



Cover Page



## ARTIFICIAL IRRIGATION UNDER THE VIJAYANAGARA RULERS

**Dr. D. Mercy Ratna Rani**

Associate Professor

Department of History, Archaeology & Culture

Dravidian University

Kuppam, Chittoor Dist., Andhra Pradesh, India

### Abstract

The kingdom of Vijayanagara takes its name, city of victory, from its capital on the Tungabhadra River, near the centre of the sub-continent. It came into existence in A.D. 1336 founded by Harihararāya and Bukkarāya with the blessings of sage Vidyāryana. The kingdom had its rule in both Andhra and Karnataka from the very beginning as Harihararāya was holding the districts of Anantapur, Chitoldurg, Shimoga, Raichur, Dharwar and Bellary as the commander of Kampili before founding the independent kingdom. Under Harihararāya their rule extended into the coastal tract and Vijayanagara inscriptions were found in Nellore district. The Vijayanagara rulers established their control over the Rayalaseema region even during the early years of their rule. The extension of Vijayanagar power into coastal districts brought them into conflict with the rulers of Kalinga. The four dynasties (i.e., Sangama, Śāluva, Tuluva, Āravīti) of Vijayanagar ruled over the entire South India and a large part of Āndhradēśa. Out of thirty rulers eleven kings had taken care to provide water facilities like wells, tanks and canals for the development of agriculture. Among these eleven kings the greatest was Krishnadēvarāya who took keen interest in promoting irrigation facilities in Āndhradēśa.

**Keywords:** Agrahāra, Nadimātrikās, Dēvamātrikās, Sētūs, Nūtimānya, Nadu-Bāvi, Ambudhi, Mahāpayōdhi, Rēkhadandās.

### Introduction

The present paper tries to analyse the contribution of Vijayanagara kings to artificial irrigation works in their kingdom. It is necessary to know the brief political history of Vijayanagara kings, because, the economic progress of the people depended very much on rulers.

The Vijayanagara Empire played a vital role in the history of South India for more than three centuries. It protected and preserved the Hindu religion and culture during the days of Muslim authority, rapine and destruction. The kingdom of Vijayanagara takes its name, City of Victory, from its capital on the Tungabhadra river, near the centre of the sub-continent. It came into existence in 1336 A.D. founded by Harihara and Bukka with the blessings of sage Vidyaranya. The Vijayanagara Emperors of Sangama (A.D. 1336-1485), Śāluva (A.D. 1485-1506), Tuluva (A.D. 1506-1570), and Āravīti (A.D. 1570-1664) dynasties ruled over entire South India and a large part of Āndhradēśa.

Harihararāya I (A.D. 1336-1354/5) was the founder of the Sangam dynasty. He expanded the Vijayanagara kingdom by bringing whole Karnataka and the South-Western Āndhradēśa under his control. Dēvarāya II was a great soldier, diplomat and patron of letters. His successors Mallikārjuna (A.D.1446-1465) and Virūpāksha II (A.D.1465-85) were weak rulers. So, Kapilēśvara Gajapati of Orissa occupied a major part of Āndhradēśa. The Śāluva Narasimha, the Governor of Chandragiri rose to the occasion saved the Vijayanagara Empire and recovered the lost territories. But the Gajapati king, Purushōttama, the son and successor of Kapilēśvara Gajapati, reoccupied the coastal region of Āndhradēśa. Vīra Narasimharāya, the son of Narasanāyaka put an end to Immadi Narasimha (son of Śāluva Narasimha) and usurped the throne. Vīra Narasimharāya was the founder of the Tuluva dynasty. He was succeeded by Krishnadēvarāya (A.D.1509-1529), the greatest ruler of Vijayanagara history and one of the celebrated emperors of India. The defeat of Vijayanagara in the battle of Bannihalli (Tallikōta or Rakshasi-Tangadi) in A.D. 1565 reduced the empire's military prestige, economic prosperity and the extent of its territorial jurisdiction. The Empire did not perish. It continued to linger on for nearly a century more with ever deteriorating territories and languishing revenue. Rāmārāya's brother Tirumala carried away much of the wealth to Pēnukōnda, leaving behind the king and governing in his name until A.D. 1568-69 when he declared independent rule i.e. Āravīdu dynasty. The last ruler of the Āravīdu family, Śrī Ranga III lost even capital Vellore and thus was reduced to the position of Emperor without Empire. He was forced to retire to Belur. With his death in or about A.D.1678, came the end of the Empire. However, the Marathas under Shivaji continued the Vijayanagara traditions. Out of thirty rulers the greatest was Krishnadēvarāya who took keen interest in providing irrigation facilities in the country.

