

**Report on Detailed Soil Survey and Land Use of 2D2C6c6 & 8 , 2D2C6f6 , 2D2C6g1,2,4 & 5, 2D2C6j2 & 6, 2D2C6m2,3,4,6 &7, 2D2C6n4, 2D2C6q6, 2D2C6r2 & 3, 2D2C6s1 & 7, D2C6t1,3 & 5, 2D2C7p1,2,4 &7, 2D2C7q3 , 2D2C7r3,6 & 7, 2D2C7s3, 2D2C7t5 and 2D2C7u1,3,5 & 6 Micro-watersheds of Banas Catchment in Ajmer, Jaipur and Tonk Districts, Rajasthan state.**

**ABSTRACT**

- 1. Survey Area:** 2D2C6c6 & 8 , 2D2C6f6 , 2D2C6g1,2,4 & 5, 2D2C6j2 & 6 ,2D2C6m2,3,4,6 &7 , 2D2C6n4 , 2D2C6q6 , 2D2C6r2 & 3 , 2D2C6s1 & 7, 2D2C6t1,3 & 5, 2D2C7p1,2,4 &7 , 2D2C7q3 , 2D2C7r3,6 & 7 , 2D2C7s3, 2D2C7t5 and 2D2C7u1, 3, 5 & 6 Micro-watersheds of Banas Catchment in Ajmer, Jaipur and Tonk Districts, Rajasthan state.
- 2. Geographical Location:** Lies between 26<sup>0</sup>15'0'' to 30<sup>0</sup>45'0'' N Latitude  
And 74<sup>0</sup>50'0'' to 75<sup>0</sup>15'0'' E Longitude
- 3. Type of survey:** Detailed Soil Survey
- 4. Period of survey:** December, 2011 to February, 2012
- 5. Total Area Mapped:** 47967 ha.
- 6. Agro Climatic Region:** Zone-VII-Central Plateau and Hill region
- 7. Base material:** Google maps on 1; 12,500 scale and Survey of India Toposheets.
- 8. Name of Soil series and their extent:**

| <b>Sl No</b> | <b>Soil series</b>  | <b>No. of Mapping Units</b> | <b>Area (ha.)</b> | <b>Percentage</b> |
|--------------|---------------------|-----------------------------|-------------------|-------------------|
| 1            | Antraliya (A)       | 5                           | 740               | 1.5               |
| 2            | Badalov (B)         | 2                           | 845               | 1.8               |
| 3            | Balapura (BP)       | 5                           | 680               | 1.4               |
| 4            | Chhota Udaipur (CU) | 5                           | 2318              | 4.8               |
| 5            | Gaijee (G)          | 2                           | 210               | 0.4               |
| 6            | Ghall(GH)           | 5                           | 1145              | 2.4               |
| 7            | Godiyana (GD)       | 4                           | 1175              | 2.5               |
| 8            | Gordhanpura (GP)    | 5                           | 1057              | 2.2               |

|    |                     |   |              |              |
|----|---------------------|---|--------------|--------------|
| 9  | Hindoli (H)         | 5 | 2218         | 4.6          |
| 10 | Jorawarpura (J)     | 5 | 8085         | 16.9         |
| 11 | Kharwar (KH)        | 4 | 610          | 1.3          |
| 12 | Khera (K)           | 5 | 1490         | 3.1          |
| 13 | Kisanpura (KP)      | 2 | 630          | 1.3          |
| 14 | Ladera (L)          | 5 | 1600         | 3.3          |
| 15 | Lamba chhota (LC)   | 4 | 1005         | 2.1          |
| 16 | Lamba Harising (LH) | 1 | 395          | 0.8          |
| 17 | Laximipura (LP)     | 3 | 467          | 1.0          |
| 18 | Manyapura (MP)      | 4 | 2744         | 5.7          |
| 19 | Morla (ML)          | 7 | 3062         | 6.4          |
| 20 | Moti (MT)           | 4 | 655          | 1.4          |
| 21 | Mundoti (M)         | 8 | 6485         | 13.5         |
| 22 | Nalu (N)            | 4 | 1500         | 3.1          |
| 23 | Patan (P)           | 7 | 975          | 2.0          |
| 24 | Pathari (PA)        | 5 | 3295         | 6.9          |
| 25 | Satuwara (SW)       | 5 | 707          | 1.5          |
| 26 | Silora (S)          | 5 | 728          | 1.5          |
| 27 | Talamal (T)         | 2 | 190          | 0.4          |
| 28 | Udaipur (U)         | 5 | 1050         | 2.2          |
| 29 | Habitation (H)      |   | 1572         | 3.3          |
| 30 | Water Bodies (W)    |   | 334          | 0.7          |
|    | <b>Grant Total</b>  |   | <b>47967</b> | <b>100.0</b> |

