

ABSTRACT

1.	Survey Area	:	Karimnagar District, Telangana State
2.	Geographical Extent	:	78 ⁰ 25'5'' to 80 ⁰ 20'40'' East Longitude and 17 ⁰ 59'08'' and 18 ⁰ 36'16'' North Latitude
3.	Agro-climatic Region	:	Southern Plateau and Hills region-X
4.	Total Geographical Area	:	12,07,871 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) of LISS-III (IRS-1D)
7.	Scale of Mapping	:	1:50,000 Scale
8.	Period of Survey	:	June to July, 2013 and November, 2013

9. Mapping unit wise soil association and their extent.

S No.	Soil Mapping Unit	Soil Series Association	Total area(Ha)	Area (%)
1	ALb1a1	Arepalli and Jublee	50244	4.16
2	BAn6c1	Somarampet	603	0.05
3	DLs4d1	Pegudapalli	1507	0.12
4	GRn6c1	Bhimaram	16565	1.37
5	GRn6d1	Rudrangi	8318	0.69
6	GRn8c1	Bolugattu, Kondagattu and Raghavapuram	27447	2.27
7	GRn8d1	Bolugattu and Kondagattu	5449	0.45

S No.	Soil Mapping Unit	Soil Series Association	Total area(Ha)	Area (%)
8	GRu4c1	Mutnoor and Jillela	26997	2.24
9	GRu4d1	Jillela and Mutnoor	20158	1.67
10	GRv2a1	Suraram and Gollapalli	98224	8.13
11	GRv2a2	Paidipalli and Saidapur	92427	7.65
12	GRv2a3	Pathipaka and Pragnapur	6745	0.56
13	GRv2a4	Kothapeta, Gollapalli and Suraram	133918	11.09
14	GRv2a5	Suraram and Thimmapur	63782	5.28
15	GRv2b1	Birur and Pragnapur	18997	1.57
16	GRv2c1	Kurmapalli and Thotapalli	2985	0.25
17	GRv2d1	Gajwel and Kondapalli	41891	3.47
18	GRv2d2	Kistapur and Kondapalli	5303	0.44
19	GRv3a1	Thimmapur and Bollaram	20421	1.69
20	GRv3c1	Thotapalli and Kurmapalli	25507	2.11
21	GRv3d1	Maddimilla and Thimmapur	45389	3.76
22	GRw2a1	Rajakkapalli and Saidapur	44242	3.66
23	LSn6c1	Sarangapur	319	0.03
24	LSu4d1	Ramayapalli	953	0.08
25	Qzu4c1	Nerilla and Burugupalli	366	0.03
26	SDn6c1	Muttaram and Edlapur	5495	0.45
27	SDn8c1	Edlapur and Muttaram	8725	0.72
28	SDn8d1	Edlapur and Muttaram	452	0.04
29	SDu4c1	Kataram and Rathpalli	25947	2.15
30	SDu4d1	Parupalli and Kataram	4544	0.38
31	SDv2a1	Rathpalli	20906	1.73
32	SDv2a2	Ramagundam and Peddapalli	22020	1.82
33	SDv2b1	Nasturpalli, Muthyala and Peddapalli	9084	0.75
34	SDv2c1	Nasturpalli and Muthyala	21166	1.75
35	SDv2d1	Rathpalli	2601	0.22
36	SDv3c1	Muthyala and Nasturpalli	73428	6.08
37	SDw2a1	Srinivasapalli	28572	2.37
38	Canal		205	0.02
39	Habitation		39635	3.28
40	Mines		1948	0.16
41	Quarry		78	0.01
42	Reservoir		94865	7.85
43	River		52244	4.33
44	ROC		1081	0.09
45	Stream		1466	0.12
46	Tank		34652	2.87
	Grand Total		1207871	100

10. Distribution of area under different landscape and Physiographic classes

Landscape	Physiography	Area(ha)	Area (%)
Alluvium	Alluvial plains	50244	4.16
Basalt	Undifferentiated hills side slope	603	0.05
Dolorite	Inselberg / dykes / butes	1507	0.12
Granite	Lower pediplains	44242	3.66
	Pediments	47155	3.90
	Undifferentiated hills side slope	57779	4.78
	Upper pediplains	555589	46.00
Limestone	Pediments	953	0.08
	Undifferentiated hills side slope	319	0.03
Quartzite	Pediments	366	0.03
Sandstone	Lower pediplains	28572	2.37
	Pediments	30491	2.52
	Undifferentiated hills side slope	14672	1.21
	Upper pediplains	149205	12.35
	Misc.(Canal, River, Reservoir, Hab., ROC, Quarry etc.)	226174	18.73
	Total	1207871	100.00

11. Distribution of area under different Land use classes

Sl. No.	Land use Classes	Area (ha)	Area (%)
1	Agriculture	581502	48.14
2	Forest	235550	19.50
3	Open scrub	136565	11.31
4	Plantation	28081	2.32
5	Misc.(Canal, River, Reservoir, Hab., ROC, Quarry etc.)	226174	18.73
	Total	1207871	100.00

