

# Ulagantha Perumal Temple - The Chola's Royal Code of a Historical Survey and Surveyors

Elanchezian S.A.V.<sup>1\*</sup> and Rajaraja Chozhan V.E.<sup>2</sup>

<sup>1\*</sup>Department of Architecture, Thiagarajar College of Engineering, Madurai, India

<sup>2</sup>Department of Civil Engineering, Sairam Engineering College, Chennai, India

\*Corresponding Author: drsavelan@tce.edu

Available online at: [www.ijcseonline.org](http://www.ijcseonline.org)

Received: 24/Jan/2017

Revised: 29/Jan/2017

Accepted: 15/Feb/2017

Published: 28/Feb/2017

**Abstract**— the historical periods of surveying have been accounted in literatures like Ardhasastra. Monotonously, whether North India or South India they speaks on *hashta* units to linear measurements. There were, however, especially in Tamilnadu indeed a specific measurements have had used to land survey those known by feet based. Opposite to this we have *hashta* oriented that is fore arm based scales used especially in structural field which were accounted in *silpa* and *vastu sastras*. Surveying land could be a usual one however surveying a whole country was obviously very rare and a prestigious one. Performing *ashvameta yaga* and surveying a country was considered as great royal proud then. Besides, rarely this was expressed in art by few Kings according to Tamilnadu. Such of these glorious achievements were celebrated in those days style with their prideful medium of art. The introduction of striding sculpture of Vishnu as a presiding deity specifically in Kanchipuram is the matter of interpretation to this effort. Therefore this research paper lenses a new unviewed a historical great event of the Pallavas and Cholas which was celebrated through religious art architecture seems ambiguous and double entendre.

**Keywords**-Survey; Nandivarman Pallava; Kulothunga Chola I; Coding; Recoding; Striding Vishnu

## I. INTRODUCTION

In India, the land surveying has been a practise in earlier regards some data found even from Vedas. Rig-Veda notes on a staff or rod was used to survey the lands [1]. The Baudhayana dharmasutra belongs to 1000 BCE. that mentions on linear measures which could be a basic to area measures [2]. Kautilyar, in his Ardhasastra (4<sup>th</sup> Century BCE) accounts on land survey and mentions the official name of Superintendent of measures, as – *Pautavādhyaksa* [3]. The Jataka stories too say on land survey and mentions the department of Ministry of Survey as *Rajjugahaka Amacca* [4]. Arthasastra again giving notes on ‘Cadastre’ which was a record on land survey. Further it says on *hashta* (forearm - முழம்) which was equal to 24 *angulas* that is 18 inches. From Gupta inscriptions we came to know *hashta* was used to measure lands. In those days the *sulba sutras* (science of mensuration) was a land surveying manual been in use. Another Jataka story namely known as, *Suvannakakkata* that says about an estate in a district of Magadha measured 1000 karias. Indeed, 1000 karias has been estimated by a scholar is equal to 8000 acres [5].

Beside these, in South India especially in Tamilnadu we have clear records from Pallava period on land survey. Their copper plates speak on their style of land survey method. However, surveying whole country was not heard before to

Nandivarman III (846 – 869 CE) and we don't have evidence of land survey during the span between Simhavishnu (550 - 580 CE) to Dantivarman Pallavan (796 – 846 CE). Surveying whole country was not a routine work or not frequent. It was held on need and to define the country's boundary not only to them also to neighbours who suppose minded to trespass to occupy.

Such these glorious incidents of survey held in Pallava Period and in Chola periods. We don't have a firsthand data on behalf of Pallava's whole survey. But we can sense it through their history. As the same, the third time of land survey held in Kulothunga Chola III's 38<sup>th</sup> reign year. However it has not been recorded in his time but was mentioned by his grandson in an inscription [6]. Of this kind, in history we can value the two major survey of whole land which was held in different period probably one by Pallavas and another by Cholas. Therefore, this paper dealt on the two meritorious and historical valued land surveys of early 9<sup>th</sup> and 11<sup>th</sup> century CE. Addition to this, the prestigious survey has monumentally structured as a temple with aesthetic features and coded according to the victorious achievements.

Apart from the Land Survey of Pallava Nandivarman III, we have the three times of land survey held at Chola period; thus:

- The first land survey on the 16<sup>th</sup> reign year (1001 CE) of the great Rajaraja I. The surveyor head was Kuravan Ulgalanthan Rasarasamarayan who finished this great project within two years [7].
- The second is on the 16<sup>th</sup> reign year (1086 CE) of Kulothunga Chola I [8]. One of the surveyor head was Thiruvegebamudaiyan Ulgalantha Chozha Pallavaraiyan [9]. The other surveyor was Ualgalanthan Thiruvarangathevan [9,10].
- The third one is on the 38<sup>th</sup> reign year of Kulothunga III. This was evidenced by his grandson Rajendra III's inscription found at Kovilur temple, which on we mentioned earlier [6].

Therefore, the intent of this paper is to detail the unseen perspectives of a historical structure that has been three times revised as well as reinstalled with a coded sculpture further finally with much taller sculpture particularly of striding Vishnu to celebrate the glorious historical event of world survey.

