

ABSTRACT/सारांश

1. Survey area : Amreli district, Gujarat
सर्वेक्षण क्षेत्र : जिला अमरेली, गुजरात
2. Geographical Extent : 71°21'to 71°30 East Longitude पूर्व देशांतर
भौगोलिक सीमा : 21°39' to 21°71'- North Latitude उत्तर अक्षांश
3. Agro- climatic Zone : Dry sub-humid climate
कृषि जलवायु क्षेत्र : Gujarat Plains and Hills region (Zone - XIII)
गुजरात मैदानी और पहाड़ी क्षेत्र (ज़ोन-XIII)
4. Total area mapped : 7,36,091ha हेक्टेयर
कुल क्षेत्रफल मैप किया
5. Kind of Survey : Soil Resource Mapping (SRM) using Remote Sensing & GIS Techniques
सर्वेक्षण की प्रकार : मृदा संसाधन मानचित्रण (एस.आर.एम.), सुदूर संवेदन और भौगोलिक सूचना प्रणाली तकनीक का उपयोग से
6. Base Map : a) IRS-1D Geo-coded Satellite Imagery (1:50,000 Scale)
आधार नक्शा : आईआरएस -1 डी जिओ-कोड उपग्रह चित्रण (1: 50,000 स्केल)
b) SOI Toposheets (1: 50,000 scale)
सर्वे ऑफ इंडिया टोपोशीट (1: 50,000 पैमाने पर)
7. Scale of Mapping : 1: 50,000
मानचित्रण के स्केल
8. Period of Survey : April 2012- February 2013
सर्वेक्षण की अवधि : अप्रैल २०१२ से फरवरी २०१३

✱. Distribution of area under different soil series association mapped मिट्टी श्रृंखला एसोसिएशन के तहत मैप किया क्षेत्र का वितरण

Sr. No.	Legend	Mapping Unit	Series Association	Area	Area (%)
1	A16	ALb2a1	Varnol(VR5)-Sajod(SJ5)	28988	3.94
2	A17	ALb2a2	Sajod(SJ5)-Varnol(VR5)	2053	0.28
3	A18	ALb2a3	Kawa(KW5)-Varnol(VR5)	7640	1.04
4	A19	ALg3d1	Derol(DR5)-Varnol(VR5)	6767	0.92
5	A20	ALg3d2	Rumalpara(RP5)-Kawa(KW5)	4959	0.67
6	B16	BAn8c1	Kuri(KU2)-Dungra(DG2)	15250	2.07
7	B17	BAn8c2	Dungra(DG2)-Kuri(KU2)	5697	0.77
8	B19	BAn6c1	Dungra(DG2)-Kuri(KU2)	10862	1.48
9	B20	BAn6c2	Kavachiya(KC2)-Dungra(DG2)	5096	0.69
10	B21	BAn6c3	Kuri(KU2)-Kavachiya(KC2)	390	0.05
11	B22	BAu5d1	Jambar(JB2)-Singalvan(SV2)	2233	0.30

