

HISTORY OF RECLAIMED KAYALS IN KUTTANAD WETLAND AND ASSOCIATED SOCIAL DIVIDE IN ALAPPUZHA DISTRICT, KERALA

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Abstract: Kuttanad wetland in Kerala is the lowest point in India and lies below mean sea level; it covers three districts viz. Alappuzha, Kottayam and Pathanamthitta of the state. Alappuzha District has the major share of Kuttanad wetland and *Kayal Nilams*. This wetland is famous for paddy cultivation where the paddy is cultivated in two types of polders viz. *Padashekaram* which are naturally formed polders due to deposition of sediments in this wetland, and *Kayal Nilams* which are reclaimed land by human effort from the Vembanad backwaters locally called *Kayals*, such *Kayals* are found below (0.2 to 2.6 metres) mean sea level. The locals use these *Kayal Nilams* and *Padashekarams* in an unique way for getting the maximum efficiency in production of paddy which has earned this region a name- "rice bowl of Kerala" The objectives of the present paper is to map, assess the area of reclaimed *Kayals*, as well as examine the social divide, associated with *Kayal* reclamation in Kuttanad wetland falling within the jurisdiction of present Alappuzha district from the colonial period till recent times.

IndexTerms - Kuttanad, Vembanad Backwaters, *Kayal Nilams*, Paddy cultivation, social divide.

I. INTRODUCTION

The native kingdom of Travancore was one among the princely state of present day Kerala under the Indian republic. Kerala is one of the developed states of India, yet like other parts of India the society here too has been divided into caste lines, in spite of being a trading centre right from the ancient times, Kerala has been under the clutches of caste system that has its manifestation on the class system, where usually the upper caste own the means of production while the lower castes are marginalized selling their labour without having much access to the resources. *Pulaya/Paraya* castes were labourers and fully dependent on the landlords during Travancore Princely State. These labours work in paddy fields and they receive some paddy in return for their work which was their only source of survival. (Kuriakose, 2014). This shows the economic status of lower caste during that time. Land in Kuttanad was mainly divided in to two they are '*brahmaswoms*' which are owned by Brahmin families and '*devaswoms*' which are owned by temple authorities mainly instituted of *brahmins*, and by a few *nair* chieftains. The tenants who leased land from the *brahmin* and *nair* chieftains leased lands only to *nair* and syrianchristian communities. Above 10 acres of land was the normal landholding of tenant cultivators in Kuttanad wetland. Due to some customary regulations Pulayas and parayas were prevented from leasing in land by the upper caste landlords. (Alex George, 1987). Caste system was deep rooted in the society of the native state of Travancore in which the status of an individual as well the access to resources is decided by the caste one belongs to (Biju and AmirthaJothi, 2012). A similar scenario emerges in the history of *Kayal* reclamation in the Kuttanad wetland of Kerala which is highlighted in this paper, but before one discusses these issues it becomes important to define a wetland.

The Ramsar Convention takes a broad approach in determining the wetlands and according to them wetland refers to : "*areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed six metres*". Five major types of wetland are generally recognized:- marine, estuarine, lacustrine, riverine and palustrine. In addition to this, there are human-made wetlands such as fish and shrimp ponds, farm ponds, irrigated agricultural land, salt pans, reservoirs, gravel pits, sewage farms and canals. (Ramsar, 2013). Kuttanad wetland the "Holland of Kerala" is located in the State of Kerala where four rivers viz. Pampa, Achenkovil, Manimala and Meenachil flow through this wetland before discharging into Vembanad backwaters which is a Ramsar site not to be disturbed by anthropogenic activities. However due to population pressure this site has been encroached upon by anthropogenic activities right from the colonial period. People here have developed unique method and techniques to reclaim land from this backwater. The backwaters are locally termed as *Kayals* while the reclaimed lands are termed as *Kayal Nilams*. Rice is the major crop cultivated in this wetland, giving Kuttanad the moniker "The Rice Bowl of Kerala". (Abhilash Joseph, 2016). Kuttanad wetland has an area of 874 Square Kilometer covering three districts of Kerala (Jayan and Sathyanathan, 2010). As about 57 percent of this wetland is in Alappuzha district this paper focuses on reclaimed *Kayals* falling under the administrative boundary of Alappuzha District.

