



Government of Kerala

HARITHA KERALAM MISSION

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ഒഴുക്കട്ടെ

Now, Let me flow



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January 2020

Now, Let me flow

Report on campaign “Ini Njan Ozhukatte”
to rejuvenate streams and its tributaries

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Forward

State level Mission meeting of Harithakeralam Mission chaired by the Hon'ble Chief Minister discussed the damages that happened to the water bodies during two consecutive floods. Waterborne diseases show their face every now and then in the State. Peculiarities of Kerala topography make the stream network all the more important for effective drainage. It is indeed a challenge rejuvenating more than 87000Km of streams spread across the State.

In everything we do, we recognise that success is founded on partnership. It is on this partnership that we launched the campaign “Ini Njan Ozhukatte” (Now, let me flow) to rejuvenate at least one major stream and its tributaries in a local body. Voluntary organisations, students, Youth organisations, Government Departments, workforce under MGNREGS and local residents all joined force in making this campaign a great success.

Ultimately all our efforts under Harithakeralam Mission are directed towards creating a better environment. This report demonstrates the enthusiasm, this campaign could create among communities at the local level. The aspirations and actions set in motion should continue. We need to consolidate the achievements through concerted efforts to make the stream network functional across the State.

Dr. T.N. Seema
Executive Vice Chairperson
Haritha Keralam Mission

Ini Njanozhukatte (Now, let me flow)

EXECUTIVE SUMMARY

Haritha keralam Mission is one of the four development Missions launched by Government of Kerala in 2016. This Mission has three complimentary sub missions in Water Resources, Waste Management and Agriculture. Goal set for the mission is to promote and implement activities that would help development projects, without environmental damages. Ensuring availability of clean water in all the water sources of the State through eco friendly interventions, planned scientifically, at watershed level, with participation of all stake holders is the flagship programme of the Mission. Activities of the mission are monitored by the State Mission team under the chairmanship of the Hon'ble Chief Minister. Mission meeting held on 01/08/2019, under the Chairmanship of the Hon'ble Chief Minister decided to launch a participatory campaign in all the local bodies of the State to clean up the streams.



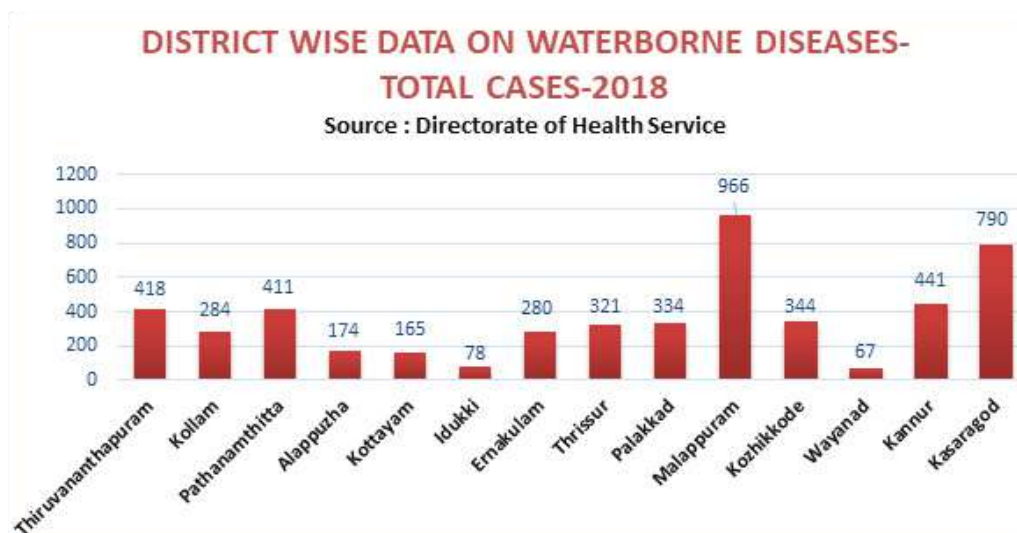
Shri Pinarayi Vijayan - Chief Minister, Kerala

Kerala has good rainfall and a well-knit drainage network, covering the three distinct natural zones consisting of low land, midland and highland. Each zone has unique physiographical, hydrological and hydro-geological characteristics. Spatial and temporal variation of rainfall is also a characteristic of Kerala Monsoon. The State receives most of the rainfall in two consecutive monsoons starting from June and lasting till December. Dry months with occasional summer showers follow.

Among the major states in India, Kerala has always occupied a unique position in many development indicators.

Urbanization in Kerala is not limited to the designated cities and towns. Absence of a distinctive rural–urban demarcation, unlike other Indian states has always been a unique feature of the State. This phenomenon has put lot of pressure on land availability in upcoming towns of the State, leading to encroachment of water bodies, diversion and filling up of lower order streams and increased pollution level of the streams. Solid and liquid waste management in towns of Kerala is yet to reach an appreciable standard.

Water scarcity during lean season is a permanent feature in Kerala, despite heavy rainfall and flooding during monsoon. Drinking water is being supplied through water tankers and water kiosks every year. Open wells are widely used for drinking water and irrigation in the State. Loss of the stream net work has resulted in diminished surface flow during non-monsoon months and the resultant recharge. Weakness of the aquifers is another phenomenon that contributes to the scarcity of water during summer. Although ground water development is only 50% of the annual replenishable storage, certain blocks of the State are over exploited. All developing nations across the globe face the threat of waterborne diseases. Kerala, with its dependency on open wells for drinking water, faces the threat of waterborne diseases all through the year.

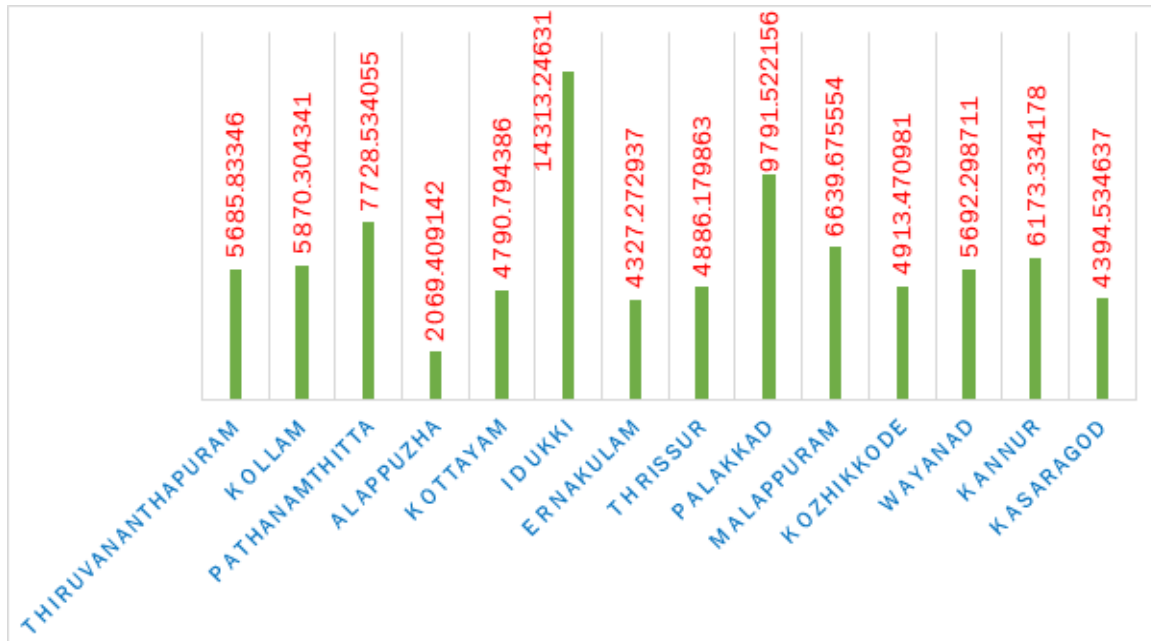


Open wells are fed by the drainage network of the river basin through shallow aquifers. Outbreak of Chicken guinea, Diarrhoea, typhoid etc is common in the State.

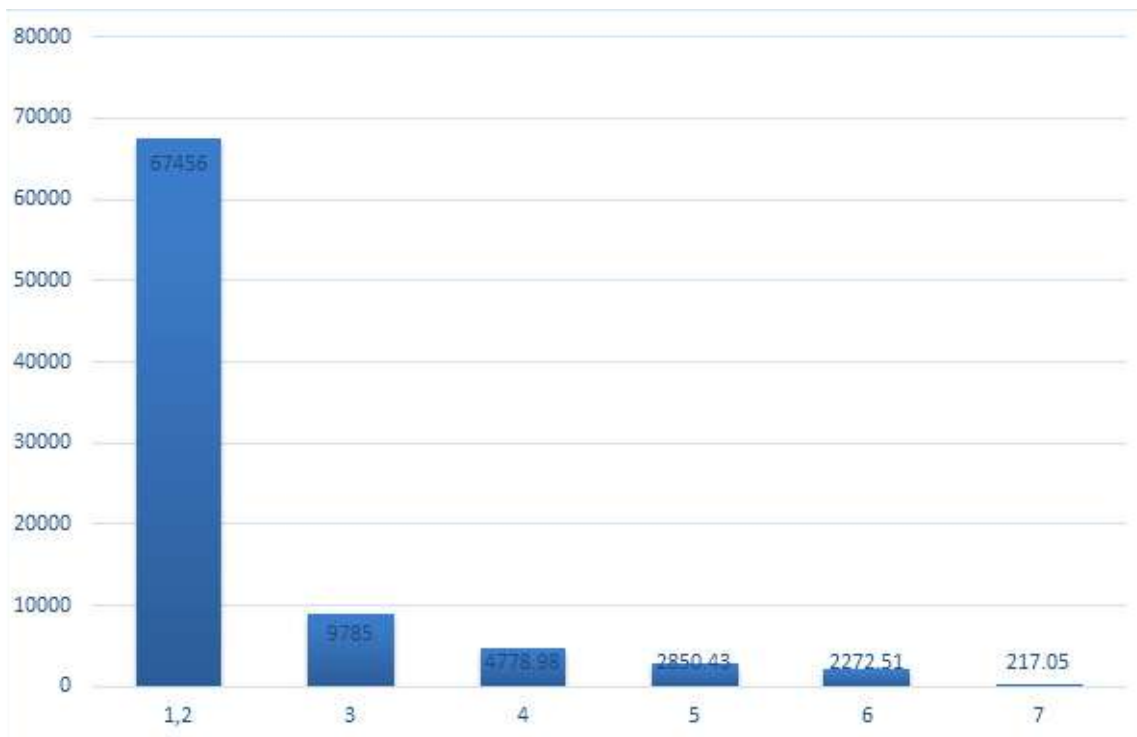
River is a living ecosystem and part of the natural hydrological cycle. A flowing river is thus, part of a healthy eco system. Rivers in Kerala have distinctive stream network starting from the first order. This network of streams was effectively used by farmers of the State. Due to rapid urbanisation and change in land use pattern, lower order streams are either lost or diverted or partially filled up. Stagnant water in the streams pollutes the shallow aquifers that feed the open wells. During heavy rains, loss of streams that used to contain flood waters results in flooding of inhabited areas and loss to life and infrastructure. During the floods that badly affected Kerala during 2018 and 2019, high ranges of the State experienced several landslides resulting in loss of life and property. Disappearance of several small Streams that used

to carry water downstream from the hillocks, which has only a thin soil cover over the granite rocks is one of the reasons for landslides in the highlands. The system of drains in each District of the State gives a clear picture of the carrying capacity of the network. Lower order streams up to the third order contribute to 44% of the entire drainage network of the State. These streams are the main water source of rural Kerala that needs urgent attention.

Districtwise distribution of Drains (Km)



Orderwise distribution of stream network (Length-Km)



Source: Kerala State Land use Board

to carry water downstream from the hillocks, which has only a thin soil cover over the granite rocks is one of the reasons for landslides in the highlands. The system of drains in each District of the State gives a clear picture of the carrying capacity of the network. Lower order streams up to the third order contribute to 44% of the entire drainage network of the State. These streams are the main water source of rural Kerala that needs urgent attention.



Guidelines for Participatory Rejuvenation of streams

Now, 'Let me flow' (Ini njanozhukatte) campaign was organised by Harithakeralam Mission in the backdrop of the increasing need to rejuvenate the stream network of the State. It is significant that the Districts worst affected by floods during 2018 and 2019 has the largest network of natural drains. The drainage network of a river system can hold water at any instance during floods equivalent to that of a dam built in the basin. This network coupled with the wetlands, paddy fields, ponds and lakes can moderate the effect of flooding due to heavy rains and contribute to recharging of aquifers.

Any attempt to rejuvenate the stream network will not sustain unless it is participatory. Harithakeralam Mission works with local self-government institutions across the State ensuring convergence of all other Departments/organisations in the sector. Mission has prepared a guideline for participatory activities to rejuvenate the streams.

It was decided that the longest stream passing through a local body shall be selected for rejuvenation. Continuity shall be ensured, consulting with the neighbouring local bodies. Local Self-Government and Water Resources Departments under Government of Kerala led by the Honourable Ministers convened meetings of all concerned and issued guidelines for effective management of the campaign. Local self-Government Department allowed incurring of expenditure by the local bodies, to bring in machinery to remove blockages and silt from the selected streams. Arrangements were made to scientifically dispose the debris.

The campaign was launched on 14th December 2019 to go on till 22nd December. However, several local bodies took up more streams for cleaning up and the process continued till first week of January 2020. Several eminent personalities participated in the campaign. Members of the State Legislature, Heads of local self-Government institutions, District Collectors and other senior officers inaugurated the campaign in each local body. Many of the local bodies have not completed the work, as they are taking up cleaning of all the smaller streams that join the selected main stream. Many lost streams could be rejuvenated along with this campaign.



Watershed maps already supplied to the Grama Panchayath Level Technical Committees (GPLTC) were used to identify the streams and plan the campaign scientifically. The campaign has a second phase, where further interventions for the streams are to be planned. Each stream will be divided into convenient number of stretches for effectively supporting activities for its sustainability.

The campaign to rejuvenate streams across the State was a huge success with active participation of all the stake holders. The rejuvenated streams can hold 9.154Mm³ of water at any instance. The rejuvenated streams account for only 10% of the total length of streams in the State. Many of the local bodies have assured that they will continue with the work of rejuvenating more number of streams.

Activities to sustain the work are being planned and will be part of the plan schemes for the local bodies. Emphasis will be to promote continued use of the rejuvenated streams to increase the income of the local community. Rejuvenated streams will allow free flow of water and moderate local flooding. Pollution of the streams will be regulated through campaign and enforcement of relevant rules. Encroachments will have to be evicted. Water quality in the streams can be tested with the new facility being planned in the Higher Secondary Schools.

HARITHAKERALAM MISSION- WATER SUB DIVIISION

"NOW, LET ME FLOW" CAMPAIGN

2019 DECEMBER

SL NO.	DISTRICT	LOCAL SELF GOVERNMENT IN	DETAILS OF DRAINS		PARTICIPATION
			NOS.	TOTAL LENGTH (IN K.M)	
1	Thiruvananthapuram	78	115	118	20278
2	Kollam	73	72	260.72	27827
3	Pathanamthitta	57	65	179.15	7000
4	Alappuzha	78	80	80	4500
5	Kottayam	77	51	186.25	15800
6	Idukki	54	49	130	2500
7	Ernakulam	96	68	120.4	2000
8	Thrissur	94	63	127.531	9000
9	Palakkad	95	95	100	2500
10	Malappuram	106	83	71.8302	800
11	Kozhikkode	78	98	225.272	21590
12	Wayanad	26	28	78.65	4000
13	Kannur	81	89	286.69	28000
14	Kasaragod	41	50	70	16500
	TOTAL	1034	1006	2034.4932	162295

Government may further support the campaign by instructing the local bodies to include rejuvenation of streams as part of the annual plan. Storages that can be left open during monsoon shall be promoted in the streams to recharge ground water and as a local source of water.



Shri Pinarayi Vijayan, Chief Minister, Kerala and
Shri K Krishnankutty, Minister for Water
Resurces, Kerala

Alternative methods for liquid waste disposal shall be planned in crowded towns where liquid waste is directly let into the streams.

All the local bodies shall keep a map of the drainage network in the office, for reference during issue of permits for infrastructure development.

1. THIRUVANANTHAPURAM

Thiruvananthapuram, the southernmost district of Kerala State, is situated between North latitude of 8° 16' 59" and 8° 49' 59" East longitude of 76° 28' 59" and 77° 16' 59" and covers a geographical area of 2192 sq. km. Administratively, Thiruvananthapuram district is grouped into 4 talukas viz., Thiruvananthapuram, Neyyattinkara, Chirayinkil and Nedumangad consisting of 11 blocks, 73 panchayats, 4 municipalities and 1 Municipal Corporation. Its population density is the highest in Kerala, with 1,509 inhabitants per square kilometer (3,910/sq. mi).

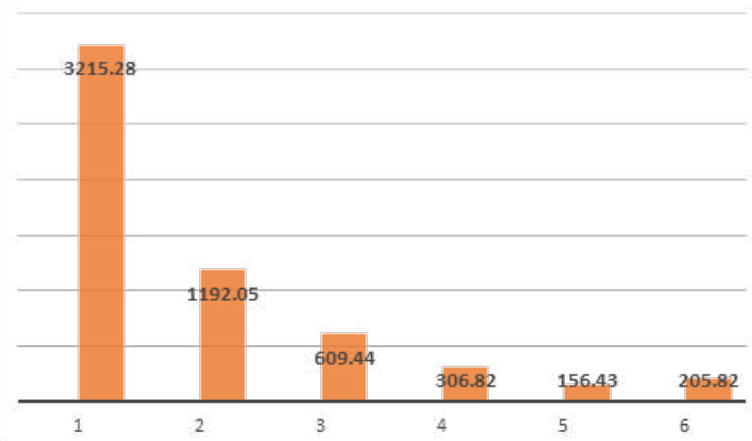
Three distinctive topographic units can be identified in the district from west to east – (1) lowland (coastal plains), (2) midlands and (3) highlands. Important rivers in the district are Neyyar, Karamana, Vamanapuram, Mamom, and Ayirur, which form three main drainage basins such as Neyyar, Karamana and Vamanapuram. The drainage network of the rivers exhibits a dendritic



pattern. Several backwaters are seen along the western parts of the district viz. Poovar Kayal, Poonthura Kayal, Vellayani Kayal, Veli Kayal, Kadinamkulam Kayal, Anchuthengu Kayal and Edava-Nadayara Kayal.

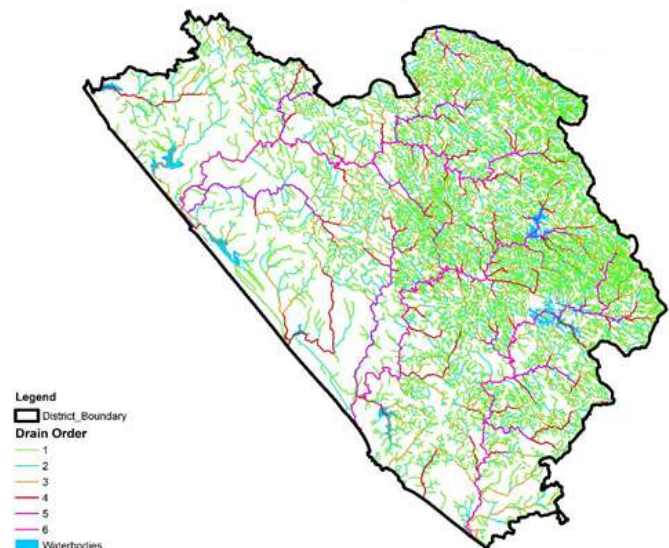
Average annual rainfall of the district is 2035mm. Thiruvananthapuram is the first city along the path of southwest monsoon and gets its showers by end of May/ beginning of June. The district also gets rain from receding northeast monsoon which hits the district by October. The southwest monsoon contributes more than the northeast monsoon to the total rainfall in the district. Even when the district receives both monsoons, a delay or failure of the monsoon often causes drought conditions in the district. The drains of order till 4 become filled by heavy storm. The district has total drain length about 5685.84 km .

Orderwise length of drains in Thiruvananthapuram District-Km



“Ini njan ozhukatte” (“Let me flow now”) campaign targeted the local streams to be rejuvenated to attain their maximum capacity to carry floodwaters. Waterborne diseases are common in the coastal stretches, where several streams are either blocked, filled up or diverted. Most of the lower order streams are polluted. A large number of residents, representing different organizations participated in the campaign under the leadership of Local Self Government Institutions. Volunteers from local cultural groups, National Service

THIRUVANANTHAPURAM DISTRICT Drains



Scheme units of different educational institutions, National Cadet Corps also participated in the campaign, with the workforce of National Rural Employment Guarantee Scheme to rejuvenate the streams.