## II. CODED STRUCTURAL WITH COINCIDING SCULPTURE OF VISWARUBA

In fact, such a marvellous plays of double entendre played in art and architecture initially by the Pallavas. This was initially indeed by Rajasimman. Also this as a tradition has been followed by Nandivarman II. Nandi's celebration on; whose regained sovereign and the status of as an Emperor by his own leg were the reason to impose a memorial temple for his beloved God Vishnu. Hence, the specific temple took shape at the place of 'Uragam' which now known as 'Thiru Uragam' is situated near by the famous Kamakshi Amman temple of Kanchipuram. He wants indeed to set a sculpture in standing posture as a presiding deity to reflect his position of free standing without any disturbances. Why because this was very new such a standing sculpture of Vishnu especially in Kanchipuram. In prior, there was, we have only an ancient temple of Thiruvehka of recumbent Vishnu. And a latest one was with seated Vishnu, built by then - recently Rajasimha in a place called Padagam, a part of Kanchipuram. This temple was also installed with coded Vishnu sculpture in Viswaruba category thus with nine feet sculpture according to us. In fact, there is no any evidence to conclude as it was built by Rajasimha; but we found the source of the temple's existing from a hymn that sung on the temple by the Boothathālwār (645 - 718 CE) [11]. Boothathālwār was a second among the trinity of early ālwars probably the first was Poigai Ālwār and the third is Peyālwār [11].

Probably the temple of Padagam now known as Pandavathutha Perumal Temple could be an inspiration to Nandivarman II. Because, it was also personified a coded metaphorical one on behalf of Rajasimha Pallava. However,

this temple too modified later by Kulothunga I (1070 – 1120 CE), a Chola monarch for the same reason and ideology which also he attained by his own shoulder as the Pallava Kings.

Besides, the Pallavas were highly art minded people ruled over Thondaimandalm produced high amount of art and architectural outputs. Each and every works of them have possessed with aesthetic greatness. They have used art as a powerful medium to interpret their achievements and made the temples as a story telling devices on religious and too royal side. Temples were the ground, beside religious, acted as a file of documents by inscriptions; workshop of artists; institution of learners; reference section of art and architecture; a dais to performing arts etc. As mentioned above the temples serve the history and psychological neatness of the rulers which have been evidenced as lithic pictorial documents, found at the circumambulatory passage of Vaikuntha Perumal Temple at Kanchipuram. The story starts from their progenitor of Brahma up to the author of the temple - Nandivarman II.

### A. The recoded temple

There is a need to recode the temple of Uragam again by his grandson Nandivarman III, because of his effort to lift out the fallen sovereignty too with its original proportion. Surely there was no chance to Pallavas because the Pandiyan king nearing to capture the whole country of them by seizing their Capital of Kanchipuram. His goal is to put a final full stop to Pallavas because such a rush it was. However, even though there was no chance to Nandi III but bravely took charge to lead a force that organised in quick time, opposed and attacked aggressively upon Pandiyan force. This sudden terrible attack by him did not expected by the Pandiyan King. The special victory particularly in a final moment have freed from the home arrest of Dantivarman. Dantivarman was a father of Nandivarman III; the former was the ruler then. Since of the glorious victory the Kingdom restored again, therefore, Danti handed over the rule to his son and declared his retirement. Now the full responsibility fell in the head of Nandi III. To stronghold his Kingdom again made war with enemies those who have disturbed more, occupied previously some lands of the Pallava region. However his continuous efforts to regain his domain as with its original two dimensional proportions set the kingdom again with stability. The far eastern countries too came under his leadership. Everything restored, the very solid Pallava Kingdom now in charge thus he planned to survey his country to declare the exact Pallava's imperialism.

Therefore, the specific reason to survey the land especially to Nandivarman III among the other Pallava kings was the never gettable victory due to the confirming expected loss. On this terrible victory the Velurpalayam copper plates praises highly him [12]. Besides, although we can trace the

existence of the Pallavas from 4<sup>th</sup> century onward however they have attained sovereign power during the period of Simhavishnu (550 – 580 CE). Their continuous war between Chalukyas have disturbed highly, though, the war liking Pallavas who fought gained victories almost. However, unfortunately a setback occurred during the period of Nandivarman II, who took charge from offline at the age of twelve due to not any strong members from main line [13]. The Chalukyas dominated and put him to flight since took refuge at Rashtrakuta Kingdom the latter gradually emerging as great power while. However, more than twenty years back he gained his Kingdom with the aid of Rashtrakuta Dantidurga [14]. Stood by own leg and restored the kingdom made relationship by marrying Rashtrakuta princess, Reva. The Rashtrakutas over thrown the mighty Chalukyas since stabilized their power gradually and dominated the Deccan entirely. Therefore, there was no threatening from surroundings since the second half of Nandivarman's rule was been in peace. However, during the reign of Dantivarman who he was a son of the Nandivarman II, the Pallava kingdom shackled by enemies again. This time the King of Telugu Choda captured the Pallava country and made Dantivarman to pay tribute. This was a high setback to him and a black mark into Pallava history probably a first time. Hence, the second half of Danti was full of downs suffered more due to this setback we can see the absence of his inscriptions from his 21<sup>st</sup> to 41<sup>st</sup> reign year particularly in the Chola region [15]. Pandiyan Srimara Srivallaban occupied huge parts of the Chola region of Pallava country. However, as discussed earlier Nandi III who recovered his Kingdom from his victory of Thellaru war which stood as a turning point to Pallava's continuity further a century almost.