Sr. No.	Legend	Mapping Unit	Series Association	Area	Area (%)
12	B23	BAu5d2	Singalvan(SV2)-Jambar(JB2)	7915	1.08
13	B25	BAu4d1	Jambar(JB2)-Singalvan(SV2)	61112	8.30
14	B26	BAu4c1	Singalvan(SV2)-Jambar(JB2)	5503	0.75
15	B27	BAu4c2	Jambar(JB2)-Singalvan(SV2)	1380	0.19
16	B28	BAu4a1	Jambar(JB2)-Singalvan(SV2)	2224	0.30
17	B29	BAu3d1	Jambar(JB2)-Singalvan(SV2)	2364	0.32
18	B32	BAv3a1	Songarh(SG4)-Chandravan	49022	6.66
19	B33	BAv3a2	Chandravan(CD3)-Songarh(SG4)	30767	4.18
20	B34	BAv3a3	Shenthali(SH3)-Chandravan(CD3)- Songarh(SG4)	18280	2.48
21	B35	BAw2a1	Shapur(SP4)-Kadaba(KD3)	45646	6.20
22	B36	BAw2a2	Shapur(SP4)-Galodhar(GD5)	168624	22.91
23	B37	BAw2a3	Shapur(SP4)-Galodhar(GD5)	47295	6.43
24	B38	BAw2a4	Shapur(SP4)-Kadaba(KD3)	29670	4.03
25	B39	BAw2a5	Kadaba(KD3)-Galodhar(GD5)	17739	2.41
26	B40	BAw2a6	Shapur(SP4)-Galodhar(GD5)	25391	3.45
27	B41	BAw2a7	Kadaba(KD3)-Shapur(SP4)	7805	1.06
28	B42	BAw2a8	Shenthali(SH3)-Kadaba(KD3)	1615	0.22
29	B43	BAG3d1	Shenthali(SP4)-Kadaba(KD3)	26944	3.66
30	B44	BAG3d2	Shenthali(SH3)-Kadaba(KD3)	12959	1.76
31	B45	BAG3d3	Shenthali(SH3)-Kadaba(KD3)	3596	0.49
32	B46	BAw2d1	Galodhar(GD5)-Shapur(SP4)	5455	0.74
33	CA05	CAi2a1	Nadiyad(ND5)-Vansali(VS5)	460	0.06
34	CA07	CAi2d1	Lakhigaon(LK5)-Nadiyad(ND5)	801	0.11
35	CA08	CAi1c1	Hansot(HS5)-Nadiyad(ND5)-Sarod(SR5)	486	0.07
36	CA09	CAi2d2	Lakhigaon(LK5)-Hansot(HS5)	2389	0.32
37	CA10	CAi2c1	Hansot(HS5)-Nadiyad(ND5)-Sarod(SR5)	269	0.04
38	CA11	CAi2c2	Nadiyad(ND5)-Sarod(SR5)	823	0.11
39	CA12	CAi2c3	Hansot(HS5)-Sarod(SR5)-Nadiyad(ND5)	190	0.03
40	CA13	CAi2a2	Nadiyad(ND5)-Sarod(SR5)	6304	0.86
41	CA14	CAi2a3	Nadiyad(ND5)-Sarod(SR5)	493	0.07
42	CA15	CAi4c1	Sarod(SR5)-Nadiyad(ND5)	1338	0.18
43	LS01	LSu4c1	Minakayar(MK2)-Chhayana(CY3)	87	0.01
44	LS04	LSu3c1	Rataudi(RT2)-Prachi(PR2)	118	0.02
45	LS05	LSu2a1	Rataudi(RT2)-Prachi(PR2)	130	0.02
46	LS06	LSu4a1	Limdi(LM3)-Minakayar(MK2)	5028	0.68
47	LS07	LSu3c2	Prachi(PR2)-Limdi(LM3)	1055	0.14
48	LS08	LSv3a1	Rataudi(RT2)-Gangarda(GN3)	3183	0.43
49	LS10	LSw2a1	Barwara(BW4)-Kolikhada(KL5)	17250	2.34
50	LS11	LSw2a2	Kolikhada(KL5)-Barwara(BW4)	10178	1.38
51	f	Aerodrum	-	124	0.02
52	g	Mud	-	4546	0.62
53	e	Quarry	-	532	0.07
54	g	River	-	8577	1.17
55	i	Saltpan	-	3139	0.43
56	g	Tank	-	1811	0.24
57	g	Water Bodies	-	612	0.08
58	f	Habitation	-	4927	0.67
			Total	7,36,091	100

B. Distribution of Area under different Physiography Classes विभिन्न प्राकृतिक भूगोल वर्गों के तहत क्षेत्र का वितरण

Landscape	Physiography	Area(ha)	Area (%)
Alluvium	Alluvial plains	38681	5.25
	Stream banks	11726	1.59
Basalt	Lower pediplains	349240	47.45
	Narrow mountain valleys	43499	5.91
	Pediments	82731	11.24
	Undifferentiated hills side slope	37295	5.07
	Upper pediplains	98069	13.32
Coastal Alluvial	Coastal Alluvial plains	13553	1.84
Limestone	Lower pediplains	27428	3.73
	Pediments	6418	0.87
	Upper pediplains	3183	0.43
Misc.	Misc. (Aerodrum, Mud, Quarry, River, Saltpan, Tank, Habitation, Water Bodies).	24268	3.30
Total		7,36,091	100

