In operation they were often regressive. The heavy rates were chiefly borne by the poor, and the influential and opulent got away with low rates. These charges were regulated formerly *very* much at the discretion of the settling officers.[7] Moreover, in the Coastal districts of Krishna and Godavari assessments on lands with assured canal irrigation did not exceed Rs.4/- per acre. These lands were taxed "as if they were dry". But in the Ceded districts in general and Cuddapah in particular the average rate of assessment was as high as Rs. 10/- per acre.[8] Table 6.3 shows the amounts collected in the form of Tirvajasti vis-a-vis the dry rates in Bellary district during the first decade of the Crown's rule.

An end was put to this confusion when the Board ordered the adoption of a uniform and fixed rate of Rs. 5 per acre in 1862. Later it was reduced to Rs. 4 per acre.[9] By 1872, the government had drafted definite rules for the levy of water-rates, in addition to the ordinary land assessment on all lands not permanently classed as wet in all districts (except Ganjam, Vizagapatam, Madura, Tinnevelly, Malabar and South Canara) where water was supplied from a government source of irrigation. The following were the rules drafted by the government.[10]

i. All dry land temporarily cultivated with wet crops had to Pay, in lieu of any other system then in force, a fixed water

rate irrespective of the source from whence the water was derived. When water was raised by mechanical contrivances, the rate was reduced by one fourth. The following were the standard rates:

Standard Water Rates Per Acre

	Rs.
1.Water rate for single wet crop raised on dry land:	4
2.Second crop on the same land:	2
3.For sugar-cane, betel, coconuts, plantains etc. requiring water longer than an ordinary wet crop:	6
4.For dry crops watered, whether first or second crop:	2

ii. As a rule the entire survey number was charged with water-rate, but where the fields were large it was at the discretion of the settling officer at Jamabandi to charge only for the area actually irrigated. Nothing less than one acre to be charged, and fractional parts to be charged as one acre.

iii. The collector had power to impose prohibitory rates whenever water was taken without permission.

iv. The above rules were applicable to all government sources of irrigation, the supply of which was at all regular and dependable. Simple Jungle streams, which only receive a casual supply, could still be utilised without charge.

v. No government water was to be taken under these rules without the express sanction of the head of the village, or of the Department of Public Works Officer when the works were in charge of that department, who was to make a special report on the subject to the Tahsildar immediately on granting permission.

These rules did not apply to a second crop raised on wet land for which the usual charge (generally half the first crop assessment) was levied.

Right from the beginning of the Crown's administration, all irrigated land was divided into two classes. First, land that was irrigated by the outlay of private capital. Secondly, land that was irrigated by an outlay of public capital. No additional assessment would ever be demanded for irrigation obtained by the outlay of private capital from sources.[11] Only the dry assessment would be charged in cases where the crops were irrigated solely with the aid of private wells and where no supply whatever was received from the tank or other government source of irrigation either for the first or the second crop season.[12] The principle that when the ryot was entirely dependent on his own well, no water rate was charged, was very well observed. But there was an exception to it in cases where the wells were in wet lands, because such wells would obviously derive their supply, in part at least, from government sources.[13]

Regarding the old well lands, the government had sanctioned the abolition of the Fassaljasti on all occupied old well lands in the Bellary district and in the Pattikonda taluk of the Kurnool district transferred from Bellary. It also sanctioned the reduction of the assessment on these lands to the highest Punjah rate of the village in which they were situated, with a minimum of one Rupee per acre.[14]

Table 6.4
INCIDENCE OF REDUCED WELL LAND ASSESSMENT TO MAXIMUM DRY RATE IN THE FOUR TALUKS OF KURNOOL DISTRICT

Taluks	Rang© of Present Well Land Assessment per Acre		Range of Maximum Dry Rate Per Acre		Reduction of Applying Maximum Dry Rate to Well Lands		
	From Rs. A. P.	To Rs. A. P.	From Rs. A. P.	To Rs. A. P.	On Ayacut Rs.	On Holdings Rs.	On Waste Rs.
Pattikonda	10 0 0	1 0 0	3 0 0	0 14 0	3983	2840	1143
Koilkuntla	32 1 4	0 7 10	6 12 0	0 9 9	6934	6486	448
Cumbum	11 10 8	0 9 4	9 8 3	0 10 6	5502	4065	1437
Markapur	9 11 7	0 4 8	3 11 6	0 9 4	6361	5115	1246
					22780	18506	4274

Source:PBR,18 October 1864, NO.6871.

Table 6.4 shows the incidence of reduced well land assessment to a maximum dry rate in the four taluks of Kurnool district. The government seems to have lost considerable amount of revenue due to its changed policy. Still, it could get rid of the maintenance of numerous wells whose ayacuts were very small and hence not worthy of maintaining them at the government cost.

6.3 Differential Water Hate System

The next important event in the history of water rates occurred in 1890 when the Board ordered that dry crops when systematically irrigated should be charged as wet. This distinction between systematically irrigated and occasionally irrigated dry crops was extended to the second crop also in 1898 and the revised system was allowed to operate for two years. The reports of collectors on the working of this system were called for and they revealed an urgent necessity for doing away with it. There was no clear idea as to the necessity for such a distinction and about the actual classification of crops as systematically irrigated and occasionally irrigated. In the course of this correspondence, the Board suggested that a trial might be given to the system of levying differential rates of water-cess. The system was first tried in selected villages in three districts viz., Chingleput, Tinnevelly and Cuddapah. Although the Board and the Director of Agriculture reported against the system after watching its operation in these villages, the government in 1909 ordered the adoption of the system in seven districts of which Cuddapah was one.[15]

It was around the same time that the first resettlement of

land revenue of various taluks of the districts of Madras Presidency was being carried out. In the region under study, the government fixed different dry and wet rates for different taluks and this was done along with their resettlements of land revenue. "Resettlement in Madras Presidency consisted in a revision of the rates of assessment, which were calculated not on holdings, but on fields which may now be in the same or in different holdings. In revising these rates, changes in prices, in means of communication, in the accessibility of markets, in the quality of the irrigation sources since the original settlement, were taken into consideration together with any other indications of economic progress or retrogression."[16]

Table 6.5

WET AND DRY RATES IN SOME DISTRICTS OF THE MADRAS PRESIDENCY (1905)

	Wet Rates(Per Acre)			Dry Rates(Per Acre)		
District	No. of Rates	Max. Rs. A.P.	Min. Rs. A.P.	No. of Rates	Max. Rs. A.P.	Min. Rs. A. P.
Salem	16	10 8 0	1 4 0	12	5 0	0 4 0
Coimbatore	9	12 0	2 8 0	10	3 8 0	0 4 0
North Arcot	18	8 0	2 0	10	3 8 0	0 6 0
Anantapur	13	11 0	1 0	9	2 8 0	0 2 0
Bellary (Western Taluks)	13	11 0	1 0	8	2 4 0	0 2 0
Cuddapah	13	10 0	2 0	14	5 0	0 4 0
Kurnool Dist. Excluding						
Kurnool Proper	16	12 0	2 8 0	15	5 0	0 4 0
Kurnool Proper	8	6 8 0	4 0	8	2 8 0	0 4 0

Source: Kurnool RDs. 26 May 1905, No. 768.