Initially the Northern part of this wetland was reclaimed and such reclaimed *Kayals* in other parts of the world are called Polders which are very much prevalent in Netherlands. Polders are basically reclaimed low-lying areas crisscrossed by backwaters, rivers, and streams, protected by embankments (Kranenburg, 2001). "*Land reclamation has been defined as the act of raising the level of land which is either just below or adjacent to water*" (Bray, 1979). This practice of land reclamation is ancient, dating back to ancient civilizations and has been in use in many places of the world to sustain livelihood especially in areas having population pressure and wetlands that are reclaimed due to shortage of land resources. The polders throughout the world

are very fertile and can sustain livelihood easily. Consequently the main reasons behind such land reclamation are agricultural activities, settlement, etc. Numerous examples of land reclamation can be noted ranging from ancient Mesopotamian civilization to exiting civilization e.g. Netherlands and present day Egypt (Bell-Gam, 1988).

The process of reclamation in Kuttanad wetland is termed as *Kayal Kuthu* (Backwater reclamation). It is interesting to note that some of the polders here are formed naturally especially during the dry season as, much sediment is deposited here by the four rivers that are discharging in the Vembanad backwaters, such polders are called *Padashekaram* while the rest of the polders are reclaimed by human effort from the backwaters and are known as *Kayal Nilam* (Land reclaimed from Backwater).

Kayal reclamation in Kuttanad wetland was introduced mainly to overcome the food scarcity during the colonial period in the princely state of Travancore. So the main motive behind the *Kayal* reclamation in Kuttanad wetland was to increase food production and bring more land under paddy cultivation.

It is interesting to note that the labour force used for *Kayal* reclamation in the past mainly represented the marginalized population constituting present day Scheduled Caste populations like *Pulayas* and *Parayas*, who did not have any ownership rights over the *Kayal Nilams* as the ownership rights were with the upper castes *Nair/Syrian* Christian communities. Caste-ism and untouchability was a major practice here, consequently human labour was exploited (Varghese, 1982). But even after Indian Independence, the trend still continues.

It is in this context the present paper highlights on mapping, estimating area under reclaimed *Kayals* and the social divide associated with such reclamation in Kuttanad wetland which falls under the administrative boundary of Alappuzha District of Kerala.

II. OBJECTIVE

To map, estimate the approximate area of reclaimed *Kayals* in Kuttanad wetland with a focus on the social divide associated with such reclamation.

III. GEOGRAPHICAL PROFILE OF THE STUDY AREA

Kuttanad wetland is a low-lying area located between 9°15' N to 9°33' N latitudes and 76°19' E to 76°34' E longitudes (Fig.1). This wetland is a deltaic trough like formation shaped by the confluence of four major rivers of the state, the Meenachil, the Manimala, the Pampa and the Achenkovil, flowing towards the north-western direction, debouching into the Vembanad Backwater. Geographically this area remains water-logged for most of the year (Padmanabhan, *et.al*, 2001). As already mentioned, Alappuzha district has the major share of Kuttanad wetland and major share of the reclaimed *Kayals* are also found here so the present research paper focuses only on the reclaimed *Kayals* located within the Alappuzha District. Kuttanad in Alappuzha District comprises of twenty-five gram panchayats suggesting that the region is populous. This low-lying area (0.6 to 2.2 m below mean sea level) with backwaters, canals and stream networks located in the southern end of India's largest Ramsar site- the Vembanad-Kole wetlands has emerged as the rice bowl of the state (Sreeja, *et.al*, 2015)