C. Distribution of area under different depth classes विभिन्न गहराई वर्गों के तहत क्षेत्र का वितरण

Sr. No.	Depth	Area(ha)	Area (%)
1	Shallow	177346	24.09
2	Moderately deep	63309	8.60
3	Deep	391575	53.20
4	Very deep	79593	10.81
5	Misc. (Aerodrum, mud, quarry, river, saltpan, tank, habitation, water bodies).	24268	3.30
Grand Total		7,36,091	100

D. Distribution of area under different Erosion classes विभिन्न कटाव वर्गों के तहत क्षेत्र का वितरण

Sr. No.	Erosion	Area(ha)	Area (%)
1	None to slight water erosion	52234	7.10
2	Slight to moderate erosion	376668	51.17
3	Moderate to severe erosion	188168	25.56
4	Severe water erosion	39528	5.37
5	Severe to very severe erosion	55225	7.50
6	Misc.(Aerodrum, mud, quarry, river, saltpan, tank, habitation, water bodies).	24268	3.30
Grand Total		7,36,091	100

E. Distribution of area under different management classes विभिन्न प्रबंधन वर्गों के तहत क्षेत्र का वितरण

Sr. No.	Management	Area (ha)	Area (%)
1	Unmanaged(UB)	16555	2.25
2	Unmanaged(UB) to poorly managed(PB)	65587	8.91
3	Poorly managed(PB) to moderately managed(MB)	185586	25.21
4	Moderately managed(MB) to well managed(WB)	444095	60.33
5	Misc.(Aerodrum, mud, quarry, river, saltpan, tank, habitation, water bodies).	24268	3.30
		7,36,091	100

F. Distribution of area under different slope classes विभिन्न ढलान वर्गों के तहत क्षेत्र का वितरण

Sr. No.	Slope	Area (ha)	Area (%)
1	Nearly level	486	0.07
2	Nearly level to very gently sloping	427208	58.04
3	Very gently sloping to gently sloping	160014	21.74
4	Gently sloping to moderately sloping	76672	10.42
5	Moderately sloping to strongly sloping	10148	1.38
6	Strongly sloping to moderately steep	16348	2.22
7	Steep to very steep	20947	2.85
8	Misc.(Aerodrum, mud, quarry, river, saltpan, tank, habitation, water bodies).	24268	3.30
	Grand Total	7,36,091	100

G. Distribution of area under different land use अलग भूमि उपयोग के तहत क्षेत्र का वितरण

Sr. No.	Land use	Area(ha)	Area (%)
1	Agriculture	525785	71.43
2	Forest	48544	6.59
3	Open scrub	137494	18.68
4	Misc.(Aerodrum, mud, quarry, river, saltpan, tank, habitation, water bodies).	24268	3.30
	Grand Total	7,36,091	100

H. Distribution of Area under different Land Capability Classes

Class	Land Capability Classes	Area(ha)	Area (%)
II	Land Suitable For Cultivation, Good Land With Minor Limitations	29448	4.00
II-III	Land Suitable For Cultivation, Moderately Good To Good Land With Moderate Limitations	47108	6.40
III-IV	Land Suitable For Cultivation, Moderately To Fairly Good Land With Occasional Cultivation And Major Limitations	45776	6.22
IV	Land Suitable For Cultivation, Fairly Good Land With Occasional Cultivation And Major Limitations	324679	44.11
VI	Land Not Suitable For Cultivation, Suitable For Pasture And Forestry With Minor Limitations.	216268	29.38
	Forest	48544	6.59
	Misc.(Aerodrum, mud, quarry, river, saltpan, tank, habitation, water bodies).	24268	3.30
	Grand Total	7,36,091	100

