

साबरमती आवाह क्षेत्र (नदी घाटी परियोजना) सूक्ष्म जल विभाजकों 5F2C2p1 to p6, 5F2C3a1 to a6, 5F2C3b4 to b7 और 5F2C3c1 to c2 तालुका- मालपुर, जिला- साबरकांठा और तालुका-बालासिनोर , जिला-खेड़ा, गुजरात की विस्तृत मृदा सर्वेक्षण एवं भूमि-उपयोग

सारांश

१. सर्वेक्षित क्षेत्र: : साबरमती आवाह क्षेत्र (नदी घाटी परियोजना) सूक्ष्म जल विभाजकों 5F2C2p1 to p6, 5F2C3a1 to a6, 5F2C3b4 to b7 और 5F2C3c1 to c2 तालुका- मालपुर , जिला- साबरकांठा और तालुका-बालासिनोर , जिला-खेड़ा, गुजरात की विस्तृत मृदा सर्वेक्षण एवं भूमि-उपयोग
२. भौगोलिक स्थिति : 23°10' to 23°22' उत्तर आक्षांश तथा 73°22' to 73°32' पूर्व देशांतर
३. कुलमान चित्रित तथा : 15,144 हे.
रिपोर्ट किया गया क्षेत्रफल
४. कुल सूक्ष्म जल विभाजक: 18
५. कुल गाँव : 56
६. सर्वेक्षण का प्रकार : विस्तृत मृदा सर्वेक्षण.
७. सर्वेक्षण की अवधि : दिसंबर, 2012 से जनवरी, 2013
८. कृषि जलवायु क्षेत्र : १३ (गुजरात मैदानी एवं पहाड़ी क्षेत्र)
९. आधार मानचित्र: : २. SOI टोपोशीट्स (१:५०,००० पैमाने पर)
३. डू इमेज (१:१२,५०० पैमाने पर)

९. मृदा श्रेणियाँ तथा उनके विस्तृत क्षेत्रफल का वर्गीकरण

अनु० नं.	मृदा श्रेणियों के नाम	मापी गई मृदा एकाई की संख्या	कुल क्षेत्रफल (हे०)	प्रतिशत (%)
१	बोरसद	7	3851	25.43
२	दाभडा	7	1701	11.24
३	हलोदर	2	1257	8.30
४	लिलिअम्बा	4	809	5.34
५	फूलपुर	6	2196	14.50
६	सुधिया	7	1000	6.60
७	त्रिकमपुर	2	324	2.14
८	वकोटा	3	2030	13.40
	अन्य		1976	13.05
	कुल	38	15144	100.00

१०. विभिन्न प्रकार के मृदाओं की गहराई तथा उनके प्रतिशत

मृदा गहराई श्रेणी	क्षेत्रफल (हे०)	प्रतिशत (%)
उथली	3196	21.10
मध्यम गहरी	1701	11.23
गहरी	2066	13.65
अति गहरी	6205	40.97
अन्य	1976	13.05
कुल	15144	100.00

११. विभिन्न क्षरण वर्गों का क्षेत्रफल तथा प्रतिशत

क्षरण	क्षेत्रफल (हे.)	प्रतिशत (%)
निम्न भू-क्षरण	3567	23.55
मध्यम भू-क्षरण	5693	37.59
तीव्र भू-क्षरण	3908	25.81
अन्य	1976	13.05
कुल	15144	100.00

१२. विभिन्न भूमि क्षमता वर्गों का क्षेत्रफल और प्रतिशत

अनु. नं	भूमि क्षमता वर्ग	क्षेत्रफल (हे.)	प्रतिशत (%)
1.	IIs-1	3567	23.55
2.	IIIe-1	1503	9.92
3.	IIIes-1	1553	10.25
4.	IIIes-2	1725	11.40
5.	IIIes-3	838	5.53
6.	IVes-1	985	6.50
7.	IVes-2	456	3.01
8.	VIes-1	87	0.57
9.	वन	2454	16.22
	अन्य	1976	13.05
	कुल	15144	100.0

प्रमुख बिंदु:

- कुल सर्वेक्षित क्षेत्र 15,144 हे . का लगभग 3,196 हे. (21.10%) भूमि कृषि बागवानी या चारागाह विकास के अंतर्गत आया है ।
- कुल सर्वेक्षित क्षेत्र 15,144 हे. का लगभग 6205 हे. (40.97%) अति गहरी, 2066 हे. (13.64%) गहरी तथा 1701 हे. (11.23%) के अंतर्गत आता है।
- कुल सर्वेक्षित क्षेत्र का लगभग 2196 हे. (14.50%) तीव्र से खड़ी ढलान , 577 हे. (3.81%) मध्यम ढलान और बाकी 10,395 हे. (68.64%) भूमि लगभग समतल से बहुत कम ढलान के अंतर्गत वर्गीकृत की गई है ।
- कुल सर्वेक्षित क्षेत्र 15,144 हे. का लगभग 3,908 हे. (25.81 %) भूमि जो कि अति तीव्र भू क्षरण से प्रभावित है , इस क्षेत्र में भू एवं जल संरक्षण करने की आवश्यकता है।
- कुल सर्वेक्षित क्षेत्र 15,144 हे. का लगभग 3567 हे . (23.55%) कृषि भूमि सुप्रबंधित है, जो कृषि के लिए उपयुक्त है तथा 2,454 हे. (15.11%) वन तथा 462 हे. (3.05%) चारागाह विकास के लिए सीमांत रूप से उपयुक्त है।

Detailed Soil Survey and Land Use plan of 5F2C2p1 to p6, 5F2C3a1 to a6, 5F2C3b4 to b7 and 5F2C3c1 to c2 Micro Watersheds, Sabarmati Catchment (Non RVP) Taluka- Malpur, District– Sabarkantha and Taluka- Balasinor, Distric- Khera, Gujarat.

