

SOILS OF LACCADIVE ISLANDS

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The Union Territory of Laccadive Islands is situated in the Arabian sea, about 198 to 386 km. west of Kerala coast between 8 and 12 degrees North Latitude and between 71 and 74 degrees E. Longitude. There are 20 islands in all, of which 10 only are inhabited at present. The total area of the islands is 27.87 sq. km. with a population of about 28,000.

Physiography

Laccadives form a group of small coral islands, lying at distances of 15 to 183 km. from each other. They are approachable only by sea. Kavaratti island is the headquarters of administration. The size of the islands and their situation are as follows.

Sl. No.	Name	Area in hectares	Attached islets
1.	Kavaratti	350	Suheli and Pakshi Pitti
2.	Androth	433	
3.	Agathy	280	Bangaram, Tinnakara, Parali, Kalpitti, Tillakam, Pitti and Cheriyaam.
4.	Kalpeni	199	Viringelli.
5.	Minicoy	453	
6.	Amini	251	
7.	Kadamat	303	
8.	Kiltan	161	
9.	Chetlat	104	
10.	Bitra	10	

All the islands have certain common features. They generally lie from north to south except Androth island which lies from east to west. Most of them are long and narrow. For every island there is a lagoon on the western side, and a storm beach on the eastern side. The lagoon is semicircular and is generally shallow with a bottom of sand and corals. The lagoons and the

coral reef enclosing it give protection to islands from the high winds and waves during the monsoon periods. The reef has one or more passages through which boats enter and leave the lagoon. The eastern side is full of worn out coralstones, boulders and sand.

Water table is high and water can be struck within three metres in most cases. In many islands,

there is a coral substratum which has to be broken for getting water for drinking.

Climate

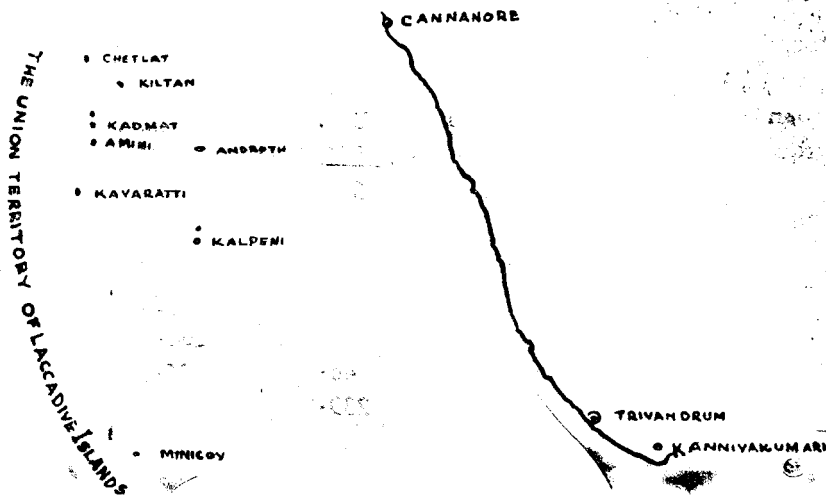
The islands have a humid tropical climate. The temperature varies from 21° to 32° C. January is the coldest month and April-May the hottest. The average yearly precipitation is 1,640 mm. at Minicoy which is the southern-most island and 1,504 mm. at Amini which lies in the North.

The relative humidity ranges from 67 to 83. The islands experience both the South West and North East Monsoons. The South West Monsoon begins by June and ends by September. The North East Monsoon is from October to November. Most of the rainfall is experienced during the South West Monsoon period. The period from January to April is calm and March to May is the summer period. The total number of rainy days in a year varies from 65 to 85.

Geology

There are two theories relating to the origin of these islands. According to one these islands are mere coral growths and according to the other, these are the remains of an upheaval or through an alteration in the sea level.

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Vegetation

Most of the islands are densely planted with coconut trees. The density of trees per hectare is about 250. Punna (*Calophyllum inophyllum*), wild almond (*Terminalia catapa*), Cheruthalam (*Pemphis acidula*), Tamara (*Tournefortia argentia*), Kanni (*Scaevola keonjii*), Puvarasu (*Thespesia populnea*), Neem (*Azadirachta*, *Eindica*), screw-pine (*Pandanus odoratissimus*), Breadfruit (*Artocarpus incisa*), are some of the trees growing wild in these islands. Bananas, arecanut, papaya, moringa, sapota, guava, anona, pomegranate and some citrus varieties are some of the cultivated fruit trees other than coconuts. Ground flora consists of *Spinifex squarrosus*, *Argemone mexicana*, *Ipomoea biloba*, *Calotropis*, *Dodonia viscosa*, *Lantana* and some wild species of grasses. Pulses and vegetables such as cowpea, red gram, cucurbits, brinjal, tomato, colocasia, sweet potato, tapioca, millets, paddy, etc. are also cultivated in about 200 acres.