The Vijayanagara rulers gave importance to agriculture and tried to bring more and more land under cultivation by reclaiming waste lands and also by providing irrigation facilities. New villages were developed and more land was brought under cultivation through agrahāra grants with tax concessions for the newly developed areas. Concessional tax rates were implemented for



Cover Page



a few years in fields irrigated by newly constructed tanks. There were two crop seasons corresponding to the summer and winter rains. Since, the Andhra area of the Vijayanagara kingdom was mainly rain fed except for the Krishna and Pennar valleys, providing irrigation facilities became a necessity. Irrigation works had never been neglected in India. According to Kautilya's Arthśāstra, irrigation works are the sources of surplus crops; the result of a good shower is ever attained in the case of crops below irrigation. Irrigation always received from the state in ancient and medieval period. It has also religious inviolability, so much that officials, as well as private individuals, were challenging with one another in their concern to digging tanks, wells, canals, etc.

Irrigation works may be classified into two types natural and artificial. The natural sources of water supply were the rivers and rains. The lands which are irrigated by rivers, rivulets, tanks, wells, etc., are called nadi-mātrikās and the lands which purely depend on rains are called nature fed or dēvamātrikās. The artificial irrigation works are of three types. They are 1. Wells including dāruvu wells on river banks, 2. River channels, rivulets, tanks, reservoirs or dams (sētūs) formed by building embankments across two hills and 3. Streams -canals. The failure of monsoons and the major droughts resulted in the construction of various artificial irrigation works from the very early period. The Śātavāhanās, Ikshvākūs, Pallavās, Vishnukundis, Chālukyās, Kākatīyās and Rēddi kings gave importance to build tanks, wells, and canals. The Vijayanagara kings also gave importance to provide artificial irrigation in their kingdom. During their rule, the kings as the head of the state, ruling chiefs, officials, local bodies and individuals took interest to provide water facilities for the encouragement of cultivation, plantation and their daily purpose.

The construction of irrigation works was not only to satisfy the desire of the ruler, but also to increase the economic conditions of the state. One of the reasons for the flourishing economic conditions of Vijayanagara Empire lay in the construction of irrigation works, which brought new areas under cultivation. The Vijayanagara inscriptions are spread over a vast period of time from 1351 to 1696 A.D. Several inscriptions refer to the rulers, nobles and officials built several tanks or reservoirs, wells, and canals. Before, the rule of Vijayanagara kings, there was no water supply in Rayalaseema region. According to Āmuktamālyada the importance of irrigational facilities in a small state in no uncertain terms when a state is small in extent, then both virtue and prosperity (dharma and artha) will increase only when tanks and channels are constructed. During the Vijayanagara period artificial irrigation works were well developed in this area. Every district had a chēruvu named after either the ruler or the donor of the irrigation work. Wells were generally dug in garden lands to provide these with a constant water supply. A record from Pōrumāmilla in Badvel taluk of Kadapa district of Śrī Krishnadēvarāya, dated, 1526 A.D. mentioned the digging of a well. The construction of a nadu-bāvi (stepped well) mentioned in the Telugu record Kannēlūru, Jammalamadugu taluk of Kadapa district, dated, 1539 A.D. during the reign of Achyutadēvamahārāya.

