Water Mothers, in the Village – in the City? Amman Deities at Village Ponds in Peri-Urban Chennai, South India

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KEYWORDS: CULTURAL LANDSCAPE, ERI CASCADE, KULAM-KUTTAI SYSTEM, LOCAL KNOWLEDGE, AMMAN DEITY, PERI-URBANISATION

Water bodies and goddesses

> Female deities, whether you call them Mariamman or Gangai-amman or Ellaiamman[1] or Bannariamman[2] or any other Amman are traditionally designated to the role of protecting natural resources. (Dr. Jayshree Vencatesan, social and environmental scientist, Chennai)

The Tamil word for "mother" is "amma". During my time in Chennai, I was lucky enough to meet different amma figures. The most visible one to me in 2015, when I first came to the city, was Amma J. Jayalalithaa, the then-chief minister of Tamil Nadu, who passed away just the following year. When Germans referred to their chancellor Angela Merkel as "*Mutti*" (mom) with an ironic wink, Tamilians seemed to call their chief minister "Amma" with full respect and sincerity, perhaps even with a sense of worship. Amma provided food to the poor in the Amma Canteen, served bottled water to everyone under the brand name "Amma Water" and her image overlooked the voluntary emergency relief work of Chennaites at the Nehru Stadium during the Chennai Floods 2015.

The second amma I met, was my landlady in Chennai-Velachery, who also was a mother of three, a wife, the head of a joint family household and an authority in our street. She was a leading figure in community festivities, she made sure that our house (her family and tenants) receive water from the tanker in drought times, she found wives for all

her sons, and she beat the drum for rain in the daily morning prayers. She was generous, calm, firm, and I always felt safe at her house.

The third amma I met is not just one figure, but numerous mother deities, called "amman"[3], at the roadsides of Chennai. Unlike the big temples I used to know, the amman temples and shrines were often small and accessible, not prominent at all. Some were situated below street level so that the wheels of the cars, buses and trucks were on the same height with the goddess' eye. To be honest, I did not pay much attention to ammans at first, because they were merged too well into their surroundings. Only when I commenced my research in the peri-urban of Chennai, I realised that whenever I found a village pond, I would also find at least one amman at its ghats. And they were interesting deities, sometimes angry with tusks and a red face, sometimes friendly and soft, some ammans wore little dresses in bright colours and others were just a black stone with three piercing eyes. The smallest amman I saw had the size of my hand and the tallest was taller than me. Once I became interested in ammans, I was wondering whether I will find a village pond, whenever I see an Amman—I did only once or twice. Nevertheless, in most cases outside the dried-up city, I would find water near the amman, be it a channel, a sluice, a pond, or the embankment of a reservoir. Even though, ammans had not been on my research agenda at all in the beginning, I decided that it was impossible to tell the story of water in the city and its surroundings without them. It proved to be the right thing to do.

The eri landscape and the readable landscape

The South Indian state of Tamil Nadu is characterised by monsoonal rainfall of the northwest monsoon (between October and December) and a long dry period. To be able to cultivate paddy, rainwater has to be retained in the landscape, which is achieved through check dams and reservoirs. For more than 2,000 years the cultural landscape of *eri*[4] cascades was shaped all over Tamil Nadu and parts of Karnataka, defining not only wetlands and fields, but also elevated zones for settlements (Mukundan 2005; Palanisami, Meinzen-Dick, and Giordano 2010; Shah 2003; Vaidyanathan & Sivasubramaniyan 2001). The eri cascades form a cultural landscape, the eri landscape, which results from state efforts and collective activities of different villages, communities and generations (Ariza-Montobbio et al. 2007; Janakarajan 1993; Shah 2003).

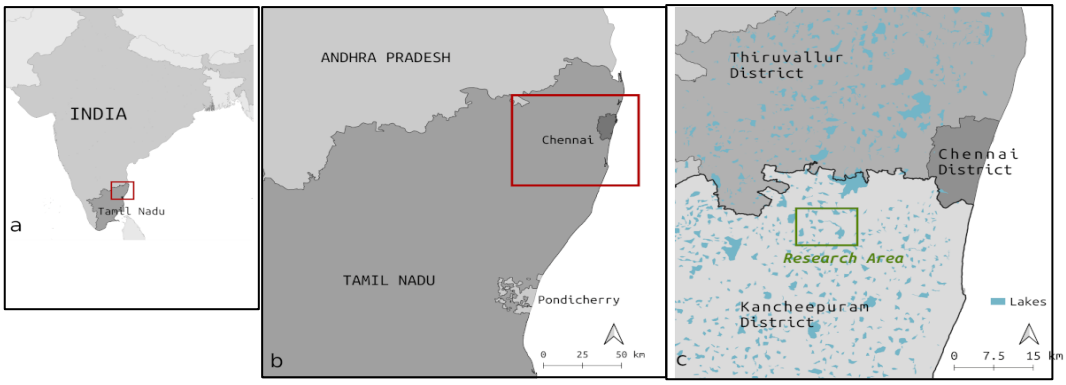

Figure 1 a–c, Location of the research area in India (a), Tamil Nadu (b), peri-urban Chennai (c).
Shapefile sources: Natural Earth (country boundaries), Open Street Map (Indian administrative boundaries), Bhuvan Water Body Information System, WBIS (water bodies)

In peri-urban Chennai (figure 1), most recent landscape changes include the disappearance of wetlands. Widely researched is the situation of eris, viewing their neglect and decay, but also their potential as irrigation tanks and drinking water reservoirs (Arumugam et al. 1997; Asian Development Bank 2006; Palanisami et al. 2010; Reyes-García et al. 2011; Sivasubramaniyan 2006; Vaidyanathan & Sivasubramaniyan 2001). The main focus of this paper however is on village ponds, called *kulam*[5] and *kuttai*[6] in Tamil. To improve the understanding of landscape changes on a small scale, I analyse how these smallest water bodies in the eri landscape are handled in a yet rural, but urbanising environment. The underlying question is, why some village ponds disappear, while others are successfully transformed into an urban water body. Eventually, the development of local, small scale components, such as village ponds, helps to comprehend the bigger picture of peri-urbanisation. The analysis includes the role of local deities in shaping, preserving and managing the eri landscape.

In the research area (figure 2), it was observed that village ponds form a system, which corresponds with the presence of deities in the landscape. This observation was initially driven by the idea of a hydrological hierarchy of village ponds, which eventually could not be verified in the research area. Nevertheless, a hierarchy of ponds exists in other terms, even including a physical dimension. Therefore, the idea of a village pond system is sketched to provide a basis for further conceptual development. Since the observed hierarchies of village ponds are based on concepts of physical and ritual "purity", they strongly include notions of caste, land definition and presence of particular deities. This research is concerned with the spatial (i.e. physical) manifestation of such notions.

So far, local deities have gained attention through a century of anthropological research concerned with rural societies and caste structures (Amrithalingam 2014; Arumugam 2015; Crooke 1919; Gough 1952; Hanumanthan 1980; Hornell 1944; Krishna 2003; Moffatt 1979; Shah 2008; Valk & Lourdusamy 2007; Weiz 2006; Whitehead 1921). Furthermore, some anthropological research was concerned with Tamil village deities, including so-called village mothers or ammans, in connection with water bodies (Shah 2008; Weiz 2006). In this chapter a geographical perspective shall be added to existing findings, precisely to survey the connection between village ponds as spatial entities, local deities and communities. Viewing the landscape as assemblage of physical and immaterial entities, divine, physical and social layers are intertwined, partly represent each other and correspond with each other, and thus lead to the shaping and making of the landscape. Moreover, local stories and myths can give insight to the shaping of the landscape and the social order connected to its establishment (Shah 2008). A concept, which can feed into these ideas is the "readable landscape" and was described in archaeological research as follows:

> The physical environment is intrinsically linked to culture and social structure, it is ordered and conceptualised by cognitive systems and its conferred meanings are "read" by society (Duncan 1976, p. 392). […] [T]he environment is both a social product and a social medium and "the landscape serves as a vast mnemonic system for the retention of group history and ideals" (Lynch 1973, 303). (Evans 1985)

This "mnemonic system" is part of local knowledge. While the physical landscape itself is a layer to be utilised and managed, the religious layer may provide the link to make this usage and maintenance possible. Therefore, it will be discussed how this mnemonic system works in the research area.

Research area description and methods

Field data for this work was gathered within a qualitative research, carried out between 2018 and 2019 in the urbanising belt of Chennai, precisely a 40 qkm large area around Manimangalam Eri, located in the Southwest of the city.

Description of research area

Manimangalam Eri is located approximately 40 km southwest from the core city of Chennai. The research area (figure 2) is around 40 qkm large, including parts of the catchment as well as the irrigation area of Manimangalam Eri. It also includes seven smaller village eris in the

catchment area, which drain into Manimangalam Eri. Moreover, small village ponds are found in the research area, which are eri- and/or rain-fed and can be found in the catchment and in the irrigation area of Manimangalam Eri.

During the field research phases in 2018 and 2019, rural land uses such as farmland, *peromboke* (common land), village settlements and forest were more or less intact and still dominating. However, farmland conversion into residential and industrial areas is a common sight and triggered by the growth of Chennai and peri-urban development hotspots, such as highways, industrial estates and growing smaller towns. Therefore, the area has changed considerably during the past twenty years.

