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Inventory of Soil & Land Resource of Palakkad District, Kerala Using Remote Sensing Techniques

Bangalore Centre



**Soil and Land Use Survey of India
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INVENTORY OF SOIL & LAND RESOURCES OF PALAKKAD DISTRICT, KERALA USING REMOTE SENSING TECHNIQUES

ABSTRACT

1.	Survey Area	:	Palakkad District (Kerala, India)
2.	Geographical Extent	:	76° 02' to 76° 54' East Longitudes 10° 21' to 11° 14' North Latitudes
3.	Agro-climatic Region	:	West Coast Plains & Hills Region-XII
4.	Total Geographical Area	:	4,47,652 ha
5.	Kind of Survey	:	Soil Resource Mapping (SRM) using Remote Sensing Techniques
6.	Base Maps	:	(i) Survey of India Toposheets (scale 1:50,000) (ii) Geology Map (scale 1:2,50,000) of Geological Survey of India (iii) Satellite Imagery (scale 1:50,000)
7.	Scale of Mapping	:	1:50,000
8.	Period of Survey	:	May, 2012

9. Mapped soil series association and their respective area

S. No.	Mapping Unit	Series Association	Area (Ha)	Area (%)
1	ALg2a1	Kottayi, Pattambi, Peringode	7339	1.64
2	CKn6b1	Puttukkarakolumbu, Kayiliyad, Mannangod	12047	2.69
3	CKn6c1	Kandalam, Kulakkad	8515	1.90
4	CKn6d1	Kulakkad, Kandalam	979	0.22
5	CKn8b1	Kayiliyad, Mannangod	5260	1.18
6	CKn8c1	Ayalur-1, Ananganadi	52365	11.70
7	CKn8d1	Ananganadi, Ayalur-1	4343	0.97
8	CKo4b1	Velladikunnu, Kulapalli	5700	1.27
9	CKp3b1	Chuduvalattur, Mangalam	341	0.08
10	CKu4b1	Vengasseri, Velladikunnu	14271	3.19
11	CKu4c1	Velladikunnu, Vengasseri	951	0.21
12	CKv3a1	Erimayur, Vadakkancheri	9052	2.02
13	CKv3b1	Vadakkancheri, Erimayur	18453	4.12

14	CKw2a1	Chuduvallattur, Anjumurtimangalam, Mangalam	27207	6.08
15	GGn6b1	Pombra, Inchikkunnu	632	0.14
16	GGn8b1	Muthikkulam, Irumbamutti, Inchikkunnu	3498	0.78
S. No.	Mapping Unit	Series Association	Area (Ha)	Area (%)
17	GGn8c1	Irumbamutti, Inchikkunnu	6423	1.43
18	GGn8d1	Attappad, Pombra, Inchikkunnu	366	0.08
19	GGu4b1	Chullisseri, Kulikkiyad	2330	0.52
20	GGv3b1	Elambulasserri, Kaliyod	2476	0.55
21	GGw2a1	Pontiyamburam, Kaliyod	2161	0.48
22	GNN6b1	Mannur, Chulanur	9029	2.02
23	GNN6c1	Valipparamlat, Chulanur	10171	2.27
24	GNN8b1	Chulliyamkulam, Mannur, Chulanur	6150	1.37
25	GNN8c1	Kumbamala, Chulanur	41490	9.27
26	GNN8d1	Malampuzha, Kumbamala	4669	1.04
27	GNO4b1	Anakkal, Mandur	5334	1.19
28	Gnp3b1	Kinasseri, Kundur	937	0.21
29	GNu4a1	Muppankulam, Kalkalam, Anakkal	3249	0.73
30	GNu4b1	Mandur, Nilipara	15815	3.53
31	GNu4c1	Mandur, Anakkal, Muppankulam	1957	0.44
32	GNu4d1	Chullimada, Nochchipulli	1174	0.26
33	GNv3a1	Kalkalam, Kallikkad	32040	7.16
34	GNv3a2	Pudur	232	0.05
35	GNv3b1	Kundur, Kallikkad	16699	3.73
36	GNv3b2	Pudur	303	0.07
37	GNv3c1	Kunpulli, Kallikkad	828	0.18
38	GNw2a1	Peringottukurussi, Kinasseri	55076	12.30
39	LAn6b1	Karakkurussi, Tiruvazhamkunna	467	0.10
40	LAo4b1	Panayur, Edathanathukara	575	0.13
41	LAu4b1	Edathanathukara, Panayur	7553	1.69
42	LAv3a1	Pallipadi, Amakkavu	954	0.21
43	LAv3b1	Amakkavu, Pallipadi	3267	0.73
44	SCn6b1	Bhutivali, Kalmukkiyur	5115	1.14
45	SCn8c1	Bhutivali, Kalmukkiyur	6993	1.56
46	SCn8d1	Kalmukkiyur, Bhutivali	5472	1.22
47	SCp3b1	Mattattukkad	1769	0.40
48	e	Rockout crop	5624	1.26
49	f	Habitation	7602	1.70
50	g	Water body	12399	2.77
Grand Total			447652	100

SALIENT FEATURES

- ❖ Agriculture and plantation occupies equal area of 30.7 per cent followed by forest (29.1%), whereas open scrubs covers 3.8 per cent.
- ❖ Out of the total area, about 40.9 per cent area is suitable for cultivation and qualified for moderately good to good land with moderate limitations.
- ❖ As per the soil irrigation potential, 18.1 per cent area has moderate soil limitations for sustained use under irrigation, whereas 29.7 per cent lands that have moderate to severe soil limitation for sustained use under irrigation.
- ❖ As per the Land Irrigability class, 35.0 per cent lands that have moderate to severe soil limitation for sustained use under irrigation.
- ❖ The survey area has 17.7 per cent land moderately managed, followed by moderately to well managed (16.8%), poorly to moderately managed (16.2%) and well managed (7.7%), whereas 21.1 per cent of area unmanaged to poorly managed and 13.6 per cent unmanaged, that needs to be managed for better crop production.
- ❖ Most of the area comes under Inceptisols followed by Entisols and Ultisols, respectively.
- ❖ The survey area is dominated by steep to very steep sloping lands (30.6 %). Nearly level to very gently sloping land accounts for 20.5 per cent of the area followed by very gently sloping to gently sloping (19.5%), gently sloping to moderately sloping (13.2%) and strongly sloping to moderately steep (10.5%).
- ❖ The area under deep to very deep soils is 38.4 per cent followed by moderately deep to deep soils covering 22.2 per cent. About 12.7 per cent area is under shallow to moderately deep soils.
- ❖ Nearly 30.3 per cent area is affected by moderate erosion followed by moderate to severe (29.5 %), slight to moderate (13.9%) and non to slight erosion (20.5%), respectively.