SOIL ATLAS
KANNIYAKUMARI DISTRICT

SOIL SURVEY & LAND USE ORGANISATION
(DEPARTMENT OF AGRICULTURE TAMIL NADU)
PALAYAMCOTTAI 627 007
1998

SOIL ATLAS
KANNIYAKUMARI DISTRICT

SOIL SURVEY & LAND USE ORGANISATION
(DEPARTMENT OF AGRICULTURE TAMIL NADU)
PALAYAMCOTTAI 627 007
1998

வீரபாண்டி எஸ். ஆறுமுகம்
வேளாண்மைத் துறை அமைச்சர்

தலைமைச் செயலகம்
சென்னை 600 009

அணிந்துரை

தமிழ்நாடு வேளாண்மைத் துறையில் உள்ள வேதியியல் பிரிவு தமிழக வேளாண் பெருங்குடி மண்ணின் தேவையை அறிந்து மண்வள தொகுப்பேடு ஒன்று தயாரித்து இருப்பது பாராட்டுக்குரிய செயலாகும்.

வேளாண்மைக்கு அடித்தளமாய் அமைவது நிலமும், நீரும் ஆகும். மண்ணின் வகைகளை அறிந்து அதன் வளத்தை தெரிந்து கொண்டு, அதற்கேற்ற பயிர் வகைகளை பயிர் செய்வதால் உற்பத்தி திறன் அதிகரிப்பதோடு, மண் வளமும் பாதுகாக்கப்படுகிறது. சங்க காலத்தில் மண்வளத்தை அறிந்து கொள்ள குறிஞ்சி, முல்லை, மருதம், நெய்தல் என நம் முன்னோர்களால் நிலப் பாகுபாடுகளை அறிந்து வைத்திருந்தார்கள். பிற்காலங்களில் மண்ணை, செம்மண் என்றும், கரிசல் மண் என்றும், வண்டல் மண் என்றும், மணற்பாங்கான மண் என்றும், மண்ணின் தன்மைக்கு ஏற்ப பிரித்து வைத்திருந்தார்கள். பண்டைய காலங்களில் மண் பாகுபாடு செய்வது தேவையற்ற ஒன்றாக கருதப்பட்டாலும், இன்றைய சூழ்நிலைக்கு மண் பாகுபாடு மிகவும் அவசியமாகிறது. வளர்ந்து வரும் மக்கள் தொகைக்கு ஏற்ப உணவு உற்பத்தியை பெருக்க மண் வரை தொகுப்பு வேளாண்மை ஆராய்ச்சியாளர்களுக்கும், விரிவாக்க அலுவலர்களுக்கும் மிகவும் பயன் உள்ளதாக இருக்கும் என நம்புகிறேன்.

இத்தொகுப்பினை வெளியிட ஈடுபட்ட அனைத்து அலுவலர்களுக்கும் எனது பாராட்டுக்களையும், வாழ்த்துக்களையும் தெரிவித்துக் கொள்கிறேன்.

அன்புடன்,

24.4.08

நா. ஆதிமூலம், இ.ஆ.ப.
அரசு செயலர்

வேளாண்மைத் துறை
சென்னை 600 009

அணிந்துரை

மண்வளமும் மனித வளமும் ஒரு நாட்டிற்கு இன்றியமையாதன ஆகும். இன்னும் சொல்லப்போனால் நிலத்து மண் ஆனது மனிதச்சரிதையின் பிரதிபலிப்பு ஆகும். ஏனெனில் அதுவே மனித நாகரீகத்தின் மாட்சியையும் வீழ்ச்சியையும் எடுத்துரைப்பதாக இருந்து வந்துள்ளது. இதற்குச் சரித்திரச் சான்றுகளும் பல உண்டு. இப்படித்தான் பெருமை படைத்த மண்வளம் பற்றிய விவரங்களை நெறிப்படுத்தி அண்டியோர்க்குப் பயன் அளிக்கும் வகையில் அமையச் செய்வது காலத்தின் கட்டாயமாகும். அதிலும் குறிப்பாக ஒன்பதாவது ஐந்தாண்டுத் திட்டத்தின் துவக்கத்திலேயே இப்பணி நடைபெறுவது சாலச்சிறந்தது ஆகும். ஏனெனில் இத்திட்டப் பெரு நோக்கங்களில் ஒன்றாக மண்வளம் சார்ந்த இனங்களை அடையாளம் கண்டு செயல்படுவது மிகவும் வலியுறுத்தப்பட்டுள்ளது.

எனவே, மாவட்ட வாரியாக மண்வள ஆதாரங்களைத் தொகுக்கும் முயற்சி மேற்கொள்ளப்பட்டது. இப்பணி நான் வேளாண்மை இயக்குநராகப் பொறுப்பில் இருந்த காலத்தில் முடிக்கப்பட்டது. தமிழ்நாட்டில் அப்போதிருந்த 15 மாவட்டங்களுக்கும் தனித்தனியே மண்வளத் தொகுப்பேடுகள் தயாரிக்கப்பட்டன. ஆயினும் அவை வரைவு நகல்களாகவே இருந்து வந்துள்ளன. அதனால் அதன் பயனை நுகர மிகச் சிலருக்கே வாய்ப்பு கிட்டியது.

இத்தொகுப்பேட்டில் விரவிக்கிடக்கும் விவரங்கள் சீரிய திட்டமிடலுக்கு அடித்தளமாக அமைகின்றன. ஒரிடத்தில் நிலவும் தட்பவெப்ப நிலை, பாசன வளம், பயிர் சாகுபடி விவரங்கள், மண் வகைகள் அவற்றின் விளைதிறன், ஏற்புடைய பயிர்கள் பற்றிய விளக்கங்கள் இடம்பெற்றுள்ளன. ஆக இவற்றின் அடிப்படையில் அமுல்படுத்தப்படும் உற்பத்திப் பெருக்குத் திட்டங்கள் அபரிமித வெற்றி அளிப்பதில் ஆச்சரியமில்லை. உதாரணமாக அண்மையில் மணிகண்டம் ஒன்றியத்தில் நிறைவேற்றப்பட்ட வேளாண் வானியியல் வளிமண்டலத் திட்டத்தினைச் சொல்லலாம். இத்திட்டத்தின் முதன்மைச் செயல் அம்சமாக இப்பகுதி நிலங்கள் நெறிப்படுத்தப்பட்டன. இத்தகைய அணுகுமுறையினால் களர்த்தன்மை உடைய இப்பகுதி நிலங்களில் சீர்த்திருத்தம் மேற்கொண்டபின் மகசூலானது எக்டேருக்கு 400 கிலோ முதல் 700 கிலோ வரை உயர்ந்துள்ளது என்பது பெருமைக்குரியதாகும்.

மிக்க பயன் அளிக்கவல்ல இத்தொகுப்பேட்டு விவரங்களினை உற்பத்தி முனைவோர் அனைவரும் பெற்றிட இதனை அச்சிடும் பணிக்கு ரூ. 10.5 இலட்சம் அனுமதித்து தமிழ்நாடுஅரசு ஆணையிட்டுள்ளது. அதன் தொடர் நிகழ்வாகவே ஏட்டளவில் இருந்த இத்தொகுப்பேடுகள் வண்ணமிகு வடிவுடனும், விவரப்பொலிவுடனும் அச்சேறி தற்போது நற்பயன் அளிக்கும் நிலை பெற்றுள்ளன. வேளாண்மை இயக்குநராக அன்று நான் துவக்கிய பணி, செயலராகப் பொறுப்பேற்றுள்ள இந்நாளில் மலர்ந்து மிளிர்வது குறித்து மட்டற்ற மகிழ்ச்சி அடைகிறேன். அத்துடன் இத்தொகுப்பேட்டுவிவரங்கள் நுண் திட்டமிடல், ஏறுமுகத் திட்டம் போன்றவற்றிற்கும் ஆதாரமாய் அமைகின்றன. புதிய சாதனைகளைத் தொடுவோரை வள்ளுவர்,

"வாரிப்பெருக்கி வளம்கூட்டு உற்றவை
ஆராய் வான்" எனப் பெருமைப்படுத்துவார்.

அவர் கூற்றுப்படி ஆராய முனைவோர்க்கு முன்னோடியாகவும், முதனிலைப் பின்புலமாகவும் இத்தொகுப்பேடு அமைந்துள்ளது என்பதில் பெரிதும் மகிழ்வடைகிறேன்.

இத்தொகுப்பேடு நன்கு வடிவமைக்கப்பட்டு, விவரங்கள் பயன்தரும் வகையில் தெளிவுப்படுத்தப்பட்டுள்ளமைக்குப் பொறுப்பான அனைவருக்கும் எனது பாராட்டுதலைத் தெரிவித்துக் கொள்கிறேன்.

17.4.98

அரசு செயலர்
வேளாண்மைத்துறை

சென்னை
17. 4. 1998

டாக்டர். க. அருள்மொழி, இ.ஆ.ப.
வேளாண்மை இயக்குநர்

சேப்பாக்கம்
சென்னை 600 005

அணிந்துரை

நில மடந்தை நமக்கு அளித்துள்ள இயற்கை வளங்களில் மிக முதன்மையானது மண்வளம் ஆகும். அத்துடன் தமிழர் வாழ்வியலில் மண்ணும் மனிதனும் பின்னிப் பிணைந்தே பேசப்படும். எனவே தான் மண்வகைகளைப் பற்றியும், அவற்றின் சாதக பாதகத் தன்மைகள் பற்றியும் சங்க கால இலக்கியங்கள் விரிவாகவே பேசுகின்றன. பிற்கால அறிவியல் முன்னேற்றம் காரணமாக ஆய்ந்தறிந்து பெறப்பட்ட உண்மைகளும் முந்தையனவைப் பெரிதும் ஒத்து இருந்தமை ஆனது பண்டைத் தமிழரின் அறிவியல் மேன்மையை எடுத்துக் கூறுவதாக அமைந்துள்ளது.

மண்வளங்களைப் பயன்படுத்துவது என்பது சமுதாயக் கட்டாயங்களினால் ஏற்பட்டதாகும். விரிந்து வரும் மக்கள் தொகை பெருகி வரும் உணவுத் தேவைகள் மற்றும் சுருங்கி வரும் சாகுபடிப் பரப்பு ஆகியவை இவற்றுள் அடங்கும். இந்த வகையில் பல மண்வகையீட்டு முயற்சிகள் தேசிய அளவிலும், மாநில அளவிலும் எடுக்கப்பட்டுவந்துள்ளன. அந்நாட்களில் சென்னை இராஜதானியில் நடத்தப்பட்ட மண்வகையீட்டுமுயற்சி இதன் துவக்கம் எனலாம். இதுவும் பின்னர் நடத்தப்பட்ட திட்டங்களும், குறிப்பிட்ட நோக்கத்திற்காகவே அமல் செய்யப்பட்டன. இதன் உச்சக்கட்டமாக 1960 ம் ஆண்டில் தரமான மண்வகையீட்டுத் திட்டம் ஒன்று மண்வகைகளின் தன்மைகளை விரிவாகவும் விளக்கமாகவும் கூர்ந்தாய்வு செய்திட அறிமுகம் செய்யப்பட்டது.

தமிழ்நாட்டு மண்வள ஆதாரங்களை விளக்கும் வரைபடங்கள் தயாரிக்கும் பணியில் வேளாண் துறையின் வகையீட்டுஅலகுகள் பணிக்கப்பட்டன. இவைகள் நடத்திய துவக்க மண்வகையீடு முலம் பெறப்பட்ட மண்வள ஆதார விவரங்கள் மாவட்ட வாரியாகத் தொகுக்கப்பட்டன. இவை மாவட்ட வளர்ச்சிக்கான திட்டமிடலுக்கு உதவுகரமாக அமைந்துள்ளன. எனினும் வெறும் வரைவு ஏடுகளாகவே இருந்து வந்த இத்தொகுப்பேடுகளை அனைவரும் பெற்றிடும் வகையில் அச்சுப் பதித்து வெளியிட தமிழ்நாடுஅரசு ரூ. 10.5 இலட்சம் நிதி அனுமதித்துள்ளது. இந்த இனிய துவக்கமாகவே மாவட்ட மண்வளத் தொகுப்பேடுகள் தற்சமயம் வெளியிடப்பட்டுள்ளன. இத்தொகுப்பேடுகளில் உணவு உற்பத்திக்கான ஊக்க முயற்சிகளுக்கு போதுமான நிலம் மற்றும் அதனைச் சார்ந்த அனைத்து விவரங்களும் இடம் பெற்றுள்ளன. நீர்ப்பாசனம், தட்பவெப்பச்சூழல், பயிர் வகைகள் விளைதிறன் ஆகிய விவரங்களின் அடிப்படையில் கிராம அளவிலான நுண் திட்டமிடல், ஏறுமுக வளர்ச்சித்திட்டம், பல்துறை பங்கேற்புத் திட்டம் போன்ற முயற்சிகள் அமல் செய்யப்படுவதற்கான இடங்களை அடையாளம் காண இத்தொகுப்பேடு பெரிதும் உதவும்.

பெரும்பயன் தரவல்ல இத்தொகுப்பேட்டினை உருவாக்கி, தொகுத்து வடிவமைத்து வெளியிட உதவிய அனைவர்க்கும் எனது பாராட்டுதல்களை மகிழ்ச்சியுடன் தெரிவித்துக் கொள்கிறேன்.

க. அருள்மொழி 30398

சென்னை
30. 3. 1998

வேளாண்மை இயக்குநர்

KANNIYAKUMARI

CONTENTS

CONTENTS

ABOUT THE SOIL ATLAS

Agriculture play a vital role in the Indian economy and provides occupation to about 75% of the population which in turn depends on several inputs applied on soil. As such soil forms the basic non renewable natural resource, its health and land productivity on a sustained basis have to be maintained for sound production system. All inputs in the production systems can be functional only when there is soil/land which is qualitatively suitable for such purpose.

In this context, soil survey form the basic tool for agriculturl development programmes and provides information on characteristics and location of the different kinds of soils and their management potentials as well as their limitation for different purposes. Keeping this in view a data base on soils of the district have been developed through reconnaissance soil survey and this is useful for planning at regional level.

In the Atlas, all the information pertinent to the socio economic condition of the district is provided briefly. Soil characteristics and their interpretations are subsequently presented at district level in small scale. For better understanding soil information and their interpretations are also given at taluk level. Further, dominant kind of soil at village level and their fertility status have been provided for developing optimum fertility management programmes.

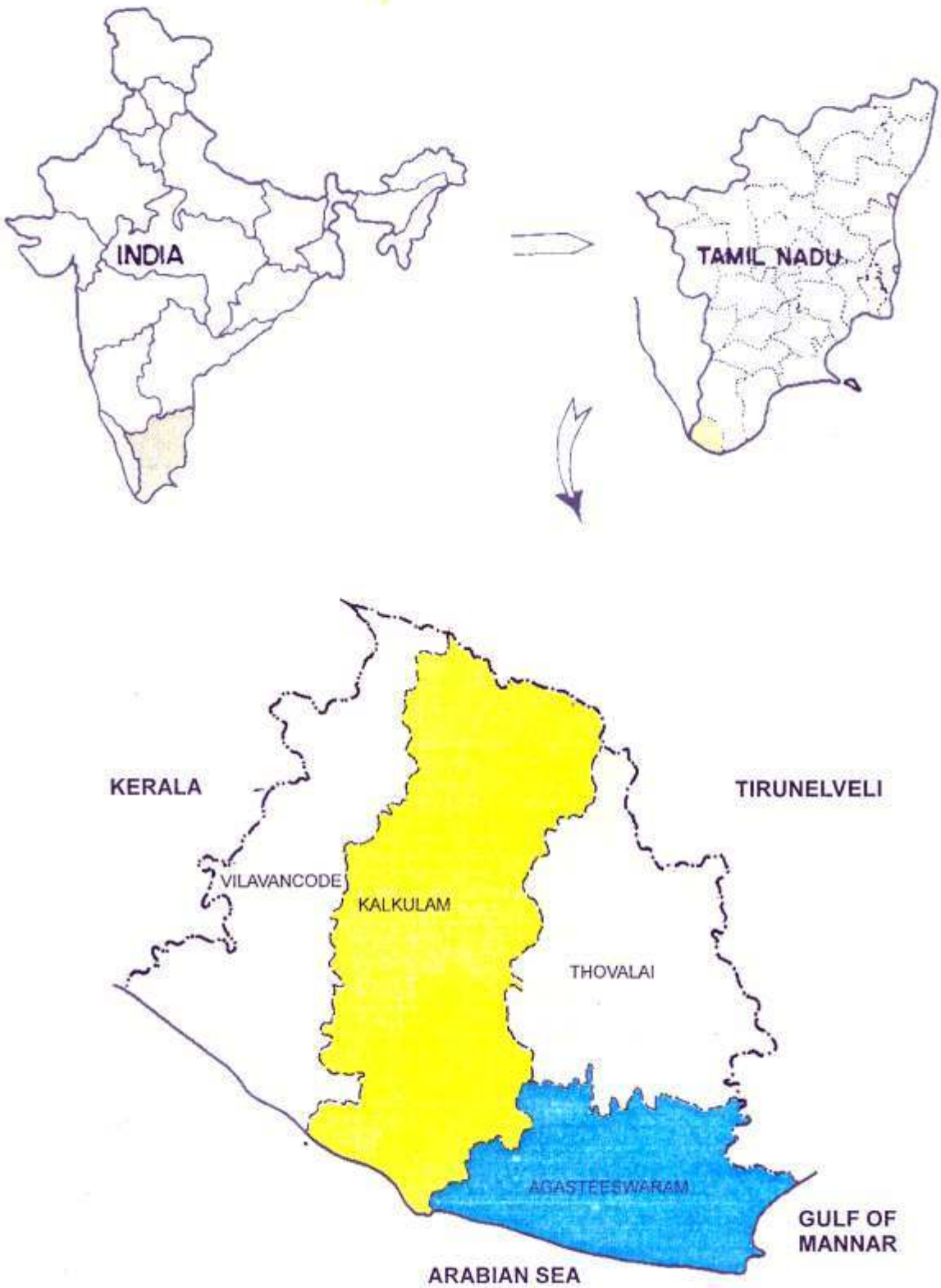
As soil is highly heterogeneous in nature, differences in soil can occur within short distances and therefore it is needless to say that detailed soil surveys at higher intensity are necessary for micro level development programmes.

LOCATION

Kanniyakumari is a coastal district bordering Kerala State and Arabian sea on the west, Indian Ocean on the south, Tirunelveli district and Kerala state on the north and Tirunelveli district on the east. It is situated between 8^{o} 03' and 8^{o} 35' North Latitude and 77^{o}05' and 77^{o}36' east longitude. The total geographical area is 1671.84sq km. It is divided into four taluks namely Agasteeswaram, Kalkulam, Thovalai and Vilavancode. The district head quarter is Nagercoil.

LOCATION MAP

KANNIYAKUMARI DISTRICT



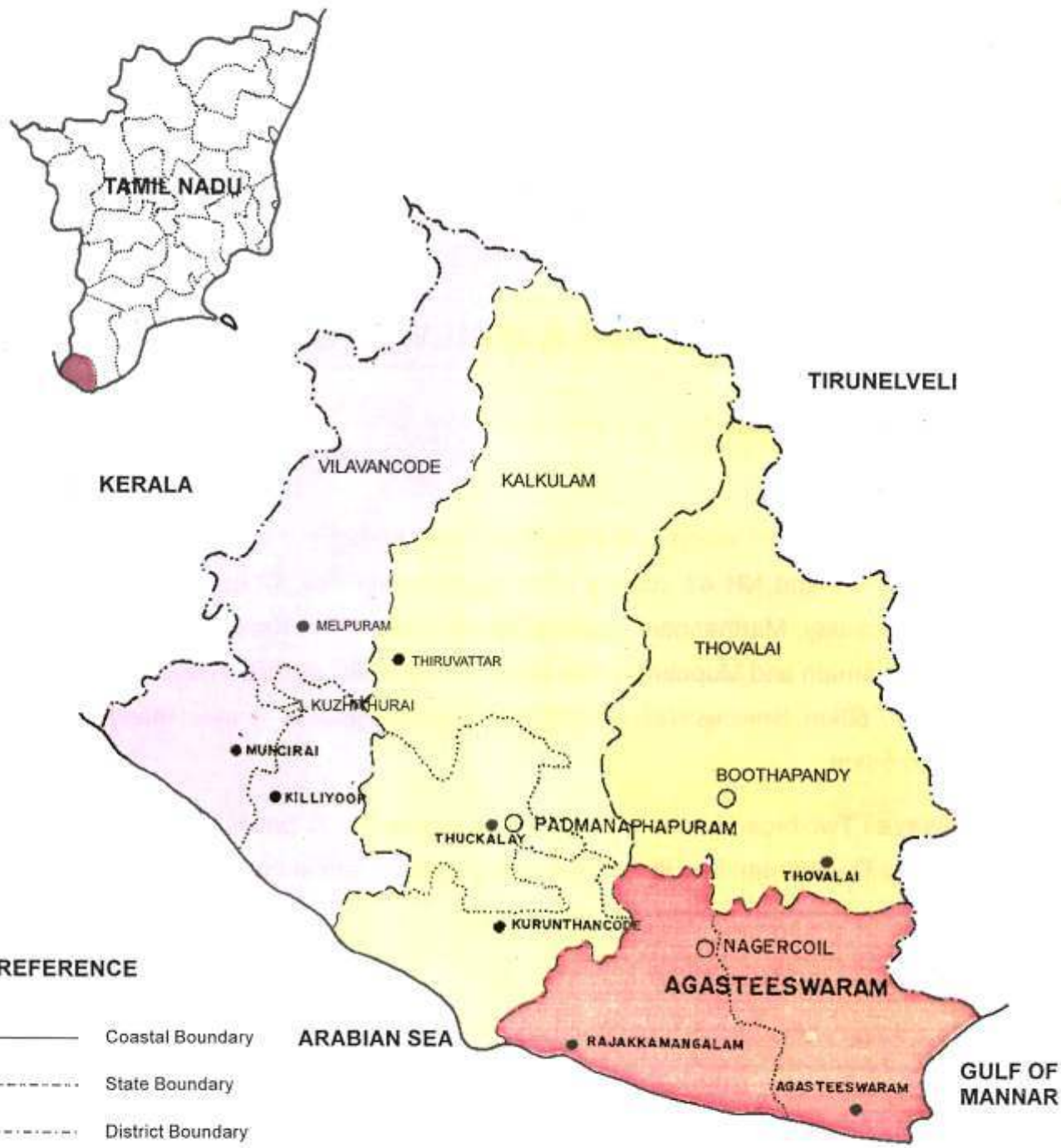
TALUKS & PANCHAYAT UNIONS

The district comprises of four taluks with nine panchayat unions as below.

Taluk	Panchayat union
1. AGASTEESWARAM	1. Agasteeswaram 2. Rajakkamangalam
2. KALULAM	1. Kurunthancode 2. Thuckalay 3. Thiruvattar
3. THOVALAI	1. Thovalai
4. VILAVANCODE	1. Killiyoor 2. Melpuram 3. Munchirai

TALUKS & PANCHAYAT UNIONS

KANNIYAKUMARI DISTRICT

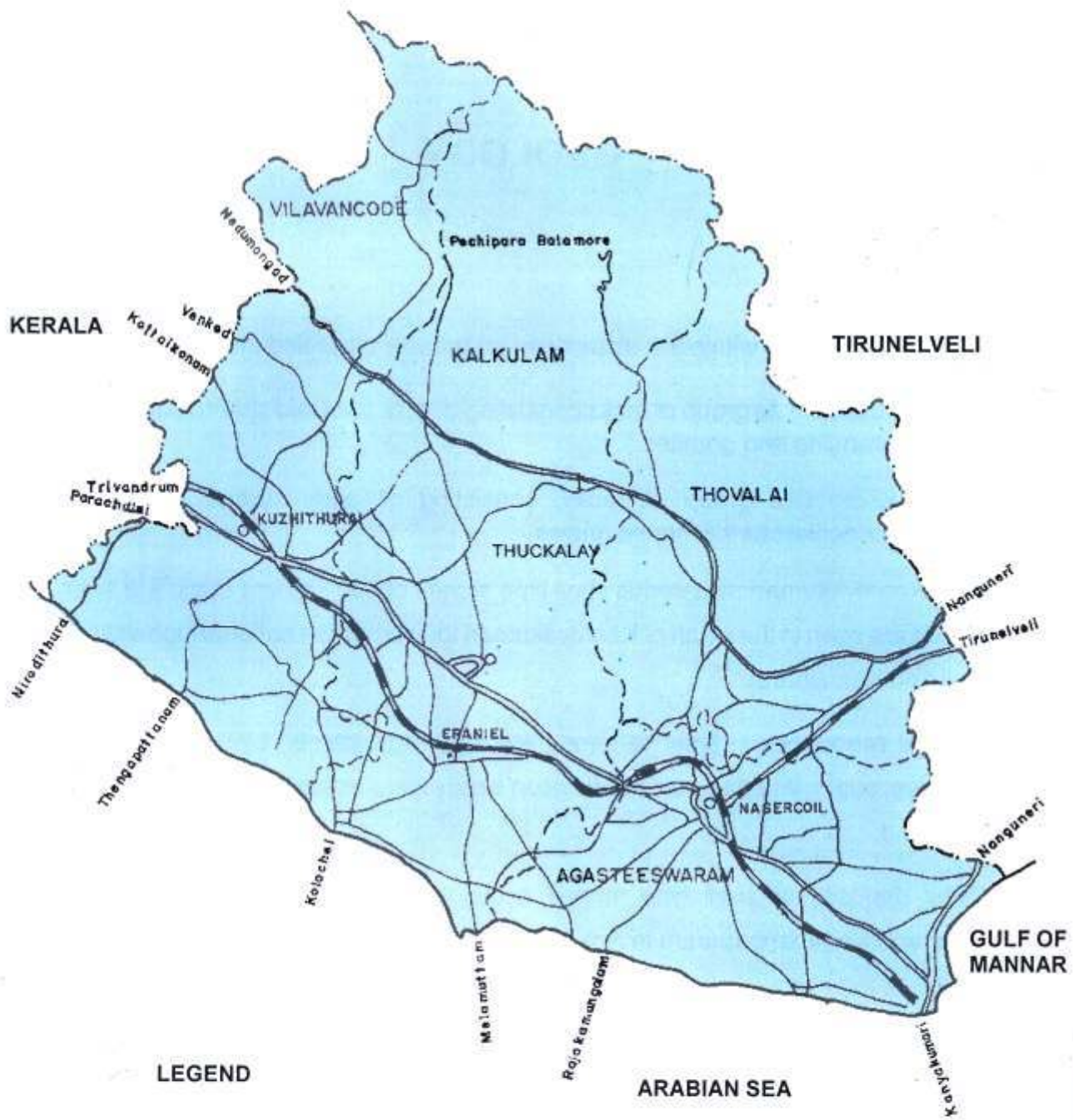


ROADS & RAILWAYS

Roads : The district which is the southern most end of our country has two National Highways ie NH 7 and NH 47 starting from capecomorin. NH 47 covers places such as Nagercoil, Thuckalay, Marthandam, Kaliakavilai and enters into Kerala state. NH 7 passes through Anjukiramam and Muppandal and leads to Tirunelveli district. The length of National Highways is 77.60km. Besides National Highways state Highways connect many places and extends upto 56km.

Railways : Two broad gauge lines start from capecomorin, one leads to Tirunelveli and another one to Trivandrum. The length of broad gauge system in the district is 78km.

ROADS AND RAILWAYS
KANNIYAKUMARI DISTRICT



GEOLOGY

The rock types met within the district can be broadly classified into two groups.

* 1. Charnockite group of rocks consisting of dark coloured charnockite, pyroxene granulite and granites.

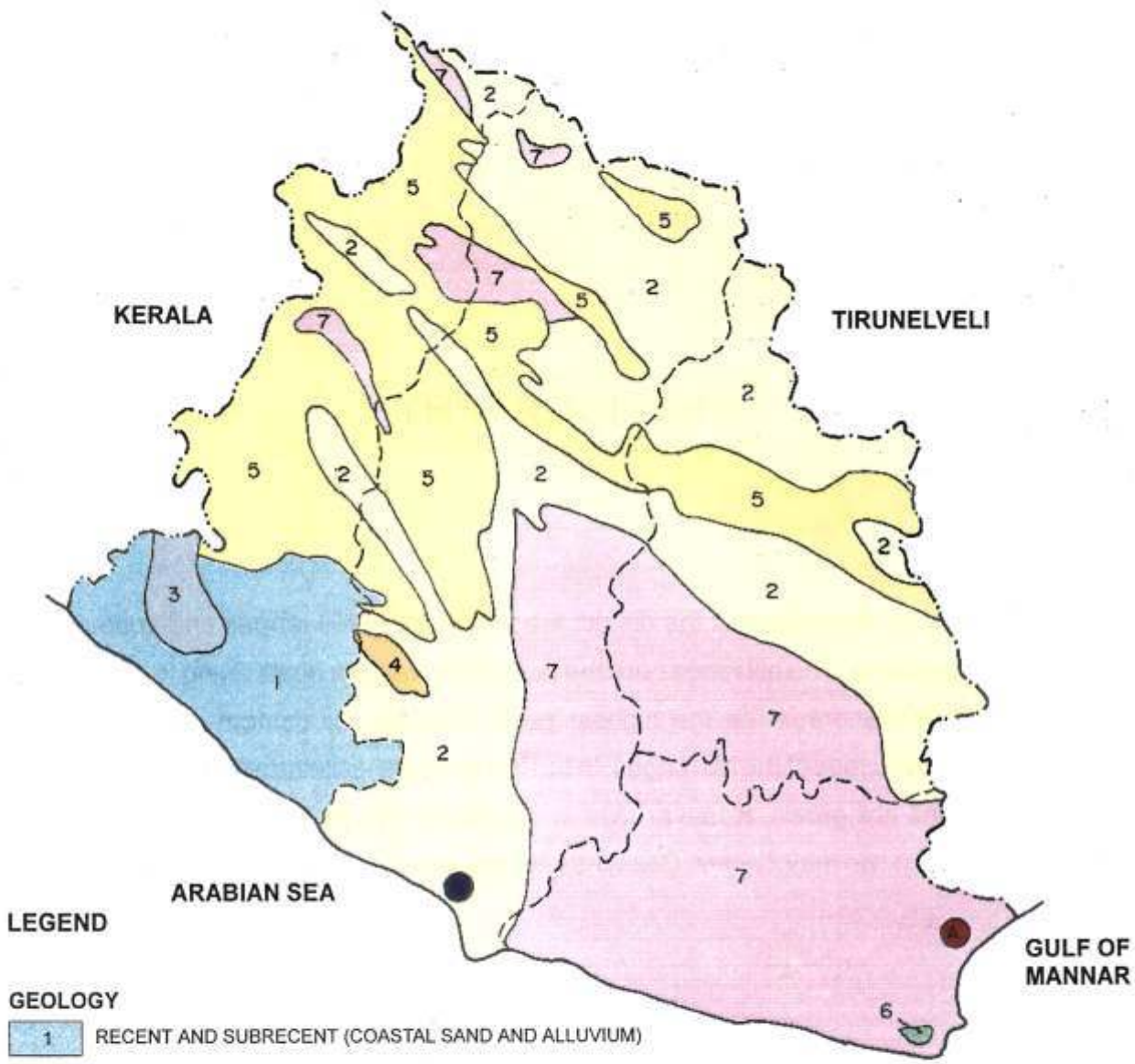
* 2. Khondalite group of rocks, consisting of garnetiferous biogneiss and garnetiferous sillimonite gneiss.

Near Kanniyakumari calcareous shell lime stones of sub - recent origin are seen. Thick lateritic soils are seen in the south of Kanniyakumari to Trivandrum national highways between Nagercoil and Kuzhithurai.

Mineral resources : Ilmenite sands are exposed between Lipuram and Vattakottai along the west coast. Ilmenite, rutile and zircon sands were estimated with a minor fraction of monazite sand.

Small deposits of shell lime stones occur near Kovalam, capecomorin, Lipuram, Vattakottai and Kanagappapuram in Agasteeswaram taluk.

GEOLOGY
KANNIYAKUMARI DISTRICT



LEGEND

GEOLOGY

1	RECENT AND SUBRECENT (COASTAL SAND AND ALLUVIUM)
2	GARNETIFEROUS BIO - GNEISS
3	TERTIARY FORMATIONS (WARKALAI BED)
4	GRANITE
5	GARNETIFEROUS SILLIMONITE GNEISS
6	CELE GRANULATE AND SHELL LIMESTONE
7	CHARNOCKITE

MINERAL

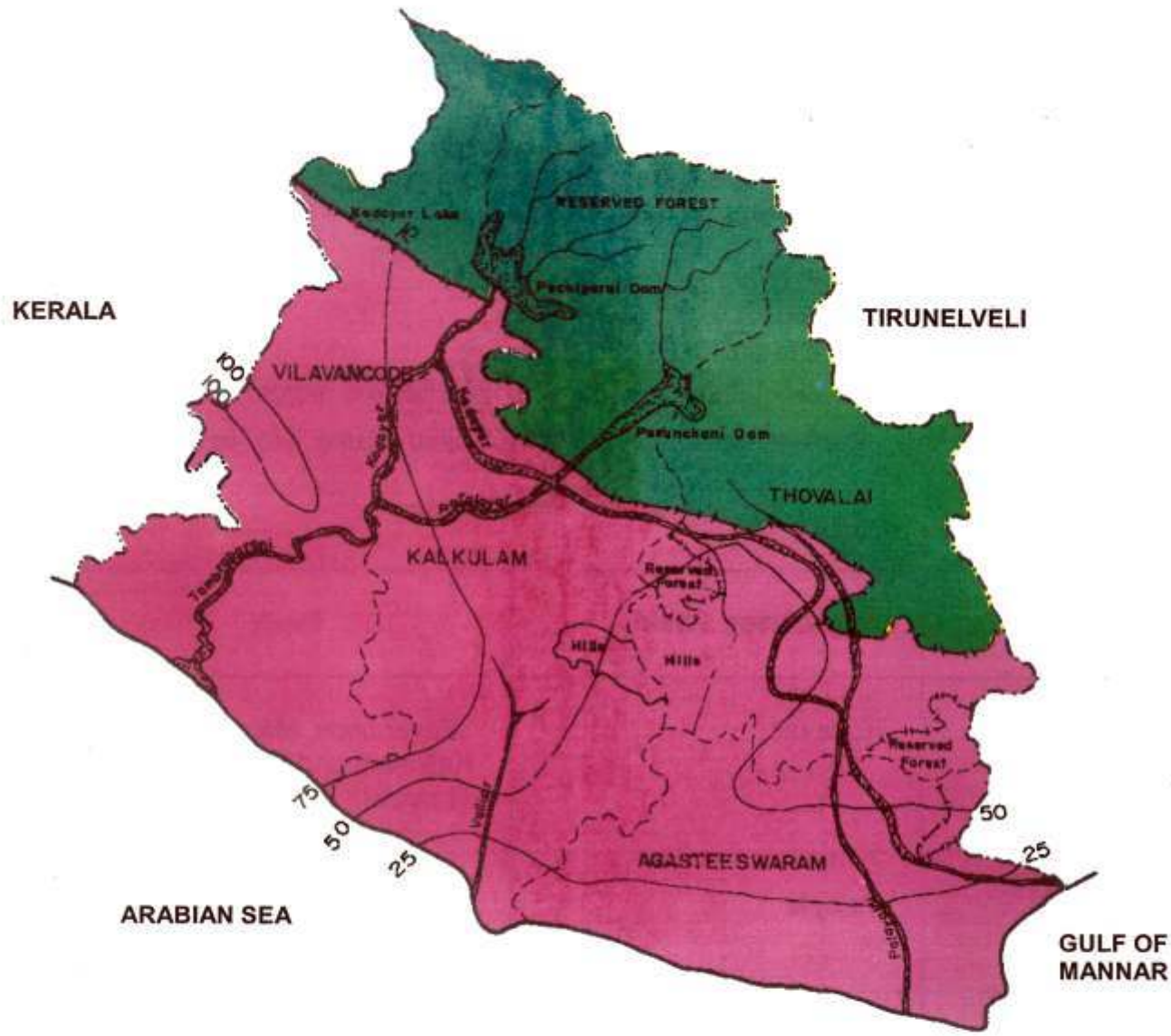
ILMENITE

WORLD RENOWNED ILMENITE, ROTILE AND ZIREON SANDS

PHYSIOGRAPHY

Most of the northern parts of the district are occupied by Hill ranges and southern and western parts by plains. The hill ranges are the part of the western ghats rising to an elevation of 1654m with Mahendragiri as the highest peak. Tea and cardamom estates are well developed on plateau tops of the hill ranges. In the low undulating plains adjacent to hill ranges, rubber plantations are grown. Kodayar river in the western parts and Paraliyar river in the central parts are the two major rivers. Coast has narrow stretches of beaches and sand dunes.

PHYSIOGRAPHY
KANNIYAKUMARI DISTRICT



LEGEND

- Rivers
- Tanks
- 50 — Contour with Level

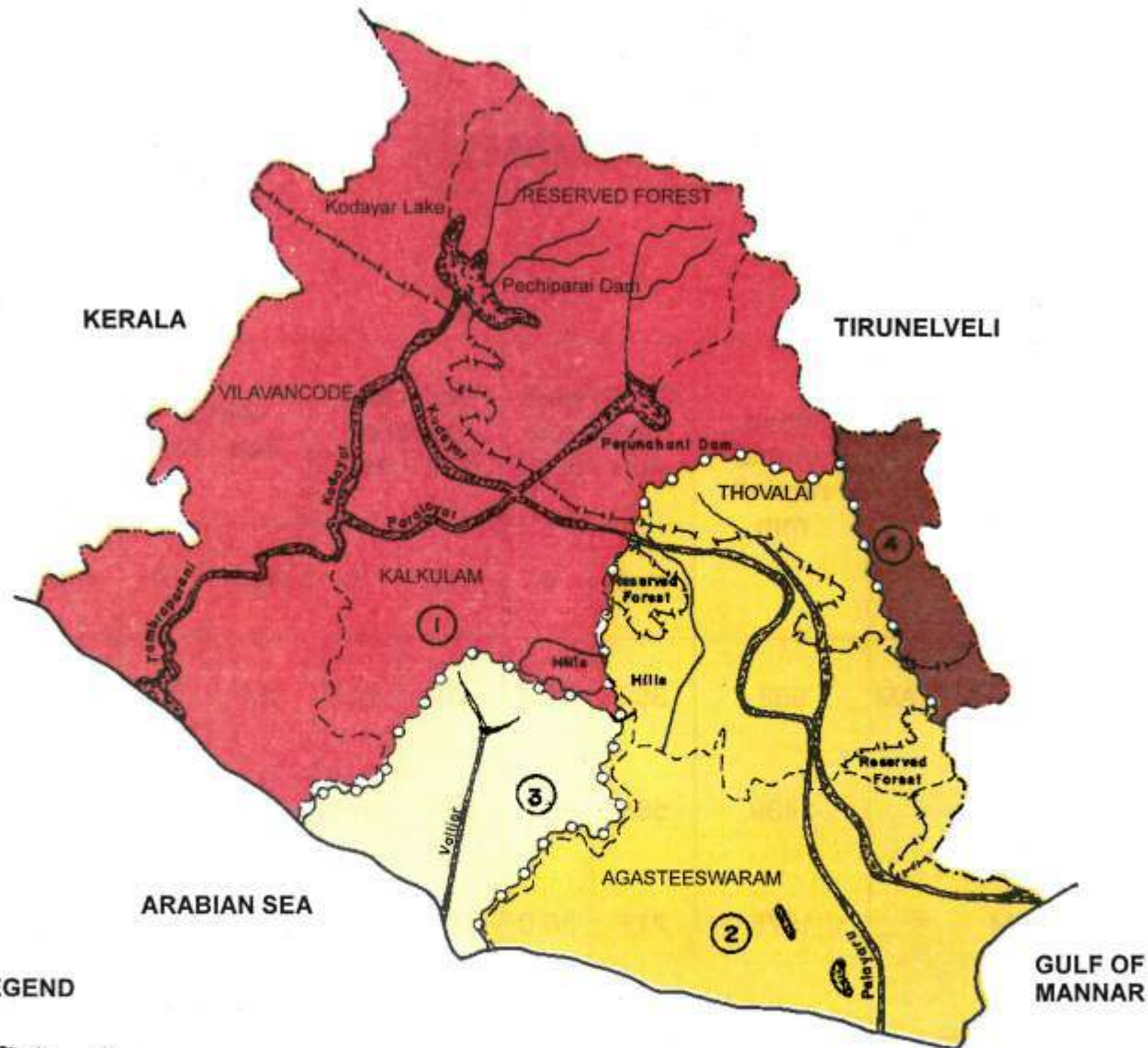
DRAINAGE & RIVER BASINS

Pazhayar, Paraliyar, Tamirabarani, Kodayar and Valliar are major rivers benefitting the agricultural activities. Pechiparai,Perunchani and Chittar dams are used for irrigation purposes.