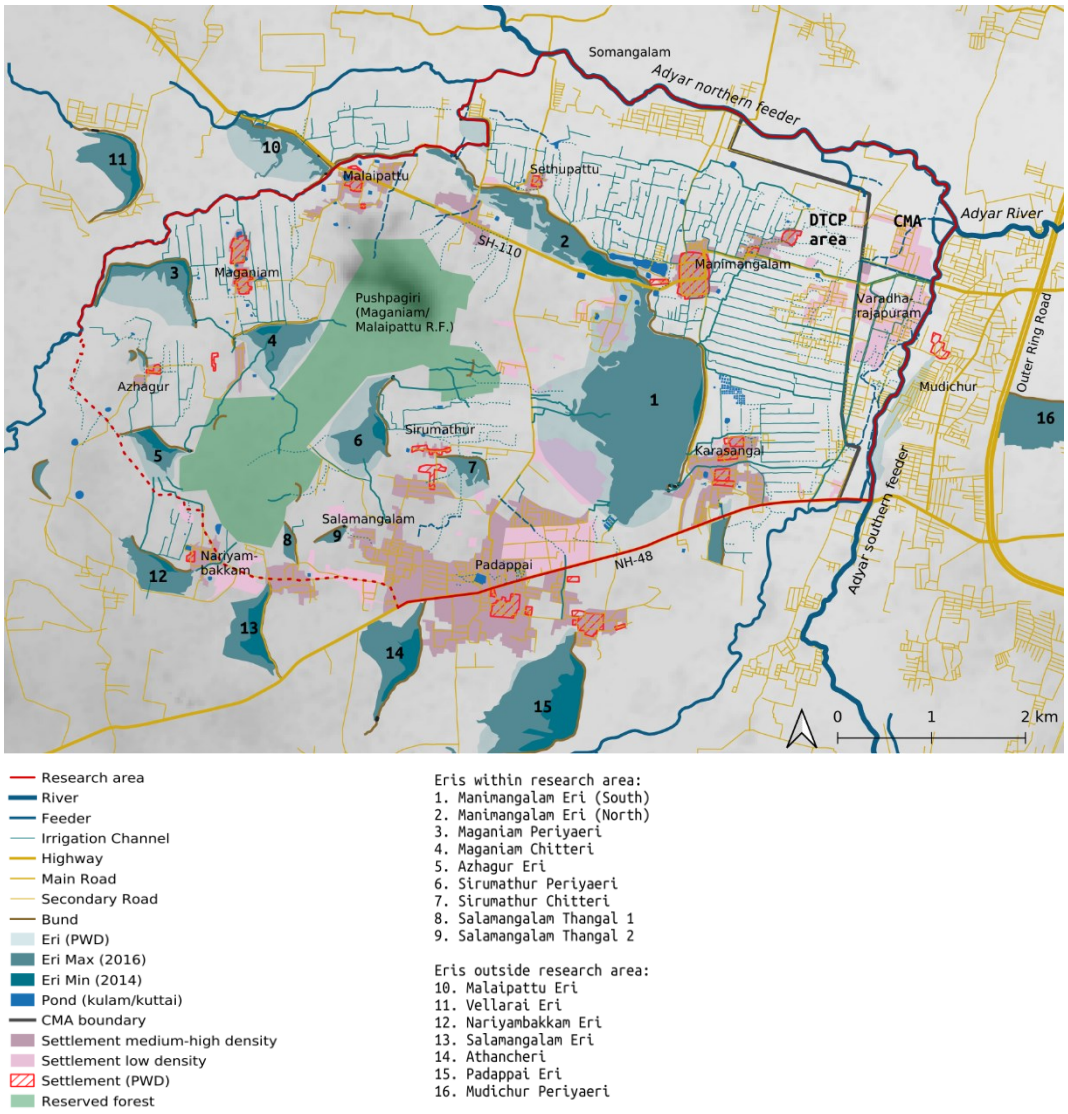

Figure 2, Research area, depicting eris of recent maximum (2016, medium blue) and minimum extend (2014, dark blue). Sources: PWD maps, Corona satellite imagery (1965), OSM shapefiles (2018), Google aerial views 2014, 2016, 2019, own field data[7]

Methods of field research: Interview conduction and mapping

After preliminary field visits between early and mid-2018, I prepared for in-depth field research, which was conducted between January and July 2019. I conducted 52 semi-structured interviews with local experts, i.e. people, who live and/or work in the research areas and 18 open interviews with experts of administration, research and the NGO sector. Interviews in Tamil were done with a research assistant, who translated between interview partners and me. After each day of field research, the researcher assistant and I reflected on the experiences of the day and revised our interview strategy if necessary. The sampling method was exploratory and qualitative. The sample design can be described as stratified as I developed different semi-structured questionnaires for the following target groups, which I had identified through former field and desk research:

- farmers
- residents of gated communities
- residents of informal settlements ("hut dwellers")
- migrant workers (eventually not used during field research)
- owners/workers on plantations or in industries
- villagers (partly merged with "farmers" questionnaire during research)
- for educational institutions, questionnaires were prepared individually

Conducting the interviews, I revised the questionnaires according to my findings and experiences. I included the element of circular revision, which was necessary to explore most promising narratives and follow up statements of interviewees to gain multiple perspectives. The categorisation of target groups led to a more specific idea of whom to approach, but nonetheless served as an entry point only.

All interviews were qualitatively analysed by the method of coding. Coding interview content means to attribute key words to text segments in order to categorise and summarise them (Berg & Milmeister 2011). I used RQDA, a qualitative data analysis tool of the R environment, to code the conducted interviews. In RQDA I coded the interview contents to group these codes into categories later. Finally, I used the codes to produced written analyses of relevant topics. Selected parts of these written analyses provided the raw material for writing the final text. Coding helped to rework and combine interview findings to gain a clearer picture of topics and narratives. Eventually, the RQDA code list served as a database to generate references in the final text.

At last it should be taken into consideration that the qualitative and semi-structured approach used for this research contains strong subjective elements, which clearly directed the findings. The subjective elements reach through all phases of research from the identification of interviewees, the conversation and interaction between interviewer, interviewees and research assistant, the selection of noteworthy information and eventually the documentation, analysis and interpretation of data. This is not considered a limitation but a central feature of qualitative research, which adds to its theoretical density.

The main physical and socio-political characteristics of the research area were mapped in QGIS during the preliminary research phase. This mapping was enhanced during the in-depth research phase in 2019 by field data. The mapping covered surface water bodies of various kinds, historical and new settlements, farmland, common land, industrial and institutional areas, land in transition, grids (roads, irrigation channels), rock and sand mines, as well as singular features (temples, estates, wells, sluices, embankments etc.), but also administrative boundaries of various levels. Automated remote sensing analysis tools were only used for hydrological analysis in this research. For purposes such as land use analysis they were considered insufficient, which is why most of the mapping was done manually. The reason for this is the considerably large scale of the research area and the scope of research, which includes detecting specific sites and features of interest, such as holy sites or unusual land uses, for which automated detection is usually erratic. The research area was mapped in its current form (2019-22). Furthermore, it was possible to reconstruct the development of the late 20th and early 21st century based on a set of existing maps. All maps and images used in this research are briefly described in table 1.

In a further step, the digital elevation model (DEM) generated from SRTM imagery was utilised for watershed delineation and channel calculation using System for Automated Geoscientific Analyses (SAGA) tools in QGIS (Conrad et al. 2015). This was useful to understand the difference between natural water flow and human intervention in the research area regarding the shaping of eris and their interconnecting streams. I overlaid mapped eri surface areas with streams, which were calculated based on the DEM (figure 3). After understanding the location and shape of eris in the research area, I secondly examined how actual streams were shaped through human intervention and differ from presumably natural streams calculated in the DEM.

Data name	Data type	Use in mapping
Bhuvan LULC maps	LULC maps of two time periods, provided through Bhuvan geoinformation database by the Indian Space Research Organisation (ISRO)	used for information only, map features or shapefiles not used
Corona imagery	satellite images, taken by US satellite Corona	detailed mapping, historical state 1965
Google Earth, Google Maps imagery	aerial imagery, combined sources ranging between 2000 and 2022	detailed mapping, timeline mapping 2000-2018, most recent developments
OSM data	Shapefiles of Open Street Maps (OSM), obtained in 2018	basic shapefile usage, enhanced and corrected for research area using field data and Google aerial imagery
PWD maps	normative official map series by the Public Works Departments (PWD), first publ. 1910–1938, last update 1968–2000	detailed mapping, historical development of settlements, water bodies and land uses
SRTM images	satellite radar images, taken during NASA's Shuttle Radar Topography Mission (SRTM) in 2000	digital elevation model (DEM), watershed delineation

Table 1, Images and maps used for mapping the research area

From the eri cascade to the kulam system

The eri cascade

To understand the system of village ponds, it is necessary to understand the eri cascade. An eri is located in natural depressions, which were modified in order to increase their surface and retain water during monsoon for agricultural irrigation (Ariza-Montobbio et al. 2007; Mukundan 2005; Vaidyanathan & Sivasubramaniyan 2001). The defining construction of the eri is an earthen embankment, called "bund". The bund forms the "hard" (i.e. perennial) edge of the water body and the boundary to the eri-irrigated fields, called "ayacut"[8]. Usually, an overflow weir with surplus channel is located at both ends or at least one end of the bund. Moreover, the bund contains sluices, which lead water into the fields through irrigation channels. Additionally, eri water is led to the settlements to feed the village ponds through the same irrigation channels.

Usually, the number of eris in the catchment of a river's upper course is higher than in the catchment of its lower course, while the size of eris is significantly larger in the catchment of a river's lower course than its upstream part. An eri receives inflow from the eris located upstream directly through the surplus channels (after the water spilled over the

surplus weirs) and indirectly through the irrigation channels and fields of the upper catchment.

However, variations are possible as can be observed in the Adyar Basin (figures 3, 4). Firstly, in the cascades of the basin, small eris are followed by medium-sized eris to again be followed by small eris, as can be seen in Sriperumbudur, Pillaipakkam and Gunduperumbedu Eris. I identified three subbasins in the Adyar Basin: The northern basin belongs to the main northern feeder and a smaller feeder, both culminating into Chembarambakkam Reservoir, the only large eri of Adyar Basin. The eris of the northern subbasin are organised in a chain, while the eris of the southern basin, where the research area is located, are organised in a fan. In the southern eris two main feeders culminate into Adyar River, connecting many eris of small and medium size. The eastern subbasin, which is formed by the main stream of the Adyar River before reaching the Bay of Bengal, is completely urbanised and therefore lost almost all its eris.

