

ABSTRACT / सारांश

1. Survey area : Navsari district, Gujarat
सर्वेक्षण क्षेत्र : जिला-नवसारी, गुजरात
2. Geographical Extent : 72°42' & 73°30' East Longitude पूर्व देशांतर
भौगोलिक सीमा : 20°32' & 21°05' –North Latitude उत्तर अक्षांश
3. Agro- climatic Zone : Gujarat Plains and Hills region (Zone - XIII)
कृषि जलवायु क्षेत्र : गुजरात मैदानी और पहाड़ी क्षेत्र (ज़ोन-XIII)
4. Total area mapped : 2,46,039 ha हेक्टेयर
कुल क्षेत्रफल
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 : December 2011 to January 2012
सर्वेक्षण की अवधि : दिसम्बर २०११ से जनवरी २०१२

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

Sr. No.	Mapping Unit	Mapping Symbol	Soil Association	Area (ha)	Area (%)
1	ALg4d1	A09	Rumalपुरा- Mulad	2708	1.10
2	ALi5d2	A10	Mulad- Rumalपुरा	2106	0.86
3	ALb3d3	A14	Borsad- Bariya	43	0.02
4	ALb2a4	A41	Varnol- Sajod	55033	22.37
5	BAv3a1	B10	Chandravan- Kadaba	367	0.15
6	BAw2a1	B12	Chandeliya- Sagbara	33531	13.63
7	BAn8c1	B18	Kuri- Kavachiya	23033	9.36
8	BAn6c2	B21	Kavachiya- Kuri	1829	0.74
9	BAu4c1	B27	Jambar - Singlvan	101	0.04
10	BAv3a2	B32	Chandravan- kadaba	29952	12.17
11.	BAw2a3	B36	Sagbara- Chandeliya	30063	12.22
12	BAv2a3	B37	Chandravan- kadaba	7087	2.88
13	CAI2a1	CA06	Nadiyad- Vansali	135	0.05
14	CAI2d1	CA07	Lakhigam- Nadiyad	1802	0.73
15.	CAI2a2	CA13	Nadiyad	11038	4.49
16.	Misc.	Build-up area (f)		8846	3.59
		Water bodies (g)		38366	15.59
Total				2,46,039	100.00

B. Distribution of Area under different Physiography Classes विभिन्न प्राकृतिक भूगोल

वर्गों के तहत क्षेत्र का वितरण

Sl. No.	Landscape	Physiography	Area (ha)	Area (%)
1.	Alluvium (AL)	Alluvial plains (b)	55076	22.39
		Ravenous lands (i)	2106	0.86
		Stream banks(g/h)	2708	1.10
2.	Basalt (BA)	Lower pediplains (w)	63594	25.85
		Pediments (u)	101	0.04
		Undifferentiated hills side slope (n0)	24861	10.10
		Upper pediplains (v)	37406	15.20
3.	Coastal Alluvium (AL)	Coastal alluvial plains 9l)	12975	5.27
4.	Misc.	Build-up area (f)	8846	3.59
		Water bodies (g)	38366	15.59
Total			2,46,039	100.00

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

Sl. No.	Depth Classes	Area (ha)	Area (%)	
1	Shallow (d2)	24861	10.10	
2	Shallow to moderately deep (d2-d3)	101	0.04	
3	Moderately deep to deep (d3-d4)	37406	15.20	
4	Deep to very deep (d4-d5)	63594	25.85	
5	Very deep (d5)	72865	29.62	
6	Misc.	Build-up area (f)	8846	3.59
		Water bodies (g)	38366	15.59
Total		2,46,039	100	

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

Sl. No.	Erosion Classes	Area (ha)	Area (%)
1.	None to slight water erosion (e0- e1)	131602	53.49
2.	Slight to moderate erosion (e1- e2)	37449	15.22
3.	Moderate to severe erosion (e2- e3)	101	0.04
4.	Very severe erosion (e4)	29675	12.06
5.	Misc.	47212	19.19
Total		2,46,039	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)	29675	12.06
2	Unmanaged(UB) to poorly managed(PB)	101	0.04
3	Poorly managed(PB) to moderately managed(MB)	92482	37.59
4	Well managed(WB)	76569	31.12
5	Misc	47212	19.19
Grand Total		2,46,039	100