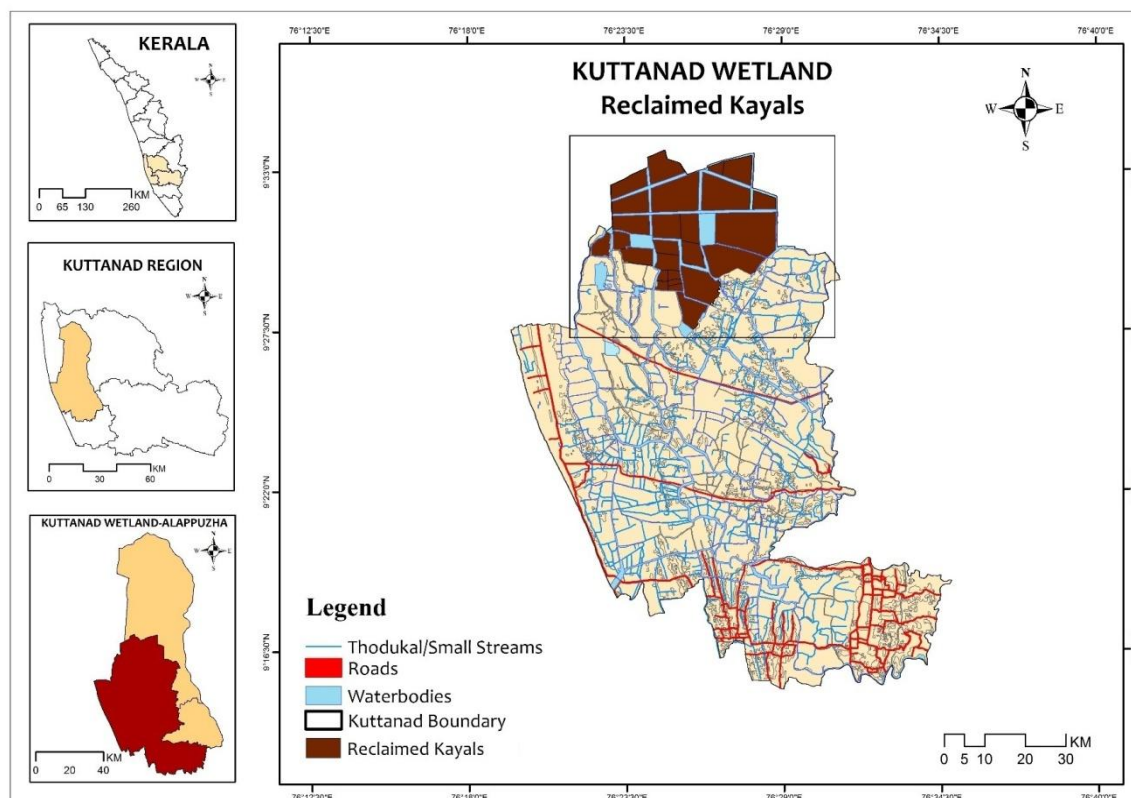


Fig. 1: Location map of the study area
Source: Compiled by author

IV. MATERIALS AND METHODS

The present study is based on both primary and secondary data sources. Study area Map has been prepared with the help of Survey of India Topographic maps. Maps of reclaimed *Kayals* from 1880 onwards has been prepared, with the help of US Army service Topographic maps surveyed in the year 1917 (NC-43/11 and NC-43/12) and Survey of India Topographic maps numbers 58C/6, 58C/7, 58C/11 and 58C/12 surveyed in 1968. The map of reclaimed *Kayal* divisions into smaller segments in 2000 has been prepared with help of Survey of India Topographic maps number C43Q6, C43Q7, C43Q10 and C43Q11 surveyed in the year 2005. The above mentioned Topographic maps has been georeferenced, digitized and mapped by the help of GIS software viz ArcGIS.

Data regarding the history of *Kayal* reclamation has been collected from various government offices and libraries which have been duly acknowledged. Area of total reclaimed *Kayals* has been collected from *Krishibhavans*. The approximate area under reclaimed *Kayals* has been computed through Arc GIS software. Information pertaining to current ownership rights of reclaimed *Kayals* and the agriculture labour force working here has been collected through field investigation by interacting with the local population who are residing on the embankments of such reclaimed *Kayals* in December and January of 2014-15. The field work was designed with the help of suitable statistical methods like purposive and simple random sampling. Out of fourteen reclaimed *Kayals* in Kuttanad wetland of Alappuzha District only ten are inhabited and these ten reclaimed *Kayals* are selected purposively. Subsequently ten respondents from these reclaimed *Kayals* have been chosen randomly for the present study. Thus total number of respondents selected for the present study is hundred.

V. RESULTS AND DISCUSSION

V.1 *Kayal* Reclamation its Genesis and Chronology

As per records and mapping of the reclaimed *Kayals* it suggests that the *Kayal* reclamation in Kuttanad can be divided into three distinct phases viz.

(i) The first phase started around 1880 which continued till about 1888. It is interesting to note that reclamation in Kuttanad were initially started by the lower caste population like *Pulayas* and *Parayas*, as this marginalized section did not have access to land, thus they started reclaiming the *Kayals* which initially were used for settlements of this marginalized section, but as the reclaimed *Kayals* were productive, ideal for paddy cultivation, paddy was introduced here, this marked the first stage of *Kayal* reclamation, but data is scarce during this stage (Kuriakose, 2014; Samuel Mateer, 1883)

The first phase of *Kayal* reclamation is marked by a series of incentives which were made available to the tenant cultivators by the Travancore state. The purpose of the reclamation was mainly to increase the area under paddy cultivation so as to increase food production. Pottom Proclamation of 1865 granted ownership rights to the tenant cultivators. (Kuriakose, 2014; Thomas, 2004). These tenants were mostly belonged to the *Nair* and Syrian Christian communities in Kuttanad. (Jose, 1977). From the year 1886 on-wards the state of Travancore encouraged projects to assist reclamation activity in Kuttanad (Justin Paul, 2005). As reclamation of *Kayal* from deep backwaters for paddy cultivation requires huge investments, since some areas are more than 9 metres below sea level. Therefore the area of reclamation was very less during this first phase (Alex George, 1987).