12. Distribution of area under different Erosion classes

Sl. No.	Erosion Classes	Area (ha)	Area (%)
1	Slight to moderate erosion	114141	9.45
2	Moderate erosion	511157	42.32
3	Moderate to severe erosion	256729	21.25
4	Severe water erosion	99670	8.25
5	Misc.(Canal, River, Reservoir, Hab., ROC, Quarry etc.)	226174	18.73
	Total	1207871	100.00

13. Distribution of area under different Slope classes

Sl. No.	Slope Classes	Area (ha)	Area (%)
1	Nearly level	50244	4.16
2	Nearly level to very gently sloping	612863	50.73
3	Very gently sloping to gently sloping	164745	13.64
4	Gently sloping to moderately sloping	80472	6.66
5	Strongly sloping to moderately steep	31300	2.59
6	Steep to very steep	42073	3.48
7.	Misc.(Canal, River, Reservoir, Hab., ROC, Quarry etc.)	226174	18.73
	Total	1207871	100.00

14. Distribution of area under different Depth classes

Sl. No.	Depth Classes	Area (ha)	Area (%)
1	Very deep	251708	20.84
2	Deep to very deep	92427	7.65
3	Deep	25742	2.13
4	Moderately deep	44242	3.66
5	Shallow to moderately deep	448857	37.16
6	Shallow	26390	2.18
7	Very shallow	33818	2.80
8	Very shallow to shallow	58513	4.84
9.	Misc.(Canal, River, Reservoir, Hab., ROC, Quarry etc.)	226174	18.73
	Total	1207871	100.00

SALIENT FEATURES:

- ❖ Karimnagar district falls in six major physiographic sub divisions namely, alluvial plains, lower pediplains, upper pediplains, pediments, dykes and Undifferentiated hills side slopes.
- ❖ Majority of the district area falls under upper pediplain physiography followed by lower pediplains.
- ❖ Agriculture is dominant in the district and occupies 581502 ha (48.14%) followed by forest 235550 ha (19.50%) and open scrub accounting 136565 ha (11.31 %).
- ❖ Most of the area of the district comes under nearly level to very gently sloping slope class (50.73 percent) followed by very gently sloping to gently sloping class (13.64 percent).
- ❖ Majority of the district area is under shallow to moderately deep soils (37.16%) followed by very deep soils (20.84%).
- ❖ Most of the area of district is affected by moderate erosion (42.32) followed by moderate to severe erosion (21.25%).
- ❖ As per the Land Capability Classification, LCC class III-IV dominated accounting to 36.58 per cent followed by class III accounting 17.84 percent.
- ❖ As per the Soil irrigation potential, 27.48 per cent area has moderate to severe soil limitations for sustained use under irrigation whereas 11.61 per cent lands have severe soil limitations, 19.26 per cent lands have severe to very severe soil limitations and 3.43 percent under very severe soil limitation for sustained use under irrigation.
- ❖ As per the Land Irrigability Class, 32.37 per cent lands are moderate to severe soil limitations for sustained use under irrigation and 16.37 percent are marginal for sustained use under irrigation because of severe to very severe limitations followed by 7.92 per cent lands that have severe limitations for sustained use under irrigation.
- ❖ Four Orders have been identified in the district which are taxonomically classified under Alfisols, Inceptisols, Entisols and Vertisols soil orders.

HOW TO USE SOIL RESOURCE MAPPING REPORT

This report embodies the results of the Soil Resource Mapping of Karimnagar district of Telangana state and furnishes information on the geographical setting of the state vis-à-vis location, extent, physiography, relief, drainage, climate, geology, natural vegetation, agriculture, land use and soils.

The report contains information on interpretative grouping of soils and land resources which includes land capability classification providing suggestive management related guidelines; soil suitability groupings and crop recommendations which in turn provides a scientific database for horticulture, forest, forage and grassland development; water harvesting, water storage and water management. The soils of the area have also been differentiated as per soil characteristics based on Soil Taxonomy (USDA) to enable the users for scientific land use planning.

Karimnagar district spreads over an area of 12,07,871 ha and is covered by thirty three Survey of India toposheets on 1:50,000 scale and the same have been used as reference maps for the survey. Satellite data (NRSC Imagery) has been used for image interpretation and soil mapping. In the report each soil mapping unit is marked by a symbol i.e. GRn6d1 (Granite Geology; undifferentiated hills side slope, 10-25 per cent slope; open scrub land use; soil association, which means the area has dominance of Bhimaram in association with Rudrangi). Each soil association is restricted to a maximum of three soil found within concerned soil mapping unit.

For the use of the soil resource report, first user needs to locate the area of interest on the map and note down the soil mapping units. Permanent features such as road, stream, lakes and village habitation etc. shown on the map will help user to locate the area of interest on the map. For the detailed information on soil mapping unit in respect of soil in the area of interest, its extent, present and proposed land uses reference may be made to chapter:- 4, 5 and Appendix-I and II.

The symbols used in the soil mapping unit represents the five levels of mapping i.e. GRn6d1 may be referred as follows:

GR	Granite	:	Landscape
n	Undifferentiated hills side slope	:	Physiography
6	10-25 % Slope	:	Slope classes
d	Open scrub	:	Land use
1	Soil association		

Any comments and/or suggestions on the report are welcome. For any additional information and clarification, further correspondence or personal contact may be established with:

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