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

Sl. No.	Slope Classes	Area(ha)	Area (%)	
1.	Nearly level to very gently sloping(0-3%)	131602	53.49	
2.	Very gently sloping to gently sloping (1-5%)	37449	15.22	
3.	Gently sloping to moderately sloping (3-10%)	2809	1.14	
4.	Moderately sloping to strongly sloping (5-15%)	2106	0.86	
5.	Strongly sloping to moderately steep (10-25%)	1829	0.74	
6.	Steep to very steep (25-50%)	23032	9.36	
5.	Misc.	Build-up area (f)	8846	3.59
		Water bodies (g)	38366	15.59
Total		2,46,039	100.00	

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

Sl. No.	Land use	Area (ha)	Area (%)	
1.	Agriculture (a)	167206	67.96	
2.	Open scrub (d)	6659	2.71	
3.	Forest (c)	24962	10.15	
3.	Misc.	Build-up area (f)	8846	3.59
		Water bodies (g)	38366	15.59
Total		2,46,039	100.00	

H. Distribution of Area under different Land Capability Classes

Sr. No.	Class	Land Capability Classes	Area(ha)	Area (%)
1	II	Land Suitable For Cultivation, Good Land With Minor Limitations	118762	48.27
2	II-III	Land Suitable For Cultivation, Moderately Good To Good Land With Moderate Limitations	12840	5.22
3	III	Land Suitable For Cultivation, Moderately Good Land With Major Limitations	37449	15.22
4	IV	Land Suitable For Cultivation, Fairly Good Land With Occasional Cultivation And Major Limitations	4814	1.96
5	Forest		24962	10.15
6	Misc.	Build-up area (f)	8846	3.59
		Water bodies (g)	38366	15.59
Total			2,46,039	100

I. Salient features मुख्य विशेषताएं:

- Major part of survey area covered under Basalt landscape (51.19 % of total geographical area) of district, it is followed by Alluvium landscape (24.35 %) and Coastal Alluvium (5.27 %), as depicted in **Table-B**.
- Soils of the area have been classified under four orders Alfisol, Entisol, Inceptisol and Vertisol. In all, 17 series in the district have been mapped under 5 sub-order, Great groups, 8 Sub group and 9 family classes.
- The interpretation of data reveals that major part of area i.e. 67.96 % falls under agriculture. After that 10.15 % area comes under the Forest, 2.71% open scrub and 19.19% under Miscellaneous, as depicted in **Table-G**.
- Out of the total surveyed area of 2,46,039 ha, 72,865 ha (29.62%) is occupied by very deep soils followed by 63,594 ha (25.85%) by deep to very deep and 37,406 ha (15.20 %) by moderately deep to deep, as depicted in **Table-C**.
- About 1,31,602 ha (53.49%) area falls under Nearly level to very gently sloping land, followed by 37,449 ha (15.22%) area under Very gently sloping to gently sloping 23032 ha (9.36%) under Steep to very steep sloping land, as depicted in **Table-F**.
- About 1,31,602 ha (53.49%) area suffers from None to slight water erosion followed by 37,449 ha (15.22%) area under Slight to moderate erosion, 29,675 ha (12.06%) area under Very severe erosion which needs immediate attention for soil conservation measures, as depicted in **Table-D**.
- About 1,18,762 ha (48.27%) lands are having capability class-II, suitable for cultivation, good land with minor limitations, 37,449 (15.22%) lands are having capability class-III, good lands with limitations and 23,032 ha (9.36%) area are having capability class VII, suited for pasture and forestry with no limitations, as depicted in **Table-H**.

HOW TO USE SOIL RESOURCE MAPPING REPORT

This report embodies the results of the soil resource mapping of Navsari 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**.

Navsari district of Gujarat is spread over an area of 2, 46,039 ha .The district is covered by ten 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. Alb2a4 (Alluvium, alluvial plain; 0-3% slope; agriculture land use; soil series Association, describing Varnol - as dominant series in association with Sajod 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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