

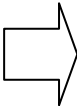
# **Report on Detailed Soil Survey and Land Use of “5D2D1f1-5, D2a1-8, D2b1-5, D2c1-2, D3a1-6, D3b1-2, D3c1-2, D3d1-2, D3f1-6 and D3h1-2” micro watersheds of Narmada Catchment (RVP), Taluka-Khategaon, Dist.- Dewas and Taluka -Nasarulaganj, Dist.- Sehore, Madhya Pradesh State**

## **ABSTRACT**

1. Survey Area : “5D2D1f1-5, D2a1-8, D2b1-5, D2c1-2, D3a1-6, D3b1-2, D3c1-2, D3d1-2, D3f1-6 and D3h1-2” micro watersheds of Narmada Catchment (RVP), Taluka.-Khategaon, Dist.- Dewas and Taluka-Nasarulaganj, Dist.- Sehore, Madhya Pradesh State
2. Total Area Mapped and Reported : 33,918 ha
3. Base map used : 1. Google maps on 1: 12,500 Scale  
2. Cadastral maps on 1: 4,000 Scale
4. Topomaps used : SOI Toposheets on 1: 50,000 Scale  
55B/14, 55B/15 and 55F/2
5. Geographical Location : 22° 44' - 22° 52' N Latitude  
76° 42 - 76° 52.5' E Longitude
6. Kind of Survey : Detailed Soil Survey
7. Period of Survey : April' 2013 to May' 2013
8. Agro climatic Zone : Central plateau and hill region (VIII)

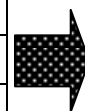
## 9. Soil Series wise area under different micro-watersheds:

Series Name	Area	% age	5D2D1f1	5D2D1f2	5D2D1f3	5D2D1f4	5D2D1f5	5D2D2a1	5D2D2a2	5D2D2a3	5D2D2a4	5D2D2a5	5D2D2a6	5D2D2a7	5D2D2a8	5D2D2b1	5D2D2b2	5D2D2b3	5D2D2b4	5D2D2b5
Ambara	985	2.9	180	140	355	260	5	-	7	38	-	-	-	-	-	-	-	-	-	-
Bajwara	841	2.5	142	245	-	-	454	-	-	-	-	-	-	-	-	-	-	-	-	-
Chikhali	807	2.4	15	-	-	-	18	-	-	-	-	-	-	-	-	-	-	-	-	53
Chipabad	758	2.2	-	-	-	-	-	-	-	21	-	18	-	189	266	-	-	-	22	171
Kamtada	207	0.6	-	-	-	-	-	-	-	40	-	9	-	13	49	-	-	-	17	56
Kapsi	326	1.0	-	-	-	-	-	-	-	-	-	-	-	186	140	-	-	-	-	-
Khairi	27432	80.9	803	1225	445	767	752	866	495	911	337	872	497	185	134	821	952	1152	958	415
Pokharni	253	0.7	-	-	-	-	20	-	-	-	-	-	-	29	71	-	-	22	73	21
Sawasra	269	0.8	269	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc	2040	6.0	193	43	-	-	268	163	10	59	-	9	4	6	6	85	18	31	27	35
<b>Total</b>	<b>33918</b>	<b>100.0</b>	<b>1602</b>	<b>1653</b>	<b>800</b>	<b>1027</b>	<b>1517</b>	<b>1029</b>	<b>512</b>	<b>1069</b>	<b>337</b>	<b>908</b>	<b>501</b>	<b>608</b>	<b>666</b>	<b>906</b>	<b>970</b>	<b>1205</b>	<b>1097</b>	<b>751</b>
% age	100.0		4.7	4.9	2.4	3.0	4.5	3.0	1.5	3.2	1.0	2.7	1.5	1.8	2.0	2.7	2.9	3.6	3.2	2.2