The Vijayanagara kings gave much preference to build artificial tanks in Rayalaseema. The terms chēruvu, kōlanu, madugu, tatāka, kēre and ēri mean a tank. In some places, due to their huge size they were called ambudhi, sāgara, samudra, mahāpayōdhi, vardhi, pēmjēruvu, sarōvara and because of sanctity, fīrtha. The construction of tanks was looked upon one of the seven meritorious acts which a man ought to perform during his life time. A son (the procreation of), a poem (the composition of), a treasure (a hoarding of), a grove (the planting of) a girl to a Brāhmin (the marriage of), a temple (the consecration of), and a tank (the construction of), are considered as sacred acts. Every district had a chēruvu or a tank named after either the ruler or the donor of the irrigation work. The method of tanks construction is best illustrated in the tank inscription at Pōrumāmilla in Badvel taluk in Kadapa district, dated, 1369 A.D., during the reign of Bukkarāya I. It describes the construction of the tank at Pōrumāmilla located in the Sākalisīma by Bhāskara alias Bhavadura, son of king Bukkarāya I, who was then the Governor of Udayagiri. This inscription gave valuable information about the construction of tanks. The grant commences with invocatory and preliminary verses, the succeeding stanzas give the genealogy of the donor, Bhāskara Bhavadura, the next few verses narrate the merit attaching to the building of a tank, then are given the details of a tank construction and the specification of the site of the tank, date of its construction, etc., then the usual imprecatory and benedictory stanzas, and lastly the specification of the adhikārin (Dēvarrajan, son of the minister (probably of Bhāskara) Kumāragirinātha) of the tank, and the composer (Limgayao-Machanaryya i.e. Machana son of Limgaya) of the record.

The tank, which is situated about two miles to the east of the village called Pōrumāmilla. It was also called Anantarāja-sāgara. The bund consists of four natural hills connected by three short earthen dams, riveted with Kadapa slabs. The western flank thus, consists of practically the range of hills which runs north and south between Pōrumāmilla and Badvel. The total length of the artificial bund is about 4,500 ft. The total length including the hills is about 14,000 ft. At the deepest section the bund is about 12 ft. wide at the top and 150 ft. at the bottom, and about 33 ft. deep. The tank has two sources of water supply, one natural and the other artificial. The natural feeder is a stream called the Maldēvi river. The reservoir is provided with four sluices, two of which have been repaired and provided with screw-gear and there are five weirs.



Cover Page



The Pōrumāmilla record also stated that for two years 1,000 labourers were working daily on the tank and the dam; and 100 carts were engaged in getting stones for walls which formed a part of the masonry work. The dam was 5,000 rēkha-dandās long, including the hills, 8 rēkha-dandās wide, and 7 high. The record also mentioned twelve sādhanās of the tank and six dōśās of tanks in general. The twelve sādhanās are 1. an enlightened king or in effect, a willing financier, 2. Brāhmana learned in hydrology, 3. the ground adorned with hard clay, 4. a river conveying sweet water and three yōjanās distant, 5. the hills around, 6. a dam of compact stone wall, not too long, but firm, 7. two extremes away from fruit (giving) land outside, 8. the bed extensive and deep, 9. a quarry containing straight and long stones, 10. the neighbouring fields rich in fruit (and) level, 11. The sluices with strong eddies and 12. a gang of skilled workers. The inscription also gives a list of six dōśhās or faults to be avoided in digging the tank. There are some references in the records to the hydraulic engineers (Jāla-sūtrada) who are specialized in the construction of tanks and dams. On the orders of the king Bukkarāya, the hydraulic engineer Singayabhatta who was also the master of ten sciences led the river Pennar with a channel by name Pratāpa Bukkarāyamandala channel to Sirivera tank at Penugonda. They are 1. water oozing from the dam, 2. saline soil, 3. situation at the boundary of two kingdoms, 4. elevation in the middle (of the tank) bed, 5. scanty supply of water and extensive stretch of land (to be irrigated) and 6. scanty ground and excess of water. The cost of construction was met with enormous cash and grain. It also contains valuable information regarding the advanced hydro-architectural skill achieved by the engineers of the period.

The rulers of Sangama dynasty constructed irrigational projects to promote agriculture, which was continued by the other dynasties of the Vijayanagara Empire. The system of artificial irrigation by tanks fed by canals from river Chitravati, a tributary of river Pennar, in the new town Kriyasaktipura in Anantapur dug during the reign of Harihara I.

During the reign of Krishnadēvarāya, a tank was built named as Timma samudram, in the name of Śāluva Timmarusayya. Krishnadēvarāya built a dam and channel at Korragal and the Baśavanna channel which are still in use. Varadarājamma, the wife of Krishnadēvarāya dug Kambam chēruvu at Kambam.