A B S T R A C T

1. Surveyed Area	5F2C2p1 to p6, 5F2C3a1 to a6, 5F2C3b4 to b7 and 5F2C3c1 to c2 MicroWatersheds of Sabarmati Catchment Non RVP (FPR), Taluka- Malpur, District– Sabarkantha and Taluka- Balasinor, Distric- Khera, Gujarat State.
2. Location	Lies between 23°10' to 23°22' N Latitude And 73°22' to 73°32' E Longitude.
3. Total Surveyed Area	15,144 ha.
4. Number of micro watersheds	18
5. Number of Villages covered	56
6. Type of Survey	Detailed Soil Survey.
7. Period of Survey	December 2012 to January 2013.
8. Agro-climatic Zone	13 (Gujarat Plains & hill Region)
9. Base map	1. SOI toposheet (1:50,000) 2. High resolution satellite images (1:12,500)

10. Distribution of Soil Series and their Extent of Area

Sl. No	Series Name	No. of Mapping Units	Area (ha)	Area (%)
1.	Borsad	7	3851	25.43
2.	Dabhada	7	1701	11.24
3.	Halodar	2	1257	8.30
4.	Liliamba	4	809	5.34
5.	Phulpur	6	2196	14.50
6.	Sudhiya	7	1000	6.60
7.	Trikampur	2	324	2.14
8.	Wakota	3	2030	13.40
9.	Misc.		1976	13.05
TOTAL		38	15144	100.00

11. Area under different Soil Depth with percentage

Sl. No	Soil Depth Class	Area (ha)	Area (%)
1.	Shallow	3196	21.10
2.	Moderately deep	1701	11.23
3.	Deep	2066	13.65
4.	Very deep	6205	40.97
5.	Misc.	1976	13.05
TOTAL		15144	100.00

12. Area under different Erosion Classes with their percentage

Sl. No	Erosion Class	Area (ha)	Area (%)
1.	None to slight	3567	23.55
2.	Moderate	5693	37.59
3.	Severe	3908	25.81
4.	Misc.	1976	13.05
TOTAL		15144	100.00

13. Area under different Slope Classes with their percentage

Sl. No	Slope class	Area (ha)	Area (%)
1.	Very gently Slope (1-3%)	6523	43.07
2.	Gently slope (3-5%)	3872	25.57
3.	Moderately slope (5-10%)	99	0.65
4.	Moderately slope terracing (C(A)1)	478	3.16
5.	Strongly slope (10-15%)	2012	13.29
6.	Moderate steep slope(15-25%)	28	0.18
7.	Steep slope (25-33%)	156	1.03
8.	Misc.	1976	13.05
TOTAL		15144	100.00

14. Area under various Land Capability Classes & their percentage

S. No	Land capability class	Area (ha)	Area (%)
1.	IIs-1	3567	23.55
2.	IIIe-1	1503	9.92
3.	IIIes-1	1553	10.25
4.	IIIes-2	1725	11.40
5.	IIIes-3	838	5.53
6.	IVes-1	985	6.50
7.	IVes-2	456	3.01
8.	VIes-1	87	0.57
9.	Forest	2454	16.22
	Misc.	1976	13.05
	TOTAL	15144	100.0

Salient Features:

- 3,196 ha (21.10%) lands may be brought under agro-horticulture or pasture development out of total are 1,5144ha.
- Around 6205ha (40.97%) area fall under very deep depth soil soils followed by deep 2,066 ha (13.64%) and 1701 (11.23%) with moderately deep soils.
- Around 6,523 ha (43.07%) area is under very gently slope, an area of 3,971 ha (26.22%) is under gently slope, an area of 2,196 ha (14.50%) area falls under strong to steep slopes (hilly area) and the remaining 478ha (3.16%) is under moderately slope.
- Out of total surveyed area of 15,144 ha, an area of 3,908 ha (25.81%) suffers from severe erosion which needs immediate attention for soil conservation measures.
- Nearly 3567ha (23.55%) area is well managed and covered under agriculture which needs assured irrigation besides effective agronomic practices.
- Out of total surveyed area of 15,144 ha, 2,454 ha (16.20%) is under Forest and 462 ha (3.05%) under pasture land.

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., PH2hH3GS (F)

- PH - is the abbreviated name for the soil series, Phulpur.
- 2 - indicates depth of the soil i.e. Shallow soils (depth class).
- k - represents soil texture i.e. gravelly sandy clay loam (textural class)
- G - symbolizes for the soil slope class, say slope 25-33% (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-III**.

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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