### B. The restored Pallava Kingdom

The Pallava Kingdom now restored keenly with its square area of all sides. The government of Nandi III revised all things and put in systematically with fine moves. His vassals are now under his control. However, might be early the Bana King lifted head and tried to free from the Pallava bounding. The safe mode has been established again and to ensure his country's area he surveyed systematically. Probably may a new type of measuring method have been then followed? Could be such this survey was an important one, while losing last minute he gained his whole country and became an emperor. Moreover, he checked the boundaries and defined them by new survey. The survey ensures his status of emperorship. While the Chola not been as a chance quester to get Independence that has been proven by a contemporary Chola feudatory King Kumarakusan and he who got the permission from Nandivarman III to handover the land to the Siva temple of newly built by Yajanabhattachan at Thirukkattupalli [16].

### C. To codify...

Undoubtedly the victory over Pandiyas by a single swing at Thellaru was a great to him to become a ruling King as an emperor. To commemorate this greatness he decided to codify with peculiar figural depiction at the existing temple of Uragam which was already a coded one by his grandfather Nandi II, then it was with simply a standing Perumal. Could be the same kuda sala sikara-vimana or perhaps modified with salakara sikara-vimana has been followed to the newly installed idol of striding Perumal that is Ulagalantha Perumal. Probably a first time the sculpture was made in stucco. That is why no any stone sculpture found nearby or around Kanchipuram, if installed by him in striding posture. Why because, the temple was renovated again set with huge stucco sculpture by Kulothunga Chola I.

To conclude as so the Thiruvuragam temple has been re installed with striding sculpture of Vishnu as Ulagalantha Perumal that first time by Nandivarman Pallavan III, secondly by Kulothunga Chola I. Which on not we are speaking entirely as an assumption basis, but have few fresh untouched but old data. Why because no one so far viewed such our perspective through the literary works. It is great victory to us to invent such an axis that intertwined with such historical events.

## III. FROM LITERARY SOURCES - NANDIKALAMBAKAM

Nandikalambakam is a contemporary literature of Nandi III which penned on him, praises his glory. One of its verses describes his event that follows:

அளவுகண் டாற்குடங் கைத்துணைபோலு மரசர்புகும்  
வளவுகண் டானந்தி மாநோதயன்வையந் தன்னிம்மகிழ்  
தளவுகண் டாலன்ன வெண்ணைசை யாற்றமி யேனதுள்ளங்  
களவுகண் டார்முகத் துக்கண்க ளாய கயற்குலமே. - 48

Alavukanḍārkudang kaiṭhunaipōlu marasarpugum  
Vaḷavukanḍānānṭhi mānōṭhayan vaiyaṅṭh thanninmagiḷ  
Thaḷavukanḍālanna veṅṅasai yārrami yēnathuḷḷang  
Kaḷavukanḍārmugath thukkanga ḷāya kayarkulamē. - 48

The verse is praising the glory of Nandivarman III, who surveyed his country to define boundaries finely by the method of traditional palm measurement which has used by the artisans that known as *thalamanam* (தலமானம்). It is an early metric tradition of India especially of Tamilnadu still uses to make god and goddess sculptures. Since, he has been praised with a specific an epithet of 'manothayan' means he who measured the world. This was composed as a statement of hero when commenting his lover's eyes which are big as fish and too her teeth replicates white jasmines. Here we can observe the word the '*thalamanam*' which is compound one since if split it come as: *thalam* + *mānam* (தலம் + மானம்).

The epithet of *mānōthayan* (மாளோதயன்) is penned under the reason of survey he did. *Mānam* (மாணம்) means measurement while 'thayan' means a rich abstract and adjective word to signify a person who measured. However, the scholars who wrote explanation wrongly mean this verse entirely in different tone.

#### IV. INSCRIPTION ON MEASURING SCALE

We have a keystone to gripping our view because a data account on an inscription has inscribed about a measuring scale-stick at a peculiar place that is the door jamb of Ulagalantha Perumal temple's sanctum sanctorum [17]. Moreover, the inscription is also supported with figures of a plough and a growing moon. These indicate how the method was followed to survey the lands. The plough tool signifies the measuring method that in a particular scheduled time how long or square the ploughing has been done. So the ploughed land is a scale to further scaling. However, the least and lengthy scales were known in Pallava period as *nalusankol* (நாலுசாண்கோல்), *pannirusankol*

