

Traditional Water Management Practices of Chettinad: A Case-Study of Valayapatti Settlement

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Abstract:

The study informs architects and planners about traditional water management practices in the Chettinad region. The Chettiars realised that water is an elixir that mediates everyday life. This reading sheds light on how this overseas trading community focussed on conservation, storage and management of water in the dry region they migrated to. The study aims to answer the research questions: How did the Chettiars establish sustainable water management practices in a dry and arid zone? How did water mediate everyday life in Chettinad region? Using a historical lens, the research adopts a case study approach to understand water management and presents an overview of the current scenario in Valayapatti village, a Chettinad settlement in Pudukottai district. This qualitative research employs direct observation and secondary sources of data to understand the role of water in mediating everyday life and to understand traditional water management practices. The study makes recommendations for improvement for enhancing water management in the region.

Keywords: Chettinad, Ancient Tamils, Sustainability, Water, Traditional Practices

The Mercantile Community of Chettiars

The Chettiars are a mercantile community from Tamil Nadu. The Chettiars are historically known for their rich cultural practices, sumptuous cuisine, ethical business practices, organised banking, exquisite diamond jewellery, unmatched philanthropy and their large palatial mansions. The Chettiar men referred to as "Chettiars" travelled across the globe for trading, particularly to regions in South-east Asia. They earned immense wealth in the 1800-1940s through their businesses and invested the same in building their palatial homes and philanthropic deeds. Chidambaram (2001) writes that the Chettiar community thrived and made a fortune for 150 glorious years and witnessed the decline in the 1950s-60s due to emergency in Burma. Despite their overseas success, the Chettiars shared greater affinity to their motherland. From building palatial homes to maintaining temples, from building schools and colleges to hospitals and public amenities, their contributions are pioneering efforts in the development of their homeland. As Nishimura states, with the fortune they made abroad, the Chettiars acquired vast areas of land from the Brahmans through the Inam settlement (Nishimura, 1993).

History states that Nagarathars migrated from one part to other due to political and natural calamities, the last being from *Kaveripoompattinam* of Chola kingdom to present location in Pandya kingdom. Silapathigaaram, a Tamil epic establishes this community as maritime traders who were based out of *Kaveripoompatinam* for many centuries and made a fortune through salt trading (Rudner, D.W., 1987). The prosperous land of *Kaveripoompatinam* was washed out by a disastrous Tsunami and the Chettiars were literally forced to migrate. The fear of this natural calamity compelled them to choose elevated barren lands where rainfall is scanty. They migrated from *Kaveripoompatinam* to the present day Chettinad region (Thurston, E., 1909). The *Chettiars* have settled in the *Chettinad* belt of Tamil Nadu, a cluster of 96 villages, many of these villages uninhabited to this day reducing the number to 72 villages.



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Rationale of the study: This dry and arid zone posed a necessity for sustainable water management. The Chettiars prioritised this need to conserve, store and manage water from micro to macro level for their sustenance. The study necessitates documentation of these century old sustainable practices to inform architects and planners.

Objective: The study aims to identify and document the traditional water management practices established by the Chettiars.

Research Questions:

The study aims to answer the research questions: How did the Chettiars establish sustainable water management practices in a dry and arid zone? How did water mediate everyday life in Chettinad region?

Methodology:

In view of the above stated objective and research questions, a qualitative approach was adopted to investigate traditional water management practices from an architectural perspective. Amongst the 72 surviving villages, Valayapatti, a settlement in Pudukottai district of Tamilnadu, India, was chosen for this study. It is the third largest among the 72 Chettinad settlements existing at present. It is the native of 1800 Chettiar families and people of other sections also live there at present. Valayapatti proves to be a classical example to showcase the principles and practices adopted by the Chettiars in their excellence in water management. Valayapatti possesses almost all the components of typical water management system prevailing in the region. Direct observation and secondary sources of data were used to understand the existing features of traditional water management, the prevailing conditions and how water shaped the everyday life in the settlement. Field work began in 2020 during the pandemic. The study is currently continuing and is spearheaded towards measures taken to retain, restore and improvise the water management system in Valayapatti.