After various classifications and reclassification the number of prevailing rates was considerably reduced to a manageable level in several districts of the Presidency(Table 6.5). These rates were quite a few compared to the hundreds of rates prevailing on the eve of the Crown's administration. Hence it was thought that simply taking the difference between the wet and dry rates as the water cess would yield better revenue results.

The first resettlement of land revenue in the taluks of the region under study was undertaken during 1900-1915. At this resettlement, all irrigable dry lands, whether government or inam had been assigned a wet rate and in the printed settlement 'registers, both the wet and dry rates were shown for such lands. The water cess to be charged when the water was taken for lands, registered as dry was based on the difference between the wet and dry assessment given for each field. This is what was known as the differential water-rate system.[17]

This scheme of water rates, in varying terms of the difference between the wet and dry assessment was introduced in the districts under study along with their resettled land revenue.

The following were the rules for the levy of water-cess on dry lands irrigated from Government sources in Anantapur, Cuddapah and Kurnool districts:[18]

Rule I: When water was supplied to dry lands in Government villages, the following rates of water-cess will be charged:

1. For a single wet crop:	The difference between the wet and the dry rates at which the land was assessed.
2. For a second or third wet crop:	One-half of the charge shown against item (1) plus half the dry assessment.
3. For a first, second or third dry crop:	One-third of the charge shown against item (1)
4. For sugarcane, betel, plantains and for other wet crop which ordinarily remain on the ground for more than six months:	The sum of the charges specified against items (1) and (2)
5. For dry crops which ordinarily remain on the ground for more than six months:	One and a half times the charge against item (3).

Rule II and Rule III were in relation to the whole inam villages.[19]

Rule IV. referred to water used for irrigation which could not be obtained without raising it by baling or by some mechanical contrivance, the water-rate charged was to be three-fourths of the rates specified in Rules I, II and III. On land under doruvu wells a single charge of one-quarter or one-eighths of the difference between wet and dry assessments was to be made on the basis whether water was raised by single or double lift and there was no charge for the second or the third crop.[20]

Rule V: For the purposes of the rates specified in the Rules I, II and III above a second wet crop was a wet crop following an irrigated crop grown in the same fasli. and a third wet crop is a wet crop following two irrigated crops grown in the same fasli, a second dry crop was a dry crop raised in succession to another crop whether that first crop was wet or dry, and a third dry crop was a dry crop raised in succession to two other crops wet or dry.

These rules, however, were not applied to Venkatapuram, Siddapuram and Thippayapalem projects.[21] For these projects higher rates were fixed in order to extract more revenue since they would be irrigating larger extent of ayacuts.

The differential system of water rates, though correct in theory, had been found to be unduly complicated in practice. Controversy over the merits of the differential water-rate system continued for quite sometime. Several drawbacks of the differential system came to the fore, of which the following were considered to be critical: [22]

(1) A correct soil classification and assessing of wet and dry rates was not possible of attainment.

(2) The vast number of rates were bewildering to the ryots who couldn't possibly understand how the amount demanded from then had been calculated.

(3) This system also left the ryots at the mercy of the Karanam, or the village accountant.

(4) The quantity of supply available played an important part in the outturn of crops and this was entirely ignored in the differential system.

(5) The incidence of water rate per acre of irrigated crop under the inferior classes of sources was in some cases equal to and in some cases greater than that under superior sources.

6.4 Fixed Mater Rate System

In 1916, an attempt was then made to see if the charge for water could be graduated in accordance with the quality of the source and of the soil to which it was applied. But the grouping

of dry tarams for charging water rate was found to be impracticable.[23] Finally in 1918, the government approved a uniform system of water rates. Under this system, the charge to be levied would depend neither on the classification of the soil nor on the crop raised, but on the grouping of the source from which the supply of water was received, this grouping being determined in accordance with the value of the source for irrigation purposes estimated in relation to the number of months for which it would yield a supply.[24]

Irrigation sources were accordingly divided into three groups: good, medium and precarious. The first and second class sources were included in the first group, third class sources in the second group and the fourth and fifth class sources in the third group.[25] Table 6.6 shows the water rates under the three groups.

Table 6.6

WATER RATES UNDER THE THREE GROUPS OF IRRIGATION SOURCES

S. No.	Water Rate per Acre	Group I Rs. A. P.	Group II Rs. A. P.	Group III Rs. A. P.
1	For each wet crop	6 - 4 - 0	4 - 3 - 0	3 - 2 - 0
2	For each dry crop	3 - 2 - 0	2 - 1 - 0	1 - 9 - 0
3	For dufasal crop	1 1 - 6 - 0	6 - 4 - 0	4 - 1 1 - 0

Source: Cuddapah Rda. 4 February 1919, No.45.

Paddy was the only wet crop recognised, all other crops being treated as dry. The water rate for a second wet crop would as hitherto be half the rate charged for a first wet crop and the

charge for a dry crop, whether first or second would be the same.[26]

In Kurnool district, the revenue derived according to the differential water-rate system was Rs.1,44,698, whereas under the revised rules of fixed water-rate system it would be Rs.1,54,148. This shows an increase of Rs. 9450/- over the differential water-rate system.[27] Thus, the introduction of the simplified system did not result in any loss of revenue to the government, but at the same time removed the various complexities and the cumbersome business of working out water rate on heterogenous problems to be solved.

Lands forming the ayacut of doruvu wells were to be treated as dry and had to be charged with water-cess at one-fourth or one-eighth of the water-cess that would be leviable for irrigation by direct flow of a first wet crop on dry lands irrigated from the sources on the banks of which the doruvu wells were situated, depending on whether water was raised by single or double lift. No water-cess was to be levied for the irrigation of a second or third crop with water from doruvu wells. For the purpose of the above rule collectors of districts in which there were doruvu wells should have lists of doruvu wells in those districts prepared and their ayacuts fixed. As regards future constructions the concession in this rule would apply only to doruvu wells constructed in the districts of Bellary, Anantapur, Kurnool and Cuddapah and in the taluks of Madanapalli and Vayalpad in Chittoor district and recognised by the collectors. In other tracts the ordinary concession for lift irrigation would alone be given. The above rule would apply

equally whether water was lifted from doruvu wells by engine - power or other means.[28]

Following stipulations were made regarding the wells constructed on government lands.[29]

(1) Wells sunk in tank-beds and river beds were to be deemed as the property of the government.

(2) The irrigation from wells, the assignment of which was objectionable but which served wet lands should not be treated as unauthorised and penalized. If the existence of any well and irrigation there from were objectionable, the proper course was to serve eviction notice and dismantle the well under the provisions of the Madras Land Encroachment Act III of 1905 and not to resort to the provisions of the enhanced water-cess rules.

(3) Water-cess was to be charged for the irrigation of dry lands from wells sunk in government lands subsequent to 20th August 1884, until the wells and their sites were assigned. No cess was to be levied for the irrigation of wet lands from such wells.

Remissions.

Though the British government had formulated a definite set of water rates, it had to still grant remission from time to time when the season was not favourable and the rainfall deficient.