(ii) The second phase of *Kayal* reclamation started around 1888 and continued till 1903 when reclamation of *Kayal* became more intensive as suggested by the mapping with the help of topographical maps as well as the secondary data. During this stage the upper castes like *Nairs-Brahmins*; Syrian Christians also adopted the *Kayal* reclamation methods of *Pulayas* and *Parayas* in large-scale and created polders from the Vembanad *Kayal* (Backwaters). But during this stage the lower castes were mainly used as the major labour force (Kuriakose, 2014). During this phase, the elite Land lords belonging to the upper castes acquired the consent from the Travancore King to reclaim the *Kayals* and they used agriculture labours belonging to the lower castes for this reclamation. The pioneers during this phase of *Kayal* reclamation were Chalayil Eravi Kesava Panicker along with other local landlords. The reclaimed *Kayals* of this stage are Attumuttu *Kayal*, *Rajaramapuram Kayal*, *Mangalam*, *Manikya mangalam Kayal*, *Sreemoolamangalam*, *Kannitta Kayal*, *Cherukali Kayal* (Fig.2 and Table-1). The last *Kayal* reclaimed during this phase was '*Mathi Kayal*' (Pillai and Panicker, 1965).

As already mentioned these reclaimed *Kayals* were the major economic assets, mainly owned by upper castes like Syrian Christians, *Namboothiris* and *Nairs* etc. While, the labour force used for such reclamation mainly constituted of the lower castes like *Pulayas* and *Parayas* who were landless agricultural labour force staying in the land of upper caste as hutment-dwellers (locally termed as *Kudikidappukar*) (Alexander, 1973). Consequently the lower castes who were also untouchables were exploited, while the benefit of the highly productive reclaimed *Kayals* went to the landlords creating a further gap on the existing socio-economic divide between the upper caste elite landlords and the poor marginalized lower caste population.

Around 1903 to 1912 *Kayal* reclamation was stopped because of the apprehension of Presidency of Madras in the impact of *Kayal* reclamation in Kuttanad which may adversely affect the port of Cochin. So the Colonial Power stationed in Madras requested Travancore Government to stop the *Kayal* reclamation (Pillai and Panicker, 1965).

The total area of reclaimed *Kayals* during the first and second phase was about 1764.15 hectares. Among the reclaimed *Kayals*, *Rajaramapuram Kayal* was the largest one having an area of 538.21 hectares. (Table-1)

Table.1: Name of reclaimed *Kayals*, its area and share to total (in %) (1880-1903)

Sl.No	Name of Reclaimed <i>Kayals</i>	Area in Hectares	Share in % to total reclaimed area	Rank
1	Mangalam Manikya Mangalam <i>Kayal</i>	394.05	22.34	3
2	Rajaramapuram <i>Kayal</i>	538.21	30.51	1
3	Sreemoolamangalam	236	13.38	4
4	Kannitta <i>Kayal</i>	18	1.02	6
5	Cherukali <i>Kayal</i>	100	5.67	5
6	Mathi <i>Kayal</i>	477.9	27.09	2
	Total Area	1764.16	100	