### 9. Distribution of area under different Land Capability Classes:

| Sl. No | Land Capability Class | Name of Soil Series   | Area (ha.) | Percentage |
|--------|-----------------------|---|------------|------------|
| A      | Arable Land           |   |            |            |
|        | II                    | Balapura, Gaijee, Hindoli, Jorawarpura, Kharwar, Khera, Kisanpura, Ladera, Lambachhota, Laxmipura, Morla, Satuwara, Silora, Udaipur | 20515      | 42.7       |

|          |                            |  |              |              |
|----------|----------------------------|--|--------------|--------------|
|          | III                        | Antraliya, Badalov, Balapura, Gordhanpura, Jorawarpura, Kharwar, Khera, Lambachhota, Laxmipura, Maniyapura, Morla, Moti, Mundoti, Pathari, Satuwara, Talamal, Udaipur. | 14868        | 31.0         |
|          | IV                         | Chhota, Udaipur, Godiyana, Morla ,Moti, Nalu, Patan, Pathari   | 9533         | 19.9         |
| <b>B</b> | <b>Non-arable lands</b>    |  |              |              |
|          | VI                         | Ghall  | 385          | 0.8          |
|          | VII                        | Ghall  | 760          | 1.6          |
|          |                            | <b>Sub total</b>   | <b>46061</b> | <b>96.0</b>  |
| <b>C</b> | <b>Miscellaneous lands</b> | Road, Habitation etc.  | 1572         | 3.3          |
| <b>D</b> | <b>Area under water</b>    | Nala, River, Tanks etc.  | 334          | 0.7          |
|          |                            | <b>Sub total</b>   | <b>1906</b>  | <b>4.0</b>   |
|          |                            | <b>Grand Total</b>   | <b>47967</b> | <b>100.0</b> |

#### 10. Distribution of area under different depth classes:

| Soil Depth Class                                  | Area in ha.    | Percentage   |
|---|----------------|--------------|
| Shallow   | 5970.0         | 12.4         |
| Moderately deep                                   | 16834.0        | 35.1         |
| Deep  | 18975.0        | 39.6         |
| Very deep   | 4282.0         | 8.9          |
| Misc. (Road, Habitation, Nala, River, Tanks etc.) | 1906.0         | 4.0          |
| <b>Total</b>                                      | <b>47967.0</b> | <b>100.0</b> |

**11. Distribution of area under different soil erosion classes.**

| <b>Erosion class</b>                                    | <b>Area in ha.</b> | <b>Percentage</b> |
|---|--------------------|-------------------|
| None to slight erosion                                  | 12993.0            | 27.1              |
| Moderate erosion  | 26660.0            | 55.6              |
| Severe erosion  | 5368.0             | 11.2              |
| Very severe erosion                                     | 1040.0             | 2.1               |
| Misc. land. (Road, Habitation, Nala, River, Tanks etc.) | 1906.0             | 4.0               |
| <b>Total</b>  | <b>47967.0</b>     | <b>100.0</b>      |