A large amount of data was generated and necessitated a systematic approach to data analysis. Field work and secondary sources of data had to be carefully documented and categorised for analysis. Utmost care was taken with respect to reliability and validity of data and subsequent interpretation of the same.

Macro-level Planning

The Chettiars are also known as 'Naatukottai Nagarathars', a name which elucidates that the Chettiars lived in palatial houses and were familiar with town planning (Annamalai, 1988; Muthiah, S et al, 2006). True to this name, the Chettinad settlements echoes outstanding urban and land-use planning using grid iron pattern, traditional water management practices and an interchange of culture in vernacular architecture (UNESCO World Heritage Centre, 2014). Valayapatti is a classic representation of a typical Chettinad settlement.

The Evolution of Valayapatti started around the Shri Valampurinatha Swami temple known as Malaiyandi koil, as it is located on a hillock in the North-eastern quadrant of the settlement. The temple is enveloped by houses constructed on the south and west side of the temple, open space in the east and agricultural lands on the north side of the temple. This ensures inflow of pure and ample rainwater that gets collected in the temple tank, Vaiyapuri, at the foothill (Refer Figure 1). This sacred temple tank serves as the water source for temple activities and as drinking purposes of the settlement.

Figure 1. Nagara Sivan Koil and Vaiyapuri Oorani

The street formations are in grid iron pattern. This enables the flow of the storm water through the settlement with ease along the gradient. The core principle of water management is the simultaneity of storage and utilization of water vis-à-vis avoiding wastage and misuse of water. This is clearly evident from the series of underground aqueducts, water channels, culverts at street junctions, inspection



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chambers, diversion structures constructed to moderate and modulate the water flow to the series of tanks and ponds so that the water is not wasted in its course.

The settlement has several water bodies and waterways connected by an optimal network which ends in a destination before entering into the large lake in the end (Refer Figure 2). Each waterway has its own catchment area and well laid & planned water drain system. The water bodies were created at strategic locations. Certain water bodies were made for specific purpose also.

A natural gradient exists from north west towards south east, which the people of settlement had exploited to the maximum to create the waterways along the existing topography. Few existing low-lying areas were formed as nodes to channelize the flow.

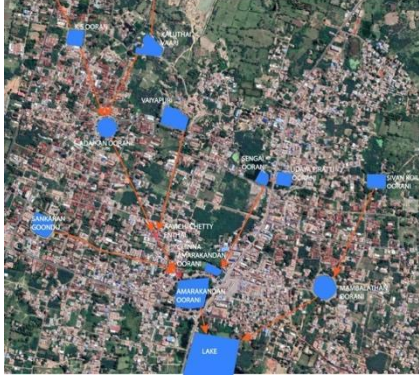


Figure 2. Water bodies in Valayapatti

First one starts from the Divertor structure – Madai near Adaikalamkathar koil. The water collected from the higher terrain on the north, Manapatti reaches this point. Close to this Kazuthaivaari – the washerman ghat. The incoming water can be regulated based on the need. It can fill the washerman ghat or retained the natural flow beyond. A well planned, well laid stone aqueduct more than 100 years old exists from this Madai to its next destination – the Adaikkan oorani, an Octagonal tank, a landmark which forms the centre of the old settlement proper.

The water collected around north-west Kesarapatti surroundings enter into K S Oorani. From there, the second route connects to the

Adaikkan oorani through drain channels and culverts across the settlement. Further the overflow – kazhingni water runs through meandering waterways in a grid iron street setting, cutting across the streets in a diagonal fashion.

The third route - The overflow water from the Vaiyapuri which has its catchment area on the north, travels down through the drain channels of Amman sannathi street begins. On their course further, all these routes merge at a node – the Avicchi chetty enthal.

Parallely, couple of other routes emerge – fourth one from western part catchment zone falling into Sankaran gundu travelling towards east and fifth one from northern zone falling into Udaiyapiratti oorani, overflow of which goes to sengai oorani – a natural water body and then towards south.