Source: Krishi Bhavanand compiled by author

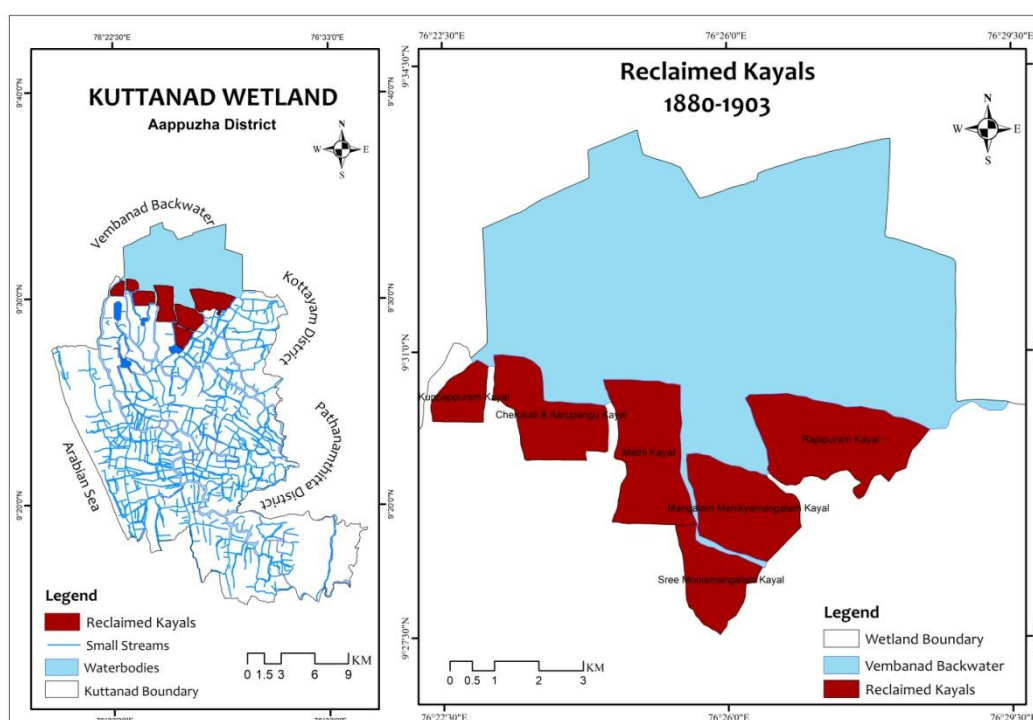


Fig. 2: Reclaimed *Kayals* from 1880-1903

Source: Compiled by author

V.2 Initiatives for better management of reclaimed *Kayals*

The large sized reclaimed *Kayals* which has already been mentioned were owned by the upper castes. These large sized *Kayals* had management problems consequently it was realized that for better management and to increase the productivity of these large sized reclaimed *Kayals*, were broken up into smaller sizes, thus *Mathi Kayal* (Fig. 3) was divided into seven divisions by constructing small *Varambu* (causeway) between them, accordingly the *Mathi Kayal* got divided into - *Thekke Mathi Kayal*, *Vadikke Mathi Kayal*, *Matha Kayal*, *Madathil Kayal Pokkam*, *Madathil Kayal Thazhcha*, *Puthanpura Kayal* and *Padinjare Venattukari*.(Table-2)

Table.2: Breaking up of Mathi Kayal for better management.

Sl.No	Separated Mathi Kayal	Area in sq.km	Share in % to total reclaimed area	Rank
1	Padinjare Venattukari	43.6	9.12	4
2	Madathil Kayal Pokkam	43.2	9.04	5
3	Thekke Mathi Kayal	152.4	31.89	1
4	Madathil Kayal Thazhcha	38.5	8.06	6
5	Puthanpura Kayal	47.4	9.92	3
6	Matha Kayal	20.8	4.35	
7	Vadacce mathi Kayal	132	27.62	2
	Total Area	477.9	100	