(பன்னிருசாண்கோல்), *pathinarusankol*

(பதினாறுசாண்கோல்). According to our study they are equal to 3 feet, 9 feet and 12 feet respectively [18]. Besides, another one inscription also on measuring scale at Thirural (Thakkolam) temple near Kanchipuram that ensure the important of the scale and the survey held [19]. The one more verse from the Nandikalambakam mention peculiarly about the survey of Nandivarman III. That is the verse no: 20 follows:

அன்றிந்நிலம் ஏழும்அளந்தபிரான் /

Anṛinilam ēlum aḷanthapirān

அடலுக்ரம கோபன் அடங்கலர்போல் /

Aḍalukrama kōpan aḍangalarpōl (38)

The meaning of the two lines is; the Nandivarman who was known as *adalukrama kopan* (a man of high aggressive on enemies) who measured the land that have been with seven categories. Again to say; the verse exactly mentions about the manual survey of seven kind of land, before. Before means in a particular time but surely. Though its looks with clear statement but has wrongly understood by early scholars. As per their observation they believe that it accounts on the Vishnu's Trivikrama myth that says Vishnu's measuring just in two steps. According to our perspective in fact the Vishnu has not measured seven kinds of lands but three worlds undoubtedly. Therefore, the above verse is pointing very clearly that on Nandivarman III's survey, who praised by an epithet name - *Adalukrama kopan*.

Therefore, there is no doubt that the temple was re-coded by Nandivarman III to commemorate his great achievement to

restore the Pallava Kingdom. The defined geological proportion by surveying was indeed another milestone to Pallava History. This was the strong and sound reason to Nandi III, thus, a perfect and peculiar icon which he had chosen to install was the striding God that is Ulagalantha Perumal (Trivikrama) means a God who measured the world. Besides, the temple's presence before to the Cholas has been ensured by contemporary Alvar's songs.

#### A. Through the song of Thirumalīṣaiyālvār

Thirumalīṣai, a fourth member of the ālvār club, sung on this Uragam temple, however, mention in a different tone that it was built recently before his birth. In fact his song not sung on the modified temple of Nandi III, but on its previous version of Nandi II's. The absence of the songs of three early alvars and the presence of the songs by this later ensures the temple's newness then. Therefore, his song helps us to scan about his using of tense in his verse on this temple's existence. Hence, it is sharply mentions about the god and his posture as stood. He has no confusion between standing and striding. So his song has exactly been sung on the standing god of Thiruvuragam. The song follows:

நின்றதெந்தையூகத்து இருந்த தெந்தை பாடகத்து  
அன்று வெஃகணைக் கிடந்தது என் இலாத முன்னெலாம்;  
அன்று நான் பிறந்திலேன்; பிறந்த பின் மறந்திலேன்;  
நின்றதும் இருந்ததும் கிடந்ததும் என் நெஞ்சுள்ளே.

(815)

Ninrathenthaiyuragaththu **iruntha** thenthai padagaththu  
Anru vehkanaik **kidanthathu** en ilatha munnalam;  
Anru nan piranthilen; pirantha pin maranthilen;  
Ninrathum irunthathum kidanthathum en nenjulle.

(815)

The first stanza of the verse clearly state on the posture of the god in particular place as the god has been stood at Vuragam and has been seated at Padgam. However, the second line very clearly state about the particular temple's god who had reclined – once (அன்று - anru). Further, in the third and fourth stanza he explains about his absence and presence according to the temples seniority. Beside of these temples, he proudly declares as after his birth now the god in three forms have been retained in his heart. Therefore, the Vuragam temple was been up to the period of Thirumangai as with standing figured sanctum. The Introduction of the Ulagalantha Perumal was a later renovated one with sculptural and structural modifications.

#### B. Through the song of Thirumangaiyālvār (770 - 845 CE)

Thirumangaiyālvār a junior to the four senior Alvars gently list out the ten Vishnu temples in a song and nine of them surprisingly belongs to Kanchipuram. However, in that song, not any specifications on gestures of the icons of the Uragam temple have been noticed. We have not considered the other alvar's songs which are not sung on them almost therefore

because we fully depend on the fives only. What we have studied deeply is that no any notices about the transitional changes from him said on the temple of Uragam. He sung the temple by mentioning name simply without any adjectives particularly on sculpture but prefixed to enhance the elegance of Kanchipuram as நிறைந்த கச்சி ஊரகத்தாய் (*niraintha kachi uragathai*). This means, the God who lives in Uragam of Kanchipuram which this city posses all wealth. The style of the song just listing Vishnu temples with adjectives and some of them mentioned plainly. The adjectives mainly fall on the place of temples not on the God. So, it was documentation and used to know the presence of Vishnu temples while. Besides, Thirumangai was contemporary to Nandivarman II and Dantivarman but not to Nandivarman III. That was why there is no chance to him to mention the re installed striding Vishnu sculpture instead of the medium sized standing one.

#### C. Again Re-coded - Ulagalantha Perumal Temple

As discussed earlier the Perumal temple of Uragam was previously built by Nandivarman II freshly as memorial temple to glorify his regaining status. As the same the same temple again has been re-coded by his grandson Nandi III on behalf of his great effort against their confirmed loss at the hand of Pandiyan King. Probably perhaps a first time or after very long period he surveyed his country. In fact, Surveying country and performing 'Aswamedha yagam' may have been very prestigious indeed primary ones in those day's royal schedules.