All these three routes – from Avicchi chetty enthal, from Sankaran Gundu and the one from Sengai oorani merge at another node – the chinna amarakandan. This natural water body acts as a regulator before emptying itself into the Amarakandan oorani which the pre-final destination of the water route of the entire settlement. Amarakandan oorani has its own catchment area on the south-west. Once Amarakandan oorani gets filled up, the surplus – kazhingni falls into the large lake in the south eastern end of the settlement. Another one – the sixth route starts from eastern half to Sivan koil oorani and overflows into Mambalathan oorani before being drained into the Lake – the final destination.

Thus, the water management system has been planned well covering the catchment areas in all directions and storing the water collected in tanks at strategic locations, diverting & directing along the available gradient, exploiting the topography, merging them at natural nodes and emptying in the final destination. On its way the flowing water serves the settlement at different levels and caters to the various needs of the society at large.

Micro level planning:

At the Micro level also, a thoughtful approach to conserve water and its best use for various domestic purposes were considered. Even though the mansions were designed indigenously by them according to their life style and culture, equal importance was given to harvest rain water appropriately wherever possible. The physical form of the palatial mansions was created to enable this requirement. The sloped



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roofs of varied scale and gradient to drain the rain water effectively and collectively towards one area or point. Introduction of multiple of courtyards – mostly introverted - to collect those water in large vessels and store it (Refer Figure 3). This water was used for drinking purposes as they very pure and hygienic. It was surplus enough for most part of the year.



Figure 3. Rainwater management at the micro-level

There exists Flat roofs – Madras terrace – also and the Chettiars handled there also efficiently by draining with proper gradient on the top surface so that the entire water fall into road side drains through slots in the parapet walls, roof overhangs, chajjas etc. They saved a portion of the water for their own usage. This is evident in the formation of the courtyards and the sloped roofs. Only water running down the corners were collected through gutters and stored in large vessels. This constitute only 50% and the rest is let out in to the roadside drains through concealed stone drains and ornate stone spouts (*Thoombu*).

Water Mediates Everyday life:

Water is central to sustenance and availability of which mediates everyday life. Water is used for private and public consumption and also for a variety of purposes by different stakeholders and thus, serves as a cultural ecosystem (Chowdhury et al, 2021). The water tanks do not serve as mere water deposits. These water resources serve economic (agriculture, livestock, fishing), ecological (replenishment of ground water and prevention of erosion, floods, etc.) and socio-cultural functions (domestic, leisure and festivals). These water bodies provide eco-systemic resilience (Ariza et al, 2007) which benefits the settlement at large as the region is arid and drought prone. It is noteworthy that there are different stakeholders who use these water resources for different purposes and hence, interact in different ways with the water bodies. These stakeholders may be classified based on occupation, caste and gender. The organisation of the settlement is homogenous and houses people from different occupation and castes. Security and privacy were of utmost importance to the Chettiars who left their family back in the village when the men were away for overseas trading. The housing in the grid iron pattern assured safety and privacy through societal homogeneity. Yet, when it came to water, Chettiars known for their philanthropic nature, were not greedy enough to store all the water for themselves. And they cannot too, since it is not possible to store whatever the nature provides. The water let out from Flat roofs and courtyards run through the hierarchy of waterways and reach the nearest tank. Thus, the society at large is benefitted much.

Pure water collected in the temple tank is used for temple religious activities and for drinking purposes by the public. Excess water through the outlet is used for other domestic purposes and bathing, ablution etc. Finally, the surplus is diverted to a huge lake in the periphery of the settlement which serves adequate supply of water to the agricultural activities there upon.

Few important temple activities around the temple are Theerthavari, Mulapaari and Abhisekham. Another important domestic ritual is called Saamiku padaikiradhu (reverence of forefathers) for which water is brought from the oorani. Apart from everyday life, water from the tanks are significant for certain life-cycle rituals. For example, water for the deceased person is brought from the oorani and the heir of the deceased takes a ritualistic dip in the oorani after performing the last rites.