Source: Krishi Bhavanand compiled by author

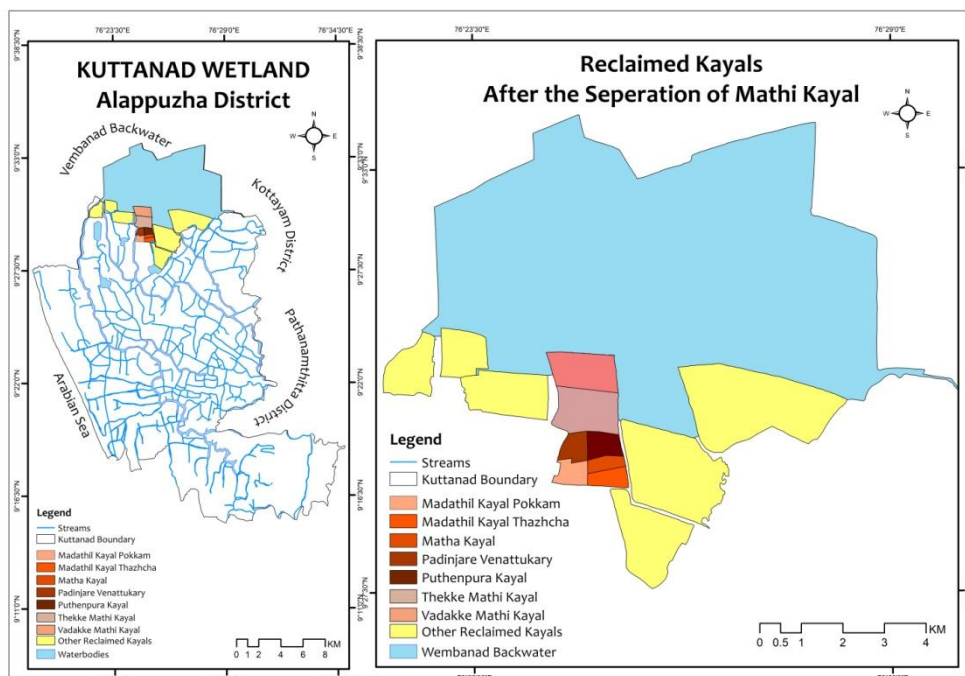


Fig. 3: Mathi Kayals after Separation
Source: Compiled by author

(iii) The third phase of Kayal reclamation can be dated from 1912 to 1945.

With the revoke of the ban on Kayal reclamation in 1912, a revival of Kayal reclamation activities started all over again. The Native King of Travancore encouraged the people for Kayal reclamation by giving tax concessions and granting loans (Pillai and Panicker, 1965). Further with the introduction of the electric pump huge Kayals could be reclaimed easily as the water could be pumped out in lesser time with a lower cost replacing human labour with electricity, consequently extensive reclamation continued and the reclaimed Kayals were mainly owned by the upper castes. The major Kayals reclaimed during this stage are, Aarayiram Kayal, Irupathinaalayiram Kayal, Moovayirathianjooru Kayal, Maran Kayal, H Block Kayal, R Block Kayal and the last reclamations are Chithira, Marthandom and Rani Kayals (Fig. 4) which are reclaimed under the leadership of Thomas Murikkan, a landlord from Kuttanad who belonged to Syrian Christian Community (Kamalasanan, 1993). Thomas Murikkan alone had reclaimed 832.15 hectares of land in one stretch; this is indeed a marvelous achievement noted in the history of Kayal Reclamation in Kuttanad (Padma Kumar, 2013).

It is interesting to note that from 1943 onwards the attached labour system or slavery as practiced in Travancore Kingdom was abolished and wage labour system was introduced, with this there came a change in reclamation of Kayals as the landlords now had to pay wage to the labour force, consequently reclamation of Kayals became insignificant

After Indian Independence and the amalgamation of the Native kingdom of Travancore with the Indian Republic (1949) the reclaimed Kayals of Kuttanad were modified for better management.

Table.3: Name of Reclaimed Kayals, its area and share to total (in %) (1912-1945)

Sl.No	Name of Reclaimed Kayals	Area in Hectare	Share in % to total reclaimed area	Rank
1	Rani Chithira	580.64	13.18	5
2	Aarayiram	968.31	21.97	1
3	Marthandam Kayal	271.48	6.16	7
4	R Block Kayal	621.29	14.1	3
5	24000 Kayal	922.56	20.94	2
6	H Block Kayal	583.8	13.25	4
7	Maran Kayal	317.29	7.2	6
8	Moovayirathi Anjooru	141.31	3.21	8
	Total Area	4406.69	100	