**12. Distribution of area under different slope classes.**

| <b>Slope Class</b>                                      | <b>Area in ha.</b> | <b>Percentage</b> |
|---|--------------------|-------------------|
| Nearly level to Plain slope                             | 4125.0             | 8.6               |
| Very gentle slope                                       | 28334.0            | 59.1              |
| Gentle slope  | 8797.0             | 18.3              |
| Moderate slope  | 3660.0             | 7.6               |
| Strong slope  | 385.0              | 0.8               |
| Moderately steep slope                                  | 300.0              | 0.6               |
| Very steep slope  | 460.0              | 1.0               |
| Misc. land. (Road, Habitation, Nala, River, Tanks etc.) | 1906.0             | 4.0               |
| <b>Total</b>  | <b>47967.0</b>     | <b>100.0</b>      |

### **13. Salient Features**

- 4950 ha. (10.3 %) and 1040 ha. (2.1%) area subjected to severe and very severe erosion which need suitable soil conservation measures.
- 760 ha. (1.58% ) area is having 15-33 % slope ,3660 ha .(7.6 %) area is having 5-10 % slope and 37131 ha (77.4 %) area with (1-5 %) slope
- 4282 ha. (8.9%) area has very deep soil where as 5970 ha. (12.4 %) area is with shallow soils.
- 35883 ha. (73.7%) area is suitable for agriculture and 9533 ha. (19.9%) area is marginally suitable for agriculture.
- 1145 ha. (2.4%) lands may be brought under agro-horticulture or pasture development.

## HOW TO USE SOIL SURVEY REPORT

The report presents findings of detailed soil survey carried out in 2D2C6c6 & 8 , 2D2C6f6 , 2D2C6g1,2,4 & 5, 2D2C6j2 & 6 , 2D2C6m2,3,4,6 &7 , 2D2C6n4 , 2D2C6q6 , 2D2C6r2 & 3 , 2D2C6s1 & 7, 2D2C6t1,3 & 5, 2D2C7p1,2,4 &7 , 2D2C7q3 , 2D2C7r3,6 & 7 , 2D2C7s3 , 2D2C7t5 and 2D2C7u1,3,5 & 6 Micro-watersheds of Banas catchment in Jaipur, Ajmer and Tonk districts, Rajasthan state. It provides complete information on the soil of the area, their distribution, classification and interrelationship. The data presented in this report can be used for various development purposes such as cropping planning, preparation and water consumption plans as well as selection of new areas for afforestation etc.

The soil and land capability maps are appended with this report. Each soil mapping unit is delineated on the map and represented by a symbol. The abbreviated symbols gives soil information about the soil series name ,effective soil depth, surface texture ,slope , erosion ,stoniness and rockiness in sequence, for example the soil mapping unit S5dB2 denotes S –name of soil series , Silora, 5- soil depth –very deep (more than 100 cm. depth) d –soil surface texture (sandy loam ),B –slope – very gentle slope (1-3 %), 2 – erosion - moderate erosion,

To make use of this report, first the area of interest is located on the map and mapping units their in are noted down. The list of all the soil mapping units with duly defined characteristics, their area under different micro-watersheds and interpretative grouping such as land capability units , soil and land irrigability classes , paddy soil grouping ,hydrological grouping etc , are given in Appendix-1 “Guide to soil mapping units”

Land capability unit wise, both improvable as well as inherent problems have been indicated on the basis of such problems, recommendations have been made which are in broad and suggestive in nature for systematic planning. For specific Recommendations for a particular use of any site of interest, local conditions and experience should be made use of, by the users of the report .Any comments and suggestions on this report would be welcome .For any detail and classification, further correspondence or contact may be established with either of the following:

The Chief Soil Survey Officer

Soil & Land use survey of India

I.A.R.I. Building, Pusa, New Delhi-110012.

Tel. 011-25841263, 25849486

Fax: 011-25843811,

Email:csso-slusi@nic.in

The Soil Survey Officer

Soil & Land Use Survey of India

C-4 Sector -1, NOIDA- 201301

0120-2442694, 2544804

Email: ssonoida-slusi@nic.in