1. Remission when dry crops were cultivated on wet lands - In all districts, whether settled or unsettled, where, owing to deficiency of water, dry crops were cultivated on wet land which roust otherwise have remained waste, only dry assessment was to be charged.

2. Charge for a dry crop grown on wet land in certain cases - when a dry crop was grown on single-crop wet land, but if water

became available in the irrigation source during any portion of the year, when it could be used for growing a wet crop, the usual wet assessment had to be levied. Where, however, no supply was received or the supply was received at a time when it could not be used or the quantity insufficient for raising a wet crop, only the dry assessment was to be charged if the crop was not irrigated.[30]

3. Wet lands under precarious sources of irrigation - In the case of wet lands under precarious sources of irrigation in the districts of Kurnool, Bellary, Cuddapah, Anantapur and in the Madanapalli and Vayalpad taluks of the Chittoor district all enquiry into the supply received in the sources in question was dispensed with and the ryots allowed free option in all years of growing wet or dry crops or none at all. Charge was to be made according to the crops actually raised, the appropriate wet or dry assessment for wet or unirrigated dry crops, and for irrigated dry crops the appropriate dry assessment and water-cess.[31]

In seasons of exceptional drought or famine it was intended that the revenue officers should take the initiative and make arrangements, as soon as the season had declared itself, for a thorough inspection of the crops and should frame and submit proposals for remission as early as practicable for the consideration and orders of the Board and Government.[32]

Thus, on the eve of the Crown's administration there were several systems of charging irrigation water in different parts of the country. Hence, the British colonial government invented a separate and uniform system of charging the irrigation water

to suit the newly emerging irrigation environment. The uniform and fixed system prevailed during the first few decades of the Crown's rule. Later the differential water rate system was introduced in 1909 and tried for some years. Since it proved to be very complicated in practice, again the fixed and uniform water rate system, with some modifications, was introduced.

Notes

1. Letter from H. Sewell, Acting Under Secretary to Government, Revenue. 27 May 1868, No. 1470.

2. PBR, 28 July 1862, Nos. 4886 & 4887, R.A.Dalyell, The Standing Orders of the Board of Revenue, from 1820 to 1870. Madras, 1871. There were some collectors who were in favour of retaining the old methods of charging the water for irrigation in stead of the newly proposed system of separate water rates. There were others who were very much in favour of the introduction of separate and uniform system of charging the water rates. For details of the views of various district collectors refer to PBR. 10 June 1872, No. 955, p.2583-2646.

3. M. Atchi Reddy, "The Colonial State and the New Water Rates in Godavari, Krishna and Pennar (1850-64)", Andhra Pradesh Economic Association Conference Papers. Tenth Annual Conference, 8 -9 February 1992, Visakhapatnam, P. 1-14.

4. Revenue. 11 May 1865, No. 986, A Collection of Papers Relating to Madras Irrigation Cess Act VII of 1865, P.130-131; Letter from the Government of India to the Secretary of State for India, PWD Proceedings. July 1867, Irrigation, No. 1.

5. Note by Colonel R. Strachey, Inspector General of Irrigation Works, Appendix to PWD Proceedings. September 1867, No.30, P.16.

6. J.D.B.Gribble, Cuddapah District Manual, p.216.

7. Letter from Major C.J. Stuart, Acting Deputy Director of Revenue Settlement, Kurnool and Cuddapah, to Geo Banbury, Director of Revenue Settlement, Madras, PBR, 10 August 1874, No. 696, P.6170, Para 5.

8. G.N.Rao, ' Railways and the Development of Commodity Markets: A Case Study of Cotton Cultivation in the Cuddapah District of Andhra, C.1860-C.1900', Mimeo, Centre for Development Studies, Trivandrum, p.43.

9. Various things may be taken as data in assessment. Sometimes the average wet rates of the adjoining land, or the quality of the soil itself may be taken as fixing the value of the water. Letter from A. Wedderburn, Collector of Cuddapah, to W. Hudleston, Secretary to the Board of Revenue, Madras, 25 April 1862, PBR, 13 August 1862, No. 5305, P. 1489.

10. PBR, 10 June 1872, No. 955, P. 2646.

11. J.W.B. Dykes, The Ryotwari Tenure. Madras, 1858, P.29.

12. Letter from J.H. Master, Acting Collector of Bellary, to the Secretary to the Board of Revenue dated 26 April 1872, No.122, PBR, 19 July 1872, No. 13665. PBR (Rev.Sett. . L. Rds.. and Agri), 16 June 1887, No. 151.

13. PBR, 17 October 1872, No. 2023, P. 5482.

14. Revenue., 6 April 1864, No. 581.

15. History of water rates in the letter from S.Bhoothalingam, Special Settlement Officer, No.III Party, Cuddapah to the Secretary to the Commissioners of the Board of Revenue, Madras, Board of Revenue (LR and Sett. .) . 15 Dec. 1938, No.3619 (Misc.).

16. M. Audinarayanaiah, A Manual of Instructions for Conducting Resettlements in the Madras Presidency. Madras, 1905, P.6.

17. Revenue. 25 October 1907, No.2629; Kurnool RDs. 12 December 1907, No.188.

18. These rules were prescribed by Government under Section I of the Madras Irrigation Cess Act VIII of 1865, as amended by Madras Act V of 1900. For the rules in Cuddapah district, Revenue. 21 August 1911, No. 2538; for Anantapur District, Revenue. 3 July 1911, No.2010; Revenue. 1 December 1911, No. 3581, for Kurnool district, Revenue. 25 October 1907, No. 2629.

19. Refer to Annexure 6.2.

20. Doruvu wells comprise wells of the following descriptions:
(i) Brick or stone wells connected with the river by a tunnel or open channel; and
(ii) wells which consist of an excavation on the face of the banks of rivers, vankas, or odais rivers rivetted with stone.

21. Refer to Annexure 6.3.

22. Board of Revenue (Rev. Sett. Sur.. L.Rds,. and Agri.), 24 December 1913, No.2757; Cuddapah RDs. 2 August 1914, No. 425.

23. Revenue. 20 July 1916, No. 1664.

24. Revenue, 18 July 1918, No. 2712; Cuddapah RDs, 4 February 1919, No.45.

25. In Cuddapah district, for example the following was the classification of irrigation sources -
I class - the Kurnool-Cuddapah canal and tanks fed by it.
II class - All rain-fed tanks affording a supply of not less than eight months and other sources of equal capacity.

III Class - Tanks affording more than five and less than eight months supply.

IV Class - Rain-fed tanks of three to five months' supply and sources of similar capacity.

V Class - All rain-fed tanks and other sources of less than three months capacity.

26. Cuddapah RDs 4 February 1919, No. 45.

27. Kurnool RTs. 11 June 1935,No. 1031/34, P.11.

28. Standing Orders of the Board of Revenue (Land Revenue. Settlement and Miscellaneous) Revised upto 30 September 1930, Madras, 1931, Vol. 1, P. 2; Kurnool RDs. 12 June 1936, No. 1032; Anantapur RDs. 24 April 1938, No. 1580.