Series Name																						
	5D2D2C1	5D2D2C2	5D2D3a1	5D2D3a2	5D2D3a3	5D2D3a4	5D2D3a5	5D2D3a6	5D2D3b1	5D2D3b2	5D2D3c1	5D2D3c2	5D2D3d1	5D2D3d2	5D2D3f1	5D2D3f2	5D2D3f3	5D2D3f4	5D2D3f5	5D2D3f6	5D2D3h1	5D2D3h2
Ambara	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bajwara	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chikhali	-	69	27	210	3	-	-	-	-	-	-	-	13	121	61	-	14	-	-	-	203	-
Chipabad	-	71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kamtada	-	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kapsi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Khairi	561	562	433	600	797	935	862	871	900	709	1138	590	376	426	472	703	817	922	702	530	372	567
Pokharni	-	14	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
Sawasra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc	31	16	92	243	15	7	15	8	15	10	8	14	43	171	-	-	7	12	12	2	362	-
<b>Total</b>	<b>592</b>	<b>755</b>	<b>552</b>	<b>1053</b>	<b>815</b>	<b>942</b>	<b>877</b>	<b>879</b>	<b>915</b>	<b>722</b>	<b>1146</b>	<b>604</b>	<b>432</b>	<b>718</b>	<b>533</b>	<b>703</b>	<b>838</b>	<b>934</b>	<b>714</b>	<b>532</b>	<b>937</b>	<b>567</b>
% age	1.7	2.2	1.6	3.1	2.4	2.8	2.6	2.6	2.7	2.1	3.4	1.8	1.3	2.1	1.6	2.1	2.5	2.8	2.1	1.6	2.8	1.7

## 10. Micro-watersheds wise Distribution of Area under various Land Capability Classes:

LCU	Area	%age	5D2D1f1	5D2D1f2	5D2D1f3	5D2D1f4	5D2D1f5	5D2D2a1	5D2D2a2	5D2D2a3	5D2D2a4	5D2D2a5	5D2D2a6	5D2D2a7	5D2D2a8	5D2D2b1	5D2D2b2	5D2D2b3	5D2D2b4	5D2D2b5
IIs-1	1557	4.6	24	16	54	57	97	-	-	-	14	-	16	-	-	15	52	103	60	16
IIses-1	14303	42.2	441	401	231	658	303	371	166	508	241	255	136	19	42	287	499	621	664	196
IIIses-1	11811	34.8	627	831	477	280	370	373	264	385	53	574	319	336	327	248	267	376	256	407
IIIses-2	342	1.0	17	5	-	-	144	-	-	-	-	-	-	1	67	-	-	22	61	8
IIIses-3	279	0.8	37	13	-	-	172	-	-	-	-	-	-	28	4	-	-	-	12	13
IVes-1	2580	7.6	175	117	38	32	5	122	72	77	29	61	26	19	31	271	134	52	-	20
IVes-2	143	0.4	-	-	-	-	-	-	-	40	-	9	-	13	4	-	-	-	17	56
IVes-3	447	1.3	62	227	-	-	158	-	-	-	-	-	-	-	-	-	-	-	-	-
IVes-4	32	0.1	26	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-
VIses-1	58	0.2	-	-	-	-	-	-	-	-	-	-	-	-	39	-	-	-	-	-
Misc	2040	6.0	193	43	-	-	268	163	10	59	-	9	4	6	6	85	18	31	27	35
Forest	326	1.0	-	-	-	-	-	-	-	-	-	-	-	186	140	-	-	-	-	-
<b>Total</b>	<b>33918</b>	<b>100</b>	<b>1602</b>	<b>1653</b>	<b>800</b>	<b>1027</b>	<b>1517</b>	<b>1029</b>	<b>512</b>	<b>1069</b>	<b>337</b>	<b>908</b>	<b>501</b>	<b>608</b>	<b>666</b>	<b>906</b>	<b>970</b>	<b>1205</b>	<b>1097</b>	<b>751</b>
<b>% age</b>	<b>100.0</b>	<b>0.3</b>	<b>4.7</b>	<b>4.9</b>	<b>2.4</b>	<b>3.0</b>	<b>4.5</b>	<b>3.0</b>	<b>1.5</b>	<b>3.2</b>	<b>1.0</b>	<b>2.7</b>	<b>1.5</b>	<b>1.8</b>	<b>2.0</b>	<b>2.7</b>	<b>2.9</b>	<b>3.6</b>	<b>3.2</b>	<b>2.2</b>