Shri. V K Madhu, District panchayath president inaugurated activities under “ini njan ozhukatte” on 14th December 2019. With the participation of 1128 persons, 11Km length of the drain was cleaned in a single day. On the same day Attingal M L A. Sri.B Sathyan inaugurated and led the campaign in Harisreekulam Thodu, Attingal. He also led the campaign at several places including Kunnathu Vathukkal-changad Polaykkal Thodu (Karavaram), malayamadam mandapam kunn thodu (kilimanoor), pappalam-kochupalam neerchal (Pazhayakunnumel), thoniyantazhikam thodu (vakkom) and sashthaam thodu(cherunniyoor).

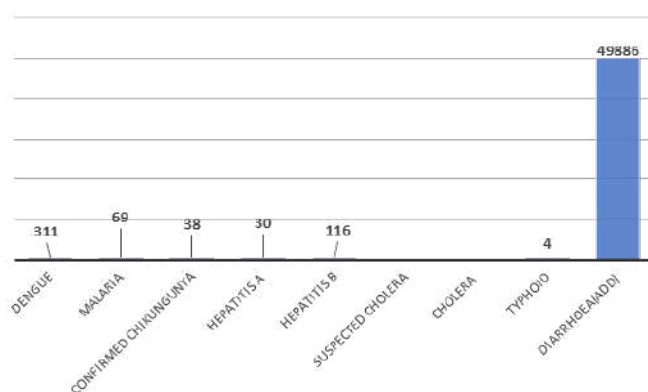


Hon'ble Minister, Shri. Kadakampalli Surendran inaugurated the campaign at Thettiayar (Andoorkonam). Adv. V Joy MLA, Varkkala inaugurated the campaign at Panthalathu Vathukkal Thodu (Madavoor), Idavelikkal Puthiyarkkavu Thodu (pallikkal), Kallanayar (Chemmaruthi), Vettoor Ela Thodu (Vettoor) and Shivagiri-Thoduve Thodu(varkkala). Shri. D. K Murali MLA, Vamanapuram inaugurated the campaign at Ereendumb-Attinpuram Thodu (Panavoor) and streams at Pullambara. Adv. I B Sathesh MLA, Kattakkada led the Campaign at Pallichal Thodu. Shri C K Harreendran MLA, Parassala inaugurated and led the campaign at Vandichira Valiya Thodu (Parassala), Vellankal Thodu (Aryankhod), Nadum Thodu (Kollayil) and Chittattinkara Thodu (Perunkidavila). Shri. K Ansalan MLA, Neyyatinkara, inaugurated cleaning of Maruthoor Thodu at Neyyatinkara. Active participation of the political leaders and social

workers persuaded the local people to ensure their participation in the state-wide campaign organized by the Harithakeralam mission.)

Thiruvananthapuram district collector Shri. K Gopalakrishnan I.A.S inaugurated the campaign at Aithikonam Ela Thodu, Karakulam. Members of the State Legislature inaugurated and led the campaign in several local bodies in the District. Presidents of the three-tier local bodies, chairmen of standing committees, members of the local bodies led the campaign across the District. Arrangements for disposal of the collected waste material was made scientifically. 23783 volunteers participated in the campaign in Thiruvananthapuram District.

Reported communicable diseases in Thiruvananthapuram District-Year 2018



SL.NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED ONLY)	PEOPLE PARTICIPATED
1	karavaaram	Kunnathuvathukkal Changad Polakkal thode	3	482
2	kilimanoor	Malayamatam Mantapam Kunnuthode	12	400
3	Madavoor	Vemutty palam ꝑPanthalatha vathukkal thode	1	130
4	Nagaroor	Thekkinkadu Arthakantanchira	3.5	253
5	Navaikulam	Oranalloorthode	2	263
6	Pallikkal	Mantapathu kavuthodev, Kulakkudi Edavelikkal Puthiyarkavu thode	1.75	171
7	Pazhayakunnum-mal	Pappalam- Kochupalam Neerchal	2	170
8	Pulimath	Arinelloor moonnattu Mukkuthode	0.8	80
9	Anjuthengu	Ooramthaxhathode	0.2	30
10	Chirayinkeezhu	Pazhanchira Panad thode	1	328
11	Kadakkavoor	Elappuram thode	0.437	162
		Mallattukulam thode	1	85
12	Kizhuvilam	Aroor elathode	1	186
13	Mudakkal	Anooparathode	1	58
14	Vakkom	Thoniyantazhikam thode	0.12	100
15	Athiyannur	Karikkoakam onamkode thode	0.1	66
16	Kanjiramkulam	Pechamkarathode	0.7	325
17	Kottukal	Valiyakarathode	0.4	196
18	Benganoor	Anoorkuzhi kochuthode	0.3	60
19	Anad	Nagacherithode	0.6	80
20	Aruvikkara	Kadayara Irayamkode thode	3	397
21	Karakulam	Maruthoor Ithikonam Ela thode	2.5	889
22	Panavoor	Erenedumbu-Attinpuram thode	2	305
23	Vembayam	Kuyathunada Konchira Keezhpanna Moolathodinte vettinad ꝑKonchira	3.5	325
24	Balaramapuram	Thalayil thode	1	300

25	Kalliyoor	Sasthamkovil thode	1	78
26	Malayinkeezhu	Anthiyurkonam anappad thode	0.3	94
27	Maranalloor	Bharaniyara azhi thode	0.9	70
28	Pallichal	Pallichal thode	2	937
29	Vilappil	Peyad alakunnam thode	0.7	133
30	Vilavoorkkal	Irattakkalunk kombetti -Vayalikkada thode	0.45	235
31	Chenkal	Ezhakulam thode -Ilanjikkulam thode	1.1	70
32	Karode	Amuthrithikulamp-Idakkulam--Venkulam thode	1	648
33	Kulathoor	Arukalmudippurap	0.8	155
		Valiyathode		
34	Parassala	Ponnamkulamp	0.6	72
		Vichira Valiya thode		
35	Poovar	Arumanoor Varamb thode Thamarakulam thode	1	255
36	Thirupuram	Iruvykkonam - Kavummugham thode	1	74
37	Amboori	Amboori	3.5	690
		Madasserithode		
38	Aryankode	MylachalpVellankal	1.5	222
39	Kallikkad	NelparathalakkalpErekkonam	0.59	145
40	Kollayil	Nadumthode Kollayil	7.5	816
41	Kunnathukal	Manninad thode	0.6	101
42	Ottasekharamangalam	Kalivilakam-Melekonam Cheruthode	1	92
43	Perumkadavila	Thuyur--Marayamuttom-Chittattinkara thode	3	484
44	Vellarada	Kovillur thode	2	274
45	Aroorkkonam	Thettiyar	0.7	1380
46	Azhoor	Thettichira Chittarikkulam thode	0.4	200
47	Kadinamkulam	KarinjavayalpChirakkal thode	0.7	138
48	Mangalapuram	Murinjalapalam Aykuttikkonam Nedumanoor thode	2	320
49	Pothenkode	Kalluvetti Valiyakulam	0.3	110
50	Kallara	Kanyarukuzhi Ilankam thode	1	85
		Madannada Thottumukku thode	0.8	206
51	Manikkal	Vembayam pKidangayam thode	0.5	130
52	Nandiyode	Kurapuzha-p-Vanchuvam thode	1.2	523
53	Nellanad	Thamprampoyka Mantapam thode	4	504
54	Pangode	Bharathannoor Aduppumpaara Thodu	1	115
		Bharathannoor Aduppumpaara Thodu	0.5	93
55	Peringammala	Thannimoodu Peringamala Ela Thodu	0.7	73
56	Pullampara	Chullaalam Moozhi Thodu	2	257
		Estate mook Balan pacha Kalliyodu Thodu	0.5	102

57	Vamanapuram	Thoongayil Thodu	0.4	77
		Mankungayam Thodu	5	115
58	Chemmaruthi	Kallanayaar	3	590
59	Cherunniyoor	Sasthaam Nada Thodu	0.3	200
60	Edava	Chandranelloor	1	255
61	Elakamon	Mecheri Thodu	0.5	287
62	Manaboor	Thottaykkad bridge-Till Kavalayoor Lake (Valiya Thodu)	0.35	367
63	Ottoor	Ottoor Punnakkuzhy Thodu	0.3	62
64	Vettoor	Vettoor elaa Thodu	0.25	554
65	Aryanad	Kallupaalam Mangodu Thodu	1.5	1335
66	Kattakkada	Kulathummal Valiyathodu	1	163
67	Kuttichal	Paruthippalli Theraani Thodu	12	68
68	Poovachal	Mailottu Moozhi Thodu	5	1218
69	Tholikkode	Poriyakkadu-Palathinkara-Aadaamoozhi-Pullikkonam Thodu	1	485
70	Uzhamalakkal	Paathaarimoola Thodu	0.5	34
71	Vellanad	Vaaliyara-Kannampally Thodu	2.5	26
72	Vithura	Maruthaamala Makkithodu	1	50
73	Neyyattinkara Municipality	Kannankuzhi- Maruthathoor Thodu	2	860
74	Varkala Municipality	Sivagiri Nadayara Thoduve Thodu	1.5	491
75	Nedumangad Municipality	Kakkathodu	0.2	55
		Chellaam Kolu Thodu	0.8	134
76	Thiruvananthapuram Corporation	Killiyar Mission 2	3	150
77	Attingal Municipality	Vaaryam Vilaakam Thodu	0.24	32
		Kaithavana Thodu	0.26	24
		Chirayil Kulam Thodu	0.25	8
		Velaam Kodu Thodu	0.55	43
		Velaamkodu Thodu	0.5	26
		Chittaattinkara Thodu	0.35	35
		Maamam Chittaattinkara Thodu	0.24	12
		Maamam Perumaal Madam ela Thodu	0.58	22
		Attakkulam Thodu	0.24	27
		Kanjiramkonam Mavira vila Thodu	0.1	43
		Maavaravila Thodu	0.1	43
		Kodumon temple Pond to Vamanapuram river (Main Drain)	0.6	18
		Kannankara konam Kulam	27	28
		Harishree kulam Thodu	0.1	52
		Kizhakkumpuram Elaa thou	0.24	17
		Madathilkonam Pond	0.3	30
	Kaithodu	1	25	

2. KOLLAM

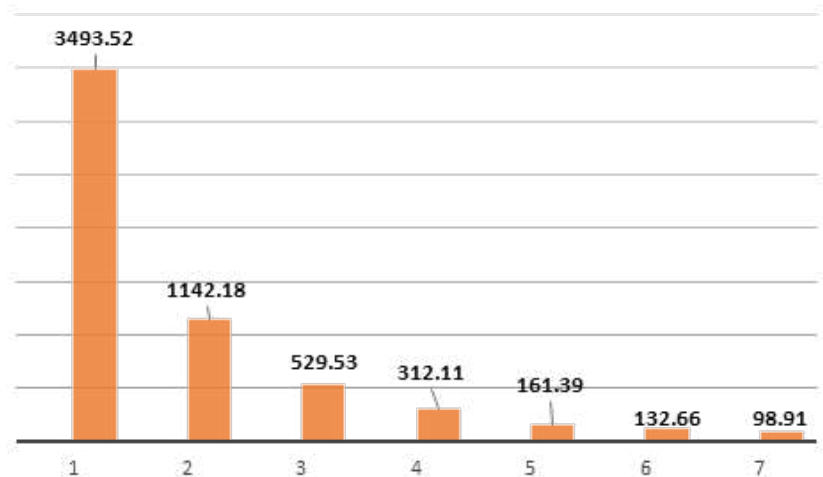
Kollam (earlier known as Quilon), one of the famous trading towns of Kerala has a distinctive place in the mineral map of Kerala. It is located on the southwest part of Kerala State and extends from Arabian sea to the Western Ghats and is bordered by Thiruvananthapuram district on the South and Alapuzha and Pathanamthitta districts in the North and Tirunelveli district of Tamil Nadu State in the East and Lakshadweep Sea in the west. It lies between North latitudes 8 0 45' and 90 07' and East longitudes 760 29' and 770 17'. It has a geographical area of 2491 sq. km.

Population of the district is 2629703 as per 2011 census and the population density is 1056 persons per sq km. Kollam district has a single revenue division with headquarters at Kollam. Pathanapuram, Kunnathur, Kottarakkara, Karunagapally and Kollam are the six Taluks in the district. The district is further subdivided into 4 Municipalities, 11 Block Panchayats, 68 Grama Panchayaths and 105 villages. Paravoor, Punalur and Karunagapally are Municipal towns and Kollam has the status of a City Corporation.

The district is drained by three west flowing rivers, viz Achenkovil, Kallada and Ithikara, originating in the eastern hilly region. These rivers together with their tributaries exhibit dendritic pattern of drainage. Ithikara basin has its elevation north of Madathara (271 m amsl) on the eastern side and slopes down to sea level west of Mayyanad. Ithikara river originates from Madatharaikunnu hills, south west of Kulathupuzha and drains into the Paravoor backwaters near Meenad. The length



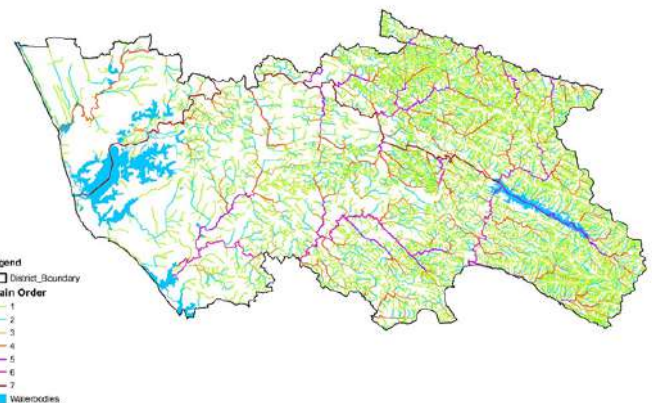
Orderwise length of drains in Kollam District (Km)



KOLLAM DISTRICT
(Drains)

of the river is 56 km and the drainage area is 779 km². Kallada river basin has its highest elevation at Karimalaikodkal (1763 m amsl) on the eastern side and reaches almost sea level west of Karunagapally. The river originating from the Western Ghats drains into Ashtamudi backwaters near Kollam. Length of the river is 121 km and drainage area is 1996 km². Kallada river has a gradient of 12.6 m/km. Achenkovil river originates from the Western Ghats and covers a basin area of 1484 km² and the main channel length is 128 km. The River joins

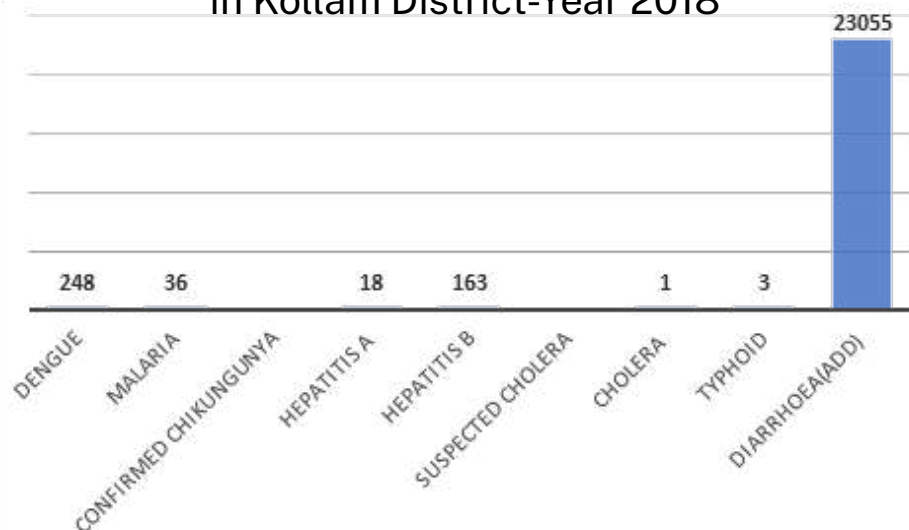
Pamba river at Veeyapuram and finally drains into Vembanad lake. The district is blessed with the largest freshwater lake at Sasthamkotta. The lake occupies 440 hectares and the catchment area of the lake is 1269 sq km. Other major lakes (Kayals) in the district are Ashtamudi Kayal -6424 ha and Paravoor Kayal -662 ha.



The district receives an annual average rainfall of about 2430 mm. Southwest monsoon from June to September contributes nearly 55% of the total annual rainfall. Northeast monsoon season from October to December contributes about 24% and the balance 21% is received during January to May as pre-monsoon showers. Out of the total 119 rainy days, about 70 rainy days occur during the southwest monsoon season.



Reported communicable diseases in Kollam District-Year 2018



Physiographically, the district can be divided into three distinct units viz. the coastal plains, the midlands and the eastern highland regions. The coastal plains with an elevation ranging between 0-6 m amsl occur as narrow belt of alluvial deposits parallel to the coast. To the east of coastal belt is the midland region with altitude ranging from 6-80 m amsl. The midland area is characterised by rugged topography formed by small hillocks separated by deep cut valleys. The midland regions show a general slope towards the western coast. To its east is the high land region. Major parts of the catchment of river Kallada and Ithikara fall within this unit. This unit occupies the maximum area of the district. The district has several fresh water drains in the Midland regions. The campaign “Ini Njan Ozhukatte” is focused on the rejuvenation of these drains. As the towns of Pathanapuram and Kottarakkara developed, stream network in the area deteriorated. Encroachments, dumping of waste and garbage into the streams makes the streams polluted and free flow blocked.

Physiographically, the district can be divided into three distinct units viz. the coastal plains, the midlands and the eastern highland regions. The coastal plains with an elevation ranging between 0-6 m amsl occur as narrow belt of alluvial deposits parallel to the coast. To the east of coastal belt is the midland region with altitude ranging from 6-80 m amsl. The midland area is characterised by rugged topography formed by small hillocks separated by deep cut valleys. The midland regions show a general slope towards the western coast. To its east is the high land region. Major parts of the catchment of river Kallada and Ithikara fall within this unit.



This unit occupies the maximum area of the district. City Corporation led the campaign at Kattakka Kayal Thodu on 23rd December 2019. 27827 volunteers participated in the campaign including the workers from MGNREGS. 276.27 km drains could be in 73 LSGIs in Kollam district.

Smt. J Mercykutty Amma, Hon'ble Minister for Fisheries, Govt. of Kerala, inaugurated the district wise campaign at Pazhangalam Thodu in Nedumbana Village in the presence of Gram Panchayath President Sri.S Nazarudheen on 15th December 2019. Sri.G S Jayalal MLA (Chathannoor) led the campaign at Thalakkulam-Pangatt Chira Ela Thodu (Poothakkulam) and Chirakkara Thodu (Chirakkara) on 18th December 2019. He inaugurated the the campaign at Kadayil thodu (Kalluvathilkkal) also. Sri. R Ramachandran MLA (Karunagappally) led the campaign Njakkumpilath Thodu, Thodiyoor on 19th December 2019. He participated in the campaign at Lakshmi Thodu (Alappadu), Thottinkara Thodu (Ochira) and Pattoli Thodu (Karunagappalli) Smt.Aisha Potty MLA (Kottarakkara) inaugurated the campaign at Pulamon Thodu of Mailom stretch, which is one of the major drains passing through Kottarakkara town. She also led the campaign at Thevalappuram-Parayil Mukku Thodu (Neduvathoor) on 20th December 2019 and Yakshikkuzhiyar Thodu (Veliyam) on 21st December 2019. Smt. Honey Benjamin Mayor, Kollam City Corporation led the campaign at Kattakka Kayal Thodu on 23rd December 2019. 27827 volunteers participated in the campaign including the workers from MGNREGS. 276.27 km drains could be in 73 LSGIs in Kollam district.