Source: Krishi Bhavanand compiled by author

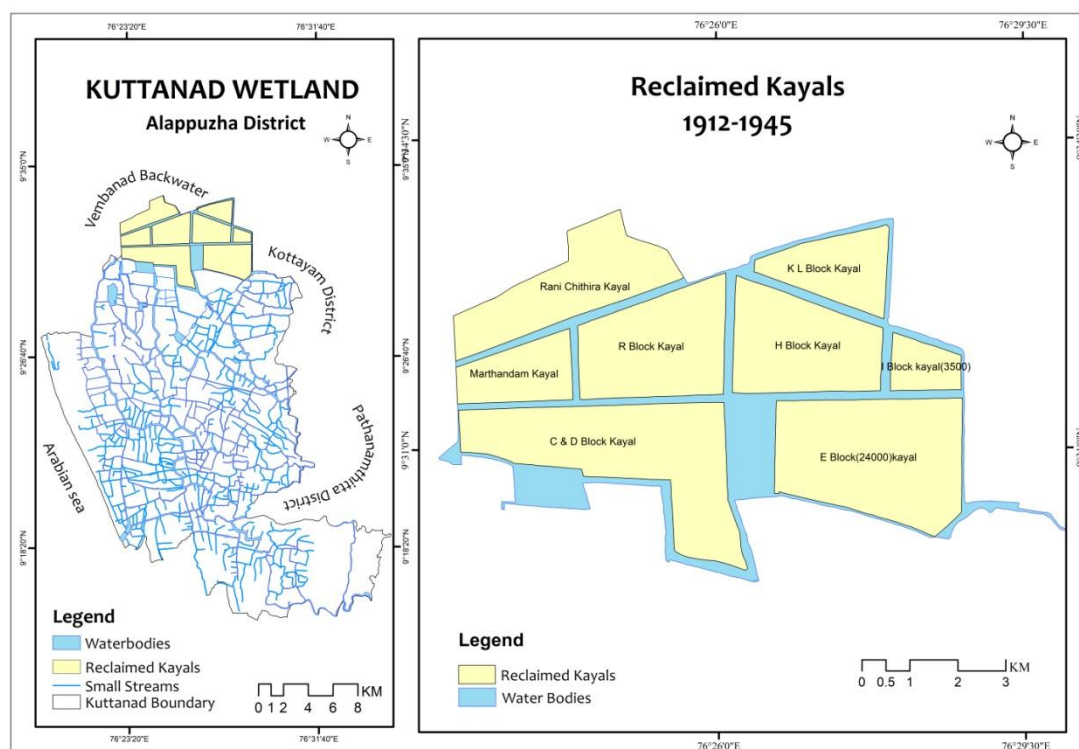


Fig. 4: Reclaimed Kayals from 1912- 1945

Source: Compiled by author

V.3 Initiatives for better management of Kayals

After Indian Independence and amalgamation of the Native Kingdom of Travancore with the Indian Union in the year 1949, it was realized that big sized reclaimed Kayals are difficult to manage consequently the bigger reclaimed Kayals are divided into smaller sized reclaimed Kayals by constructing canals and embankments in between the reclaimed Kayals (Fig.5). The Padashekara Samithi (Association of a group of Farmers) divided the big reclaimed Kayals in to several Blocks for better management. (Fig.5 and Table-4).

After the separation of the bigger reclaimed Kayals it was suggested to use English alphabets to name the different blocks created from the bigger reclaimed Kayals. Table-4 indicates the present name and area of the smaller sized reclaimed Kayals and their rank based on sizes which were part of the bigger reclaimed Kayals.

As Kuttanad wetland faced problems like seasonal flooding affecting the settlements which grew up here due to population pressure as well as lower productivity and loss in paddy cultivation along with salt water intrusion hampering paddy fields “M.S. Swaminathan Commission Report.” (2007) suggested to construct canals in between C Block and D Block of

Puthen Aarayiram Kayal, this commission also suggested the construction of a channel in between *Rani* and *Chithira Kayals* for the easy flow of flood water especially during monsoon season (Fig.5).

Table.4: Present status of Reclaimed *Kayals* after modification

Sl.No	Name of Reclaimed <i>Kayals</i>	Area in Hectares	Share in % to total reclaimed area	Rank
1	D Block Thekke 6000(Aarayiram)	192.37	4.41	11
2	DBlockVadakke 6000(Aarayiram)	214.16	4.91	10
3	D Block Puthen 6000(Aarayiram)	277.91	6.37	5
4	C Block <i>Kayal</i> (Aarayiram)	261.36	5.99	7
5	S Block (Marthandam)	271.48	6.22	6
6	T Block (Rani)	252.03	5.77	9
7	KL Block (Maran <i>Kayal</i>)	261.36	5.99	7
8	Appu <i>Kayal</i> (Maran <i>Kayal</i>)	55.93	1.28	13
9	Q Block (Chithira)	308.64	7.07	4
11	E Block(Irupathinaalayiram <i>Kayal</i>)	922.56	21.14	1
12	R Block <i>Kayal</i>	621.27	14.24	2
13	H Block <i>Kayal</i>	583.8	13.38	3
14	I Block <i>Kayal</i>	141.31	3.24	12
	Total Area	4364.19	100	