S.No.	River Basin	Taulk
1.	Kodayar	Vilavancode, Major part of Kalkulam and Northern part of Thovalai
2.	Palayar	Agasteeswaram and major part of Thovalai
3.	Valliyar	Southern part of Kalkulam
4.	Hanumanathi	Eastern part of Thovalai taluk

RIVER BASIN & WATER SHED

KANNIYAKUMARI DISTRICT

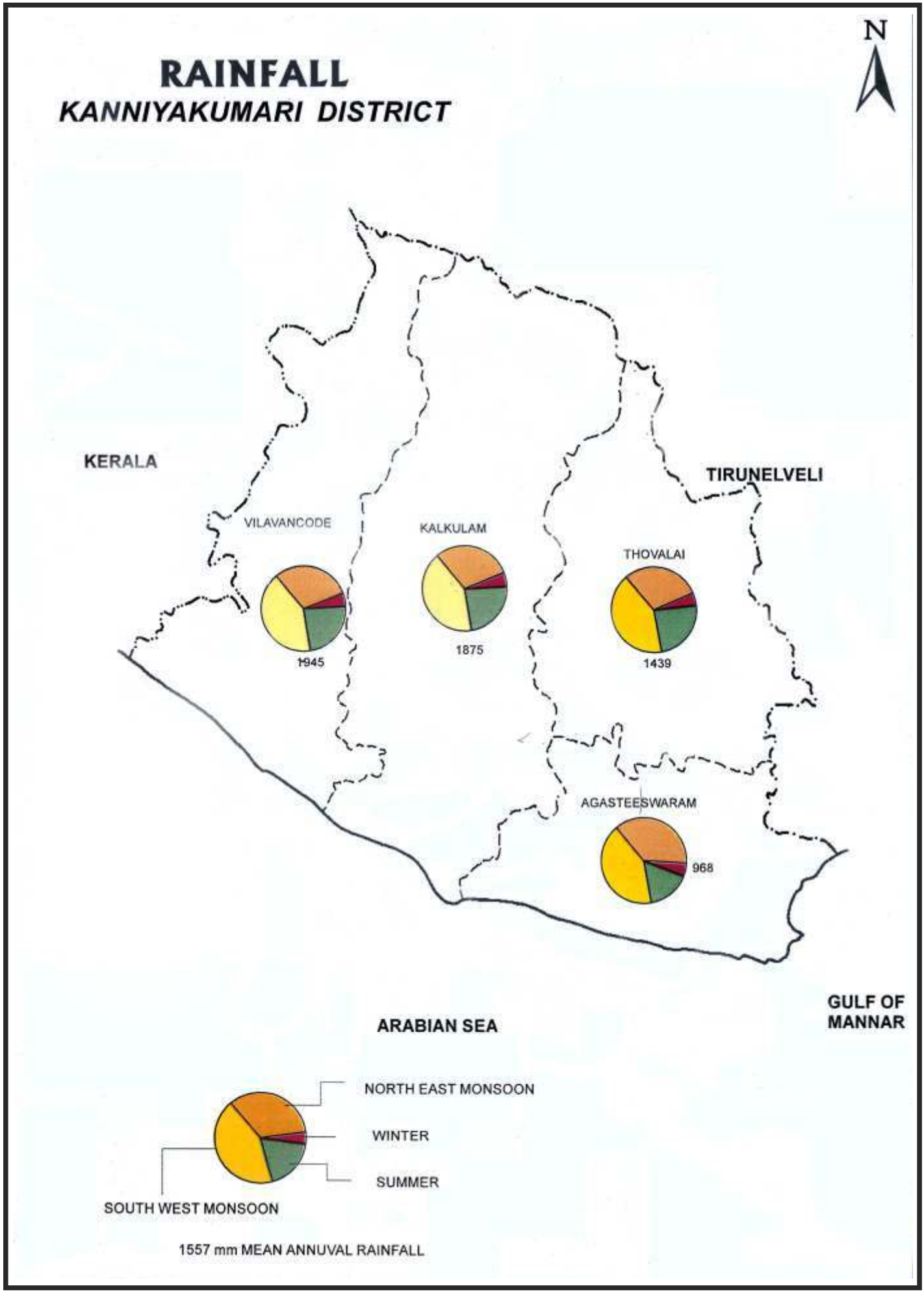


LEGEND

- Rivers
- Tanks
- Basin Boundary
- 3 — Basin Number
- 1 — Kodayaru Basin
- 2 — Palayaru Basin
- 3 — Valliyar Basin
- 4 — Hanumannadi Basin

RAINFALL

Taluk	Mean annual rainfall mm	South west monsoon Jun - Sep		North east monsoon Oct - Dec		Winter Jan - Feb		Summer Mar - May	
		mm	%	mm	%	mm	%	mm	%
1. AGASTEESWARAM	968	352	36.4	419	43.3	27	2.8	170	17.5
2. THOVALAI	1439	565	39.3	527	36.6	27	1.9	320	22.2
3. KALKULAM	1875	717	38.0	666	35.5	51	3.0	441	23.5
4. VILAVANCODE	1945	795	40.9	650	33.4	47	2.4	453	23.3
Mean for the district	1557	607	39.0	566	36.4	38	2.4	346	22.0


RAINFALL
KANNIYAKUMARI DISTRICT
N
KERALA
TIRUNELVELI
VILAVANCODE
1945
KALKULAM
1875
THOVALAI
1439
AGASTEESWARAM
968
ARABIAN SEA
GULF OF MANNAR
NORTH EAST MONSOON
WINTER
SUMMER
SOUTH WEST MONSOON
1557 mm MEAN ANNUVAL RAINFALL

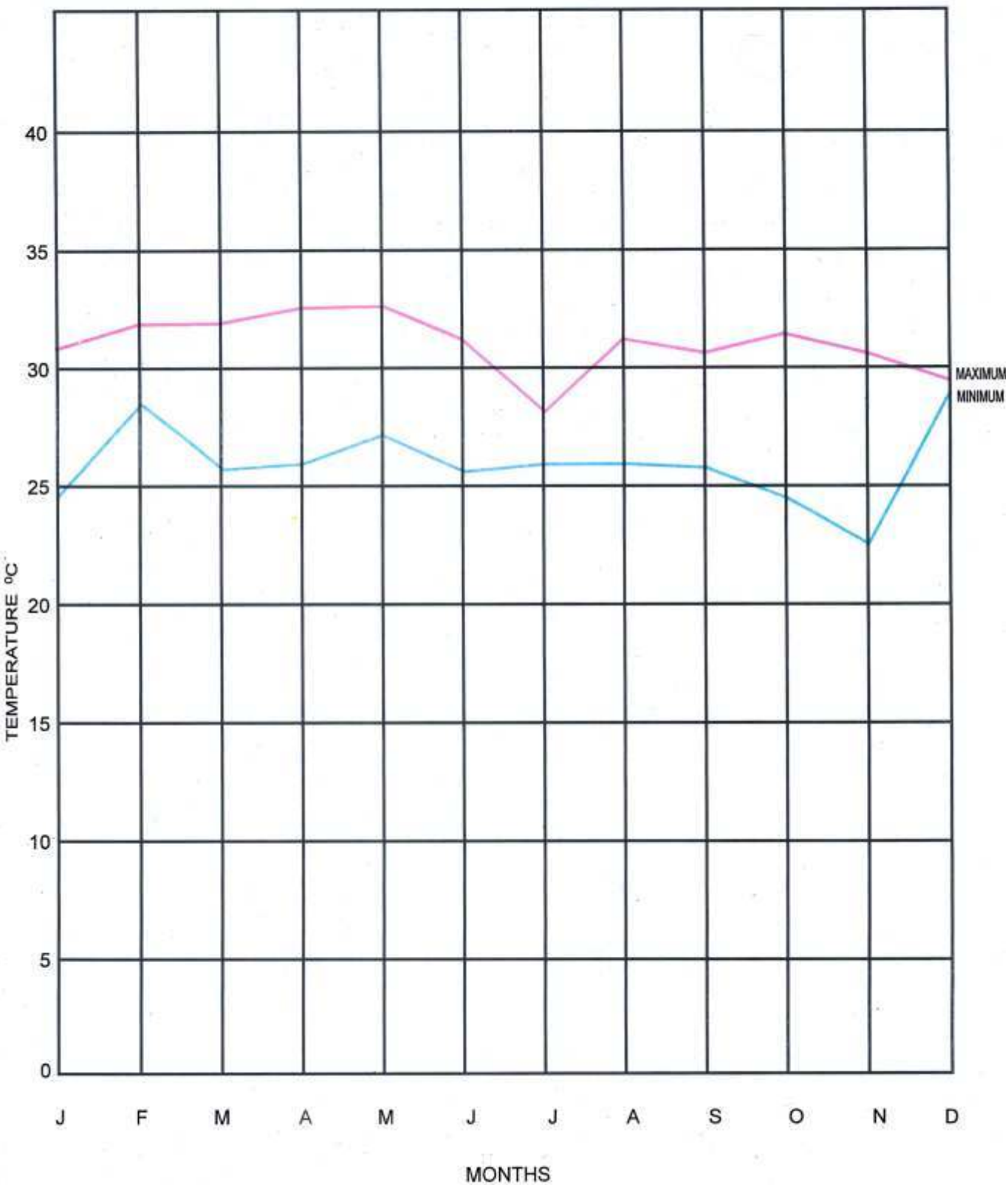
TEMPERATURE

The Mean annual temperature of the District is 28.3°C. The temperature data indicates that April and May are the hottest months. October and November are the cooler months. The data on soil temperature is lacking. By computing the atmospheric temperature, the temperature regime is deduced to be ISO HYPERTHERMIC.

Month	Maximum temperature (°C)	Minimum temperature (°C)	Mean temperature (°C)
January	30.4	24.5	27.5
February	32.1	28.2	28.7
March	32.0	25.1	28.6
April	32.7	25.5	29.1
May	32.8	26.6	29.7
June	31.3	25.2	28.3
July	28.8	25.4	27.1
August	31.3	25.6	28.4
September	30.4	25.5	28.6
October	31.3	24.5	27.9
November	30.7	22.4	26.5
December	29.7	28.9	29.3
Mean	31.04	25.3	28.3

TEMPERATURE

KANNIYAKUMARI DISTRICT



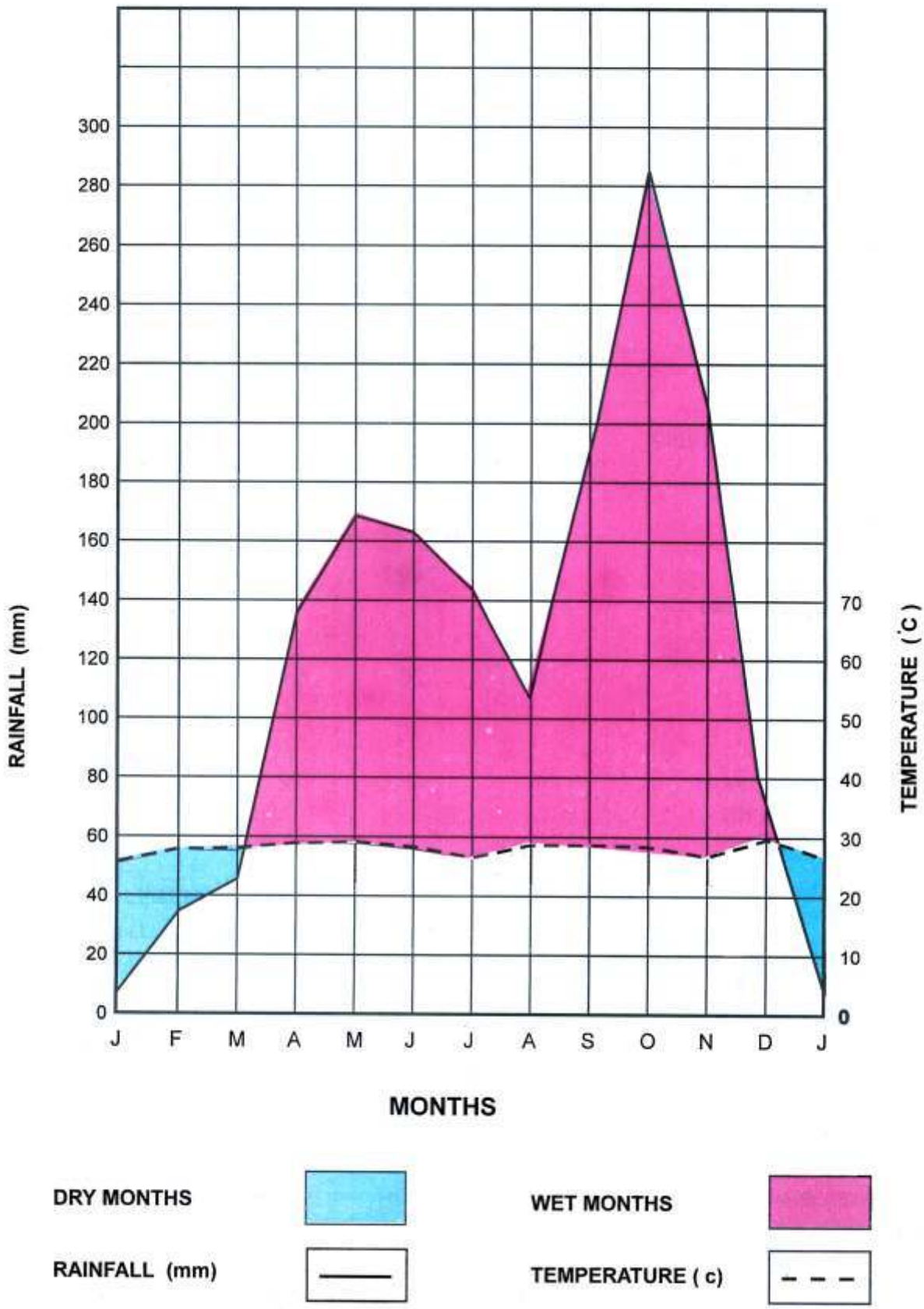
OMBROTHERMIC DATA

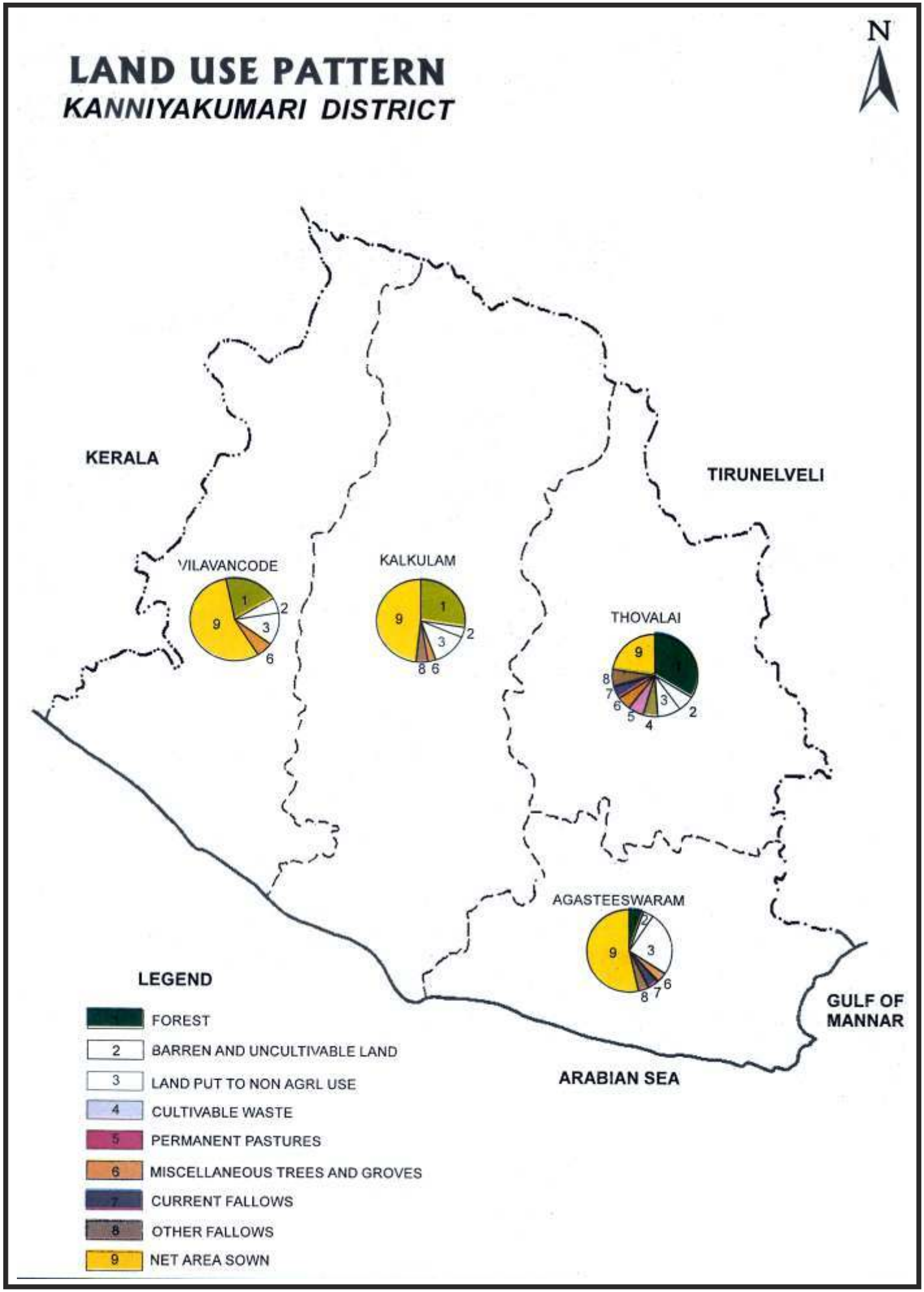
Month	Mean rainfall(mm)	Mean temperature (°C)
January	5.7	27.5
February	33	28.7
March	44.3	28.6
April	134.1	29.1
May	168.2	29.7
June	164.1	28.3
July	143.3	27.1
August	108.3	28.4
September	191.3	28.6
October	285.9	27.9
November	206.5	26.5
December	72.5	29.3

The ombrothermic diagram prepared from the rainfall and temperature data indicates nine months of wet, three months of dry period in a year.

OMBROTHERMIC DIAGRAM

KANNIYAKUMARI DISTRICT




LAND USE PATTERN
KANNIYAKUMARI DISTRICT
N
KERALA
TIRUNELVELI
VILAVANCODE
KALKULAM
THOVALAI
AGASTEESWARAM
GULF OF MANNAR
ARABIAN SEA
LEGEND
1 FOREST
2 BARREN AND UNCULTIVABLE LAND
3 LAND PUT TO NON AGRL USE
4 CULTIVABLE WASTE
5 PERMANENT PASTURES
6 MISCELLANEOUS TREES AND GROVES
7 CURRENT FALLOWS
8 OTHER FALLOWS
9 NET AREA SOWN

LAND USE PATTERN

(Area in hectares)

Land use	Agastee swaram	Kalkulam	Thovalai	Villavan code	Total
Total geographical area	27739	59363	36907	43175	167184
1. Forests	795	18718	19916	9925	49354
2. Barren and uncultivable land	1287	979	820	252	3338
3. Land put to non agricultural use	7726	7490	3619	5491	24326
4. Cultivable waste	6	20	99	12	137
5. Permanent pastures and grazing lands	4	3	72	—	79
6. Miscellaneous tree crops and groves	160	223	57	33	473
7. Current fallows	41	6	500	17	564
8. Other fallow lands	57	66	2039	8	2170
9. Net area sown	17663	31858	9785	27437	86743

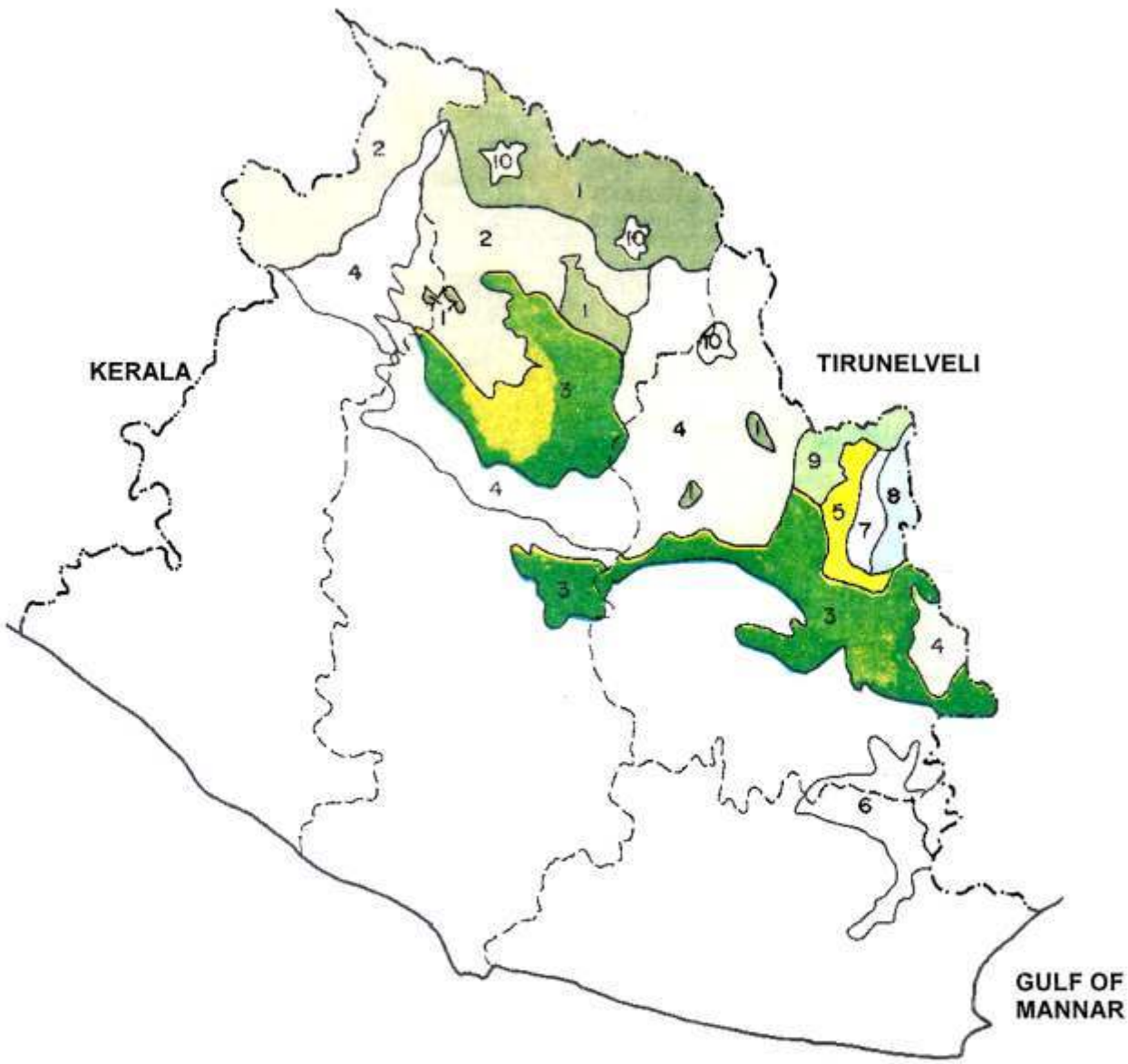
FOREST

Total area under forests is 49354 ha which accounts for 29.5% of the District. The District consists of ten types of forests viz.

* 1) Southern Hill top tropical evergreen forest
* 2) West Semi ever green forest
* 3) Slightly moist and teak forest
* 4) Southern moist mixed deciduous forest
* 5) Southern dry mixed deciduous forest
* 6) Dry Savannah forest
* 7) Southern thorn forest
* 8) Carmatic umbrella thorn forest
* 9) Southern Subtropical hill forest
* 10) Ochlandra reed brakes

Taluk	Area	
	ha	%
1. AGASTEESWARAM	795	1.6
2. KALKULAM	18,718	37.9
3. THOVALAI	19,916	40.4
4. VILAVANCODE	9,925	20.1
Total	49,354	100.00

FOREST
KANNIYAKUMARI DISTRICT

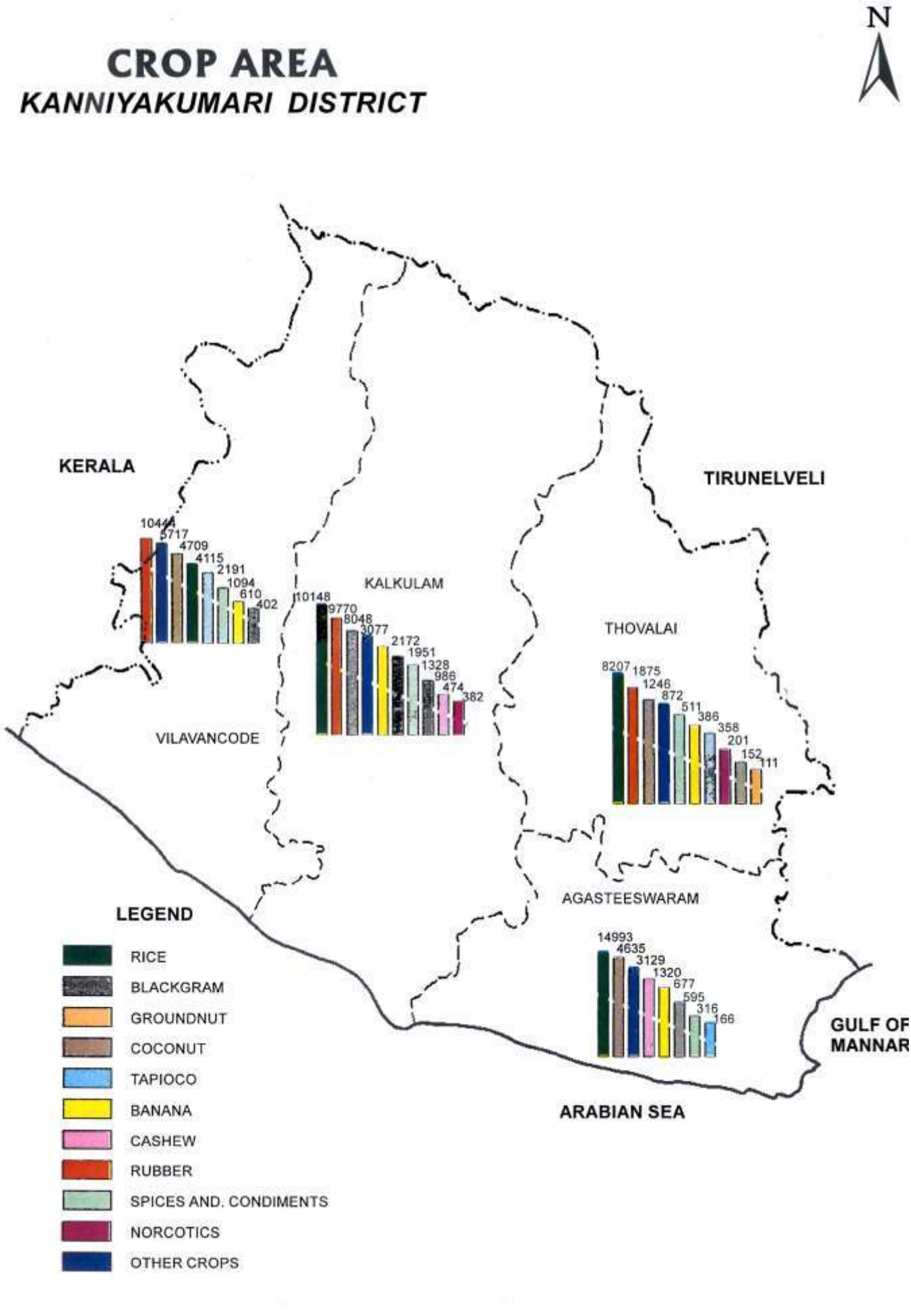


CROP AREA

(Area in hectares)

Crop	Agastee swaram	Thovalai	Kalkulam	Vilavan code	Total
1. Rice	14,993	8,207	10,148	4,115	37,463
2. Blackgram	595	152	986	402	2,135
3. Other pulses	—	—	21	185	206
4. Groundnut	5	111	—	2	118
5. Coconut	4,635	1,246	8,048	4,709	18,638
6. Tapioca	166	358	3,077	5,717	9,318
7. Banana	677	386	2,172	610	3,845
8. Cashew	1,320	35	474	195	2,024
9. Rubber	—	1,875	9,770	10,444	22,089
10. Spices and Condiments	316	511	1,328	1,094	3,249
11. Norcotics	—	201	382	37	620
12. Othercrops	3,129	872	1,951	2,191	8,143
TOTAL	25,836	13,954	38,357	29,701	1,07,848

CROP AREA
KANNIYAKUMARI DISTRICT



CROPPING CALENDAR

The major crops cultivated in this District are Paddy, Tapioca, Rubber, Coconut, Banana spices and pulses. Paddy is grown as a major crop in Agasteeswaram, Thovalai and Kalkulam taluks where as tapioca is the major crop followed by paddy in Vilavancode taluk. The phenologic seasons of these crops are shown in the chart indicating the various stages of crops during different months.

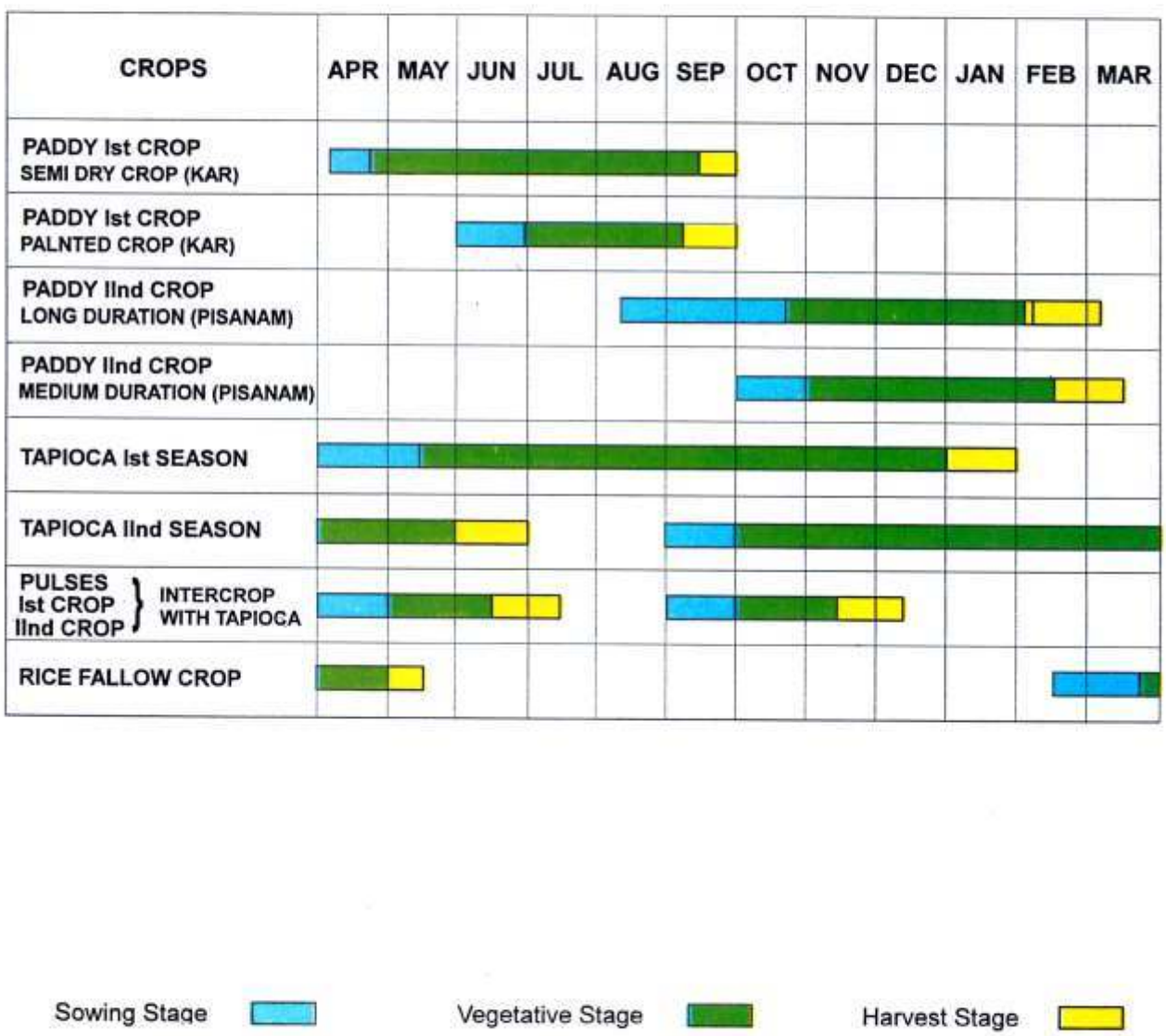
SOURCES OF IRRIGATION

Canals and tanks are the major source of irrigation supplemented by open wells. 16500 ha are irrigated by tanks and 12000 ha by canals followed by 1300 ha through wells and 300 ha through other sources. Pechiparai and Perunchani are the major dams in the district.