What we have analysed on the critical situation of both Nandi II and his son Danti that the same situation has had chanced to the Cholas at once. The post period of Rajendra I, were a continuous bad luck days to them since we have lost four Chola kings in regular gaps. Also, the Rajamahendra who was a son of Rajendra II lost his life in severe war wounding perhaps, hence totally five. [20] Therefore, from the death year of Rajendra I that is 1044 CE and up to last period of the Adhirajendra that is 1070 CE a last king from main line, gapped with twenty six years were dreadful. All of this was because the Western Chalukyas made war frequently with Cholas and almost all of the wars were successful to Cholas however the bad luck continuous at their back. In this tight situation there was no candidate to take charge after Adirajendra from main line, since, the Eastern and Western Chalukyas disturbed more to disintegrate the Chola domain. Pandiyas perfectly used this chance and withdrawn their liege set their country again independently. In this situation, the Rajendra an Eastern Chalukyan prince and a feature Kulothunga who came and took charge restored the very powerful and prestigious Chola Kingdom between high struggles.

#### D. Who was Kulothunga? Was he a right candidate as King of Chola Kingdom?

The Chola King Rajaraja I have two issues. Hence, Rajendra I a son and Kunthavai a daughter were his proudest issues. Kunthavai was married with Vimalathithyan a Chalukya King. To this couple a son was born to whom his maternal grand father's name was given thus his name was Rajaraja Narendra. Therefore, Rajendra I, a son of Rajaraja I was a maternal uncle to Rajaraja Narendra. Hence, Ammangadevi a daughter of Rajendra I was given to Rajaraja Narendra to marry. To this couple who he born as a son was our Kulothunga I. Apart such this sequential relationship, further, the Kulothunga got marry with Madhurantaki a daughter of Rajendra II. Rajendra II was a son of Rajendra I. Therefore, Kulothunga I was a genuine grand-grandson by his daughter to Rajaraja I and grandson by his daughter to Rajendra I. such this case a great intertwining bloody relationship that hold by Kulothunga as a Chola by birth was the reason to him to take charge of Chola Kingdom. That was why there was no opposition raised from Chola's main line [21]. He has grown fully here at the palace of Gangaikonda Cholapuram.

The Chola Kingdom again poured with permanent peace due to the tremendous effort of Kulothunga who restored the sovereign with its olden glory. The external structures were strongly set since his concentration fall on social internal infrastructures. Among them the particular one was religious structural restorations. He did more renovations of early temples. Most of the temples hold his many inscriptions or at least one; the familiar among is "ஸ்வஸ்திஸரீ புகழ்மாது

விளங்க சயமாது விரும்ப நிலமகள் நிலவ மலர்மகள் புணர..." "swathisri pugazmathu vilanga saymathu virumba nilamagal nilava malarmagal punara..." Suppose there were no any such *prasasti* verse if with plain matters we can able to see however his name "Kulothunga Cholathevar" anybody can easily identify it, between the inscriptions that straightly speaks on matter. *Prasasti* is a Sanskrit word, in Tamil it is called as *meykīrthi* (மெய்க்கீர்த்தி) denotes a praising that on the fame of the particular King who achieved by efforts those was sequentially put in order in a poetical style.

#### V. THE HISTORICAL DATA THROUGH PRASASTI COMMENDATION

From the commendations of Inscriptions we can find the movements of Kulothunga I that with high schedules even from young age to his last period. As we mentioned earlier he set the stability in and around of his country. He has gone all directions. He accepted those who bows. As well as he defeated those who opposes. Neighboring countries have surrendered at him. Since went further towards North. Made them surrender. He sailed to overseas countries, put them under his Umbrella. He who not aided with others, himself alone led force on enemies; regained the lands previously

taken by some others. How the God Vishnu once redeemed the earth from an Asura; the latter who hid the earth under the sea; as the same the Kulothunga regained the Chola Kingdom. Led his Royal flag and Umbrella in all directions; due to this he add the name and fame to his clan's proud of ethical discipline. Trait, bravery, mercy and sacrifice such these four good manners have been character as default to him and crowned the prestigious *krita* of Chola dynasty. Such with great position his over lordship covers almost all parts of India. The said above all commendations are probably enlisted that found in the second reign year's inscription of Kulothunga I.

Moreover, he had a strong friendship with the ruler of China. He sent an ambassador team compressed with seventy two members. The team has had reached probably on 1077 by seven years journey. This was an ambassador team of traders who gained good respect and more profit with 81, 800 copper coins. Besides, the Chinese King presented valuable things at the hands of the team to Kulothunga. Such this historical data has been derived from Chinese historical sources [22]. Moreover, The *Kalingaththuparani* a then contemporary literature has accounts the victory of Kulothunga on Kadaram as “பரக்கும் ஒதாக் கடாரம் அழித்த நாள்”... (*parakkum othak kadaram azhiththa naal...*)

Kadaram was a part of Modern Malaysia [23]. Kulothunga also gained friendship from Kannauj, Indonesia, Kambuja, Miyanmar and Pagan [24]. Such these wider friend ship around him enhanced his power much more. He fits to what the manners of psychology and style of disciplinal movements and overlordship of the Pallavas. To what the aesthetics the King Rajasimha Pallava imposed early a temple at Padagam with seated viswarupa Vishnu sculpture as a monumental coded that has been a parallel concept too to Kulothunga himself. That was why he interested to renovate the same Padagam temple and installed again with very but a taller seated sculpture of Vishnu on behalf of his achievements.