29. V.S. Hejmadi, Collectors Standing Orders of the Cuddapah District (Revenue). Madras, 1939, P.19.

30. Standing Orders of the Board of Revenue (Land Revenue. Settlement and Miscellaneous) Revised upto 30th Sept. 1930. Madras, 1931, Vol. 1, P. 29.

31. For purposes of these concessions all sources of irrigation of the fourth and fifth classes except river and spring channels, tanks which are river-fed or connected with irrigation projects and tanks having a capacity of five months shall be deemed to be precarious sources of irrigation. Revenue. 29 August 1922, No. 1374; Revenue(Misc.). 8 August 1928, No. 1819; Standing Orders of the Board of Revenue (Land Revenue. Settlement and Miscellaneous) Revised upto 30th Sept. 1930. Madras, 1931, Vol. 1, P.31.

32. Village Officers' and Ryots' Manual. Madras, 1931, P.90.

Annexure 6.1

RATES OF ASSESSMENT PREVAILING IN THE DISTRICT OF BELLARY BEFORE THE ORIGINAL SETTLEMENT

No.	Dry Rates	Wet Rates
1	3 0	2 0
2	2 8	11 8
3	2 4	11 0
4	2 0	10 8
5	1 14	10 0
6	1 12	9 12
7	1 10	9 8
8	1 8	9 4
9	1 6	9 0
10	1 4	8 12
11	1 2	8 8
12	1 0	8 4
13	0 15	8 0
14	0 14	7 12
15	0 13	7 8
16	0 12	7 4
17	0 11	7 0
18	0 10	6 12
19	0 9	6 8
20	0 8	6 4
21	0 7	6 0
22	0 6	5 12
23	0 5	5 8
24	0 4	5 4
25	0 3	5 0
26	0 2	4 12
27	-	4 P
28	-	4 4
29		4 0

30	-	3 12
31		3 8
32		3 4
33		3 0
34	—	2 12
35	-	2 8
36	-	2 4
37	—	2 0
38	-	1 12
39	—	1 8
40	-	1 4
41	-	1 0

Source: PBR, 10 June 1872, No.955, P.2598.

Annexure 6.2

RULES FOR THE LEVY OF WATER-CESS ON LANDS IRRIGATED FROM GOVERNMENT SOURCES IN ANANTAPUR, CUDDAPAH AND KURNOOL DISTRICTS:

Rule II When water is supplied to lands in the whole inam villages which have been surveyed and classified, the same rates of water-cess as in Rule I will be charged.

Rule III When water is supplied from first class sources to lands in whole inam villages which have not been surveyed and classified, the following rates will be charged.

	Per Acre Rs.	A.	P
1. For sugarcane, betel, plantains and turmeric	6	0	0
2. For paddy first crop	4	0	0
3. For paddy, second or third crop	2	0	0
4. For chillies, sweet potato, onion, brinjal and similar garden crops	3	0	0
5. For indigo crop standing on the ground for more than six months	2	8	0
6. For indigo crop standing on the ground for not more than six months	1	4	0
7. For mundlavari paddy	2	0	0
8. For korra, Cholam, curabu, ragi, arika blackgram, horsegram, coriander and cummin-seed	1	0	0

Note: Three-fourths of the above rates will be charged when water is supplied from second-class sources.

Source: Revenue. 3 July 1911, No.2010; Revenue, 21 August 1911, No. 2538; Revenue, 30 November 1911, No.3560; Revenue, 1 December 1911, No. 3581.

Annexure 6.3

RULES FOR THE LEVY OF WATER-CESS ON GOVERNMENT DRY LANDS AND ON MINOR INAM LAND AND LANDS IN WHOLE INAM VILLAGES IRRIGABLE UNDER THE SIDDAPURAM AND VENKATAPURAM PROJECTS

	Rates Per acre	Rs. A. P.
1.	For each wet crop	9 6 0
2.	For each dry crop	4 11 0
3.	For each dufasal crop	14 1 0

4. The water-rate for a second wet crop will be half the rate charged for a first wet crop and the charge for a dry crop whether first or second will be the same.

Note: When water is raised by mechanical contrivances, the water-rate will be reduced by one-fourth.

III. Not withstanding anything in the foregoing rules, Government reserve the full right, with or without reason given, to discontinue either temporarily or permanently the supply of water for irrigation and to modify the method of charging for water and the rates of their discretion.

Source: Revenue. 7 October 1919, No. 2295.

C O N C L U S I O N S

In dry areas where rainfall is scanty, irrigation has developed as an important productive force. It becomes important in these areas to conserve and use, whatever little rain water is available, for irrigation purposes. As a result development of minor irrigation sources like tanks becomes essential for proper utilisation of scarce water resources.

Lack of continuous flow of water increases its value for irrigation purposes, which in turn necessitates continuous and sometimes immediate care of he irrigation works like tanks. This has to be undertaken by the people in the neighbourhood of these irrigation works. This sort of necessity had been very well recognised historically and led to the development of traditional community based institutions for the development of minor irrigation sources in dry regions like Rayalaseema. In these regions some of the indigenous institutions and through them public involvement in the construction and maintenance of minor irrigation works was once widely prevalent and was fully endorsed by the local rulers.

For centuries preceding the British rule, the native rulers had taken great interest in the construction and maintenance of various minor irrigation works especially tanks in dry regions. Besides directly undertaking the construction of larger tanks, the native rulers had encouraged the local initiatives for the construction as well as maintenance of minor irrigation works by encouraging local institutions like Dasabandam and Kudimaramat.

The institution of Dasabandam was in the form of an inam tenure. Most of the time construction of the Dasabandam tanks and Dasabandam wells was undertaken along with the establishment of new villages and settlements in

the early pre-British days, in return for Dasabandam grants. During the medieval period also Dasabandam works were undertaken by people from different sections of the society, primarily with the State initiative and encouragement. Kudimaramat, on the other hand, was an extensive native organisation bringing together several people for the maintenance of minor irrigation works, especially in those dry areas where river and spring channels were the dominant sources of irrigation. Though it was the initiative taken by the people that mattered ultimately for the successful functioning of these institutions, there is hardly any doubt that the system was nurtured and encouraged under the tutelage of the State patronage.

Disintegration of the Indigenous Institutions

The imposition of the British colonial rule and the process of incorporation of India into the imperial economy, had brought about certain strong but gradual alterations in the tenurial relations, which had struck at the very roots of the indigenous institutions. After annexation of the region of Rayalaseema, the British East India Company had recognized the existence of the Dasabandam tenure, though it didn't make any specific efforts to further the practice in the form as it was under the native rulers. This was mainly because of the overall changes brought about by the colonial government in the revenue administration and also in the policies relating to minor irrigation works. The process of incorporation replaced the institutional interests of the periphery with those that facilitated the subordination of the indigenous interests to that of the metropolitan.

Under the British rule, the imperial government had very well recognized the existence of thousands of the Dasabandam works and also the institution of Kudimaramat. It formulated various policies, from time

to time, with regard to the maintenance of the Dasabandam works. However, the growing transactions in land, the emergence of a land market, the division of Dasabandam inam land by inheritance and sale, the slow but growing mobility of the people away from the rural areas brought about instability in the institution of Dasabandam. The result was the resumption of hundreds of the Dasabandam inams. Voluntary contribution of Kudimaramat labour (of the pre-British days) at the grossroots level was not forthcoming in the newly emerging bureaucratic and revenue oriented environment. Hence under the colonial rule, the work which was hitherto a voluntary contribution was made compulsory contribution through legislation, but still with little positive impact. Informal functioning of these institutions was made more formal and bureaucratic through the creation of formal bodies like the Irrigation Panchayats.