Taluk	Canals		Wells	Tanks		
	No.s	Length (km)		Nos. with ayacut > 40 ha	Nos. with ayacut < 40 ha	Total
1. Agasteeswaram	36	26	1047	18	197	215
2. Kalkulam	7	259	415	4	1216	1220
3. Thovalai	6	97	283	17	255	272
4. Vilavancode	4	121	492	2	884	886

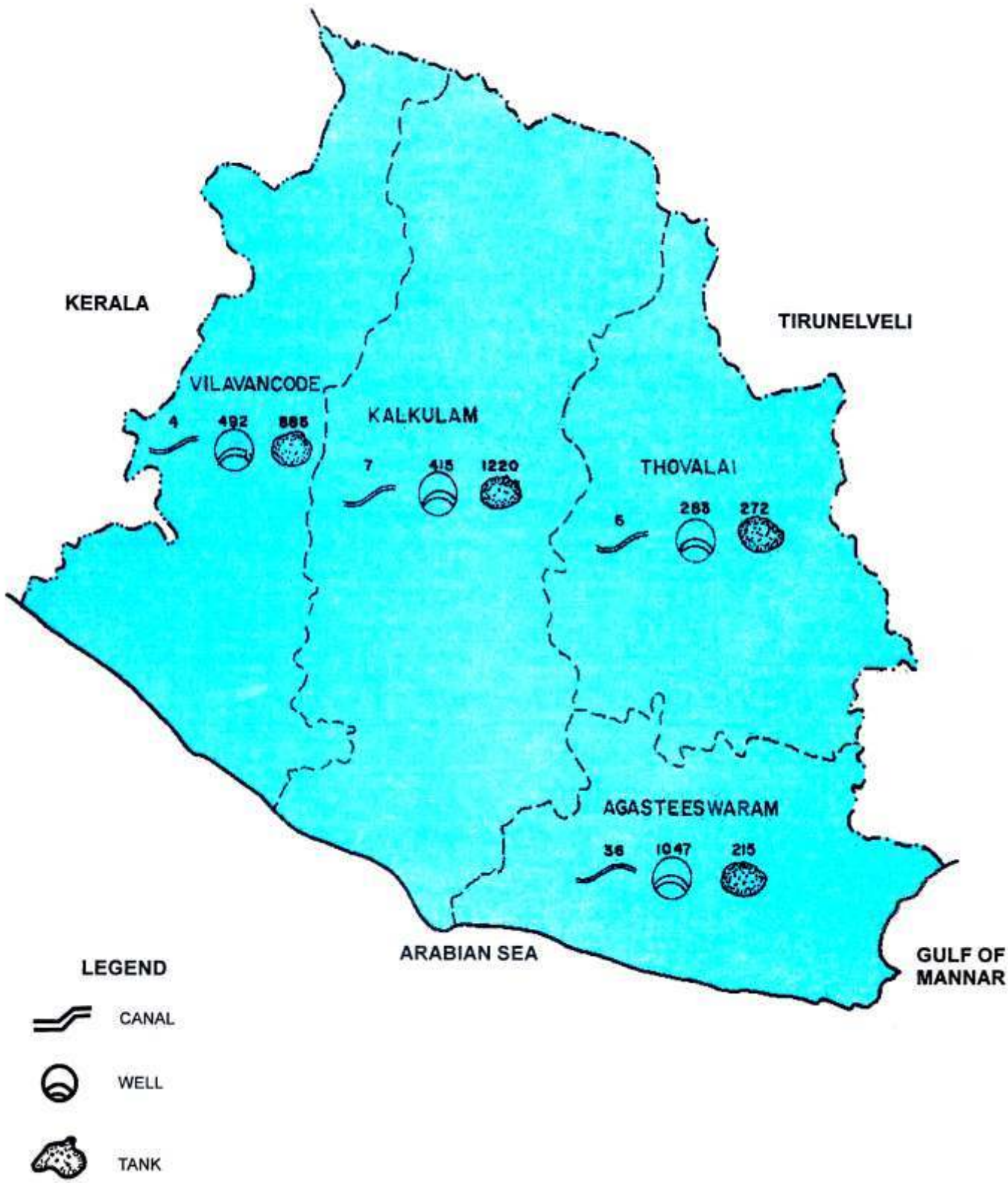
CROPPING CALENDAR

KANNIYAKUMARI DISTRICT



SOURCES OF IRRIGATION

KANNIYAKUMARI DISTRICT

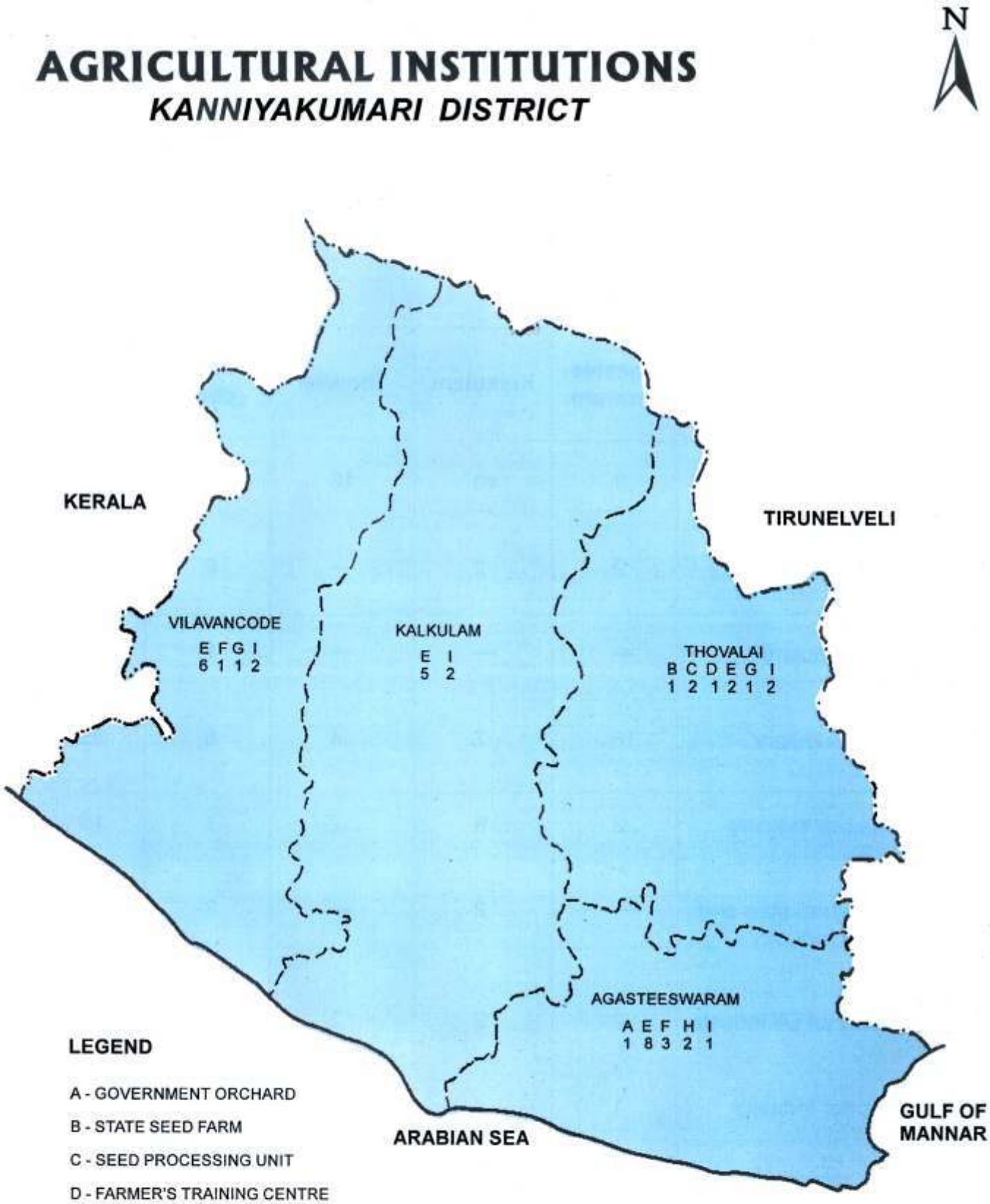


AGRICULTURAL INSTITUTIONS

Institutions	Agastee swaram	Kalkulam	Thovalai	Vilavan code	Total
1. Government orchard	1	—	—	—	1
2. State seed farm	—	—	1	—	1
3. Seed processing unit	—	—	2	—	2
4. Farmers training centre	—	—	1	—	1
5. Agricultural Extension centre	8	5	2	6	21
6. Agricultural Laboratory	3	—	—	1	4
7. Agricultural research station	—	—	1	1	2
8. Coconut farm	2	—	—	—	2
9. Regulated market	1	2	2	2	7

AGRICULTURAL INSTITUTIONS

KANNIYAKUMARI DISTRICT



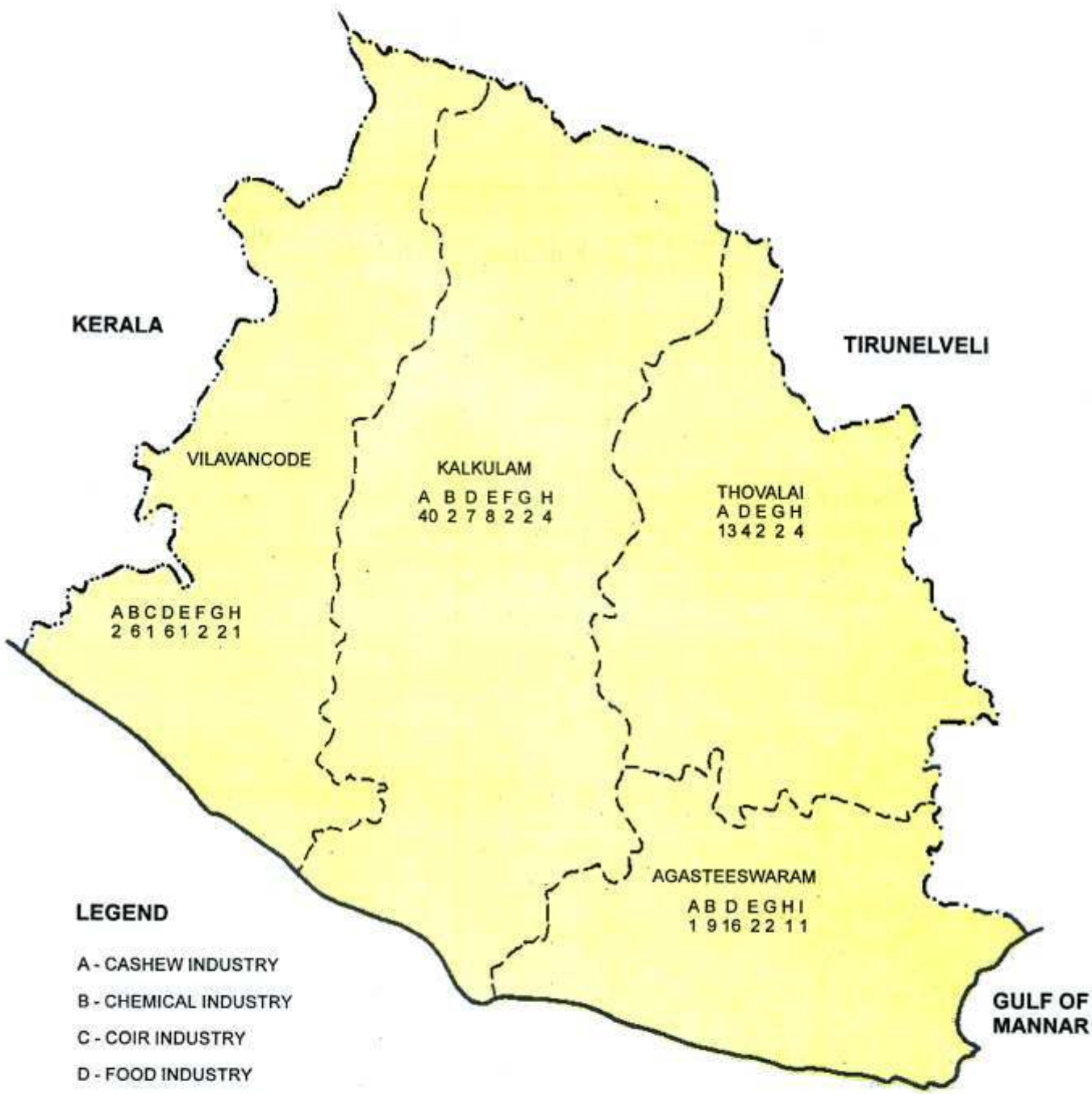
AGRO - INDUSTRIES

Industry	Agastee swaram	Kalkulam	Thovalai	Vilavan code	Total
1. Cashew Industry	1	40	13	2	56
2. Chemical Industry	9	2	—	6	17
3. Coir Industry	—	—	—	1	1
4. Food Industry	16	7	4	6	33
5. Rubber Industry	2	8	2	1	13
6. Palmyrah fibre and brushes Industry	—	2	—	2	4
7. Coconut Oil Industry	2	2	2	2	8
8. Timber Industry	1	4	4	1	10
9. Tapioca flour Industry	1	—	—	—	1

ANIMAL HUSBANDRY INSTITUTIONS

Institutions	Agastee swaram	Kalkulam	Thovalai	Vilavan code	Total
1. Veterinary Hospitals and Dispensaries	8	11	2	4	25
2. Mobile veterinary unit	1	—	—	—	1
3. Key village centres	2	1	1	1	5
4. Livestock Research centre	1	—	—	—	1
5. Poultry Extension centre	1	—	—	—	1
6. Municipal slaughter houses	2	1	—	3	6
7. Fishing points	4	9	—	3	16

AGRO INDUSTRIES
KANNIYAKUMARI DISTRICT



LEGEND

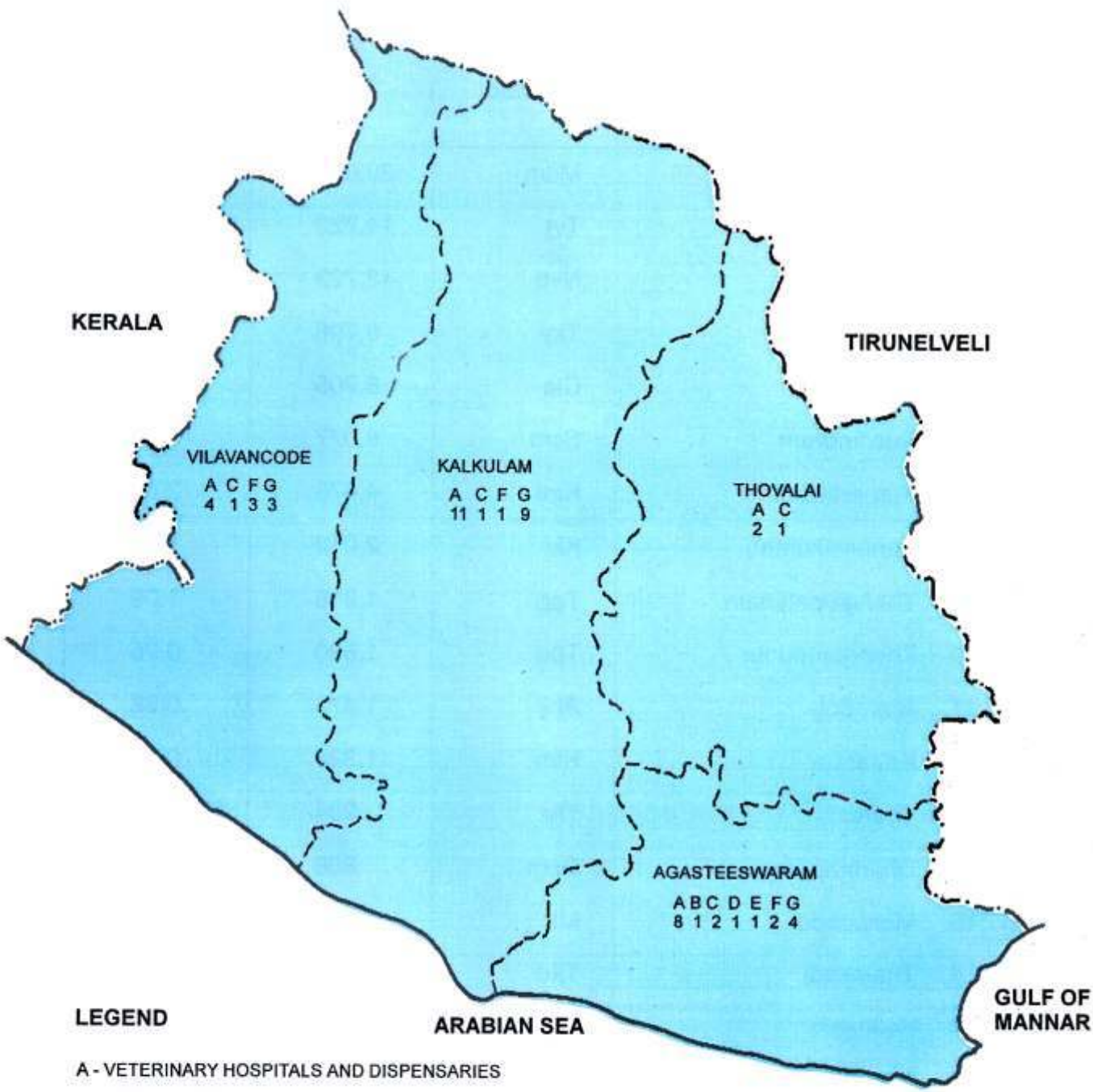
A - CASHEW INDUSTRY
B - CHEMICAL INDUSTRY
C - COIR INDUSTRY
D - FOOD INDUSTRY
E - RUBBER INDUSTRY
F - PALMYRAH FIBRE AND BRUSHES INDUSTRY
G - COCONUT OIL INDUSTRY
H - TIMBER INDUSTRY
I - TAPIOCA FLOUR INDUSTRY

SOILS

Soil series	Symbol	Extent	
		(ha)	%
1. Marthandam	Mdm	20,033	11.98
2. Thiruvattar	Tvt	14,723	8.81
3. Navalkadu	Nvd	13,729	8.21
4. Thuckalay	Tky	8,796	5.26
5. Colachal	Clc	8,705	5.21
6. Suchindram	Scm	8,077	4.83
7. Kumarakovil	Kml	4,476	2.68
8. Kanniyakumari	Kki	2,012	1.20
9. Thengaipattinam	Tgp	1,818	1.09
10. Thengampudur	Tpd	1,590	0.95
11. Aramboly	Aby	1,478	0.88
12. Kottaram	Ktm	1,328	0.80
13. Therur	Thr	984	0.59
14. Dharmapuram	Dpm	808	0.48
15. Mullucode	Mlc	802	0.48
16. Thalakudi	Tkd	740	0.44
17. Kalkulam	Klk	650	0.39
18. Thovalai	Tvl	312	0.19
Forests	—	49,354	29.52
Others	—	26,769	16.01
TOTAL	—	1,67,184	100.00

ANIMAL HUSBANDARY INSTITUTIONS

KANNIYAKUMARI DISTRICT



LEGEND

A - VETERINARY HOSPITALS AND DISPENSARIES

B - MOBILE VETERINARY UNIT

C - KEY VILLAGE CENTRES

D - LIVE STOCK RESEARCH CENTRE

E - POULTRY EXTENSION CENTRE

F - MUNICIPAL SLAUGHTER HOUSES

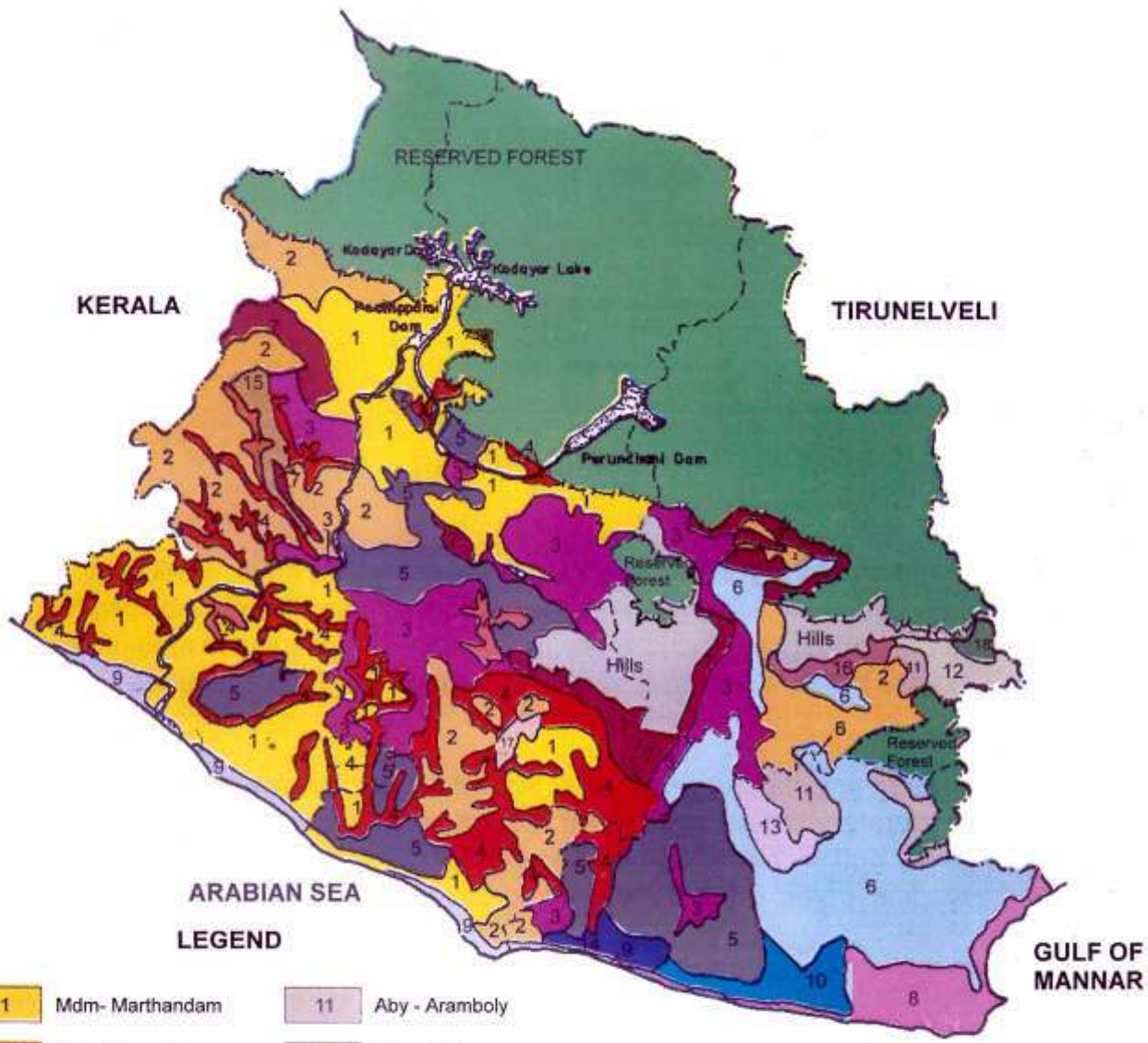
G - FISHING POINTS

MARTHANDAM SERIES (Mdm)

Physiography	..	Gently sloping Uplands to Undulating
Drainage	..	Well drained
Parent mateial	..	Laterite

HORIZON	DESCRIPTION
Ap	0 - 18cm; reddish brown (2.5 YR 5/4 M); sandy clay loam; weak to moderate, fine to medium subangular blocky; dry slightly hard, moist friable, wet slightly sticky and slightly plastic; many, fine roots; common, fine to medium and few coarse pores; moderately slow permeability; clear, wavy boundary; pH 5.4.
Bw_1	18 - 58 cm; reddish brown (2.5 YR 4/4 M); sandy clay loam; 20% gravels; moderate, medium subangular blocky; dry hard, moist friable, wet slightly sticky and slightly plastic; few, fine to medium roots; common, fine and few medium pores; moderately slow permeability; clear, wavy boundary; pH 5.3.
Bw_2	58 - 115 cm; red (2.5 YR 4/8 M); gravelly sandy clay loam; 30% gravels; moderate to strong, medium to coarse subangular blocky; dry very hard, moist firm, wet slightly sticky and slightly plastic; common, fine to coarse ferro manganese concretions; few, fine to coarse roots; common fine and few medium pores; moderately slow permeability; pH 5.1.
C	115^+ cm; laterite

SOILS
KANNIYAKUMARI DISTRICT



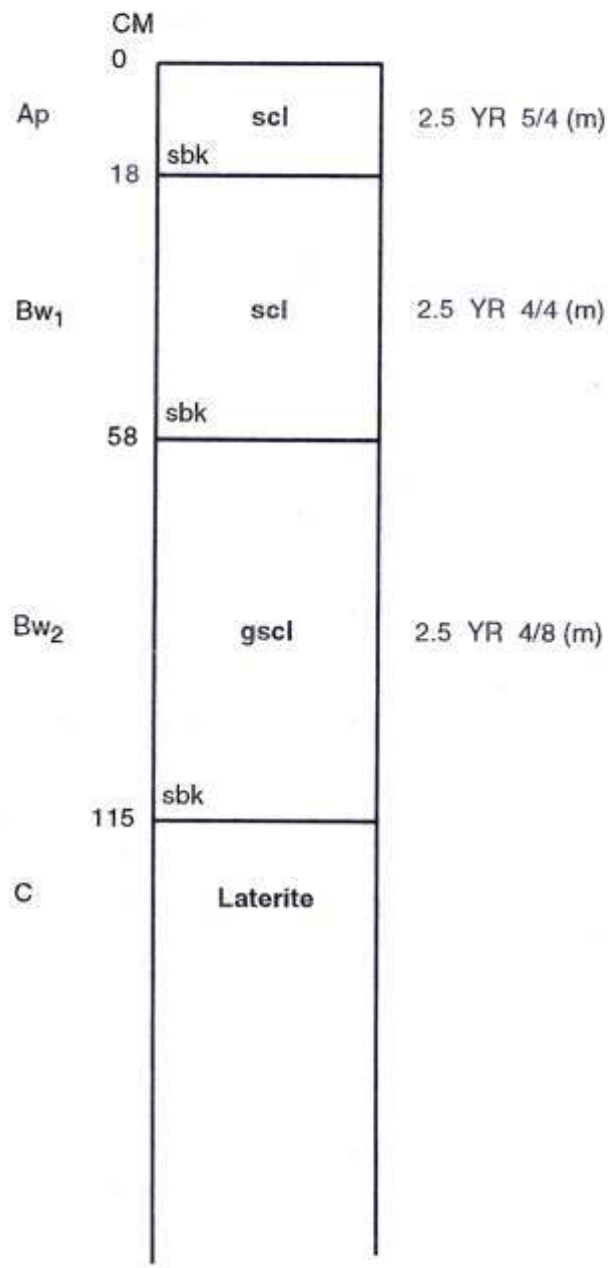
LEGEND

1	Mdm- Marthandam	11	Aby - Aramboly
2	Tvt - Thiruvattar	12	Ktm - Kottaram
3	Nvd - Navalkadu	13	Thr - Therur
4	Tky - Thuckalay	14	Dpm - Dharmapuram
5	Clc - Colachal	15	Mlc - Mullucode
6	Scm - Suchindram	16	Tkd - Thalakudi
7	Kml - Kumarakovil	17	Klk - Kalkulam
8	Kki - Kanniyakumari	18	Tvl - Thovalai
9	Tgp - Thengaipattinam		Reserved Forest
10	Tpd - Thengampudur		Hills

REFERENCE

- Coastal Boundary
- State Boundary
- District Boundary
- Taluk Boundary
- Rivers

MARTHANDAM SERIES (Mdm)



Soil Taxonomy : Fine loamy, mixed, isohyperthermic Typic Dystropepts

THIRUVATTAR SERIES (Tvt)

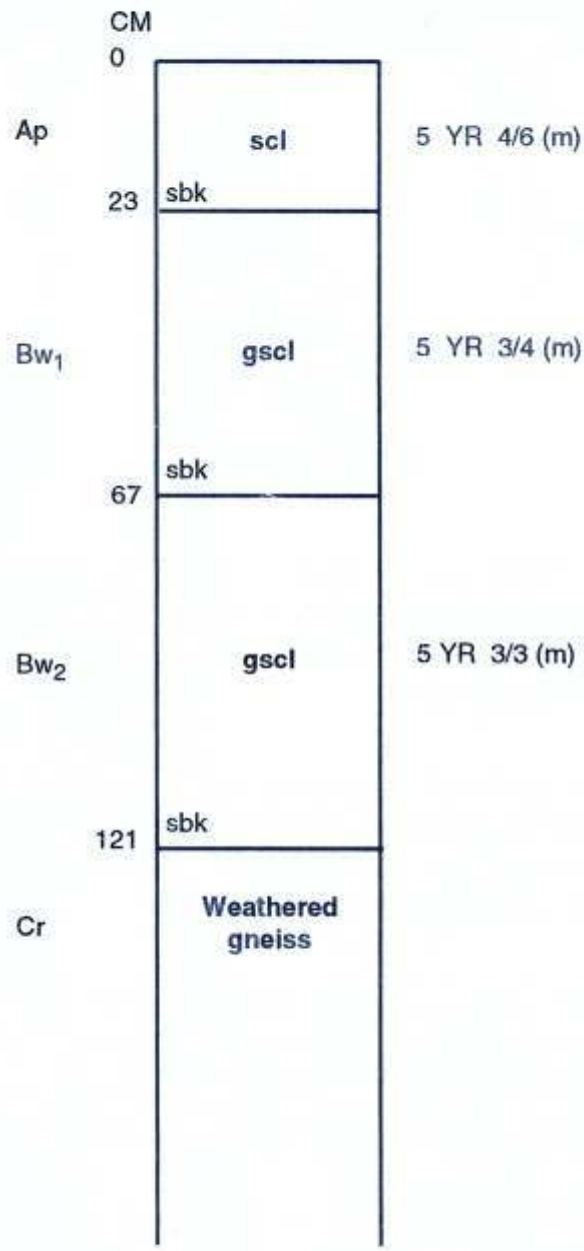
Physiography .. Gently sloping to undulating

Drainage .. Well drained

Parent material .. Weathered gneiss

HORIZON	DESCRIPTION
Ap	0 - 23 cm; yellowish red (5 YR 4/6 M); sandy clay loam; 15% gravels; weak, fine subangular blocky; dry slightly hard, moist friable, wet slightly sticky and slightly plastic; many, fine roots; many, fine and few, medium to coarse pores; moderately slow permeability; clear, wavy boundary; pH 6.0
Bw_1	23 - 67 cm; dark reddish brown (5 YR 3/4 M); gravelly sandy clay loam; 25% gravels; moderate, medium subangular blocky; dry very hard, moist firm, wet slightly sticky and slightly plastic; few, fine to medium ferro manganese concretions; common, fine and few medium pores; moderately rapid permeability; clear, wavy boundary; pH 5.8.
Bw_2	67 - 121 cm; dark reddish brown (5 YR 3/3 M); gravelly sandy clay loam; 35% gravels; moderate to strong, medium to coarse subangular blocky; dry very hard, moist firm, wet slightly sticky and slightly plastic; common, fine to medium ferro manganese concretions; moderately rapid permeability; pH 5.9.
Cr	121^+ cm; weathered gneiss.

THIRUVATTAR SERIES (Tvt)



Soil Taxonomy : Fine loamy, mixed, isohyperthermic Typic Eutropepts

NAVALKADU SERIES (Nvd)

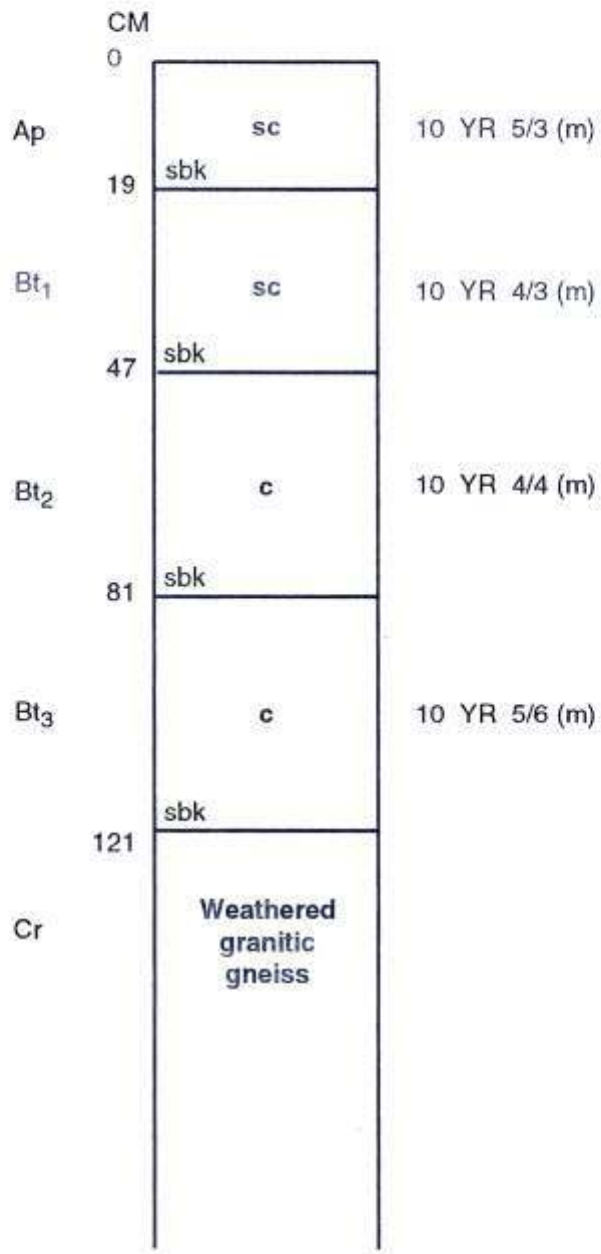
Physiography .. Plain

Drainage .. imperfectly drained

Parent material .. Granitic gneiss

HORIZON	DESCRIPTION
Ap	0 - 19 cm; brown (10 YR 5/3 M); sandy clay; moderate, medium subangular blocky; dry hard, moist slightly firm, wet sticky and plastic; common, fine to medium roots; common fine and few medium pores; slow permeability; clear, wavy boundary; pH 5.9.
Bt_1	19 - 47 cm; brown (10 YR 4/3 M); sandy clay; moderate to strong, medium to coarse subangular blocky; dry very hard, moist firm, wet sticky and plastic; thin, patchy clay films; few fine roots; common, fine pores; slow permeability; clear, wavy boundary; pH 5.9.
Bt_2	47 - 81 cm; dark yellowish brown (10 YR 4/4 M); clay; strong, coarse subangular blocky; dry very hard, moist firm, wet very sticky and plastic; thin, patchy clay films; few fine ferro manganese concretions; very fine pores; very slow permeability; clear, smooth boundary; pH 5.7.
Bt_3	81 - 121cm; yellowish brown (10 YR 5/6 M); clay; strong, coarse subangular blocky; dry very hard, moist firm, wet very sticky and very plastic; thin, patchy clay films; common, fine to medium ferro manganese concretions; very fine pores; very slow permeability; pH 5.6.
Cr	121^+ cm; weathered granitic gneiss.

NAVALKADU SERIES (Nvd)



Soil Taxonomy : Fine, mixed, isohyperthermic Typic Tropudalfs

THUCKALAY SERIES (Tky)

Physiography .. Almost Plain lands

Drainage .. Imperfectly drained

Parent material .. Weathered gneiss

HORIZON	DESCRIPTION
Ap	0 - 19 cm; yellowish brown (10 YR 5/4 M); sandy clay loam; weak to moderate, fine to medium subangular blocky; dry slightly hard, moist friable, wet slightly sticky and slightly plastic; many fine roots; many fine to medium and few coarse pores; slow permeability; clear, wavy boundary; pH 6.0.
Bt_1	19 - 52 cm; strong brown (7.5 YR 4/6 M); sandy clay; moderate, medium subangular blocky; dry hard, moist firm, wet sticky and plastic; thin, patchy clay films on ped faces; few, fine roots; common, fine and few medium pores; slow permeability; clear, wavy boundary; pH 5.8.
Bt_2	52 - 109 cm; strong brown (7.5 YR 4/6 M); sandy clay; moderate to strong, medium to coarse subangular blocky; dry very hard, moist firm, wet sticky and plastic; thin, patchy clay films; many, distinct, very dark gray (10 YR 3/1) ferro manganese mottlings; common, fine pores; very slow permeability; pH 5.8.
Cr	109^+ cm; weathered gneiss.

COLACHAL SERIES (Clc)

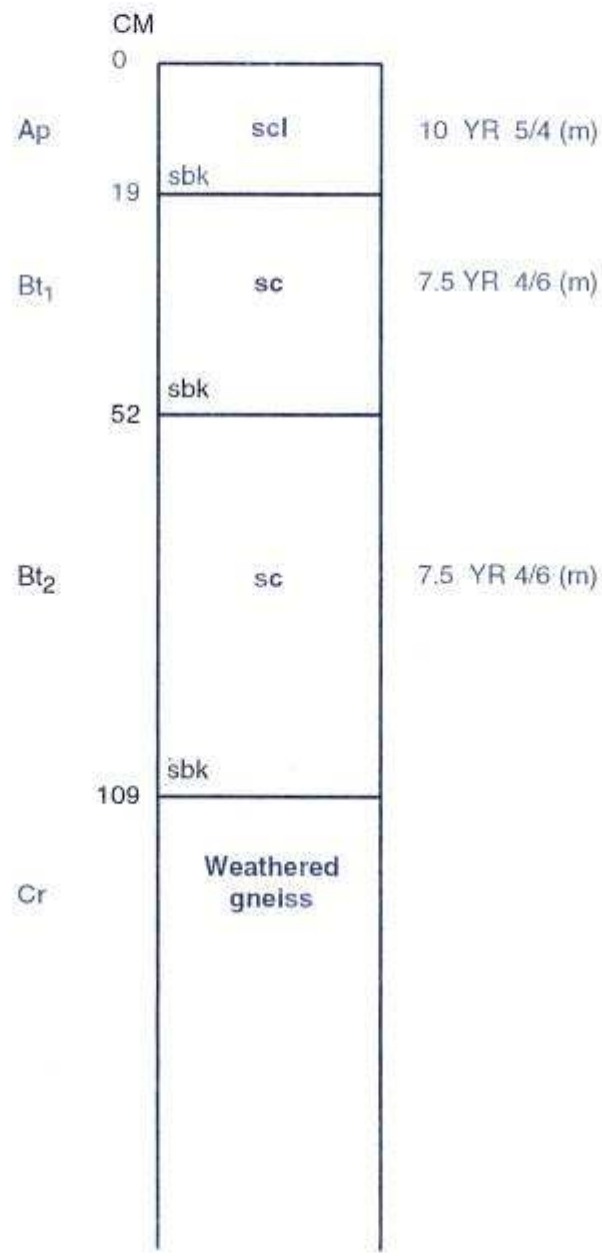
Physiography .. Gently sloping uplands

Drainage .. Well drained soils

Parent material .. Weathered gneiss

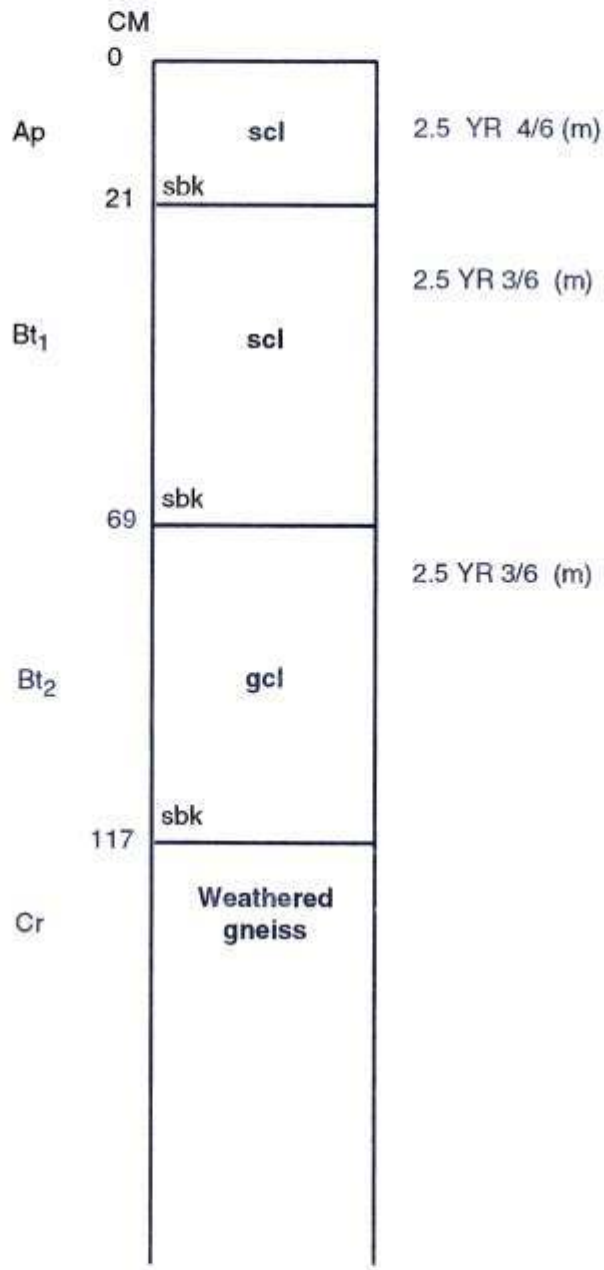
HORIZON	DESCRIPTION
Ap	0 - 21 cm; red (2.5 YR 4/6 M); sandy clay loam; moderate, medium subangular blocky; dry hard, moist very friable, wet slightly sticky and slightly plastic; common, fine roots; many fine, common medium and few coarse pores; moderately rapid permeability; clear, smooth boundary; pH 5.9.
Bt_1	21 - 69 cm; dark red (2.5 YR 3/6 M); sandy clay loam; 20% gravels; moderate to strong, medium to coarse subangular blocky; dry hard, moist friable, wet slightly sticky and slightly plastic; thin, patchy clay films; few, fine to medium, irregular ferro manganese concretions; few fine roots; many fine and few medium pores; moderately slow permeability; gradual, wavy boundary; pH 5.7.
Bt_2	69 - 117 cm; dark red (2.5 YR 3/6 M); gravelly clay loam; 30% gravels; strong, coarse subangular blocky; dry very hard, moist friable, wet sticky and slightly plastic; thin, patchy clay films; common, fine to medium irregular ferro manganese concretions; common fine and few medium pores; moderately slow permeability; pH 5.6.
Cr	117^+ cm; weathered gneiss.

THUCKALAY SERIES (Tky)



Soil Taxonomy : Fine, mixed, isohyperthermic Aquic Tropudalfs

COLACHAL SERIES (Clc)



Soil Taxonomy : Fine loamy, mixed, isohyperthermic Typic Rhodudalfs

SUCHINDRAM SERIES (Scm)

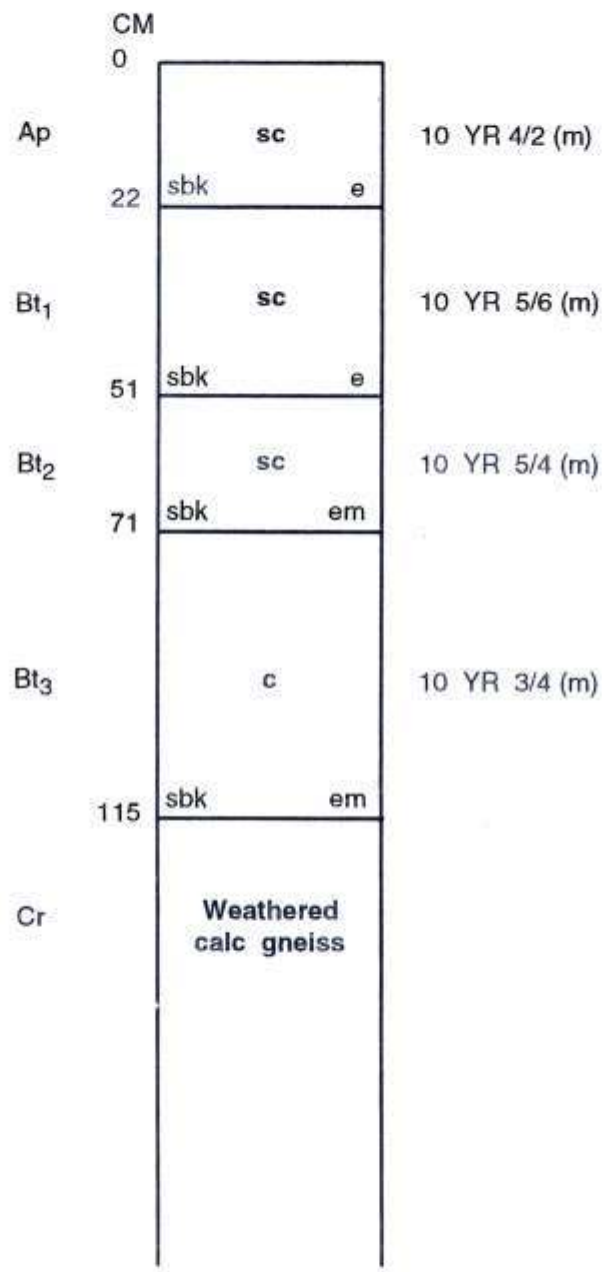
Physiography .. Plain

Drainage .. Moderately Well drained

Parent material .. Weathered Calc gneiss

HORIZON	DESCRIPTION
Ap	0 - 22 cm; dark grayish brown (10 YR 4/2 M); sandy clay; moderate. medium subangular blocky; dry hard, moist firm, wet sticky and plastic; mild effervescence to dilute HCl; many, fine roots; many, fine pores; slow permeability; clear, wavy boundary; pH 7.1.
Bt_1	22 - 51 cm; yellowish brown (10 YR 5/6 M); sandy clay; moderate to strong, medium to coarse subangular blocky; dry hard, moist firm, wet sticky and plastic; thin, patchy clay films; effervescence to dilute HCl; few, fine roots; many, fine pores; slow permeability; clear, wavy boundary; pH 7.1.
Bt_2	51 - 71 cm; yellowish brown (10 YR 5/4 M); sandy clay; moderate to strong, medium to coarse subangular blocky; dry very hard moist firm, wet sticky and plastic; thin, patchy clay films; moderate effervescence to dilute HCl; common, fine pores; slow permeability; gradual, wavy boundary; pH 7.8.
Bt_3	71 - 115 cm; dark yellowish brown (10 YR 3/4 M); clay; strong, coarse subangular blocky; dry very hard, moist firm, wet very sticky and plastic; thin, patchy clay films; moderate effervescence to dilute HCl; common, fine to medium conca; very fine pores; very slow permeability; pH 7.9
Cr	115 $^+$ cm; weathered calc gneiss.