SL.NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED ONLY)	PEOPLE PARTICIPATED
1	Nedumbana	Pazhangalam Thodu	12	500
2	Poothakulam	Thalakkulam Pangadu chira Ela Thodu	3	280
3	Thekkumbhagam	Pakulam Thodu	0.6	128
4	Vettikavala	Velamkottu Vaidyasala Thodu	2	130
5	Chirakara	Chirakara Thodu	8	1175
6	Ittiva	Kavumkangal Thodu	9	750
7	Thenmala	Andoor pacha thodu	6	600
8	Kulashekarapuram	Kaliyikkal Thodu (Kaithodu Vazhicanal)	1	220
9	Thodiyoor	Njakkumpilathu Thodu	1.5	245
10	Piravanthoor	Thachakulam Eruthamkuzhy Athikkara Ela Thodu	1.5	465
11	Pattazhi	Kelur panayam Thodu	4	205
12	Mailam	Pulamon Thodu	15	2445
13	Kulakada	Shanthiyil Kathiravan kunnu vor Thodu	2	152
14	Perinadu	Cherumoodu Chemmakadu Thodu	3.5	800
15	Perayam	Karikuzhy Thodu	0.25	215
16	Chithara	Pazhavoorkonam Irappupara	5	360
17	Ilamadu	Pattankode Ela Thodu	2	290
18	Nilamel	Poovathoor Kaloore Thodu	10	395

19	Mantrothuruth	Karoothara Thodu	2	100
20	Shooranadu South	Kurumbolil Karuthara Thodu	1	750
21	Anchal	Vattamon Thodu	1	480
22	Karavaloor	Thazhe vathikkal Thodu	0.7	785
23	Poruvazhi	Venkulam Ela Thodu	3.62	350
24	Pattazhi Vadakku	Parapuzha Thodu	4	210
25	Chadayamangalm	Kannankodu Chadayamangalam Olipuram Thodu	4	405
26	Melila	Melila Valiya Thodu	3	174
27	Kalluvathikkal	Kadayil Thodu	2.5	302
28	West Kallada	Thiruppaserry - desha Kollam Thodu	5	95
29	Kunnathoor	Tamizhamkulam Ela Thodu	4	221
30	Neendakara	Lakshmi Vilasam Thodu	4	232
31	Punalur Municipality	Vettipuzha Thodu	2.5	1050
32	Klappana	Parayanathu Kakkambal Aayiram Thengu Thodu	3	632
33	Adichanalloor	Venmani Chira Thodu	4	365
34	Neduvathoor	Thevalappuram Paarayil Mukku Thodu	3	250
35	Chathanoor	Chathanoor Thodu	4	505
36	Aryankavu	Karimbin Thodu	2	600
37	Kulathupuzha	Kunniman Thodu	4	507
38	Panmana	Malamel Thodu	2	100
39	Veliyam	Yakshikuzhiyar Thodu	4.5	350
40	Pooyapalli	Maruthamonpalli Thodu	5	350
41	Ilambaloor	Nejattayil Thodu	7	250
42	Kizhakkekallada	Naduthodu	6	220
43	Velinallor	Mulayarachal Madathil Ela Mupallikonam Thodu	3	460
44	Kummil	Kondody sambhramam Thodu	8	650
45	Paravur Municipality	Pashuman Ollaal Thodu	2.5	310
46	Ummanoor	Perumba Thodu	5	247
47	Kottangara	Peroor Temple Aamakodu Thodu	3	70
48	Thrikkaruva	Mulaykkal Ela Thodu	3	500
49	Ezhukon	Moozhiiyl Vadamonkavu mannathu thodu	3	250
50	Panayam	Charukaad ela thodu	3	450
51	Aalapadu	Lakshmi Thodu	1	215
52	Chavara	Thondalil Chalil	1	464
53	Oachira	Thottinkara Thodu	1.5	450
54	Kariipra	Idakkidam Thodu	6	168
55	Vilakkudi	Kunnikkodu Melila Karani Valiya Thodu	3	350
56	Thevalakkara	Ammayar Thodu(Mukkatharamel Mukku)	5	350

57	Karunagapally Municipality	Pattoli Thodu	0.2	125
58	kottarakkara	Nischira Elaa Thodu	4	422
59	sooranadu north	Keezhukida Elaa Thodu	7	500
60	kadakkal	Palaykkal Ela Thodu	2	500
61	Pavithraswaram	Pangode Kulakkavu ela Thodu	3	190
62	sasthamkotta	Musaliar Farm Thodu	0.4	225
63	Mainagapally	Mundakam Padam Ela Thodu	2.5	300
64	Kollam Co operation	Kattakka Kayal Thodu	4.5	120
65	Kundara	Mukkoodu Chamundi Moola Thodu	3.5	250
66	Eroor	Aduppupara Mothalaayikkal Thodu	5	500
67	Alayamon	Mukkodu Chovaloor Thodu	5	1000
68	Thrikkovilvattom	Kallupala Puthuchira Thodu	3	23
69	Pathanapuram	Vazhappara Kallukadavu Thodu	5	20
70	Thalavoor	Pazhanjikkadavu Thodu	6	20
71	Mayyanadu	Umayanalloor Ela Thodu	3.5	20
72	Thazhava	Thazhava Vattakkayal Thodu	4	20
73	Idamulaykkal	Idamulaykkal Thodu	1.5	20

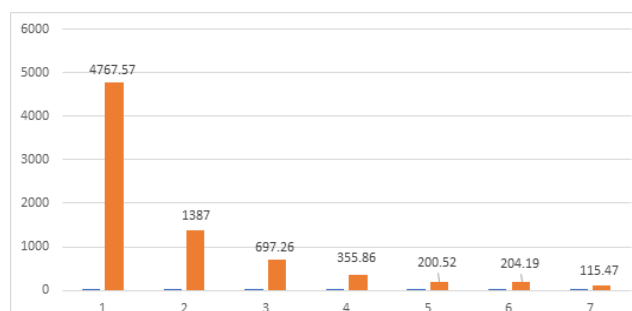
3. PATHANAMTHITTA

Pathanamthitta is an inland district of Kerala State covering an area of 2731 sq.km. It is bordered by Kollam district on the South and Alappuzha on the West, Kottayam and Idukki districts on the North and Tamil Nadu State in the East. It lies between North latitude 90 5' and 90 28' and East longitudes 760 30' and 770 17'. As per census 2011, Pathanamthitta district has a population of 1,195,537. The density of the population is 453 in 2011 compared to 468 of 2001. There are no major industries in the district. Agriculture based activities are predominant.

The district has two revenue divisions namely Thiruvalla and Adoor and six taluks - Adoor, Kozhencherry, Konny, Thiruvalla, Mallapally, and Ranni. Municipalities in the District are Pathanamthitta, Adoor, Thiruvalla and Panthalam. There are eight blocks viz Parakode, Pandalam, Elanthoor, Konni, Mallappally, Rani, Koipuram and Puli-keezhu. Ranni is the biggest block of the Thiruvalla division with an area of 1004.6 sq.km and Konni block of Adoor division has an area of 841.26 sq.km. There are 53 Grama panchayats and 69 revenue villages in the district.

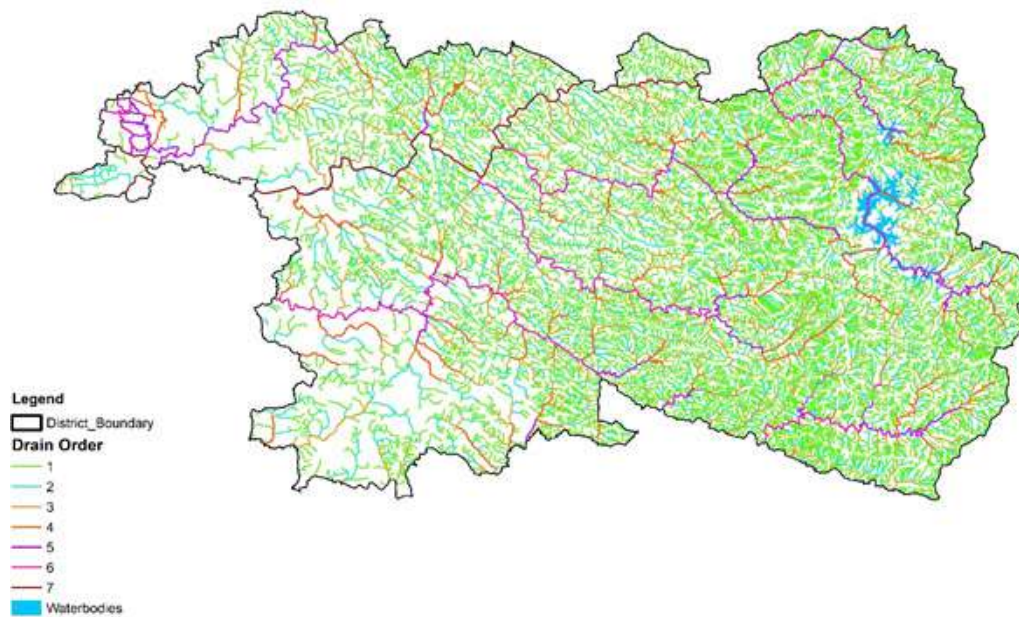


Orderwise length of drains in Pathanamthitta District-Km



The district is drained by Pamba, Achankovil, Manimala and Kallada Rivers. These rivers with their tributaries exhibit a trellis pattern of drainage in the eastern part, a dendritic pattern in the western part of the district. Almost 57% of the district area is occupied by forest and only about 31%

PATHANAMTHITTA DISTRICT
Drains

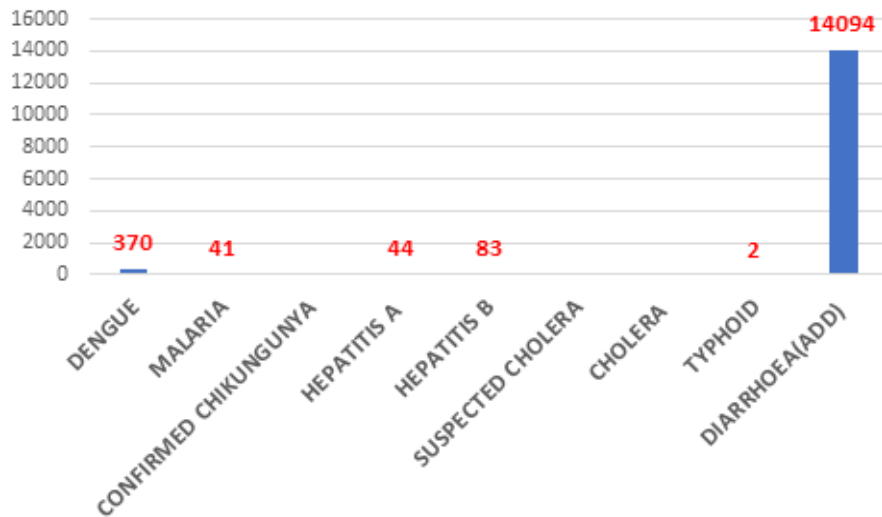


ried by forest and only about 31% is the net area sown. Important crops are Coconut, Rubber, Paddy, Banana and Pepper. Though the total cropped area in the district is 1151 sq. km, the area sown more than once is 317 Sq. km. Irrigation facilities are confined to the valleys in the midland area. Only 2.2% of the area of the district has irrigation facilities. The total length of the drains (till 7th order) in the district is 7728.47Km.



Climate is generally wet. District receives an average rainfall of 3133.9 mm annually. Major rainfall contribution is from south-west monsoon. Rainfall during south-west monsoon contributes nearly 56.8% of the annual rainfall. North East Monsoon and summer showers contribute to the rest of the rainfall received in the District. Eastern part of the district receives maximum rainfall in comparison with the western part. Area around Konni receives the highest rainfall and the area around Adoor receives the lowest. Physiographically, the district can be divided into three units viz. the plainlands in the west, the midland region in the centre and the hill range in the east. Elevation varies from <5 to 1500 m amsl. The midland region in the western part of the district is of undulating terrain of narrow and broad valleys.

Reported communicable diseases in Pathanamthitta-Year 2018



Pathanamthitta was badly hit by the floods in the year 2018. Landslides are also common in the District. Recent floods revealed the impact of the lost stream network in the District. Eastern part of the District was badly hit during the floods. It is also revealed that the Eastern portion of the District is badly affected during drought also.



“Ini njan ozhukatte” campaign was a great success in the District as the residents understood the importance of their drainage network. 163.25 km of streams were rejuvenated within a time span of 7 days. 61 drains from 57 Local Self Government institutions were cleaned and desilted by a volunteer force of 14959.

Smt. Veena George MLA (Arnamula) inaugurated the campaign at Melechira Valiya Thodu in Omalloor Grama Panchayath on 19th December 2019. She also led the campaign at Pulimood Varyapuram Thodu (Ilanthoor) and Panangad Pomthodu (Kulanada). Smt. Mercykutty Amma, Hon'ble Minister for Fisheries of Govt. Of Kerala led the campaign at Chennankara Karimalan Thodu (Kodumon) on 28th December

2019. Sri. Mathew T Thomas MLA (Thiruvalla) led the campaign at Kottamundakam Thodu (Kaviyoor), Kakkayil Neerchal (Kadapra), Madhuram Puzhachal (Kadapra), Muttunkeri Vattadi Valiyathodu and Chanthathodu (Thiruvalla). Sri. Raju Abraham MLA (Ranni) coordinated the campaign at Chalappalli Thodu (Kottanad), Theeyadikkal, Valiya thodu (Ayiroor) and Pulimukk Pampa Thodu (Ranni).



Sri. K U Janeesh Kumar MLA (Konni) led the campaign at Kavum moola Thodu (Chittar), Valiyathodu (Kalathoor) and Chennankara Karimalan Thodu (Kalathoor). Sri. Chittayam Gopakumar MLA (Adoor) led the volunteers at Kilivayal Puthusseri Thodu (Erath), Shavakkottappadi Thodu (Pallikkal), Puthuvathukkal Ela Thodu (Adoor) and Mavara Valiya Thodu (Panthalam). Garbage collected from the campaign was scientifically disposed by Harithakeralam mission.



“Ini njan ozhukatte” campaign was well organised and structured in the District. Committees were formed in advance and action plans are drawn for ensuring sustainability of the interventions.

SL. NO	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED ONLY)	PEOPLE PARTICIPATED
1	Anicadu	Vilangumpara Thodu	1.8	100
2	kaviyoor	Kottamukam Thodu	0.85	120
3	Kottangal	Valichayil Thodu	2.5	115
4	Kottanad	Chalappally Thodu	1.5	350
5	Kallooppara	Plankoottathil Thodu	0.75	170
6	Kunnamthanam	Ambalathumpady - Ottiyakuzhy - Kothavilachal	1.45	520
7	Mallappally	Para Thodu	3	180

8	Kadapra	Kakkayil Neerchal	0.85	70
9	Kuttur	Madhuram puzhachal	2.2	300
10	Niranam	Muttumkerry - Vattady Valiya thodu	2.5	500
11	Nedumbram	Vaikkathillam puthen Thodu	3	700
12	Peringara	Pulluveli - Pannikuzhy Thodu, Illathu Thodu	3	60
13	Azhiroor	Theeyadikkal valiya Thodu	2.5	84
14	Eraviperoor	Padathu palam Thodu	2	300
15	Koyipram	Muttumon - Ovanalil padi - Marangattuchira Thodu, Poykayil Kalluvarikkal, Tholum kuzha	3	70
16	Thottapuzhassery	Erappan Thodu	1.2	100
17	Ezhumattoor	Parakadav	4.5	255
18	Puramattam	Vennikulam valiya Thodu	2.5	71
19	Omallur	Melechira valiya Thodu	2	250
20	Chenneerkara	Vayppuvelil ela Thodu	2.5	172
21	Elanthoor	Pulimoodu Varyapuram Thodu	1.5	300
22	Cherukole	Kuzhimannil padi - Kattoor Ela Thodu	1.2	100
23	Kozhencherry	Ayanthi Thodu	0.8	190
24	Mallapuzhaserry	Valiya Thodu	7	120
25	Naranganam	Vazhithanam Kalleli mukku - Perumthodu	4.5	55
26	Ranni	Valiya kalunk Kalapalam Thodu	1	130
27	Ranni Angadi	Aruvikkal pulimukku pamba Thodu	5	150
28	Ranni Pazhavangadi	Ozhuvan para Thodu	5	121
29	Ranni Perunadu	Naranam Thulapadi Thodu	4	600
30	Vadasserikara	Chirakkal	2	150
31	Chittar	Thekkekara kavummoola Thodu	4	150
32	Seethathodu	Thekkummoodu Thodu	2	350
33	Naranamoozhi	Athikkayam madanthamon Aarattumon thodu	4	137
34	Vechoochira	Paruva - Oropoyka- Pamba nadhi	1.5	100
35	Konni	Vallattu Thodu	1	200
36	Aruvappulam	Pulinjani Thodu Aanakuthi achankovil Thodu	3	400
37	Pramadom	Plavila vaaluthundil padi Thodu	0.75	100
38	Mylapra	Mannarakulanji - santhi nagar Thodu	4	200
39	Vallicode	Valiyathodu	2	100
40	X ^{nt} mSv Than-nithodu	Pathalil padi valiyathodu	0.4	280
41	Malayalappuzha	Kulathungal padi - Chengolikkal padi Thodu	3	250

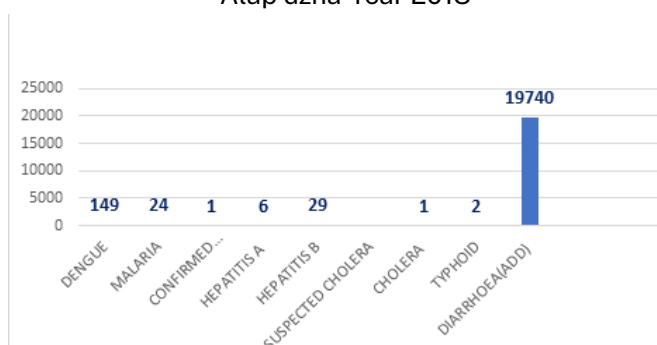
42	Mezhuveli	Eramathil padi - Ramanchira Thodu	2.5	200
43	Thumbamon	Mavara Thodu	4	95
44	Kulanada	Panagadu Pomthodu	5	395
45	Pandalam Thekkekara	Ponnumthottathil padi – Paranthal valiya thodu	4	250
46	Aranmula	Vettikal Thodu	3	80
47	Enadimangalam	Kuthiramon -Adappupara Thodu	2	60
48	Erathu	Vayala Kilivayal Puthussery phagam Thodu	2	270
49	Ezhamkulam	Kallupalam - Thottathil padi valiya thodu	4	150
50	Kadampanad	Kalayamangalam chembakaserry valiya thodu	2	250
51	Kalanjoor	Valiyathodu	12	2000
52	Kodumon	Chennangara Karimalan Thodu	9	1800
53	Pallikkal	Kallinal Shavakottapadi Thodu	3	270
54	Adoor Municipality	Puthuvathukkal Ela Thodu	2	160
55	Thiruvalla Municipality	Chantha Thodu	2.5	159
56	Pandalam Municipality	Muttar- Kilikollur Mavara Valiyathodu	1	70
57	Pathanamthitta Municipality	Mundukottaykkal Thazhe Vettipuram Thodu	4	80

4. ALAPPUZHA

Alappuzha (Alleppey) is one of the well-developed coastal districts in southern part of Kerala, covering an area of 1,414 sq.km and is the smallest district in the State. The district lies between North latitudes 90 05' and 90 54' and East longitude 760 17' and 760 36' and is surrounded by Lakshadweep Sea on the west, Kottayam and Pathanamthitta districts in the east, Kollam district in the south and Ernakulam district in the north. According to 2011 census, the district has a population of 2121943 and The population density is 1501 persons/sq.km, highest among all the districts of the State. Alappuzha is the Headquarters of the district. The district has 6 taluks viz. Cherthala, Ambalappuzha, Kuttanad, Karthikapally, Chengannur and Mavelikara which have further been subdivided into 12 Block Panchayats and 72 Grama Panchayats. District has 93 village divisions as the lowest revenue administration. There are six municipalities namely Chengannur, Alappuzha, Kayamkulam, Mavelikara, Cherthala and Harippadu. Alappuzha town is criss-crossed by navigable canals that are that are connected to Kochi in the north and other important towns in the east.



Reported communicable diseases in Alappuzha-Year 2018



Alappuzha district is drained mainly by the Pamba River and its tributaries viz. Achankovil and Manimala Rivers. The Pamba River drains an area of 804 sq.km of the district and forms a deltaic region skirting the southeastern, southern and southwestern fringes of Vembanad Lake. The Manimala River enters the Kuttanad area at Thondara

ALAPPUZHA DISTRICT
(Drains)



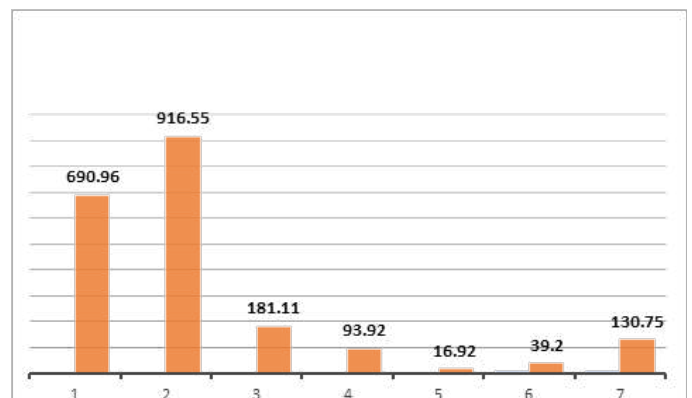
and confluences with Pamba River at Neerettupuram. Achancovil river enters Kuttanad at Pandalam and joins Pamba River at Veeyapuram. Five rivers drain into Vembanad lake in the District, the largest backwater in the State. The district receives an average annual rainfall of 2965.4 mm. The southwest monsoon season from June to September contributes nearly 60.3% of the annual rainfall. Canals and tributaries carry major part of the rainfall into the lakes and rivers. The District is among the worst affected during the floods of 2018 and 2019. A major part of the district forms part of the coastal plains. The general elevation of the area is less than 6 m above mean sea level with some parts of the area below mean sea level in the range of 1-2m.