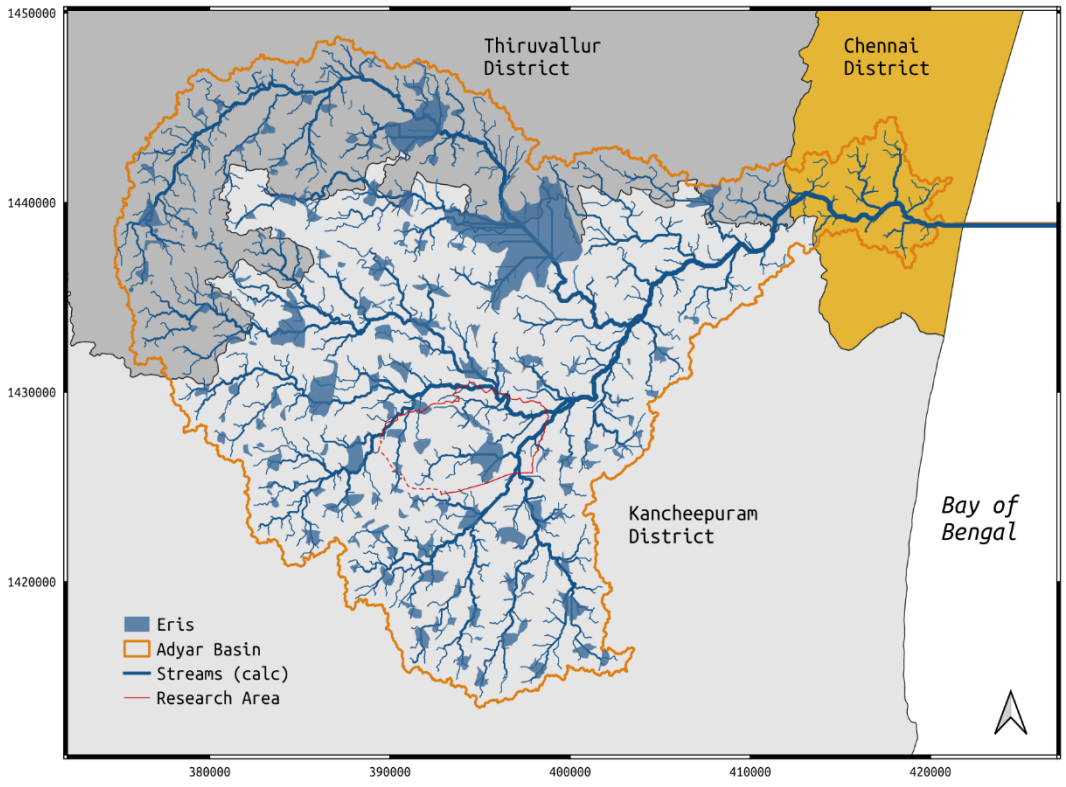

Figure 3, Adyar Basin, administrative boundaries: Kancheepuram, Thiruvallur and Chennai Districts, Tamil Nadu. Source: OSM

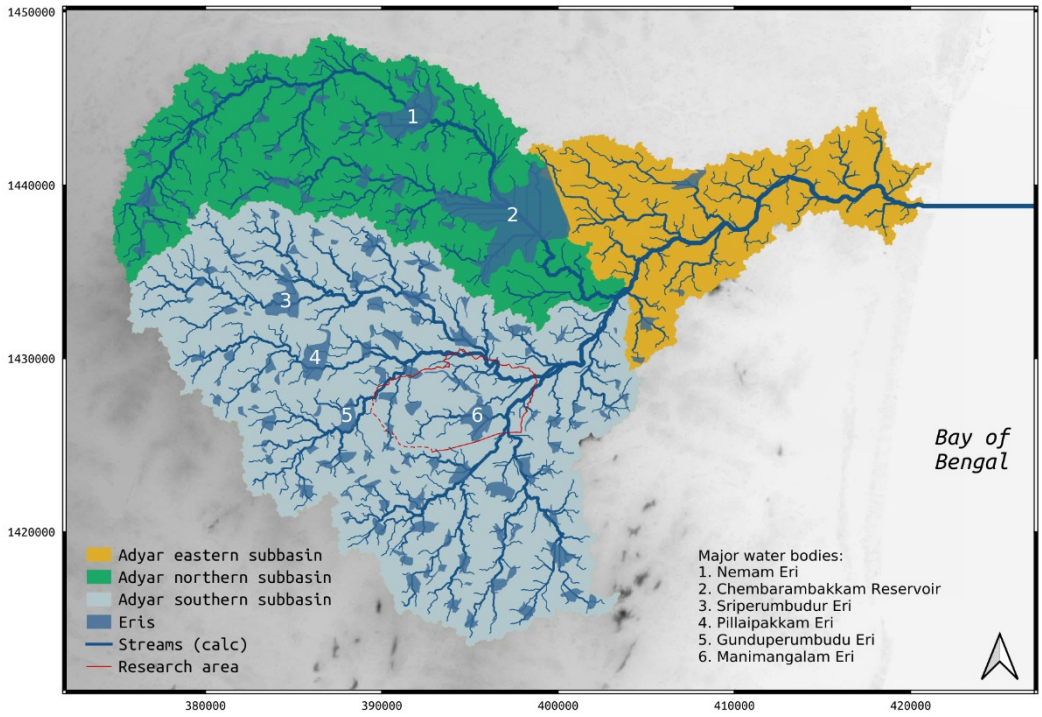

Figure 4, Adyar Basin divided into three subbasins: north (green), south (blue), east (yellow). Subbasins based on own delineation. SRS: EPSG 32644; source watershed delineation, calculated streams: own calculation based on DEM

The kulam-kuttai system

The regional phenomenon of the eri cascade, consisting of smaller and larger eris, connected through irrigation and surplus channels finds a correspondent on the village scale: Traditionally, potable water for the villages was supplied through small village ponds, called kulam and kuttai. While eri cascades have been surveyed thoroughly, village ponds have only received little attention in scientific research so far (Vedamuthu & Rukkumany 2019; Weiz 2006). My contribution to research is a notion of village ponds as a spatial-social-divine system, here called the kulam-kuttai system, which is not described in scientific literature so far. Nonetheless, it is not a novel idea but is common in many villages and discussed among researchers (Interview NGO3). Rukkumany (2016) speaks of a connection of kulams on the village scale and eri systems on the regional scale.

Before investigating the system of village ponds, I want to introduce their two types, kulam and kuttai: A kulam is described as dug out, often quadrangular, artificial pond and is usually found within settlement areas. A kuttai is similar to a kulam in size and purpose, but is more obscure in shape and usually located at settlement fringes or in the fields. Similar to eris, village ponds reach far beyond their physical form: While an eri catchment includes smaller upstream eris, agricultural lands and hills, the catchment of a village pond is merely formed by the surrounding

settlement or fields (Weiz 2006). In contrast to village ponds however, eris change their shape throughout the year and are situated at the fringe between the "wild" and the "cultured"[9] parts of the landscape. In the human field of vision, an eri is too vast to be perceived as one entity. In contrast to this, a pond is always visible in its full shape and forms one entity to the human eye (ibid.). As will be examined below, this is an important factor for the connection between pond and deity.

Informed by existing and on-going research (Interview NGO3; Rukkumany 2016; Weiz 2006) and earlier findings from a nearby research area (Haufe 2017), I was eager to find out, whether a hydrological hierarchy between ponds exists in analogy to the hydrological hierarchy of an eri cascade. Field observations suggest that while in an eri cascade the size of water bodies increases downstream, a kulam-kuttai system starts with the largest or central kulam. Usually, the cascade of ponds moves from a central location in the village to the settlement fringes, eventually reaching the fields. With the declining hierarchy, ponds are less defined, from rectangular basins with ghats (i.e. masonry or stone slab steps) connected by clear channels (kulam) to simple waterholes receiving obscure inflow from upstream and surrounding fields (kuttai).

As an analytical tool to survey kulam-kuttai systems in the research area, I suggest two types of kulam-kuttai systems, which are based on existing research (Interview NGO3; Rukkumany 2016; Weiz 2006), as well as own observations:

The first type of kulam-kuttai systems is defined through a hierarchy of "users", which is based on the caste system and was observed in other Tamil villages (Interview NGO3; Weiz 2006). In this hierarchy the first kulam belongs to the main temple of the village and is exclusively used by the brahmins. From this "brahmin kulam" water is distributed to other kulams in the village following the caste hierarchy with one kulam for each caste community. At the end of the cascade, water reaches the kuttais, which are located in the fields and used by the dalits and adivasis. Concluding, one kulam or kuttai is used by one community for all purposes.

The second type of kulam-kuttai systems is defined by a hierarchy of "uses", which was mentioned by Rukkumany (2016), who even describes a hydrological cascade in researched villages according to such uses. In the hierarchy of uses, all kulams and kuttais can be used by all villagers. The first kulam of the cascade is used for idol washing and drinking water (*kudineer kulam*), further down in the cascade kulams and kuttais of lower purposes follow, which are bathing, vessel cleaning and cloth washing. Field kuttais conclude the cascade as watering holes

for animals. Concluding, one kulam or kuttai is just by all communities for one purpose.

Ammans at village ponds

> This is what eco-feminism is all about […]. There is a natural tendency to be protective towards natural resources when it comes to women, maybe for various reasons. […] In fact, all our agricultural traditions, whenever there is an issue of faith obeisance in the sense of giving the grain to the god or seeking blessings for a good harvest, it is a female deity. (Dr. Jayshree Vencatesan)

The settlements in South India are organised by caste (Moffatt 1979; Mosse 1997; Weiz 2006), which means that each caste community has its own hamlet or street, its own kulam and its own deity, which is in most cases a female deity (Moffatt 1979). Village ponds are usually regarded as places of divine presence, which is why local deities[10] are a key to understand kulam-kuttai systems.