SUCHINDRAM SERIES (Scm)



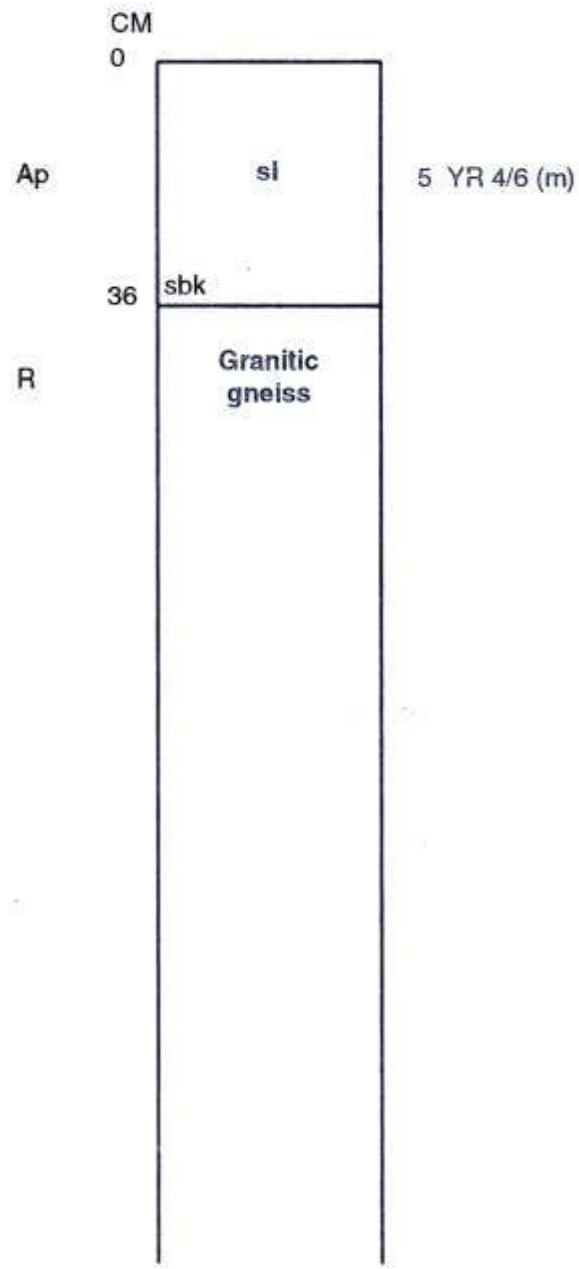
Soil Taxonomy : Fine, mixed, isohyperthermic Typic Haplustalfs

KUMARAKOVIL SERIES (Kml)

Physiography	..	Gently sloping uplands
Drainage	..	Well drained
Parent material	..	Granitic gneiss

HORIZON	DESCRIPTION
Ap	0 - 36 cm; yellowish red (5 YR 4/6 M); sandy loam; 25% gravels; weak to moderate, fine to medium, subangular blocky; dry slightly hard, moist friable, wet slightly sticky and very slightly plastic; many, fine to medium roots; many, fine and common, medium to coarse pores; rapid permeability; clear, smooth boundary; pH 6.8.
R	36^{+} cm; granitic gneiss.

KUMARAKOVIL SERIES (Kml)



Soil Taxonomy : Fine loamy, mixed, isohyperthermic Lithic Troporthents

KANNIYAKUMARI SERIES (Kki)

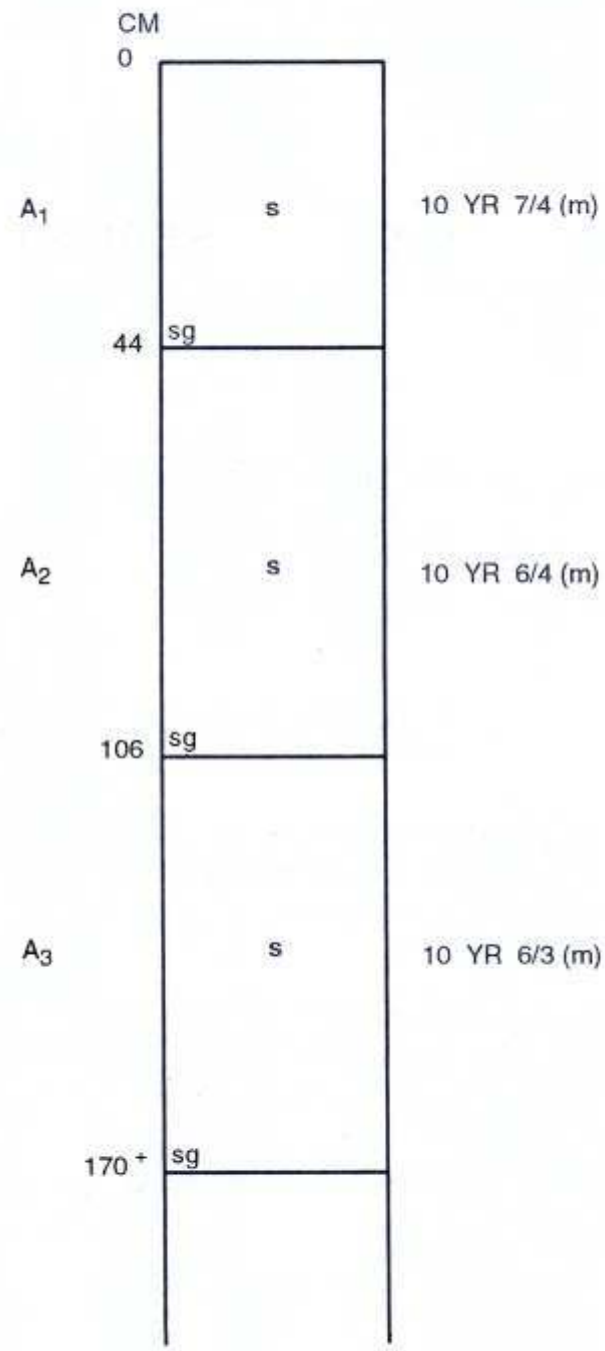
Physiography .. Gently Sloping coastal Plain

Drainage .. Excessively drained

Parent material .. Coastal alluvium

HORIZON	DESCRIPTION
A_1	0 - 44 cm; very pale brown (10 YR 7/4 M); sand; single grain; dry loose, moist loose, wet non sticky and non plastic; common, fine roots; very rapid permeability; gradual, wavy boundary; pH 7.1.
A_2	44 - 106 cm; light yellowish brown (10 YR 6/4 M); sand; single grain; dry loose, moist loose, wet non sticky and non plastic; few fine and medium roots; very rapid permeability; gradual, wavy boundary; pH 6.9.
A_3	106 - 170$^+$ cm; pale brown (10 YR 6/3 M); sand; single grain; dry loose, moist loose, wet non sticky and non plastic; very rapid permeability; pH 7.0.

KANNIYAKUMARI SERIES (Kki)



Soil Taxonomy : Siliceous, isohyperthermic Typic Ustipsamments

THENGAIPATTINAM SERIES (Tgp)

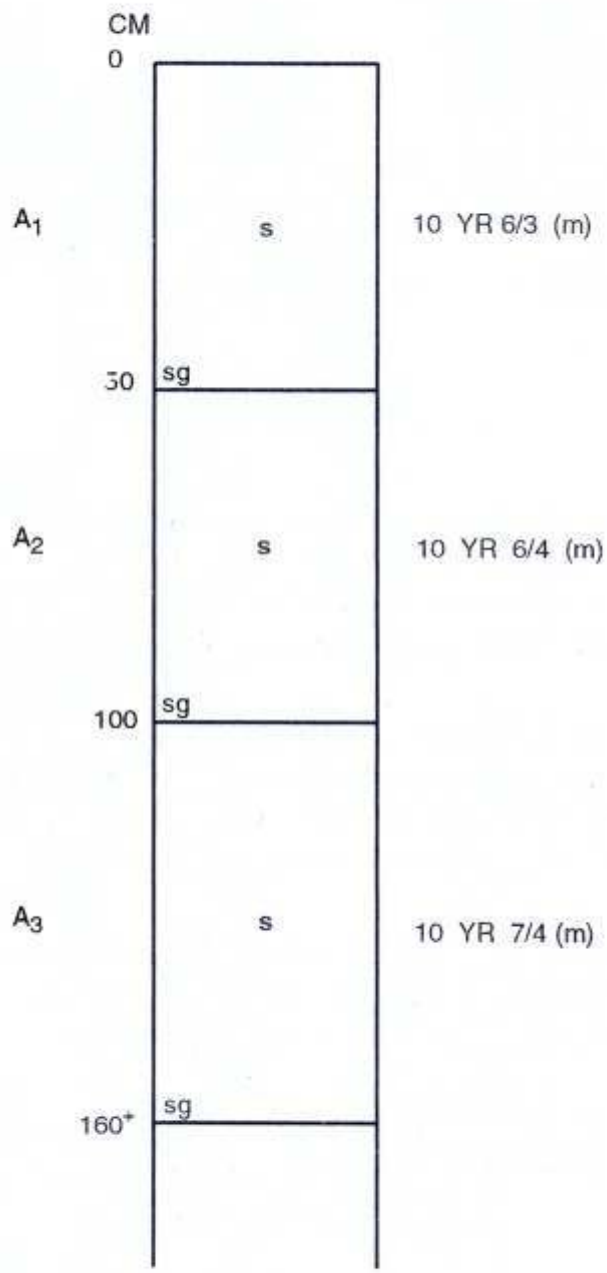
Physiography .. Gently Sloping Coastal Plain

Drainage .. Excessively drained

Parent material .. Coastal alluvium

HORIZON	DESCRIPTION
A_1	0 - 50 cm; pale brown (10 YR 6/3 M); sand; single grain; dry loose, moist loose, wet non sticky and non plastic; common, fine to medium roots; very rapid permeability; clear, smooth boundary; pH 6.5.
A_2	50 - 100 cm; light yellowish brown (10 YR 6/4 M); sand; single grain; dry loose, moist loose, wet non sticky and non plastic; common, medium roots; very rapid permeability; clear, smooth boundary; pH 6.3.
A_3	100 - 160$^+$ cm; very pale brown (10 YR 7/4 M); sand; single grain; dry loose, moist loose, wet non sticky and non plastic; very rapid permeability; pH 6.1

THENGAIPATTINAM SERIES (Tgp)



Soil Taxonomy : Siliceous, isohyperthermic Typic Tropopsamments

THENGAMPUDUR SERIES (Tpd)

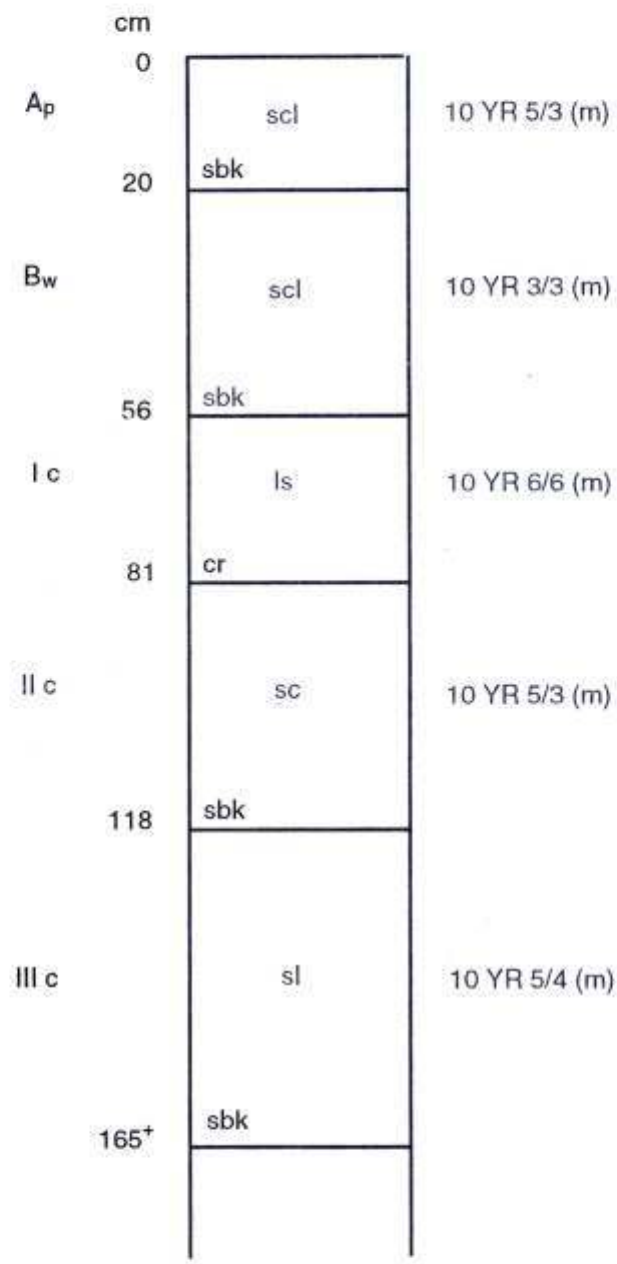
Physiography .. Flood Plain

Drainage .. Moderately well drained

Parent material .. Alluvium

HORIZON	DESCRIPTION
Ap	0 - 20 cm; brown (10 YR 5/3 M); sandy clay loam; weak, fine subangular blocky; dry slightly hard, moist friable, wet slightly sticky and slightly plastic; many, fine roots; many fine and few medium to coarse pores; moderately slow permeability; clear, wavy boundary; pH 7.1.
Bw	20 - 56 cm; dark brown (10 YR 3/3 M); sandy clay loam; moderate, medium subangular blocky; dry very hard, moist firm, wet slightly sticky and slightly plastic; few, fine roots; common fine and few, medium pores; moderately slow permeability; abrupt, wavy boundary; pH 7.3.
Ic	56 - 81 cm; brownish yellow (10 YR 6/6 M); loamy sand; weak, fine crumby; moist very friable, wet non sticky and non plastic; porous; very rapid permeability; abrupt, wavy boundary; pH 6.9.
IIc	81 - 118 cm; brown (10 YR 5/3 M); sandy clay; strong, coarse subangular blocky; moist very firm, wet sticky and plastic; very fine pores; slow permeability; abrupt, wavy boundary; pH 7.2.
IIIc	118 - 165^{+} cm; yellowish brown (10 YR 5/4 M); sandy loam; weak to moderate, fine to medium, subangular blocky; moist friable, wet very slightly sticky and very slightly plastic; many fine and common, medium to coarse pores; rapid permeability; pH 7.0

THENGAMPUDUR SERIES (Tpd)



Soil Taxonomy : Fine loamy, mixed, isohyperthermic Fluventic Haplustepts

ARAMBOLY SERIES (Aby)

Physiography .. Plain

Drainage .. Moderately well drained

Parent material .. Calc gneiss

HORIZON	DESCRIPTION
Ap	0 - 24 cm; brown (10 YR 5/3 M); sandy clay loam; weak, fine subangular blocky; dry slightly hard, moist friable, wet slightly sticky and slightly plastic; many, fine roots; many, fine and common medium pores; moderately slow permeability; clear, wavy boundary; pH 7.5.
Bw_1	24 - 62 cm; dark brown (7.5 YR 3/4 M); sandy clay loam; moderate, medium subangular blocky; dry hard, moist slightly firm, wet slightly sticky and slightly plastic; mild effervescence to dilute HCl; few, fine roots; many fine and few medium pores; moderately slow permeability; clear, wavy boundary; pH 7.7.
Bw_2	62 - 113 cm; dark brown (7.5 YR 3/4 M); sandy clay loam; strong, coarse subangular blocky; dry very hard, moist firm, wet slightly sticky and slightly plastic; moderate effervescence to dilute HCl; few, fine conca; common fine and few medium pores; moderately slow permeability; pH 7.8.
Cr	113^+ cm; weathered gneiss coated with calcium carbonate.

KOTTARAM SERIES (Ktm)

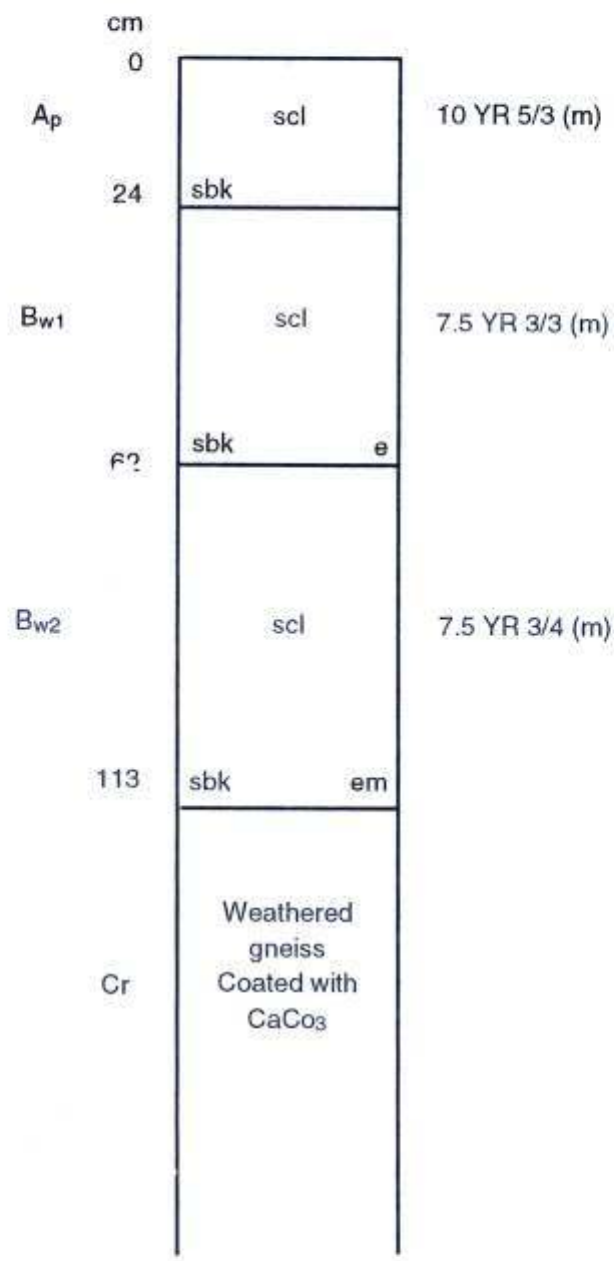
Physiography .. Plain

Drainage .. Moderately well drained

Parent material .. Weathered gneiss

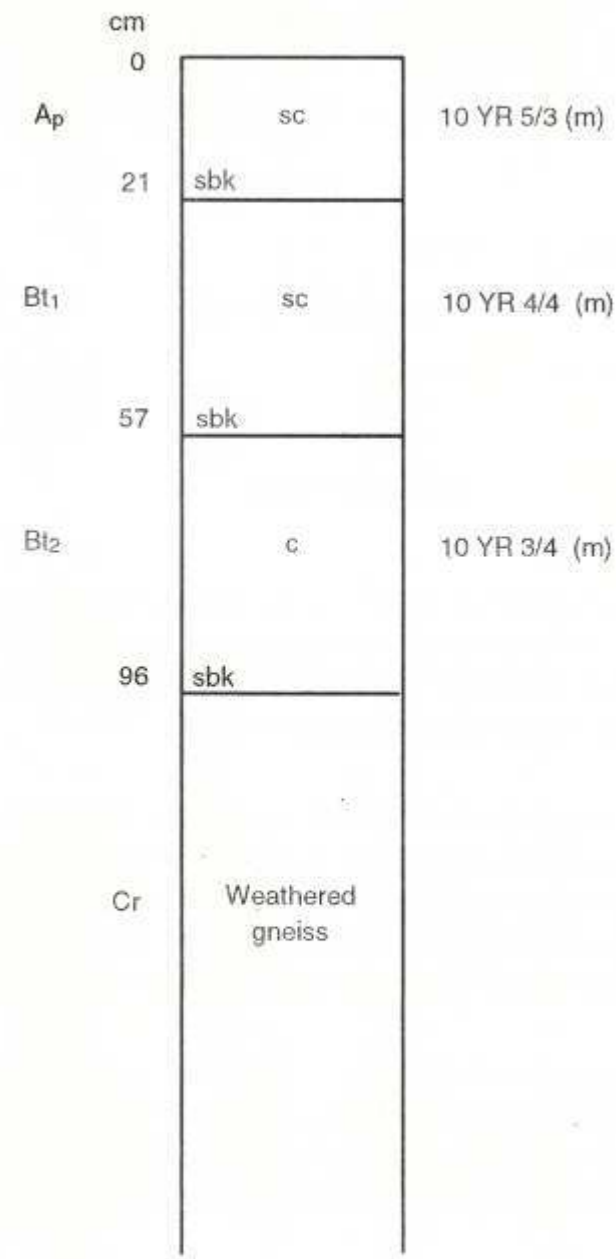
HORIZON	DESCRIPTION
Ap	0 - 21 cm; brown (10 YR 5/3 M); sandy clay; moderate, medium sub angular blocky; dry hard, moist firm, wet sticky and slightly plastic; many, fine roots; many, fine and few medium pores; slow permeability; clear, wavy boundary; pH 7.0.
Bt_1	21 - 57 cm; dark yellowish brown (10 YR 4/4 M); sandy clay; strong, coarse subangular blocky; dry very hard, moist firm, wet sticky and plastic; thin, patchy clay films; few fine roots; common, fine pores; slow permeability; clear, smooth boundary; pH 6.8.
Bt_2	57 - 96 cm; dark yellowish brown (10 YR 3/4 M); clay; strong, coarse, subangular blocky; dry very hard, moist firm, wet sticky and plastic; thin, patchy clay films; very fine pores; slow permeability; pH 6.8.
Cr	96^+ cm; weathered gneiss.

ARAMBOLY SERIES (Aby)



Soil Taxonomy : Fine loamy, mixed, isohyperthermic Typic Haplustepts

KOTTARAM SERIES (Ktm)



Soil Taxonomy : Fine, mixed, isohyperthermic Typic Haplustalfs

THERUR SERIES (Thr)

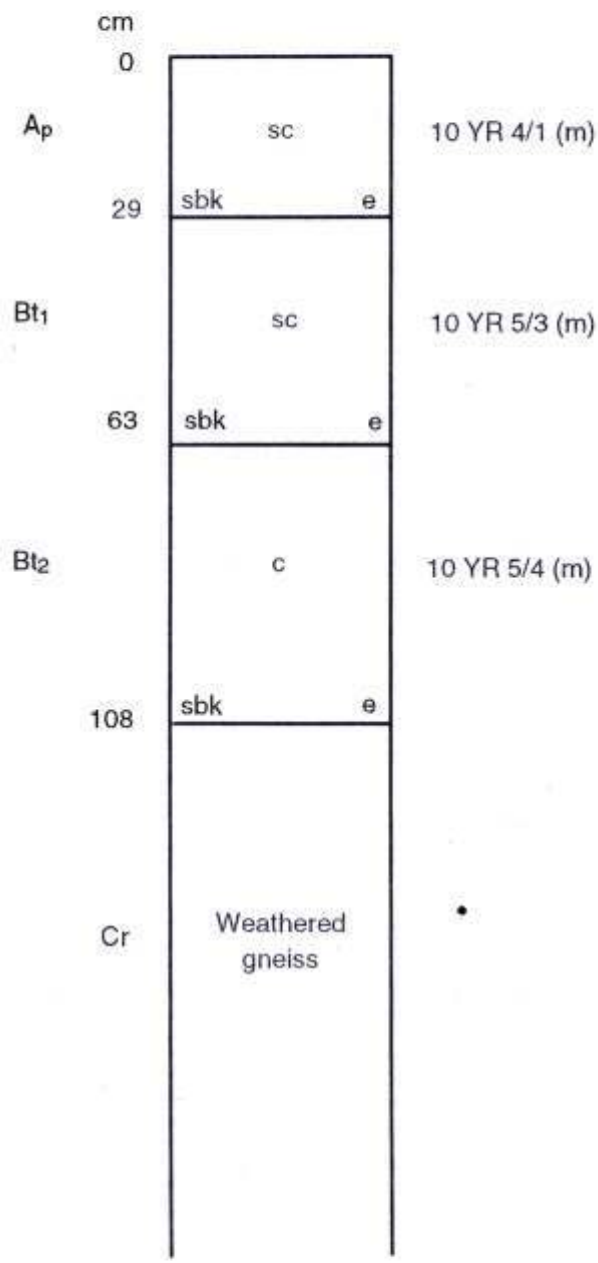
Physiography .. Plain

Drainage .. Imperfectly drained

Parent material .. Gneiss

HORIZON	DESCRIPTION
Ap	0 - 29 cm; dark gray (10 YR 4/1 M); sandy clay; moderate, medium subangular blocky; dry hard, moist firm, wet sticky and slightly plastic; mild effervescence to dilute HCl; common fine roots; common, fine to medium pores; slow permeability; clear, wavy boundary; pH 7.5.
Bt_1	29 - 63 cm; brown (10 YR 5/3 M); sandy clay; moderate to strong, medium to coarse, subangular blocky; dry hard, moist firm, wet sticky and plastic; thin, patchy clay films; common, fine, distinct very dark gray (10 YR 3/1) ferro manganese mottlings; mild effervescence to dilute HCl; few, fine roots; common, fine pores; slow permeability; clear, wavy boundary; pH 7.7.
Bt_2	63 - 108 cm; yellowish brown (10 YR 5/4 M); clay; strong, coarse subangular blocky; moist firm, wet very sticky and plastic; thin, patchy clay films; common, fine, distinct very dark gray (10 YR 3/1) ferro manganese mottlings; mild effervescence to dilute HCl; very fine pores; very slow permeability; pH 7.8.
Cr	108^+ cm; weathered gneiss.

THERUR SERIES (Thr)



Soil Taxonomy : Fine, mixed, isohyperthermic Aquic Haplusalfs

DHARMAPURAM SERIES (Dpm)

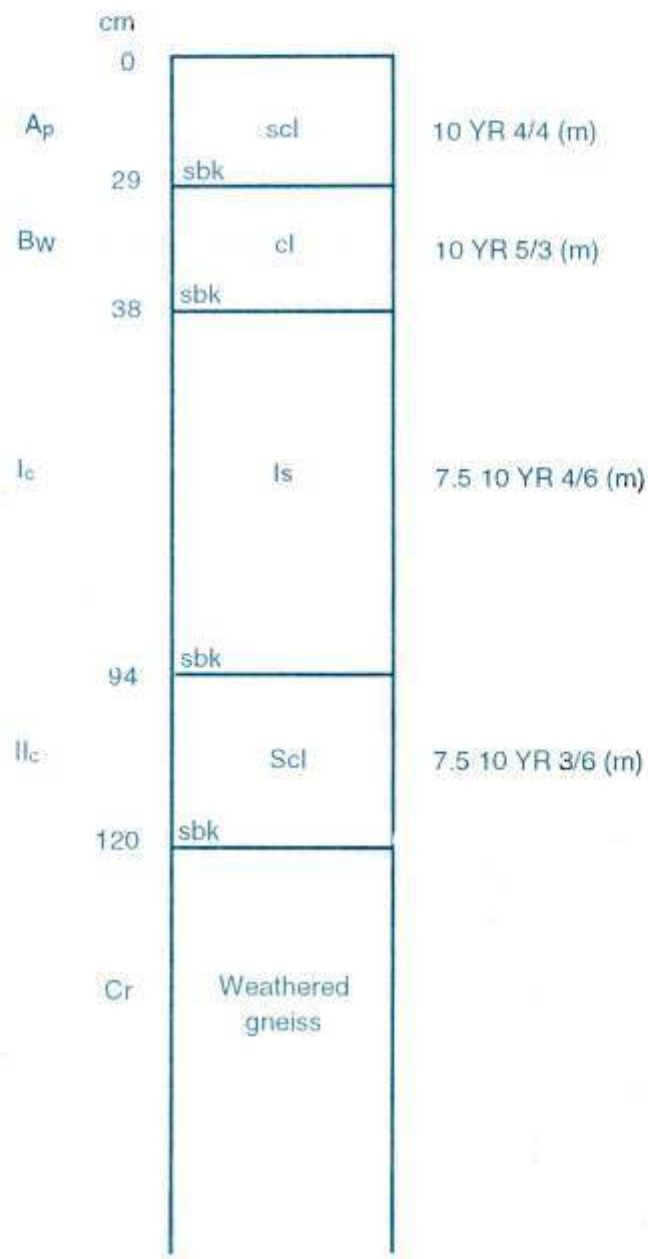
Physiography .. Flood Plain

Drainage .. Moderately well drained

Parent material .. Weathered Gneiss

HORIZON	DESCRIPTION
Ap	0 - 19 cm; dark yellowish brown (10 YR 4/4 M); sandy clay loam; weak, fine subangular blocky; dry slightly hard, moist friable, wet slightly sticky and slightly plastic; many, fine roots; common, fine to medium pores; moderately slow permeability; clear, wavy boundary; pH 6.5.
Bw	19 - 38 cm; brown (10 YR 5/3 M); clay loam; moderate, medium subangular blocky; moist firm, wet sticky and slightly plastic; common, fine roots; many, fine and few medium pores; moderately slow permeability; abrupt, wavy boundary; pH 6.3.
Ic	38 - 94 cm; strong brown (7.5 YR 4/6 M); loamy sand; weak, fine subangular blocky; moist loose, wet non sticky and nonplastic; porous; very rapid permeability; abrupt, wavy boundary; pH 6.5.
IIc	94 - 120 cm; dark brown (7.5 YR 3/4 M); sandy clay loam; moderate, medium subangular blocky; moist slightly firm, wet slightly sticky and slightly plastic; common fine to medium pores; moderately slow permeability; pH 6.7
Cr	120^{+} cm; weathered gneiss.

DHARMAPURAM SERIES (Dpm)



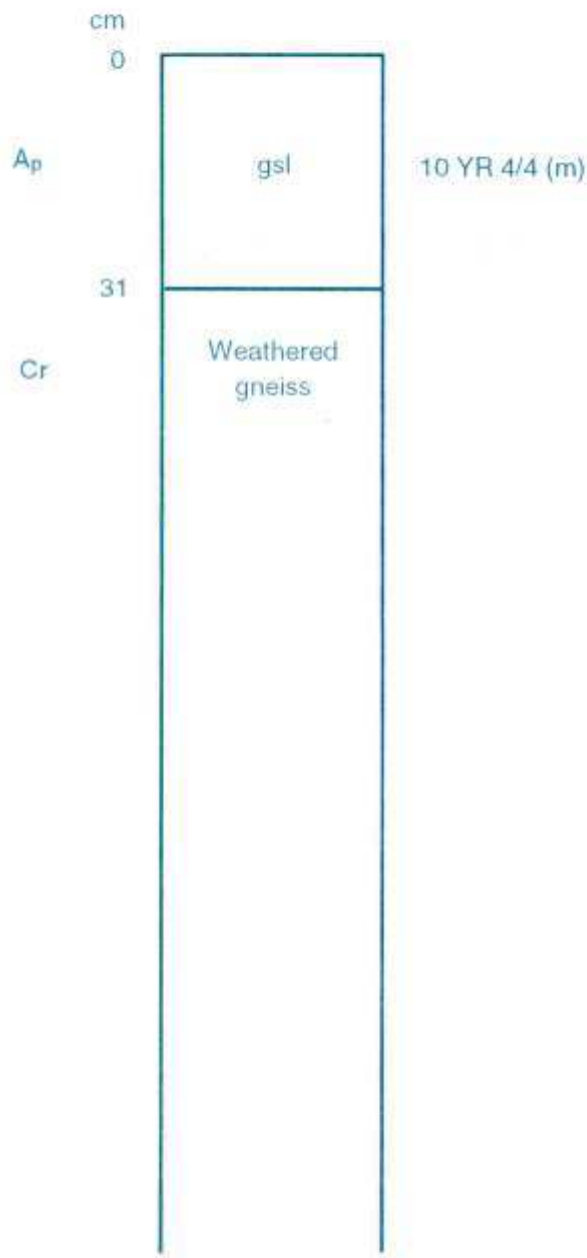
Soil Taxonomy : Fine loamy over sandy, mixed, isohyperthermic Fluventic Eutropepts

MULLUCODE SERIES (MIc)

Physiography	..	Gently sloping lands
Drainage	..	well drained
Parent Material	..	Gneiss

HORIZON	DESCRIPTION
Ap	0 - 31 cm; yellowish red (5 YR 4/6 M); gravelly sandy loam; 35% gravels; weak to moderate, fine to medium subangular blocky; dry hard, moist friable, wet slightly sticky and very slightly plastic; many fine and few medium roots; many fine and common medium to coarse pores; rapid permeability; clear, smooth boundary; pH 5.5.
Cr	31^{+} cm; weathered gneiss.

MULLUCODE SERIES (Mlc)



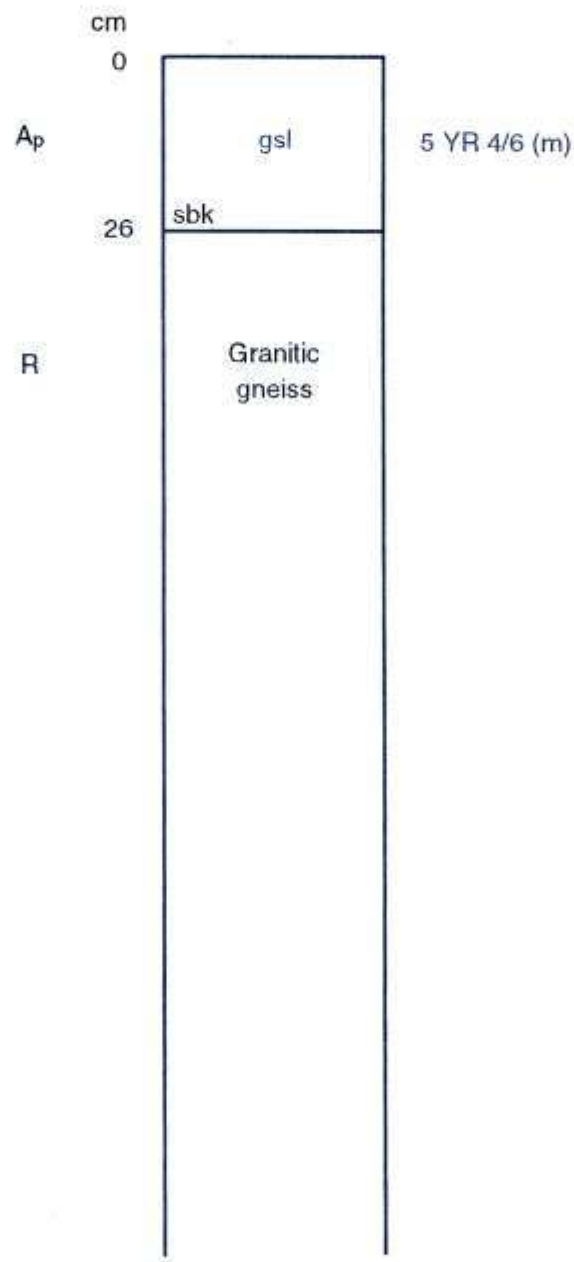
Soil Taxonomy : Loamy skeletal, mixed, isohyperthermic Paralithic Troporthents

THALAKUDI SERIES (Tkd)

Physiography	..	Gently sloping uplands
Drainage	..	Well drained
Parent material	..	Granitic Gneiss

HORIZON	DESCRIPTION
Ap	0 - 26 cm; yellowish red (5 YR 4/6 M); gravelly sandy loam; 40% gravels; weak to moderate, fine to medium subangular blocky; wet slightly sticky and very slightly plastic; many, fine to medium and few coarse roots; many, fine and common, medium to coarse pores; rapid permeability; clear, smooth boundary; pH 6.9.
R	26^{+} cm; granitic gneiss.