Soil

The dead disintegrated and weathered corals form the soil in Laccadives. It consists mostly of calcium carbonate. The soils are

of open character, possess good drainage and aeration, and are usually in a loose friable condition. The nutrient status of some of the typical soil samples taken from the cultivated areas is given at the end of this article.

This soil test analysis shows in general the following characteristics:-

1. The soils are distinctly alkaline and contain appreciable amounts of free calcium carbonate.
2. The available Nitrogen status as indicated by organic carbon can be graded as medium.
3. Available Phosphorus content is high and there is a good accumulation of calcium phosphate in the soil.
4. Available Potassium status in these soils can be graded as low.

Soluble salt content is normal. There is no accumulation of excess salts in these soils.

The alkalinity of these soils can reduce the availability of almost all the plant nutrients. Lime induced chlorosis is common. The nitrification in these soils is affected by the alkalinity to a considerable extent. The potassium absorption

by the plants is reduced because of the ionic antagonistic effect of the excessive calcium in the soil. The presence of excessive amounts of phosphate in the absence of enough nitrogen and potash will have deleterious effects on the plants to some extent. This can further reduce the availability of trace elements like iron, manganese, zinc and copper.

Conclusion

Coconut is the most important crop in Laccadives and the annual income by sale of copra is about Rs. 42 lakhs. However these islands are short of pulses, rice, fruits, etc. Natural gifts of plenty of sunshine and adequate rainfall during the monsoon periods are there. Even though subsoil water is available at a shallow depth, excessive irrigation if practised may deplete the fresh water supply. Trials have shown that many types of vegetables, pulses, fruits etc. can be grown. Combined with high doses of organic and inorganic manures, proper cultivation and technical know-how of crop growing, agricultural production in these islands can be increased to a great extent. Steps are afoot in this direction.

Sl. No.	Place from where soil sample was taken	Organic Carbon %	Available Phosphorus kg./ Ha.	Available Potash kg/ Ha.	pH	TSS mmho
1.	Agatti low ground	1.25 M	59.8 M	84 L	7.9 Al	0.4
2.	Agatti High ground	0.73 M	78.0 H	128 L	8.6 Al	0.2
3.	Amini Low ground	1.46 M	871.0 H	128 L	8.1 Al	0.6
4.	Amini High ground	1.29 M	845.0 H	248 M	7.7 Al	0.3
5.	Androth High ground	0.92 M	304.2 H	280 L	8.2 Al	0.2
6.	Androth Thottam land	0.87 M	700.0 H	132 L	8.1 Al	0.3
7.	Bitra North	1.40 M	2054.0 H	72 L	7.9 Al	0.3
8.	Bitra Centre	1.03 M	135.2 H	34 L	8.4 Al	0.2
9.	Chetlat South	1.55 M	793.0 H	104.0 L	7.7 Al	0.4
10.	Chetlat North	0.96 M	46.8 M	36.0 L	8.7 Al	0.25
11.	Kadmat North Low Ground	0.86 M	239.2 H	80 L	8.4 Al	0.2
12.	Kadmat North High Ground	1.40 M	109.2 H	280 M	7.8 Al	0.35
13.	Kadmat South High Ground	0.26 L	36.4 M	28 L	8.3 Al	0.30
14.	Kavaratti Agrl. Demonstration Unit. Field No. 12 A.	0.84 M	98.8 H	64 L	8.4 Al	0.40
15.	- do No. 12 B.	1.18 M	735.2 H	40 L	8.0 Al	0.25
16.	Kavaratti High Ground	1.09 M	33.8 M	104 L	8.0 Al	0.30
17.	Kavaratti Low Ground	1.46 M	124.80H	104 L	8.2 Al	0.4
18.	Kiltan Block No. 2	0.90 M	101.4 H	372 M	8.4 Al	0.2
19.	Kiltan Block No. 1 High Ground	1.97 M	897.0 H	308 M	8.1 Al	0.70
20.	Minicoy Pandaram Land	1.04 M	88.4 H	76 L	8.0 Al	0.35
21.	Minicoy Agrl. Demonstration Unit	1.46 M	98.8 H	52 L	8.2 Al	0.4

Note: 1) The organic matter gives a rough indication of the available nitrogen content.
 2) L = Low; M = Medium; H = High; N = Normal.

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