

Report On Detailed Soil and Land use Survey of Aj9s, Aj9u, Aj9v, Aj9x, Aj9y, Aj10h, and Aj10j Subwatersheds of Aj Subcatchment under Nagarjunsagar Catchment (RVP) in Kundgol, Navalgund, Hubli Taluks of Dharwad District and in Shiggaon and Shirahatti Taluks of Haveri and Gadag Districts of Karnataka State

ABSTRACT

1. **Surveyed area** : Aj9s, Aj9u, Aj9v, Aj9x, Aj9y, Aj10h, and Aj10j Subwatersheds of Aj Subcatchment under Nagarjunsagar Catchment in Kundgol, Navalgund, Hubli Taluks of Dharwad District and in Shiggaon and Shirahatti Taluks of Haveri and Gadag District of Karnataka State.
2. **Total area mapped and surveyed** : 31,592 hectares.
3. **Kind of survey** : Detailed Soil and Land Use Survey.
4. **Period of survey** : From 9th February, 2011 to 27th March, 2011
5. **No. of villages in the surveyed area** : 41 (Forty one)
6. **Base map used** : Enlarged Quadrant wise Toposheets on 1:12,500 Scale and IRS-P6, LISS IV Satellite Imageries
7. **Agro climatic zone** : Southern Plateau and Hill Region (Zone.10).
8. **Sub watersheds surveyed and corresponding codes as per new Karnataka Microwatershed Atlas**

Sl. No	Subwatershed codes	Subwatershed codes as per new Karnataka MWA	Micro watersheds covered in the subwatershed as per Karnataka MWA
1.	Aj9s	4D5B4f (part)	4D5B4f1, 4D5B4f2, 4D5B4f3
2.	Aj9u	4D5B4g(part)	4D5B4g1, 4D5B4g2, 4D5B4g3
3.	Aj9v	4D5B4h (part)	4D5B4g2, 4D5B4g5, 4D5B4h5, 4D5B4h6
4.	Aj9x	4D5B4j	4D5B4j1, 4D5B4j2, 4D5B4j3
5.	Aj9y	4D5B4k (part)	4D5B4k1, 4D5B4k2 (part), 4D5B4k4 (part)
6.	Aj10h	4D5B4n	4D5B4n1, 4D5B4n2, 4D5B4n3, 4D5B4n4
7.	Aj10j	4D5B4p	4D5B4p1, 4D5B4p2, 4D5B4p3, 4D5B4p4, 4D5B4p5

9. Soil series mapped and sub watershed area under each soil series:

Sl.No	Land capability classes	Total area (Ha)	Percentage	Soil Series
1	II	21470	68.0	Kallur, Lakshmapur, Thimmapur.
2	III	4531	14.3	Kallur, Thimmapur.
3	IV	4693	14.9	Kallur, Thimmapur, Gudda.
4	Misc. lands	898	2.8	Habitation, River/Stream, Tank/Ponds.
	Total	31592	100	

10. Area under different land capability classes.

Sl. No.	Name of the Soil series	Sub-watershed code							Total area	%
		Aj9s	Aj9u	Aj9v	Aj9x	Aj9y	Aj10h	Aj10j		
1	Gudda	-	-	07	17	09	-	-	33	0.1
2	Kallur	133	134	155	200	52	143	331	1148	3.6
3	Lakshmapur	-	-	283	-	-	-	246	529	1.8
4	Thimmapur	4495	4646	4248	3757	2621	3827	5390	28984	91.7
5	Misc.	142	117	136	126	80	79	218	898	2.8
	Grand Total	4770	4897	4829	4100	2762	4049	6185	31592	100
	Percentage	15.0	15.5	15.4	13.0	8.7	12.8	19.6	100	

11. Sub watershed wise area under different erosion classes and their percentage

Sl. No.	Subwatershed	Total area in hect	Misc. Lands	Soil Erosion		
				1	2	3
				Slight or none	Moderate	Severe
1	Aj9s	4770	142	72	3756	800
2	Aj9u	4897	117	15	3831	934
3	Aj9v	4829	136	270	3639	784
4	Aj9x	4100	126	52	3278	644
5	Aj9y	2762	80		2311	371
6	Aj10h	4049	79		3377	593
7	Aj10j	6185	218	265	5168	534
	Total	31592	898	674	25360	4660
	Percentage	100	2.8	2.1	80.3	14.8