“*Ini njan ozhukatte*” (“*Let me flow now*”) campaign in Alappuzha is mainly focused on the rejuvenation of streams connecting the canals, tributaries and other local drains. The district-wise campaign was inaugurated by Hon’ble Minister Shri.P Thilothaman (Food and Civil Supplies Minister, Kerala) in the presence of Shri. A M Arif MP (Alappuzha) at Thanneermukkom on 14th December 2019. Harithakeralam Mission organized the campaign with the support and leadership of Local self Governments. Rejuvenation of irrigation canals and other major canals such as PIP canal stretches from northern direction of Koyikkal were carried out with the help of MGNREGS.



Panchayath presidents took leadership at several places of Alappuzha in rejuvenating streams like madayam thodu (Aryad), Pozhikal (Breakwaters at south of Mararikulam), Utharapalliyar (Aala), Railway-Mulamoottil-Idamuripalam Thodu (Cheriyanaad), Thrukkek-

Orderwise length of Drains in Alapuzha (Km)





kad-Kathamcheril Thodu (Thiruvandoor), Irattappana Mundar Thodu (Budhanoor), Oorikkadavu Thodu (Mulakkuzha), neer Padam Thodu (Venmani), Koyikkal junction to jagaja canal (Chennithala), Ilambanam thodu (Mannar), Pamba Irrigation Project Canal (Thazhakkara), Karoor Neerthadam Kannittakadav Canal (Purakkad), Vadakkeppuram Thodu (Ambalappuzha), Chembuthodu

(Kumarapuram), Pallippad (Moolathod), Othalappuzha Thodu (Chettikkulangara), Madhavasseri Thodu (Chambakkulam), Pandankari (Edathva), Kottayal temple thodu (Edathva), Kuzhikkala colony Thodu (Ramanakari), St, Xaviers Thodu (Muttar), Ayiraveli Thodu (Kainakari), karuvakkal thodu (Thalavadi), Aakkappalli Thodu (Mavelikkara) and Eerothodu (South Punnapra). Removal of debris and silt helped in attaining the original carrying capacity of the drains. Collected garbage was segregated and sorted well with the help of “Harith Karma Sena” (Green Action Force) and “Harithasahaya Sthapanangal” (Green Help Institutions).

7656 dedicated people representing the local community, Organisations, volunteers from various institutes and cultural platforms made the campaign “Let Me Flow Now” a great success. 33 drains from 32 LSGIs having a total length of 32.83 km could be rejuvenated.

SL. NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED ONLY)	PEOPLE PARTICIPATED
1	Aryad	Madayam Thodu	300	150
2	Muhamma	Kallathodu	500	54
3	Cheriyannadu	Railway mulamootil Idamurippalam - Achankovil	500	22
4	Thiruvannoor	Thrikkekkadu katham cheril Thodu	800	85
5	Puliyoor	Charayilpadi motor Thara Thodu	200	80
6	Budhanoor	Irattappana Mundar Thodu	2800	480
7	Mulakkuzha	Oorikkadav Mayangal Thodu	800	444
8	Venmani	Idaneerppadam Thodu	100	60
9	Chennithala Thrippetherunthura	Koyikkal Junction to Jakaja Canal	500	40
10	Mannar	Ilambanam Thodu	5000	150

11	Thazhakkara	Pamba Irigation Project – main Canal	320	45
12	Purakkadu	Karoor Neerthadam – Vallakadav - Kannittakkadav	800	170
13	Ambalappuzha South	Nadukkemelathumkary Vadakkeppuram Thodu	910	120
14	Ambalappuzha North	Kopparakkaduv Mappilassery Thodu	600	180
15	Kumarapuram	Chembu thodu	1500	200
16	Karuvatta	Chembu thodu	800	150
17	Pallipadu	Moola Thodu	800	125
18	Karthika Palli	Chembu thodu	850	150
19	Chettikulangara	Othalapuzha Thodu	300	53
20	Chambakulam	Madhavserry Thodu	200	120
21	Edathua	Pankkary	150	42
22		Kottayil Temple	200	58
23	Ramankary	Kuzhikala Colony	250	110
24	Muttar	St. Xaviers Thodu	250	60
25	Kainakary	Ayiraveli muttel Bridge Thodu	1200	140
26	Thalavady	Karuvakkal Thodu	1500	300
27	Mavelikara Thekkekara	Thadathilal Aakkappally Thodu	650	43
28	Punnapra South	Eerothodu	500	100
29	Kanjikuzhy	Andisseri Thodu	900	112
30	Chennam Pallippuram	Parappel Thodu	800	100
31	Kayamkulam	Malayan Thodu	1000	56
32	Haripad	Pillathodu	500	60
33	Mavelikkara	T A Canal	400	94

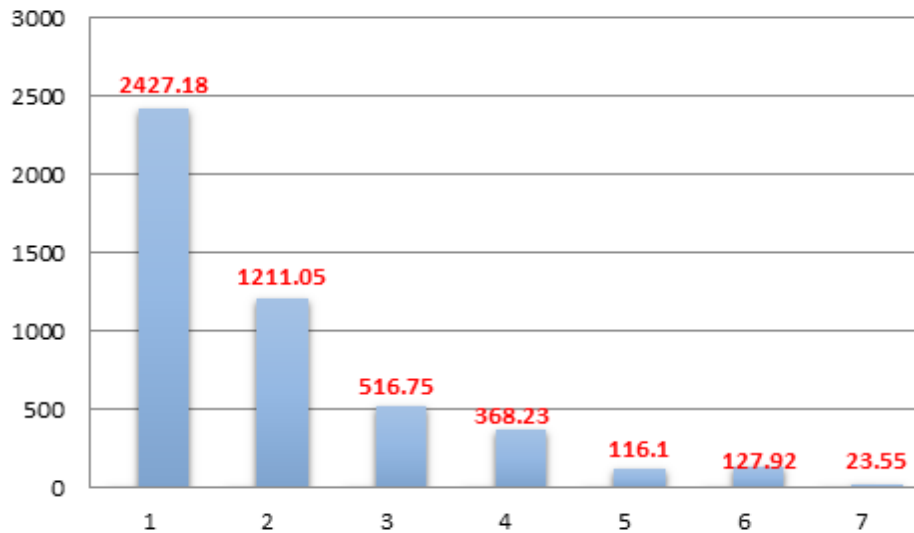
5. KOTTAYAM

Kottayam district is famous for the largest inland water body in the State i.e., Vembanad lake. The district is divided into two revenue divisions viz. Kottayam and Pala. There are five taluks in the district viz Kottayam, Changanacherry, Vaikom, Meenachil and Kanjirapally. The total number of grama panchayats, Block panchayaths and municipalities are 71,11 and 6 respectively. In 2011, Kottayam had a population of 1,979,384 and the density of population is 896 per sq.km.

Major rivers in the district are Meenachil, Muvathupuzha , and Manimala River. Meenachil River flows through Meenachil, Vaikom and Kottayam taluks. Total catchment area of Meenachil River is 1272 sq km and is formed by several streams originating from the Western Ghats in Idukki district. 66 percent of the land area of Kottayam district is drained by Meenachil River. Poonjar river joins Meenachil at Erratupetta, Chittar River at Kondur and Payapparathodu at Lalam. Finally, the river drains into Vembanad Lake. Muvattupuzha River originates from the Idduki district flowing mostly through vaikom taluk and joins the Vembanad Lake. Manimala river flows through Kanjirapally and Chanaganacherry taluks. Chittar joins it further down the west as it flows towards Alappuzha district. Streams of different orders having a total length of 4790.80 km drains the District.



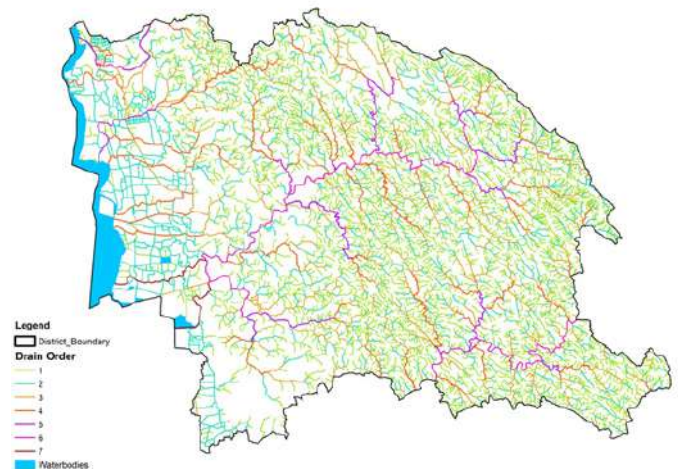
Orderwise length of drains in Kottayam District



Normal rainfall in the district is 2931 mm and analysis of rainfall data reveals that the distribution of rainfall increases from west to east. Highest rainfall is recorded at Pala while the lowest rainfall is received at Ettumanur. In general, the district has a wet type of climate with four seasons. Hot summer season is from March to May, southwest monsoon from June to September, North-East monsoon season from October to December and cool climate during January and February. The district is divided into three well defined physiographical units namely lowland, midland and highland. Midland area has an elevation of 7.5 to 75 m amsl covers around 1287.75 sq km and the highland area with an elevation of more than 75 m amsl covers around 508.8 sq km. Midlands and highlands have large number of drains that carry flood water downstream. These streams ensure free flow of flood water and ground water recharge. A major part of Kottayam, Changanassery and Vaikom taluks fall in the midland region and the Harithakeralam district mission and the selected drains mostly from these regions.

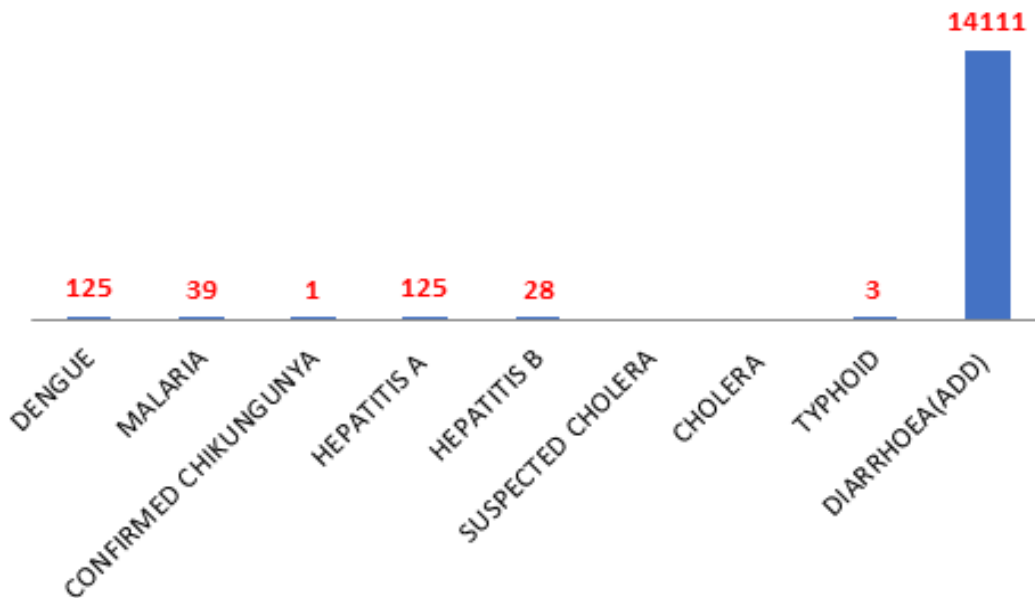
The district has seen a major intervention in Meenachil-Meenanthara-Kodoor re-linking initiated by Harithakeralam Mission and taken forward by the implementing departments

KOTTAYAM DISTRICT
(Drains)



and volunteer organisations. The intervention Water scarce regions of Mannarkkand, Vijayapuram, Ayarkunnam benefitted by bringing in more than 1100 Acres of land under cultivation. Re-establishment of the drainage network also ensured proper drainage of the low lying areas.

Reported Communicable diseases
in Kottayam District-Year 2018



Most of the streams got blocked due to silting up and garbage dumping. Harithakeralam mission associated several govt. departments, representatives from NGOs and LSGIs for the rejuvenation of streams. An NGO named Green Fraternity took the initiative in cleaning Nattasseri Thodu. This intervention was inaugurated by Dr. T M Thomas Isaac, Hon'ble Minister for Finance on 28th August 2017. Experience gained through this intervention helped in formulating realistic action plan for "in njan ozhukatte" in the district in Kottay-



am the campaign gained importance as a post flood intervention, as the District was badly hit in the recent floods. Sri. P Thilothaman (Minister of Food and Civil Supplies, Govt. of Kerala) inaugurated the campaign at Iruveli thodu in Nannaveli Thodu in Manjur village on 20th December 2019. 300 volunteers from Haritha Karama Sena, Merchant's Associations representatives, Kudumbasree volunteers and Non-Government Organisations joined the campaign. Members of Legislative assembly inaugurated and led the campaign at several places. Smt. C K Asha MLA (Vaikom) inaugurated the campaign at Panachithiruth Thodu (Thayaazham) and Pullanthiyar Thodu (Chembu), Sri. Suresh Kurup MLA (Ettumanoor) at Kallumada Kuzhithoorkaithodu (Aymanam),

Sri. Mons Joseph MLA (Kaduthuruthi) at Uzhavoor thodu (Uzhavoor) and Sri.Jayaraj MLA (Kanjirappalli) at Kakkathodu (PALLikkathodu). Sri Thiruvanchoor Radhakrishnan MLA (Kottayam) led the campaign in iranja lPalam (Kottayam Municipality). 8395 volunteers joined hands to rejuvenate 62 drains under 66 LSGIs having a length of 169.35.

The District is fast developing increasing the pressure on land. Lot of lower order drains are either filled up or diverted. “Ini njan ozhukatte” campaign launched after the floods could create awareness among public in maintaining the stream network.



SL.NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED ONLY)	PEOPLE PARTICIPATED
1	Thalayazham Grama Panchayat	Panachithuruth Vakkethara Thodu	2	260
2	Chempu Grama Panchayat	Pullanthiyar Thodu	3	150
3	Maravanthuruthu Grama Panchayat	Payikode Thodu	1.3	40
4	T. V. Puram Grama Panchayat	Marotty chuvadu, Mallatt pallipalam Thodu	0.5	20
5	Vechoor Grama Panchayat	Muchoorkavu Thottapallil	2	400
6	Kaduthuruthy Grama Panchayat	Chulli Thodu	6	400
7	Kallara Grama Panchayat	Kallukadav Thodu	2.3	400
8	Mulakualam Grama Panchayat	Palanada Manipuzha Thodu	3	40
9	Njeezhoor Grama Panchayat	Valiya Thodu	10	150
11	Thalayolaparambu Grama Panchayat	Kurunthara puzha Thodu	1	200
12	Thiruvvarppu Grama Panchayat	Kanjiram, Kechupalam Vettikadu Thodu	2	300
13	Aymanam Grama Panchayat	Kallumada Kuzhithoor, Kaithodu	1	180
14	Athirampuzha Grama Panchayat	Mundakapadam Thodu	1	80
15	Arpookara Grama Panchayat	Karippa - Cherupushppam Kollamthara - Mukkel Thodu	4	20

16	Neendoor Grama Panchayat	Kannangakuzhy Thodu	1	80
17	Veliyanoor Grama Panchayat	Veliyanoor Thodu	1	20
18	Manjoor Grama Panchayat	Iruveli Thodu	1. 200	300
		Nannaveli Thodu	1	
19	Bharananganam Grama Panchayat	Kanjiramattam Nayikkanal Thodu	2	20
20	Karoor Grama Panchayat	Aazhuveli Thodu	3	80
21	Kozhuvanal Grama Panchayat	Mevida Thodu, Muttam Thodu, Arakkal Thodu	8	250
22	Meenachil Grama Panchayat	Parapallythodu	1.5	120
23	Mutholy Grama Panchayat	Puliyanoor Thodu	1.5	80
24	Melukavu Grama Panchayat	Konipadu Thodu	6	150
25	Moonilav Grama Panchayat	Maruthampara Chelithodu	3	100
26	Poonjar Grama Panchayat	Poonjar Aaru, Kavumkadavu Thodu Thodu	3	150
27	Poonjar Thekkekara Grama Panchayat	Pathambuzha Thodu	7	150
28	Teekoy Grama Panchayat	Chathambuzha Thodu	8	90
29	Thidanadu Grama Panchayat	Karimbanoli Thodu	6.75	100
30	Alakunnam Grama Panchayat	Pannagam Thodu	2	200
31	Elikulam Grama Panchayat	Kakkathodu	3	250
32	Kooropada Grama Panchayat	Pannagam Thodu	5	350
33	Pampady Grama Panchayat	Karimbil Thodu	2	190
34	Pallikathodu Grama Panchayat	Kaakkathodu	4	200
35	Puthupally Grama Panchayat	Kochumattam - Tharethara thodu	3	150
36	Panachikkadu Grama Panchayat	Pakkilchira Thodu	1.5	150
37	Kurichi Grama Panchayat	Kalambattu Thodu	4	20
38	Madapally Grama Panchayat	Mundupalam Kannotta Thodu	1.5	80
39	Paippad Grama Panchayat	Nerekadavu Ottathil Kadavu	1.5	80

39	Paippad Grama Panchayat	Nerekadavu Ottathil Kadavu	1.5	80
40	Thrikodithanam Grama Panchayat	Kunnathukadu Nerekadavu	3	20
41	Vakathanam Grama Panchayat	Kuttikadu nada Ponganthanam	3	20
42	Chirakkadavu Grama Panchayat	Kanayathodu	8	250
43	Kangazha Grama Panchayat	Idayirikkapuzha Valiyathodu	11	150
44	Nedumkkunnam Grama Panchayat	Chaathanadu Manthuruthi Thodu	2.5	300
45	Vellavoor Grama Panchayat	Vellavoor Valiyathodu	7	150
46	Vazhoor Grama Panchayat	Valiyathodu	6	260
47	Karukachal Grama Panchayat	Makkiyil thodu	2	130
48	Kanjirapalli Grama Panchayat	Chittarpuzha Anakallu Thodu	1	230
49	Koottikkal Grama Panchayat	Valitta Thodu	0.5	105
50	Manimala Grama Panchayat	Kondoor Thodu	1	150
51	Paarathodu Grama Panchayat	Paarathodu Poyka thodu	1	150
52	Koruthodu Grama Panchayat	Mannam Thodu	1	200
53	Kottayam Municipality	Iranjalpalam, Kanjikuzhy	2	150
54	Pala Municipality	Meenachilaar	1	150

6. IDUKKI

Idukki district is a densely forested, mountainous region between North latitudes 09°16' 30" and 10°21'00" and East longitudes 76° 38' 00" and 77° 24'30". Idukki district is located in the south-central part of Kerala and shares eastern border with Tamil Nadu. Idukki district has two revenue divisions with headquarters at Idukki and Devikulam. There are four taluks in the district, viz: Devikulam, Udumbanchola, Peerumade and Thodupuzha. These Taluks have 8 Block Panchayats, 52 Grama Panchayats and 67 revenue villages for administrative convenience. The Block Panchayats are Thodupuzha, Elamdesam, Adimali, Devikulam, Nedumkandam, Kattappana and Azhutha.

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Two west-flowing and one east-flowing river drain the district. Almost 80% of the district is drained by Periyar River, which is the largest river in Kerala that originates from the southeastern border of the district. The important tributaries of Periyar River in the district are Mulla Ar, Panni Ar, Puyankutti Ar, Perinjamkutti Ar and Muthirapuzha Ar. The Periyar River and its tributaries exhibit good structural control

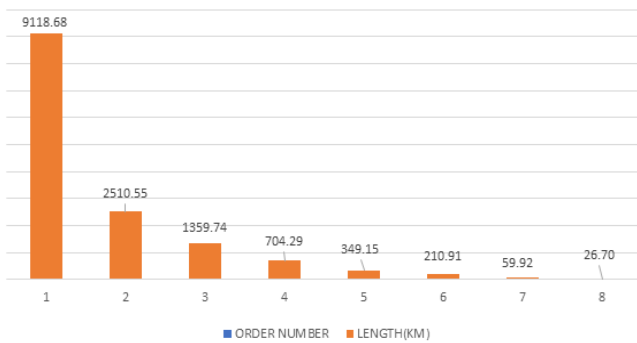
**IDUKKI DISTRICT
(Drains)**



and are aligned along major fracture zones. Two major tributaries of Muvattupuzha River viz. Kaliyar Ar and Thodupuzha Ar originate from Thodupuzha and Nagarampara reserve forests in the district. The northeastern part of the district is drained by the tributaries of Amaravathi River namely Pambar River and Ten Ar which are east flowing. A small area in the southern part of the district is drained by Azhutha River which is the tributary of the Pamba River. As per the data from land use board, Governemnet of Kerala, the total drain length (first to eighth order) is 14339.95 km.

The district receives an average annual rainfall of about 3677mm, ranging from less than 1000 (Marayoor, Kanthaloor, Chinnar areas and the areas northeast of Anamudi) to around 5000 mm (Peerumedu, Neriya mangalam etc).