Generally, ammans incorporate both protective and destructive aspects (Moffatt 1979) and are widespread in Tamil Nadu, as well as in other South-Indian states. Moffatt (1979) observed that in Hindu belief systems, as they are lived in South Indian villages, there is no divide between the human and super-human domain as is usually the case in western notions of human-divine separation. In contrast to this, human and divine beings in South Indian villages find their position in the same hierarchy, which Moffatt identifies as three-fold identity for deities:

1. A "pure" deity, which means he/she is benevolent, receives vegetarian offerings, puja done by brahmins, in most cases a male deity, often referred to as "vedic" or even "brahmin" deities (Hanumanthan 1980; Valk & Lourdusamy 2007; Weiz 2006; Whitehead 1921);
2. a deity, who is shifting between "pure" and "impure", which means that the deity fluctuates between benevolent and malevolent, in some cases needs to undergo a ritual to control her energy and commence the shift from "impure" to "pure" (for instance a marriage to a higher deity), receives vegetarian and non-vegetarian offerings depending on their state or their worshipping community, puja done by non-brahmins or brahmins depending on their state, in most cases a female deity, an amman;
3. an "impure" divine being, which is usually a ghost or demon, who is solely malevolent, receives offerings to be appeased or is shielded off through the power of higher deities.

Human beings, according to their caste and the state of the deity, can stand beneath or above a divine being in the same hierarchy (Moffatt 1979). As this research is not concerned with inquiring people's caste in detail, caste structures are more or less described along this threefold model, which Moffatt identified for divine as well as human beings, instead of utilising the more common varna structure. In fact, brahmins and dalits/adivasis were those communities in the research areas, whose lifestyles, locations of settlement as well as level and quality of social integration in the village life were most distinct from other castes. Caste structures "in between" are therefore neglected and were beyond the scope of this research, but were researched elsewhere (Maloney 1975; Moffatt 1979; Valk & Lourdusamy 2007; Weiz 2006).

The two most prominent amman deities found in Tamil Nadu are Mariamman and Gangaiamman. Both deities have a strong connection to water (Amrithalingam 2014, 13). Gangaiamman [11] (figure 5) is worshipped throughout India and represents the holy river Ganges. The river Ganges is not only regarded to be a natural feature, but also a divine principle of water: The goddess Ganga manifests in every water body, and vice versa all water bodies are somewhat united in the goddess. In Tamil villages, Gangaiamman is found at village ponds, acting as a protector of the water body and as a *grama devi* (village deity). In Tamil Nadu, Gangaiamman is often seen as a form of Mariamman (Moffatt 1979).

Mariamman[12] (figure 6) on the other hand is mostly unknown in North India, but worshipped throughout Tamil Nadu. She is the goddess of rain and the protector against epidemics, prominently small pox (Hanumanthan 1980). In many shrines and temples, she appears as a fierce goddess with demonic tusks and sometimes a red face. In other places of worship, she is merely present as a sacred tree, a black stone with three eyes painted on it or simply by a *trishula* (a trident, her attribute) in the ground with a lemon pierced on it. On the other hand, she appears in her "pure" form, depicted as the virtuous and graceful goddess Muthu Mariamman[13] as in Manimangalam Village (Interview 13).

Figure 5, Gangaiamman shrine at Gangaiamman Kulam, Sethupattu Village. Source: author

Figure 6, Mariamman as a sacred tree at Mariamman Kulam, Sirumathur Village. Source: author

Kulam system examples from three village areas

Based on historical maps, satellite images and field observations around 100[14] kulams and kuttais were recorded in the study area, out of which more than 30 already disappeared.[15] Three examples of kulam-kuttai systems around Manimangalam Eri were selected to document the interrelation between village ponds and amman deities, namely the settlements of Manimangalam, Karasangal and Maganiam. These examples show that kulam-kuttai systems can be shaped very differently due to local conditions and requirements.

The kulam-kuttai system of Manimangalam

Manimangalam consists of two hamlets, the village and the colony[16], and its farmland (figure 7). It shares the eri with Karasangal further south and Sethupattu in the northwest. The state highway (SH) 110 passes through the village and connects it with the colony. Manimangalam has a long history as a settlement and became a site of historical importance in 642 CE as location of the battle of Manimangala between the Pallava and Chalukya kingdoms.[17]

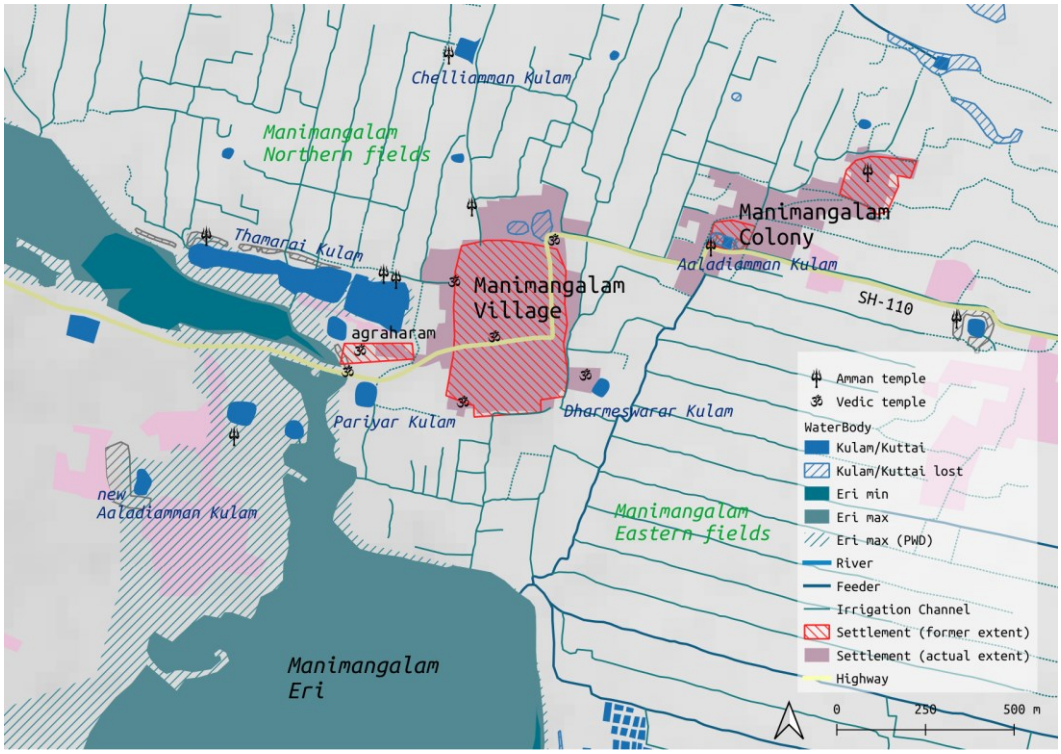

Figure 7: Kulam-kuttai system of Manimangalam. Sources: DEM, village block maps (PWD), Google aerial imagery 2014/2016/2018, own field data.

In Manimangalam Village, most people used to take water from "Thamaraikanniamman Kulam" or short "Thamarai Kulam" (Interviews 2bc, 3d, 7a, 7c, 7d; figure 8). Thamaraikanniamman[18], a local deity, and

Gangaiamman have their small temples at the kulam and are worshipped as grama devis in Manimangalam, along with three other amman deities[19] (Interview 13). Thamarai Kulam is located in the northwest of the village and covered an area of around 7.2 ha earlier, which is comparably large[20] for a kulam. It is fed by Manimangalam Eri, to which it is connected by a channel and sluice. A dam of 100 metres length was constructed to divide the kulam into two parts. The smaller, eastern section was used for drinking water, while the larger, western section (called "*irrendram kulam*" (second kulam), by villagers) was used for bathing, washing cloths and cleaning vessels (Interviews 7a, 7c).

Figure 8: Thamarai Kulam (left) with Thamaraiamman temple (yellow) and Gangaiamman shrine (white-red), Manimangalam. Source: author

Thamarai Kulam was used for drinking and domestic water supply until 15 years ago by the majority of Manimangalam villagers, who transported the water by foot or bicycle (Interview 7c). With the advent of village-wide groundwater supply via overhead tanks (OHT) in 2011-12 Thamarai Kulam was neglected. Today, the kulam's water quality has deteriorated to a state of eutrophication.

Manimangalam Village is a rare case because its central kulam is used by almost all communities for a range of purposes (with a later improvement to separate drinking water by a small dam). However, dalits were excluded from the use of Thamarai Kulam and used other water sources, such as a well located in the bed of Manimangalam Eri and Pariyar[21] Kulam[22] (Interview 5a), located south of the state highway (SH-110) next to the eri bund. It is around 0.3 ha large and directly fed by the eri.

Apart from dalits, brahmins did not use Thamarai Kulam as well. A brahmin interviewee stated that despite the fact, that the agraharam, the brahmin street, is located close to the kulam, he and his family never

used it, but took water from the well at their house instead. Also, brahmins do not worship the grama devis at the kulam and are only connected to the three larger temples[23] of Manimangalam as priests and devotees (Interview 3c). Religious ceremonies for the grama devis are therefore conducted by non-brahmin priests only.[24]

Out of the three historical temples in Manimangalam, only Dharmeswarar Temple has its own kulam within the temple premises. The temple is located at the southeastern corner of the village and its kulam is adjacent to the fields, which act as catchment to it. The kulam is exclusively used for temple purposes, i.e. idol washing. During early 2019 is was heavily silted and not used for the temple, yet desilting was planned along with the on-going temple restoration (Interview 7b). Dharmeswarar Kulam is the only kulam in Manimangalam, which is used by the brahmin community, although exclusively for religious purposes.

Manimangalam Colony has its own set of water supply modes. Firstly, piped water supply was installed in the colony along with the village in 2011-12. When water was supplied through kulams, the residents of the colony where excluded from using Thamarai Kulam in the village, because of the distance and due to caste segregation. Aaladi Amman Kulam supplied water to the southern hamlet of the colony instead. At the kulam, a temple is dedicated to the goddess Aaladi Amman, who is the kula devi of a dalit community, that was recently evicted from the area (Interviews 5d, 7d). According to former residents, the community had lived in Manimangalam Colony since the early 20th century after being evicted from South Chennai. Recently around 30 people were temporarily resettled to another area in the research area (Interview 5d). Also, in the new settlement area Aaladi Amman is worshipped and the adjacent kulam is named after her.