#### A. Surveying the world

Surveying system has been well developed in Chola Period. As we discussed earlier the Pallava King surveyed his country previously before Cholas. We do not know, was there any survey held between Sangam Period. However, the Cholas of Post Sangam period, could be in first time, they have made the whole land survey probably by the Great Rajaraja I. Further, the Vijayalaya Chola was the key-man who initiated the Chola rule again after very long period and conquered a small portion of Mutharaiyas. He captured Thanjavur and some its neighbouring area from Mutharaiyas. It was a small portion then, else still they were a feudatory to Pallavas. To achieve such very powerful sovereignty there

was a great effort has contributed by every ruler continuously from Vijayalaya to Rajaraja I.

The Adhitya Chola I, who won over the Pallavas thus annexed some portions of Thondaimandalam of them. Since the dimension of the Chola domain has enlarged now considerably. Besides, the Parantaka I a son of Adhitya I fought war against Pandiyas. In this battle he won, since annexed the whole Pandiyan country to their domain. The Chola country lifted to the status of Emperorship now; however, the enlargement held just only in neighbouring areas that should be minded here. The spread of the Chola country during the Period of Rajaraja I attained much more enlargement even overseas countries. Such this great built-emperorship was really a historical one which on minded himself by the king since ordered to survey his whole country. As mentioned earlier this was probably a first historically known survey of Chola history. However, he never thought on it to celebrate as with structural art instead of that however, the particular duration period of the surveying he was very busy with his dream project of Rajarajeswaram – the Big Temple of Thanjavur. The Big temple has been dealt as a total code in all aspects of Cholas dynasty indeed.

Therefore, we believe that the second survey of Chola country has been minded as a great achievement because of redeemed one by Kulothunga I. If not restored by him could be wiped off then by Western Chalukyas and Pandiyas. As well as it would not be continued again with two centuries further. Therefore after Adhirajendra's death we have Kulothunga I to seven other Chola kings who ruled two centuries. Hence, the confidence about the long durative sovereign which was a deep thought since the Kulothunga I who formatted his country in all aspect and confirmed with whole land survey. It is enough to note the celebrative mood of Land survey probably of Kulothunga I that was why such an effort was highly minded by Kulothunga and interested to celebrate the achievement as codified structural art like Pallavas. For this we have further evidence from literature and inscriptions.

#### VI. THIRU ULAGALNATHA SRI PATHAKOL

(திரு உலகலந்த ஸ்ரீ பாதக்கோல்)

The world measured scale of Kulothunga period was called after the survey as "Thiru Ulagalnatha Sri Pathakol". This particular data available from an inscription of a temple of Thiruvothur. Thiruvothur belongs to Thiruvannamalai district very adjacent or a part of Cheyyar town. The inscription found at the temple's south wall of the first prakara. Therefore it is strong evidence that the survey has been in fact celebrated as a pride probably by Kulothunga I. As we discussed before obviously though it was a great an event as

surveying very first time in their History or after very long back by Rajaraja I, but he did not consider it separately to celebrate it with another coded structure. Of course, all his effort was a huge ever grand temple aesthetically to stand to reveal the Cholas imperialism and intellectuality beyond the history. Hence he did not revise the Uragam temple again with a tall viswaruba sculpture. From these we can understand that the survey was a victory-trophy in practical manner to Kulothunga I as discussed earlier that the full stop came with end of their history by continuous misfortunes however by his unparalleled effort replaced the full stop with comma. The real mood of celebration has to be exactly applicable properly to Kulothunga I. The name of the scale too in a category of a proper noun since it denotes the scales measurement method. To believe strongly as the hero to our survey was exactly Kulothunga I by the support of Kalingathupparani which was a contemporary literature of the Kulothungan era.

#### A. Aimbadaithali

In majority Kulothungan seems to be a devotee of Vishnu. He has been admired as equivalent to Lord Vishnu by those days' scholars. Some of them deemed that Kulothungan himself as an incarnation and his foot were obviously the same of Vishnu thus they worshiped indeed. This is evidenced even in the literature of *Kalingathupparani* that mentions a special ornament has been worn by Kulothunga in childhood days namely known as 'Aimbadaithali' (ஐம்படைத்தாலி). The song follows:

'பண்டு வசுதேவன் மகன் ஆகி, நில மாதின்  
படர் களையும் மாயன் இவன்' என்று தெளிவு எய்தத்  
தண்டு, தனு, வாள், பணிலம், நேமி, எனும் நாமத்  
தன் படைகள் ஆன திரு ஐம்படை தரித்தே. (25)