Orderwise length of drains in Idukki District (Km)



Rainfall increases from east to west. The eastern part of the district lies in the rain shadow region of the Western Ghats. Southwest monsoon from June to September contributes about 60% of the total annual rainfall. The North-East monsoon from October to December contributes 24% of the annual rainfall and the remaining received during January to May.

SL.NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED ONLY)	PEOPLE PARTICIPATED
1	Adimali	Dheviyaar	2	58
2	konnathadi	Parathodu-Mukkudam Panikkankudi Thodu	3	100
3	Bisonvali	Uppar Thodu	7	50
4	Vellathooval	Ambazhachaal Thodu	2	84
5	Pallivasal	Kallar Puzha	4	82
6	Santhanpara	Panniyaar Puzha	3	72
7	Marayoor	Pallanaad Thodu	2	128
8	Pambandumpara	Haajiyaar padi-dhevagiri Thodu	1	40
9	Senaapathi	Maangaathotti Neerchaal	2	33

10	Nedunkandam	Paalaar	7	65
11	Raajaakkad	Pazhaya Viduthi Thodu	1	50
12	Udumbanchola	Parathodu Neerchaal	6	40
13	Rajakumari	Manjakkuzhi Thodu	1.5	165
14	Aal akkaode	Chavarna Thodu	1	500
15	Udumbannoor	Udumbannoor Idamuruk Thodu	1	400
16	kodikkulam	Valiya Thodu	3	1000
17	Velliyaammattam	Vadakkanaar	3	1000
18	Karimannoor	Karimannoor Thodu	8	650
19	Vaathikkudi	Periyaar Vali Puzha	2.5	100
20	Arakkulam	Nachaar	4	200
21	Kaamakshi	Parakkadavu Thodu	2	84
22	Vaazhathoppu	Pakittaan Thode	2	54
23	Mariyaapuram	Chattikkuzhi Thode	5	240
24	andanmedu	Aamayaar thodu	2.5	30
25	Kanchiyaar	Murikkattupadi Thodu	4	150
26	Chakkupallam	Karakkaadapi Kumariv- ikkattupara thodu	2	60
27	Irattayaar	Uppukandam Ayyamala thodu	1.5	60
28	Ayyappankovil	Koorampaara Thodu	4	85
29	Kumaramangalam	Mundupaalam Thodu	1	60
30	Muttom	Parapraam thodu	3	140
31	Manakkad	Nadayarthode	1.5	350
32	Purappuzha	Chellal Thodu	2	120
33		Marika Thodu	2	103
34	Peruvanthaanam	Azhuthayaaru	2	105
35	Kumaly	Springvalley Thodu	7	100
36		Rosaappookkandam	2.5	149
37	Kokkayaar	Pullakkarayaar	3	85
38	Elappara	Elappara Thodu	3.5	184
39	Kattappana Municipality	Kattappanayaar	2	92
40	Thodupuzha Municipality	Ilanji thode	2	250

Most of the local streams carry water from hill slopes and the discharge is very heavy with stormwater during rainy season. Carrying capacity of the drains in the District have reduced due to silting up, encroachments and dumping of debris. Frequent landslides also contribute to silting up of streams. Last year's monsoon rains have not only caused displacement and heavy damage to property in different parts

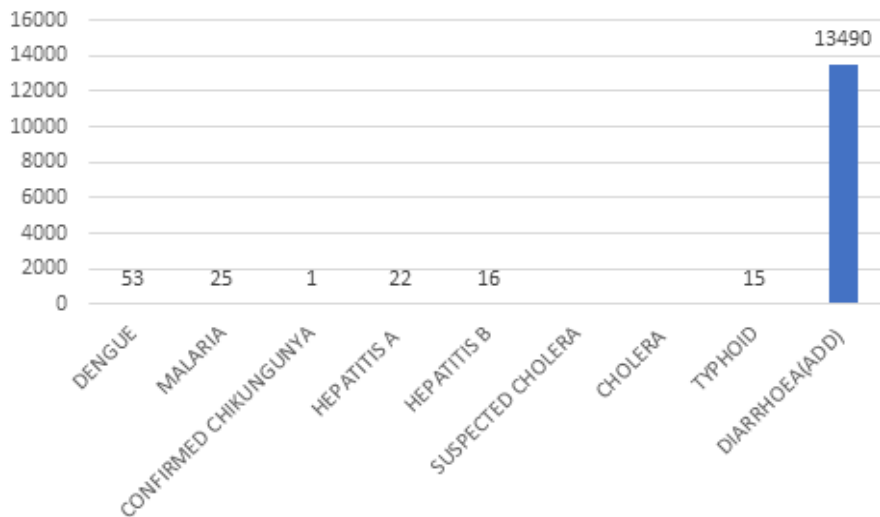
of the district but also pushed tonnes of plastic waste into the rivers and reservoirs.



The campaign “Ini Njan Ozhukatte” focused on creating awareness among the communities on reducing non-bio degradable wastes in the District.

The action committee led by Harithakeralam mission district team and LSGI representatives with the active participation of volunteers and the workforce of MGNREGS selected streams in the Grama Panchayats for cleaning and de-silting.

Reported communicable diseases in Idukki District-Year 2018



Smt.Kochuthresia Paulose, Idukki district panchayath president inaugurated the campaign in Mutharapuzhayar, Munnar on 20th December 2019. Members of other local self Government institutions joined the campaign in their locality. Streams were cleaned and the debris removed scientifically after proper segregation. Periyar wildlife sanctuary reported heavy waste dumping.



4km length of kooramparathodu in Ayyaooancoil was rejuvenated. 7318 volunteers participated in the campaign spread across 36 LSGIs. 38 drains of 112.5 km were rejuvenated up to 4th January 2020.

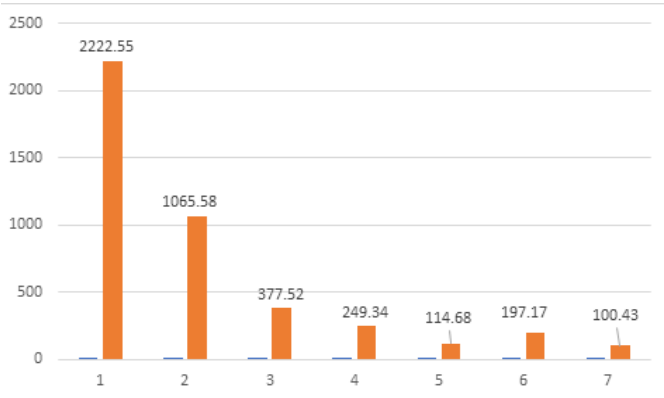
7. ERNAKULAM

Ernakulam district occupies the Central part of Kerala state and is bound by Thirur district on the north, Idukki on the east and southeast, Kottayam and Alappuzha districts on the south and the Lakshadweep Sea on the west. The district is spread over an area of 3068 sq. km. The district lies between North latitudes 09° 47' 13" and 10° 10' 44" and East longitudes 76° 10' 05" and 77° 05' 24". Ernakulam district is divided into two revenue divisions and seven taluks. There are 14 Block Panchayats, 82 Grama Panchayats, 13 Municipalities and one Municipal Corporation in the district. The district has a population of 32,79,860.



The district is drained by Periyar and its tributaries in the north and Muvattupuzha River in the south. Periyar, the longest river in the state with a total length of 244 km originates from the cardamom hills of the Western Ghats, flows in a North-easterly direction initially and then in North-west direction as it flows through Idukki district before entering Ernakulam district at Neriamangalam. In downstream at Aluva, the river bifurcates into two: the Marthandavarma and the Mangalappuzha branches.. Periyar is a perennial river and is a source of drinking water for several major towns. Muvattupuzha River is formed by the confluence of Thodupuzha River, Kaliyar River and Kothamangalam River at Muvattupuzha. These rivers originate from the Thodu-

Orderwise length of drains in Ernakulam District

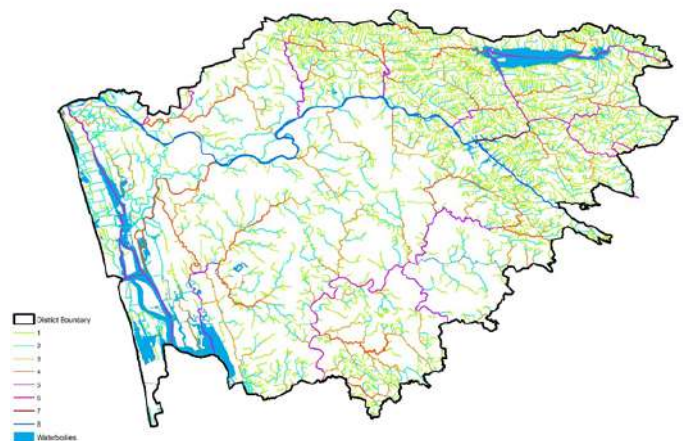


Ernakulam district is bordered to the south-west by Vembanad Lake which is the largest lake in Kerala. Besides Ernakulam, the lake is bordered by Alappuzha and Kottayam districts. The portion of the Vembanad Lake located in and around the Kochi mainland is known as Kochi Kayal. The lake is a part of the Vembanad-Kol wetland system which extends from Alappuzha in the south to Azheekode in the north, making it by far, India's longest lake at just

over 96.5 km in length. The lake is fed by 10 rivers flowing into it including the six major rivers of central Kerala namely the Achenkovil, Manimala, Meenachil, Muvattupuzha, Pamba and Periyar.

Ernakulam district has wet monsoon type of climate. The district experiences heavy rainfall during the southwest monsoon season followed by the northeast monsoon. During summer months, it is predominantly dry. March, April and May are the hottest months. December to February are the coldest months. The district receives an average 3359.2 mm of rainfall annually. The annual rainfall ranges from 3233 to 3456 mm at different places of the district.

ERNAKULAM DISTRICT
Drains



The district can be broadly divided into three physiographical units viz. (1) the Coastal plains (low lands) (2) the midlands and (3) the high lands. The general elevation of the coast is less than 8.0m. amsl and that of the midlands is between 8.0 and 76 m. amsl. The highlands have a general elevation above 76 m with a maximum of around 504 m. amsl. The entire taluks of Kochi and Paravur and major parts of Kanayannur fall under the coastal plain.



Drains for the campaign “Ini Njan Ozhukatte” are mostly away from the urban areas. Drains are polluted from various domestic and industrial sources. Waterborne diseases are common in the District. Campaign focused on clearing the drainage network of dumped in waste and accumulated silt.

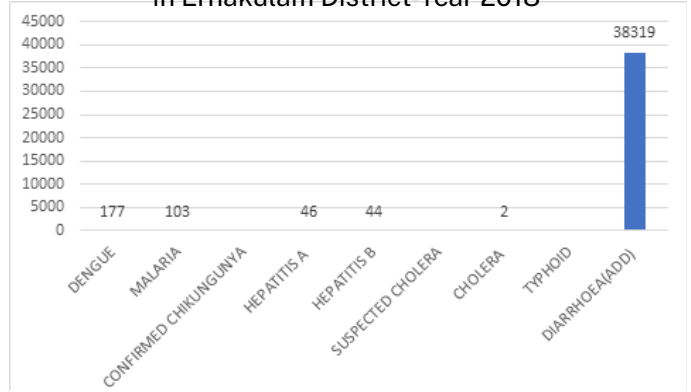
Smt. Dolly Kuriakose, district panchayath president inaugurated the campaign at Irappu Thod in Rayaman- galam on 18th December 2019. Antony john MLA (Kothamangalam) led the campaign at Karingad Mathirappilli Thodu in Varappetti on 27th December 2019.

The coordination committee decided to continue the campaign as a pre-mon- soon activity in all LSGIs in Ernakulam

District with the technical support of Harithakeralam mission. The committee could mobilise large number of volunteers, who were joined by MGNREGS workforce.



Reported Communicable diseases in Ernakulam District-Year 2018



Major portion of the district is coastal plains with crisscrossing canals. The campaign would move on to the coastal plains to clear the drainage network of the District.

SL.NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVE- NATED ONLY)	PEOPLE PAR- TICIPATED
1	raayamangalam	irappu	2	300
2	mulanthuruthi	Kaarikkodu Thodu	1.5	55
3	chottanikkara	Naagapaadi kidakkayam thodu	1	100
4	kumbalangi	Konathu Thodu	1	80
5	Karumaloor	Muriyaakkal Thodu	2.5	45
		Aanachaal Thodu	2.5	46
		Andhakaaratha Thodu	1.5	75
6	Perumbaavur	Krishnapuram Thodu	1	80
7	Thiruvaaniyoor	Asaraattithazham Thodu	0.5	120
8	Vengola	Valiyathodu	2	85
9	Pothaanikkadu	Irutt Thodu	2	70
10	Paigottoor	Nambolithazham Thodu	1	75
11	Kunnathu Nadu	Chakkalamukal	1	55
12	Edakkattuvayal	Thirumayoor Punja Thodu	0.5	70
13	Kunnukara	Adappa Thodu	2	120
14	Choornikkara	Muttath Thodu	1	65
15	Edathala Thodu	Nedum Thodu	2	45

16	Keezhmaadu	Thumbichaal Thanneerthadam	1	40
17	Vadakkekara	Vaavakkad Thodu	0.5	100
18	Pallippuram	Thekkekkad Thuthoochira	1	60
19	Aamballur	Ambazhavelil Thodu	2	55
20	Vaarappetti	Karingaad Mathirappalli	2	70
21	Aalangad	Nedungappuzha Thodu	0.6	50
22	Ezhikkara	Puthanthodu	1	45
23	Keezhmaadu	Moonnu Kayyanithuruthi Thodu	0.6	50
24	Pambaakkuda	Arekkal Thodu	0.2	200
25	Cheranellur	Idayaakunnam Puzha	3	20
26	Keerambaara	MukkamKUzhi Valiya THodu	0.5	50
27	Pallari Mangalam	Kothamangalam Thodu	3	90
28	Shreemoola Nagaram	Nadaykkapuncha Thodu	0.78	60
29	Parakkadavu	Kankaali Thodu	1	70
30	Kaanjoor	ManjkkappadamTHodu	1	57
31	Kalloorkkadu	Kattakadayil Thodu	0.7	75
32	Nelikkuzhi	Irumalloor Thodu	2	150
33	Karumaloor	Thrukkulam THodu	1	100
		Karuchira Thodu	1	100
34	Chengamanaad	Kaithaattu chira	0.5	100

8. THRISSUR

Thrissur is one of the important historical cities of Kerala, which is known as the cultural capital of Kerala. The district has an area of 3032 sq.km and is in the central part of the State. Thrissur district lies between North latitudes 10° 10' 22" and 10° 46' 54"; and East longitudes 75° 57' 20" and 76° 54' 23". The district has seven taluks viz. Chavakkad, Talappilli, Thrissur, Kodungallur, kuunankulam, Mukundapuram and kodungallur which comprises 16 block Panchayats, 86 Grama panchayaths and 7 municipalities. Density of population is 1,026 in 2011 compared to 981 in 2001. Thrissur district comes under three river basins viz. Ponnani, Keecheri & Karuvannur basins (Kole lands) and Chalakudy. Areal extensions of these basins are 510, 1691 and 830 sq.km respectively. The Kole lands are situated below mean sea level and are affected by tidal action. The drainage pattern of the rivers is 'trellis' and 'sub trellis' type in the upper reaches and dendritic in the coastal plain. In coastal and rural areas, farmers depend on ponds and tanks for irrigation.

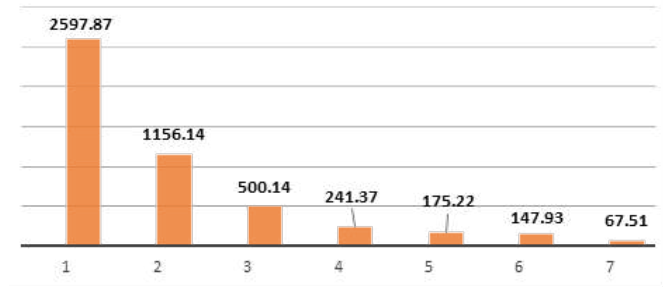
Thrissur district is characterized by wet climate and four types of seasons are identified. Hot summer season from March to May, the southwest monsoon season from June to September, the northeast monsoon season from October to December and a generally cool and salubrious climate period during January and February. The average annual rainfall ranges between 2310.1 and 3955.3 mm in the district with a mean annual rainfall of 3198.133 mm. The maximum rainfall occurs during the



period June to September (SW monsoon) and nearly 71.24% of the total rainfall is received during the season. 16.27% of the total rainfall is received during North-East monsoon between October and December, 12.1% of the total rainfall is received dur-

ing March to May and the balance 0.37% is accounted for during January and February months. The month of July experiences abundant rainfall and is the wettest month. The three geomorphologic units of the Thrissur district are coastal plain, midlands and high lands. Infilled valleys in the midland region occur between lateritic mounts and vary in length from 100m to 3.5 km, comprising alluvial sediments and are intensively cultivated and gets flooded during monsoon. Renovation of the drains is thus inevitable to regulate flood. Due to the increase in population density, the drains are seriously affected by pollution. The campaign “Ini Njan Ozhukatte” is focused on regaining the capacity of a drain to carry flood water and to flow energetically.

—Orderwise length of drains in Thrissur District-Km—



ERNAKULAM DISTRICT
Drains



The campaign was inaugurated by Shri. A C Moideen, Minister of Local Self Government, Govt. Of Kerala on 14th December 2019 at Kalippadam Thodu (Tholloor). 600 people including the volunteers from Kudumbasree units, merchant associations, co-operative societies joined the campaign for cleaning the streams. On the same day, the workers under Ayyankali Urban Employment Guarantee Scheme handled the campaign at Vallithod (Chalakkudi).

2 km of the entire drain was cleaned with the help of 100 volunteers from different areas. Shri. Sunil Kumar MLA(Kodungalloor)



inaugurated the campaign at Malachal Thodu (Mala) on 21st December 2019. On the same day, Chelakkara MLA Shri. U R Pradeep coordinated the campaign at Viruttanam Valiya Thodu (Varavoor). He also led the campaign at Kaladi Thodu (Kondazhi) on 26th December 2019. Kaipamangalam MLA Shri. E T Taison Master inaugurated the campaign in Arappathodu stream at Perinjanam. Shri. Murali Perunelly MLA, Manalur inaugurated the campaign at

Kozhithodu (Pavarotti) , Kothayipalam Thodu (Manalur), Kizhakkumpuram Lift Irrigation Canal (Arimbur) and Kecheri Puzha (Choondal).

Kozhithodu (Pavarotti) , Kothayipalam Thodu (Manalur), Kizhakkumpuram Lift Irrigation Canal (Arimbur) and Kecheri Puzha (Choondal).

Kerala Government Chief whip Adv. K Rajan MLA (Ollur) inaugurated the campaign at Mookkanikkara Thodu, Nadathara and Kalppaka Thodu (Puthoor) on 21st December 2019. On the same day Shri. K V Arunan MLA, Irinjalakkuda inaugurated the campaign at Ashupathri Thodu (Muriyad). The cleaning work of other drains were led by the municipality chairman, Panchayath Presidents etc. The involvement of LSGIs in the formation of an action committee for the coordination of the campaign and in the case of bringing the scientific potential of state government forward are very noteworthy. The dedicated effort of 13837 people from various parts of society to rejuvenate the drains made the campaign very booming. The campaign covered a total 47.6 km length of 80 drains and reached among 75 LSGIs.

