

# ABSTRACT/सारांश

1. Survey area <i>सर्वेक्षण क्षेत्र</i>	:	Junagadh district, Gujarat <i>जिला - जूनागढ़, गुजरात</i>
2. Geographical Extent <i>भौगोलिक सीमा</i>	:	69°56'31" to 71°13'13" East Longitude <i>पूर्व देशांतर</i> 20°41'21" to 21°40'19"-- North Latitude <i>उत्तर अक्षांश</i>
3. Agro- climatic Zone <i>कृषि जलवायु क्षेत्र</i>	:	Dry sub-humid climate Gujarat Plains and Hills region ( <b>Zone - XIII</b> ) <i>गुजरात मैदानी और पहाड़ी क्षेत्र (ज़ोन-XIII)</i>
4. Total area mapped <i>कुल क्षेत्रफल मैप किया</i>	:	8,81,452 ha <i>हेक्टेयर</i>
5. Kind of Survey <i>सर्वेक्षण की प्रकार</i>	:	Soil Resource Mapping (SRM) using Remote Sensing & GIS Techniques <i>मृदा संसाधन मानचित्रण (एस.आर.एम.), सुदूर संवेदन और भौगोलिक सूचना प्रणाली तकनीक का उपयोग से</i>
6. Base Map <i>आधार नक्शा</i>	:	a) IRS-1D Geo-coded Satellite Imagery (1:50,000 Scale) <i>आईआरएस-1 डी जिओ-कोड उपग्रह चित्रण (1: 50,000 स्केल)</i> b) SOI Toposheet (1: 50,000 scale) <i>सर्वे ऑफ इंडिया टोपोशीट (1: 50,000 पैमाने पर)</i>
7. Scale of Mapping <i>मानचित्रण के स्केल</i>	:	1: 50,000
8. Period of Survey <i>सर्वेक्षण की अवधि</i>	:	April 2008- February 2009 <i>अप्रैल २००८ से फरवरी २००९</i>

## A. Distribution of area under different soil series association mapped

मिट्टी श्रृंखला एसोसिएशन के तहत मैप किया क्षेत्र का वितरण

Sr. No.	Mapping Symbol	Mapping Unit	Series Association	Area (ha)	Area (%)
1	A16	ALb2a1	Varnol-Sajod	16159	1.83
2	A18	ALb3a1	Kawa-Mulad	2220	0.25
3	A19	ALh3d1	Mulad-Kawa-Varnol	5998	0.68
4	A21	ALb2a2	Varnol-Mulad	9201	1.04
5	B17	BAn8c1	Dungra-Kuri	17060	1.94
6	B18	BAn6c1	Kuri-Dungra	48339	5.48
7	B20	BAn6c2	Kuri-Dungra	28544	3.24
8	B21	BAn6c3	Kuri-Dungra	16355	1.86
9	B25	BAu4a1	Singalvan	56225	6.38
10	B27	BAu4c3	Singalvan	48697	5.52
11	B29	BAu3d1	Singalvan	11025	1.25
12	B32	BAv3c1	Chandravan-Kadaba	32629	3.70
13	B33	BAv3a1	Chandravan-Kadaba	39229	4.45
14	B36	BAw2a2	Galodhar-Shapur	102218	11.60
15	B37	BAw2a3	Shapur-Galodhar	85175	9.66
16	B38	BAw2a4	Shapur-Shenthali	35610	4.04
17	B43	BAG3d1	Shapur-Shenthali	24445	2.77
18	B44	BAG3d2	Shenthali-Shapur	12367	1.40

Sr. No.	Mapping Symbol	Mapping Unit	Series Association	Area (ha)	Area (%)
19	<b>B45</b>	BAG3a1	Shenthali-Shapur	505	0.06
20	<b>CA08</b>	CAM1c1	Hansot	430	0.05
21	<b>CA09</b>	CA11d1	Lakhigaon-Hansot	2699	0.31
22	<b>CA11</b>	CA12d2	Nadiyad-Sarod	655	0.07
23	<b>CA14</b>	CA12a1	Sarod-Nadiyad	672	0.08
24	<b>CA16</b>	CA14c1	Dwarka	9459	1.07
25	<b>LS06</b>	LSu4d1	Minakayar-Chhayan	4722	0.54
26	<b>LS07</b>	LSu3b1	Limdi-Prachi	30312	3.44
27	<b>LS08</b>	LSv3a1	Gangarda-Rataudi	48307	5.48
28	<b>LS10</b>	LSw2a1	Barwara-Prachi	32647	3.70
29	<b>LS11</b>	LSw2a2	Barwara-Kolikhada	128240	14.55
30	<b>G</b>	g	Water Bodies	11346	1.29
31	<b>F</b>	f	Habitation	19962	2.26
			<b>Total</b>	<b>8,81,452</b>	<b>100</b>

**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	27580	3.13
	Dissected stream banks	5998	0.68
Basalt	Lower pediplains	223003	25.30
	Narrow mountain valleys	37317	4.23
	Pediments	115947	13.15
	Undifferentiated hills side slope	110298	12.51
	Upper pediplains	71858	8.15
Coastal Alluvium	Coastal alluvial plains	13485	1.53
	Marshy Land	430	0.05
Limestone	Lower pediplains	160887	18.25
	Pediments	35034	3.97
	Upper pediplains	48307	5.48
Misc.		31308	3.55
	<b>Total</b>	<b>8,81,452</b>	<b>100</b>

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

Sr. No.	Depth Class	Area (ha)	Area (%)
1	Shallow	202391	22.96
2	Shallow to moderately deep	107195	12.16
3	Moderately deep to deep	177432	20.13
4	Deep to very deep	315633	35.81
5	Very deep	47493	5.39
6	Misc.	31308	3.55
	<b>Total</b>	<b>8,81,452</b>	<b>100</b>

