

Detailed Soil Survey and Land Use plan of 5F2C7r1, 5F2C7s1, 5F2C7t1, 5F2C7u1 and 5F2C7u2 Micro Watersheds, Sabarmati Catchment Non RVP, District Aravali, Gujarat and District Dungarpur and Udaipur, Rajasthan.

A B S T R A C T

1. **Surveyed Area:** 5F2C7r1, 5F2C7s1, 5F2C7t1, 5F2C7u1 and 5F2C7u2 Micro Watersheds, Sabarmati Catchment Non RVP (FPR), District Aravali, Gujarat and District Dungarpur and Udaipur, Rajasthan.
2. **Location:** The microwatersheds lies between 23°41' to 23°56' N Latitude and 73°24' to 73°30' E Longitude.
3. **Total Surveyed Area:** 14,567 ha.
4. **Number of Villages:** 48
5. **Type of Survey:** Detailed Soil Survey.
6. **Period of Survey:** February, 2014 to March, 2014
7. **Agro-climatic Zone:** 13 (Gujarat Plains & hill Region)
8. **Base map:**
 1. SOI toposheet (1:50,000)
 2. High resolution satellite image (1:12,500)

9. Distribution of Soil Series and their Extent of Area

Sl. No	Series Name	No. of Mapping Units	Total Area (ha)	Percentage (%)
1.	Eshwarpur	1	1676	11.5
2.	Gada	1	465	3.2
3.	Karcha	1	125	0.9
4.	Meshwo	1	105	0.7
5.	Pallisoda	1	187	1.3
6.	Rangpur	3	1224	8.4
7.	Talaya	1	276	1.9
8.	Vasa	7	10119	69.4
	Misc.	-	390	2.7
Total		16	14567	100.0

10. Area under different Soil Depth with percentage

Soil depth class	Area (ha)	Percentage (%)
Shallow	11982	82.2
Moderately deep	125	0.9
Deep	465	3.2
Very deep	1605	11.0
Misc.	390	2.7
Total	14567	100.0

11. Area under different Erosion Classes with their percentage

Erosion	Area (ha)	Percentage (%)
None to slight	2070	14.2
Moderate	1801	12.4
Severe	10306	70.7
Misc.	390	2.7
Total	14567	100.0

12. Area under various Land Capability Classes & their percentage

S. No	Land capability class	Area (ha)	Percentage (%)
1.	II-1	777	5.3
2.	II-2	1293	8.8
3.	IVes-1	125	0.9
6.	IV es-2	187	1.3
7.	VI es-1	5949	40.8
8.	VIIes-1	3593	24.7
9.	Forest	2253	15.5
	Misc.	390	2.7
	Total	14567	100.0

Salient Points:

- Out of the total surveyed area of 14,567 ha, 11,982 ha (82.2%) is occupied by shallow soils, followed by 125 ha (0.9%) by moderately deep and 2,070 ha (14.2%) by deep to very deep soils.
- Around 11,795 ha (81.0%) area falls under strong to steep slopes (hilly area). 1605 ha (11.0%) is under undulating terrain and the remaining 777 ha (5.3%) is under nearly level to very gently sloping topography.
- Out of the total surveyed area of 14,567 ha, 10,306 ha (70.7%) area suffers from severe erosion which needs immediate attention for soil conservation measures.
- Nearly 2070 ha (14.21%) area is well managed and covered under agriculture which needs assured irrigation besides effective agronomic practices.
- Land not suitable for cultivation & suitable for pasture and forestry with major limitations i.e. LCC VII covers the area 3593 (24.7%) followed by VI 5949 ha (40.8%)

How to use Soil Survey Report

The present report furnishes a detailed account of various characteristics of the surveyed area like physiography, relief, geology, climate, natural vegetation and the soils. Detailed description of the soil series recognized in the area and interpretation of different soil mapping units for various applied aspects of agricultural development such as land use plans, soil and water management, soil conservation plan, identification of new area for afforestation, engineering application, eco-restoration have been given in different chapters. Different problems of the area have been depicted and corrective measures are also suggested.

In order to use the report, the user may locate the area of the interest on the soil map appended with the report. On the map, each soil mapping unit has been delineated and represented by symbolic expression that deals with technical description. The abbreviated symbol of mapping unit given information about the name of soil series, soil depth, soil texture, slope gradient, erosion status, land surface features like gravelliness, stoniness and rockiness.

On the soil map, each soil mapping unit is marked by a symbolic expression, viz., VS2hH3GS (F)

- VS - is the abbreviated name for the soil series, Vasa.
- 2 - indicates depth of the soil i.e. Shallow soils (depth class).
- h - represents soil texture i.e. gravelly clay loam (textural class)
- H - symbolizes for the soil slope class, say slope 33-50% (slope class).
- 3 - represents soil erosion, severe erosion (erosion class)
- GS - indicates for gravelly and stony phases.
- F - indicates for land use (forest).

In the soil mapping unit gravelly textural class indicated by underlining the texture symbol, 'gravelly' and 'stony' phases are indicated by symbols G & S, respectively.

For multipurpose interpretation of the mapping units, user can refer to the "Guide to Soil Mapping Units" (Appendix-I) where in the entire soil mapping units have been listed with their description under microwatershed and their interpretative groupings. This table provides comprehensive information on important soil and land characteristics and their potential uses.

The table on series-wise (Table-6) and microwatershed wise (Table 7) provide data on distribution of area under different soil depths, slopes and erosion phases and is useful to obtain information on soil and land characteristics.

The table on series-wise (Table 9) and microwatershed wise (Table 10) distribution of area under different land capability units read with chapter on "Land

capability Classification” is useful for obtaining information on the potential, problems and conservation treatment needs of the survey area.

The detailed information on soil series, profile description and other soil characteristics, reference can be made to *Chapter 4* “Soils of the Area” and Appendix – II. Micro watershed wise mapping units along with the area extent, present land use & management status are given in Appendix-II.

The symbols used in the report and the analytical method used for soil analysis are also illustrated in Appendix IV & V, respectively.

The recommendations in this report are brief and suggestive and broad in nature for systematic watershed management planning.

Any comments and suggestion on this report are welcome. For any other details and clarification, contact or correspondence may be established with:-

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