12. Specific problematic and Non problematic areas in the surveyed subwatersheds of Aj Sub catchment:

Sl. No.	Specific problems	Sub-watershed code						Total area (ha)	
		Aj9s	Aj9u	Aj9v	Aj9x	Aj9y	Aj10h		Aj10j
1	Moderate soil erosion on 10-25% elevated sloping lands on Shallow deep soils	-	-	07	17	09	-	-	33
2	Moderate soil erosion on 3-5% sloping lands on very deep clayey textured soils	777	710	551	569	408	727	789	4531
3	Moderate soil erosion on 1-3% sloping lands on very deep clayey textured soils	2979	3121	3081	2692	1894	2650	4379	20796
4	Severe soil erosion on 1-5% sloping lands on very deep clayey textured soils	800	934	784	644	371	593	534	4660
5	Gravelliness and Rockiness surface/phase, on 10-25% sloping lands	-	-	07	17	09	-	-	33
6	Shallowness on 10-25% sloping lands	-	-	07	17	09	-	-	33
	Total problematic area (ha)	4556	4765	4437	3956	2700	3970	5702	30086
7.	None to slight erosion on 1-3% sloping lands on very deep, well managed clayey texture soils	72	15	270	52	-	-	265	674
8.	Miscellaneous lands	142	117	136	126	80	79	218	898
	Total Non-problematic areas on soil erosion (ha)	214	132	406	178	80	79	483	1572

9. Total problematic area in the surveyed subwatersheds : 30,086 hect.

10. Total Non-Problematic area in the surveyed subwatersheds : 1572 hect.

Problematic wise total area : 31658 hect.

7 Subwatersheds total area : 31,592 hect.

(Note: An area of 66 hectares is having more than one inherent problem, so this 66 hectares accounted only once with the total surveyed area of 31,592 hectares)

12. Salient features:

- In all four Soil Series have been established namely Gudda, Kallur, Lakshmapur and Thimmapur.
- Of the total soil mapped area of 30,661 hect, Thimmapur series covers maximum area of 28,984 hectares (91.7%) which is followed by Kallur series (3.6%), Lakshmapur series (1.8%) and Gudda series (0.1%) respectively.
- An area of 21,470 hectares (68%) of the total surveyed area falls under land capability class II while an area of 4531 hectares (14.3%) and 4693 hectares (14.9%) falls under land capability class III and IV respectively.
- An area of 4660 hectares (14.8% of the total surveyed area) falls under severe erosion hazard.

HOW TO USE SOIL SURVEY REPORT

This report on detailed soil and land use survey of Aj9s, Aj9u, Aj9v, Aj9x, Aj9y, Aj10h, and Aj10h Subwatersheds of Aj Sub catchment under Nagarjunsagar Catchment, Kundgol, Naval Gund, Hubli Taluks of Dharwad District, Shiggaon and Shirahatti Taluks of Haveri and Gadag District of North - Karnataka State, contains detailed information about different soils of the surveyed subwatersheds area, which could be used for various purposes viz. agro based, land use planning for proper utilization of natural resources for specific purpose and at the same time sustaining the available resources for fugitive use. It is useful in providing information on soil and water management programs, soil conservation and watershed management programs and practices etc. the requisite information for desired locality could be obtained from the report as follows:

First, identify and locate the area of interest on the soil map which is appended along with this report and note the soil-mapping units enclosed by the soil boundary with the help of permanent cart tracks features such as roads, railway tracks, ponds, lakes, reservoirs, streams, rivers, village site, temples and revenue survey number of fields etc. are shown on the maps.

In the soil map, each soil-mapping unit is marked by a mapping symbol, which refers to a particular kind of soil. For example in this report the soil mapping unit having mapping symbol, T5r B2 indicates abbreviated details

- a) Abbreviated name of soil series 'T' for Thimmapur
- b) Soil depth '5' for very deep soil depth (more than 100 cm.)
- c) Soil texture 'r' for clay surface texture
- d) Slope class 'B' for 1-3% slope and
- e) Erosion class '2' for moderate erosion

For detailed information on soil series, profile description and other related soil characteristics refer to the **Chapter No. 7** entitled "Soils of the Area" and in "Description of representative pedons" in **Appendix II**. Soil classification of the soils of the area is done according to the "Soil Taxonomy" (USDA) 1999 and has been provided in **Table 12**.

The factual and precise subwatersheds wise, and mapping unit wise information about the soil mapping units and its physiographic position, predominant slope, present land use, and soil conservation status and measures adopted and land capability units has been given in Appendix No. VI.

In **Appendix I** entitled as “Guide to soil mapping units” multipurpose interpretation of each soil mapping unit is presented. Mapping units mapped in the surveyed area have been listed along with respective description. Furthermore this provides information on area of mapping unit in each subwatershed followed by the interpretation with respect of land capability units, soil and land irrigability classification, paddy soil grouping and hydrological soil groupings. This table readily provides information on soil and land characteristics and their use potential at a glance thus can be very helpful.

In Chapter 7.0 section 7.1 on land capability classification, two types of problems viz. 1) Inherent problem and 2) improvable problem /correctable problems have been listed for each of the land capability unit mapped along with the recommendations for soil conservation, treatment needs and crop production. These recommendations are brief and suggestive but are adequate for broad level watershed management planning. For specific planning and potential for a particular land use of any site or area of interest the user agencies can use their local experiences and knowledge about the area and may make necessary modifications as warranted. General recommendations for the soil and water conservation have been given in **Chapter 8** “General recommendations for soil conservation and crop production”.

For any suggestion, comment, or clarification further correspondence/personal contact is to be established with

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