The changing property relations in land through inheritance and sale, the increasing mobility of the cultivators in search of better opportunities elsewhere, the increasing emphasis on the revenue settlement policy of the colonial government, the encouragement of private wells for irrigation, the excessive bureaucratization of local administration and an increasing dependence on rules to maintain the water resources had no place for indigenous institutions or people's initiatives on which they depended. What was perceptable was a process of transformation of the institutional arrangements from those shaped by predominantly indigenous needs ment by local initiatives to those dictated by the external interests.

Privatisation of Irrigation Sources

Prevalence of hundreds of Dasabandam wells was a significant feature of the pre-British days, explaning their community character. The preponderance of Dasabandam wells in the early British Rayalaseema and its

disappearance by the turn of the 19th century and the first few decades of the present century, is an adequate reason to believe that with the land, water also increasingly changed from being a public resource to a private resource. After the incorporation of India into the emerging imperial system, the British under the East India Company had initiated the process of encouraging the construction of wells at private cost, which was later intensified under the Crown. Private wells have come to be recognized as a protective source of irrigation during famine. Several loans were granted for this purpose. As a result thousands of wells were constructed by the ryots.

During the initial years of the direct British regime, several ruined tanks were made over to the ryots on special dry rates for private repairs. Later, even tanks irrigating small ayacuts, though not in a ruined condition were handed over to private individuals for repair since the government thought that it was not profitable enough to maintain such small works at government cost. Entrusting the construction of a major irrigation work like the Kurnool-Cuddapah Canal to a private enterprise was another big venture in the direction of encouraging private initiatives in the development of public sources like irrigation. The overseas private company (MICC) had limited knowledge about the local agricultural and irrigation practices of the region. This resulted in taking several wrong decisions, including the choice of the tracts to be traversed by the Canal and high initial water rates in the tracts where there was hardly any demand for irrigation water. These fundamental and inherent mistakes could not be reversed altogether even later after the government had taken over the administration of the Canal. Hence, there was only a marginal improvement in the performance of the Canal.

Imperial Irrigation Policy and the Neglect of Minor Irrigation Works

Maximization of land revenue was the guiding principle of the British colonial administration right from the East India Company days. Whenever the Company government had undertaken some repairs to tanks and watercourses in dry areas it was always the revenue surplus as a difference between the estimated cost and the expected revenue that decided the choice of works. The importance of irrigation, particularly of major works and their revenue fetching prospects were very well understood by the British towards the end of the Company rule itself. Under the Crown, a separate department of PWD was created with the objective of undertaking profitable irrigation development. The frequent recurrence of famines had necessitated the imperial government to look into the protective aspects of irrigation development. The imperial motive of extracting as much revenue as possible had led to the evolution of a separate water rate system which was altered from time to time on lines with the settlement and resettlement of land revenue.

The history of Tank Restoration Scheme is a classic example of the conflict between the local needs which can be sustained by institutions based on peoples initiatives on the one hand and the imperial profits which are driven by cost-return calculus. The Tank Restoration Scheme was one of the major policy outcomes of the Crown's regime. Under this Scheme, the amounts spent by the imperial government were meagre and the way they were spent were discriminatory. Tanks of profitable returns were only restored. Tanks irrigating small acres of land were either given to the ryots for private repair or abandoned altogether. The recommendations of various Famine Commissions and also the Irrigation Commission had brought about several changes in the imperial irrigation policy, but with little positive impact on the minor irrigation works in the dry areas like Rayalaseema.

Appendix I

LIST OF THE MORE IMPORTANT CROPS RAISED IN KURNOOL DISTRICT

Common Name	Where Sown
Cereals The great millet or Jonna (Ye1low)	On the lighter soils generally as an early crop, and on stiffer soils in the middle season.
Do. Do.(white)	On the stiffer soils as a late crop.
Koda millet or Arika	On the poorer soils early.
Spiked or Bulrush millet or Sazza	On the mixed soils and in some taluks as an early garden crop alone.
Indian millet or Variga	In some taluks as a late crop.
Wheat or Godhuma	On the black-cotton soils very late.
Do or Yeva	Under irrigation very little.
Paddy	Under irrigation and dry
Ragi	Mostly under irrigation from wells, also in some taluks on good land, dry.
Pulses Red gram or Kandi	Everywhere mixed with early cereals
Greengram or Pesara	Everywhere mixed with early cereals also with late jonna.
Alatsandalu Anumu Mittikelu	With early jonna on poor soils in few taluks in a small quantity only generally.
Blackgram or Minurau	A very little on medium soils by itself.
Bengalgram or Senaga	On the black-cotton soils generally
Horsegram or Ulava	On the lighter soils by itself largely and mixed with cotton on stiff soils.

Industrial Crops Indigo Castor	 On mixed and stiff soils generally. On poorer soils alone; on stiff with indigo.
Cotton	Chiefly alone on the black-catton soils, also a little mixed with jonna on light, and with korra on mixed soils.
Roselle (Gogu)	Mixed with many cereals on all soils
Gingelly	Mixed with korra and jonna on light and mixed soils early.
Safflower (Kusuma)	On black soils with wheat and as a fence
Linseed	On black soils as a late crop.
Tobacco	On mixed and heavy soils chiefly in the North Errarnala and Nannur and Nandikotkur tracts.
Sugar-cane	Under irrigation on the best land in a few places.
Miscellaneous Crops Chillies	 On mixed soils largely near Kurnool and everywhere in gardens.
Omuin or Vamu	On mixed and stiff soils in Nandikotkur tract chiefly.
Turmeric	Under irrigation as sugar-cane, often mixed with maize.

Source: C. Benson, An Account of the Kurnool District Based on an Analysis of Statistical Information Relating Thereto and on Personal Observation. Madras, 1889, P.77-78.

Appendix II

Sources of Irrigation in the Four Sub-Division Taluks of Cuddapah District: 1879

Sources of Irrigation	Rayachoti				Vayalpad				Madanapalli				Kadiri				Sub-division Total			
	Govt	Das.	Pri.	Total	Govt	Das.	Pri.	Total	Govt	Das.	Pri.	Total	Govt	Das.	Pri.	Total	Govt	Das.	Pri.	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Tanks & kuntas	192	500	7	699	361	1112	68	1521	241	681	128	1050	181	181	104	446	985	2464	297	3716
Channels from Rivers and Hill Streams	49	84	9	142	28	35	3	66	28	97	5	130	24	16	9	49	129	232	26	387
Spring Channels	7	82	-	89	90	150	15	255	21	9	7	37	42	18	8	68	160	259	30	449
Anicuts	4	7	-	11	-	-	-	-	1	1	-	2	-	-	-	-	5	8	-	13
Wells	185	2648	2645	5678	35	2154	2898	5087	50	883	3982	4895	730	2017	3825	6572	1000	7682	13550	22232
Total	437	3321	2861	6619	504	3451	2974	6929	341	1661	4122	6114	977	2212	3946	7135	2259	10636	13903	26797

Note: Govt. - Government; Das. - Dasabandam; Pri. - Private.