SL.NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED ONLY)	PEOPLE PARTICIPATED
1	Aloor	Parayan Thodu	0.1	60
2	Annamanada	Parappan Thodu	0.6	43
3	Athirappilly	Thavalakuzhipaara Thodu	0.2	55
4	Adat	Choorkkattukara - Karekkadu - Puzhaykkal Thodu	0.5	58
5	Arimbur	Kizhakkumpuram Lift Irrigation Canal	0.6	270
6	Anthikad	Sreeramanchira Thodu	0.3	95
7	Avinissery	Thathamkulam	3	325
8	Cherpu	Karuvannur, Cheriya Palam Thodu	0.1	85
9	Chelakkara	Pangarapilli Pulikkal Thodu - wall protection	0.1	136
10	Chowannur	Kalavarnna - Ozhukkupara Thodu	0.1	65
11	Chazhoor	Thai valappan Thodu	0.05	69
12	Desamangalam	Maankutty mullakkal Paddy Field Thodu	0.3	340
13	Edathiruthy	Painoor Chira	0.05	145
14	Eriyadu	Cheriya Thodu	0.1	90
15	Erumapetty	Karkkidathaav Irrigation Thodu	0.1	82
16	Elavally	Cochin Frontier Thodu	0.3	140
17	Kadamgodu	Panikkathazham Thodu	0.12	127
18	Kaippamangalam	Arappathodu	0.5	750
19	Kaiparambu	K. L. D.C. Canal	0.11	38
20	Kandanassery	Valiya Thodu	0.4	55
21	Kattakanpal	Valiya Thodu	0.1	97
22	Kodaserry	Thazoor Thodu (KappaThodu)	0.8	83
23	Kolazhi	Manam kutty Thodu	0.225	66
24	Koratty	Mundachira Thodu	0.02	60
25	Kuzhoor	Kakkulam Muthlanga Thodu	1	130
26	Kondaazhi	Kalady Thodu	0.25	213
27	Madkkathara	Vellaaniserry Chal	0.07	36
28	Manaloor	Kothayipalam Thodu	0.3	130
29	Mulankunnathu kavu	Athikkodu	1.5	190
30	Mathilakam	Srambi Thodu	0.1	185
31	Mullaserry	Cochin frontier Thodu	2	190

32	Mullurkkara	Attoor Thodu	0.15	137
33	Muriyad	Aashupathri Thodu	0.8	334
34	Nattika	Angadi Thodu	0.3	80
35	Nadathara	Mulayamkozhukkulli Moorckanikkara Thodu	0.05	100
36	Ormanayoor	Chathanthara	0.2	100
37	Padiyoor	KochamThodu	0.8	730
38	Paralam	Mannaram Thodu	0.4	249
39	Parapookara	Konikkal Thodu	1	385
40	Pavaratty	Kozhithodu	0.5	226
41	Panjaal	Koolithodu	0.015	165
42	Punnayoor	Thachittavazhi Thodu	0.2	60
43	Pazhayanoor	Vellapara, Kaithakkodu Kuttadan Neerchal	0.65	485
44	Perinjanam	Arappathodu	1.5	176
45	Porkkulam	Paarembadam Aashari thodu	2	115
46	Poyya	Kannoolikulam Puthuppanappadam Thodu	0.3	86
47	Sreenarayanapuram	The Rejuvenation of small streams to reached the Conolly canal	0.1	104
48	Thannyam	Mathuthodu	2	435
49	Tholoor	Kalippadam thodu	1.5	950
50	Thalikulam	Ozhukkan Thodu	0.3	80
51	Vadakekkadu	Anjoor Chakkithara Perumthodu	0.04	70
52	Vallathol Nagar	Pallam, Puthuserry, karimbadam Paddy field Stream	0.9	561
53	Vantharappilli	Velupadam Madam Palambra Thodu	0.46	135
54	Varavoor	Viruttanam Valiya Thodu	0.5	324
55	Velukkara	Vaikkara desham Chiravalav Punchapadam valiya Thodu	0.8	70
56	Veloor	Kidayi Thodu	0.04	98
57	Vengidangu	Main Canal	0.6	288
58	Valappadu	Palaam Thodu	0.1	75
59	Vadanapilli	Chelodu Thodu	0.8	124
60	Kadappuram	Mathiikayal	0.05	50
61	Thrikkoor	Thodu	0.7	166
62	Karalam	M. M. canal	0.067	84
63	Vallachira	Kizhakke kayal	0.28	135
64	Puthoor	kalppaka Thodu	5.5	650
65	Kadavalloor	Kontholi Thodu	0.6	148
66	Mala	Malachaal	0.7	244
67	Thiruvillamala	Pakavathu Thodu	0.5	250
68	Avannoor	Avannoor cheriya Thodu	0.3	105
69	Thekkumkara	Thekkumkara Peruthakattil Chaal	0.7	125
70	Chavakkad Municipality	Mathikayal	1	160
71	Kunnamkulam Municipality	Madhurakulam Panagayi Thodu	0.05	43
72	Vadakkancherry Municipality	Puthuruthi Parlikadu Thodu	1.5	137
73	Irinjalakuda Municipality	Njavarikulam	0.35	105
74	Kodungaloor Municipality	Kaniyathu Thodu	0.3	135
75	Chalakkudy Municipality	Pallithodu	4	150

9. PALAKKAD

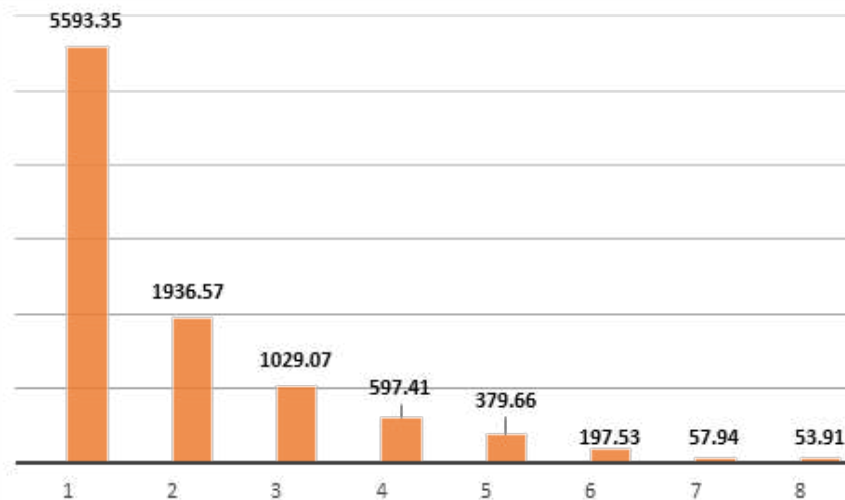
Palakkad (Palghat) is the land of Palmyrahs and Paddy fields. Palakkad is a major Paddy growing area in the State. It is often called the “Gateway of Kerala”. The district is located at 10.775°N and 76.651°E. Administrative divisions of Palakkad district consist of 2 revenue divisions, 6 taluks and 157 revenue Villages. There are 7 Municipalities, 13 block panchayats and 88 village panchayats in the district. according to the census data 2001, population of the district is 2,809,934 [Rural – 2,133,124, Urban – 676,810] spread over an area of 4482 Sq. Km.

There is a considerable change in the land use and cropping pattern in the district over the last few years. Due to low income from paddy and coconut, farmers are switching over to cash crops like sugarcane, vegetables and flower cultivation. Over-dependence on groundwater for domestic, irrigation and industrial purposes in the district has led to the lowering of water table , especially along with the eastern belt. Water quality from tube wells are deteriorating as the level of the wells go deeper. The district receives an average of 2362 mm of rainfall annually.



The district is drained mainly by two rivers, viz Bharathapuzha and Bhavani. Bhavani is east-flowing and form a tributary of the Cauvery River. Bharathapuzha basin can be divided into 50 watersheds and 290 mini watersheds. Soil erosion is more in the upstream parts of the basin which leads to sedimentation in local drains. Dendritic is a common drainage pattern. 75 % of the population depends on surface water sources for their irrigation needs, mostly Bharathapuzha river, its tributaries and

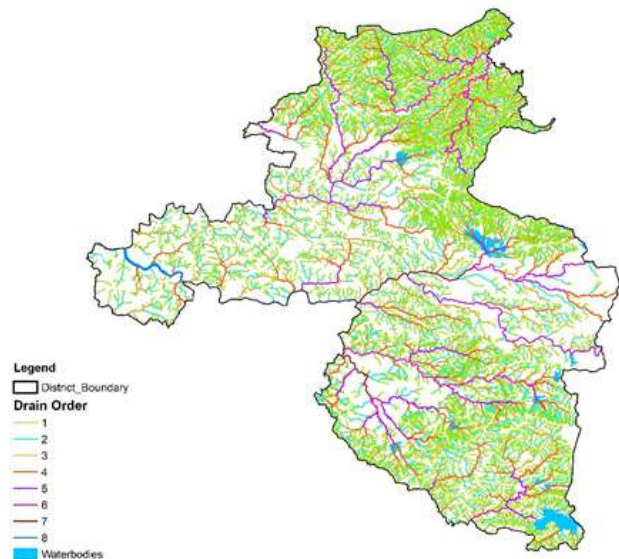
Orderwise length of drains in Palakkad District (Km)



other water bodies. There are 12 reservoirs in the district associated with two major rivers and its tributaries viz - Parambikulam, Peruvaripallam, Thoonakadavu, Chulliyar, Pothundi, Moolathara, Meenkara, Walayar, Malampuzha, Gayathri, Kanjirapuzha and Mankulam. Major irrigation projects are Malampuzha, Chittoorpuzha, Kuriar Kutty, Karapara and Kanjirapuzha. Main crops grown under irrigation are paddy, coconut, aracanut, plantain, grams and vegetables.

Physiographically the district can be divided into two parts viz, the highland and midland. Ottapalam taluk lies completely in the midland region whereas all other taluks lie both in midland and high land regions. The district is not blessed with the coastal track and natural lakes. Classification of terrain are shown

PALAKKAD DISTRICT
Drains



Terrain units in Palakkad District	Area %
Low lying terrain including flood plain and terrace	27
Moderately undulating midland terrain with flood plain	26
Highly undulating terrain	12
Hilly area including scrap slope	35



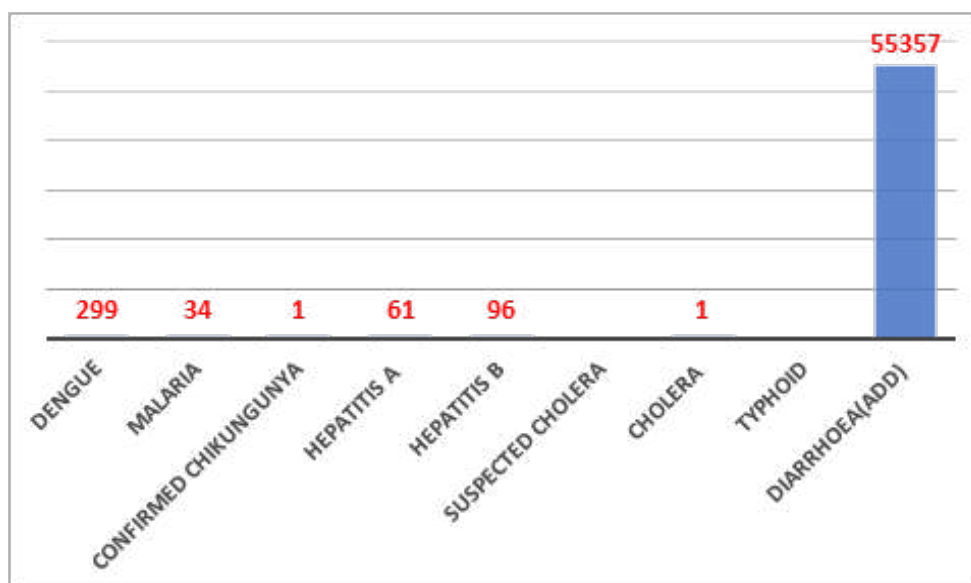
The district receives maximum rainfall during the southwest monsoon followed by the northeast monsoon. Other months are mostly dry. Temperature is pleasant from December to February. The district receives an average of 2362 mm of rainfall annually. Western part of the district around Pattambi receives the maximum rainfall whereas the rain shadow region of Chittur in the eastern part receives the minimum rainfall.

Drains selected for the campaign are mostly located near the places which receives maximum rainfall. The district has a total length of 9845.44 km of drains.

The campaign “Ini Njan Ozhukatte” has put its major concern on the drains near paddy fields facilitating drainage. District mission team of Harithakeralam mission coordinated the LSGs, Departments, voluntary organisations and the workforce of MGNREGS. Sri. K KrishnanKutty Hon’ble Minister for Water Resources, Govt. of Kerala inaugurated the district wise campaign at Valambilymangalam (Sreekrishnapuram) on 20th December 2019. 99 drains passing through 105 LSGs were selected for the campaign. 18126 volunteers joined the campaign. Haritha Karma Sena volunteers scientifically transferred the garbage for disposal.



Reported communicable diseases in Palakkad District-Year 2018



SL.NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED PART)	PEOPLE PARTICIPATED
1	Kappur	Chekkodu padam - Karumam puram Thodu, Palakkal Thazham, Kapoor Padam Thodu, Kottappadam Thodu Keeri Thodu	5.95	350
2	Nagalassery	Vazhakkadu thodu	3.5	150
3	Pattithara	Koombathodu	5	100
4	Thirumittakkodu	Bharathapuzha Theeram, Kozhikkattiri Thodu, Irrigation canal Theeram	1.26	300
5	Thrithala	Bharathapuzha	8	300
6	Kulukalloor	Thuthapuzha	1.5	330
7	Muthuthala	Kamthodu	2	250
8	Parathoor	Kulamukku kayal-bharathapuzha thodu	4	75
9	Vilayoor	Peradiyoor-chirakkal thodu	3	70
10	Nellaya	Nellaya pulakkadu thodu	2	100
11	Vallapuzha	Pappinithodu	1.5	55
12	Ambalapara	Akava thottu thudanugunna thodu	3.5	100
13	Anganadi	Vellarampala pathamkulam road panaman-na pathakulam thodu	4.5	154
14	Chalavra	Kadunganthodu, Angadithodu	10	150
15	Lakkidi -Peroor	Mulanjoor thodu	3.2	56
16	Vaniyamkulam	Kootukavu thodu	4	100
17	Thrikkadiri	Neerchalukal	2	200
18	Kadampzhipuram	Satramkavu puzha	2	120
19	Karimpuzha	Cheerakkanani thodu	1.3	500
20	Pookottukavu	Kadampuzhaya thodu	4	200
21	SreeKrishnapuram	Thootha puzha	1.5	500
22	Vellinezhi	Mulakuveetil Palliyal neerchal	1.5	100

23	Karakurissi	Karimba Thodu	2	100
24	Alanallur	Malikkunnu Chennallikku Thodu	1.2	60
25	Karimba	Thuppanadu Puzha	2	100
26	Kottoppadam	Maleriyam Thodu	6	150
27	Kumaramputhur	Ottumpara – Vellapadam kothara, Kambankodu, Akkippadam Thodu	7.5	321
28	Kanjirappuzha	Poonjola Kolpadam Puzha, Uravukuzhi Nazhiyampara Thodu	14	1400
29	Thachanattukara	Muriyamgani Puzha and small Thodu in different wards	5.7	250
30	Thachampara	Kunnam Thodu	2	200
31	Thengakara	Aanamooli Thodukadu - Naduthodu	1.5	100
32	Agali	Shiruvani puzha – Agali Panchaythu Stadium to Bhoothivazhi	0.5	150
33	Puthoor	Bhavani Puzha	5	130
34	Sholayoor	Kodumkara Pallam Puzha	2.4	350
35	Keralasherry	Mariyamkundu Thodu	3	200
36	Kongodu	Manikkasherry Puzha	2.1	400
37	Mangara	Kanjiram Thodu	2.5	100
38	Mannoor	Chavittala Thodu	2.4	400
39	Parali	Kaleppotta Thodu	2	200
40	Pirayiri	Kunnamkulangara – Kadoor Thodu	7	260
41	Kottayi	Bharathappuzha	4	300
42	Kuthanoor	Thekkethodu	5	250
43	Kuzhalmandam	Pangulam Thodu	1.25	100
44	Mathoor	Thamarappadam Thodu	2.3	100
45	Thenkurissi	Panayam chira Thodu	3.5	70
46	Kannadi	Mambaram Puzha to Thirunellai Bridge	6.06	150
47	Elappulli	Vavoli Thodu	2.1	300
48	Polppulli	Mullan Thodu	2	150
49	Eruthembathi	Idivizhunthampara Puzha	5	300
50	Kozhinjambara	Kitta Krishi to Ramaswamy Krishi	0.6	120
51	Nalleppilli	Vithodu Bridge	8	250
52	Perumatty	Kaitharav Thodu	3	100
53	Vadakarappathi	Kozhippara Kinar pallam Thodu, Kanna-kkallam Thodu, Parishikkal Thodu Valiya kallyambara Thodu, Anupoor Thodu	1.5	250
54	Pattancherry	Aanjaancherry Canal	2.95	100
55	Kollamkodu	Gayathrippuzha, Chengampotta Thodu	1.5	200
56	Koduvayoor	Mannam Thodu	7	300
57	Muthala mada	Gayathrippuzha	5.6	130
58	Puthunagaram	Adichira Thodu	2.6	100
59	Vadavanoor	Adichira Thodu	2	50
60	Peruvembu	Alankar Thodu	0.2	100
61	Ayiloor	Ayiloor Puzha	5	150
62	Melarkodu	Puthanthara Thodu Side wall protection	1	85
63	Nelliyampathy	Nooradi puzha	1	70

64	Elavancherry	Varari Thodu	8	250
65	Nenmara	Pothundi puzha	7	250
66	Pallassana	Kallamparambu to Chemmini parambu	2.5	150
67	Vaazhi	Valayal puzha	1	250
68	Alathur	Vanoor Aayarkkulam Thodu	3	200
69	Erimayur	Cherupulichhi Thodu,Puthuvapparambu Thodu	5	950
70	Kavassery	Mangalam Puzha Gayathri puzha	13	200
71	Kizhakkancherry	Podukilkundu Thodu, Kottekkadu vellappan	2	300
72	Puthucode	Mangalam puzha - near places of Plazhi Ambedker colony pumping station	1	200
73	Tharoor	Gayathri Puzha	2	160
74	Vadakkacherry	Kanakkappara Pamkodu Thodu	3	120
75	Kannambra	Shankarankannan Thodu to Kolayakkadu	0.5	300
76	Akathethara	Ambattu Thodu	5.2	100
77	Puthuppariyaram	kayyalaparambu Kavilppadu Thodu	4	250
78	Marutha road	Thirumundithodu	3	300
79	Puthusserry	Nadu pathi Thodu	3	200
80	Kodumba	Ponnumala Thodu	3	250
81	Mannarkkad	Nellipuzha - Mukkanam Thadayana	0.4	90
82	Ottapalam	Kanniyampuram Thodu	1	300
83	Chittur - Thathamangalam	Kankulam to Mettupalayam	2	350
84	Cherpulassery	Koramba Thodu	4	100

10. MALAPPURAM

Malappuram literally means an elevated place on the top of hills. The district lies between North latitudes 10°40' and 11°32' and East longitude 75°50' and 76°36'. The Nilgiris of Tamil Nadu in the east and Arabian Sea in the west provide natural boundaries. In the north, it is bounded by Kozhikode and Wayanad districts and in the south by Palakkad and Thirur districts. The district has a geographical area of 3550 sq.km, which is 9.13 % of the total area of the State. In 2011, Malappuram had a population of 4,110,956. Malappuram contributes 12.31% of the total population of the state. Population density of the District is 1,158 inhabitants per square kilometer (3,000/sq. mi).

Headquarters of the district is at Malappuram. The district has two Revenue Divisions with Headquarters at Perinthalmanna and Tirur. There are 7 taluks namely Ernad (Headquarters at Manjeri), Perinthalmanna, Tirur, Ponnani, Nilambur, Tirurangadi (Headquarters at Parappanangadi), and Kondotty. The district has 94 Gram Panchayats, 15 Block Panchayats and 12 Municipal Corporations.

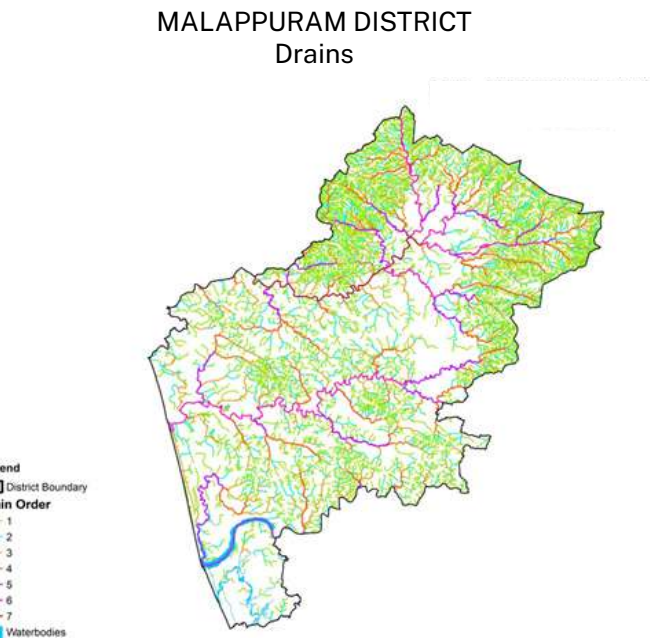


Malappuram district is mainly drained by the Kadalundi River, Chaliyar River and Bharathapuzha (locally known as Ponnani River). Of these rivers, only Chaliyar and Bharathapuzha are perennial and all others get dried up in summer and hence Malappuram district is highly drought-prone. Kadalundi River is formed by the confluence of its two main tributaries viz; the Olipuzha and the Veliyar. Olipuzha takes its origin from 'the Cherakkobban Mala (1160 m amsl) and the Veliyar originates from the forest of the Erattakomban Mala' (1190 m amsl). Kadalundi River is 130 km long with a drainage area of 1274 sq. km. The river joins the Sea at about 5 km south of

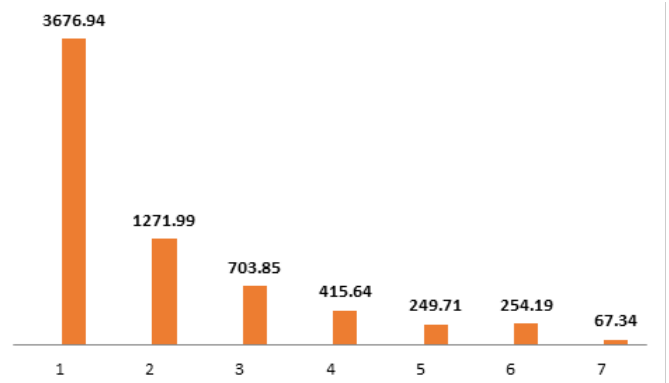
the Chaliyar river mouth. The Chaliyar River, one of the major rivers of the State, originates from the Ilambalari Hills in Nilgiri district of Tamil Nadu (2066 m amsl). The river flows along the northern boundary of Malappuram district through Nilambur, Mambad, Edavanna, Areakode and Feroke. It joins the Sea near Beypore. The river is 169 km long with a drainage area of 2535 sq. km in Kerala State. The district has a total stream network of 6639.67 km.