Courtiers, taking inspiration from their rulers, undertook the artificial irrigation works. Anantarasa, a minister of Bukkarāya I, built a tank called Bukkarāya samudram (1364 A.D.) in Anantapur district. Chikkaōdēyar, the minister also built a dam across the river Chitravati in the Elamanchi district sixteen miles south of Bukkarāya samudram and constructed a big tank. An inscription from Dulamvāripalli in Badvel taluk of Kadapa district dated 1376 A.D. refers to the construction of tank to the west of the village Kaluchapalli situated to the east of Ahobila in Sākalisīma by the two subordinates named Dēsiya and Nāgaya their two sons Nāyaka and Dēsiya in the reign of Bukkarāya I. Another inscription from Rāvulakōlanu in Pulivendala taluk of Kadapa district, dated, 1494 A.D. of Narasimha II stated the construction of a tank by Narasanāyaka. Further, the record didn't give any information. Rāyasam Kōndamarasayya, a minister of Krishnadēvarāya, built two tanks in Kōndavīdu area which he named Kōnda samudram and Timma samudram. Matla Ananta Bhūpāla built Siddhavatam tank in Kadapa district during the reign of Krishnadēvarāya. Bayakara Rāmappayya built the tank Hiriyālakka samudram in the name of his mother Hiriyalakkasamma. He was also responsible for the construction of the tanks (Nearly sixteen) like Achytōmma samudram, Bācha samudram, Amma samudram, Rāma samudram, Akka samudra, Kāma samudra Vīra samudra, Achytēndra samudra, Venkatēndra samudram, Pinalakka samudram, Chinnatippa samudram, Achuta samudram, Peddalakka samudram, Lingālaya tatāka, Venkatāyya tatāka, Pedatimma samudram and Chinnabācha samudram. An inscription from Nāgēnahalli in the Hospet taluk of Bellary district, dated, 1516 A.D. refers to Ranganātha Dikshita built a tank called Nāga samudram after the name of Nāgāladēvi, the mother of Krishnadēvarāya. Another inscription from Chennuru in Kadapa district dated, 1522 A.D. Singabhūpala, a local chief rebuilt the Nāgēśvara pagōda and built a tank at Chennur. According to Upparapalli (Kadapa, 1524 A.D.) record Peda Singama Nayaningāru of the Jupally family ruler of the Chennurisīma and Pōtadurti-Sīma districts included in Mulkinādu, a sub division of the Ghandikōtasīma which formed part of the Udayagirirājya, rebuilt the Naganatha temple of stone and dug a tank near it. An inscription from Vēmulpādu in Guntur district dated, 1530 A.D. refers to Sālakarāju Peda Tirumala, brother-in-law of king Achuyatarāya, dug a tank and built a garden and both to the deity Gōpinātha of the village. Feeder channels connecting the tank to major water sources like a river or a stream, and irrigation channels which supplied water to the fields were also built.

The Vijayanagara rulers were also took interest for digging canals for the promotion of agriculture. A network of irrigation canals was developed between villages attached to the temple so that the whole area was made cultivable. This type of irrigation development can be seen in villages attached to all the major temples like Ahōbalam, Śrīkālahasti, etc. The digging of a canal from the river Henna (Pēnnā) to Penukōnda, a dam on the Haridra for supply of water through canal to Harihara and a dam on the Kāvēri from where a canal dug to Sītāpura and further to Hērūr at the request of the people of the latter place. These served the purpose of irrigation and added to the resources of the cultivators, temples and rulers. The Mādirēddipalli (Hindupur taluk of Anantapur district)



Cover Page



Telugu inscription dated, 1388 A.D. of Harihararāya II states that Pōlināyakaya, son of Mahānāyamcarya Harigila Kitināyaka ruling at Mēdirēddipalli caused to dig feeder channel to the tank from the river Cīreru. It also records the grant of some land as daśavandam to Peda-Bayirapōju and Cina-Bayirapōju. Vīrananāyaka, the brother of Virūpannaya, the chief of Penukonde, dug a canal called nūtanatungabhadra by drumming the underground water and brought it to the village Mōdēya (alias Acyutarāyapura) for irrigation. The land irrigated by the canal was assigned to the Mahālakshmi of Haruhe Lakshmapura. Breaches in tank bund were repaired. Another Telugu inscription of Dēvarāya dated 1426 A.D., from Ulimella in Pulivendala taluk of Kadapa district mentions a canal near the village Ulimella. An epigraph from Rāvulakōlanu, Pulivendala taluk of Kadapa district dated 1494 A.D., of Narasimha II records the construction of a canal named as Katu Kāluva by Narasanāyaka, son of Kasavināyaka, who was the kattiga (official) of Kathāri Śāluva Immadi Narasimha mahārāja, named after his (donor's) mother Kāvēramma. The word kattiga may mean body guard who bears a damda (stick). Another epigraph from Śrīrangāpuram in Hindupuram taluk of Anantapur district dated, 1584 A.D., Śrīrangarāya built a tank and canal connecting the tank with river for the supply of water.

