

Irrigation System during the Time of Kakatiyas in Andhradesa

K. NARASIMHULU

Academic Consultant, Dept. of History and Archaeology, Yogi Vemana University, Kadapa,
A.P. E-mail: narasimhulukdu@gmail.com

Abstract: *The present paper deals with the irrigation system during the period of Kakatiyas. Agriculture was the main occupation of the people and Irrigation is the back bone of Agriculture during the medieval period in Andhradesa. Artificial irrigation form is an important factor which must have supplied drinking water to a household and growth of agrarian economy. The importance of irrigation in agricultural economy was recognized in ancient and mediaeval Times. Historians recognized that one of the major prerequisites of the evolution of a civilization in any society is a surplus production of food grains and other agricultural produce. It is a universal fact that the development of agriculture and food production directly depends on the water resources without adequate water resources food production, because scarce and hence life is insecure. In the absence of perennial rivers farmers totally depend upon the rainfall or irrigation facilities.*

Keywords: *Artificial irrigation, Civilization, Water resources, Agriculture*

Received : 27 March 2022

Revised : 19 April 2022

Accepted : 26 April 2022

Published : 15 July 2022

TO CITE THIS ARTICLE:

Narasimhulu, K. 2022. Irrigation System during the Time of Kakatiyas in Andhradesa. *South Asian History, Culture and Archaeology*, 2: 1, pp. 81-85.

Introduction

Kakatiya kings and their subordinates, chieftains, nobles, and officials promoted large scale construction of irrigation facilities like tanks and canals to improve agriculture; infact tank irrigation was well developed during the Kakatiya period. Every village had one or more tanks known as *cheruvu* (tank) *samudram*.

TANKS

The inscriptions that, found in different parts of Andhra desa reveal the construction of tanks by the Kakatiya kings. The important Bayyaram inscription gives information about tank irrigation in Bayyaram. According to Bayyaram inscription, Ganapathideva's sister and wife of Natavadi Rudra developed a township known as Bayyaram on the name of her mother Bayyaladevi and constructed

Bayyaram tank in 1194 AD. This inscription found on a stone pillar lying on tank bund. It was one of the biggest tanks in Telangana region, its engineering skill lies in selecting the place where one or two streams pass between hillocks. Hydraulic particulars of the tank are, catchment area about 20 sq miles, length of the band is 7300 feet, height of the band 35 feet, area of the tank at F.R.L 43 million sq feet, storage capacity of the tank at F.R.L 397 M.cubic feet and land irrigated 5400 acres. Many villages were irrigated by the waters off of Bayyaram tank.¹ Another epigraph² of Ambadevi at Brahmanapalli in Siddavatam taluk of Kadapa district dated 1290 AD records the construction of a tank at Ravulakolanu village and the demarcation of its boundaries at the instance of the minister Goderaya Gangadeva. The residents of Pottapinadu on their part met together in the Parameshwara temple at Attirala and decided to raise one *madai* from every village in the district to construct an embankment on the South of the river Cheyyeru and prevent any possible danger from the floods to the temple of Parasurameswara.³ The Tripuranthakam Inscription refers that, Ambadeva built two tanks in the village of *Pedapula tank*⁴ and Another tank named as *Ganapasamudram tank* at Ganapapuram.

The Motupalli inscription of Ganapatideva states that Prola I built a tank named as *Kesaritatakam* (tank).⁶ Beta II built a tank named as *Sivapura* in Hanumakonda, he constructed another two tanks namely *Settikerya tank* and *Kesari Samudramu* (tank).⁷ Another undated record of Kazipet mentioned that Prola II built a tank named *Sirisamudramu* (tank)⁸ According to Siddeshwara Charita a tank was built named as *Kamasamudramu* (tank). Rudradeva constructed a big tank in the middle of the town Vidyasta Chododaya and another big tank at Panugallu in Nalgonda district; it is close to the Musi River. The Ghanapur tank is located in Mulug rank of Warangal district. It is at a distance of 6 miles to the west of the Ramappa Lake, its antiquity goes back to 1213 AD. Its earthen band is of 7300 feet long and 48 feet in height. The villages benefited under this irrigation tank are Ghanpur, Mylaram, Karkapalli and Burrakayapalem. The total area of land irrigated by this tank is 3043 acres. Here giving one example Chain Link tank in Maripeda mandal of Mahabubabad district on the highway road from Warangal to Khammam. The right side Anepuram village tank nearly 3 km, catchment area to attract rain water to Anepuram tank. The over flow water crossing Warangal to Khammam Highway joined in Yellampet tank which is 5 km from Anepuram, the surplus water of Yellampet tank reached to Jammikunta Thanda tank which is 3 km and then the surplus water from Jammikunta tank to Visampalli *Kotha cheruvu*(tank). Again this surplus water reached to Jaganadha tank, which is reached to 30 years.⁹