*paṇḍu vasudēvan magan āgi nila māthin  
paḍar kaḷaiyum māyan ivan enṟu theḷivu eythath  
thaṇḍu thanu vāḷ paṇilam nēmi enum nāmath  
than paḍaiḡā āna thiru aimbaḍai tharithe.*

This song is very important that accounts the nature of Kulothunga, and is enough to clear about his status that says as; once in his previous birth he was the Kannan a son of Vasudevan he who saved the earth from demon. As to remember such of his previous incarnated birth he worn a special garland like necklace which ornamented with the miniature symbols of the five weapons of Kannan. The weapons follow: *Thaṇḍu*, bow, sword conch and the chakra. *Thandu* could be a stem like or a *gadhayudha* perhaps. Again coming to the measuring scale's method; the *Thalamanam* is a compound word of both Tamil and Sanskrit in discipline therefore; *thalam* + *manam*. *Thalam* is a Tamil word derived from the word of *thal* (தாள்). *Thal* means foot. The Great Tamil Poet Thiruvalluvar in his world

familiar Thirukkural he used this word in first chapter (kadavul vazhthu) (கடவுள் வாழ்த்து) to denote the foot of God. In this case the verse 2, 7, 8 & 9 all are examples to the specific word usage. Also the word of *adi* (அடி) has been used to denote the foot which found in the same first chapters' 3 & 4<sup>th</sup> verses. Therefore, the measuring tradition of Tamilnadu in linear measurement we have initially a foot oriented method that was why the foot size was taken as a least unit to a measuring scale. Still we have foot measures in use as square foot or square feet like. Therefore; we can confirm that the scale used to survey the Chola country while in the period of Kulothunga I was based on the foot size of the King himself as a least unit to that particular surveying scale of Chola land. That was why the Tiruvotthur inscription mentions the scale which was used to measure the Chola country as Sri Pathakkol. Patham a Sanskrit word means a foot. Therefore, Kulothunga was deemed as the incarnation of the God Kannan that was why to do survey his foot size was taken to make a special scale for Chola country survey.

Besides, in Ancient Egypt, the method of surveying found similar with Indian style of tools thus with rod and cord. However, unfortunately we don't have such any two or three dimensional depictions of art on survey but in literatures. As the same we have reliable data on land survey held at mogul period has been accounted by Jesuit Mission. However an art created during the British period in India especially in nineteenth century (1802 CE) shows the land survey of India. This was a trigonometric survey and too in this project they map out the Highest Mountains of India. (See fig 2).

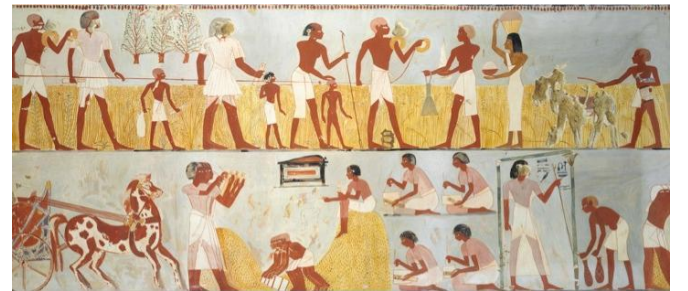


Fig.1 The top portion shows a cord man stretching the cord while surveying the land between Tomb Menna



Fig.2 This survey has been started from South India but took three decades to finish.

In fact we have to know about the modern survey method how they attained evolution towards flexibility even very easiest way like GPS by satellite uses. This helps to know the region or place or a street or a building with three dimensional views with scales. The Global Positioning System (GPS) is much advanced highly securable a fast way to survey even very vast lands without physical strains and wasting time, with more accuracy.

## VII. THE MODERN SURVEYING METHOD

There are three types of methods of linear measurement currently in use which are: 1. Direct measurements, 2. Measurement by Optical means, 3. Electro Magnetic method. The direct method is having various types such as 1. Pacing, 2.Measurement with Passometer, 3.Measurement with pedometer, 4. Measurement with odometer and speedometer. 5. Chaining. The first pacing method for rough measurement and the second passometer method is a watch like device used by the surveyor while his body movement is calculated by the device. The third method of pedometer is similar to passometer but having little bit of advancement. The fourth method of odometer is based on a wheels rotation and its circumference. And the last fifth method of chaining is but a simplest method uses only the straight stretches. It is not used to measuring curves. In 1990s, the theodolites that equipped with small telescopes being used with usual tools such as measurement taps and rulers. This is a most using method still in vogue in the field of Civil Engineering. We can see the method of chain survey which obviously an advancement from the ancient robe method of Historical period. Beside, the data of private land survey is very easy and a secure one now a days due to the cloud computing data storage style. No need to keep big and big ledgers enough physically. Even the very important data can also now possible to store in cloud due to the Homomorphic encryption's advancement [26].