Agricultural expansion by converting forests into agricultural land by construction of tanks is also noticed in this period. The kings and chiefs reclaimed great stretches of land and increased the extent of arable land. Vijayanagara rulers also took interest not only reclaimed the forests but also provide water facilities in reclaimed areas. These reclaimed areas were exempted from the payment of taxes for specific periods, and to fix a graded rate of assessment on them thereafter. Krishnadēvarāya built a huge tank near capital to provide irrigation to fields and water supply to the new city of Nāgalāpura founded by him. This tank was built at the mouth of two hills as a collection point and was connected by means of pipes to irrigate gardens and rice fields and exempted from paying taxes for nine years. As a result of which, the field was improved with revenue of about 20,000 pardaos. The evidence shows that incentives were offered by the Government to the people who settled down in particular areas to improve the lands for agricultural production. For irrigation and water supply to the new city of Nāgalāpura (modern Hospet), Krishnadēvarāya built a big tank Kayara-kere near his capital with the aid of a Portuguese engineer Joaodella Ponte. Krishnadevaraya employed fifteen to twenty thousand workers and put them under different sub-chiefs. The place under work looked like a sheet of people covering the ground. The tank has three large pillars, and beautifully carved. Achyutadēvarāya also utilised the services of the above-mentioned engineer in fortifying the Dannaika tank with lime.

Maintenance and repairs of the irrigation works including desilting tank beds, maintenance of bunds, repairs to sluices and guarding of dams were also generally executed through land grants; such as daśavanda, kattugodage, kattumānya and kerebittuvata. Royal officials and nāyakās encouraged people to take up the responsibility of constructing tanks and digging canals wherever necessary, in return for which they were granted a piece of tax-free land known as daśavanda mānya, watered by the tank or canal they had built. The extent of land granted depended on the size of work undertaken. Local people took up such works as they increased crop yield. According to Kadireddikunta record nūtimānya i.e. the gift of land as remuneration for maintaining a well to pertaining Annamarāju, in Maddipādu of Nuvsulapādu village. Kadireddikunta is a hamlet of Katteragandla, in Badvel taluk of Kadapa district. The record belonged to Śrī Krishnadēvarāya. An undated record from Sunkēsula, Pulivendala taluk of Kadapa district, mentioned a grant of one iddumn of land to Kōndōju Timmayya digging a well. The record didn't mention the ruler at that time. A record from Mōpūru in Pulivendala taluk of Kadapa district of Harihararāya I dated, 1351 A.D. records the gift of the village Nāgūru in Pulivēndala and two khās of madi (wet land) under the tank of Cadupurēla in Mulkinādu to the god Bhairavadēva of Mōmpūru by Sāvemna-odēya who was ruling in Udayagiri. It was also known as daśavandha or daśavandha-mānya. The Indukūru Telugu inscription (Kamalapuram taluk, Kadapa district) of Harihararāya II dated, 1386 A.D., states that Irugāmarēddi-Māmarēddi built a tank. It also mentioned that he gave one putti of land as prabhumānya, daśavamdha and some more lands, it seems, was given dēva-brāhmana-vrittis. The rate of daśavandha or payment used for the maintenance of the tank is stated to be two tūmūs of grain per putti of land irrigated under the tank. An inscription dated, 1387 A.D. from Mereddipalli, a hamlet of Madanapalli in the Hindupur taluk of the Anantapur district states that Pōlināyudu while ruling Mereddipalli, made a daśavanda grant of wet lands to two persons, who dug a feeder channel to tank of that village from a rivulet Chittēru. A Telugu inscription from Mudivēdu, Madanapalli taluk of Chittoor district of same king dated, 1397 A.D. mentioned a tank at Ballegam cheruvu in Mangumali sthala in Penugōnda Marjavāda. Mahānāyamkācarya Mōtta Dōrapanāyaka had given certain lands as daśavamdha under this tank. Another Telugu record from Pemdlamarri (Kadapa) of Dēvarāya I dated, 1413A.D. mentioned that the grant of daśavamdha-mānya to Aubhalōjhyalu, Dēvamna, Tippanna, Manccanōjhyalu and some others of the village Pendimari by Malanāyinmgaru who was holding nāyamkara of the village Pendlamari in Mulkināti-sīma (from Kamalapuram to Siddhavatam). The said granters were to maintain in good condition the bund of the big tank on the west of the village for, a remuneration of 300 simgauyas (mādās) in lieu of which they were granted wet land measuring three puttis. An inscription from Venkatāpuram in the Udayagiri taluk of the Nellore district, dated 1426/27, refers to a certain Bayichanabōya sold to another person, whose name is not mentioned in it, the daśavandam tanks built by him at Bōyavīdu and Kudichalapādu in Udayagiri rājya, along with the profits accruing from the tanks. Probably, the profits referred to include the daśabandam lands granted to above mentioned Bayichanabōya for building tanks. A record from Tirupati dated 1475 A.D. records that





