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**Soil Resource Mapping of Goa using  
Remote Sensing Techniques**

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## Soil Resource Mapping of Goa State using Remote Sensing Techniques

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### ABSTRACT

1. Survey Area : Goa
2. Geographical Extent : 73<sup>0</sup> 40' 54" to 74<sup>0</sup> 20' 11" E Longitudes  
14<sup>0</sup> 53' 47" to 15<sup>0</sup> 47' 59" N Latitudes
3. Total Area : 3, 70,200 ha
4. Agro-Climatic Region : Zone No.-12, East Coast plain and Ghat region
5. Kind of Survey : Soil Resource Mapping using Remote Sensing  
Technique
6. Scale of Mapping : 1:50,000
7. Period of Survey : April to May, 2004  
November to December, 2005

8. Mapping unit wise Soil association and their extent:

S.No.	Mapping Unit	Soil Series Association	Area (ha)	Percentage
1	Alb2a1	Mandvi-Girin	5344	1.44
2	ALg2a1	Girin-Mandvi	8957	2.42
3	ALg2c1	Mandvi	1166	0.31
4	BAn6c1	Chorla	1024	0.28
5	BAn8c1	Ivre Khurd-Chorla	3952	1.07
6	BAn8d1	Ivre Khurd	4146	1.12
7	CAI1a1	Badal-Fatarde	31594	8.53
8	CAI1c1	Fatarde	500	0.14
9	CAI1d1	Fatarde-Badal	4819	1.30
10	GGn8c1	Astagol	2590	0.70
11	GGr5c1	Astagol	642	0.17
12	GGu3a1	Ardophand	116	0.03
13	GRI3a1	Sauntawada	3905	1.05
14	GRI3b1	Sauntawada-Sannogal	1005	0.27
15	GRI4d1	Sauntawada-Betora	740	0.20
16	GRI5c1	Bombad-Sauntawada	329	0.09
17	GRn6a1	Sarjhora-Gudi	1470	0.40
18	GRn6b1	Sarjhora-Bombad	2452	0.66

19	GRn6c1	Curchorem	10089	2.73
20	GRn6d1	Kodar-Gudi	2095	0.57
21	GRn8a1	Gudi	515	0.14
22	GRn8b1	Gudi-Sarjhora	5926	1.60
23	GRn8c1	Sarjhora-Kodar	21731	5.87
24	GRn8d1	Kodar	1142	0.31
25	GRo3a1	Donga-Khari	689	0.19
26	GRo3b1	Khari-Donga	2219	0.60
27	GRo5c1	Bhati-Khari	703	0.19
28	GRp3a1	Kuntal-Khari	1567	0.42
29	GRp3b1	Kuntal-Bhati	170	0.05
30	GRp3c1	Kuntha	878	0.24
31	GRR3c1	Panda-Sannogal	3055	0.83
32	GRR5a1	Sannogal-Ponda	416	0.11
33	GRu4a1	Betora-Bombad	5622	1.52
34	GRu4b1	Bombad-Betora	2887	0.78
35	GRu4c1	Bombad	2453	0.66
36	GRu4d1	Betora	890	0.24
37	LAI3a1	Madkai	6296	1.70
38	LAI3b1	Madkai-Khajahwada	823	0.22
39	LAI3c1	Madakai-Shirval	637	0.17
40	LAI3d1	Madkai	1549	0.42
41	LAn6a1	Velge	5564	1.50
42	LAn6b1	Velge-Britova	14546	3.93
43	LAn6c1	Britova-Barsen	8598	2.32
44	LAn6d1	Britova	2232	0.60
45	LAn8a1	Velge-Barsen	8439	2.28
46	LAn8b1	Barsen	14550	3.93
47	LAn8c1	Barsen	19437	5.25
48	LAn8d1	Barsen-Britova	5844	1.58
49	LAo2a1	Waddem	673	0.18
50	LAo4a1	Kundal-Waddem	606	0.16
51	LAo4b1	Kukeli-Kundal	5462	1.48
52	LAo4c1	Kukeli	2088	0.56
53	LAo4d1	Kundal	481	0.13

54	LAp3a1	Kolval-Model	1122	0.30
55	LAp3b1	Model-Kolval	1551	0.42
56	LAr5a1	Khajahwada	6187	1.67
57	LAr5b1	Khajahwada	2759	0.75
58	LAr5c1	Khajahwada-Shirval	7080	1.91
59	LAu4a1	Shirval	30961	8.36
60	LAu4b1	Shirval-Khajahwada	2455	0.66
61	LAu4c1	Khajahwada-Shirval	8578	2.32
62	LAu4d1	Shirval	3692	1.00
63	QZn6a1	Derode	84	0.02
64	QZn6c1	Derode-Kodal	1456	0.39
65	QZn6d1	Kodal-Derode	644	0.17
66	QZr5c1	Kodal-Satare	174	0.05
67	QZr8c1	Kodal-Derode	359	0.10
68	SCn6a1	Diyant	106	0.03
69	SCn6b1	Valpoy	324	0.09
70	SCn6c1	Diyant-Valpoy	1921	0.52
71	SCn8b1	Valpoy-Diyant	12044	3.25
72	SCn8c1	Valpoy-Gulle	3001	0.81
73	SCn8d1	Gulle	505	0.14
74	SCo4c1	Keri-Kup	420	0.11
75	SCp3a1	Manvi	573	0.15
76	SCp3c1	Manvi-Nagre	221	0.06
77	SCr5a1	Khodiye-Nagre-Manvi	127	0.03
78	SCr5c1	Khodiye	1008	0.27
79	SCw3a1	Veluz	1948	0.53
80	SCw3b1	Charavale-Veluz	1344	0.36
81	SCw3c1	Charavale-Nagre	505	0.14
82	Miscellaneous Land		43428	11.73
	<b>Grand Total</b>		370200	100

## **9. Salient Features:**

- ❖ The survey area is dominated by steep to extremely steep sloping lands (28.6 %). Gently to moderately sloping land accounts for 18.2 % of the area followed by strongly to steep sloping is 13.8 %. Whereas plain to nearly level land occupies 10 % and very gently to gently sloping is 8.1 % area. The moderately to strongly sloping land covers 5.2 % followed by nearly level to very gently sloping area (4.4 %).
- ❖ Agriculture land occupies about 33.2 % followed by forest land 28.3 %, whereas plantation and open scrubs covers 19 % and 7.8 %, respectively.
- ❖ The area under very deep soils is 39.8 % followed by deep soils 18.2 %. About 14.6 % area is under moderately deep to very deep soils.
- ❖ Nearly 56.8 % area is affected by moderate erosion followed by moderate to severe erosion (14.7 %) and only 2.6 % area is affected by severe erosion.
- ❖ About 18.7 % area is potentially good for a variety of crops with suitable agronomic practices.
- ❖ Nearly 29 % areas have severe soil limitations for sustained use under irrigation.
- ❖ Most of the area comes under Inceptisols followed by Entisols and Alfisols respectively.