THALAKUDI SERIES (Tkd)



Soil Taxonomy : Loamy skeletal, mixed, isohyperthermic Lithic Ustorthents

KALKULAM SERIES (Klk)

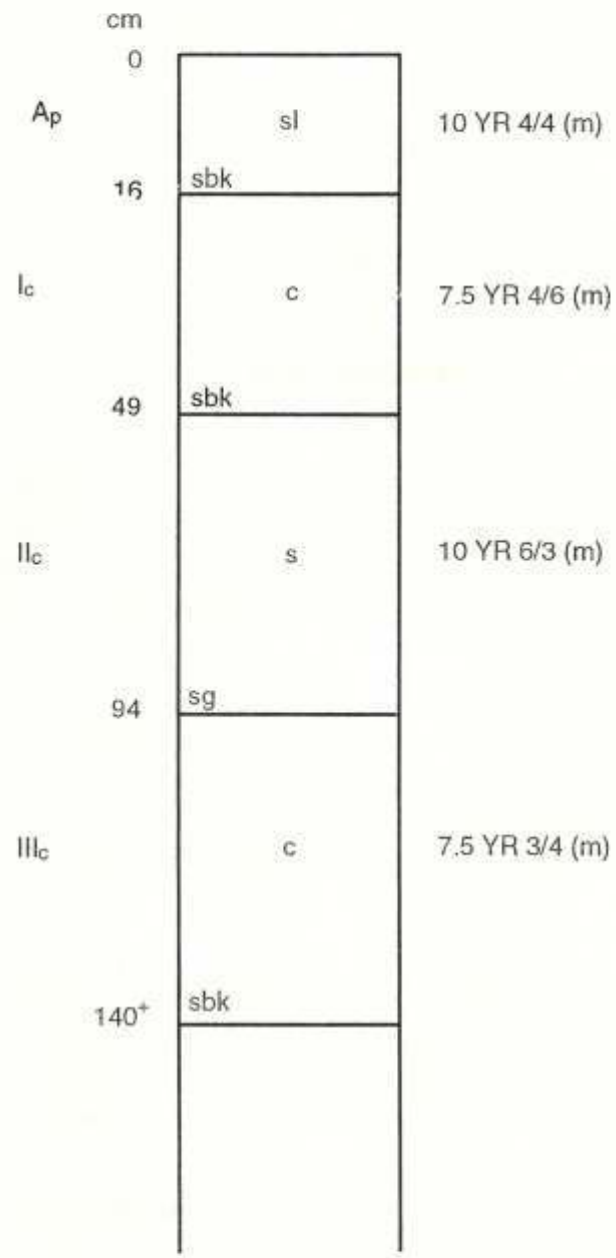
Physiography .. Flood plain

Drainage .. Imperfectly drained

Parent material .. River alluvium

HORIZON	DESCRIPTION
Ap	0 - 16 cm; dark yellowish brown (10 YR 4/4 M); sandy loam; weak, fine subangular blocky; dry slightly hard, moist friable, wet very slightly sticky and very slightly plastic; many, fine roots; many, fine and common medium to coarse roots; moderately slow permeability; abrupt, smooth boundary; pH 7.1.
Ic	16 - 49 cm; strong brown (7.5 YR 4/6 M); clay; strong, coarse subangular blocky; dry very hard, moist firm, wet sticky and plastic; very fine pores; slow permeability; abrupt, smooth boundary; pH 7.3.
IIc	49 - 94 cm; pale brown (10 YR 6//3 M); sand; single grain; dry loose, moist loose, wet non sticky and non plastic; porous; very rapid permeability; abrupt, smooth boundary; pH 6.8.
IIIc	94 - 140 cm; dark brown (7.5 YR 3/4 M); clay; moderate to strong, medium to coarse subangular blocky; dry hard, moist firm, wet sticky and plastic; common distinct, very dark gray (10 YR 3/1) ferro manganese mottlings; very fine pores; slow permeability; pH 7.2

KALKULAM SERIES (Klk)



Soil Taxonomy : Clayoy over sandy, mixed, isohyperthermic Aquic Tropofluvents

THOVALAI SERIES (Tvl)

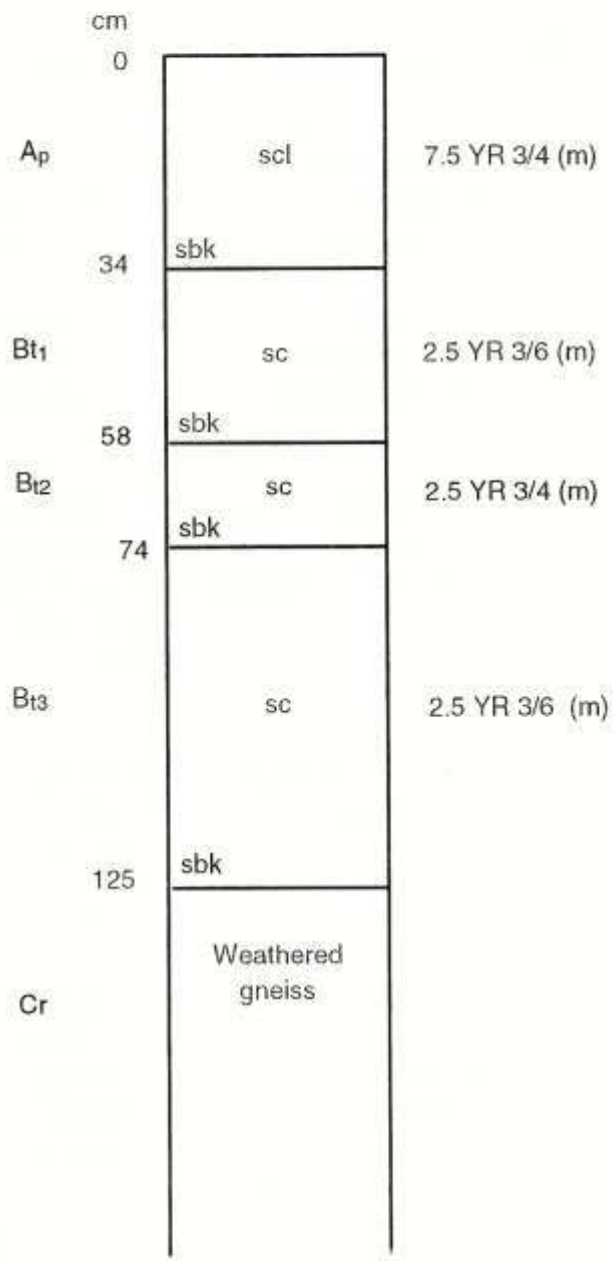
Physiography .. Gently sloping uplands to undulating

Drainage .. Well drained

Parent material .. Weathered Gneiss

HORIZON	DESCRIPTION
Ap	0 - 34 cm; dark brown (7.5 YR 3/4 M); sandy clay loam; weak to moderate, fine to medium subangular blocky; dry slightly hard, moist friable, wet slightly sticky and slightly plastic; common, fine to medium roots; common fine and few medium to coarse pores; moderately rapid permeability; abrupt, wavy boundary; pH 5.9.
Bt_1	34 - 58 cm; dark red (2.5 YR 3/6 M); sandy clay; moderate, medium subangular blocky; dry hard, moist friable, wet sticky and slightly plastic; thin, patchy clay films; common fine and few medium to coarse roots; common, fine to medium pores; moderately slow permeability; gradual, wavy boundary; pH 5.8.
Bt_2	58 - 74 cm; dark reddish brown (2.5 YR 3/4 M); sandy clay; moderate to strong, medium to coarse subangular blocky; dry very hard, moist firm, wet sticky and plastic; thin, patchy clay films; few, medium to coarse roots; common fine and few medium pores; slow permeability; gradual, wavy boundary; pH 5.6.
Bt_3	74 - 125 cm; dark red (2.5 YR 3/6 M); sandy clay; strong, coarse subangular blocky; dry very hard, moist firm, wet sticky and plastic; thin, patchy clay films; few, fine to medium ferro manganese concretions; common fine pores; slow permeability; pH 5.6.
Cr	125^+ cm; weathered gneiss.

THOVALAI SERIES (Tvl)



Soil Taxonomy : Fine, mixed, isohyperthermic Typic Rhodustalfs.

LAND CAPABILITY

Area (ha)	Land capability classification	Soil series	Limitation	Needs
23,134	II s	Suchindram Kottaram Navalkadu	Low organic Matter status, sub soil hardness	Addition of organic Manures
3,876	III s	Aramboly, Thengampudur, Dharmapuram	Soil crusting, Low organic Matter status	Liberal addition of organic Manures
43,773	III se	Marthandam, Thiruvattar, Thovalai, Colachal,	Acidity, Low Base status, Low organic Matter, Low CEC, Erosion	Addition of Lime, Addition of organic Manures, Soil conservation
10,430	III sw	Kalkulam, Therur, Thuckalay	Low organic Matter status, sub soil hardness, wetness	Addition of organic Manures, Drainage
9,848	IV se	Thalakudi, Kanniyakumari, Kumarakovil, Thengaipattinam, Mullucode	Coarse Texture, Low WHC, Low CEC Low organic Matter status, Erosion	Addition of tanksilt and organic Manures, soil conservation

Class

II *Good cultivable Lands that have moderate limitations for sustained use under agriculture.*

III *Moderately Good cultivable Lands that have severe limitations for sustained use under agriculture.*

IV *Lands that have very severe limitations for sustained use under agriculture*

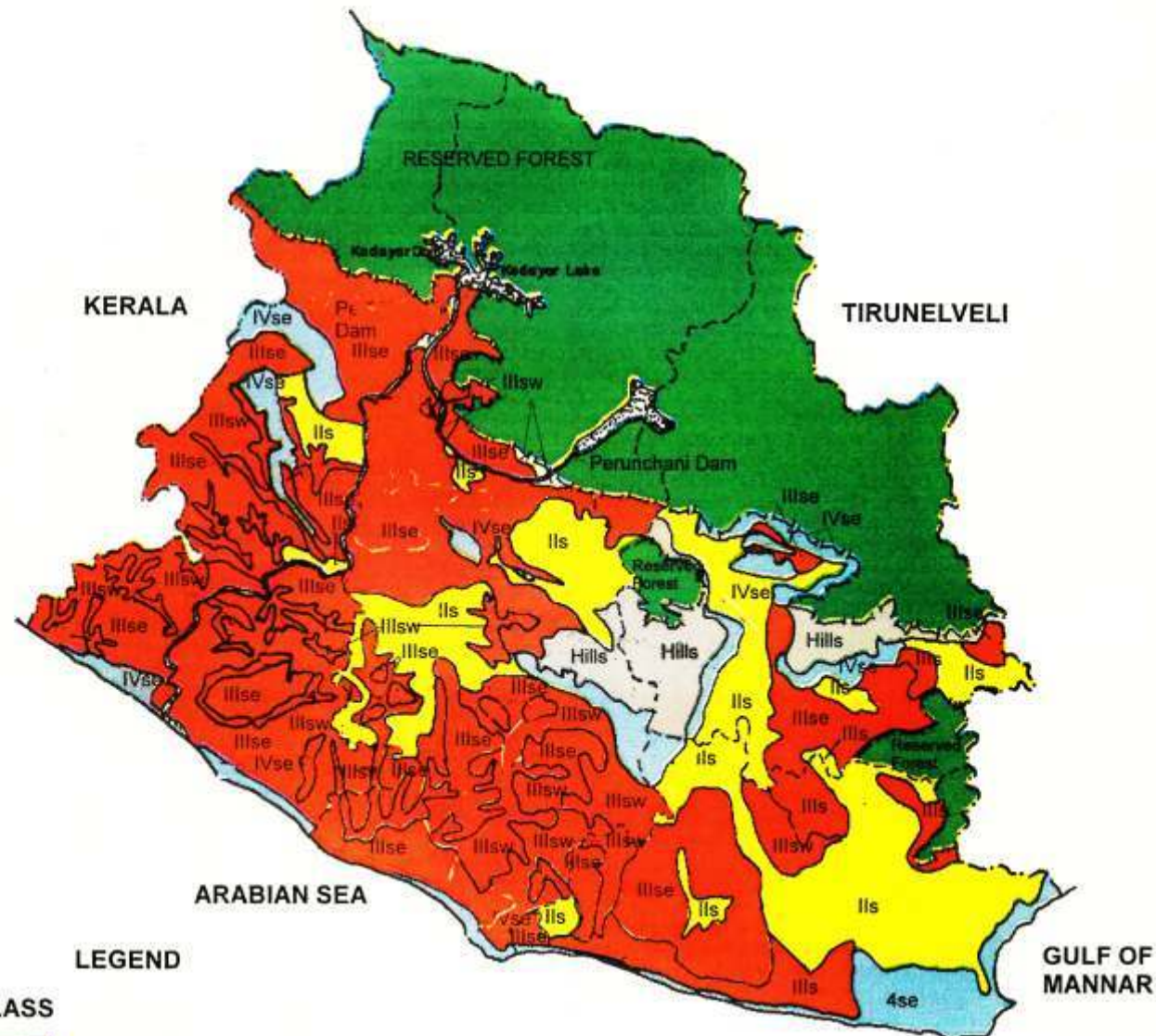
Sub class

s *Root zone limitation*

e *Erosion and runoff*

w *Excess water*

LAND CAPABILITY
KANNIYAKUMARI DISTRICT



LEGEND

CLASS

- II - Moderate Limitations
- III - Severe limitations
- IV - Very Severe Limitations
- Hills
- Reserved Forest

SUB CLASS

s - Root zone Limitations

e - Erosion hazards

w - Wetness

LAND IRRIGABILITY

Area (ha)	Land Irrigability classification	Soil series	Limitation
23,134	2s	Suchindram Kottaram Navalkadu	Sub soil hardness
3,876	3s	Aramboly, Thengampudur, Dharmapuram	Soil crusting,
43,773	3st	Marthandam, Thovalai, Thiruvattar, Colachal,	Acidity, Low Base status, Low CEC, Topography
10,430	3sd	Kalkulam, Therur, Thuckalay	sub soil hardness, Drainage
9,848	4st	Thalakudi, Kanniyakumari, Kumarakovil, Thengaipattinam, Mullucode	Coarse Texture, Low CEC, Low WHC, Topography

Class

2 *Lands that have moderate limitations for sustained use under irrigation.*

3 *Lands that have severe limitations fot sustained use under* irrigation.

4 *Lands that have very severe limitations for sustained use under irrigation.*

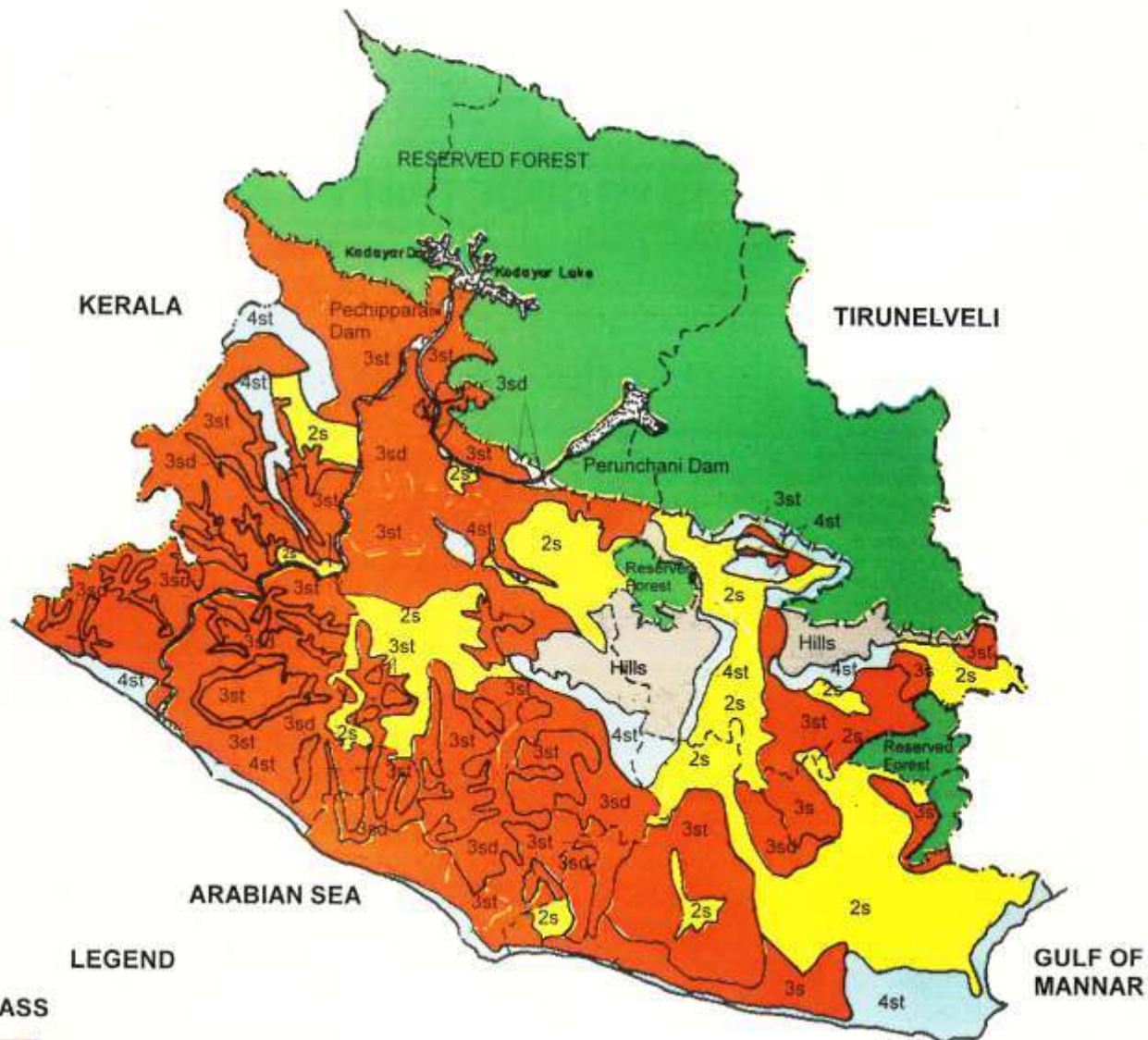
Sub class

s *Soil limitation*

t *Topographical, limitation*

d *Drainage hazards*

LAND IRRIGABILITY
KANNIYAKUMARI DISTRICT



LEGEND

CLASS

- 2 - Moderate Limitations
- 3 - Severe limitations
- 4 - Very Severe Limitations
- Hills
- Reserved Forest

SUB CLASS

s - Soil Limitations

t - Topographic Limitations

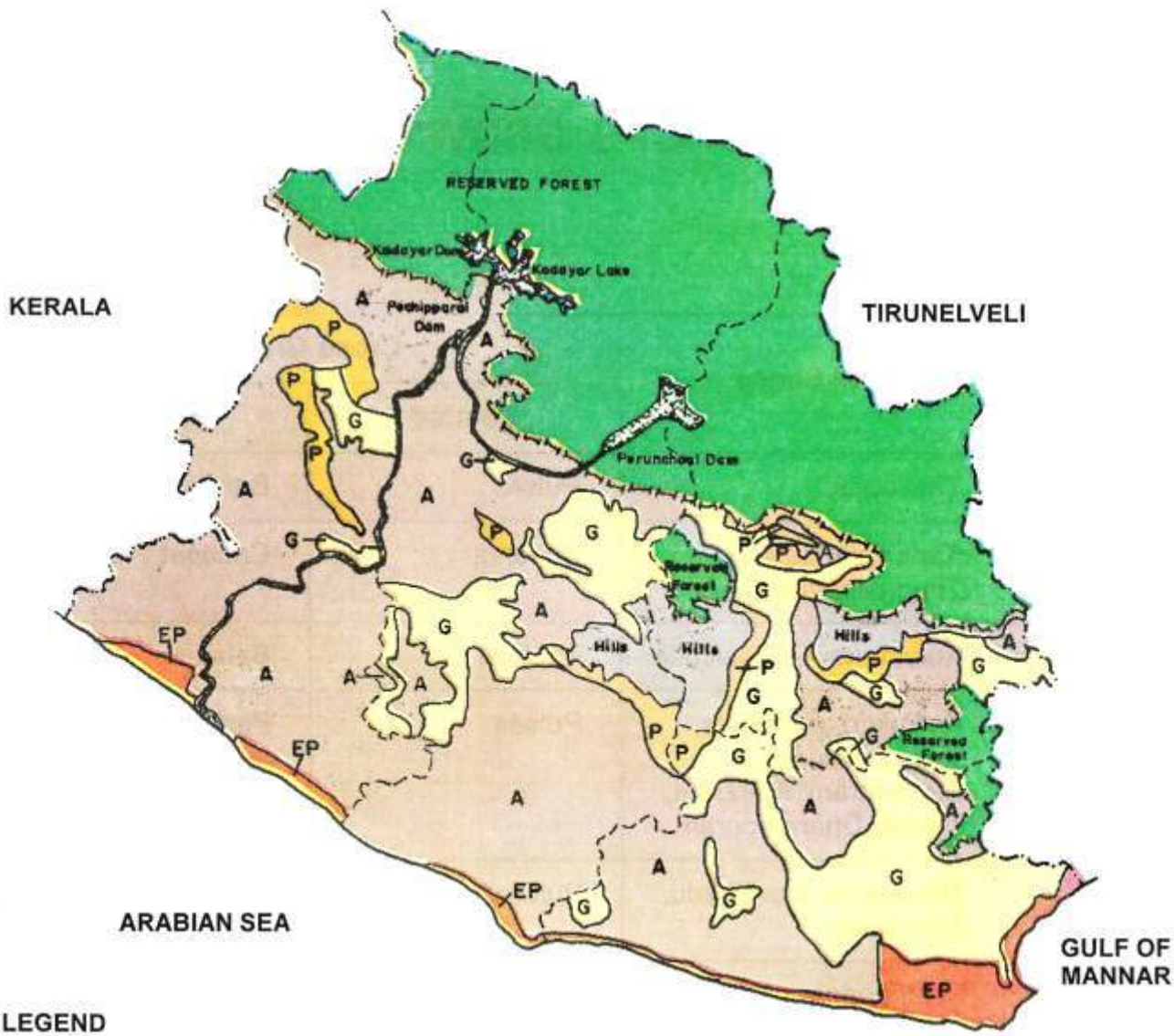
d - Drainage hazards

SOIL PRODUCTIVITY

Area (ha)	Productivity		Soil series
	Rating	Grouping	
3,830	0 - 7	Extremely Poor	Kanniyakumari, Thengaipattinam
6,018	8 - 19	Poor	Thalakudi, Kumarakovil, Mullucode
58,079	20 - 34	Average	Kalkulam, Aramboly, Thengampudur, Marthandam, Thiruvattar, Therur, Thovalai, Colachal, Thuckalay, Dharmapuram
23,134	35 - 64	Good	Suchindram, Kottaram, Navalkadu

SOIL PRODUCTIVITY

KANNIYAKUMARI DISTRICT



LEGEND

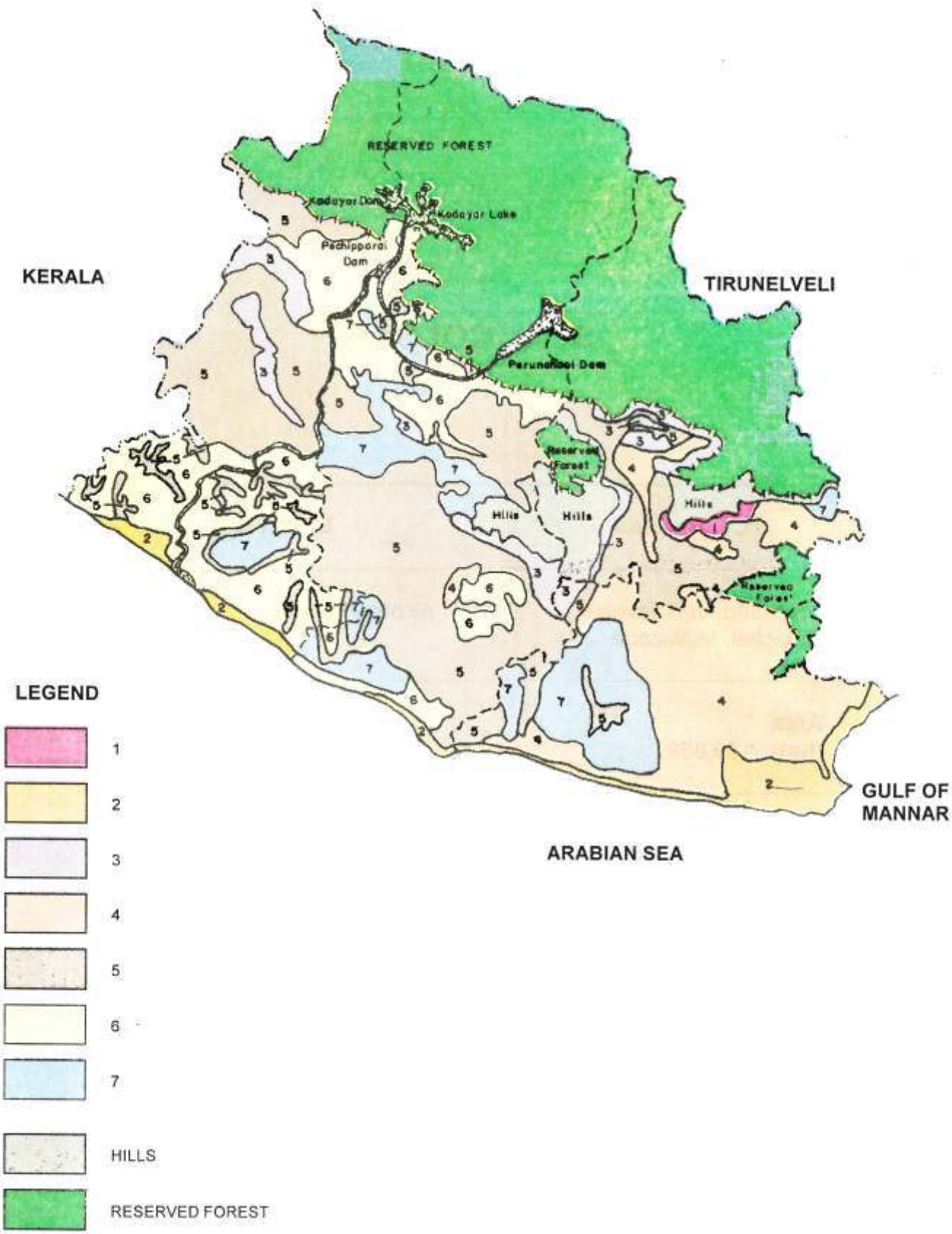
- Extremely Poor [E.P]
- Poor [P]
- Average [A]
- Good [G]
- HILLS
- RESERVED FOREST

CROPS GROWN

Map symbol	Soil Series	Crops Grown	
		Rainfed	Irrigated
1	Thalakudi	Pulses	Banana
2	Kanniyakumari, Thengaipattinam	Coconut	Coconut
3	Kumarakovil, Mullucode	Tapioca	Banana
4	Kalkulam, Aramboly, Thengampudur, Suchindram, Kottaram, Therur, Dharmapuram	Pulses	Paddy, Banana
5	Thiruvattar, Navalkadu, Thuckalay	Pulses	Paddy, Banana Coconut
6	Marthandam	Spices	Paddy, Coconut Rubber, Spices
7	Thovalai, Colachal	Cashew	Orchard crops, Coconut

CROPS GROWN

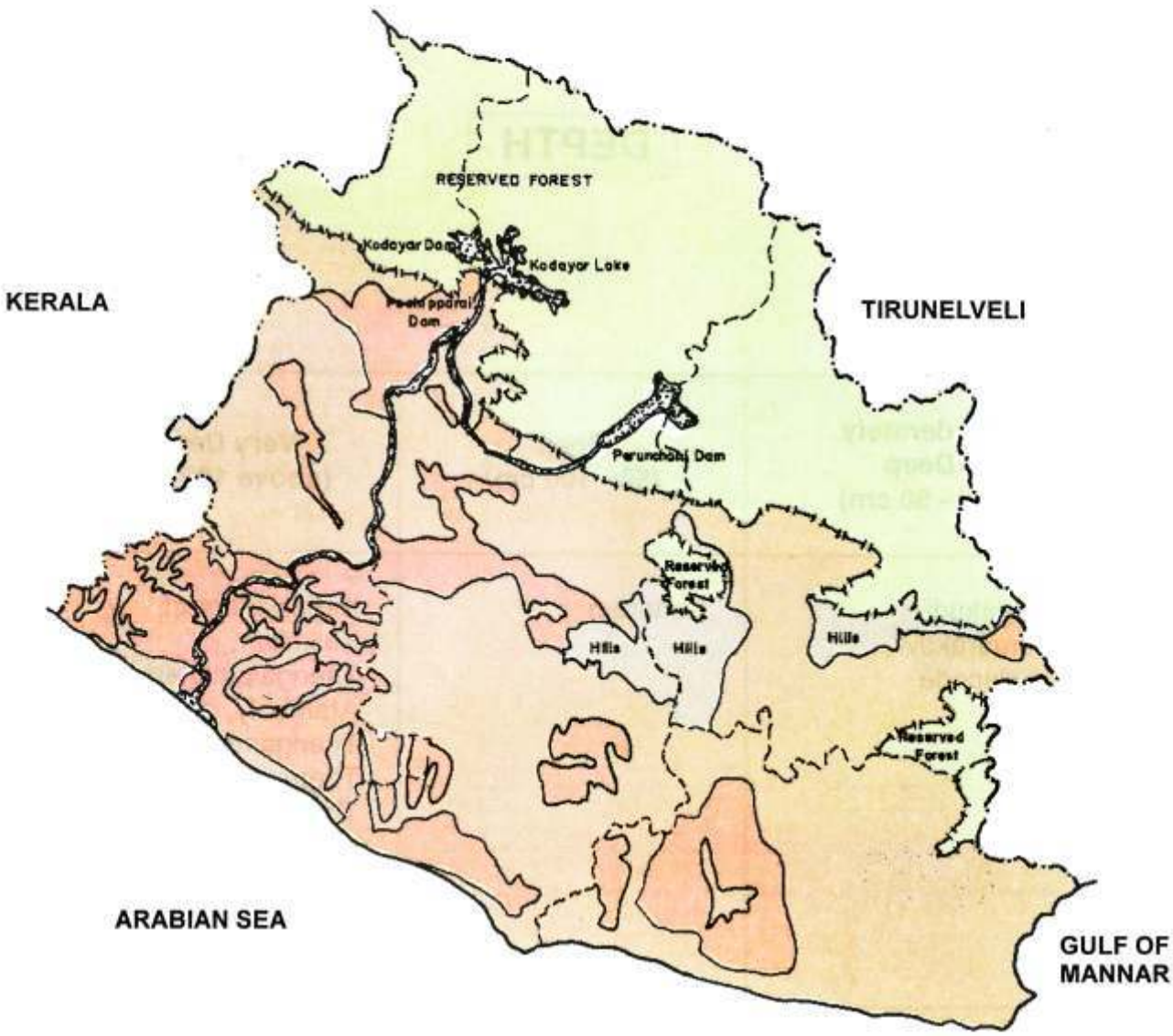
KANNIYAKUMARI DISTRICT



SOIL COLOUR

Red soil	Brown soil
Marthandam, Thovalai, Colachal, Mullucode	All other series
Area (ha) 29,852	61,209

SOIL COLOUR
KANNIYAKUMARI DISTRICT



DEPTH

Moderately Deep (25 - 50 cm)	Deep (50 - 100 cm)	Very Deep (above 100 cm)
Thalakudi, Kumarakovil, Mullucode	Kottaram	Kanniyakumari, Kalkulam, Thengaipattinam, Aramboly, Thengampudur, Therur, Marthandam, Thiruvattar, Suchindram, Thovalai, Colachal, Navalkadu, Thuckalay, Dharmapuram
Area (ha) 6,018	1,328	83,715

EFFECTIVE SOIL DEPTH
KANNIYAKUMARI DISTRICT

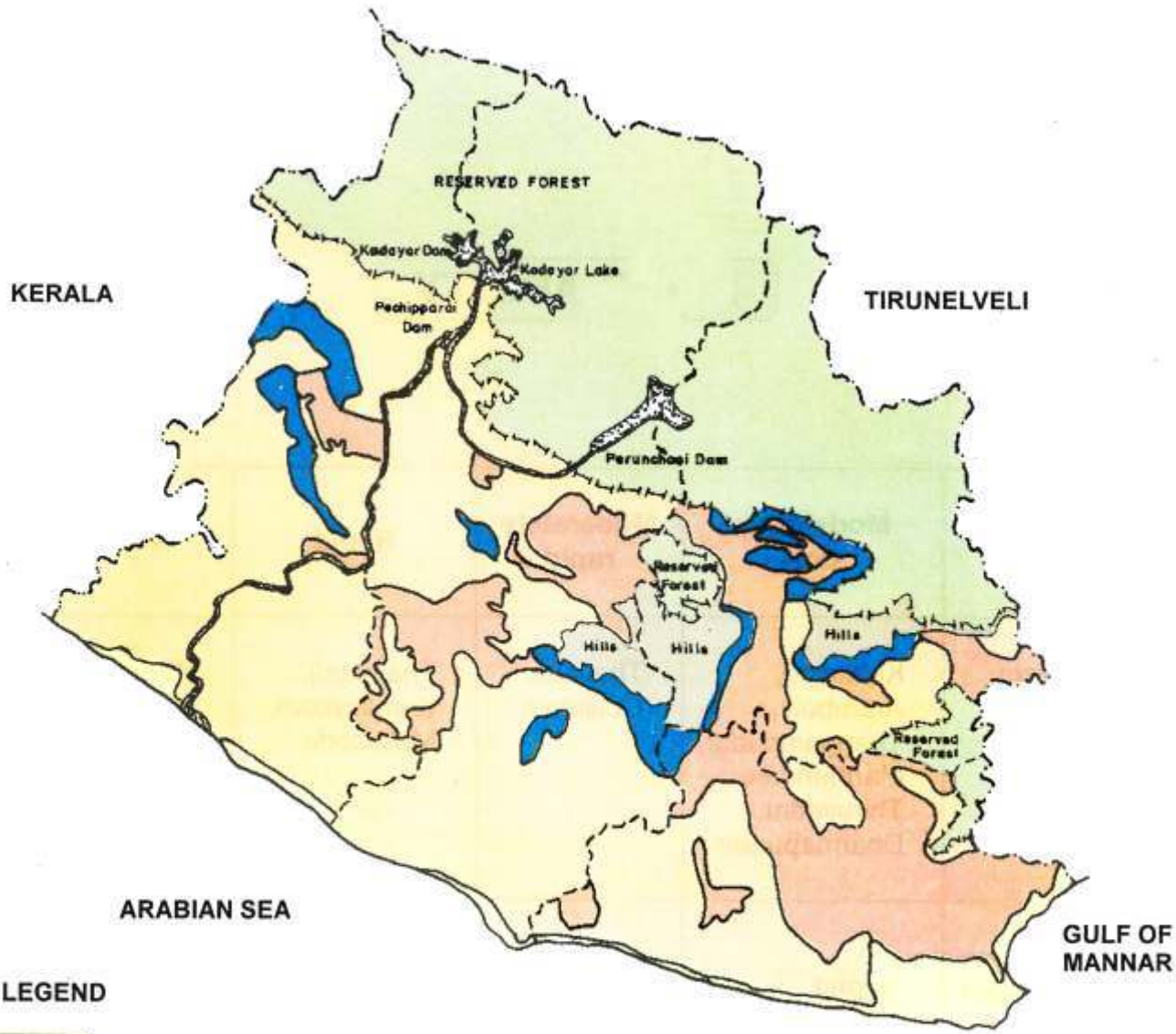
LEGEND

- MODERATELY DEEP
- DEEP
- VERY DEEP
- HILLS
- RESERVED FOREST

TEXTURE

Sand	Sandy loam	Sandy clayloam	Sandy clay
Kanniyakumari, Thengaipattinam	Thalakudi, Kumarakovil, Kalkulam, Mullucode	Aramboly, Thengampudur, Marthandam, Thiruvattar, Thovalai, Colachal, Thuckalay, Dharmapuram	Suchindram, Kottaram, Therur, Navalkadu
Area (ha) 3,830	6,668	56,445	24,118

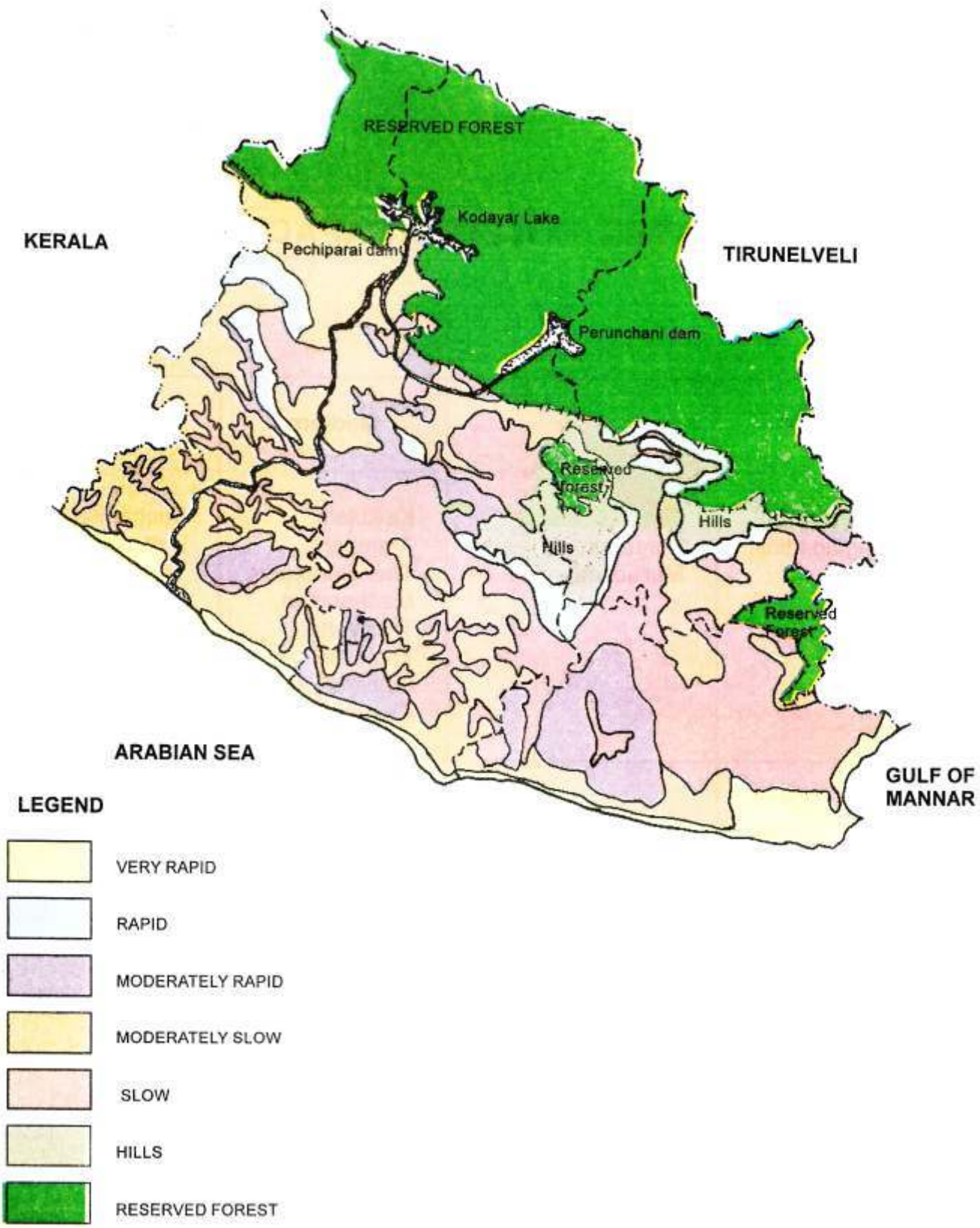
SOIL TEXTURE
KANNIYAKUMARI DISTRICT



PERMEABILITY

Slow	Moderately slow	Moderately rapid	Rapid	Very rapid
Suchindram, Kottaram, Therur, Navalkadu, Thuckalay	Kalkulam, Aramboly, Thengampudur, Marthandam, Thiruvattar, Dharmapuram	Thovalai, Colachal	Thalakudi, Kumarakovil, Mullucode	Kanniyakumari, Thengaipattinam
Area (ha) 32,914	39,282	9,017	6,018	3,830

PERMEABILITY
KANNIYAKUMARI DISTRICT

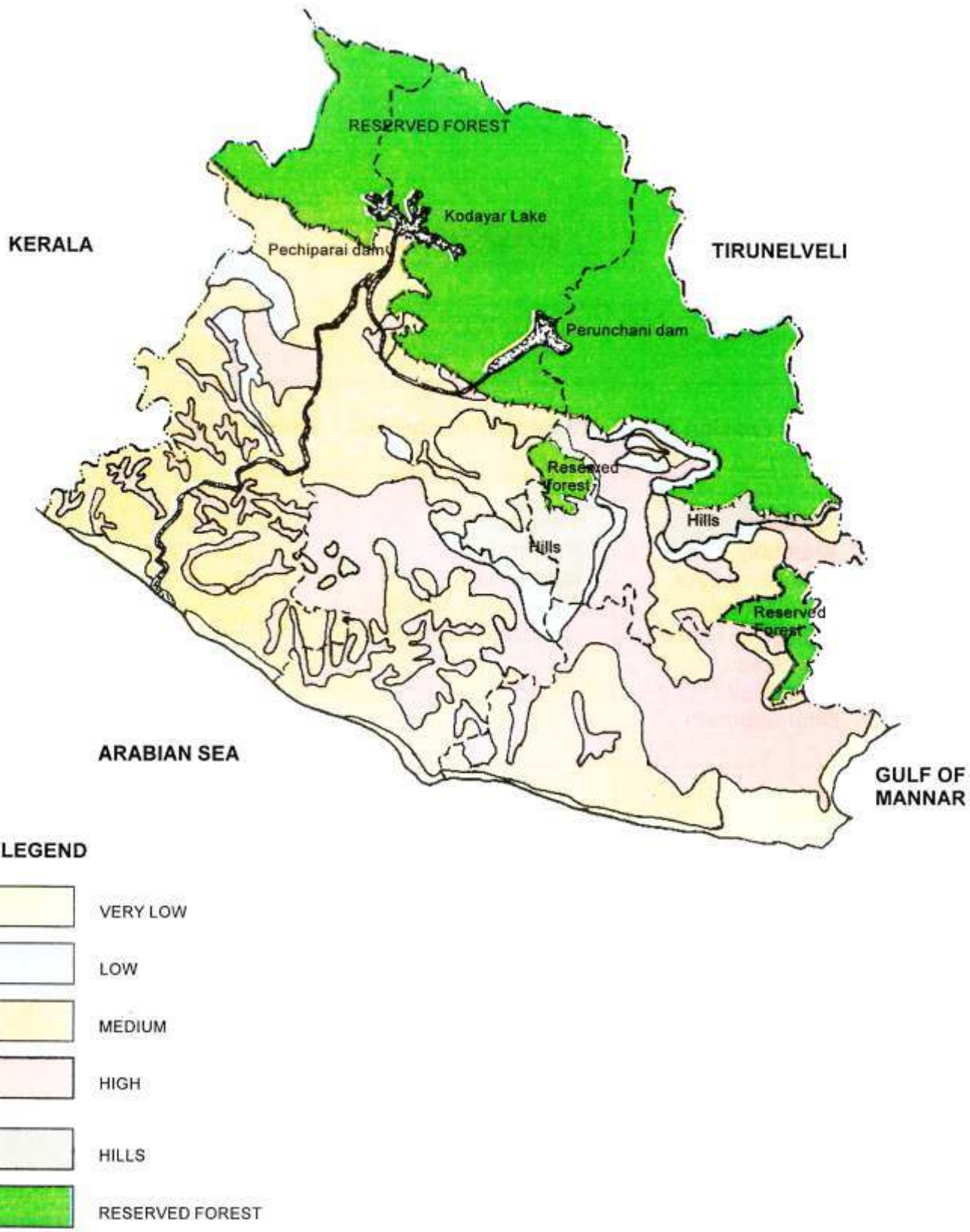


WATER HOLDING CAPACITY

Very low	Low	Medium	High
Kanniyakumari, Thengaipattinam	Thalakudi, Kumarakovil, Mullucode	Kalkulam, Aramboly, Thengampudur, Marthandam, Thiruvattar, Thovalai, Colachal, Dharmapuram	Suchindram, Kottaram, Therur, Navalkadu, Thuckalay
Area (ha) 3,830	6,018	48,299	32,914

