

**INVENTORY OF SOIL & LAND RESOURCES MAPPING OF
WARANGAL DISTRICT OF TELANGANA STATE USING REMOTE
SENSING TECHNIQUES**

ABSTRACT

1.	Survey Area	:	Warangal district, Telangana State
2.	Geographical Extent	:	78°50 ' and 80 °40 'East Longitudes 17 ° 20' and 18 °32' N North Latitudes
3.	Agro-climatic Region	:	Southern Plateau and Hills region-X
4.	Total Geographical Area	:	12,84,322 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	:	08 th to 25 th September, 2011 and 20 th June to 26 th July, 2012

9. Mapping unit wise soil association and their extent.

S. No.	MAPPING UNIT	SOIL ASSOCIATION	AREA
1	ALb1a1	Eturnagaram-Patelguda	54147
2	ALb2a1	Cherial-Eturnagaram	332
3	ALb2d1	Patelguda-Cherial	235
4	DLn6c1	Jaffargarh-Peddapahad	767
5	DLn6d1	Jaffargarh-Peddapahad	882
6	DLn8c1	Peddapahad-Jaffargarh	3284
7	DLu4c1	Polaram-Abbapur	10585
8	DLu4d1	Abbapur-Polaram	13901
9	DLv3a1	Chelukamma-Kottapalli	9606
10	DLv3b1	Kottapalli-Chelukamma	378
11	DLv3c1	Polaram-Abbapur-Kottapalli	18532
12	GGg2d1	Nellutla-Nekkonda	380
13	GGu4d1	Katkur-Jangaon	3091
14	GGv2a1	Jhallargarh-Raparathi	39362
15	GGv2a2	Vaddichora-Raparathi-Chinnaripet	26693
16	GGv3a1	Chinnaripet-Narayanapur	128351
17	GGv3a2	Narayanapur-Chinnaripet	887
18	GGv3c1	Raparathi-Shameerpet	20113
19	GGv3d1	Raparathi-Shameerpet	78485
20	GGv3d2	Jangaon-Raparathi	85671

21	GGw2a1	Nekkonda-Nellutla	87167
22	GGw2a2	Nekkonda-Kadavergu	113275
23	GGw2a3	Kadavergu-Nekkonda-Nellutla	107325
24	GRn6c1	Medikonda	5662
25	GRn6d1	Medikonda	4744
26	GRn8d1	Medikonda	3133
27	SDn6c1	Rampur-Ramapur	40117
28	SDn8c1	Ramapur-Rampur	45002
29	SDu4c1	Arepalli-Kalikode	45973
30	SDu4d1	Kalikode-Arepalli	1591
31	SDv3a1	Ganapur-Mulugu	12924
32	SDv3a2	Mulugu-Ganapur	13327
33	SDv3b1	Ganapur-Arepalli	5188
34	SDv3c1	Arepalli-Ganapur	134993
35	SDw2a1	Koyagudem-Mated	34236
36	SDw2c1	Mated-Koyagudem	2879
37	SHv3a1	Govindapuram-Kottagudem	10941
38	SHv3c1	Kottagudem-Govindapuram	26201
39	SHw1a1	Narasampet-Narsapur	15724
40	SHw2a1	Narsapur-Narasampet	2699
41	Misc.	Aerodrome, Canal, Habitation, Reservoir, River, ROC, Tank etc.	75539
		TOTAL	1284322

SALIENT FEATURES:

- ❖ Agriculture has dominant area in the district and occupied 6, 56,996 ha (51.2%) followed by forest area 3, 54,108 ha (27.6%).
- ❖ Out of the total area, about 52 per cent area is suitable for cultivation and qualified for moderately good to good land with moderate limitations.
- ❖ As per the Land capability classification, LCC class II dominated accounting to 25.3 per cent followed by II-III (19.1%) and III (8.1%).
- ❖ As per the Soil irrigation potential, 29.5 per cent area has moderate soil limitations for sustained use under irrigation; whereas 28.6 per cent lands that have severe soil limitations and 8.4 per cent lands under very severe soil limitation for sustained use under irrigation.
- ❖ As per the Land Irrigability Class, 32.8 per cent lands have severe limitations for sustained use under irrigation followed by 25.2 per cent lands have moderate limitations with 8.1 per cent lands are marginally suitable for sustained use under irrigation due to very severe limitation.
- ❖ Most of the area comes under taxonomically classified soil order Inceptisols followed by Entisols, Vertisols and Alfisols respectively.
- ❖ The survey area is dominated by very gently sloping to gently sloping lands (32.3%), whereas gently sloping to moderately sloping lands accounts for 42.5 per cent of the area.
- ❖ The area under very deep soils is 31.1 percent followed by moderately deep to deep soils is 24.3 per cent and shallow to moderately deep soils covering 20.6 per cent of the total area of the district.
- ❖ Nearly 61.4 percent of the area is affected by moderate erosion with 32.1 per cent area under none to slight water erosion with mere 1 percent under severe erosion.

HOW TO USE SOIL RESOURCE MAPPING REPORT

This report embodies the results of the Soil Resource Mapping of Warangal 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.

Warangal District spreads over an area of 12,84,322 ha and for administrative purposes, the district is divided into five revenue divisions and 51 mandals. The district is covered by thirty two 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. DLn6d1 (Dolorite Geology; undifferentiated hills side slope, 10-25 per cent slope; openscrub land use; soil series association, which means the area has dominance of Abbapur series in association with Polaram series). Each soil association is restricted to a maximum of three soil series 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 series 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. DLn6d1 may be referred as follows:

DL	Dolorite	:	Landscape
n	Undifferentiated hills side slope	:	Physiography
6	10-25 % Slope	:	Slope classes
d	Openscrub	:	Land use
1	Soil series 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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