Cover Page



a private person gifted 150 panam for food offerings to Udaiyavar (Rāmānujachārya). This sum was used for improving an existing tank in Udaiyavarkalvay-pattadai in Vikramāditya-mangalam.

Krishnadēvarāya's, officials also not only constructed tanks but also granted lands for the maintenance and repairs of the tanks. An inscription from Vānipemta in Prodduturu taluk of Kadapa district dated 1521 A.D. refers to the king Krishnadēvarāya who granted Ganjikumta-sīma as nāyamkara to Śrīman-mahāmandalēśvara Bukkarāju Timmarāju. A certain Rāyasam Gangarusu, son of Mancikamti Kāmarāju is stated to have made an arrangement for the repairs and up-keep of the tank of Vanipemta village by granting a remuneration of one tūmu of grain for each (martar) madi of the land irrigated under the tank including all the king's lands (nagari-madis). A record from Kōnakōnda of Gooty taluk in Anantapur district, dated 1521 A.D. refers to under the orders of Krishnadēvarāya, Kottanara Rāmarāju made a gift of land to certain persons of Kōndakundi for constructing a tank and for its supervision. Another record from Havinahallu-vīrapura, Bellary taluk dated 1529 A.D. refers to the people of Dōndavati village made a gift land to Malēsāni, son of Gundapa for repairing the tank at the village during the reign of Krishnadēvarāya. An epigraph of the king Acyutadēvarāya records the grant of daśavandha-mānya to certain persons of the village Kūcipāpa for digging a canal, probably in the stream (antara-ganga-kāluva). The canal was named after the donor's son Cāri Ayyaparusu. Charitable persons gifted land and cash for deepening or desilting tanks. According to Budili record (Hindupur taluk of Anantapur district dated, 1539A.D.) Chikka Narasappayya aliyas of Anantayya purchased some land for the repairs of the tank at Budili.

An epigraph from Bagināyakanahalli in Rayadurg taluk of Bellary district dated, 1546 A.D. mentioned that Vīranāyaka, an agent to mahāmadalēśvara Rāmarājavithālayadēva-mahā-arasu, made a kattu-mānya (same as daśabandha) grant of fields to five persons for constructing the ruined tank at Bagina (Yakanahalli). The breached tank-bund at Tellapādu in Gandikōtasīma, of Kadapa district was repaired and rebuilt by three persons, for which they were given daśavandha grant of land by an officer Pedda Ōbulanāyanan, in 1550 A.D. A water-shed (calivendra) near Kōtulakunta-pāya on the way to Tirumala mentioned in the record from Dēvuni Kadapa, Kadapa taluk, Kadapa district dated 1551 A.D. The record does not refer to the King. The chief who issued this record was a subordinate of Sadāśivarāya as known from the records. The record also mentioned the gift of some land as sarvamānya to Sūrapa Aubhalēśvara by Nandyāla Aubhala mahārāja for maintaining a watershed and grant of some lands as sarvamānya to the suppliers of water. A tank near the Narsimhadēva temple on the bank of Pinākini mentioned in an inscription from Yerragudipādu in Kamalapuram taluk of Kadapa district dated 1551 A.D. during the reign of Sadāśivarāya. Another tank at Doddagatta in Nidugalnādu of Anantapur district repaired and made a kattu-kōdage gift of land to Mali-Gauda and Parusa-Gauda during the reign of same king. A record from Rayadurg, Anantapur district dated 1556 A.D. records, the fines collected in the agrahārās as gifts to the temples and for repair of the tank and channels in the respective agrahārās in which they were collected. The income of the gift land was used for repairing the tank.