Source: PBR, 15 October 1879, No.2931; Revenue, 5 February 1880, No.140.

Appendix III

STATEMENT SHOWING THE DETAILS OF SOME OF THE DASABANDAM (TANK) INAMS RESUMED IN CHITTOOR AND PALAMANER TALUKS OF CHITTOOR DISTRICT: 1901-1902

Sl. No (1)	Dasabandam Source of Irrigation (2)	Village (3)	Das.Inam Extent (4)	Enjoyers of the Dasabandam Inam at the Time of Resumption (5)
	PALAMANER TALUK			
1.	Kotha Cheruvu	Jallipet	3.43	Peddareddy Chengamma, Abbaiah alias Mallesu.
2.	Motla Cheruvu	Chappitipalli	<10	
3.	Doddigani Cheruvu	Devadoddi Village	4.19	Peddaseshugavudu, Chirmaseshugavudu, Venkatagavudu, Raghunadha gavudu.
4.	Venkatappa Cheruvu	Nallipatti	1.42	Budda Venkatappa alias Keseti Venkatappa [He has purchased the shares of the other two inamdars also].
5.	Agraharam Cheruvu	Kolamasinapalli	2.79	Venkatamuni Reddy.
6.	Maddibanda Cheruvu	Kolamasivapalli	3.8	Sripuram Narayana Swamy, Timraaiah Swamy.
7.	Peddacheruvu	Kallupalli	13.36	Jonna Ramana, Jonna Venkata Ramana, Nareppason Muniswami, Gandla Kondama, Basappa, Dasini Reddi, Pedda Venktaramamma, Chinnappa Reddi, Nareppa Naidu Veerigouda.
8.	Chennaiah Cheruvu	Madurarabadi	0.70	Muthadu Chinniga.
9.	Nagireddypalli Adavi Cheruvu	Gonumakulapalli	4.48	Veerasarigurappa now deceased. Wife Balarama, son-in-law Venkataramanayya.

10.	Naranappa Cheruvu	Chappidipalli	24.28	Kattaioanchi Girappa, K. Narayanaswarni, K. Ramaswami, K. Varadappa, Laxmaiah, Vasudeva Rao, Narayana Rao, Grandi Inumaswami, Venkataswami.
		CHITTOOR TALUK		
1.	Raroabhadrayya Cheruvu	Kamachinniah palli	19.66	Sankara Pillai, Ravilla Muneppa Naidu, Armam Muthiah Chetty, Kalluru Varadappa, Bacreddi Muneppa, Chengamanaidu, Talluru Chengal Rayudu, Venkatrayudu, Nallamaneni Kamaiah, Nallamaneni Venkatrayudu, Curnam Krishnappa, Ramalingadu, Curnam Chengal Reddi, Ravilla Chengama Naidu, Sri Chinna Chengama Reddi, Panthgunta Chengal Reddi.
2.	Kalahasti Cheruvu	Polavaram	6.81	Raraalinga Reddy, (died) Some of them reside in Puthalpet - Abba Reddi, Komati Munireddi, Palamakula Munireddi.
3.	Rayama Cheruvu	Venumathapalli		Sirasanam Bapipedda Boyal Reddi, China Boyal Reddi, Muniyam Vengareddi.
4.	Amapalli Tank	Puthalapet	4.23	Abbareddi, Butchi Reddi, Pedda Subba Reddi, Bangar Reddi, Muni Reddi, Bunni Venga Reddi, Toomati Muni Reddi.
5.	Pullareddi Cheruvu	Chintapenta	3.46	Vengareddi and others.

6.	Venkatrayani Cheruvu	Kothakota	7.79	Sidda Reddi, Maniam Venkat Reddi, Chinna nayan Reddi, Govinda Reddi, Narayan Reddi, Butchi Reddi, Narayan Reddi, Tharabireddi gari lunireddi, Pulicherla Chenna Reddi, Abba Reddi, Rama krishna Reddi, Avadhan Narayanayya, Subbamma, Wife of Bogayya, Pulicherla Poli Reddi, Pulicherla Chengal Reddi, Pulicherla Venkata Reddi, Pulicherla China Chenna Reddi.
7.	Raganna Cheruvu	Venuthanapalli	8.58	Venga Reddi, Subba Reddi, Chenga Reddi and seven others.
8.	Venkatareddi Cheruvu	Godugu-chinta		Chengal Reddi, Chinathatnbi Reddi, Enainula Chengal Reddi.
9.	Pottinayani Cheruvu	Puthalpet	30.19	Abbareddi and others.

Source: North Arcot RDs for the Years 1901 and 1902.

Appendix IV

STATEMENT SHOWING THE DETAILS OF SOME OF THE DASABANDAM INAMS RESUMED IN MADANAPALLI AND VAYALPAD TALUKS OF CUDDAPAH DISTRICT; 1899

Sl. No. (1)	Name of the Dasabandam Source of Irrigation (2)	Village (3)	Das.Inam Extent (4)	Das.Inam Asst. (5)	Circar Ayacut Extent (6)	Circar Ayacut Asst. (7)	Cost of Repair (Rs.) (8)	Enjoyers of the Dasabandam Inam at the Time of Resumption (9)
			WELLS / BHAVIS					
	VAYALPAD	TALUK						
1.	Nallavani Bhavi	Tarigonda	2.29	16.0.0	2.29	16.0.0	335	Pedda Venkata Reddi, Govinda Reddi
2.	Todikunta Bhavi	Tarigonda	0.98	6.13.0	0.98	6.13.0	151	Kandula Garudachelam, Audinarayana
3.	Vuriraundari Bhavi	Tarigonda	0.84	5.14.0	0.84	5.14.0	150	Venga Chenchu, Peda Venkata Reddi, Nallappa, Venkatanarasamma
4	Kavalavandla Bhavi	Tarigonda	0.58	4.1.0	0.58	4.1.0	402	Yangara Chennappa
5.	Nimmanothi Bhavi	Tarigonda	1.30	9.2.0	1.31	9.3.0		Chitambarappa, son of Raraappa
6.	Magasam Bhavi	Tarigonda	0.80	5.10.0	0.80	5.10.0	223	Pedda Venkata Reddi, Chinna Venkata Reddi
7.	Topula Bhavi	Tarigonda						Govinda Reddi, Chengal Reddi, Venkat Reddi
8.	Nosala Bhavi	Tarigonda	0.60	4.3.0	0.61	4.4.0	350	Govind Errigari Veerappa
9.	Jeevagumpula Bhavi	Tarigonda	0.74	6.11.0	0.74	6.11.0	663	Putta Chelamaiah, Chengaludiah, Venkat Reddi
10.	Bangarutopula Bhavi	Tarigonda	0.31	2.13.0	0.31	2.13.0	300	Putta Chelamaiah
11.	Bodumalla Bhavi	Tarigonda	0.50	3.8.0	0.51	3.9.0	300	Proddatur Subbi Chetty, M. Ramaswami Chetty
12.	Lakshmana Bhavi	Tarigonda	1.20	8.6.0	1.20	8.6.0	103	Butchi Reddi, Subbamma , Karamanohar
13.	Kottam Bhavi	Tarigonda	0.86	6.1.0	0.86	6.0.0		Reddi Venkat Reddi, Putta Chelamaiah