WATER HOLDING CAPACITY

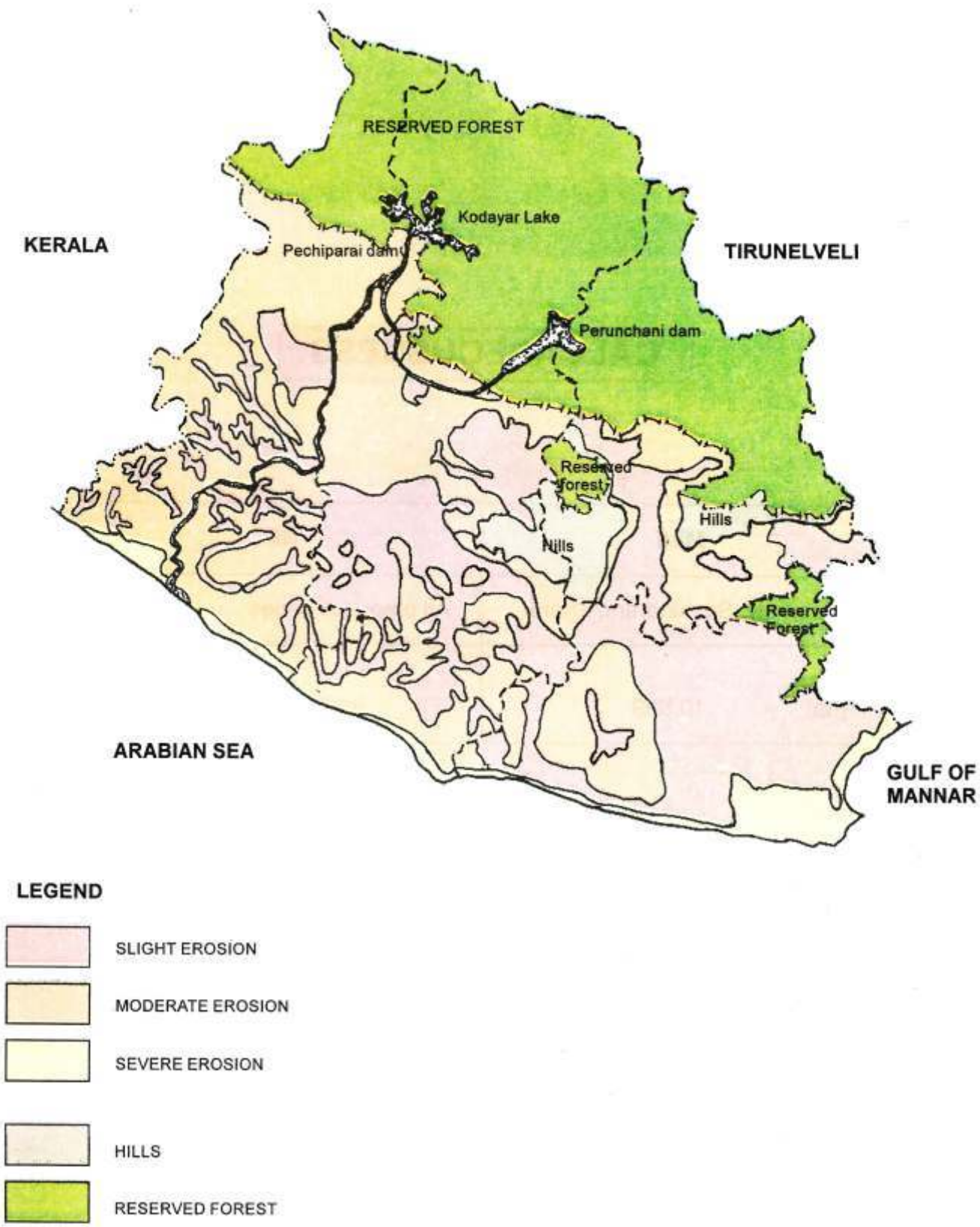
KANNIYAKUMARI DISTRICT



EROSION

Slight Erosion (e_1)	Moderate Erosion (e_2)	Severe Erosion (e_3)
Kalkulam, Aramboly, Thengampudur, Suchindram, Kottaram, Therur, Navalkadu, Thuckalay, Dharmapuram	Thalakudi, Kumarakovil, Marthandam, Thiruvattar, Thovalai, Colachal, Mullucode	Kanniyakumari, Thengaipattinam
Area (ha) 37,440	49,791	3,830

EROSION
KANNIYAKUMARI DISTRICT



CALCAREOUSNESS

Mild	Nil
Aramboly, Suchindram, Therur	All other soil series
Area (ha) 10,539	80,522

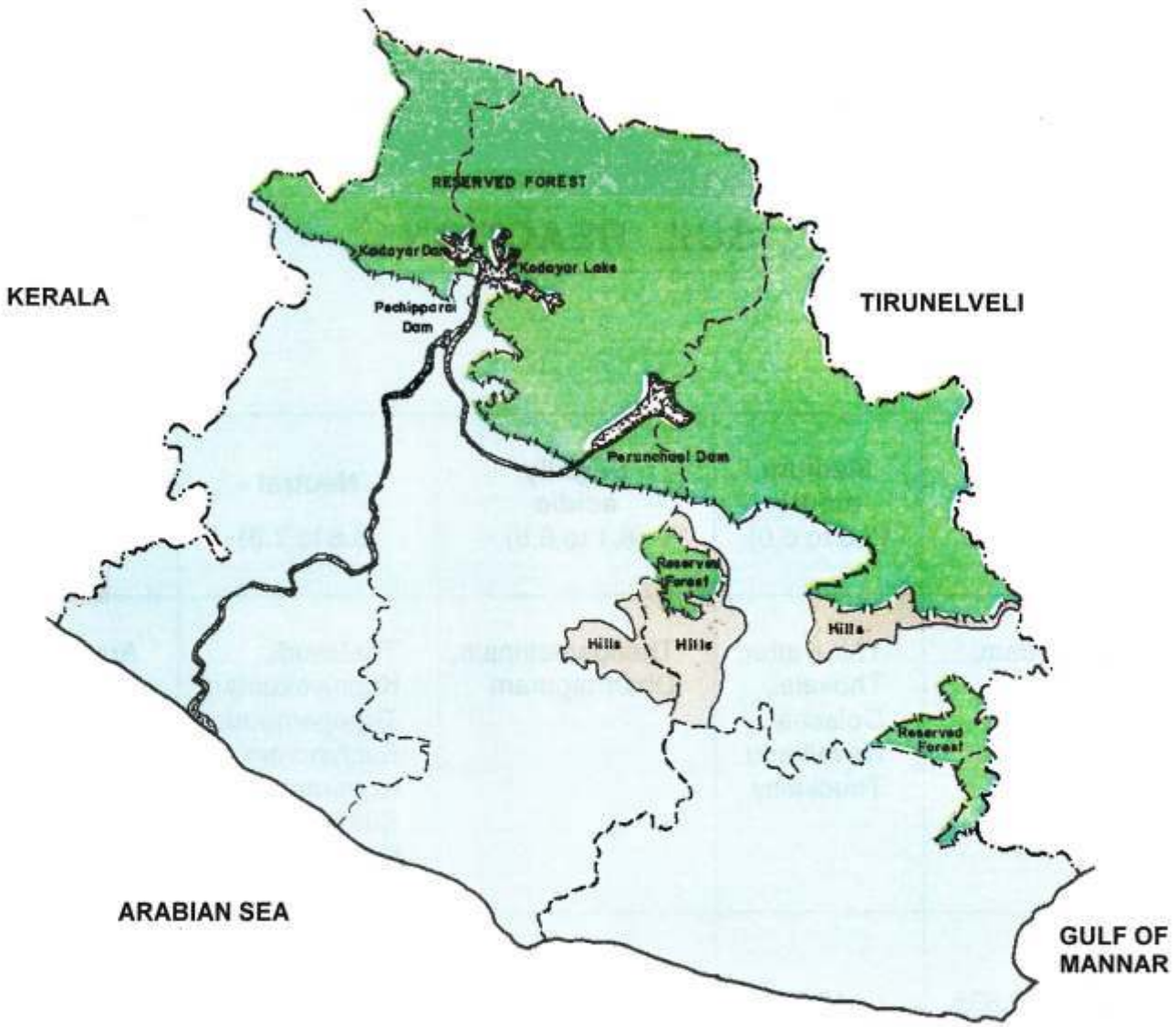
CALCAREOUSNESS
KANNIYAKUMARI DISTRICT

SALINITY

All the soil series in the district are non saline and the level of soluble salts is harmless.

SALINITY

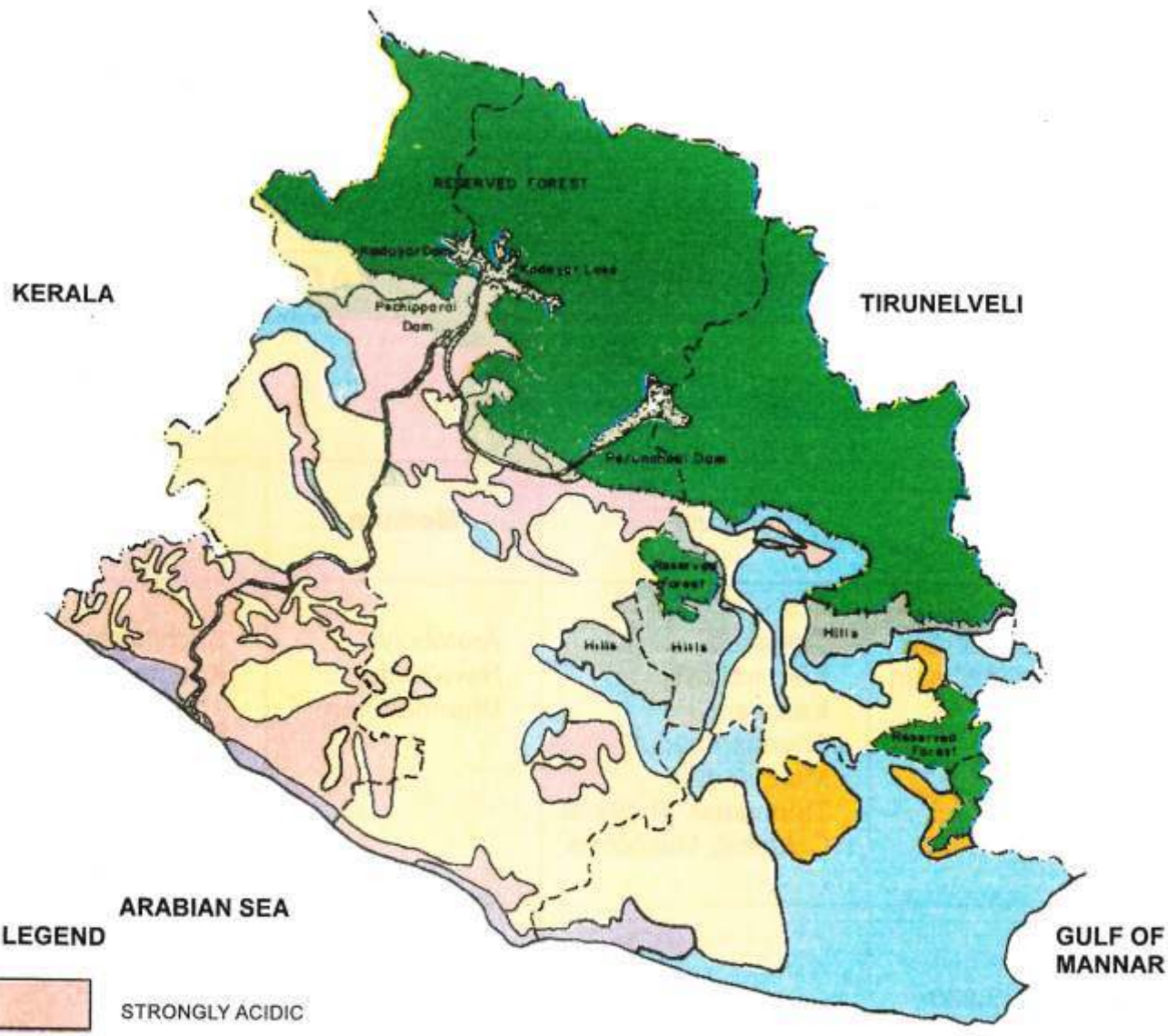
KANNIYAKUMARI DISTRICT



SOIL REACTION

Strongly acidic (5.1 to 5.5)	**Medium acidic** (5.6 to 6.0)	**Slightly acidic** (6.1 to 6.5)	**Neutral** (6.6 to 7.3)	**Mildly alkaline (7.4 to 7.8)**
Marthandam, Mullucode	Thiruvattar, Thovalai, Colachal, Navalkadu, Thuckalay	Thengaipattinam, Dharmapuram	Thalakudi, Kanniyakumari, Thengampudur, Suchindram, Kottaram, Kumarakovil, Kalkulam	Aramboly, Therur
Area (ha) 20,835	46,265	2,626	18,873	2,462

SOIL REACTION
KANNIYAKUMARI DISTRICT

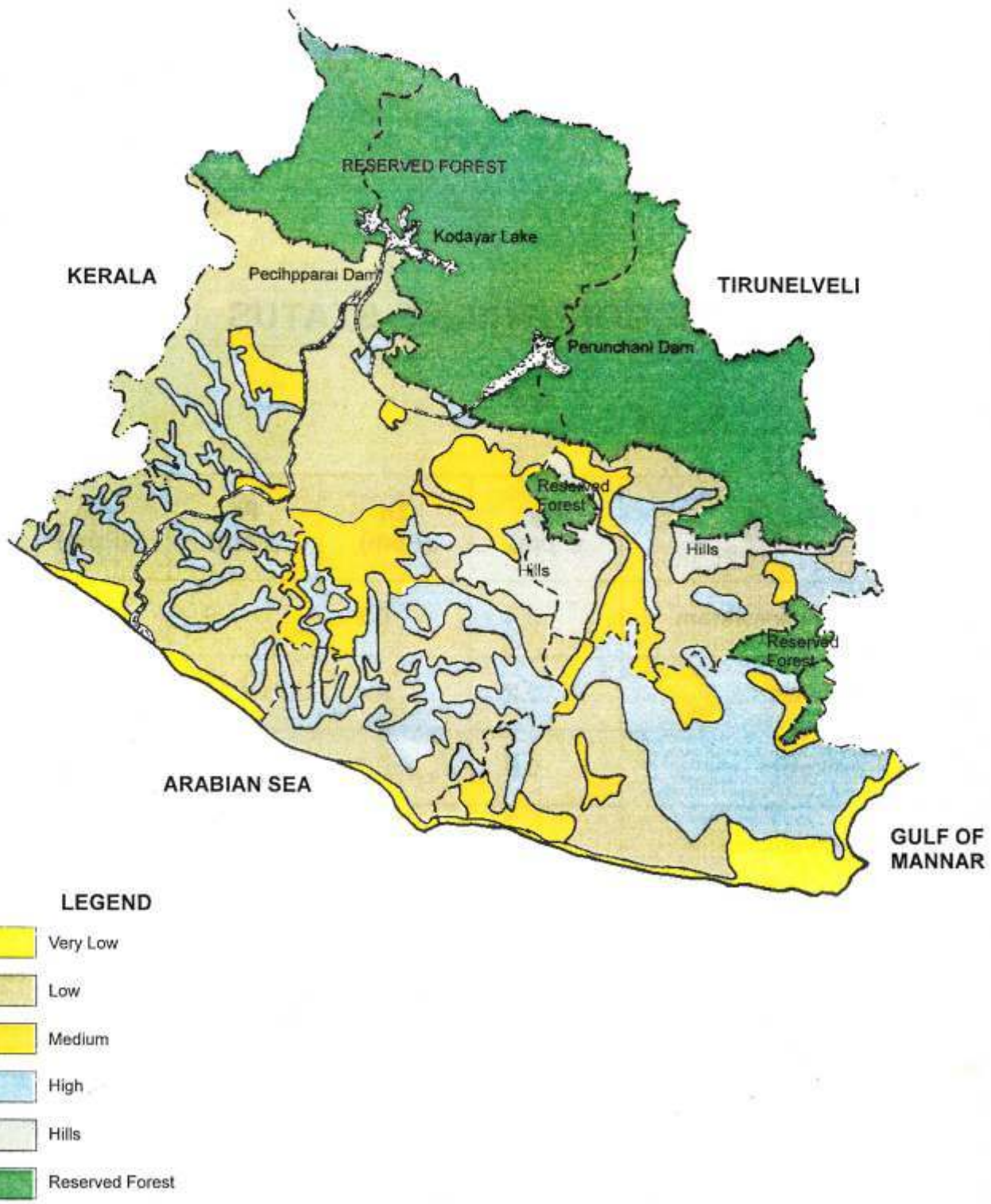


CATION EXCHANGE CAPACITY

Very low	Low	Medium	High
Kanniyakumari, Thengaipattinam	Thalakudi, Kumarakovil, Kalkulam, Thengampudur, Marthandam, Thiruvattar, Thovalai, Colachal, Mullucode	Aramboly, Navalkadu, Dharmapuram	Suchindram, Kottaram, Therur, Thuckalay
Area (ha) 3,830	52,031	16,015	19,185

CATION EXCHANGE CAPACITY

KANNIYAKUMARI DISTRICT

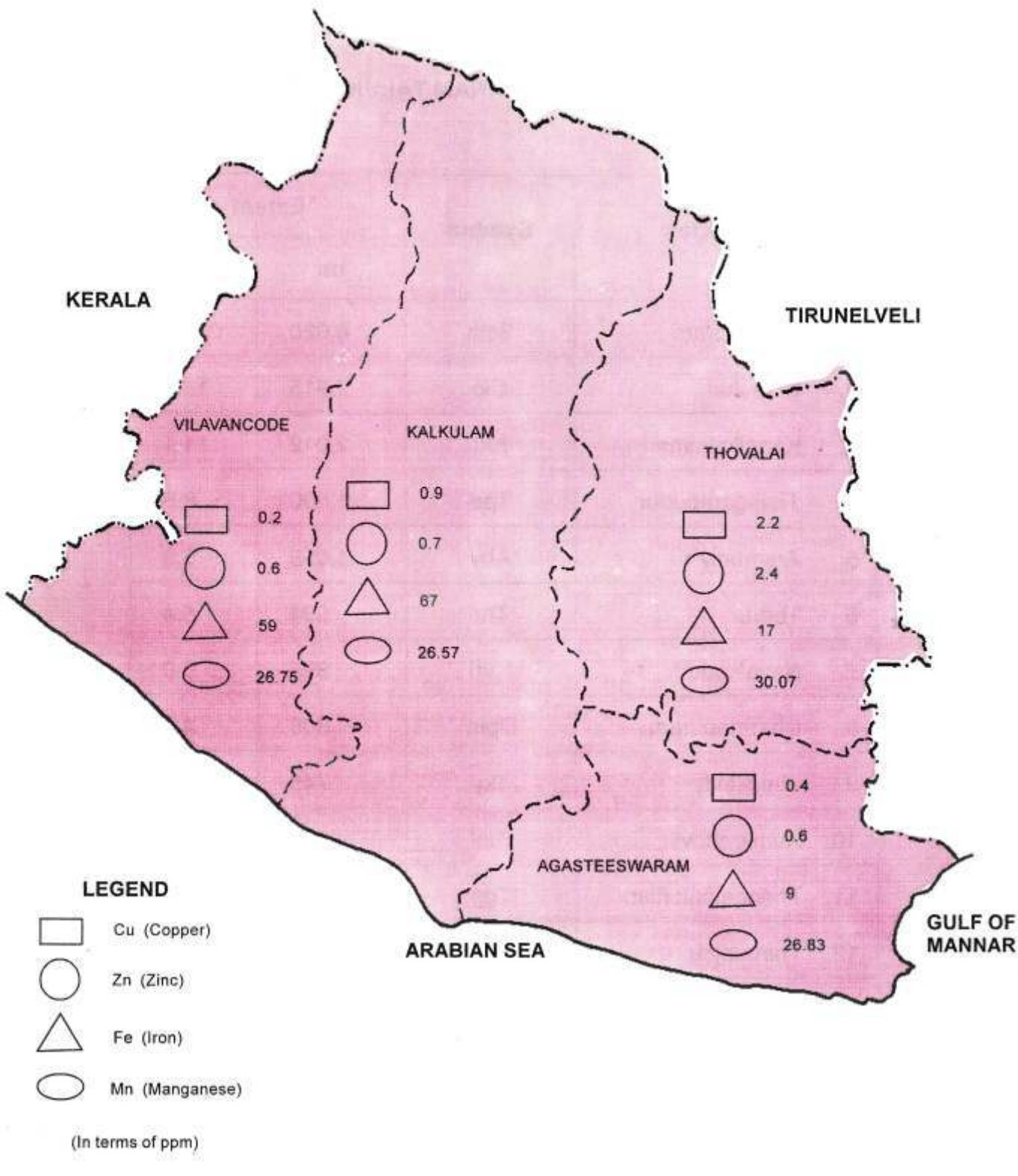


MICRONUTRIENT STATUS

Taluk	Cu (Ppm)	Zn (Ppm)	Fe (Ppm)	Mn (Ppm)
1. Agasteeswaram	0.4	0.6	9	26.83
2. Thovalai	2.2	2.4	17	30.07
3. kalkulam	0.9	0.7	67	26.57
4. Vilavancode	0.2	0.6	59	26.75

MICRO NUTRIENT STATUS

KANNIYAKUMARI DISTRICT

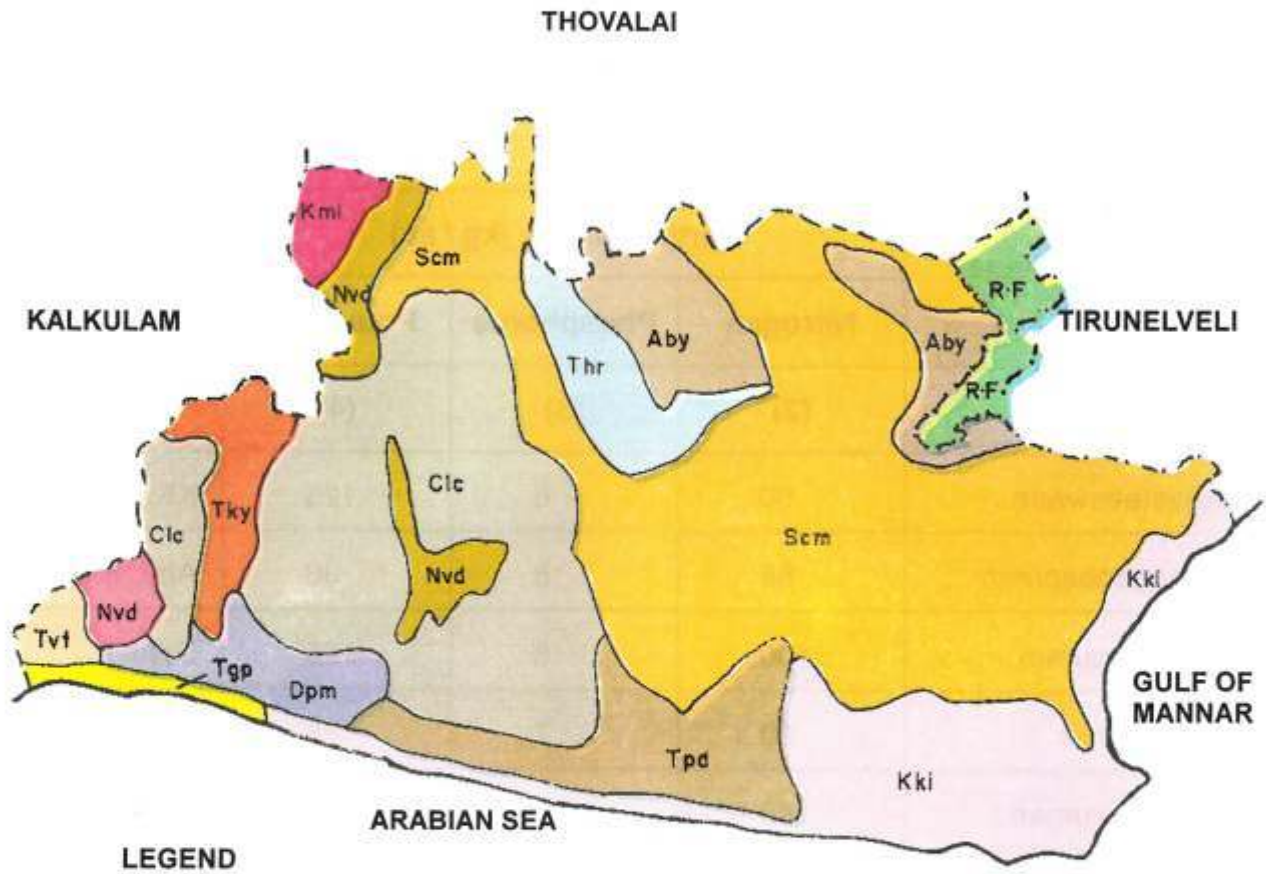


SOILS

AGASTEESWARAM TALUK

Soil series	Symbol	Extent	
		ha	%
1. Suchindram	Scm	6,020	33.31
2. Colachal	Clc	2,915	16.1
3. Kanniyakumari	Kki	2,012	11.1
4. Thengampudur	Tpd	1,590	8.8
5. Aramboly	Aby	1,058	5.9
6. Therur	Thr	984	5.4
7. Navalkadu	Nvd	895	5.0
8. Dharmapuram	Dpm	808	4.5
9. Thuckalay	Tky	745	4.1
10. Kumarakovil	Kml	440	2.5
11. Thengaipattinam	Tgp	307	1.7
12. Thiruvattar	Tvt	295	1.6
	Total	18,069	100.0

SOILS
AGASTEESWARAM TALUK



VILLAGE WISE FERTILITY STATUS AND SOIL SERIES

AGASTEESWARAM TALUK

Name of the village	Fertility status (kg / ac)			Dominant soil series
	Nitrogen	Phosphorus	Potassium	
(1)	(2)	(3)	(4)	(5)
1. Agasteeswarm	80	8	123	KKi
2. Azhagappapuram	85	8	86	Aby, Kki
3. Dharmapuram	100	8	125	Dpm
4. Eraviputhur	90	7	185	Scm
5. Kanniyakumari	80	8	123	Kki
6. Kulasekarapuram	90	7	122	Scm
7. Kottaram	90	7	115	Thr
8. Marungoor	100	7	128	Scm
9. Nagercoil	105	7	126	Thr, Scm
10. Neendakarai - A	95	8	115	Scm

(1)	(2)	(3)	(4)	(5)
11. Neendakarai - B	100	8	125	Tpd
12. Nadhusedhanapuram	100	8	125	Tpd
13. Parakkai	100	8	125	Scm
14. Suchindram	95	8	115	Scm
15. Tamaraikulam	90	8	128	Tpd, Kki
16. Thengampudur	100	8	125	Tpd, Scm
17. Theroor	95	7	125	Thr, Scm
18. Vadiveeswaram	100	8	115	Thr
19. Vadasery	95	8	115	Scm
20. Vembanoor	100	8	115	Thr

WATER QUALITY

AGESTEESWARAM TALUK

Village	pH	EC	Total of anion	Total of cation	RSC	SAR	SSF	USSL Class	Geo-chemical type
1. Agasteeswaram	8.4	0.2	2.77	3.46	-0.9	—	—	C_1S_1	$CaCl_2$
2. Azhakappapuram	8.2	0.3	3.67	4.28	+0.7	0.95	22	C_2S_1	$CaCl_2$
3. Dharmapuram	8.4	0.4	4.28	6.00	-0.5	0.89	19	C_2S_1	$CaCl_2$
4. Eravipudur	8.9	0.9	8.87	8.05	0.6	2.86	36	C_3S_1	$Ca(HCO_3)_2$
5. Kanyakumari	9.0	0.8	8.47	8.38	-2.0	1.95	28	C_3S_1	$CaCl_2$
6. Kottaram	8.7	0.6	8.21	6.70	-3.8	0.58	12	C_2S_1	$Ca(HCO_3)_2$
7. Kulasekarapuram	8.1	0.5	6.38	6.46	-0.5	4.02	50	C_2S_1	NaCl
8. Madhusoothana-puram	8.0	0.4	4.25	5.83	-0.7	1.19	19	"	$CaCl_2$
9. Marungoor	8.8	0.6	7.52	7.74	0.5	2.72	37	C_2S_1	$Ca(HCO_3)_2$
10. Neendakara 'A'	7.3	0.2	2.13	2.55	-0.60	0.30	9	C_1S_1	$CaCl_2$

11. Neendakara 'B'	7.3	0.2	1.95	1.78	0.2	1.52	41	"	$Ca(HCO_3)_2$
12. Parakkai	8.4	0.6	7.28	8.23	0.7	4.44	55	C_3S_1	$Na(HCO_3)_2$
13. Suchindram	8.4	0.2	1.94	2.66	-0.4	1.67	30	C_1S_1	$CaCl_2$
14. Thamaraikulam	8.7	0.2	2.28	2.16	0.2	4.10	70	C_1S_1	NaCl
15. Thengampudur	8.0	2.0	14.38	18.67	2.5	22.28	91	C_3S_1	NaCl
16. Theroor	8.8	0.8	7.90	9.19	-0.4	2.48	35	"	$Ca(HCO_3)_2$
17. Vadasery	8.7	0.6	6.94	6.55	-2.9	1.42	23	C_2S_1	$CaCl_2$
18. Vadiveeswaram	8.6	1.0	7.00	11.74	1.0	1.14	23	C_3S_1	"
19. Vembanoor	7.2	0.2	2.53	1.98	-0.9	1.23	32	C_1S_1	$CaCl_2$

LAND CAPABILITY

AGASTEESWARAM TALUK

Area (ha)	Land capability classification	Soil series	Limitations	Needs
6,915	II s	Suchindram Navalkadu	Low organic matter status, sub soil hardness	Addition of organic manures
3,456	III s	Thengampudur Aramboly Dharmapuram	Soil crusting, low organic matter status	Liberal addition of organic manures
3210	III se	Colachal Thiruvattar	Acidity, low CEC, low organic matter status, erosion	Addition of lime, Addition of organic manures, soil conservation
1729	III sw	Therur Thuckalay	Low organic matter status	Addition of organic manures, drainage
2759	IV se	Kanniyakumari Kumarakovil Thengaipattinam	Coarse texture, low WHC, low CEC, low organic matter status, erosion	Addition of tank silt and organic manures, soil conservation

Class

- ***II*** Good cultivable lands that have moderate limitations for sustained use under agriculture
- ***III*** Moderately good cultivable lands that have severe limitations for sustained use under agriculture.
- ***IV*** Lands that have very severe limitations for sustained use under agriculture.

Sub class

- ***s*** Root zone limitations
- ***e*** Erosion and run-off
- ***w*** Excess water

LAND IRRIGABILITY

AGASTEESWARAM TALUK

Area (ha)	Land Irrigability classification	Soil series	Limitations
6,915	2 s	Suchindram Navalkadu	Sub soil hardness
3,456	3 s	Thengampudur Aramboly Dharmapuram	Soil crusting
3,210	3 st	Colachal Thiruvattar	Acidity, low CEC, topography
1,729	3 sd	Therur Thuckalay	Drainage
2,759	4 st	Kanniyakumari Kumarakovil Thengaipattinam	Coarse texture, low WHC low CEC topography

Class

2 Lands that have moderate soil limitations for sustained use under irrigation

3 Lands that have severe soil limitations for sustained use under irrigation

4 Lands that have very severe soil limitations for sustained use under irrigation

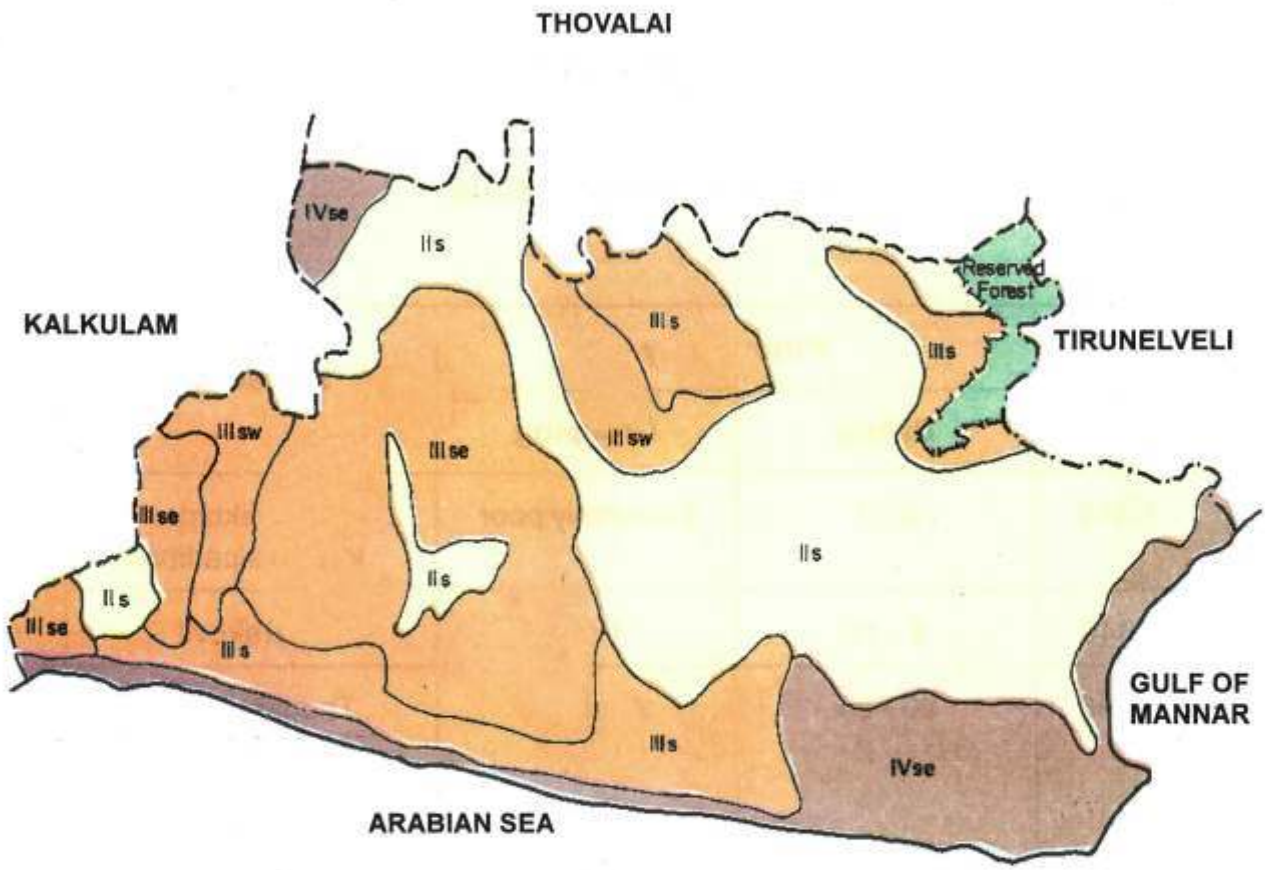
Sub class

s Soil limitations

t Topography

d Drainage

LAND IRRIGABILITY
AGASTEESWARAM TALUK



LEGEND

CLASS

- 2 - Moderate limitation
- 3 - Severe limitation
- 4 - Very Severe limitation
- RESERVED FOREST