The Kakatiya rulers not only gave much preference for the storage of water by constructing tank, but also the reclamation of forest for the inception of new villages. The Hanumakonda inscription dated 1162 AD of Kakatiya Rudradeva reveals that he destroyed the forest of the king Cododaya and built an enormous beautiful tank.¹⁰ Rudradeva gave 14 *Martars* of wetland behind the *Mailasamudram tank* which he constructed. Ganapatideva's Ganapesvaram inscription states that Rudradeva destroyed many towns of his enemies and established many quarters in the city of Warangal, where respective inhabitants resided over, he also built tanks and temples and inhabited them with fresh settlers.¹¹ The same inscription also stated that a village called Vadlakurru and a tank named as *Bhimasamudramu tank* were constructed.¹² The Tripuranthakam inscription states that, Ganapatideva found a village named Visvanadhapuram and a tank was built after clearing the forest. Another Kakatiya ruler Pratapadudra also increased the extent of the cultivable large tracts under cultivation. Local traditions preserved in the Kakatiyas of several villages in the Rayalaseema too refer to the deforestation of much of this country by the command of Prataparudra. Almost all the female members of the Kakatiya family and women of various Carders, Nobles and Officials shown much interested to provide water facilities and made donations too. Mailamma, the sister of Ganapatideva built tank at Matedu dated 1117

AD in Warangal district and Bayyaram in Khammam, she also constructed *Dharmasagaram tank*, *Muppavaram tank*, *Tripurasamudram tank* and many other smaller tanks. According to Kundavaram and Nidigonda inscriptions and Ganapatideva's another sister Kundamamba constructed tanks in Adilabad and Warangal area.¹³ Both of these were named after her as *Kundasamudram tank*. An epigraph¹⁴ at Karimnagar dated 1170 AD refers that, Gangadhara the minister of Rudradeva built several tanks; he built a beautiful tank at Demdodu and gave an Agrahara. Hanumakonda inscription stated that Gangadhara built not less than five tanks.

The Recherla chief of Kakatiyas also constructed tanks in Nalgonda and Warangal districts. Ramappa Lake (tank) is situated near Palampet village at a distance of 65 km North East of Warangal town. The lake (tank) was constructed during the Kakatiyas Dynasty and is an example magnificent irrigation works constructed by Kakatiya rulers. As per inscription¹⁵ at the lake (tank) it is constructed during the time of Ganaptideva 1213 AD. The capacity of Ramappa Lake is 2.912 TMC and where as the total yield computed from the catchment is only 1.12 TMC. Hence the capacity of the lake was designed for more than 2.5 times yield at the site. The capacity of the lake at MWL is 5.401 TMC. Because of this reason they have not provide surplus sign arrangement for the lake. But after formation of Andhra Pradesh, the department has constructed 36.60 surplus weirs for the lake with maximum flood discharge of 12900 cusecs. The length of the earthen dam is 600 M connecting chain of hills. The total ayacut under the project is 5280 acres irrigating five villages. In addition to registered ayacut further area of 1577 acres in being irrigated. There are two head regulators namely tower sluice and tiger sluice. The sluices are designed for three levels to draw water at different elevation. There are five channels under these two head regulator. The farmers are growing paddy crop under this tank for kharif and Rabi seasons. Because of the carry over capacity of the lake, the ayacut never suffered during draught year also.

The Viriyala chiefs of Kakatiyas also built several tanks, the chief Malla built a tank at Ganuduru¹⁶. The Bothupur inscription records that, a tank was built by another Chief gunda. Another chief of Kakatiyas named Bollayanayaka dated 1215 AD states that Lokireddy caused to build tank named as Lokasamudramu (tank) at Utturu and Miryalaguda tank in Nalgonda district. Chintala samudramu (tank), Nama samudram (tank), Visvanada samudramu (tank), Lakuma samudramu (tank), Kudukudiya cheruvu (tank), Katyare cheruvu (tank), Naredla cheruvu (tank), Jagatkesari samudramu (tank) and several tanks at Nagulapadu are built by Recherla family. The Pammi inscription records the construction records, the construction of tanks named as *Bhiramvarikunta* tank, *Maddekunta* tank *Madhavakunta* tank and *Muppadikunta* tank by Viriyala Nagasanamma. The Kakatiya chiefs, Chagis ruled over the Krishna and Guntur regions, an undated record of Muktyala in Krishna district states that, Potarju built a tank, named after him as *Chagi Potasamudramu* (tank) at Simhadri. In the same district an inscription from Mungapalli refers that another tank (*Protasamudramu*) was built in Muppala. Navaabupeta inscription refers that, tank were constructed and named as *Kothacheruvu* (tank), *Pathacheruvu* (tank), *Tontacheruvu* (tank), *Ravulacheruvu* (tank), *Prantscheruvu* (tank), and *Sanamgatcheruvu* (tank). From these evidences, it can be stated that the nobles, the officials and the chiefs of the Kakatiyas also paid much interest for the development of agriculture in the region and strived their might to provide water supply.