I. Salient features मुख्य विशेषताएं:

- There are twenty-nine soil series, which have been mapped in Amreli district of Gujarat.
- Majority of the soils of Amreli district are deep 391575 ha of 53.20% followed by shallow 177346 ha of 24.09%, very deep 79593 ha of 10.81 %, and moderately deep 63309 ha of 8.60 %.
- Physiography of Amreli district having mainly eight physiographic units as lower pediplains as 376668 ha. of 51.18%, upper pediplains as 101252 ha. of 13.32 %, pediments 89149 ha. of 11.24%, Coastal alluvial plains 13553 ha. of 1.84, Undifferentiated hill side slopes 37295 ha. of 5.07, narrow mountains valleys as 43499 ha. of 5.91%, alluvial plains as 38681 ha. 5.25% and stream bank 11726 ha. of total area .
- Soils of Amreli district in seven slope classes as nearly level to very gently sloping as 427208 ha. of 58.04%, very gently sloping to gently sloping as 160014 ha. of 21.74%, Gently sloping to moderately sloping as 76672 ha. of 10.42%, Steep to very steep as 20947 ha. of 2.85%, Strongly sloping to moderately steep as 16348 of 2.22%, Moderately sloping to strongly sloping as 10148 ha. of 1.38% and Nearly level 486 ha. of 0.07% of total area.
- Land cover classes of Amreli district are as cultivated land 522608 ha. of 71.00%, forest land as 48545 ha. of 6.59%, open scrub as 137494 ha. of 18.68% of total area.
- Soils of Amreli district fall under different erosion classes as slight to moderate erosion as 376668ha. of 51.17%, severe to very severe erosion as 55225of 7.50 %, moderate to severe erosion as 188168 of 25.56% of total area.
- Soil of Amreli district under different land capability classes fall classes are II area of 29448 ha. of 4.00%, II-III area of 47108 ha. of 6.40, III-IV area of 45776 ha. of 6.22%, IV area 324679 of 44.11%, class VI area 216268 ha. of 29.38%, and miscellaneous 24268 of 3.30% of total area.
- Amreli district has three orders, (Alfisols, Entisols, Aridisols and Inceptisols). There are three four sub-orders (Ustalf, Cambids, Orthents and Usteps). Five sub-group Haplustalfs, Haplustepts, Natrustalfs, Haplocambids and Ustorthents. Amreli district has hyperthermic family.
- Higher organic carbon (1.30%) observed in Sajod and lowest (0.17 %) in Hansot series, Similarly, higher pH (8.60) observed in Kolikhada and lowest (5.60) in Gangarda series. EC higher (1.52 dSm⁻¹) in kolikhada and lowest (0.04 dSm⁻¹) in Kuri. Shenthali series has highest (38.90) CEC and lowest (5.40) in Rumalpura.

HOW TO USE SOIL RESOURCE MAPPING REPORT

This report embodies the results of the soil resource mapping of Amreli district of Gujarat providing information on the geographical setting of the district, such as location, extent, physiography, relief, drainage, climate, geology, natural vegetation, agriculture, land use & soils.

The report contains other information on interpretative grouping of soils such as land capability classes; land irrigability classes, soil suitability grouping and hydrological grouping and also recommendation for crops; horticulture development; forest, forage and grasslands development; water harvesting, water storage and water management that are essential for soil land resource management. The genesis and classification of the soils are also discussed in chapter-5.

Amreli district of Gujarat is spread over an area 7,36,091 ha. The district is covered by twenty-one SOI topographical sheets on the scale of 1:50,000 which are used as base material along with satellite imageries.

Each soil mapping unit is marked by mapping unit i.e. BAu4d1 (Basalt, pediments, 3-10% slope, open scrub, soil series association describing Jambar as dominant series in association with Singalvan series). Each soil association is restricted to maximum of three soil series.

For the use of the soil resource mapping report, first locate the area of your interest on the map. For the detailed information on soil mapping unit in respect of soil series of the area of interest, its extent, present and proposed land uses, and reference may be made to **chapter-4, appendix I and II.**

The mapping unit used in soil mapping represents the five levels of mapping i.e.

Alb2a1 may be referred as follow:

AL	- Alluvium	-	Landscape
b	- Alluvium plain	-	Physiography
2	- 0-3 %	-	Slope class
a	- Agriculture land	-	Land use
1	- Association of soil series with erosion and management soil unit.		

For any clarification and comments, correspondence may be made to

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