14.	Narasirahuni Bhavi	Tarigonda	0.99	6.15.0	1.00	7.0.0	300	Iragadu, Mogeli Ramaswamy
15.	Soga Bhavi	Tarigonda	1.12	7.13.0	1.12	7.13.0	439	Uogisi Akkalappa, V. Kamappa, (Minor son of Akkalappa), C. Rama Rao, Krishnaiah, Bhaskarappa
16.	Seetaram Bhavi	Tarigonda	0.70	4.14.0	0.70	4.14.0	674	Veeriga Chenchu
17.	Parapalla Bhavi	Tarigonda	0.61	4.4.0	0.61	4.5.0	177	Bali Nayani Nanigadu
13.	Balinayaninay udu Bhavi	Chinna-gottigal	0.14	0.11.0	0.24	1.3.0		-
19.	Madinani bhavi	Jillella-mandla	0.82	4.2.0	0.84	4.3.0	100	Rayavaram Papireddi, and Nagannah
20.	Nelagudreddi Bhavi	Jillella-mandla	0.96	6.12.0	0.96	6.12.0	200	Kamala Bhunayak, Subbiah, Uma Kistaiah
21.	Nimmana Chitta Bhavi	Jillella-mandla	1.85	S.4.0	1.85	9.4.0	200	Rayavaram Nagammah, Rayavaram Papireddi
22.	Cherlo Bhavi	Jillella-mandla	1.63	S.13.0	1.63	9.13.0	200	Ram Reddi and Nachi Reddi
23.	Kuppireddi Malreddi Bhavi	Jillella-mandla	0.77	3.14.0	0.77	3.14.0	200	B. Gangappa, Ram Reddi, D. Nachi Reddi
24.	Macchireddi Bhavi	Jillella-mandla	1.2	5.2.0	1.3	5.2.0	200	Desu Kondareddi, Ram Reddi, Machi Reddi
25.	Vadla Chelamanna Bhavi	Jillella-mandla	0.56	2.23.0	0.67	3.6.0	150	Vadla Venkatappa
26.	Isaka Bhavi	Jillella-mandla	0.85	5.2.0	C 49	2.15.0	200	Nachi Reddi, Ram Reddi
27.	Guruvaraju Bhavi	Jiliella-mandla	1.29	5.23.0	1.30	5.24.0	300	Boyani Venkatappa, Polisetti Venugadu
28.	Seethapuram Rachaiah Bhavi	Ustikayala-penta	5.76	23.1.0	5.76	23. 1.0	250	Seetarampuram Rasaiah
29.	Bathinavandla Bhavi	Ustikayala-penta			0.48	1.15.0	100	Varadamba, Guardian of minor Thaluguntla Chinnagadu

	MADANAPALLI	**TALUK**						
1.	Chintamani Bhavi	Kammalapalli	0.84	6.12.0	2.52	20.3.0		Tadilla Lakshmanna, Hadupuri Reddi
2.	Gangaraju Musalayya Bhavi	Kammalapalli	0.70	5.10.0	2.9	16.12.0	500	Subba Reddi
3.	Nadira Bhavi	Kammalapalli	1.90	13 .35 .0	1.91	13.36.0	500	Cholaramaiah Somi Rayadu, Ayyapasomi Rayadu, Venkateswara Swami Rayadu, Ayyapasomi Venkatappa
4.	Chalarnanna-gari Bhavi	Kammalapalli	0.65	5.3.0	1.97	15.12.0	500	Chelamaiah Somi Rayadu, Pedda Venkatapah Peddigadu, Eangiah, 3uddavadu, Pullakka, Erayya, Eassam Bayyan, D. Narasimha Rao, P. Peddamma
5.	Vepamani Bhavi	Kotlapalli	-	-	-	-	-	Kandula Garudachalam, Battula Venkatappah

			TALUKS/ Cekvwyse					
	Vayalpad Taluk							
1.	Chinnapareddi Cheruvu	Tarigonda	1.45	10.2.0	1 .46	10.3.0	290	Chinna Venkata Reddi, Chinnapareddi
2.	Rayappa Cheruvu	Nadimicherla	9.1	27.1.0	8.26	15.0.0	35	Gurumurthy, V. Subbaiah, J. Subbaiah, L. Chinna Ram Reddi, Laxminarayana Rao, V. Rama Rao.
3.	Vaddula Cheruvu	Chintakunta	0.98	2.7.0	2.8	5.4.0	100	A. Lakshmakka, A. Venkataramaiah, and Veeraswami
	MADANAPALLI	TALUK						
1.	Kagitivani Cheruvu	Kundamarri	11.6	45.15. 0	16.38	58. 1.0		Gouripedda Kalappa, Gouri pedda Srinivasaiah, Gajula Gangulappa, G. Subbamma, G. Siddappah

			POEDG/	KUNTAS				
	VAYALPAD TALUK							
1.	Yerraboyana Kunta	Gangachinta	0.81	3.1.0	0.83	2.8.0	150	Aluru Nagireddi
2	Nayuni Peddamma Kunta	Jillella-mandla	3.14	12.9.0	3.26	13.1.0	250	Pachpala Kadnappa, Tiramala Naidu
3.	Sankaravani Kunta	Bhakarapet					50	Chetti Siddappa
	MADANAPALLI TALUK							
1.	Kavagala Kunta	Kalvapalli	0.87	2.10.0	-	-	-	Chinnapareddi, Son of Inamdar Gangireddi.
2.	Reddi Papanna Kunta	Jadamarri	0.61	4.4.0	0.61	4.5.0	177	Yasvant Bahadur, Kadiyala Umakantappa, Kadiyala Lakshmamma and Kadiyala Venkataswami

Source: North Arcot RDs for the Year 1899.

APPENDIX V

WASTELAND ALLOTMENT UNDER THE K-C CANAL

Where the Waste land is situated	Extent granted	Particulars about the block applicants	
		Kurnool District	
		Nandikotkur Taluk	
Village (1)	(2)	Name (3)	District to which he belongs (4)
1.Pudur	10.20	Subbia	Kurnool
2.Pamulapad	209.20	Ramasubba Iyer	Tinnevelly
3.Bhanumukkala	73.19	R.Narasimha Iyer	Do
4. Do	47.52	Venkata Rao for Srinivasa Iyer	Do
5. Do	124.00	Srinivasa Iyer	Do
6. Do	17.56	R. Narsimha Iyer	Do
7. Do	17.63	Ramasubba Iyer	Do
8. Do	12.31	R. Narasimha Iyer	Do
9. Allur	13.79	Virigadu	Kurnool
10. Rudravaram	11.8	Rami Reddi	Do
11.Muchuramarri	54.13	U.Kistnayya and four others	Do
12. Do	31.71	Venkataseshayya and two others	Do
13. Do	19.16	Sirigireddi Yellayya	Do