CANALS

In Kakatiya period, the diversion canals or channels were excavated to bring water from rivers or streams to fill up the tanks, example; *Antaranga canal*, *Museti canal*, *Krishnaveni canal* etc. The sub soil water from springs and *Utakaluva* were also dug to fill the tanks and some cases direct irrigation to

agricultural land. As per the inscriptions of that period are *Uta canal*, *Vamsavardana canal*¹⁷ *Ravipeta canal*, *Bomminikunta canal*, *Tumu canal*, *Tamti canal* and *alugu canal* etc. Excavations of well and using for irrigation were also in practice by farmers. They used to *Raatnam* (chakra)¹⁸ with bullocks or manually to bail out the water from the well for irrigation. Some inscriptions gave detailed of the construction of *Antara Ganga canals*¹⁹ by this method, water use to be diverted to tank or directly to agricultural fields through rivers, small streams and flow from hill. An inscription²⁰ at Attirala in Rajampet taluk of Kadapa District dated 1279 AD reveals that Ghoderaya Gangadeva, the Prime Minister of Kayastha Ambadeva constructed *Raya Sahasramall canal* in Lebaka and another canal named *Gandapendara canal* at Tallapaka and tanks called *Ambasamudramu canal* at Utukuru.

WELLS

Generally, a well was dug for the purpose of irrigation. It was preferred in the areas where there was water scarcity of rainfall. Some reasons like Palanadu in the Guntur district and also Rayalaseema are had less rainfall. So, to fulfill this water scarcity, artificial irrigation was restored to buy the people in Kakatiya period. The land which are irrigated by rivers, rivulets, tanks and canals there from, springs and wells are called *nadi-matrikas*, and the land which purely depend on rains are called nature fed or *deva-matrikas*. The water from the well was also known as *uruni-kulam*. The people used this well water for their daily purposes. The block cotton soil (*nallaregadi bhumi or kariyanela*) were supplied with water from the deep Wells. We have a few records for digging of Wells during the Kakatiya period. There is a well at Warangal is full of water even in the driest region. It is known as *Anthasthula bavi* (well) or *Metlabavi* (well). Now, it looked more like a dumping ground, it seems that, the well was a swatting pool for Kakatiyas Queen Rudramadevi who used to take a secret underground from Warangal fort to use it. More than ten Wells were dug in around the fort during the Kakatiya period. These well are supplying water through modern motors to field even now. Spring Wells in the beds of the streams and small canals along their banks at some places are only for use of the rivers from time immemorial.

An inscription from Moripirala in Warangal district dated 1181 AD states that Polireddy who belonged to the Viriyala family, feudatories of Kakatiyas dug a well.²¹ The chief Malla of above same family also dug a well at Gumuduru.²² A record from Guivada dated to 1123 AD refers to the construction of well with bricks on the eastern side of the village by Guivada Potanaboya, who appointed a person to draw and supply water into a *Kalugai* (downward channel built of stone) for flow of water into field. It also refers to why the well was caused with bricks. The soil around Guivada was black cotton soil where the well was dug and the eastern walls of the well are liable to collapse anytime causing inconvenience to draw water, if, they were encased. Potanaboya, who belonged to an agro-pastoral community, might be having an earlier experience in this regard, which led to the construction of a well with bricks to prevent its collapse. The donor also gifted one *putti* of land near the well as remuneration to that person.²³ Another record dated 1316 AD refers to a well that dug by Malyakama. The chief Anavotanaya belonged to Velama family caused to dig well. Another two wells dug at Gandikoma and Vemulavada during the reign of Kakatiyas.

Basically, the maintenance of irrigation works was done by a single person or a group of people as seen from the records, which were given the *Dasavandha* or *Dasabhandha inam*, which means to donate a grand of land as remuneration for the service rendered by the individuals to irrigation facilities, *Dasabandha* or *Dasavandha*, meaning tax at one tenth of the produce. The *Dasavandha* Grants were particularly given for such work as the maintenance of tank and canals repairs to bunds and repairs to breaches. In several cases, the people who were instrumental in digging the tanks made

adequate provision to maintain them in a proper manner. When the irrigation works were damaged due to heavy rains, breaches and floods, the rulers took immediate action to repair such type of damages. Amarabad inscription states that, a tank belonging to the temple of Swayambhudeva was repaired by why raising its band and increasing the capacity by a certain Malliseti.²⁴

Concluding Remarks

To conclude, on the basis of the Epigraphical evidences, it was clear that the construction of Tanks, Lakes and Wells were developed in Kakatiya period. Huge tanks built at different places in Andhra and Telangana are in existence even today. Since the main source of the Revenue was land tax, the Rulers, Officials, Chieftains and Queens gave much importance to provide Irrigation facilities. The state Administration as well as the people had taken care in not just constructing the tanks alone, but also in maintaining them by providing the *dasavanda manyaa* to the people who looked after the maintenance of the irrigation works. The construction of the irrigation works under the Kakatiyas was not only to fulfill the desire of the rulers, but also to improve the state of the economic condition.

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