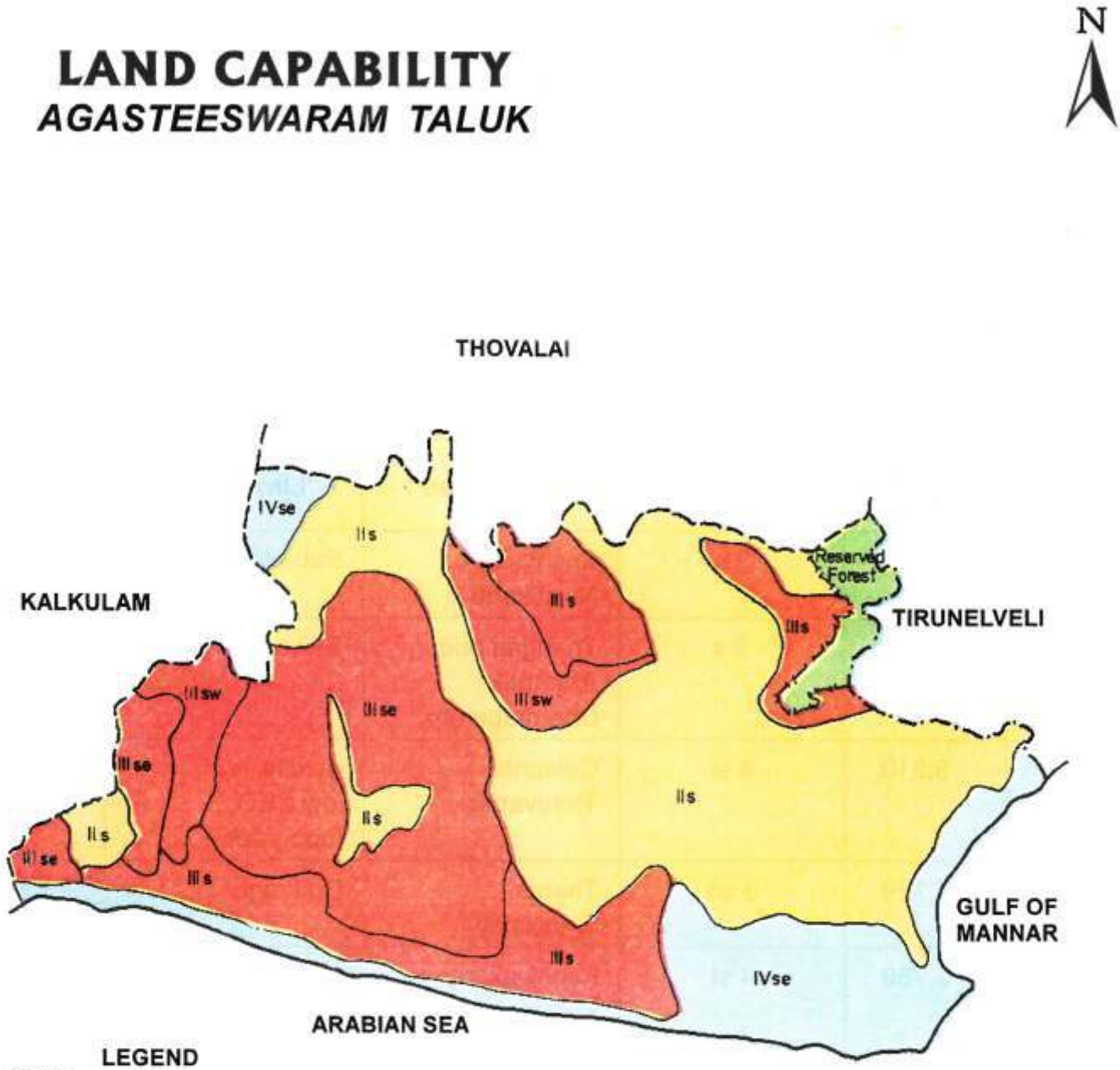
SUB CLASS

s - Soil limitation

t - Topographic limitation

d - Drainage hazard

LAND CAPABILITY
AGASTEESWARAM TALUK



LEGEND

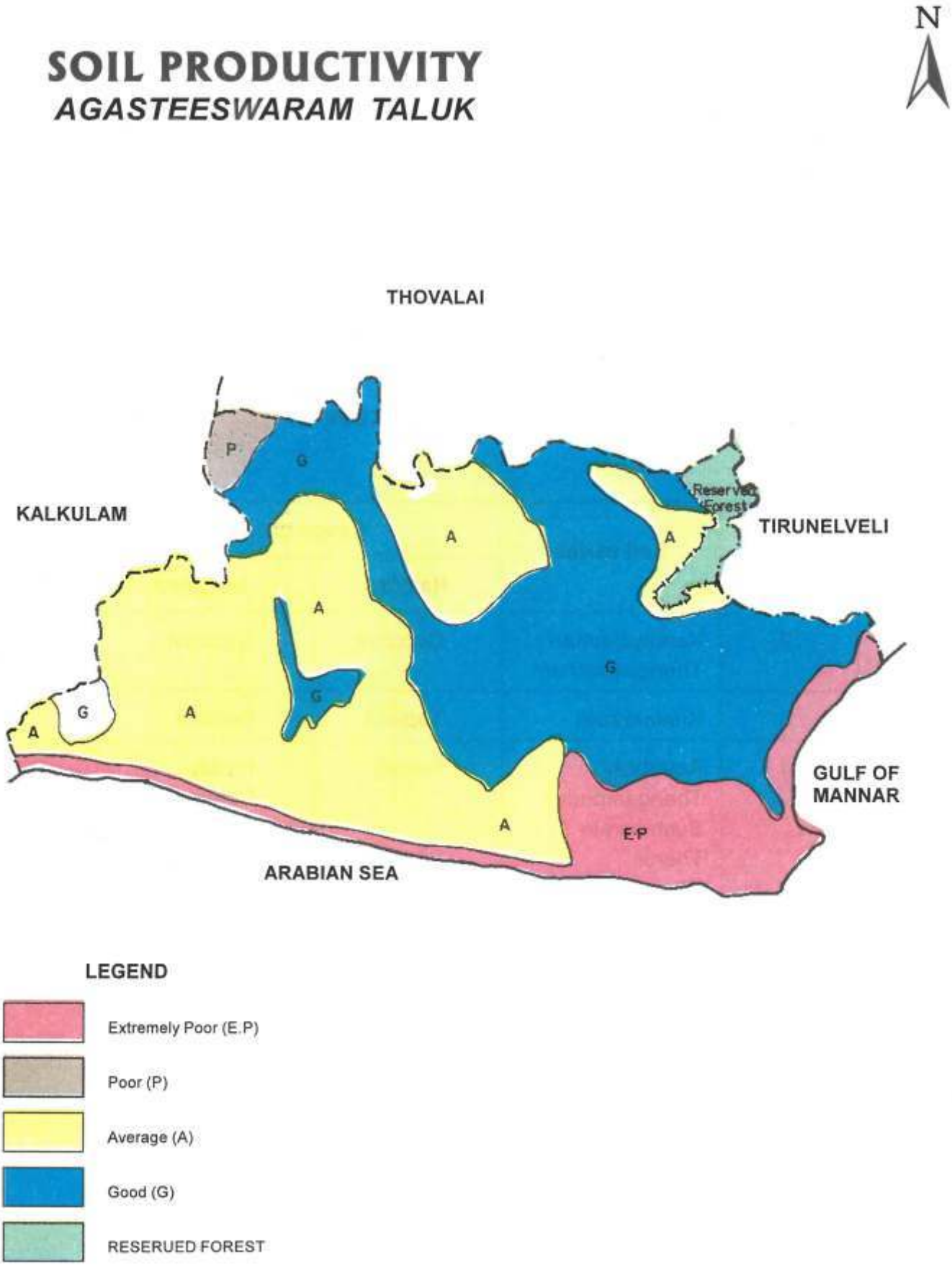
CLASS

- II - Moderate limitation
- III - Severe limitation
- IV - Very Severe limitation
- RESERVED FOREST

SUB CLASS

- s - Root zone limitation
- e - Erosion hazard
- w - Wetness

SOIL PRODUCTIVITY
AGASTEESWARAM TALUK



SOIL PRODUCTIVITY

AGASTEESWARAM TALUK

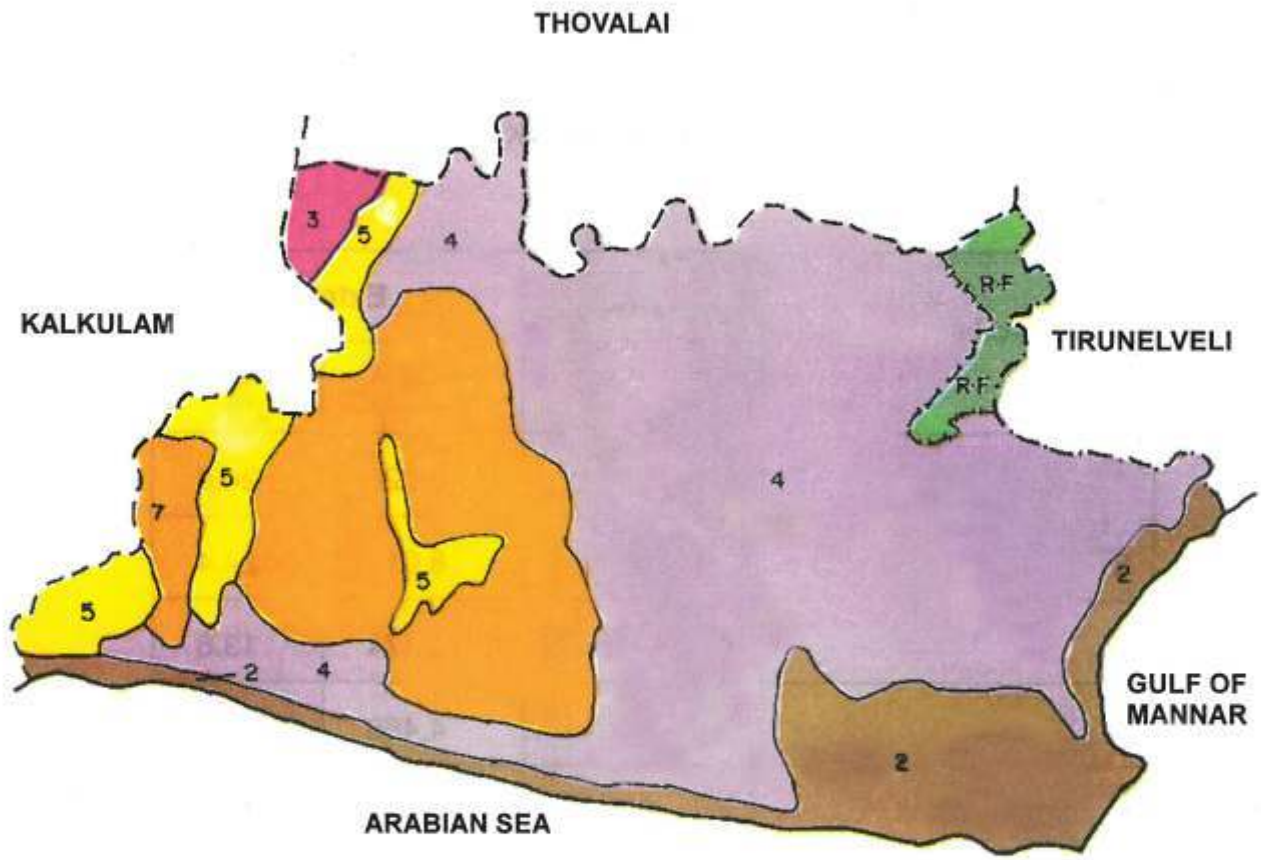
Area (ha)	Productivity		Soil series
	Rating	Grouping	
2,319	0 - 7	Extremely poor	Kanniyakumari Thengaipattinam
440	8 - 19	Poor	Kumarakovil
8,395	20 - 34	Average	Thegampudur, Aramboly, Therur, Thiruvattar, Colachal, Thuckalay, Dharmapuram
6,915	35 - 64	Good	Suchindram Navalkadu

CROPS GROWN

AGASTEESWARAM TALUK

Map symbol	Soil series	Crops grown	
		Rainfed	Irrigated
2	Kanniyakumari Thengaipattinam	Coconut	Coconut
3	Kumarakovil	Tapioca	Banana
4	Aramboly Thengampudur Suchindram Therur Dharmapuram	Pulses	Paddy Banana
5	Thiruvattur Navalkadu Thuckalay	Pulses	Paddy Banana Coconut
7	Colachal	Cashew	Orchard crops, Coconut

CROPS GROWN
AGASTEESWARAM TALUK



LEGEND

- 2
- 3
- 4
- 5
- 7
- RESERVED FOREST

SOILS

KALKULAM TALUK

Soil series	Symbol	Extent	
		ha	%
1. Marthandam	Mdm	8,028	24.5
2. Navalkadu	Nvd	8,010	24.4
3. Thiruvattar	Tvt	4,474	13.6
4. Thuckalay	Tky	4,468	13.6
5. Colachal	Clc	4,462	13.6
6. Kumarakovil	Kml	2,050	6.2
7. Thengaipattinam	Tgp	690	2.1
8. Kalkulam	Klk	650	2.0
	Total	32,832	100.0


SOILS
KALKULAM TALUK
N
TIRUNELVELI
Reserved Forest
Kodayar Lake
THOVALAI
VILAVANCODE
AGASTEESWARAM
ARABIAN SEA
Hills
Clc
Mdm
Nvd
Tvt
Kml
Tky
Tgp
Klk
LEGEND
Mdm - Marthandam
Nvd - Navalkadu
Tvt - Thiruvattar
Tky - Thuckalay
Clc - Colachal
Kml - Kumarakovil
Tgp - Thengaipattinam
Klk - Kalkulam
Hills
Reserved Forest

VILLAGE WISE FERTILITY STATUS AND SOIL SERIES

KALKULAM TALUK

Name of the village	Fertility status (kg / ac)			Dominant soil series
	Nitrogen	Phosphorus	Potassium	
(1)	(2)	(3)	(4)	(5)
1. Kappiara	95	6	105	Mdm
2. Valvachagostam	92	6	104	Mdm
3. Attoor	9	6	107	Clc, Mdm
4. Thuckalay	96	7	112	Mdm, Tky
5. Kalkulam	96	7	112	Tky, Klk
6. Kottanallur	95	7	111	Tky, Mdm
7. Mecode	93	6	104	Clc, Mdm
8. Aruvikarai	93	7	103	Clc, Mdm
9. Thiruvattar	95	6	105	Mdm, Tvt
10. Thirparappu	93	6	104	Clc, Mdm
11. Ponmanai	92	6	104	Mdm, Tvt
12. Aloor	95	7	108	Tky, Tvt
13. Eranial	96	7	114	Mdm, Tky

(1)	(2)	(3)	(4)	(5)
14. Thalakulam	93	7	113	Tky, Mdm
15. Kadiapattanam	96	7	114	Mdm, Clc
16. Manavalakurichi	89	6	109	Mdm, Tky
17. Colochel Town	90	6	110	Clc, Tky
18. Colochal	90	6	110	Clc, Tky
19. Thiruvitamcode	96	7	105	Mdm
20. Viyannoor	95	6	105	Tvt
21. Velimalai	90	7	125	Nvd
22. Thumpodu	93	7	103	Mdm
23. Churulakode	92	6	105	Mdm, Clc
24. Villukuri	91	7	114	Tky, Tvt
25. Kurunthancode	95	6	107	Mdm
26. Lakshmipuram	95	6	110	Mdm, Ccl
27. Padmanabapuram Twon	95	7	113	Mdm

13. Manavalakurichi	7.6	0.8	7.85	7.84	—	10.1	88	C_3S_2	Nacl.
14. Mecode	7.2	0.1	1.18	1.22	—	2.8	82	C_1S_1	Nacl.
15. Ponmana	7.3	0.1	1.22	1.23	—	2.3	75	C_1S_1	Nacl.
16. Thuckalai	7.1	0.1	1.82	1.83	—	3.9	83	C_1S_1	Nacl.
17. Thiruvattar	7.0	0.1	1.20	1.22	—	3.2	83	C_1S_1	Nacl.
18. Thirparappu	7.1	0.1	1.30	1.22	—	2.6	77	C_1S_1	Nacl.
19. Thalakulam	7.8	0.8	7.78	7.84	—	8.4	84	C_3S_1	Nacl.
20. Thumpode	7.3	0.6	1.12	1.32	—	2.8	82	C_1S_1	Nacl.
21. Thiruvithamcode	7.8	0.1	1.30	1.43	—	2.6	77	C_1S_1	Nacl.
22. Valvachagostam	7.6	0.1	1.20	1.22	—	2.3	75	C_1S_1	Nacl.
23. Velimalai	7.1	0.1	1.12	1.22	—	2.1	73	C_1S_1	Nacl.
24. Viyanoor	7.1	0.2	2.08	2.04	—	2.6	70	C_1S_1	Nacl.
25. Villukuri	7.0	0.1	1.82	1.83	—	2.8	74	C_1S_1	Nacl.

WATER QUALITY

KALKULAM TALUK

Village	pH	EC	Total of anion	Total of catio	RSC	SAR	SSP	USSL	Geo-chemical type
1. Aloor	7.4	0.1	1.31	1.32	—	3.5	85	C_1S_1	Nacl.
2. Arunakarai	7.2	0.1	0.03	1.12	—	2.5	80	C_1S_1	Nacl.
3. Attor	7.2	0.1	1.22	1.13	—	3.2	83	C_1S_1	Nacl.
4. Churulacode	7.2	0.1	1.10	1.22	—	2.8	82	C_1S_1	Nacl.
5. Eraniel	7.9	0.1	1.50	1.53	—	4.1	87	C_1S_1	Nacl.
6. Kappiara	8.0	0.1	1.18	1.32	—	2.8	82	C_1S_1	Nacl.
7. Kalkulam	8.3	0.5	4.83	4.80	—	4.5	74	C_2S_1	Nacl.
8. Kadiapattanam	7.6	0.1	1.30	1.31	—	2.6	77	C_1S_1	Nacl.
9. Kothanallur	7.5	0.6	5.05	4.96	—	1.6	48	C_2S_1	Nacl.
10. Colachel	7.7	0.5	4.86	4.82	—	5.4	79	C_3S_1	Nacl.
11. Kurunthancode	7.6	0.1	1.30	1.12	—	2.6	77	C_1S_1	Nacl.
12. Lekshimipuram	7.7	0.1	1.20	1.22	—	3.2	83	C_1S_1	Nacl.

LAND CAPABILITY

KALKULAM TALUK

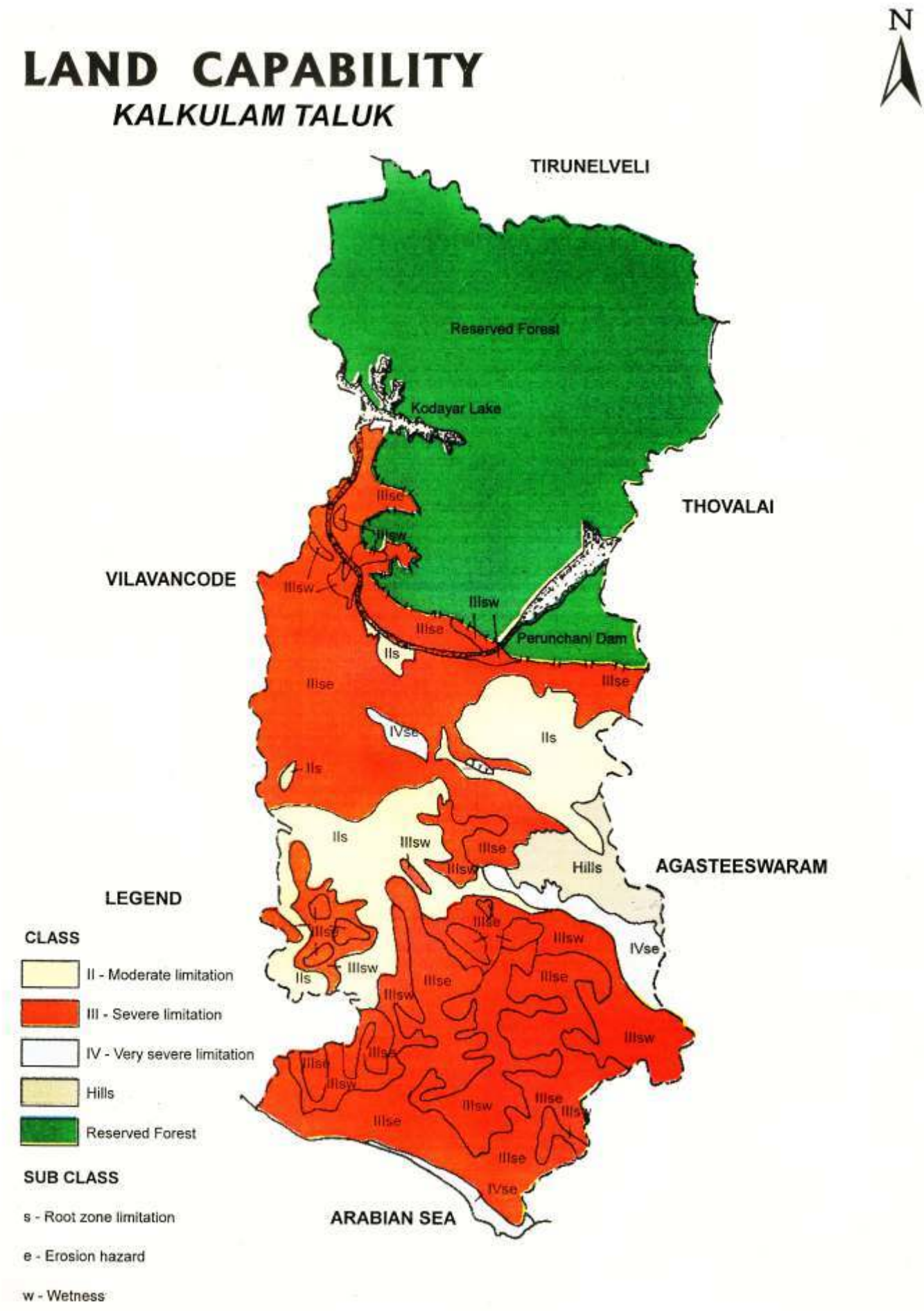
Area (ha)	Land capability classification	Soil series	Limitations	Needs
8,010	II s	Navalkadu	Acidity, Low organic matter status	Addition of lime, Addition of organic manures
16,964	III se	Marthandam Thiruvattar Colachal	Acidity, low base status, low organic matter status, low CEC, erosion	Addition of lime, Adddition of organic manures, Soil conservation
5,118	III sw	Thuckalay Kalkulam	Low organic matter status, wetness	Addition of organic manures
2,740	IV se	Kumarakovil Thengaipattinam	Coarse texture, low WHC, low CEC, low organic matter status erosion	Addition of tank silt and organic manures Soil conservation

Class

- ***II*** Good cultivable lands that have moderate limitations for sustained use under agriculture
- ***III*** Moderately good cultivable lands that have severe limitations for sustained use under agriculture.
- ***IV*** Lands that have very severe limitations for sustained use under agriculture

Sub class

- ***s*** Root zone limitations
- ***e*** Erosion and run-off
- ***e*** Excess water


LAND CAPABILITY
KALKULAM TALUK
N
TIRUNELVELI
Reserved Forest
Kodayar Lake
THOVALAI
VILAVANCODE
Perunchani Dam
Hills
AGASTEESWARAM
ARABIAN SEA
LEGEND
CLASS
II - Moderate limitation
III - Severe limitation
IV - Very severe limitation
Hills
Reserved Forest
SUB CLASS
s - Root zone limitation
e - Erosion hazard
w - Wetness

LAND IRRIGABILITY

KALKULAM TALUK

Area (ha)	Land Irrigability classification	Soil series	Limitations
8,010	2 s	Navalkadu	Acidity
16,964	3 st	Marthandam Thiruvattar Colachal	Acidity, low base status, low CEC, topography
5,118	3 sd	Thuckalay Kalkulam	Drainage
2,740	4 st	Kumarakovil Thengaipattinam	Coarse texture, low WHC, low CEC, topography

Class

2 Lands that have moderate soil limitations for sustained use under irrigation

3 Lands that have severe soil limitations for sustained use under irrigation

4 Lands that have very severe soil limitations for sustained use under irrigation

Sub class

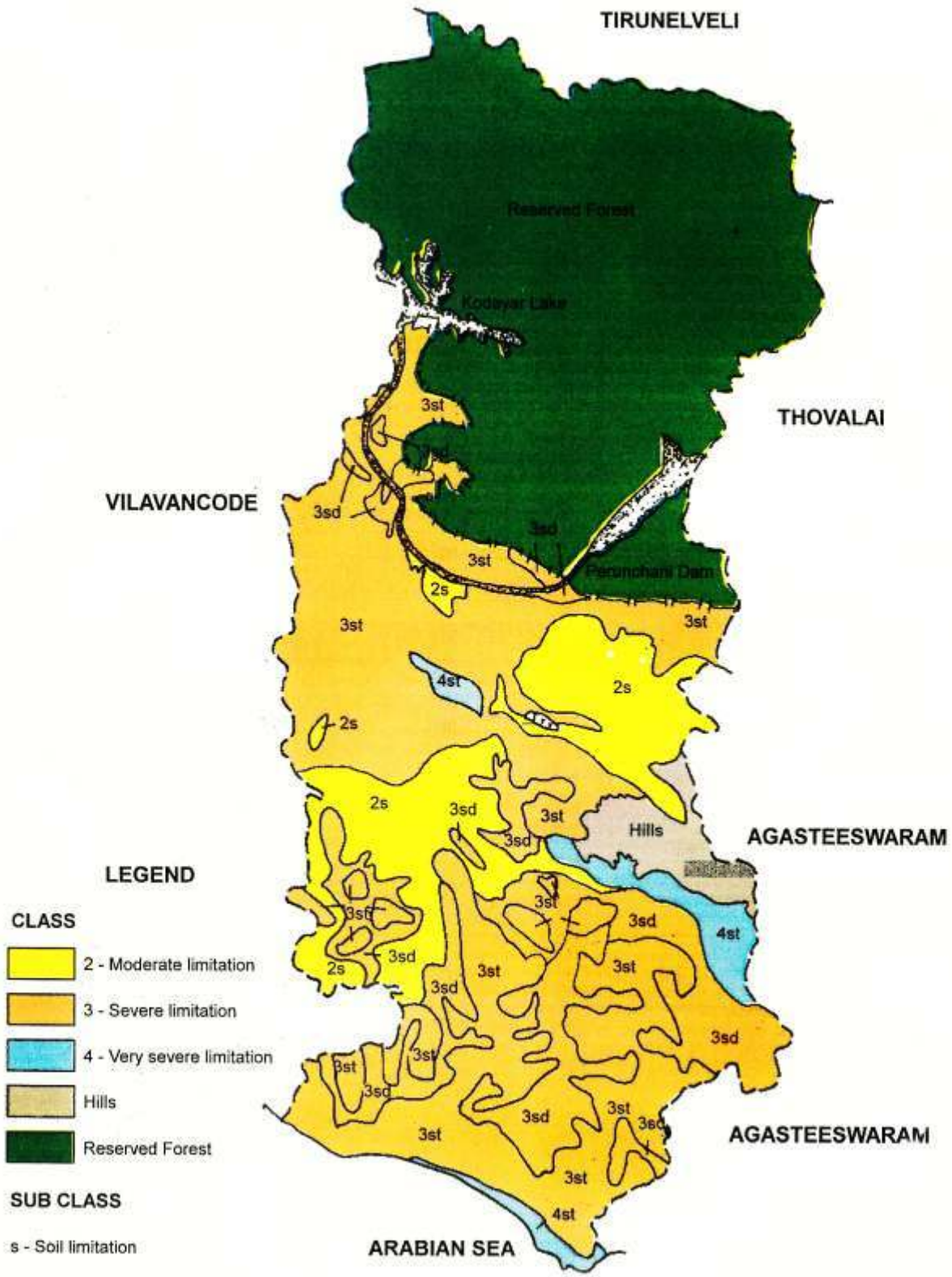
s Soil limitations

t Topography

d Drainage

LAND IRRIGABILITY

KALKULAM TALUK



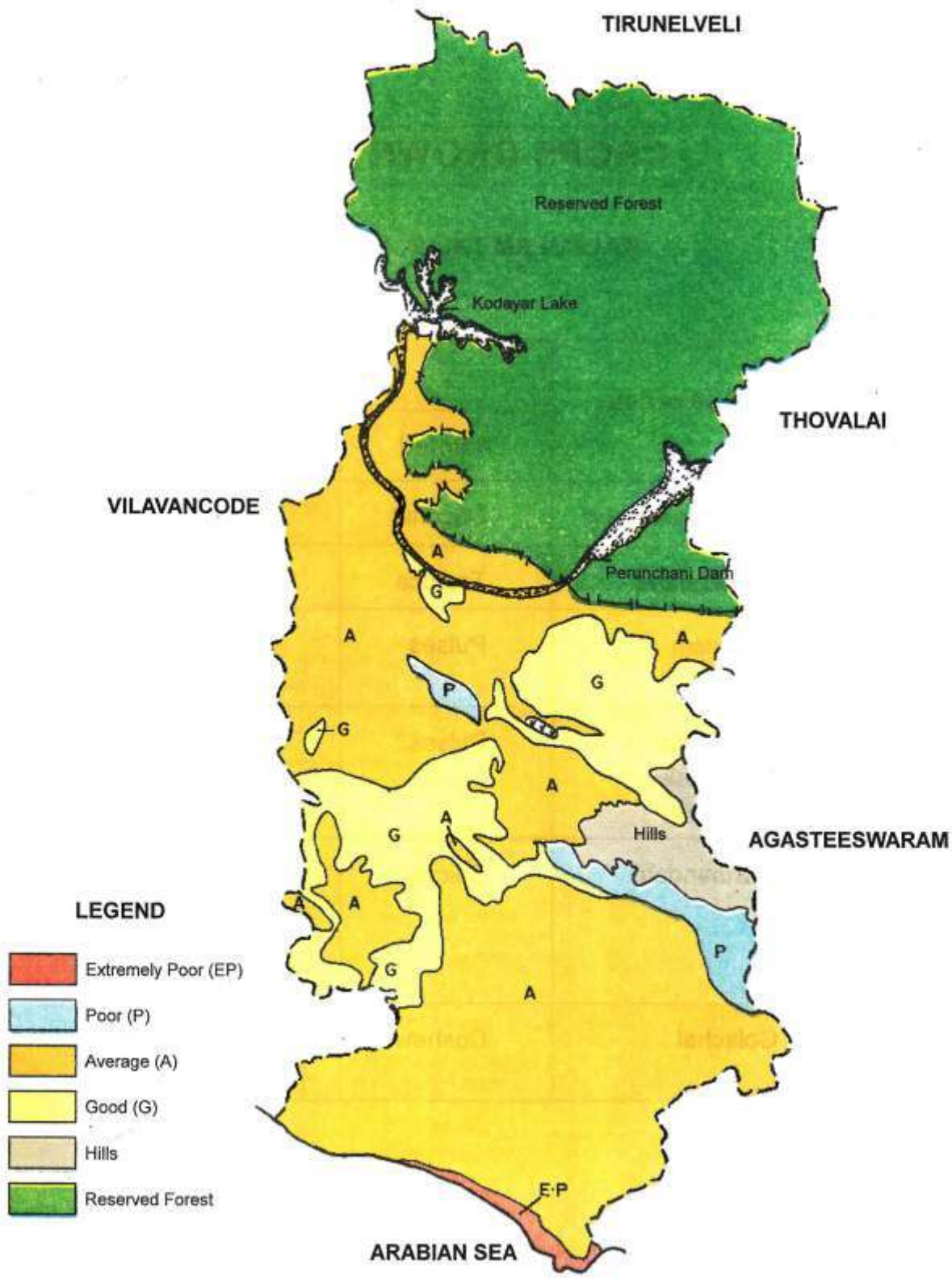
SOIL PRODUCTIVITY

KALKULAM TALUK

Area (ha)	Productivity		Soil series
	Rating	Grouping	
690	0 - 7	Extremely poor	Thengaipattinam
2,050	8 - 19	Poor	Kumarakovil
22,082	20 - 34	Average	Marthandam, Thiruvattar, Thuckalay, Colachal Kalkulam
8,010	35 - 64	Good	Navalkadu

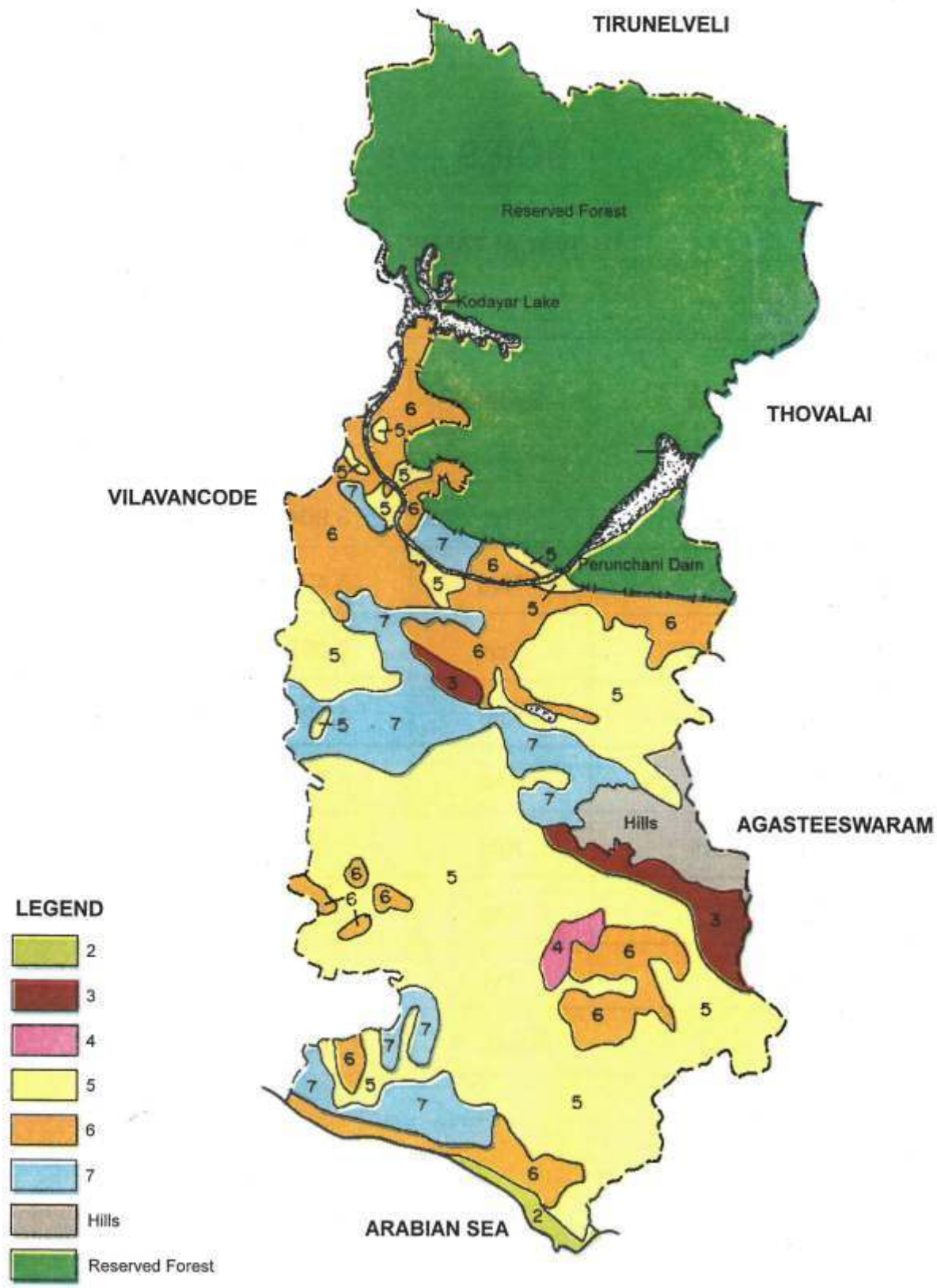
SOIL PRODUCTIVITY

KALKULAM TALUK



CROPS GROWN

KALKULAM TALUK



SOILS

THOVALAI TALUK

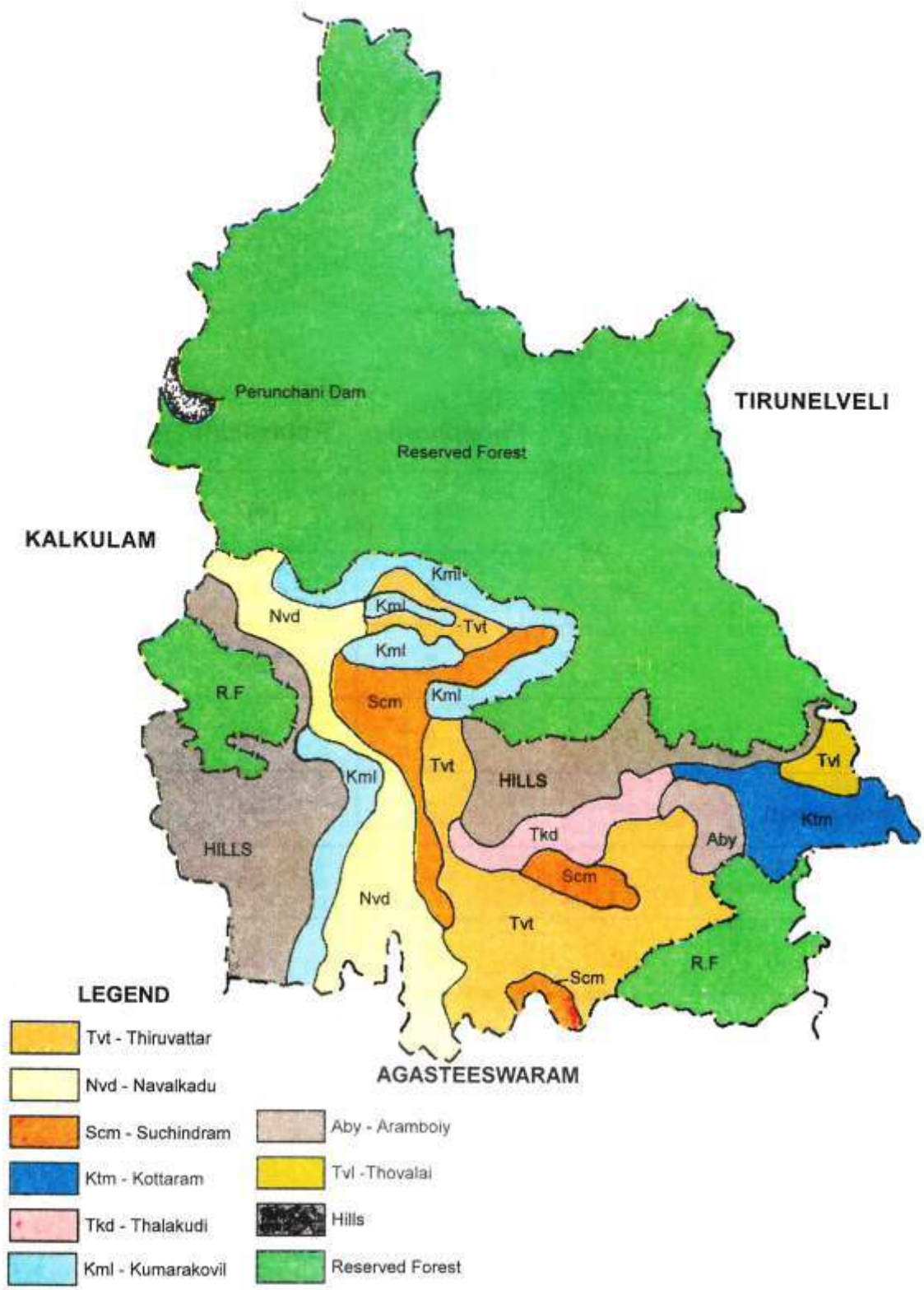
Soil series	Symbol	Extent	
		ha	%
1. Thiruvattar	Tvt	3,904	30.8
2. Navalkadu	Nvd	3,420	27.0
3. Suchindram	Scm	2,057	16.2
4. Kottaram	Ktm	1,328	10.5
5. Thalakudi	Tkd	740	5.8
6. Kumarakovil	Kml	508	4.0
7. Aramboly	Aby	420	3.3.
8. Thovalai	Tvl	312	2.4
	Total	12,689	100.0

CROPS GROWN

KALKULAM TALUK

Map symbol	Soil series	Crops grown	
		Rainfed	Irrigated
2	Thengaipattinam	Coconut	Coconut
3	Kumarakovil	Tapioca	Banana
4	Kalkulam	Pulses	Paddy Banana
5	Thiruvattur Navalkadu Thuckalay	Pulses	Paddy Banana Coconut
6	Marthandam	Spices	Paddy Coconut Rubber Spices
7	Colachal	Cashew	Orchard crops, Coconut

SOILS
THOVALAI TALUK



VILLAGE WISE FERTILITY STATUS AND SOIL SERIES

THOVALAI TALUK

Name of the village	Fertility status (kg / ac)			Dominant soil series
	Nitrogen	Phosphorus	Potassium	
(1)	(2)	(3)	(4)	(5)
1. Ananthapuram	75	8	80	Tvt
2. Arumanallur	95	7	98	Scm, Tvt
3. Aramboly	85	8	86	Aby
4. Azhayapandipuram	95	8	99	Kml
5. Bhoothapandi	85	7	80	Scm, Tvt
6. Basanthimangalam	100	8	100	Scm

7. Chenbagaraman-pudoor	75	8	79	Tvl, Ktm
8. Chiramadam	100	8	99	Scm, Tvt
9. Derisanamcoppu	100	8	100	Scm
10. Erachakulam	90	8	90	Tvt, Scm
11. Thalakudi	95	7	185	Tkd, Tvt
12. Thovalai	90	7	87	Tvl, Ktm
13. Thirupathisaram	90	8	88	Tvt, Tkd

WATER QUALITY

THOVALAI TALUK

Village	pH	EC	Total of anion	Total of cation	RSC	SAR	SSF	USSL Class	Geo-chemical type
1. Ananthapuram	7.9	0.5	5.5	5.10	1.3	2.86	44	C_2S_1	$Ca(HCO_3)_2$
2. Arumanalloor	8.4	0.2	2.3	2.20	—	1.36	35	C_1S_1	$Ca(HCO_3)_2$
3. Aralvoimozhy	8.4	1.0	11.0	10.60	-0.5	4.83	51	C_3S_1	NaCl
4. Azhaiapandipuram	7.1	0.3	3.23	3.60	-1.1	1.03	25	C_2S_1	$CaCl_2$
5. Boothapandi	7.2	0.2	2.70	2.60	0.8	1.27	30	C_1S_1	$NaHCO_3$
6. Chiramadam	7.8	0.3	3.44	4.00	-0.1	0.99	23	C_2S_1	$Ca(HCO_3)_2$