The district has more or less the same climatic conditions prevalent elsewhere in the State viz. dry season from December to February and hot season from March to May, the South-West monsoon from June to September and the North-East monsoon from October to December. The normal rainfall of the district is 2793.3 mm. Out of this, major rainfall contribution is from SW monsoon followed by the NE monsoon. The southwest monsoon is usually very heavy and nearly 73.5% of the rainfall is received during this season.

Geomorphologically the district can be divided into three viz. coastal plain (less than 7.5 m amsl) midland (7.5–75 m amsl) and highland (above 75 m amsl). The coastal

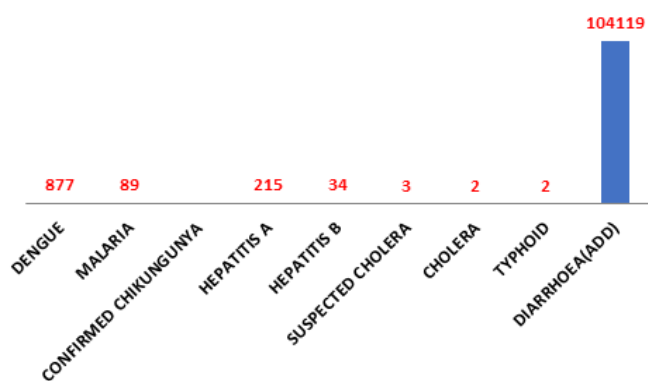


Orderwise length of Streams in Malappuram District



plains extend as a narrow stretch of land lying along the coast from Kadaundi Nagaram in the north to Ponnani in the south. The area lying between the coastal plain in the west and the high ranges in the east is occupied by the midlands. This is the most prominent physiographic unit of the district. This is characterized by flat-topped hillock with steep 'U' shaped valleys and ridges. Valley forms a potential area for agriculture including paddy, arecanut, vegetable, banana and coconut. The hilltops are generally barren and covered by thick and compact laterite

Reported communicable diseases
in Malappuram District-Year 2018



Total length of the drain (up to 7th order) is 6639.67 km which stretches its major portion in the midland region.

The campaign “Ini Njan Ozhukatte” targeted a length of 32Km of drains to be rejuvenated. Harithakeralam mission organized the campaign in Malappuram with the leadership of LSGIs. Sri. P Unnikrishnan, District panchayath president inaugurated the campaign in Valiya thou (Thrikkalangodu) on 18th

December 2019. The campaign was joined by 4477 volunteers in 36 main drains across 35 Local Self Government Institutions in the district. The campaign has great relevance in the District as the pressure on land is too high and the streams get polluted easily

Sl No.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in km) (REJUVENATED ONLY)	PEOPLE PARTICIPATED
1	Amarambalam	Cherayi valiya thodu	1	170
2	Chaliyar	Parekadu valiya thodu	2.5	250
3	Karulayi	Pilakkottu padam thodu	1	200
4	Edakkara	Kakkaparadha thodu	2	20
5	Chelembra	Neeram thodu-kopra thodu	2.5	200
6	Cherukavu	Malavettichalu thodu	1.5	115
7	Pallikkal	Nedungodu kunnipuram thodu	2	140
8	Thrikkalngod	Valiyathodu	2	300
9	Veliyangodu	Jaram west thodu	0.1	40
10	Vettathoor	Elakkadu thodu	0.6	125
11	Parappoor	Meen thodu	0.25	100
12	Kalppakancherry	Thottayi thodu	1	20
13	Perumanna klari	klari thodu	0.5	150
14	Thruppangodu	Puzhangara thodu	1	85
15	Valavannur	Valavannur thodu	1	150
16	Thirunavaya	Vallilapuzha thodu	1	68
17	Alamngodu	Panthvaoor neerthadam	3	215
18	Edappal	Payangulam poothodu	1	20
19	Marancherry	Vakkattel perivazhikkulam thodu	1.5	20
20	Ponmundam	Aadrusserry thodu	2	200
21	Nannamukku	Kavilappadam thodu	2	160

22	Elamkulam	Edakkalpadi thodu	2.5	80
23	Melanoor	Velloli thodu	1	150
24	Keelanoor	Elakkad thodu	3	100
25	Vattamkulam	Neeliyadu thodu	1.5	145
26	Muthuvallur	Puthuvallichira vattal thodu	1.5	20
27	Kodoor	Valiyaparambil thodu	0.5	20
28	Kalady	Kooyar thodu	1	150
29	Thavnoor	Palathhodu	1	20
30	Ponnani	Biyyam kayal theeram	2	210
31	Thirurangadi	Venchali thodu	2.5	30
33	Mancherry	chalikkathodu	1	94
34	Kottakkal	Kakkanma,kakkathodu	0.78	350
35	Thanoor	Conolly canal	1	250

11. KOZHIKODE

Kozhikode is one of the coastal districts of Kerala. Kozhikode district is bounded on the north by Kannur district, on the east by Wayanad district, on the south by Malappuram district and on the west by Lakshadweep Sea. It lies between North latitudes $11^{\circ} 08'$ and $11^{\circ} 50'$ and East longitudes $75^{\circ} 03'$ and $76^{\circ} 08'$. The district is divided into 3 taluks, 12 Block Panchayats and 77 Grama panchayats for administrative purpose. The district has one corporation (Kozhikode) and two Municipalities namely Koyilandi and Vadakara. Out of the total area of 2344 Sq. Kms 336 Sq. Kms falls under urban area and the remaining 2008 Sq. Kms falls under rural area. The district has a total population of 30, 89,543 as per 2011 census. The density of population is 1318. Decadal population (2001-2011) growth rate of the district is 7.31%.

The district is drained by six rivers of which one is of medium nature and all others are minor ones. Chaliyar, Kuttiyadi, Mahe, Kadalundi, Kallayi and Korapuzha are the rivers in the District. Chaliyar River is a medium river and originates at a height of 2066m in Ilambalari hills of Western Ghats of Gudallur district, Tamil Nadu. Chaliyar drains into Beypore estuary. It is a sixth order stream with a length of 169 km. Main tributaries are Punnurpuzha, Pandiyur, Karimpuzha, Cherupuzha, Kanhirampuzha, Kurumbanpuzha, Vathatpurampuzha & Iruvantipuzha.



Kozhikode district experiences an annual rainfall of 3698 mm. The high rainfall areas in the district are Kakkayam dam site and Kakkayam Powerhouse. It has been noticed that rainfall displays an increasing trend towards north-eastern areas of the district. The SW and NE monsoons account for 82.77% of the rainfall. The month of June experiences maximum rainfall. The months of July, August and October also receive heavy rainfall. Agricultural activity of the district depends on the onset of SW

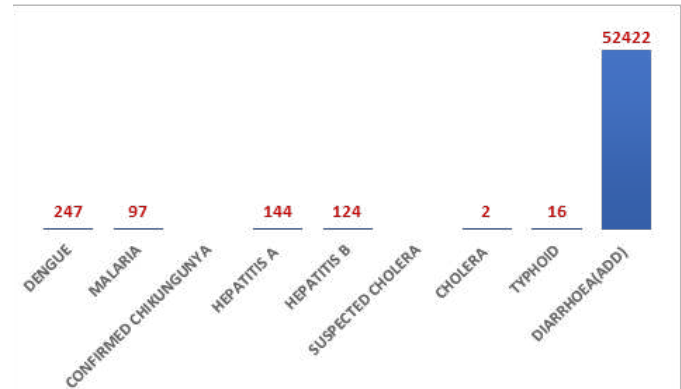
tropical monsoon.

The physiographic divisions of Kozhikode district are low land (<7.6 m amsl), mid land (7.6 to 76m amsl) and high land (above 76 m amsl). The highest peak is Nilamala with an altitude of 1935 m amsl. The low land extends as a narrow stretch of land lying along the coast from South Kadalundi to North Mahe. The height of the plain is less than 7.6 m. The landform units identified in Kozhikode are alluvial plain, flood plain, valley fill, linear ridge, hillcrest, sloping terrain, rocky slope (scarp face) and hilly terrain. The flood plain and valley fill are the major fluvial landforms.

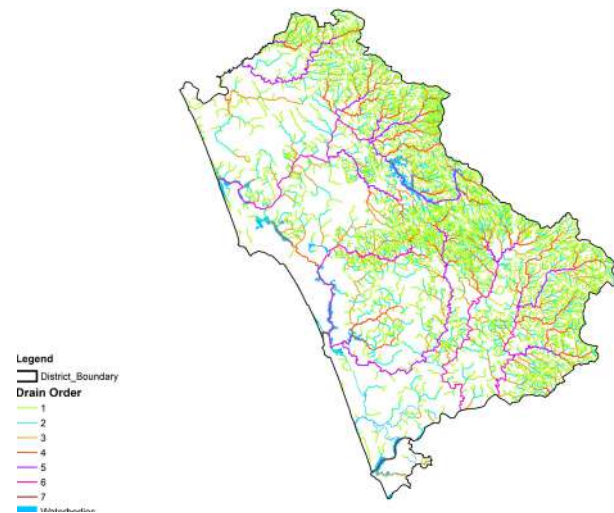
Most of the drains in the District are 6th order or lower. The campaign “Ini Njan Ozhukatte” covered maximum number of targeted drains inside the district. 60 drains in the District were rejuvenated as part of the campaign. Harithakeralam mission District coordination team could ensure the participation of Local organisations, consortiums, residence associations, NSS units of colleges and schools, merchant’s groups and self-help groups in the campaign.



Reported communicable diseases in Kozhikode-Year2018

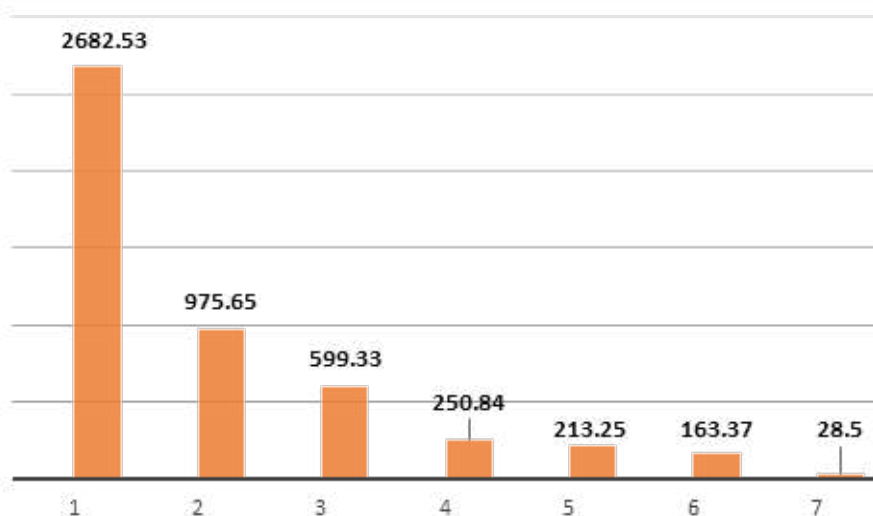


KOZHIKODE DISTRICT Drains



Shri. T P Ramakrishnan, Hon'ble Minister for Excise and labour, Government of Kerala inaugurated the campaign at Thondilakkadav-Chirakkadav-Manchakkal Thodu (Olavanna) on 15th December 2019. Shri. PTA Rahim MLA. Shri, V K C Mammad Koya MLA and the District Collector Shri. Sambashiva Rao participated. 122.6 km length of drains were renovated scientifically with the collective effort of 2590 people across district. Kozhikode was badly affected by the previous years' flood. Participants showed great interest in rejuvenating the drains. Kozhikode is also among the Districts with high incidence of waterborne diseases.

Orderwise length of drains in Kozhikode (Km)



SL.NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED ONLY)
1	cherode	Peruvana thode	3
2	thooneri	Kappathode (kodanjeri)	8
3	vanimel	Vanimel puzha vilangad part	2
4	nadapuram	Pulikkool thode	3
5	kunnummal	Meenmuttikkal thode (paathirappatta)	2.5
6	kayakkodi	Naaranathu thazhe thode	0.4
7	velam	Athirthi theekkuni thode	4
8	aayanjeri	Mangalaadam thode	3
9	keezhariyoor	Aachei thode	2
10	cheruvannoor	Koormuzhi Thodu	3
11	nochaad	Vaalyakkode valiya thode	6
12	changaroth	Koottalott thode	3
13	kaayanna	Cherukaad kuttivayal thode	5
14	Perambra	Marakkadi thode	3

15	kottoor	Manjappozhiyil ramanpuzha part	2.5
16	Koorachund	Vattachira athyodi upathode	2
17	atholi	Cherattakkara thode	0.5
18	moodaadi	Kallada thode	0.95
19	chengott kaavyu	Paavara vayal thode	3.5
20	nanamma	Naarakasseri thode	4
21	kaakkoor	Kakkoor thode	3.5
22	kattippaara	Poonoor puzha	3
23	kunnamanagalam	Manathaazhath thode	0.2
24	kunnamanakalam	chukkikulam	0.5
25	payyoli	Naivaarani thode	1
26	vadakara	Nadaku thaazhe cherode kanal;	4
27	Mukkam	Vattoli Parambu, pulpparambu Thodu	4.5
28	Koduvalli	Kaayangal keppoyil Thodu	3

12. WAYANAD

Wayanad is a small hill district in Kerala with an area of 2131 km². Geographic location is 11.633090°N and 76.089638°E. There is only one Revenue Division in this district Kalpetta is the headquarters of the Wayanad District Administration with Civil Station and other main offices. The district is divided into three taluks - Sulthan Bathery, Vythiri and Mananthavady. There are 23 Grama panchayaths, 4 Block panchayaths and 3 Municipalities. The district has a population of about 8.16 lakh of which 90% depend upon agriculture for sustenance.

Wayanad is drained by Kabani and Valapattanam rivers. Total length of drains in wayand is 5692.29 km. Most of Wayanad district is drained by Kabani and its three main tributaries viz. Panamaram, Mananthawady and Tirunelli. Other tributaries include Bavelipuzha and Noolpuzha. Kabani River is one of the three east flowing rivers in Kerala and is an important tributary of the Cauvery River. Kabani and its tributaries carved the present landscape of the

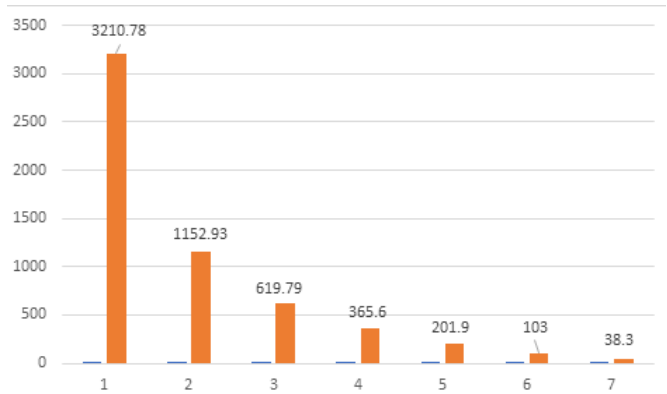


district. Other drainages in the district are Chaliyar and Valapattanam. Panamaram River originates from Lakkidi and its main tributaries are Kavadam puzha, Kadamanthodu, Venniyode puzha, Karapuzha and Narassipuzha. Panamaram River joins with Mananthawady rivulet originating from Thodarmudi at an elevation of 1500m amsl. After joining with Mananthawady River, it flows as Kabani river. After entering the Karnataka State Kabani joins with Cauvery. There are a number of tanks and ponds, minor irrigation projects and lift irrigation projects in the district. Being a hilly district, drainage system is most important in Wayanad, which is prone to landslides.

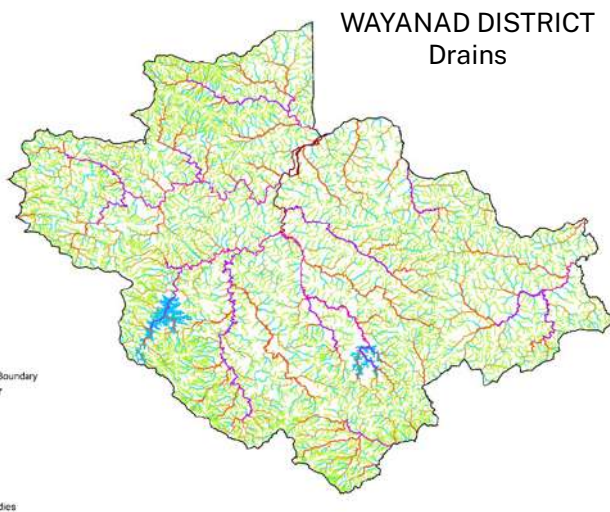
Wayanad experiences a salubrious climate with a mean rainfall of 2786 mm. Lakkidi, Vythiri and Meppady experiences heavy rainfall. Southern, south-western and north-eastern areas of the district receive more than 3000 mm of annual rainfall. Eastern and north-eastern areas receive lesser rainfall. An increase in rainfall is observed towards the south, southwest and northeast. The SW and NE monsoons contribute to the rainfall in the area with 80 % of the

rainfall from SW monsoons. The month of June experiences abundant rainfall and is the wettest month. Months of July, August and October also receive heavy rainfall.

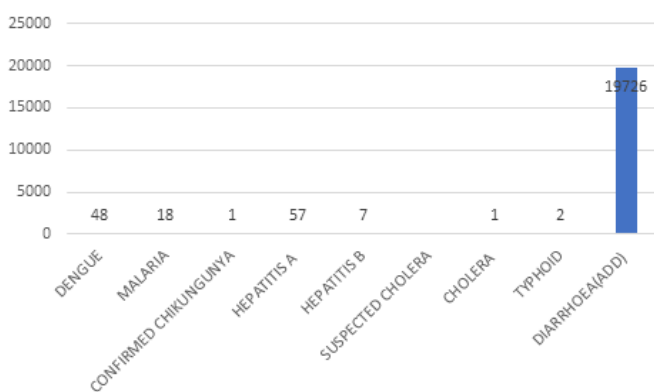
Orderwise length of drains in Wayanad District-Km



The district may be divided into three physiographic zones- Wayanad plateau (WP), Central Sahyadri High land (CH) and Mountainous regions of Central Sahyadri (MR) as per Soil Survey Organisation. On the basis of topographic features, the area can be divided into different physiographic zones like high ranges with rugged topography, high ranges with moderately rugged topography, intermontane valley, and flood plains. The drains are spread across central Sahyadri and wayanadan plateau region.



Reported Communicable diseases in Wayanad District-Year 2018



Although Wayanad is prone to landslides and local flooding, the District faces acute shortage of water during lean season. Area under paddy is only around 30% of original area. Harithakeralam Mission has joined hands with several agencies in chalking out strategies for improvement of the ecosystem in Wayanad. Stream network of the District needs to be reinstated.

“Ini njan ozhukatte” campaign launched by Harithakeralam Mission has good acceptance in the District. This campaign is the continuation of the earlier river rejuvenation campaign. Members of Legislative Assembly from the District always supported the campaign for conservation of waterbodies in the District.



54.15 km stretch of drain has been rejuvenated through the campaign in a week. Most of the 27 drains selected for the campaign feed the paddy fields. Sri. C K Saseendran MLA (Kalppatta) inaugurated the District-wide campaign at Araykkal Thodu of Kalppatta municipality in the presence of District Collector Dr. Adeela Abdulla, municipality chairperson Smt. Sanitha Jagadheesh and Harithakeralam mission District Coordinator Sri. P Prakash. Kudumbasree volunteers, MGNREGS workers, Municipality Health wing and local volunteers joined the campaign. Action committee for the campaign has decided to continue with the campaign and take up more streams for rejuvenation before monsoon with help of machineries also.