Source: Krishi Bhavanand compiled by author

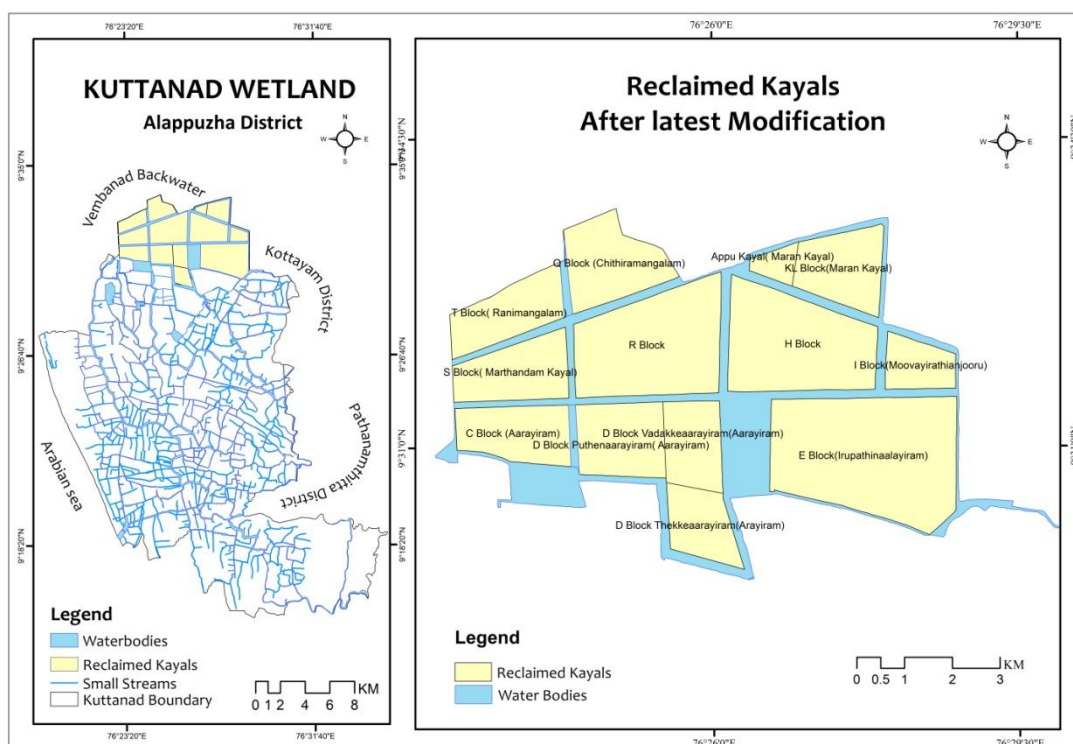


Fig.5: Reclaimed *Kayals* after the latest Modification

Source: Compiled by author

It is observed that the total area of *Kayal* reclamation was only 1764.16 hectares during 1880 to 1903 and from 1912 to 1945 the area of reclamation increased to 4406.68 hectares suggesting a growth rate of 149.79 % between phase I and phase II reclamation periods and also a gap of nine years no reclamation was done between these two periods. After Independence and amalgamation of the Travancore state with the Indian Republic the Indian government stressed on better management of such reclaimed *Kayals*, subsequently the large sized reclaimed *Kayals* were separated by canals and embankments, thus the area of the

reclaimed *Kayals* reduced from 4406.68 hectares to 4364.19 hectares. The Significant thing is that the total area of Vembanad backwater in the reclaimed area has drastically reduced from 5445.64 hectares to 1072.97 hectares. Because reclamation of *Kayal* was mainly done from Vembanad backwater this leads to the shrinking of the backwater area in Kuttanad wetland of Alappuzha District. After Independence due to population pressure settlements have sprung up in the embankments separating the reclaimed *Kayals*.

V1 CONCLUSION

After Indian Independence, the government of Kerala introduced Kerala Land Reforms (Amendment) Act, 1969, even though it was not totally successful in Kerala, nevertheless, this act put an end to the feudal system on 1 January 1970 (MukundanPeruvattoor, 2012). Therefore some of the large landholders reclaimed *Kayals* were also seized under this land reforms Act and the seized reclaimed *Kayals* were taken by the government and distributed to the landless agriculture labour force who were in fact the creators of such reclaimed *Kayals*. However in spite of the Government's effort, field investigation carried in December- January 2014-15 suggests that the reclaimed *Kayal* owners are mainly belonging to the upper castes while the agriculture labour force are constituted from the lower castes. As already mentioned due to population pressure, settlements have sprung up in the embankments separating the reclaimed *Kayals*. Field investigation suggests that majority of the population living in these embankments are from the schedule caste population or the other backward caste population. Consequently it can be concluded that in spite of Kerala being a forward state the caste divide exists which gets manifested into the class divide, as stated by Nissim Mannathukkaren (2013) in his article mentioned that "*caste and class segregation has not been addressed properly till date*".

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