The northern part of the colony is inhabited by OBC farmers, who own the fields of the northeastern farmland. An interviewee told, that he avoided to use the water of nearby Aaladi Amman Kulam, since it was used by dalits (Interview 7d). Instead water was received from the main irrigation channel, which first supplies Aaladi Amman Kulam with water from Manimangalam Eri before reaching the northern colony. In the village block map provided by the Public Works Department (PWD), both hamlets are discernibly separated. By 2019 the two hamlets had been merged into one due to recent building activities. Nevertheless, the separation between the communities in the colony is still perceivable.

Several kulams are located around the hamlets of Manimangalam, which receive water through irrigation channels or obscure inflow from their surroundings. Chelliamman Kulam for instance belongs to a temple dedicated to the grama devi Chelliamman, who is worshipped by farmers

of the village (Interview 12a) and is connected to Thamarai Kulam through irrigation channels. Another kuttai is located in the eastern fields and surrounded by a dalit settlement called Ambedkar Nagar. It also has a small shrine for the kula devi. To make way for the planned highway (SH-110) widening, kuttai and settlement are both to be overbuilt (Interview 9b). A detailed list of ponds surveyed in Manimangalam is given in table 2.

Order	***Village pond name***	***Alternative name***	***Hamlet***	***Function (active – A, inactive – I)***	***Associated deities***	***Community (as far as known)***
1	Thamarai Kulam	Thamarai Karima Kulam, Thamarai Kanni Kulam	Manimangalam Village	central kulam, Main drinking water kulam, puja (eastern section), domestic uses (western section), I	Thamarai (Karima Kanni) Amman (village deity), Gangai-amman	all village castes except brahmin, dalit/adivasi
2	Dharmeswarar Kulam	--	Manimangalam Village	temple kulam, temple purposes, fishing, A	Dharmeswar (Siva)	brahmin priests (temple purposes), other castes after permission (fishing)
3	Chelliamman Kulam	--	Manimangalam ayacut	temple kulam, temple purposes	Chelli-amman	non-brahmin priests from northern village
4	Pariyar Kulam	--	Manimangalam Village	community kulam	(not covered in research)	dalits of village
5	Aaladi Amman Kulam	--	Manimangalam Colony	community kulam, Drinking water, domestic uses, I	Aaladi Amman	dalit (evicted)
6	Surrounded by fields Kuttai	Suthi Kazhani, Suttu kalani	Manimangalam ayacut	community kuttai, all purposes, I	(not covered in research)	dalit

Table 2. Village ponds surveyed in Manimangalam. Source: own data (order: own assessment, factors: centrality, caste, location)

The ponds located in and around the hamlets of Manimangalam show a social hierarchy: Thamarai Kulam is not just central but almost absolute as the vast majority of villagers used it for water supply. It therefore connects most villagers beyond caste on a daily basis. Nonetheless, dalits, lower caste colony inhabitants and brahmins did not use Thamarai Kulam. Dalit users and the lower caste users of the colony were excluded from use to avoid ritual contamination of the kulam, whereas brahmins depended on their own wells to maintain their own ritual purity. Thus, Pariyar Kulam and Aaladi Kulam were exclusively used by dalits and can be regarded as lower in the social hierarchy. The latter kulams receive eri water directly, as does Thamarai Kulam. A hydrological connection is existent, but not a cascade of several kulams. Moreover, Dharmeswarar Kulam as the most sanctified kulam both in terms of uses and users, but cannot be regarded prominent in the hierarchy of the Manimangalam village ponds as it is neither prominent in location nor public significance. The fact, that Thamarai Kulam and Pariyar Kulam are the only drinking water ponds in the village makes Manimangalam a special case.

In anthropological surveys, stories of local deities have been recorded, out of which some resurface in other villages, even other regions, and others are told only in the locality, where they were recorded (Amritha-lingam 2014; Hanumanthan 1980; Hart 1986; Moffatt 1979; Ramanujan 1986; Rao 1986; Shah 2008; Weiz 2006; Whitehead 1921). In the northern part of Manimangalam Village, an interview partner shared two local stories of Manimangalam's amman deities (Interview 13). The story teller originates from the colony, but moved to the northern part of the village, after it was transformed from a threshing ground to a residential hamlet. He now works in a blue-collar job, but his ancestors were farmers, who owned land in the northeastern ayacut. He is familiar with all the grama devis in the village, their locations and worshipping communities. Furthermore, he knows about the relationships between the deities. Out of the information he shared with us, two local Amman stories of rather anecdotal character shall be retold briefly:

Chelliamman's debts and Muthu Mariamman in the river bed

Each year a festival is conducted in Manimangalam to worship Muthu Mariamman.[25] In this festival, the Muthu Mariamman idol is placed on a *ratha* (a procession cart), which is pulled through the village by the devotees. Drums are beaten during the procession. Only in one street of the village, the drums stop. The people who live in this street are worshippers of Chelliamman. Since Chelliamman owes money to Muthu Mariamman, the community, who worships Chelliamman, is excluded from the sound of the drums. This will only change once the debts are repaid.

After the procession through the village is completed, it moves out from the northern hamlet towards Adyar River. Eventually, the ratha is placed in the dry river bed. Once there was unseasonal rainfall during the festival, so the fields filled up with water quickly and fish could be seen in the water in the fields. The villagers were excited about the pleasant surprise, started fishing in the fields and forgot about the ratha in the river bed. Because of the rain, the dry river bed had soon turned into a broad stream, which carried the ratha away. Thus, Muthu Mariamman swam all the way down to Saidapet[26] on the ratha.

Chelliamman kills her brother-in-law

Chelliamman is the sister of another local grama devi, presumably Aaladiamman of Manimangalam Colony. Both goddesses were women from Manimangalam in the past. During their human lives, Chelliamman's sister was married, but her husband and his family ill-treated her. The family made her do all the field work alone and her husband abused and beat her. Chelliamman took pity on her sister and wished to help her. One day, Chelliamman had come to her sister's house for a visit, while her sister's husband was away. She hid behind the door, awaiting him and, when he entered, killed him. Today, Chelliamman is worshipped for this deed and in her temple, she is depicted killing her brother-in-law.

In these two stories, Chelliamman is connected to Muthu Mariamman as debtor and to Aaladiamman as sister. This implies a hierarchy between these goddesses, in which Muthu Mariamman holds a higher position over the other two, who can be seen as equals. Another interesting aspect is, that Mariamman as well as Chelliamman are commonly known and worshipped throughout Tamil Nadu. Yet, the two stories recorded strongly imply their local links, not just among each other, but also to the location (e.g. Muthu Mariamman floats to Saidapet). Deities might be commonly known, but are localised or indivualised through local stories. Furthermore, Chelliamman and Aaladiamman are said to be of human origin, which makes them local women. The motif of local humans, who become deities, is also found in other villages (Shah 2008) and further localises the deity. Deification of humans can even be seen in its reversion: the deity is being humanised.

The kulam-kuttai system of Karasangal

Karasangal is located near the southern part of Manimangalam Eri, from which it receives its water for irrigation. Its farmland comprises the southern section of Manimangalam Eri's ayacut. The settlement is divided by a major channel coming from the southern weir of the eri, dividing the settlement into a northern and southern hamlet. The

channel feeds the kulams located to the south. Another channel located further north feeds the remaining kulams in the northern hamlet.

Karasangal's kulam-kuttai system (figure 9) is less centralised compared to the one of Manimangalam. Each street had one or two kulams in its vicinity, which presumably served as multi-purpose water sources for the local caste community. The southern hamlet is the larger one, showing one street and an area of open ground, which was apparently covered by huts.[27] The kulam closest to this area is called Devaraj Kulam (Interview 1d; figure 10), referring to the god-king.[28] A shrine at the kulam is dedicated to Gangaiamman, which led to its alternative name "Gangaiamman Kulam" (Interview 1d).

The northern hamlet only hosts two kulams: *Kaatukare Kuttai* (forest people kuttai), which is used by the Irular[29] community and guarded by Saptakanniamman[30], a typical kula devi of the Irular, who is associated with ancestral worship (Interview NGO4). At the time of our visit, the kuttai was heavily silted, but used by some people, who collected plants from the pond bed and watered cattle. Even though, a nearby resident stated, that "noone" uses the kuttai due to its deteriorated state, which implies that the kuttai is avoided by other communities.

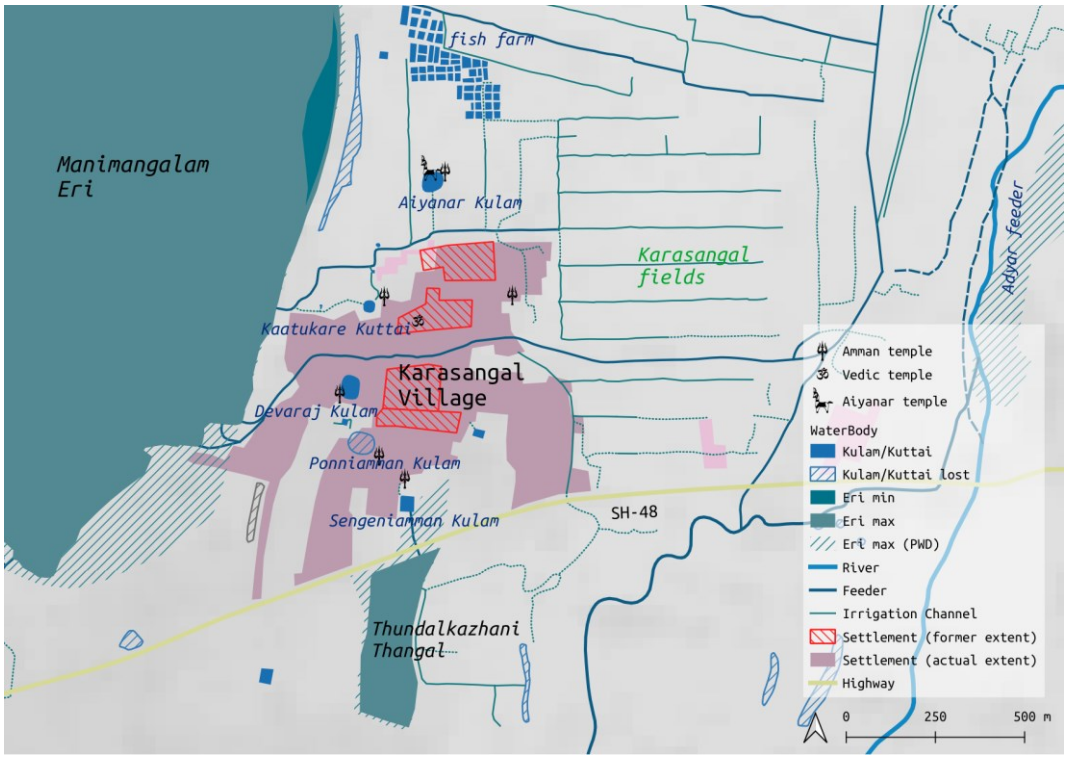

Figure 9, Kulam-kuttai system of Karasangal. Sources: DEM, village block maps (PWD), Google aerial imagery 2014/2016/2018, own field data

Figure 9, Devaraj Kulam with Gangaiamman temple, Karasangal. Source: author.