7. Chenbagaraman pudur	8.3	0.3	3.95	3.50	-1.6	2.11	41	C_2S_1	$CaCl_2$
8. Derisanamcoppu	6.9	0.1	1.82	1.60	-0.5	1.35	39	C_1S_1	$CaCl_2$
9. Erachakulam	7.8	0.3	6.16	6.43	1.4	3.22	47	C_2S_1	$Ca(HCO_3)_2$
10. Esanthimangalam	7.4	0.1	0.92	1.70	-0.3	—	—	C_1S_1	$Ca(HCO_3)_2$
11. Thiruppathisaram	9.1	1.0	6.4	6.80	0.1	1.71	28	C_3S_1	$Ca(HCO_3)_2$
12. Thovalai	8.4	0.7	5.7	5.80	0.5	2.00	42	C_2S_1	$Ca(HCO_3)_2$
13. Thazhakudi	7.4	0.1	7.45	1.70	-0.3	—	—	C_1S_1	$Ca(HCO_3)_2$

LAND CAPABILITY

THOVALAI TALUK

Area (ha)	Land capability classification	Soil series	Limitations	Needs
6,805	II s	Navalkadu Suchindram Kottaram	Low organic matter status, sub soil hardness	Addition of organic manures
420	III s	Aramboly	Mild alkalinity, soil crusting, low organic matter status	Liberal addition of organic manures
4,216	III se	Thiruvattar Thovalai	Acidity, low CEC, low organic matter status, erosion	Addition of lime, Addition of organic manures, Soil conservation
1,248	IV se	Thalakudi Kumarakovil	Shllow depth, low CEC, low WHC, Coarse texture, Low organic matter status, erosion	Selection of suitable crops, Addition of tank silt and organic manures, Soil conservation

Class

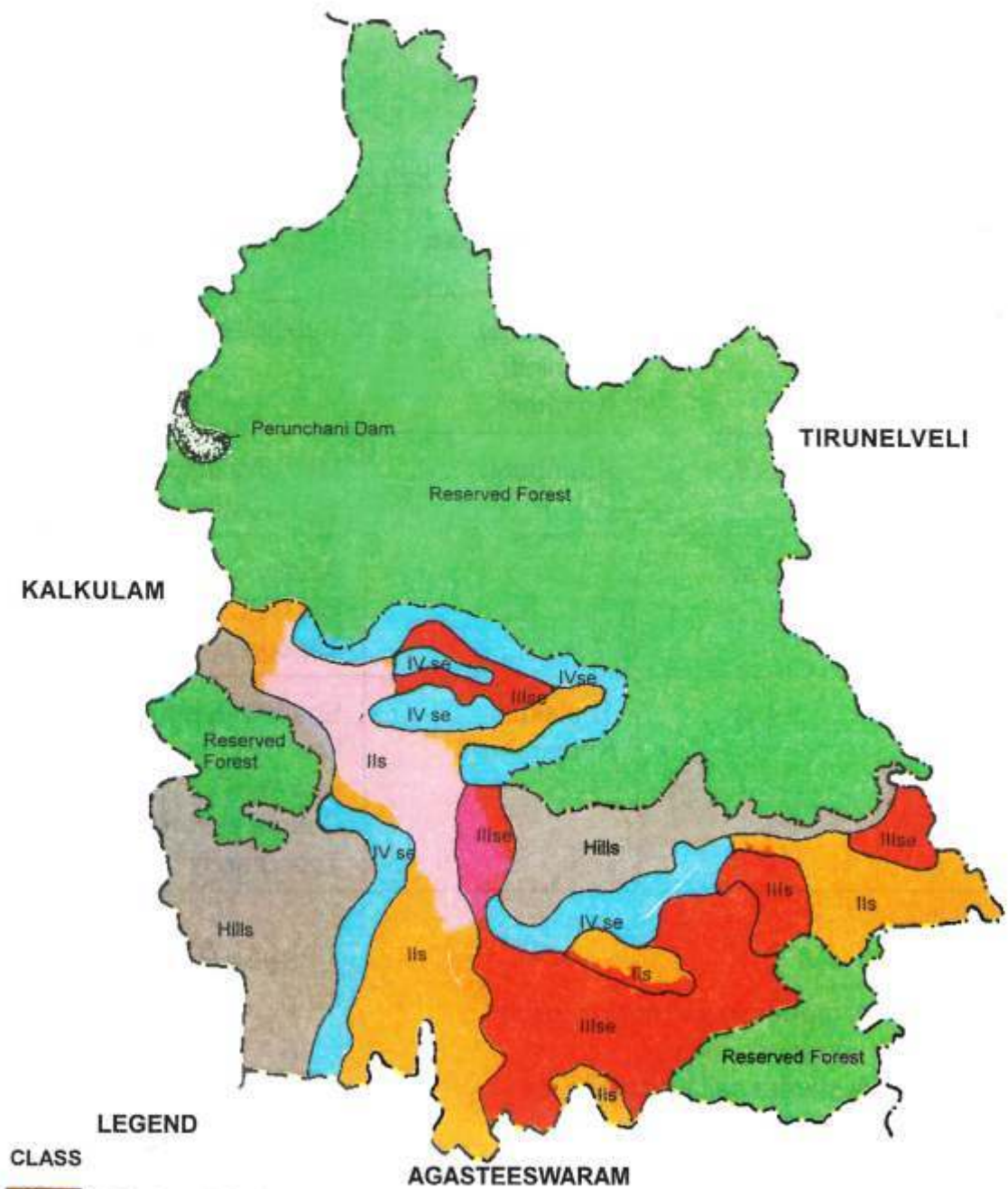
- ***II*** Good cultivable lands that have moderate limitations for sustained use under agriculture
- ***III*** Moderately good cultivable lands that have severe limitations for sustained use under agriculture.
- ***IV*** Lands that have very severe limitations for 'sustained use under agriculture.

Sub class

- ***s*** Root zone limitations
- ***e*** Erosion and run-off

LAND CAPABILITY

THOVALAI TALUK



LAND IRRIGABILITY

THOVALAI TALUK

Area (ha)	Land Irrigability classification	Soil series	Limitations
6,805	2 s	Navalkadu Suchindram Kottaram	Sub soil hardness
420	3 s	Aramboly	Mild alkalinity, Soil crusting
4,216	3 st	Thiruvattar Thovalai	Acidity, low CEC, Topography
1,248	4 st	Thalakudi Kumarakovil	Shallow depth, Low CEC, Low WHC, Coarse texture, Topography

Class

2 Lands that have moderate soil limitations for sustained use under irrigation

3 Lands that have severe soil limitations for sustained use under irrigation

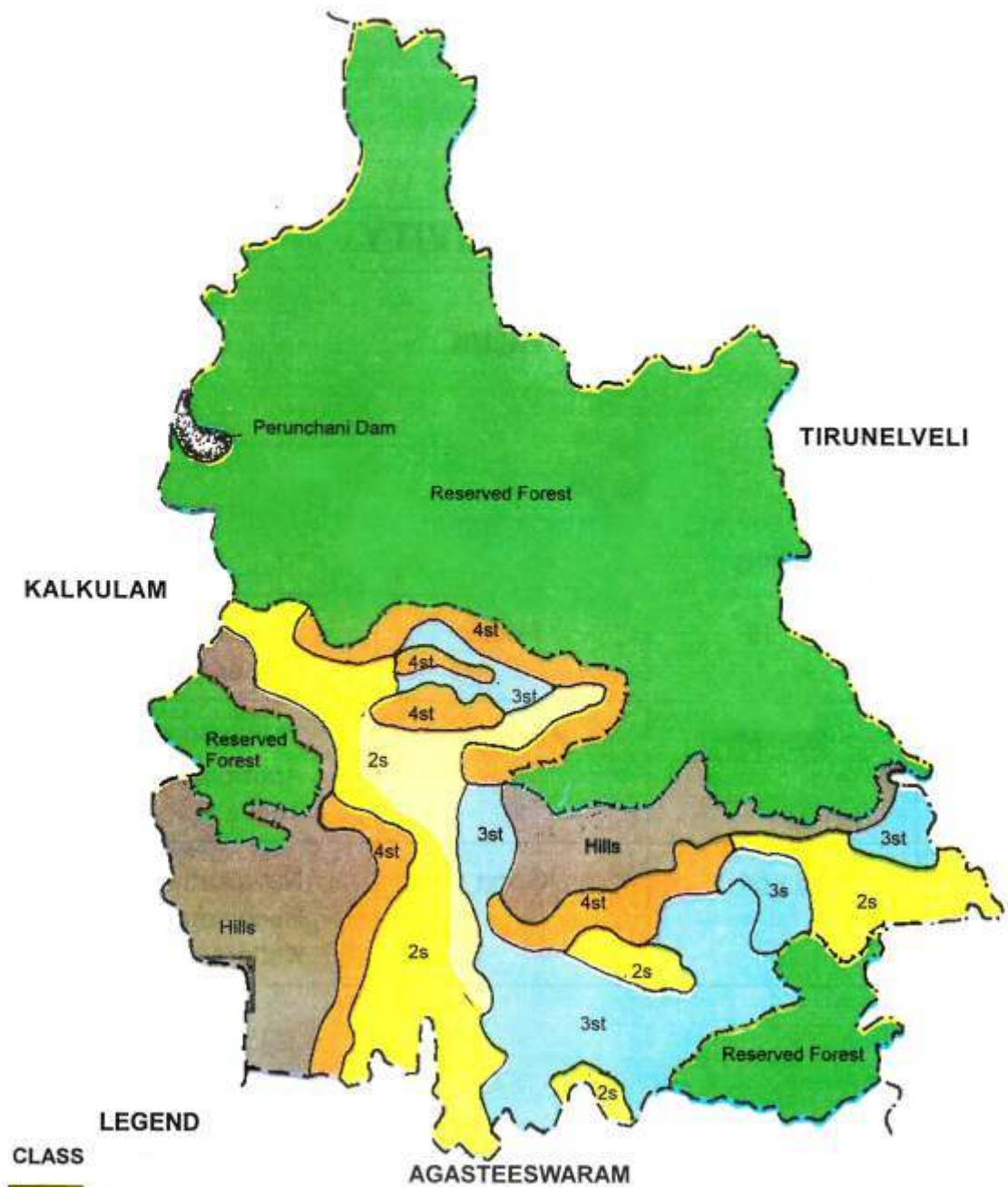
4 Lands that have very severe soil limitations for sustained use under irrigation

Sub class

s Soil limitations

t Topography

LAND IRRIGABILITY
THOVALAI TALUK



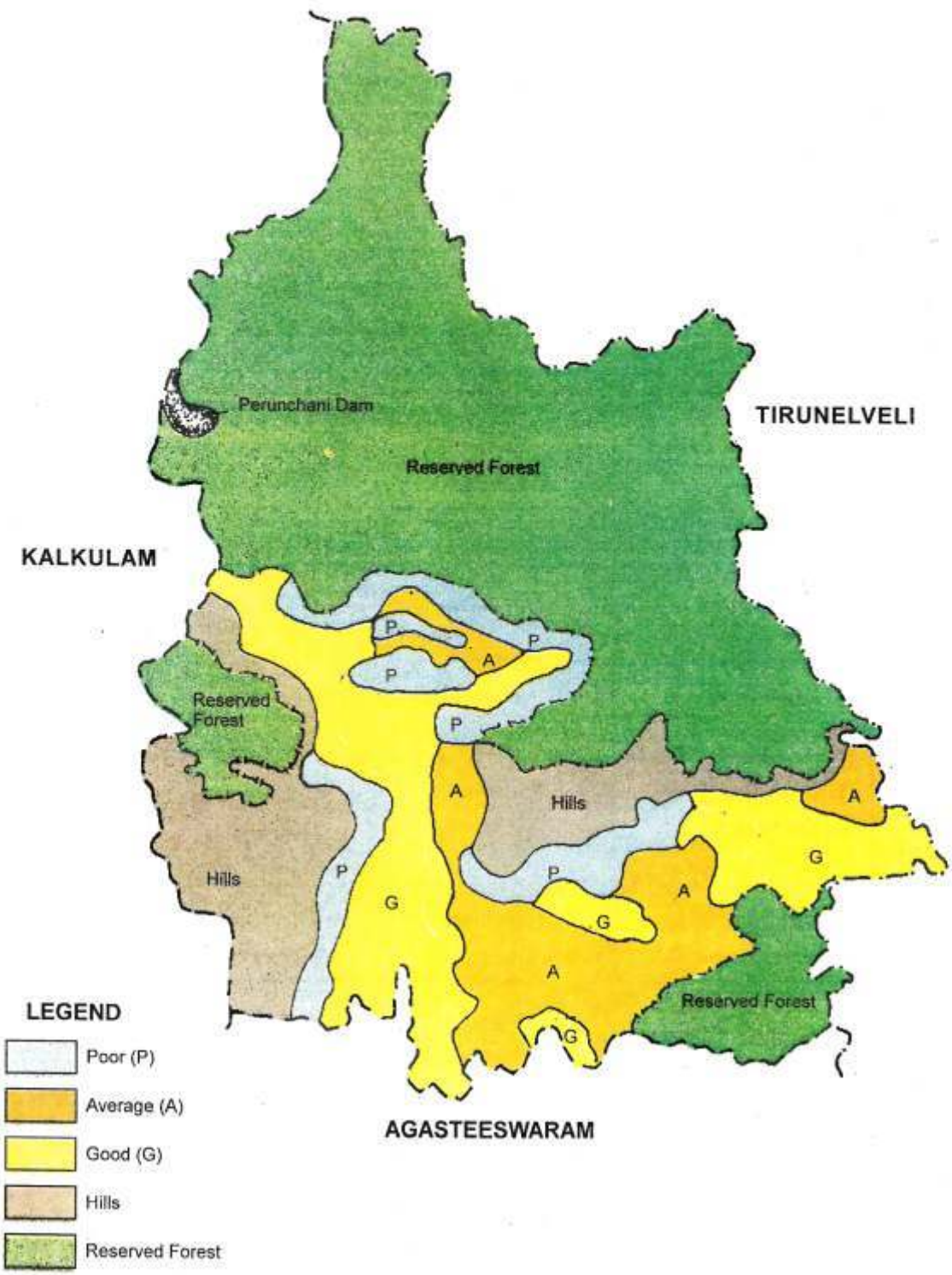
SOIL PRODUCTIVITY

THOVALAI TALUK

Area (ha)	Productivity		Soil series
	Rating	Grouping	
1,248	8 - 19	Poor	Thalakudi Kumarakovil
4,636	20 - 34	Average	Thiruvattar Aramboly Thovalai
6,805	35 - 64	Good	Navalkadu Suchindram Kottaram

SOIL PRODUCTIVITY

THOVALAI TALUK

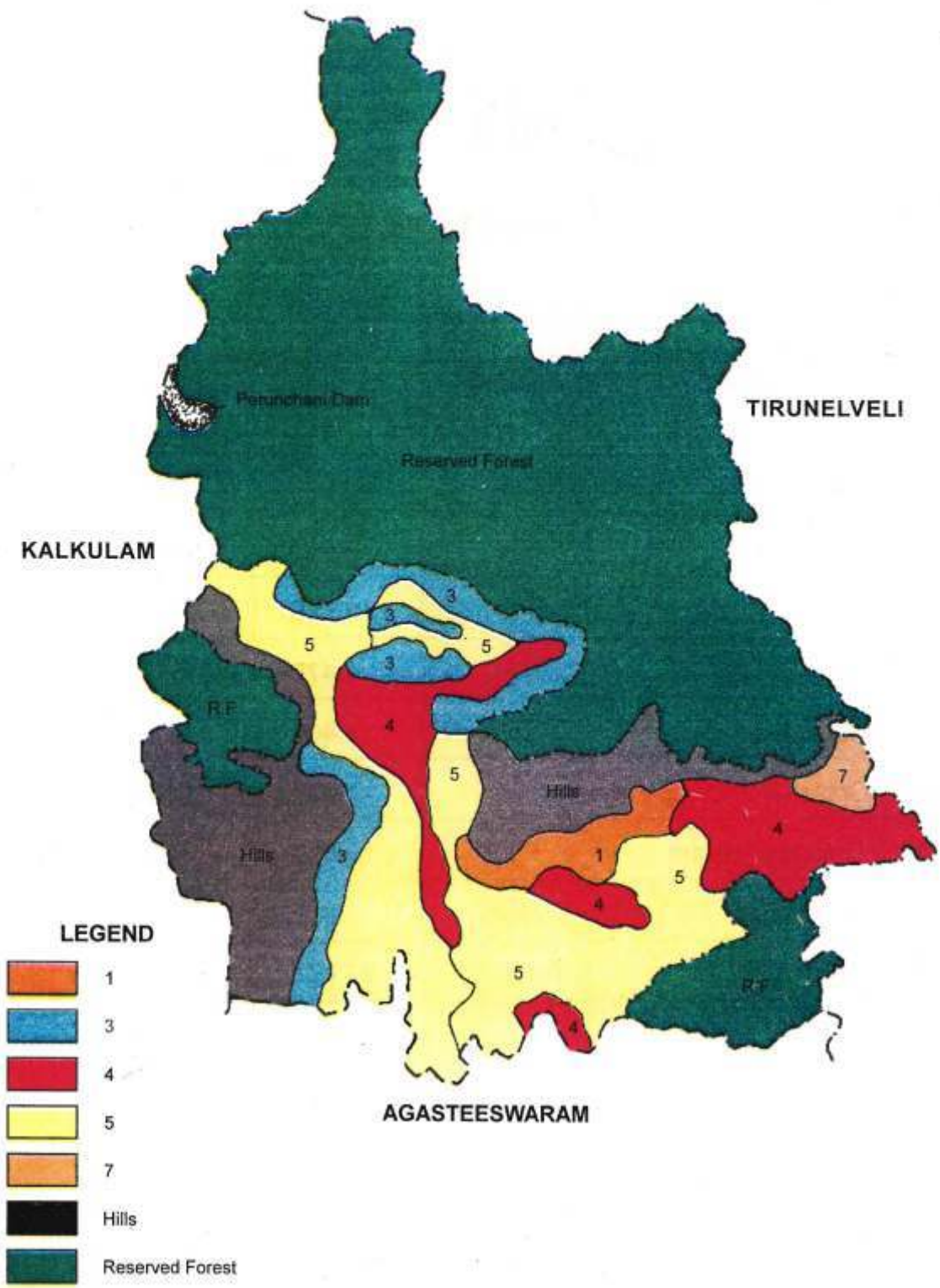


CROPS GROWN

THOVALAI TALUK

Map symbol	Soil series	Crops grown	
		Rainfed	Irrigated
1	Thalakudi	Pulses	Banana
3	Kumarakovil	Tapioca	Banana
4	Aramboly Suchindram Kottaram	Pulses	Paddy Banana
5	Thiruvattur Navalkadu	Pulses	Paddy Banana Coconut
7	Thovalai	Cashew	Orchard crops, Coconut

CROPS GROWN
THOVALAI TALUK

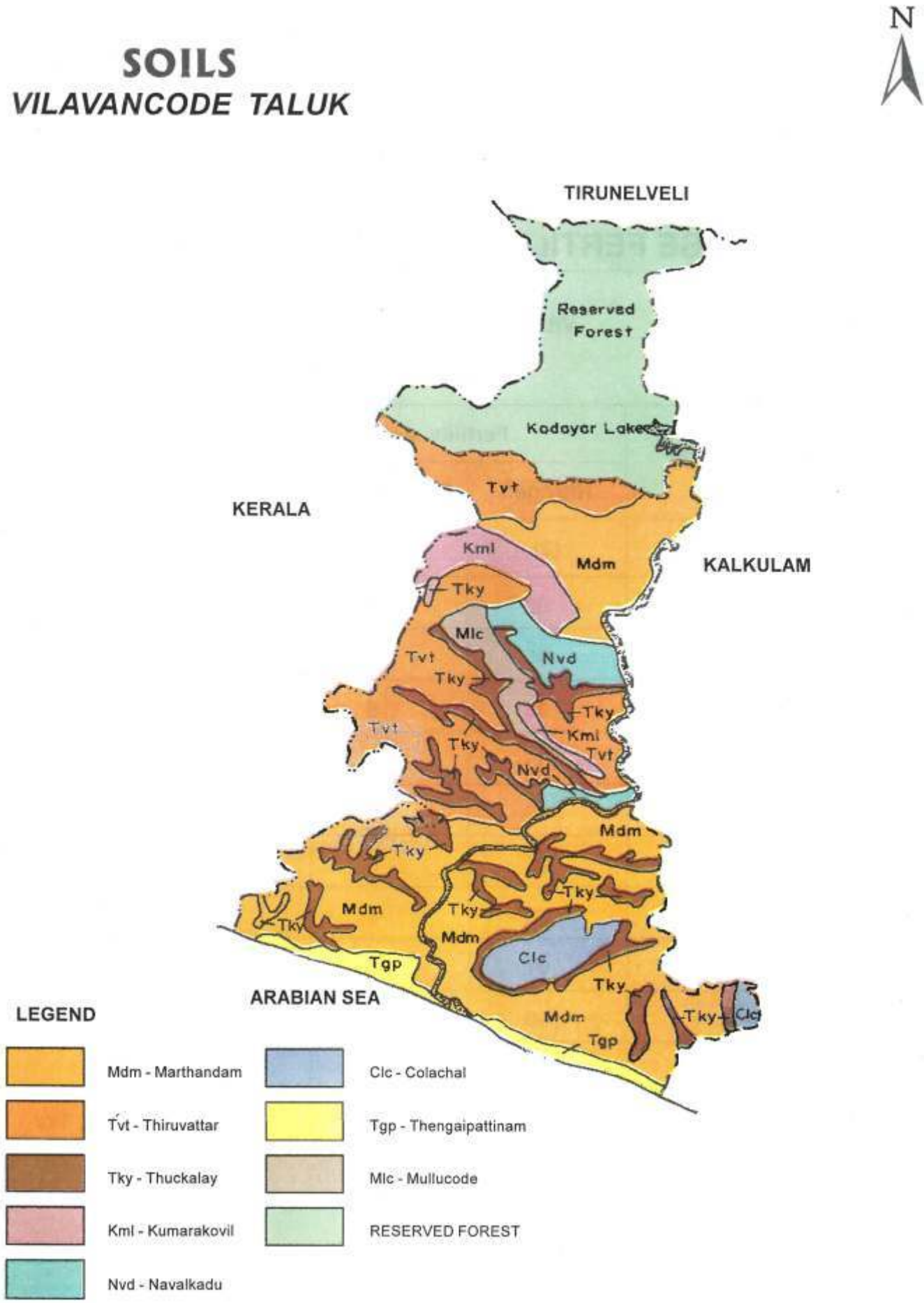


SOILS

VILAVANCODE TALUK

Soil series	Symbol	Extent	
		ha	%
1. Marthandam	Mdm	12,005	43.7
2. Thiruvattar	Tvt	6,050	22.0
3. Thuckalay	Tky	3,583	13.0
4. Kumarakovil	Kml	1,478	5.4
5. Navalkadu	Nvd	1,404	5.1
6. Colachal	Clc	1,328	4.9
7. Thengaipattinam	Tgp	821	3.0
8. Mullucode	Mlc	802	2.9
	Total	27,471	100.0

SOILS
VILAVANCODE TALUK



VILLAG WISE FERTILITY STATUS AND SOIL SERIES

VILAVANCODE TALUK

Name of the village	Fertility status (kg / ac)			Dominant soil series
	Nitrogen	Phosphorus	Potassium	
(1)	(2)	(3)	(4)	(5)
1. Anducodu	90	8	122	Mdm, Kml
2. Arudesam	85	8	80	Mdm, Tky
3. Arumanai	95	8	120	Nvd, Tky
4. Edaicode	105	8	128	Tvt, Tky
5. Ezhudesam	90	8	101	Mdm, Clc
6. Kalial	95	6	105	Tvt, Mdm
7. Kellencode	90	8	101	Mdm, Clc
8. Keezhmidalam	91	8	118	Mdm, Clc
9. Keezhkulam	99	8	116	Clc , Mdm
10. Killiyoor	100	8	119	Clc
11. Kunnathoor	85	8	78	Mdm, Tky

12. Kulapuram	95	8	113	Mdm, Clc
13. Mancode	90	8	100	Mdm, Mlc
14. Midalam	95	8	113	Mdm, Clc
15. Mothukummal	85	8	78	Mdm, Tky
16. Nalloor	95	8	150	Mdm
17. Nattalam	105	8	118	Tky, Tvt
18. Pacode	105	8	128	Tvt, Tky
19. Painkulam	85	8	78	Mdm
20. Paloor	105	8	100	Mdm, Clc
21. Palugal	95	8	104	Mdm
22. Vellancode	90	8	101	Mdm, Clc
23. Vilavancode	96	7	112	Tky, Mdm

WATER QUALITY

VILAVANCODE TALUK

Village	pH	EC	Total of anion	Total of cation	RSC	SAR	SSF	USSL Class	Geo-chemical type
1. Anducode	7.0	0.1	12.26	13.50	-0.7	9.6	83	C_1S_1	NaCl
2. Arumana	7.3	0.1	11.61	14.05	-0.7	8.5	80	C_1S_1	NaCl
3. Aruthesam	7.3	0.2	12.36	11.76	-0.7	8.6	80	C_1S_1	NaCl
4. Edaicode	7.4	0.1	12.09	12.80	-1.2	8.9	81	C_1S_1	NaCl
5. Ezhudesam	7.3	0.4	12.30	1332	-1.5	8.7	81	C_1S_1	NaCl
6. Kunnathoor	7.2	0.2	14.10	14.03	-2.1	7.3	72	C_1S_1	NaCl
7. Kollencode	7.0	0.3	13.16	13.21	-1.6	8.0	77	C_2S_1	NaCl
8. Killiyoor	7.3	0.2	12.36	11.76	-0.7	8.6	80	C_1S_1	NaCl
9. Keezhkulam	7.1	0.4	14.29	15.35	-0.8	8.1	76	C_2S_1	NaCl
10. Kaliyal	7.0	0.2	13.26	13.73	-2.9	8.1	77	C_1S_1	NaCl
11. Kulappuram	7.1	0.2	15.39	17.98	-0.6	8.5	76	C_1S_1	NaCl
12. Kuzhithurai	7.1	0.1	14.86	15.83	-1.5	8.1	75	C_1S_1	NaCl

13. Keezmidalam	7.7	0.1	12.20	12.40	—	6.2	83	C_1S_1	NaCl
14. Mangode	7.2	0.1	13.26	13.73	-2.9	8.1	77	C_1S_1	NaCl
15. Methukummal	7.0	0.2	12.00	12.80	-2.1	8.8	80	C_1S_1	NaCl
16. Midalam	7.7	0.5	14.82	14.86	—	5.5	79	C_3S_3	NaCl
17. Nalloor	7.2	0.3	11.70	15.35	-2.1	8.5	76	C_1S_1	NaCl
18. Nattalam	7.3	0.2	12.70	16.35	+1.0	8.0	78	C_1S_1	NaCl
19. Painkulam	7.3	0.1	12.09	12.80	-1.2	8.9	81	C_1S_1	NaCl
20. Pacode	7.2	0.2	12.30	14.42	-0.7	7.2	74	C_1S_1	NaCl
21. Paloor	7.0	0.1	13.20	11.80	-2.5	9.0	74	C_1S_1	NaCl
22. Palugal	7.4	0.1	12.00	11.12	-1.3	9.0	81	C_1S_1	NaCl
23. Vilavancode	7.2	0.2	13.50	15.26	-1.0	9.0	79	C_1S_1	NaCl
24. Vollamcode	7.0	0.1	12.10	14.58	+1.0	8.6	79	C_1S_1	NaCl

LAND CAPABILITY

VILAVANCODE TALUK

Area (ha)	Land capability classification	Soil series	Limitations	Needs
1,404	II s	Navalkadu	Acidity, Low organic matter status	Addition of lime, Addition of organic manures
19,383	III se	Marthandam Thiruvattar Colachal	Acidity, Low base status, Low organic matter status, Low CEC, Erosion	Addition of lime, Addition of organic manures, Soil conservation
3,583	III sw	Thuckalay	Acidity, Low organic matter status, wetness	Addition of lime, Addition of organic manures, Drainage
3,101	IV se	Kumarakovil Thengaipattinam Mullucode	Coarse texture, Low WHC, Low CEC, Low organic matter status, Erosion	Addition of tank silt and organic manures, Soil conservation

Class

- ***II*** Good cultivable lands that have moderate limitations for sustained use under agriculture
- ***III*** Moderately good cultivable lands that have severe limitations for sustained use under agriculture.
- ***IV*** Lands that have very severe limitations for sustained use under agriculture.

Sub class

- ***s*** Root zone limitations
- ***e*** Erosion and run-off
- ***w*** Excess water

LAND CAPABILITY
VILAVANCODE TALUK

LEGEND

CLASS

- II - Moderate limitation
- III - Severe limitation
- IV - Very severe limitation
- RESERVED FOREST

SUB CLASS

r - Root zone limitation

e - Erosion hazard

LAND IRRIGABILITY

VILAVANCODE TALUK

Area (ha)	Land Irrigability classification	Soil series	Limitations
1,404	2 s	Navalkadu	Acidity
19,383	3 st	Marthandam Thiruvattar Colachal	Acidity, Low base status, Low CEC, Topography
3,583	3 sd	Thuckalay	Acidity, Drainage
3,101	4 st	Kumarakovil Thegaipattinam Mullucode	Coarse texture, Low WHC, Low CEC, Topography

Class

2 Lands that have moderate soil limitations for sustained use under irrigation

3 Lands that have severe soil limitations for sustained use under irrigation

4 Lands that have very severe soil limitations for sustained use under irrigation

Sub class

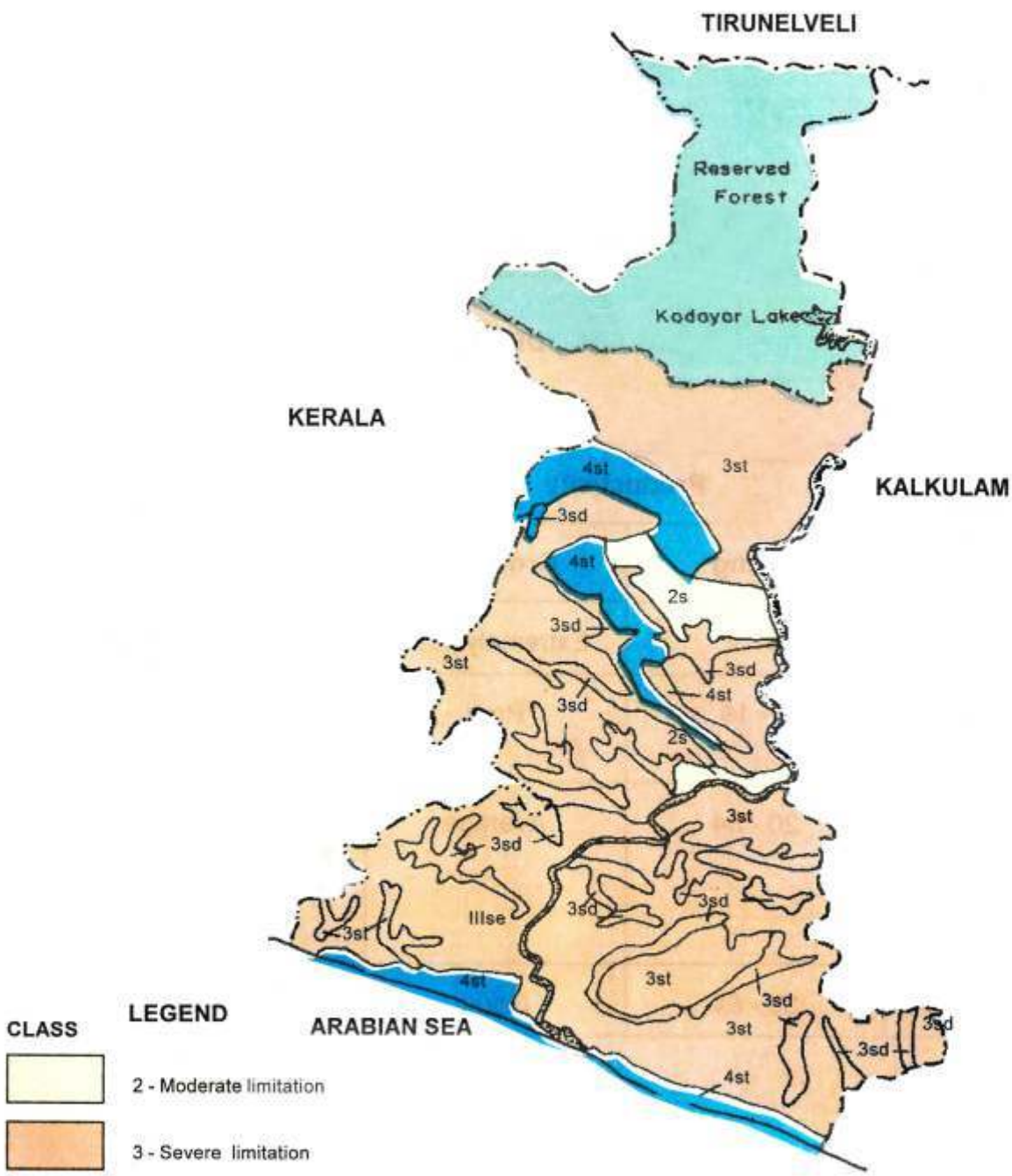
s Soil limitations

t Topography

d Drainage

LAND IRRIGABILITY

VILAVANCODE TALUK



SOIL PRODUCTIVITY

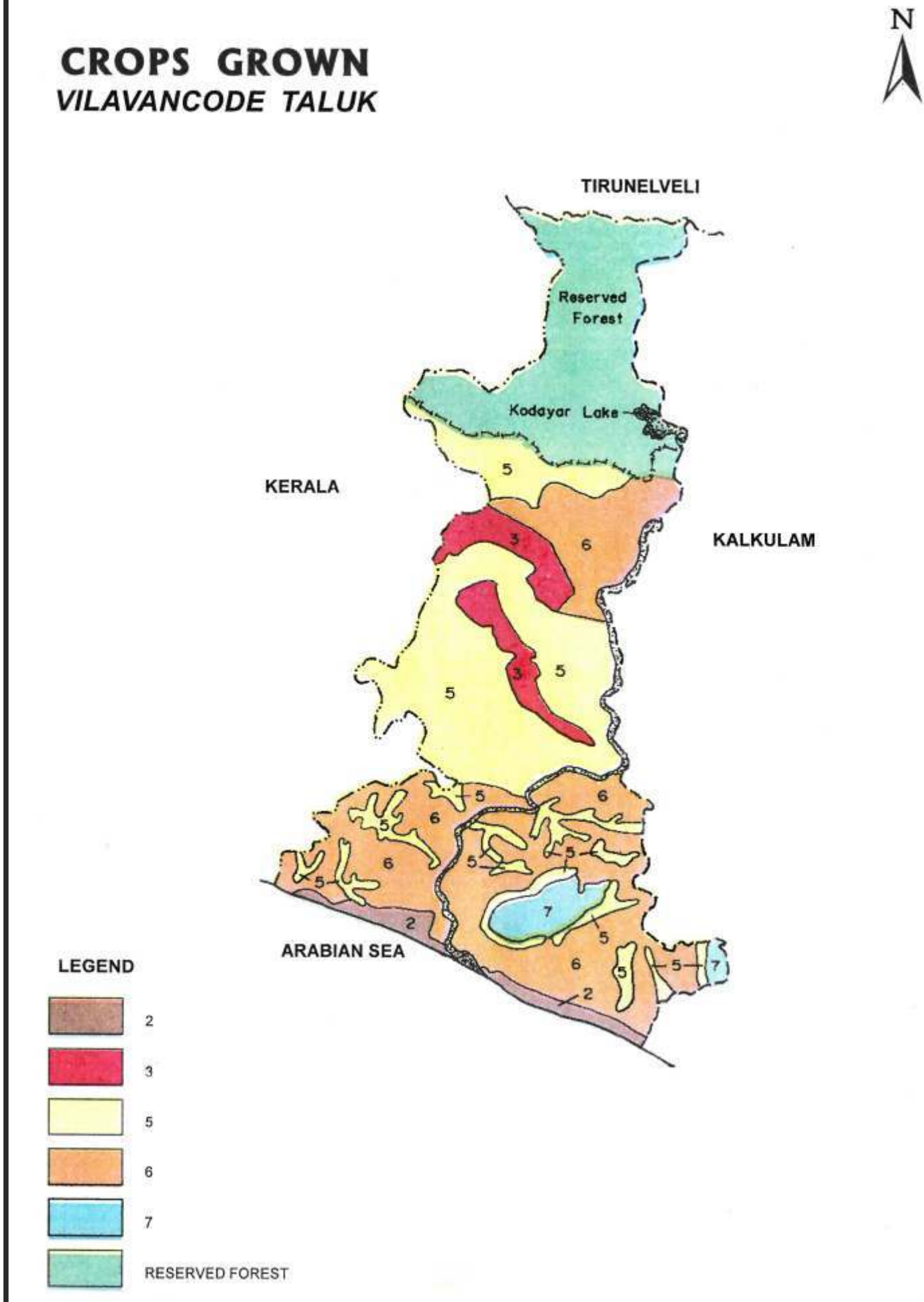
VILAVANCODE TALUK

Area (ha)	Productivity		Soil series
	Rating	Grouping	
821	0 - 7	Extremely poor	Thengaipattinam
2,280	8 - 19	Poor	Kumarakovil Mullucode
22,966	20 - 34	Average	Marthandam, Thiruvattar, Thuckalay, Colachal
1,404	35 - 64	Good	Navalkadu

SOIL PRODUCTIVITY

VILAVANCODE TALUK

CROPS GROWN
VILAVANCODE TALUK



CROPS GROWN

VILAVANCODE TALUK

Map symbol	Soil series	Crops grown	
		Rainfed	Irrigated
2	Thengaipattinam	Coconut	Coconut
3	Kumarakoil, Mullucode	Tapioca	Banana
5	Thiruvattar, Navalkadu, Thuckalay	Pulses	Paddy Banana Coconut
6	Marthandam	Spices	Paddy Coconut Rubber Spices
7	Colachal	Cashew	Orchard crops Coconut

CONTRIBUTORS

1. *Concept* :

Dr. A. Dhanapalan Mosi
Addl. Director of Agriculture (Res) (Retd)

S. Lakshminarayanan
Addl. Director of Agriculture (Res) (Retd)

Syed Nazeer Peeran
Addl. Director of Agriculture (Res) Chennai

2. *Source* :

i) ***Soils Resources of Kanniyakumari district***
K. Murugan **M. Janakiraman,**
K. Krishnamoorthy **P.K. Mahalingam**
District Report No. PLC 8/92-93
Published by Soil Survey and Land Use Organisation Palayamcottai

ii) ***Village level fertility status***
Assistant Soil Chemist Soil Testing Laboratory Nagercoil

iii) ***Micronutrient Status***
Assistant Soil Chemist Soil Testing Laboratory Nagercoil

iv) ***Quality of Irrigation water***
Assistant soil chemist Mobile Soil Laboratory Nagercoil

3. *Script & Maps Compilation* :

J. Janakiraman Agricultural Officer
M. Duraipandian Agricultural Officer
S. Viswanathan Agricultural Officer

4. *Cartography* :

N. Mutharasu Junior Draughting Officer
A.S. Meena Assistant Draughtsman

5. *Editing* :

M. Athimoolam Assistant Agricultural Chemist

6. *Approval* :

P.R. Ramachandran Joint Director of Agriculture (Res)