The pure water was also used for drinking purpose. When the tank dried up, it also served as recreational space for youngsters to pursue sports such as cricket. This drying up was not common until the drought prone times and quite often a consequence of exploitation of resources. Other significant uses of these



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water bodies were for laundry, cattle and washing of vehicles. The entire settlement benefits directly and indirectly from the water resources.

Present Scenario:

The well-connected water network developed almost a century ago still exists. But the recent developments, haphazard growth and unauthorised encroachments have disrupted the waterways to a larger extent. Lack of maintenance and growth of thorny bushes has blocked the water routes. Knowingly people are letting the sewage and sullage into the waterways, since there is no proper planned drainage system in place. The problem of letting waste water into the system arose once toilet complexes were introduced into the built environment. We need to address and find out solutions for this impact. The water bodies – both natural nodes and tanks faces the same situation. The tank bunds have become dilapidated and deformed. The sizes of the tanks have shrunk due to encroachments. Also, the rapid construction activities in and around the catchment areas have reduced the inflow of water coming to the tanks. The nature also has limited its contribution due to cutting of trees and global warming, leading to much lesser rainfall than usual.

The Way Forward:

There is a dire need to resurrect the traditional water management practices for a sustainable living. We have the responsibility at this juncture to restore the tanks, reinstate the waterways, redirect the waste water, reclaim the catchment areas to its original nature. The REACH Chettinaadu – an active group which is primarily into restoration of old chettinaadu mansions and revival of chettinaadu's cultural heritage has involved itself in restoring the water management system in Valayapatti to its original condition. As part of the initiative, the group has developed a comprehensive plan – the Valayapatti Bluenet that offers a possible, feasible, cost-effective solution involving the Government & their schemes, the local body – panchayat, general public, like-minded Social organisations, family trusts, Philanthropists, etc. The change has begun.

Recommendations:

A universally acknowledged best practice is to revive traditional practices and pay heed to indigenous knowledge systems. This is getting lost in the name of modernisation, expansion and development. Architects and planners must focus on how these lessons can be translated for contemporary water management. Modern development must address the lack of connectedness between waterbodies and storm water drains. The key lessons include connectedness and interrelatedness of waterbodies both at the macro-level and micro level of settlement planning and the intention to share water across the settlement. Building new houses with courtyards and sloping roofs will aid in rain water harvesting and benefit domestic use too. Newly developed colonies, including those in the Chettinad region, must comply with the traditional layout and water management practices. New developments have a organic pattern and have disrupted the grid iron pattern. In the yesteryears, the Chettiars took utmost care in maintaining the water bodies. They were pious and philanthropic in their approach towards this public service. This is a lesson that public must imbibe and come together for maintenance of waterbodies along with the Government initiatives.

Scope of study:

The study is limited to understanding and reviving traditional water management practice in Valayapatti and offers the scope to investigate other settlements. Also, the research paves way to investigate social perception of water tanks and how integral it is to improve water management. The study may be extended to understand economic, ecological and socio-cultural aspects of water bodies and how it affects contemporary water management practices.

Conclusion:

Being in the tropical region, with scanty rainfall and scorching heat, Chettiars were able to be self-sufficient in water resource for the most part of the year. Water management and conservation is one of



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the key aspects in the settlement planning at macro level; and the traditional planning principles of those palatial mansions at the micro level. Chettiars were conscious towards water management as they prioritised and incorporated the same at every level of detailing. Traditional water management practices also facilitated social interaction and mediated everyday life where all stakeholders had a sense of belonging to the water resources in the settlement. We had an excellent sustainable water management system available and it becomes our responsibility also to continue with utmost care. We are proud that our ancestors had a broad vision and thirst to conserve water and thus preserve Mother Nature. Our ultimate aim is to showcase the traditional practices and the practices to the society. There was a system in place. It is deteriorating on one hand owing to haphazard development and on the flip side, it requires upgradation to suit the present-day context. We look forward to reviving these practices with the concerted efforts of all stakeholders.

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