At the utmost northern end of the settlement is Aiyanar[31] Kulam, which is used by farmers, who live or have their fields in the vicinity. Aiyanar is a male guarding deity, who is often found at boundaries—in this case of the settlement—as a protector. He is usually depicted as a fierce hero or warrior in the open, often with an entourage of horses and *veeran* (subordinate heroes). In the case of Karasangal, he is depicted as slightly larger-than-life warrior on horseback, which implies not just strength, but mobility. This movement expands his divine presence to a larger territory (the entire settlement boundary) and shows that he is worshipped at the kulam, but is not fixed to it like most ammans are. Often, an amman shrine or temple is located near Aiyanar, which is also the case at Aiyanar Kulam in Karasangal.

A list of village ponds, their location, function, divine and social association is given in table 3.

Order	*Village pond name*	*Alternative name*	*Hamlet*	*Function (active – A, inactive – I)*	*Associated deities*	*Community (as far as known)*
1	Devaraj Kulam	Gangaiamman Kulam	southern hamlet	central kulam, main drinking water kulam, I	Gangaiamman	all castes except dalit/adivasi
2	Ponniamman Kulam	--	southern hamlet	community kulam, probably multi-purpose, now overgrown, I	Ponni-amman	local caste
3	Sengeniamman Kulam	--	southern hamlet	community kulam, probably multi-purpose, I	Sengeni-amman	local caste
4	Aiyanar Kulam	--	northern hamlet	mixed community kulam, purpose not known	Aiyanar	mixed castes (but not brahmin, not SC/ST)
5	Kaatukare Kuttai	--	northern hamlet	community kuttai, multi-purpose, A	Saptakanni-amman	Irular

Table 3, Village ponds surveyed in Karasangal. Source: own data (order: own assessment, factors: centrality, caste, location)

The kulam-kuttai system of Karasangal is less centralised as the the one of Manimangalam and incorporates both hierarchy types, the user-based and the use-based one, out of which the user-based one is prominent. Almost all kulams are guarded by an Amman, which acts as a kula devi (Ponniamman, Sengeniamman, Saptakanniamman) or grama devi (Gangaiamman at Devaraj Kulam). The hierarchies of ponds, divine beings and social structure are align in Karasangal, with a central drinking water kulam (hierarchy of use), guarded by a goddess representing a supra-regional principle of water (Ganga), followed by community kulams with respective kula devis (hierarchy of users). Aiyanar at the fringe of the settlement again fulfills a function for the entire settlement, protection. The deity's risky fringe position is also reflected in the location of his kulam.

The kulam-kuttai system of Maganiam

Maganiam[32] is located on the western foothills of Pushpagiri and is served by two eris, Maganiam Periyaeri[33] and Maganiam Chitteri[34] (figure 11). Maganiam consists of three hamlets: two connected village hamlets, which are surrounded by the village fields and the separate colony, located in the bed of the chitteri.

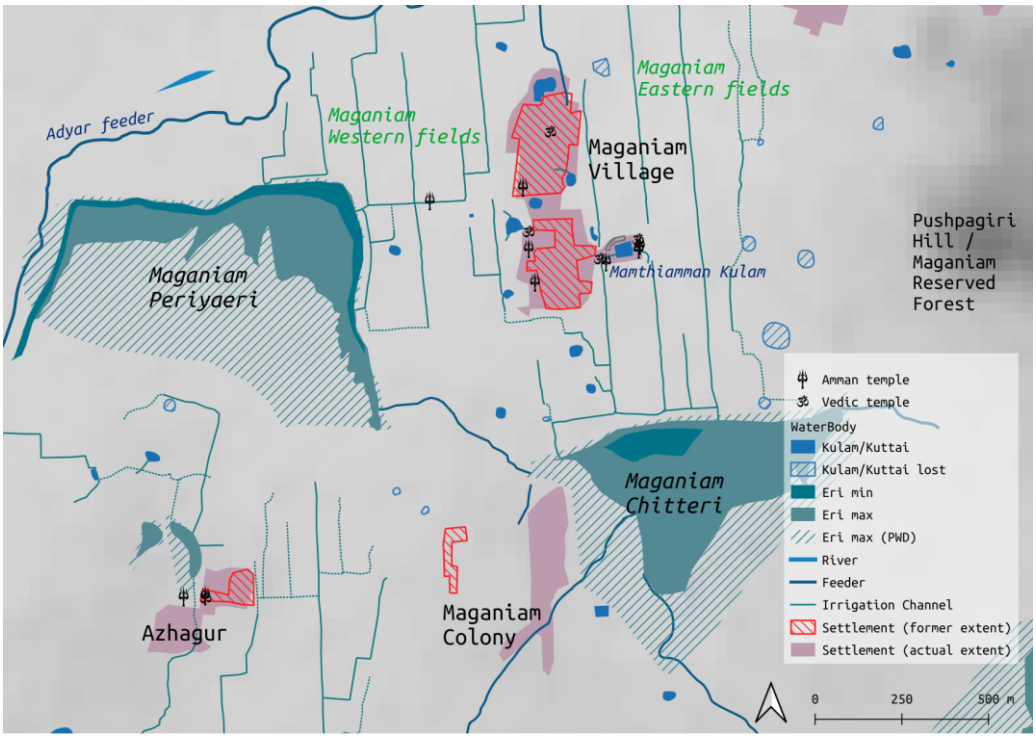

Figure 10, Kulam–kuttai system of Maganiam. Sources: DEM, village block maps (PWD), Google aerial imagery 2014/2016/2018, own field data

At least six ponds are located in Maganiam village today and serve villagers of different castes. Mamthiamman Kulam is the central drinking water kulam, covers 0.18 ha, receives its water from the chitteri directly through two channels and is located in the southern hamlet of the village (figure 12). It is the only well-defined kulam of Maganiam built in a square shape with mason steps and was renovated in 2011-12.[35] Mamthiamman is the grama devi of Maganiam and her small temple is found at the kulam, which is surrounded by eight other deities.[36] According to information from villagers, brahmins lived around the kulam in the past, but migrated to Bengaluru and Chennai some decades ago. In 2019 only one brahmin family still lived in Maganiam, but moved away from the kulam, while a hut settlement had evolved at the northern edge of Mamthiamman Kulam during the past 50 years (Interview 11c, 14a). It can be assumed, that Mamthiamman Kulam served as brahmin community kulam, but simultaneously also served as drinking water kulam for the entire village. An annual village festival is

conducted each year at the kulam, which was advertised on a large poster set at its edge in 2019. Since the 1960s, kulam water has been transported via pipeline to supply Maganiam Colony and four neighbouring villages[37] with drinking water (Interview 11b).

Figure 11, Mamthiamman Kulam with Mamthiamman Temple, Maganiam. Source: author

Maganiam Village was supplied by nine to twelve ponds in the past (Interviews 11a, 11b). Within the village, kulams and kuttais were separated by caste and many of them served as drinking water kulams[38] (Interview 11b). Apart from the six ponds, which still exist in the village today, another five can be found in the fields. The village block map of 1971 shows some more ponds around Maganiam Village, especially at the foothills of Pushpagiri; however, these ponds disappeared during the past decades due to plantations and construction projects. Since villagers could not give full information on existing ponds today, only three ponds could be examined in the field research (table 4).

Order	*Village pond name*	*Alternative name*	*Hamlet*	*Function (active – A, inactive – I)*	*Associated deities*	*Community (as far as known)*
1	Mamthiamman Kulam	--	Village	central drinking water kulam, drinking water, bathing for pilgrims and Brahmins only, drinking water pro-vision via pipeline, A	Mamthi-amman (village deity), Angala Paramesvari, Subramaniam	all village castes
2	Arasan Kuttai	--	Village	community kuttai, multi-purpose, I		local caste
3	Theru Oda Kuttai	--	Village	community kuttai, multi-purpose, I		local caste

Table 4, Village ponds surveyed in Karasangal. Source: own data (order: own assessment, factors: centrality, caste, location)

Maganiam Colony is located in the eri bed of Maganiam Chitteri and has no ponds at all. Only in 1992, the pipe connection from Mamthiamman Kulam was extended to the colony to bring water from Mamthiamman Kulam. Until then, the residents used groundwater from their own wells or water from the chitteri (Interviews 11d, 13b). Earlier, the colony settlement was located further west[39] and had two agricultural wells and two—now disappeared—kuttais in its vicinity, which were probably used for domestic water supply.