## VIII. CONCLUSION

In this paper, we have analyzed to unveil the untold facts of a celebrative structural of historical era. It has been reinstalled with a prime code of icon in its *garbagriha* during the period of Kulothunga Chola I. Such this special religious structure re installed with special icon however in this case what could be an instinct to the Chola King and as the same what could be an inspiration both in conceptual and practical are the matter of this research which this has interpreted been through this paper. Therefore, the celebrative icon of striding Vishnu, the particular posture that has how metaphorically been used by the King to portray himself too because he who too surveyed the whole Chola country. More over the re installed sculpture is a rare one being with 21 feet high even it is a *garbagriha* sculpture. As discussed prior it is a special portrayal to show the almighty of the God and the King of Kulothunga I himself in 'Viswaruba' manner in the temple of Thiruuragam is in fact a 'sculptural-simile' stood directly to a religious purpose and indirectly coded as to Royal.

## ACKNOWLEDGMENT

I would like to thank my student S. Karthick IIIrd year, B. Arch, Thiagarajar College of Engineering, Madurai, and V.E. Cybychakravarthy my son who helped more in field works.

## REFERENCES

- [1] Kunwar Deo Prasad, "Taxation in Ancient India", Mittal Publications, First Edition, 1987, ISBN: 81-7099-006-8, p 39.
- [2] ASI, Measures in Ancient India, Ajanta Publications, Delhi, 1979, p 36.
- [3] Ibid p 41.
- [4] [4] Ibid p 41.
- [5] Kunwar Deo Prasad, p 43.
- [6] T.V. Sadhasiva Pandarathar, Pirkalach chozhar sarithiram (Tamil), Ramaiya Pathippagam, Chennai, First Edition, 2008, pp 147, 148.
- [7] T.V. Sadhasiva Pandarathar, Pirkalach Chozhar Sarithiram (Tamil), Ramaiya Pathippagam, Chennai, First Edition, 2008, p 55.
- [8] S.I.I. Vol, V. No. 990.
- [9] S.I.I. Vol. VII, Ins. 132 of 1929 – 30.
- [10] Ibid. Ins. 340 of 1917.
- [11] Dr.S.A.V. Elanchezian, "Chronological – Sculptural – Structural – Distinctions of Three Perumal Temples", International Journal of Innovative Research in Science, Engineering and Technology, Vol.5, Issue-7, pp.13912-13930, Jul 2016.
- [12] T.N.Subramanian, (Special Editor), Pallava Copper Plates Thirty (Tamil), Tamil Historical Centre, Chennai, 1999, p 260.
- [13] T.V. Mahalingam, Kanchipuram in Early South Indian History, Asia Publishing House, New York 1963, pp 139, 140.
- [14] Tamilnadu varalarruk kuzhu, Tamizhnattu varalaru, First Vol, Tamilvalarchi Iyakkagam, Chennai, p 181
- [15] Ibid, p 189.



- [16] T. N. Subramanian, (Special Editor), Pallava Copper Plates Thirty, p 261.
- [17] SA. Kirushnamurthy, Tholliyal nokil Kanchipura Mavattam, (Tamil), Meyyappan Pathippagam, Chidambaram, 2010, p 249.
- [18] Thamizhnattu Varalarrukkuzhu, Thanizhnattu Varalaru, p 383.
- [19] SA. Kirushnamurthy, Tholliyal nokil Kanchipura Mavattam, (Tamil), Meyyappan Pathippagam, Chidambaram, 2010, p 249.
- [20] K.A.Nilakanta Sastri, A History of South India, Oxford University Press, Madras, Fourth Edition, 1976, p 187.
- [21] K.A.Nilakanta Sastri, The Colas, University of Madras, Madras, 1955, p 285.
- [22] [22] K.A.Nilakanta Sastri, The Colas, p 316.
- [23] கலிங்கத்துப்பரணி, காண்டம் – 6, செய்யுள் எண் – 152 (நான்கு அடிகளைக்கொண்ட செய்யுளில் முதலாம் அடி).
- [24] K.A. Nilakanta Sastri, A History of South India, p 192.
- [25] Puliur Kesigan, Sayangondar's Kalingaththupparani, Pari nilaiyam, Chennai, 1965, verse no: 240, p 121.
- [26] Suraj S. Gaikwad, Amar R. Buchade, "Survey on Securing Data using Homomorphic Encryption in Cloud Computing", International Journal of Computer Sciences and Engineering, Vol.4, Issue-1, pp.17-21, Jan 2016.

#### Authors Profile

**Mr. S.A.V. Elanchezian** pursued both Bachelor and Master of Fine Art from University of Madras. He has pursued M.Phil and PhD in Fine Art from Tamil University, Thanjavur in India. He is currently working as an Assistant Professor in the Department of Architecture, Thiagarajar College of Engineering Madurai, India. He is a life member of Artists Centre of Mumbai since 2008. He has published several research papers in reputed International Journals available in online and published four Research Books too. His main research is focusing on art and architecture and the structural engineering of ancient world. He has 11 years of teaching and 33 years of practical experience and with 10 years of Research Experience.



**Mr. V.E.Rajaraja Chozhan** currently in final year of Civil Engineering an innovative aspiring civil engineer more interested in field work studies to gain knowledge in first hand.