14. Vellala	22.19 J	C.Kamayya	Nellore
		Nandyal Taluk	
15.Pesaravoyi	71.35	Srinivasa Rao	Tinnevelly
16.Nunepalli	43.85	Rajah Saib Sirvel Taluk	Kurnool
17.Allagedda	21.76	Barrukala Subbaiah	Do
18. Do	35.34	Srinivasa Iyer	Tinnevelly
District total	836.69		
		Cuddapah District	
		Proddatur Taluk	
19.Madur	335.36	Ganapathi Pillai & Co.	Vizagapatnam and Tanjore
20. Do	40.33	Natesa Iyer	Tanjore
21.Maidukur	121.51	Adimulam Mudaliar	Kistna
22.Badripalli	51.44	Lakshminarayana Sastri	Tinnevelly
23. Do	37.41	N.Subbaiah	Cuddapah
24. Do	158.19	Nawab Nizara-ud-dowlah Rustumja, Nawab of Bandur	Madras
25. Do	33.63	Bhuinireddi, Buddareddi and four others	Cuddapah
26.Dhoor	25.42	Nur Ahmad and two others	Do
27.Velavali	81.28	P.Venkiah and others	Godavari
28. Do	80.11	S.Chinnabhi and others	Cuddapah
29. Do	15.46	Subbadu and four others	Do

30.Chiyyapad	42.60	Ramaswami Iyer	Tanjore
31.Chintakunta	36.50	Gopalaswami Iyer	Do
32.Alladupalli	279.50	T.Salla Nagayya and five others	Cuddapah
33.Peddaguruvalur	34.97	Bhumireddi, Buddareddi and four others	Do
Cuddapah Taluk			
34.Tudumuladdinne	81.15	Nawab-Nizam-ud-dowla, Rustumja, Nawab of Bandur	Madras
35. Do	102.12	Gopala Iyer and others	Tinnevelly
36. Do	14.71	Seshadrinatha Iyer	Do
37. Yetur	41.72	Koorathalwar Iyengar	Madras
38.Tavvaripalli	86.93	Appaswami Iyengar	Chingleput
39.Chinnavatsupalli	53.42	C.Guru Rao	Madras
District Total	1753.76		
Canal Total	2590.45		

Source: Board of Revenue (Rev.Sett.. L.Rds.. and Agri.). 9 October 1899, No.315, P.12.

Glossary

Amal	Transaction; Administration; Business.
Amaldar	Native collector of revenue; Superintendent of the district or division of a country.
Amani	A settlement under which the government receives its share of the produce of the lands from each cultivator in kind, instead of stipulating for a pecuniary commutation.
Anicut	A weir or dam of masonry across a river.
Ayacut	This term signifies the whole taxable area in a village but more specifically under an irrigation work.
Bahaudur, Bahadur	A title of honour given to nobles under the Moharamaden government and to distinguished native officials under the British.
Beriz	The total of territorial assessment.
Bhattavarti, Bhittuvarthi	An assignment of revenue or land granted to Brahmins at a low rent, or rent - free, for their subsistence, the lands in such cases being mostly held in severalty. The term sometimes designates a village, the lands of which are permanently distributed among hereditary shares.
Bund	The wall of earth mostly artificial that supports the lower end of a tank. Also masonry bank built across a stream so as to retain water above it.
Calingulah	A water-way constructed in the bunds of tanks to permit the escape of surplus water, so as to prevent the bund bursting; usually set with upright stones to admit of partial bunding up.
Calwah	A channel.
Cawny, Kani	A land measure. Approximate actual value of one cawny = 57,600 square feet or 1.322 acres.
Chetty, Setti	Primarily a member of any trading caste in Southern India.

Circar, Sarkar : Government.

Curnam, Karanam	Village registrar and accountant.
Dasabandam	An allowance of land (Khanda Dasabandam) or exemption of revenue (Shamilat Dasabandam) given as a compensation for the construction or maintenance of a tank, well, or channel; Abatement of one-tenth of the revenue on account of compensation for some public work, as the construction of a tank.
Fasli, Fusly	The harvest or agricultural year, from the sowing of the Kharif through to the harvesting of Rabi. The Madras government fixed its commencement to 12th July.
Fassaljasti Fussuljasty	Charge for a second crop raised by government water on land registered as single crop.
Inam	Generally a gift from a superior to an inferior (danam). So a grant of land for religious or charitable purposes, made by government.
Inamdar	Holder of anything as a favour. A person in the possession of rent-free, or favourably assessed lands.
Jagheer	An assignment of the government share of the produce of a portion of land to an individual.
Jamabandi	The annual settlement of the land revenue, made under the Ryotwari system.
Kaifiyat	Statement, description, reports, account particulars. Any authenticated document.
Kudi, Coody	Agricultural village, habitation.
Kudimaramat, Coodymaraumut	Contribution of labour for petty repairs to irrigation work, which the ryots are bound to give by immemorial custom.
Kunta	Same as gunta, a pond. Also a Telugu measure of land equal to 1089 sq.ft. 32 kuntas or 19,600 sq.ft. make a Katti. A Katti is equal to 14 acres.

Manyam, Mauniuin	A grant of land, or assignment of the government share of the produce therefrom to the revenue officers and the public servants or other individuals in return for services to be rendered to the community.
Maramat	Repair of public works.
Nanjah, Nunjah	Land irrigated or capable of irrigation.
Nirganti, Niruganti	Inam for superintending the distribution of water for irrigation. Also person who is assigned the inam and who performs the duties of superintending the distribution of irrigation water.
Nullah, Nalla	A small river; also an artificial water course.
Patel, Potail	Village headman.
Patta	Revenue certificate given by Zamindar or collector of revenue stating terms on which the land is held and the amount payable.
Poligar	Military chieftain.
Poramboke	Uncultivable land.
Punjah	Land cultivated without irrigation, also land classed as such in the revenue accounts.
Reddy, Reddi	A chief, usually a rich man in a village.
Ryot	Peasant, an occupier and cultivator of land; tenant of land.
Ryotwari	The term used for that system of land revenue administration, under which the government deals with each ryot individually.
Shrotrium	An assignment of land or revenue to a Brahmin learned in the Vedas. Also lands, or village held at a favourable rate.
Taccavi, Takkavi	Official advances to cultivators from public funds for agricultural purposes.
Tahsildar	A native collector of a sub-division under a European collector or a Zamindar.

Taram	Class, especially applied in South India to designate the lands, and the heads under which they are arranged in the village accounts.
Tirvajasty Tirwajasti	Charge for water from a government source taken to dry or garden lands.
Turn	Roughly represents a hundred weight. It is 4,480 tolas.
Uppara	The tank digging caste.
Vetti	Village peon.
Visabadi	Villages so called for the land and rent being divided into sixteen shares, the share settling among themselves the exact proportion of the whole assessment that each had to pay.
Wadde, Vadde	Inam for the service of repairing tanks. Wadders are those enjoying such inams and known for their skills of excavation of tanks, wells or channels.
Zamindar	Land holder who collected the revenue on behalf of government. But by 1802 settlement complete proprietary rights were confirmed on them in property.
Zillah	A district.

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