According to Śrīsailam (Nandikotkur taluk of Kurnool district) inscription dated 1574 A.D., the bund across (the stream) Bhōgavati was repaired during the reign of Tirumalarāya. The digging of the irrigational canal at Cidipurāla mentioned in the record from Cidipurāla in Kamalapuram taluk of Kadapa district, dated 1578 A.D. during the reign of Śrīrangarāya. It also records some gifts in the form of paddy levied on the land irrigated by this canal. Large number of inscriptions from Tirumala Tirupati dēvastānam mentioned the donations of money which were received by the temple treasury diverted for the improvement of temple lands and irrigation channels. The economic activity of the Tirumala temple reveals how money was diverted for the upkeep of irrigation facilities to the temple villages. These irrigation facilities or development, digging channels, renovation of the tanks, and reclamation of lands for cultivation with the expenses of huge money (from the time of the Tuluva rulers-1505-1576 A.D.) through deposits in the temples as endowments ultimately resulted in the growth of agricultural activities which in turn raised both temple economy as well as the state economy. That the monetary endowments were fully utilised for the purpose of irrigation facilities by the temple authorities is the significant feature of the agrarian development in the country during fifteenth century A.D. The irrigational developments were looked after by the temple authorities and local authorities in the village level with the temple money which reduced the burden of state investment in the agrarian activities. Both the state and the local bodies were relieved from the money expenditure towards irrigation facilities and reclamation of lands. The king did not involve in the matter of monetary transactions of the temple and their activities on the development of channels, tanks and other agrarian activities in the villages. In other words, the king did not provide any additional fund for the state irrigational scheme which was carried out by the temple authorities.

The individuals also had taken active part in maintaining the irrigation works. They not only provided labour for the up keep of the works but sometimes some wealthy persons encouraged the maintenance and repair of local irrigation works by even granting lands and providing other financial help. A record from Pōtur in Kurnool district, dated 1535 A.D. mentioned that the land grants to a private person by one Chintamarāju for repairing a well.



Cover Page



The records from Tirumala Tirupati, and Kalahasti refer to huge donations to the improvement of tanks, channels and reclamation of waste lands belonging to the temples. These irrigation developments, digging channels, renovation of the tanks, reclamation of lands for cultivation with the expenses of huge money through deposits in the temples endowments, eventually, resulted in the growth of agricultural activities which in turn raised both temple economy as well as the state economy. The monetary endowments were fully utilised for the purpose of irrigation facilities by the temple authorities is the major feature of the agrarian development in the country during fifteenth century A.D. An inscription from Tirumala the Chandragiri taluk of Chittoor district dated 1457 A.D., mentioned that Venkata Valliyar, one of the Emperuman adiyārs temple of Narasimhadēvar at Tirupati donated a sum of 1000 panam to Tiruvenkatamudaiyan. The sthanattars of Tirumala temple arranged for the investment of this amount in the digging of periyā-ēri (tank) in Tirupati. During the reign of Krishnadevaraya as recorded in three Tamil inscriptions from Kalahasti arrangements were made for the utilizing of the gifted money for the deepening of the tank-bed and improving other irrigation facilities in the dēvadāna villages or temple villages. The irrigational improvements were looked after by the temple authorities and the local authorities in the village level with the temple money which reduced the burden of state investment in the agrarian activities.

The taxes such as eri-ayam or the kere-katte or kāluve-sunka are mentioned in the records, the proceeds of which were used for tank repairs. A person was appointed to maintain or regulate supply of water to fields for this purpose a tax was levied which went by the name nīrupa cambalam. The local body helped the state in this regard was to make the residents and tenants pay the local taxes and dues. In some areas the fines collected from the people as punishment for certain offences were utilized for the up keep of tanks. A record from Yelanji in Rayadurg taluk of Anantapur district dated 1556 A.D. refers to that on the complaint of the villager, Mahāmandalēśvara Rāma Rāju Vittalarāja stopped the illegal collections of money in Yelanji, Sōmalapuram, etc and directed that the fines etc collected in the village should be utilised for repairing temples and tanks in those villages.

