
**Inventory of Soil & Land Resources of Chittoor district,
Andhra Pradesh State Using Remote Sensing Techniques**

ABSTRACT

1.	Survey Area	:	Chittoor district
2.	Geographical Extent	:	78° 05' 46" to 80° 05' 50" East longitude 12° 35' 42" to 13° 59' 05" North latitude
3.	Total Area	:	15, 16,249 ha.
4.	Agro-Climatic Region	:	Zone No. X, Southern plateau and hill region
5.	Kind of Survey	:	Soil Resource Mapping using Remote Sensing Techniques
6	Base Map	:	LISS-III, IRS-1D Geo-coded satellite Imagery SOI Toposheets
7.	Scale of Mapping	:	1:50,000
8.	Period of Survey	:	October 2009, May-June 2010 & November 2010

9. Mapping unit wise Soil association and their extent:

S.No.	Mapping Unit	Soil Series Association	Area (ha)	%
1	ALg2a1	Annur-Kottagunta	3347	0.2
2	BAn6c1	Kothala-Siddu konda	81165	5.4
3	BAn8c1	Siddu konda-Kothala	23182	1.5
4	BAu4c1	Chinnabodi palle-Danduvvari palle	50623	3.3
5	BAv3a1	Kotta palle-Danduvvari palle	336478	22.2
6	GGn6c1	Manjula konda-Mala palle	6494	0.4
7	GGn6d1	Tippasamudram-Mala palle	22454	1.5
8	GGn8c1	Mala palle-Manjula konda-Tippasamudram	24334	1.6
9	GGn8d1	Tippasamudram-Mala palle	13352	0.9
10	GGu4a1	Madana palle-Adavi palle	305361	20.1
11	GGu4c1	Kottapeta-Venkatapuram	23687	1.6
12	GGu4d1	Kottapeta-Venkatapuram	105124	6.9
13	GGv3a1	Adavi palle-Madana palle-Ayyapparaju palle	33976	2.2
14	GGv3c1	Venkatapuram-Kottapeta	4031	0.3
15	GGv3d1	Venkatapuram-Kottapeta	7068	0.5
16	GGw2a1	Ayyapparaju palle-Adavi palle	3599	0.2
17	GRv3a1	Guruvareddi palle	53091	3.5
18	GRv3c1	Chikkana palle-Valligatla	74337	4.9
19	GRv3d1	Vana palle-Nellimani konda	2281	0.2
20	GRw2a1	Dasara palle-Vana palle	143069	9.4
21	LAv3a1	Panaba khandriga-Pangooru-Kodur	8519	0.6

22	Lav3c1	Kodur-Pangooru	61378	4.0
23	LAv3d1	Pangooru-Kodur	7165	0.5
24	SDn6c1	Nagari-Kannavaram	3590	0.2
25	SDn8c1	Kannavaram-Nagari	5565	0.4
26	SDu4c1	Chenneri-Perdam palle	5500	0.4
27	SDv3c1	Perdam palle-Chenneri	12010	0.8
28	SHn6c1	Srinivasa Nagaram-Anjaneyapuram	49516	3.3
29	SHn8c1	Anjaneyapuram-Srinivasa Nagaram	1738	0.1
30	SHv3c1	Napier south-Krishnapuram	7604	0.5
31	Rock Out Crop (e)		3986.00	0.26
32	Habitation (f)		9705.00	0.64
33	Water Body (g)		10022.00	0.66
34	River (g)		12898.00	0.85
Total			15,16,249	100

10. Salient Features:

- Granite gneiss is the major landscape accounting 36 percentage with Basalt 32 percentage followed by Granite, Laterite, Alluvium, Shale and sandstone.
- Physiography wise upper pediplain occupies 40 percentage, pediment 32 percentage with hillside slopes 15percentage and lower pediplains 1.7 percentage only.
- Majority of the area in the district is in very gently to gently sloping lands (40 percentage) followed by gently to moderately sloping lands(32 percentage), nearly leveled lands (10 percentage) and steep to very steep sloping lands (10 percentage).
- Agriculture and forest occupy 32 percentage of the district with plantation 16 percentage and scrubs 15 percentage.
- Soils found in the district are deep (31 percentage), moderately deep (43 percentage), very deep (10 percentage) and shallow (13 percentage).
- Nearly 23 percentage of the area is under moderate to severe erosion followed by slight to moderate erosion 43 percentage and moderate erosion 21 percentage.
- Only 10 percentage of the district area is moderately managed with majority of the area under poor to unmanaged condition.
- Land capability wise 49.7 percentage of the area is under Class-III, 9.9 percentage under II, with 28.7 percentage under forest.
- Only 30 percentage area classified under severe soil limitation for irrigation and 27 percentage area under lands that are marginal for sustained use under irrigation because of very severe limitations
- 46 percentage of the area is classified under moderately high runoff potential with 14 percentage under slight runoff potential.

HOW TO USE SOIL RESOURCE MAPPING REPORT

This report contains the results of the Soil Resource mapping of Chittoor district 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.

Other information provided in this report comprises interpretative grouping of soils and land resource provides suggestive management related guidelines on land capability classes; soil suitability groupings and recommended crops; horticulture development; forest, forage and grassland development; water harvesting, water storage and water management. The soils of the area have also been differencecated as per soil characterizes to enable the users for scientific land use planning and classified based on soil Taxonomy (USDA).

Chittoor spreads over an area of 15, 16,249 hectare. The state is covered by thirty eight SOI toposheet on the scale of 1:50,000 and the same have been used as reference maps for the survey. IRS LISS III satellite data has been use for soil mapping as base. In the report each of soil mapping unit is marked by symbol i.e. GGv3a1 (Granite Gneiss Geology; Upper Pedi plain; 1-5 % slopes; agriculture land use; soil series association, which mean the area has dominance of Adavi palle series in association with Madana palle & Ayyapparaju palle).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-3, 4, 5 and Appendix-I and II.

The symbols used in the soil mapping unit represents the five levels of mapping i.e. GGv3a1 may be referred as follows:

GG	Granite Gneiss	- Landscape
v	Upper Pedi Plain	- Physiography
6	1-5 % Slope	- Slope classes
a	Agriculture	- 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 –

<p>The Chief soil Survey Officer, Soil and Land Use Survey of India IARI Buildings, New Delhi 110 012 Phone: +91-11-25841263 / 25849486 Fax : +91-11-25843811 Email: csso-slusi@nic.in</p>	<p>The Soil Survey Officer Soil and Land Use Survey of India Survey No.207, Kodigehalli, Vidyaranya pura (P), Bangalore - 560 097. Phone : 080-23640761, 080-23641119. Fax : 080-23640751, Email: soilkar@nic.in</p>
<p>Log on to: http://slusi.dacnet.nic.in</p>	