SL NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED ONLY)	PEOPLE PARTICIPATED
1	Kalpatta Municipality	Araykkal Thodu	0.3	154
2	Meenangadi	Purakkadi thodu	2.5	350
3	Thavinjal	Muthireri Thodu	3	120
4	Kaniymbatta	Chittoor Puzha	0.2	18
5	Pavamaram	Aayanellur	0.6	59
6	Thornadu	Porlom Thodu	1.5	62
7	Bethery Municipality	Puthuchola Thodu	1.5	150
8	Vellamunda	Mothakkara Thodu	12	520
9	Padinjarethara	Kurimani Mannarkundu Thodu	1	145
10	Vaithiri	Sreepuram chemmatty Thodu	1.5	87
11	Mullankolli	Idamalathodu	0.3	54
12	Edavaka	Panniyodu to Orappu Thodu	1	165
		Elumandam Thodu	1	
13	Thariyodu	Chekuthan Thodu	0.25	113
14	Pozhuthana	Anivayal Kakkanjil Thodu	2	100
15	Nenmeni	Kannakadu Nambikolli Thodu	1.5	450
16	Noolpuzha	Kalloor Nambikolli Thodu	2.5	43

17	Poothadi	Moodakkolli Thodu	3	54
18	Moopainadu	Choladi Puzha	5	60
19	Thirunelly	Panavalli Kolli Colony puzha	1.5	100
20	Pulpally	Aloorkunnu Thodu	1.5	286
21	Kottathara	Krishna Thodu	1.5	50
22	Amabalavayal	Manjapara Madhannamoola Thodu	1.5	86

13. KANNUR

Kannur (Cannanore) district is one of the northern maritime districts of Kerala. It covers an area of 2966 sq. km bounded by the North latitudes 11°40' and 12°48' and East longitudes 74°52' and 75°56'. It has Kasaragod district in the north, Kozhikode district in the south, Coorg district of Karnataka and Wayanad district in the east and the Lakshadweep Sea in the west. The Census data for the year 2011 shows a total population of 2525637 persons and population density is 813 people per sq.km. Kannur district is divided into 1 Municipal Corporation, 9 municipalities, 11 block panchayaths and 71 Grama panchayaths.

Kannur district is drained by the Valapattanam and Anjarakandy rivers. Other rivers are Kuppam, Mahe and Thalasserry. Rivers follow Dendritic drainage pattern. The Valapattanam river, which is the longest in the district originates from the Brahmagiri Reserve forest in Coorg district of Karnataka. Drainage area of the river in Kerala is 1321 sq.km. The Anjarakandy river originates from the Kannothe Reserve forest.



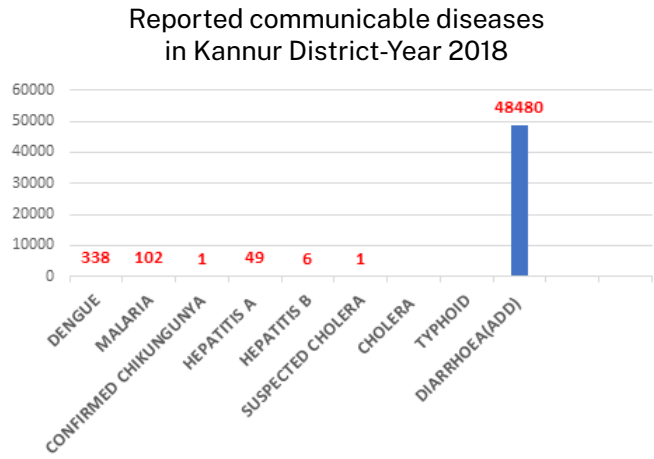
Drainage area of the river is 412 sq.km. The district receives a total annual rainfall of 3438 mm. The district experiences heavy rainfall during the southwest monsoon followed by North-East monsoon. Southwest monsoon from June to September contributes 70 % of the total rainfall of the year. The Northeast monsoon contributes only about 30%. Rainfall is considerably less during the period from January to May.

Kannur district can be divided Physiographically into three distinct geomorphologic units viz the coastal plains and lowlands in the western part, the central undulatory terrain comprising the midland region and eastern highland region. The coastal plains occur as a narrow belt of alluvial deposits running parallel to the coast

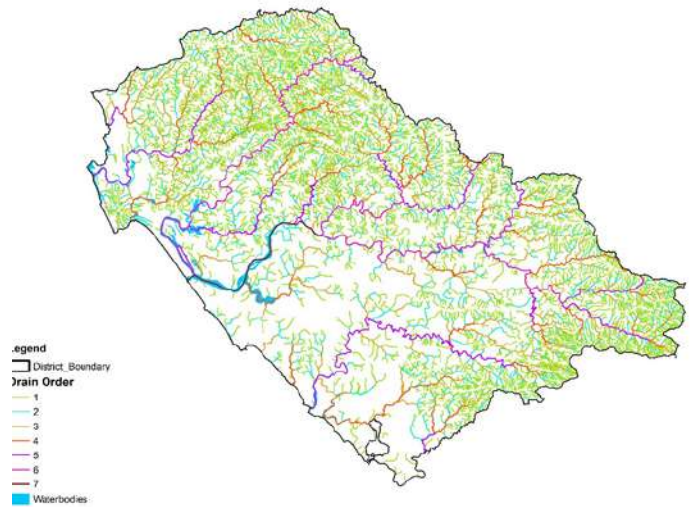
with a maximum width of about 15 km. Midland region forms a plateau land at certain places covered by a thick cover of laterite. The hilly tract in the eastern part consists of highly rugged terrains. Major portion of the geomorphic pattern falls under the midland region.

The drains of order 1st to 7th having a total length of about 6173.33 km According to the KSCSTE's environmental monitoring program, almost all drains in coastal plain and certain drains in the midland are seriously affected by contamination due to chlorides, coliform and fecal coliform bacteria. Contamination was detected in the groundwater samples as well. Reason for the spread of waterborne diseases in the district is due to polluted water bodies contaminating the shallow aquifers that feed the open wells.

Sri. Kadannappalli Ramachandran, Hon'ble Minister of Port, Archaeology and Museums inaugurated the campaign Ini Njan Ozhukatte at Echoor Kaithala Thodu (Munderi) on 14th December 2019. Sri. KC Joseph MLA led the campaign at Karuvanchal Thodu (Naduvil) and cleaned up to 3km of the drain. He also inaugurated the campaign in Payyavoor Puzha and Alakkodu Thodu. Sri. James Mathew MLA has led the campaign at Morazha Valiya Thodu on 15th December 2019.

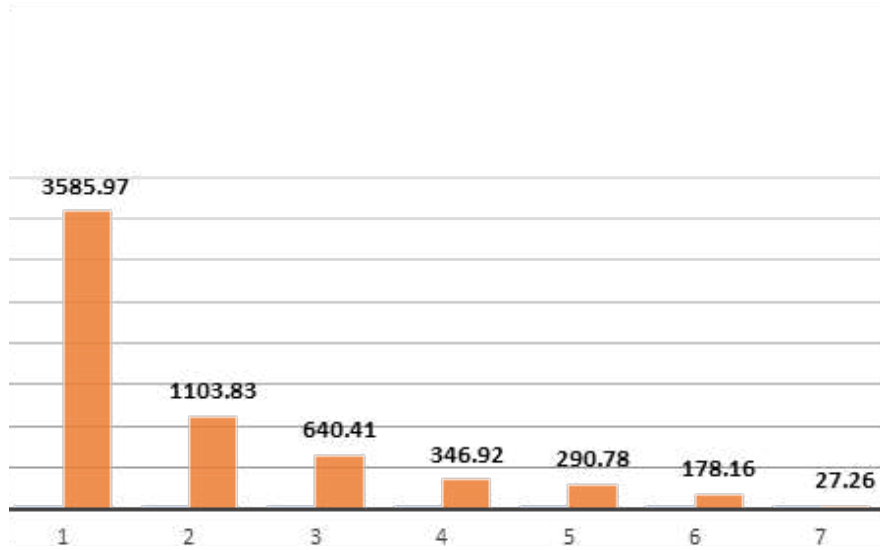


KANNUR DISTRICT
Drains



The campaign was a great success with the renovation of 184 km length of the drain. About 6806 volunteers from 58 LSGIs joined the campaign along with the MGNREGS work force. The mass campaign reached 69 drains across the district was joined by citizens from all walks of life. Harithakeralam mission district team with the leadership of LSGIs supported the campaign technically.

Orderwise length of drains in Kannur District (Km)



SL.NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED ONLY)	PEOPLE PARTICIPATED
1	Kunhimangalam	Kannada Amman Thodu	3	82
		Pallivayal - Aanapetty Thodu	2	35
2	Cheruthazham	Kulappuram - Kundam Thodu	3	640
3	Ezhome	Edakool Thodu	1	280
4	Kannapuram	Punchayal Thodu	2.4	398
5	Naduvil	Karuvanchal Thodu	3	20
6	Udayagiri	Karthikapuram Thodu	1	80
7	Irikkoor	ilamuttam Thodu	1	150
8	Malappattam	Kavunthala Muthirachal Thodu	0.3	50
9	Kuttiyattoor	Pazhassi nirathupalam Thodu	8	70
		Maniyoor Thodu	6	103
10	Padiyoor Kalyad	Eranjira Thodu	3	200
11	Munderi	Echoor Kaithala Thodu	2.5	285
12	kadamboor	Kannothu Thazhe	1.5	81
13	Chembilodu	Koyyodu Indhirabhavan	1	95
14	Peralasseri	Mundalloor Thodu	1.5	64
15	Anjarakkandi	Nalakkandi Thazhe Thodu	2	46
16	Dharmmadam	Elipram Thodu	4	35
17	Eranjoli	Kottarankkandiyil Vellapoyyil road	2.5	20
18	Vengaad	Paduvilaayi Valiya Thodu	1.6	20
19	Kottayam	Eranji Thodu	5.6	125
20	Chittaripparambu	Kannan Thodu	3	20
21	Kathiroor	Kallumbram Thodu	2.5	20
22	Aralam	Vellari vayal Thodu	6	197
23	Thilankeri	Vanjeri Thodu	5	20

24	Koodali	Muttanor Edayanur Thodu	2.5	53
		Pannaram Kottu Thazhee Thodu	1	75
		Kodolipram Thodu	0.8	36
		Kumbham Thodu	1	30
		Kuruthuvayal Thodu	0.4	20
		Kanjirodu Manikkunnu Thodu	1	90
25	Paayam	Madathi Kalikkandam Thodu	0.2	20
		Narayani Thattu-Kolikkadavu Thodu	0.4	20
		Vilavana Vattavayal Thodu	1	20
		Kadamunda Vayal Thodu	0.9	20
		Kelan Peedika Maram Veena Kandi Thodu	0.8	20
26	Pattuvam	Kulavaya thodu	2	100
27	Pinarayi	chekkikkuni palam ,Maratte Thodu	2	200
28	Mokeri	Mokeri Punchakkamaanam Thodu	2	20
29	Kelakam	Chaappa Thodu	3.5	20
30	Kottiyoor	Ambaayathodu	0.5	30
31	Muzhuppilangadi	Maaramkandi Thodu	.1.5	195
32	Narathu	Kaakkathodu	0.38	20
33	Mangattidam	Ayyappan Thodu	1	20
34	Chapparappadvu	Madakkad Thodu	1.5	20
35	Mayyil	Neerthaazham Kaivayal thodu	1	20
36	Eramaram	Paalayaad cheppadu thodu	4	20
37	Chiraykkal	Puzhathi vayal Thodu	1.2	20
38	Karivalloor	Peralam Kizhakke Todu	3	320
39	Payyavoor	Payyaavoor Puzha	12	340
40	Aalakkodu	Alakkodu Thodu	7	20
41	Keezhloor	Edayannoor Keezhloor Thodu	7	20
42	Kurumthoor	Kalikkadavu Karimbam Paraad	5	20
43	pariyaaram	thalora Muthali Thodu	2.5	288
44	Kankol Anappadappu	Elakkadu Karinkuzhi Thodu	2	255
45	Maadaai	Kadavathu Thodu	3	20
46	Kallyaaseri	Kaaniyaar Vayam Maryamangalam thodu	2.7	222
47	Paadyam	Panayaathodu Puzha	0.35	38
48	Chokli	paalazhi	1.5	20
49	Ayyuankunnu	Kundoor puzha	6	20
50	Kolayaadu	Padipparamba Vayal Palayam Thodu	3	78
51	maloor	Maruvancheri Kanjileri Thodu	7	20
52	thruppangottur	Kalikkandi	2	20
53	Kolacheri	Kolachei-Palipparambu -Kayacheri Thodu	4	20
54	Ramanthali	Kunnara Punchakkee Thodu	0.6	100
55	Cherupuzha	Thirumenu-Cherupuzha Thodu	5	430
56	Chengalaai	Chuzhali-Valakkai Thodu	5	30
57	Azheekkodu	Paamban Thodu	1	251
58	New Mahi	Mangaadu Thodu	2	49

14. KASARGODE

Kasaragod is the northernmost district of Kerala, bordering Karnataka State. Kasaragod district is divided into 3 Municipalities (Kasaragod, Kanhangad and Nileshwar), 6 Block Panchayaths (Manjeshwar, Kasargod, Kanhangad, Nileshwar, Karadka and Parappa) and 38 Grama Panchayaths. As per 2011 census, population of the district is 13.1 lakhs and is Kerala's 4th least populous district. Total geographical area of Kasaragod district is 1989 km². Population density of the district is 657 persons per km².

Major crops raised are coconut, arecanut, cashew, rubber, paddy and pepper. Traditionally arecanut is being cultivated in the valley portion of the district. Arecanut is irrigated by the springs and seepages or shallow dug wells in the valleys or by water collected from the tunnel wells. During and after the eighties, large number of bore wells were dug in the District. This has led to reduction in water availability in the traditional



watersources. Further, the delay in summer showers badly affect the crops and drinking water availability. Therefore, rejuvenation of the stream network is expected to yield positive results in water availability also.

The district is drained by nine rivers, all minor in nature except Chandragiri and Karingote which originates from the eastern highland and flows towards the west to join the Sea. There are 10 river basins in Kasaragod, which are Manjeswar River Basin (RB), Uppala RB, Shiriya RB, Mogri RB, Chandragiri RB, Chittari RB, Nileswaram RB, Karingod RB, Kavvayi RB and a small portion of Peruvamba RB. According to the information from Land Use board total length of drain categorized under first to seventh order drains is 4394.54 km.

The district receives an average of about 3500 mm rainfall annually. The major source of rainfall is the southwest monsoon from June to September which contributes nearly 85.3% of the total rainfall of the year. The northeast monsoon contributes nearly 8.9% and a balance of 5.8% is received during the month of January to May as pre-monsoon showers. Out of the 106 rainy days in a year, 87 rainy days occur during the southwest monsoon. Physiographically the district can be divided into three distinct units viz. the coastal plains, the midlands and the eastern highland regions.

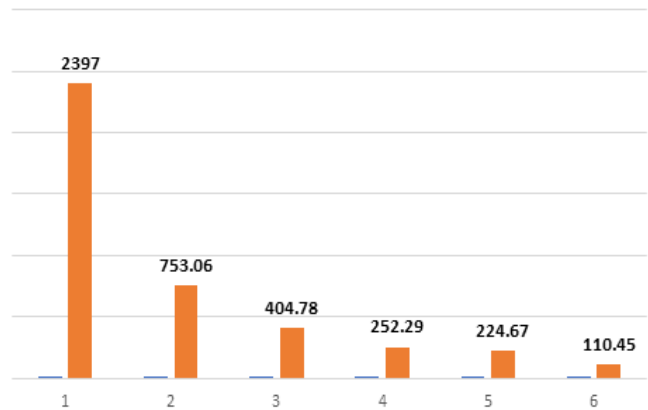
Drains selected for the campaign “Ini Njan Ozhukkatte” are mostly located in midland and lowland zones of the District. Sri. K. Kunhiraman MLA inaugurated the campaign at Pulloorkonam thodu. Selected drain, which was blocked could be rejuvenated with the concerted effort from MGNREGS workforce, Kudumbasree volunteers, ward members, Harithakeralam mission district team, Haritha Karama Sena, cultural and religious organizations.

Garbage collected was shifted to the nearest Material Collection Facility (MCF) for scientific disposal. On the same day, local political party representatives and officials from panchayath coordinated the campaign at Kallar-Parakkayam thodu which was source of water for agriculture and domestic purposes. 1 km of the main stretch could be cleaned in a day. This was followed by the rejuvenation of Perdala River.



HARITHA KERALAM MISSION

Orderwise length of drains in Kasargod District

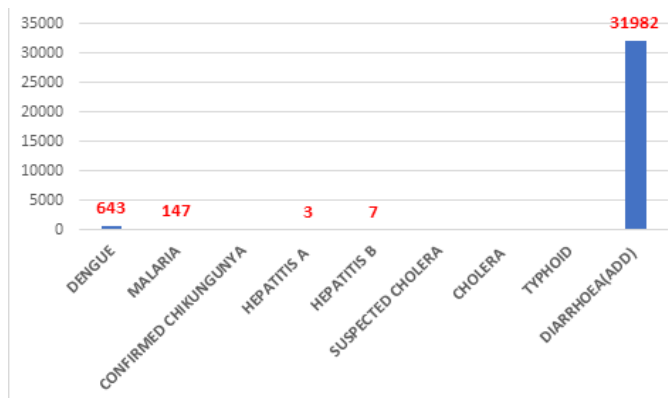


KASARGODE DISTRICT Drains



On 16th December 2019, mangrove saplings supplied by Mr. Dhivakaran Kadinjumoola were replanted on the banks of the rejuvenated stream. Sri. N A Nellikkunnu MLA (Kasaragod) led the campaign at Kanakkodu Bannathinpadi Thodu on 27th December 2019 and at pallom Thodu on 28th December 2019.

Reported communicable diseases in Kasargod District-Year 2018



Kannada cinema actress Smt. Roopasri Vorkkadi inaugurated and supported the campaign activities on 21st December 2019 at Hosabettu Koplai Kundukolaika Thodu (Mancheswaram) with the participation of 150 volunteers including students from Scouts and Guides units of local Schools. Participation of the National Service Scheme unit of Govt. Vocational Higher Secondary School Iriyanni under the leadership of Syamala Teacher in Muliyaar thodu inspired many others to join the campaign.

Marnadam Thodu (west Eleri) cleaning campaign was lead by Sri. Saji Sebastian and the Student Police Cadet (SPC) volunteers from St. Jude's Higher Secondary School joined the campaign.

Temporary bunds using natural materials were put up in the rejuvenated streams with the technical support of Minor Irrigation Department. The campaign also focused on cleaning the water spread area of existing structures like VCBs and checkdams. 84.8 km of 33 drains in 32 Local Self Government institutions were renovated with the involvement of 5632 volunteers.

SL.NO.	NAME OF LSGIs	NAME OF DRAINS	LENGTH OF DRAIN (in K.M) (REJUVENATED ONLY)	PEOPLE PARTICIPATED
1	East eleri	Chittarikkal Mandapam Thodu	4.5	34
2	Chenkala	Madhuvahini Puzha	10	300
3	Paivilagai	Sarnagiri Thodu	3	62
4	manjeswaram	Hosabettu Koplai Kundukolaika Thodu	2.5	150
5	Kallar	Kallar Thodu	1	35
6	Madikkai	Vazhakkodu Echikkanmam Thodu	4	70
7	Pilikkodu	Pallikkandam Thodu	3	150
8	Mogral Puthoor	Kallyanikatte Thodu	2	150
9	Kayyoor Cheemeni	Aalanthatta Thodu	3	55
		Payyaraattu Thodu	2	70
10	Kaaradukka	Karale Paniya Thodu	7	600
11	kinaanoor karinthalam	Kumbala Pallichal	6	1700
12	vorkkadi	Pavoor Thodu	1	17
13	madhoor	Meeoppuguri thodu	0.3	31
14	west Eleri	Marnadam Narkkilangaad Thodu	3	160
15	Muliyaar	Muliyaar Thodu	1.5	70

16	Ajaanoor	Kaliyangaanam Kuliyanmanam Thodu	1.5	93
17	Pallikkara	Alangodu Pallathinkaal Thodu	3	50
18	Udhuma	Aramangaanam Thodu	0.162	76
19	Puthigai	Kanaaje Thodu	0.5	70
20	Kumbadaaje	Agalppaadi Umbragalam Thodu	5	108
21	Kuttikkol	Korakkol Thodu	0.8	100
22	Dhelampaadi	Koppalam Sanchakkadavu Thodu	4	72
23	kodombeloor	Aanappetti Thodu	1	300
24	Badhiyedukka	Perdaala River	2	125
25	Pulloor Periya	Pulloor Thodu	2	200
26	Bedadukka	Vavadukkam Ambilangad river Portion	1	42
27	Panathadi	Panathoor Kottakkunnu Thodu	3	30
28	Balaal	Sugandha Vahini Puzha	2	70
29	Belloor	Edamugar Thodu	1	100
30	Karadukka Block Panchaayath	Kanakkodu BannathinPadi Thodu	1.5	92
31	Kanjangaad Municipality	Arayimonaacha Puzha	1	150
32	Kasaragode municipality	Pallam Thodu	1.5	300