Similar to Karasangal, Maganiam also shows a pond system serving different communities in a hierarchy of users. Out of all villages in the research area, it has the largest number of kulams and kuttais, out of which 13 still exist and another eight have disappeared today, summing it up to 21 kulams and kuttais in the past. Each pond is guarded by at least one deity, usually an amman. Maganiam is a special case, because of Mamthiamman Kulam's outreach: it is not only a highly central kulam within the village, which is implied by the presence of multiple deities; it furthermore became a central kulam even for other villages and the colony from the 1960s onwards because of the then implemented water pipeline. In this regard, Mamthiamman Kulam's centrality exceeds the one of Thamarai Kulam in Manimangalam and is a strong element of the hierarchy of use. On the other hand, a high amount of subordinate

kulams are and were present in Maganiam, serving either one community or one purpose. The fact that many of them were used as drinking water suppliers in the past, implies a tendency towards a hierarchy of users rather than uses. However, which kulam and kuttai exactly was used for what and by whom could not be derived, which is why a mix of hierarchy types is assumed.

General observations on ammans in the research area

As could be observed in the research area, ammans appear in commonly known, but also highly localised forms. Places of amman worship are usually not bound to the seclusion of a temple compound. On the contrary, ammans are found at spots and areas in the landscape, inside and outside the village, marking places of importance and special attention, such as infrastructural features (sluices, canals, bunds), natural shrines (sacred trees and other environmental features), boundaries (of the settlement or village lands) and most importantly village ponds. Deities are usually found at the central drinking water kulam, which is the case in Karasangal, Manimangalam, Maganiam and other villages in the research area. However, a village can have more than just one grama devi. Usually, a caste community has its own devi, residing at their own kulam at their hamlet of the village. This type of deity is also called kula devi (often translated to "family goddess" or "kinship goddess"). The words kula (family, kin, caste) and kulam (pond) are not only phonetically close, but sometimes even used as synonyms.[40]

Apart from Mariamman and Gangaiamman, also less known deities have taken the role of the grama or kula devi. Table 5 provides a brief overview of the variety of Amman deities found near ponds in the research area:

Deity	Village(s)	Remarks
Mariamman, Muthu Mariamman	Manimangalam, Sirumathur	At local and central kulams (in various forms), **common** deity in Tamil Nadu (TN)
Gangaiamman	Manimangalam, Karasangal, Sirumathur, Sethupattu, Maganiam, Azhagur, Malaipattu	At local and central kulams (usually idol in shrine), **common** deity in TN and India
Chelliamman	Manimangalam	Walled temple complex with kulam; **common** deity in TN
Ponniamman	Karasangal, Azhagur	Ponni – a rice variety; shrine at former kulam; **common** deity in TN
Angala Parameswari	Maganiam	Small temple at central kulam; **common** deity in South India
Mamthiamman	Maganiam	Shrine, guarding central kulam, **local** deity
Thamaraiamman	Manimangalam	Thamarai – (Tamil) lotus, referring to water; shrine, guarding main kulam; **common** deity in TN
Aaladiamman	Manimangalam	Small temple, guarding community kulam in colony, **local** deity
Periammaniamman	Sirumathur	Shrine, guarding community kulam in the fields, **local** deity
Sengeniamman	Karasangal, Maganiam	Shrine, guarding kulam at thangal; deity also **known** elsewhere in TN, but not very common
Karumariamman	Bharati Nagar (Manimangalam)	Temple located in eri bed, next to kulam, incorporating huge anthill (which was original place of worship); deity also **known** elsewhere TN, but not very common
Rogathuvamman	Salamangalam	Ancient small temple at eri, near kuttai, Saptakanniamman idol; **local** deity
Kanniamman	Maganiam	Idol at central kulam, **Common** deity in TN, often regarded as one of the Saptakanniamman
Puthalamman	Azhagur	Shrine at local kulam, deity **known** elsewhere in TN, but not very common

Table 5. Amman deities worshipped at kulams in the study area, listed according to prominence. Source: own data

Kulam-kuttai systems: A spatial-social-divine hierarchy

Zooming into the water body cascade

As explained earlier, cascades of dammed water bodies can be found in different scales: eris are interconnected on a regional scale, supplying water to ayacuts and settlements through their ponds on the village scale. As documented in the research area, village ponds supply water inside and outside the settlements and form own kulam-kuttai systems. Both, the eri cascade and the kulam-kuttai system, are intertwined, because the village ponds receive water from the local eri, which acts as an original supplier for at least the central kulam of a settlement.

A hydrological interconnection was not evident for most ponds in the research area: even though some ponds in the research area are eri-fed either directly through channels or indirectly by run-off from the fields, the surrounding area of a pond—settlement, field or forest—acts as catchment, whereas water from one pond hardly reaches another one downstream. Irrigation channels might act as pond connectors. Nevertheless, water does never directly spill over from one pond to another even in those cases. What has become evident instead was the omnipresence of amman deities at village ponds and their role in spatial definition. This leads to a spatial hierarchy of ponds, which is not based on hydrology, but social and divine associations.

In an ideal kulam-kuttai system the physical pattern of the eri cascade is reversed into a centrifugal arrangement: it starts with a central kulam, followed by subordinate kulams and at last kuttais. Along this hierarchy, the "purity" of water recedes with the status of uses or users, as described earlier. The spatial layer of the pond hierarchy can be described as a gradient to differentiate it from the clearly fixed term "cascade", which describes the physical connection between eris. The "kulam-to-kuttai gradient" is physical, too, yet flexible according to its social and divine connections. Its main function is to connect two poles, purity and impurity, inside and outside, defined and obscure. The kulam-kuttai system is align with the caste order but also a hierarchy of spaces, defining its users, locations and vice-versa.

Even though the kulam-to-kuttai gradient can be observed in all settlements of the research area, kulam-kuttai systems show many local varieties, which leads to another important observation in the research area: Kulam-kuttai systems display the unique village identity, acting as a signature or theme. The three examples from the research area have a central kulam, Thamarai Kulam in Manimangalam Village, Devaraj Kulam in Karasangal and Mamthiamman Kulam in Maganiam. The character of these central kulams as well as their situation in the local

kulam-kuttai system is unique in all cases, and so is their exact assembly of deities. In the three kulam-kuttai systems described, notions of centrality, community identification and boundary definition play an important role, yet result in distinct pond combinations and connections. All three systems equally prove to be unique in their structure and character and must be viewed apart from conceptual stencils as systems of their own right. The omnipresent Amman deities support this village identity, as they are deities connected to each other, but also deities of their own right with an individual story and community.

Ammans at the water bodies

The findings show, that Amman deities play a prominent role around village ponds and are important for spatial definition and identity. They act as markers in the landscape and make it "readable" by creating a mnemonic system, as Evans (1985) described it.

The two local stories retold above surely do not cover the richness of oral traditions in the research area, since oral traditions were not the prior scope of the research. Nonetheless, they emphasise the importance of ammans in local knowledge transfer. In local stories ammans act as protagonists, often showing a human face, dealing with adversity or even failure. They display human emotion, behaviour and relationship, as some stories tell about kinship among local deities. The goddess' role in the story underlines her individuality and thus the uniqueness of the community or village, to which she belongs. This corresponds with the uniqueness of a kulam-kuttai system, which can be seen as the material layer of the deities' presence. The stories also explain more marginal facts: for instance, does the story of Muthu Mariamman in the river tell, that Saidapet can be reached by following the Adyar River. Even geographical knowledge, precisely the way to reach somewhere, can be told through a story, which is used as a mnemonic.

Weiz (2006) describes the kulam as a "public place", in which "public" is further narrowed down to the neighbourhood, making the water of a kulam a good to be used only by one community. I would like to suggest, that the kula devi "marks" the locality of a community, as she is residing at the community's centrepiece, the kulam. For instance, Saptakanniamman marks the Kaatukare Kuttai in Karasangal as belonging to the Irular community exclusively, as a "community boundary" marker.

In contrast, central drinking water kulams are surrounded by a large number of deities, worshipped by different communities, which demonstrates their belonging to the whole village. The grama devi (e.g. Thamaraikanniamman, Gangaiamman or Mamthiamman in the research

area) resides at the central kulam and plays an inclusive role, since she is worshipped by villagers of different castes. The density of deities in combination with kulams functions as a marker of centrality in the landscape. By "centrality", I do not necessarily refer to spatial centrality, but rather a social and spiritual one. The more central a kulam is, the more deities are assembled at its banks. The best example for this is Mamthiamman Kulam in Maganiam, who is the grama devi of the village and worshipped by all villagers regardless their caste. Mamthiamman's temple is placed at a prominent spot at the east side of the kulam, while eight more deities have their shrines, stones and trees around it. In the case of Maganiam, a high density of deities indicates a high centrality of a water body. This means, that the priority of the kulam in village life is high and that many communities hold ownership of it. Subsequently, other kulams show a lesser number of deities, as they are not central for the entire settlement, but only for a particular community. Hence, ammans mark spots of centrality either for a village including different communities as grama devi or for just one community as kula devi, "reducing" them to a community marker.

Ammans in combination with Aiyanar act as a marker of a boundary in the research area: The god Aiyanar has a guarding function for the settlement of Karasangal. He is accompanied by an amman deity, the local kula devi, and the pair marks the boundary between settlement and field. In the case of Karasangal, both are located at Aiyanar Kulam. This particular formation of deities is also found outside the research area at eri bunds[41], on which Aiyanar and the local Amman deity are placed facing the eri bed. The eri bund acts as boundary between village lands (the irrigated fields, *naadu*) and wilderness (the eri bed, *kaatu*).

I state, that the kulam–kuttai system can be seen as the spatial manifestation of the social-divine hierarchy, which became evident in the research area. The deity worshipped at a pond fits the pond's position in the kulam-kuttai system. Vice versa a pond's position in the spatial and social-divine hierarchy becomes visible not just through its physical form (well defined or obscure) or location (in the village or in the fields), but also through its guarding deity and the community connected to it. Moffatt (1979) claims that the social-divine hierarchy is an intertwined system of human and divine beings, in which there is no separation between a profane and a sacred sphere as in western belief systems. Village ponds among other landscape features add a spatial layer to this system and turn it into a spatial-social-divine hierarchy. Amman, pond and community cannot be viewed in separation. In fact, they form one entity, which includes a divine, spatial and social aspect.