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

Sr. No.	Erosion Class	Area (ha)	Area (%)
1	None to slight water erosion	22835	2.59
2	Slight to moderate erosion	383890	43.55
3	Moderate to severe erosion	280605	31.83
4	Severe water erosion	110298	12.51
5	Severe to very severe erosion	52516	5.96
6	Misc.	31308	3.55
	<b>Grand Total</b>	<b>8,81,452</b>	<b>100</b>

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

Sr. No.	Management Class	Area (ha)	Area (%)
1	Unmanaged(UB)	12872	1.46
2	Unmanaged(UB) to poorly managed(PB)	160531	18.21
3	Poorly managed(PB) to moderately managed(MB)	249355	28.29
4	Moderately managed(MB) to well managed(WB)	427386	48.49
5	Misc.	31308	3.55
	<b>Total</b>	<b>8,81,452</b>	<b>100</b>

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

Sr. No.	Slope Class	Area (ha)	Area (%)
1	Nearly level	3129	0.35
2	Nearly level to very gently sloping	410577	46.58
3	Very gently sloping to gently sloping	207037	23.49
4	Gently sloping to moderately sloping	119103	13.51
5	Strongly sloping to moderately steep	93238	10.58
6	Steep to very steep	17060	1.94
7	Misc.	31308	3.55
	<b>Total</b>	<b>8,81,452</b>	<b>100</b>

**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	556408	63.12
2	Forest	201513	22.86
3	Open scrub	61911	7.02
4	Plantation	30312	3.44
5	Misc.	31308	3.55
	<b>Total</b>	<b>8,81,452</b>	<b>100</b>

## H. Distribution of area under different Land Capability Classes विभिन्न भूमि क्षमता वर्गों

### के तहत क्षेत्र का वितरण

Sr. No.	LCC Class	Land Capability Classes	Area(ha)	Area (%)
1	III	Land Suitable For Cultivation, Moderately Good Land With Major Limitations	3371	0.38
2	II-III	Land Suitable For Cultivation, Moderately Good To Good Land With Moderate Limitations	179266	20.34
3	III-IV	Land Suitable For Cultivation, Moderately To Fairly Good Land With Occasional Cultivation And Major Limitations	262232	29.75
4	IV	Land Suitable For Cultivation, Fairly Good Land With Occasional Cultivation And Major Limitations	162425	18.43
5	VI	Land Not Suitable For Cultivation, Suitable For Pasture And Forestry With Minor Limitations.	11025	1.25
6	P	Plantation	30312	3.44
7	F	Forest	201513	22.86
	Misc.	Misc.	31308	3.55
		<b>Grand Total</b>	<b>8,81,452</b>	<b>100</b>

### I. Salient features मुख्य विशेषताएं:

- Twenty five soil series have been mapped in Junagadh district of Gujarat.
- Soils of Junagadh district are be majorly covered by very deep soils with 47,493 ha (5.39 %), deep to very deep soils with 3, 15,633 ha (35.81 %) , moderate deep to deep soils with an area of 1,77,432 ha (20.13 %) ,shallow to moderate deep soils with an area of 1,07,195 ha (12.16 %) and shallow soil with an area 2,02,391 ha (22.96 %).
- Total surveyed area is mostly covered under agriculture and open scrub land which is followed by area under Plantation and forest
- Physiographically, Alluviums divided into two physiographic unit's viz. Alluvial plains 27,580 ha (3.13%) and Dissected stream banks 5,998 ha (0.68%).
- Basalt is divided into five physiographic units viz. Lower pediplains 2,23,003 ha (25.30%), Upper pediplains 71,858 ha (8.15%), Pediments 1, 15,947 ha (13.15%) Narrow mountain valleys 37,317 ha (4.23%), and Undifferentiated hill side slopes 1, 10,298 ha (12.51%).
- Coastal alluvium is divided into two physiographic units viz. Coastal alluvial plains 13,485 ha. (1.53%) and Marshy lands 430 ha (0.05%).
- Limestone's divided into three physiographic units viz. Lower pediplains 1, 60,887 ha (18.25%), Upper pediplains 3, 1308 ha (3.55%), Pediments 48,307 ha (5.48%).
- Soils of Junagadh district is divided into seven slope classes, nearly level to very gently 4,10,577 ha (46.58%), followed by very gently sloping to gently sloping 2,04,584 ha (23.21%), gently sloping to moderately sloping 1,18,804 ha (13.48%), strongly to moderately steep sloping 93,238 ha (10.58%), steep to very steep 17,060 ha (1.94%), nearly level 3,129 ha (0.35%) and miscellaneous 31,308 ha (3.55%) of total area.
- Land cover classes of Junagadh district classified as Agricultural land with an area of 5, 56,408 ha (63.12%), forest land as 2, 01,513 ha (22.86%), open scrub as 61,911 ha (7.02%) and plantation 30,312 ha (3.44%).
- About 1,41,606 ha (46.14%) area suffers from Severe to very severe erosion water erosion followed by 2,80,605 ha (31.80%) area under moderate to severe erosion, which needs immediate attention for soil conservation measures

## HOW TO USE SOIL RESOURCE MAPPING REPORT

This report embodies the results of the soil resource mapping of Junagadh 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 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-6**.

Junagadh district of Gujarat is spread over an area **8, 81,452** 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. BAu4c1 (Basalt, pediments, 3-10% slope, plantation, soil series association, describing Singalvan). 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&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.		

Any comment and suggestion on the report would be welcome. For any further enquiry / or clarification, correspondence or personal contact may be established, with the

For any clarification and comments, correspondence may be made to

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