Distribution of water for the purpose of irrigation was complicated in those days as it is today, and hence the rulers formed certain specific rules and imposed same restrictions taking into account all aspects of the proportion and supply of water. The construction of channels for bringing water from rivers, tanks and wells for the purpose of irrigation were all strictly under the administrative control of the village governing bodies. Irrigation disputes were rare in the Vijayanagara Empire. Disputes between the villages were settled generally in the presence of mahāpradhāni or the leading men of both the villages.

We find more areas brought under cultivation and more irrigational works undertaken during Vijayanagara period. Like this, the Vijayanagara rulers and their officials took interest not only to build tanks, digging wells and canals but also granted lands for maintenance and repairs of irrigation works. Irrigation was considered a work of religious merit.

The epigraphical evidences prove that the Vijayanagara rulers, nobles and officials built several tanks or reservoirs, wells and canals. One of the reasons for the flourishing economic conditions of Vijayanagar Empire in the early fifteenth century lay in the construction of irrigation works, which brought new areas under cultivation. This had significantly contributed to the state revenues as more land was brought under cultivation. During this period not only the tanks, wells and canals were built by rulers, nobles and private persons, but also care was taken to see proper maintenance and repairs of irrigation works. Partial exemption of some of the taxes was given to persons for their involvement. The rulers, the village assemblies and the mahājanās played an active role in construction, maintenance and repairs of water works. The administration was carried out by the mahāmandalēśvarās (Governors). Mahāmandalēśvarās were the members of royal family in early stages of the Vijayanagara rule and took care of the water works at the local and provincial regions.

After the downfall of Vijayanagara Empire the ceded districts came under the control of Qutub Shahis of Golconda. They had not taken interest to construct the tanks and other irrigation works in ceded districts of Āndhradēśa.

## References

1. Hemachandram, G (2007), Irrigation System in Rayalaseema Region-A Historical Perspective, Andhra Pradesh History Congress, Proceedings of the Thirty First Session, Kadapa, pp.75-7
2. Nagolu Krishna Reddy (2007), Techniques of Tanks Excavations in Medieval Andhra, Op.Cit., pp.71-4
3. Narasimhacharya, R (1923), Śāsanapadyamanjari, Guruvilas Printing Works, Bangalore, p.103
4. Narasimhaswami, H.K (Ed.), (1972), South Indian inscriptions, Vol.XVI, New Delhi, Nos. 11,14,55,63,64,93,199, 270
5. Parabrahma Sastry, P.V (Ed.), (1978), Inscriptions of Andhra Pradesh, Cuddapah District, part. II, The Government of Andhra Pradesh, Hyderabad, pp.16,25,38,63,103,132,134,276,281, and 333
6. Ibid. (2011), part. III, p.123



Cover Page



DOI: <http://ijmer.in.doi./2022/11.07.38>

7. Radhakrishna Murthy, K (1987), The Economic Conditions of Medieval Andhradēśa, A.D. 1000-1500, Sri Krishna Publications, Tirupati, pp.21-2, and pp.150-7
8. Ramayya. J (1948), South Indian inscriptions, Vol. X, Ananda Press, Delhi, No.761
9. Sastri, R. Shama (1939), South Indian Inscriptions, Vol. IX, Part-I, Archaeological Survey of India, Delhi, No. 50
10. Sewell, R. (1962), A Forgotten Empire, Reprint, New Delhi, pp.245-7
11. Sircar, D.C., Desai, P.B (1956), South Indian inscriptions, Vol. XV, Manager of Publications, Madras, No.9
12. Soma Reddy, R (Ed.), (2014), Late Medieval Andhra Pradesh A.D. 1324-1724, Tulika Books, New Delhi, pp.69-70, and 186
13. Srinivas Ritti and Y. Subbarayalu (Eds.) (2010), Vijayanagara and Krishnadevaraya, Indian Council of Historical Research, Bangalore, p.91
14. Subramanyam, R (Ed.), (1976), Journal of Andhra Historical Research Society, part-II-IV, Government of Andhra Pradesh, Hyderabad, p.63
15. Thomas, F.W (Ed.), (1982), Epigraphia Indica, Vol.XIV, Archaeological Survey of India, New Delhi, pp.89-9
16. Thomas, W (1872), Manual of Bellary District, Lawrence Asylum Press, Madras, p.32