These entities, which can be named Amman or kulam or community, create a readable landscape.

Ammans and their ponds in the peri-urban context

The initial search for hydrological connections between village ponds has led to the layer of immaterial connections between them. They may lose significance when singular features, their divine and social aspects, or entire landscapes are being overwritten by newer, faster developments as is the case in peri-urban Chennai.

In the research area, many ponds have disappeared in the last decades due to land use change and urbanisation processes in particular. Since most ponds are associated with a guarding deity, their disappearance is of multi-layered repercussions. Along with the environmental feature disappears its function as place of worship, community identity and ownership and as landscape marker. Moreover, the deities are closely linked to the production and communication of local knowledge and are protagonists of the readable landscape.

Surveying the phenomenon of water body connections on the village scale has helped to enhance the understanding of eri cascades, which on one hand incorporate kulam-kuttai systems and on the other hand mirror them. It is evident that eris play a role in flood mitigation, groundwater recharge and agricultural irrigation, while kulams and kuttais are overall negligible in these terms. Nevertheless, a spatial-social-divine hierarchy of kulams and kuttais could be identified in the research area, which has further implications for future developments: While kulams of high centrality are often restored and adapted to new urbanising surroundings, marginal kulams and kuttais are usually prone to disappear. While eri decline can be surveyed as a purely technical problem, the maintenance and disappearance of kulams and kuttais needs to be understood in its religious and social context as well. Eventually, urbanisation transforms not just village ponds, but the entire eri landscape by drastically changing physical realities, fostering migration and eradicating the divine layer of the landscape.

Endnotes

[1] Ellai – (Tamil) village boundary (எல்லை = ellai).

[2] A local deity in Erode District, Tamil Nadu (பண்ணாரி அம்மன் - paṇṇāri ammaṉ).

[3] Tamil: அம்மா (ammā) – mother; அம்மன் (amman) – mother goddess, village mother, village goddess. "Amman" is used as a suffix following the individual name of the deity, for example: Gangaiamman (Ganga (Ganges) + amman), Ponniamman (Ponni (a type of paddy) + amman), and so on.

[4] Eri – (Tamil) lake, reservoir (ஏரி = ēri)

[5] Kulam – (Tamil) village pond (குளம் - kuḷam; plural: குளங்கள் - kuḷangaḷ) → To introduce it as a technical term in English, the simplified plural "kulams" is used in this text.

[6] Kuttai – (Tamil) village/field pond (குட்டை - kuṭṭai; plural: குட்டைகள் - kuṭṭaigaḷ) → simplified to "kuttais".

[7] The depiction of the eris is based on Google aerial views, as well as official water-spread area based on PWD data (pale blue). The current settlement development is depicted based on Google aerial views (pale and dark pink); older village areas are highlighted (red hatched) based on PWD data and Corona satellite imagery (1965).

[8] Ayacut – Tamil: ஆயக்கட்டு = āyakkaṭṭu.

[9] The terms "wild" and "cultured" refer to the binary concept of *kaatu* (காடு - forest, the wild; uncontrolled area) and *naadu* (நாடு - cultivated/inhabited land; controlled area).

[10] There are more sophisticated ways of ordering deities and their worship into personal god *(ista devam)*, household god *(veedu devam),* lineage god *(kula devam)* and village god *(grama devam)* (Moffatt 1979). This precision is neglected in this research in favour of the water body focus. In the research area, kula devam and grama devam could often not be distinguished clearly. Therefore, grama devam is used in this study to also imply kula devam. Grammatical note: devam – male, devi – female. Since this research is mainly concerned with female deities, the the term *devi* will be used as generic femininum.

[11] Gangaiamman (கங்கையம்மன் = Kaṅkaiyammaṉ), known as Ganga Ma in North India (Sanskrit: गंगा मा = Gaṅgā Mā).

[12] The etymological origin of the name "Mariamman" (மாரியம்மன் - Māriyammaṉ) is not clear. "Mari" might be a derivate from the Tamil word for rain, *mazhai* (மழை).

[13] As Muthu Mariamman she has no tusks and her face is not red (a colour associated with demons), but fair, white, black or blue.

[14] Information derived from village block maps, Public Works Department (PWD).

[15] Information derived from recent Google imagery and own field data.

[16] The divide between "village" and "colony", is very common in Tamil (and other Indian) rural settlements and is based on caste segregation. The "colony" is considered to be an area outside the village and inhabited by dalits and sometimes lower caste communities (OBC) as is the case in Manimangalam. The term "colony" is often avoided by its inhabitants and may be considered stigmatised and thus stigmatising. One interviewee of Manimangalam Colony called his hamlet "the eastern part" [of Manimangalam] instead (Interview 13). The term is used here despite its undesirable attributes since another commonly used term is not available. Caste segregation of village hamlets is described in the literature in detail (Moffatt 1979; Weiz 2006).

[17] In 642, the Pallava king Narasimhavarman I. defeated the Chalukya king Pulakesin II. Located between the old Pallava capital Kanchee (now Kancheepuram) and the port town Mahaballipuram, Manimangalam was a strategically important location. In Sri Rajagopala Swami Temple, which is located near the eri bund in Manimangalam village, the battle and royal land gifts to the temple are described in inscriptions (Interviews 3c, 3f).

[18] Thamarai – (Tamil) lotus; kanni – (Tamil) young woman/girl, virgin, also: pure; amman – (Tamil) mother(goddess); (தாமரையம்மன் = tāmaraiyammaṉ).

[19] Muthu Mariamman, Chelliamman and Aaladiamman (Interview 13). Apart from several kula devis, Manimangalam has more than one goddess who is worshipped by the entire village.

[20] Within the research area, Thamarai Kulam is by far the largest pond, followed by now dried up Pillayar Kuttai in Salamangalam, which had a size of 2.6 hectares.

[21] Pariyar/Paraiyar = (Tamil) dalit.

[22] Interestingly, the presence of a special kulam for dalits in the village area implies the presence of dalits in the village. Whether there are dalit hamlets in the village area was not retrieved in this research. Another possibility is that dalits settled in Bharati Nagar, a settlement located in the *peromboke* (common land, here: eri bed) of Manimangalam Eri, and used the well in the eri and Pariyar Kulam.

[23] I.e. Sri Rajagopala Swami Temple, Dharmeswarar Temple and Sri Kailasanathar Temple, all three are ancient temples and dedicated to vedic deities.

[24] In contrast to this, Moffatt (1979) and Whitehead (1921) describe cases, in which grama devis are inclusive of caste and worshipped by all communities of a village and colony in their respective form (vegetarian or non-vegetarian offering, prasadam reception, hamlet order of procession etc.) and role (brahmin priest, non-brahmin priest, devotee in temple, devotee outside temple, announcing drummer, etc.).

[25] Muthu Mariamman has a shrine near the Northern hamlet of Manimangalam Village, where we met the interviewee. Her shrine is located at the road, which leads to the Adyar River. The Chelliamman temple is located halfway on the same road.

[26] A village downstream of Adyar River, now belonging to Chennai.

[27] The PWD often omitted huts in maps. The depicted area does not show any built structures, which is why it can be assumed that it was covered by imperennial thatched huts.

[28] In pre-colonial South India, the king often was patron for the construction of water supply facilities, such as eris and kulams, and therefore was deified and worshipped as benefactor (Interview A1).

[29] The Irular are a South Indian adivasi community, mostly residing in Tamil Nadu. Their traditional lifestyle is nomadic, but most Irular settled permanently during the last century. In the research area, they form the majority of the adivasi communities.

[30] Sapta – (Sanskrit) seven; kanni – (Tamil) young woman, virgin; (சப்த கன்னியம்மன் = capta kaṉṉiyammaṉ); usually translated to "seven mothers", "seven sisters" or "seven virgins". Saptakanniamman is depicted as seven female idols sitting in a row, either as figurines or a relief. They may also be symbolised by seven bricks placed in a row. They appear in different contexts, in temple compounds, on eri bunds or at kulams and are worshipped by a mix of communities. For the Irular community, Saptakanniamman is a central deity and closely connected to ancestral worship (Interview NGO4).

[31] Aiyanar (ஐயனார் - Aiyaṉār).

[32] Also spelled Mahaniam or Maganiyam (மாகாண்யம் - mākāṇyam).

[33] Periya eri: (Tamil) big lake; (பேரிய ஏரி = pēriya ēri).

[34] Chitteri: (Tamil) small lake; (சிட்டேரி = ciṭṭēri).

[35] The restoration was conducted under the IAMWARM scheme of the Tamil Nadu state government, according to a board at the kulam and an interview statement (Interview 11c).

[36] Naga Ma (snake goddess) at a Peepal tree (holy tree), Navagraha (the nine planets), Sengeniamman, Kanni Ma, Angala Paramesvari (own temple), Subramaniam (own temple) (Interview 14a).

[37] I.e. Malaipattu, Gunduperumbudur, Vellarai, Azhagur.

[38] Most of them are deteriorated, apart from Mamthiamman Kulam only Arasan Kulam is used for drinking water (Interview 11b).

[39] In the past, the colony was located 270 metres to the west (PWD map, 1987), but was shifted into the eri bed, apparently to make way for a plantation, which can be seen on the aerial images of the recent years. The shifting must have happened before 1965 with deficient official recording. The Corona image (1965) shows the colony at its current location and no trace of the first settlement could be found, even though the Corona image is older than the latest updates of the PWD map (1987, 1971). Hence, the exact time span of the settlement shift could not be derived.

[40] Moffatt (1979) describes, how people inquire after each others caste by asking for the name of their kulam (*kula* (குல) vs. *kuḷam* (குளம்)). However, he never mentions water bodies in his research. The apparent double meaning of kulam as both "pond" (also implying "hamlet") and "subcaste, lineage, kin" is also discussed by Weiz (2006).

[41] As observed in villages around Puducherri.

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