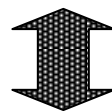




LCU	5D2D2C1	5D2D2C2	5D2D3a1	5D2D3a2	5D2D3a3	5D2D3a4	5D2D3a5	5D2D3a6	5D2D3b1	5D2D3b2	5D2D3c1	5D2D3c2	5D2D3d1	5D2D3d2	5D2D3f1	5D2D3f2	5D2D3f3	5D2D3f4	5D2D3f5	5D2D3f6	5D2D3h1	5D2D3h2
IIs-1	18	-	-	34	10	13	91	16	43	37	188	112	-	59	10	85	26	129	10	72	-	80
IIs-1	268	33	274	274	403	464	441	554	592	501	657	388	160	284	296	449	461	489	399	318	206	353
IIIs-1	211	505	109	335	229	376	241	233	259	171	282	86	218	126	187	169	315	304	293	140	205	47
IIIs-2	-	14	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
IIIs-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IVes-1	64	164	77	167	158	82	89	68	6	-	11	4	11	78	40	-	29	-	-	-	164	87
IVes-2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IVes-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IVes-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VIs-1	-	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc.	31	16	92	243	15	7	15	8	15	10	8	14	43	171	-	-	7	12	12	2	362	-
Forest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>592</b>	<b>755</b>	<b>552</b>	<b>1053</b>	<b>815</b>	<b>942</b>	<b>877</b>	<b>879</b>	<b>915</b>	<b>722</b>	<b>1146</b>	<b>604</b>	<b>432</b>	<b>718</b>	<b>533</b>	<b>703</b>	<b>838</b>	<b>934</b>	<b>714</b>	<b>532</b>	<b>937</b>	<b>567</b>
% age	1.7	2.2	1.6	3.1	2.4	2.8	2.6	2.6	2.7	2.1	3.4	1.8	1.3	2.1	1.6	2.1	2.5	2.8	2.1	1.6	2.8	1.7

## 11. Micro-watersheds wise Distribution of Area under various Erosion Classes:

Erosion	Area	% age	5D2D1f1	5D2D1f2	5D2D1f3	5D2D1f4	5D2D1f5	5D2D2a1	5D2D2a2	5D2D2a3	5D2D2a4	5D2D2a5	5D2D2a6	5D2D2a7	5D2D2a8	5D2D2b1	5D2D2b2	5D2D2b3	5D2D2b4	5D2D2b5
None to slight erosion (e1)	1557	4.59	24	16	54	57	97	-	-	-	14	-	16	-	-	15	52	103	60	16
Moderate erosion (e2)	26878	79.24	1122	1250	708	938	989	744	430	933	294	838	455	397	444	535	766	1019	1010	680
Severe erosion (e3)	3443	10.15	263	344	38	32	163	122	72	77	29	61	26	205	216	271	134	52	-	20
Misc.	2040	6.01	193	43	-	-	268	163	10	59	-	9	4	6	6	85	18	31	27	35
<b>Total</b>	<b>33918</b>	<b>100</b>	<b>1602</b>	<b>1653</b>	<b>800</b>	<b>1027</b>	<b>1517</b>	<b>1029</b>	<b>512</b>	<b>1069</b>	<b>337</b>	<b>908</b>	<b>501</b>	<b>608</b>	<b>666</b>	<b>906</b>	<b>970</b>	<b>1205</b>	<b>1097</b>	<b>751</b>
% age	<b>100.0</b>		<b>4.7</b>	<b>4.9</b>	<b>2.4</b>	<b>3.0</b>	<b>4.5</b>	<b>3.0</b>	<b>1.5</b>	<b>3.2</b>	<b>1.0</b>	<b>2.7</b>	<b>1.5</b>	<b>1.8</b>	<b>2.0</b>	<b>2.7</b>	<b>2.9</b>	<b>3.6</b>	<b>3.2</b>	<b>2.2</b>



Erosion	5D2D2C1	5D2D2C2	5D2D3a1	5D2D3a2	5D2D3a3	5D2D3a4	5D2D3a5	5D2D3a6	5D2D3b1	5D2D3b2	5D2D3c1	5D2D3c2	5D2D3d1	5D2D3d2	5D2D3f1	5D2D3f2	5D2D3f3	5D2D3f4	5D2D3f5	5D2D3f6	5D2D3h1	5D2D3h2
None to slight erosion (e1)	18	-	-	34	10	13	91	16	43	37	188	112	-	59	10	85	26	129	10	72	-	80
Moderate erosion (e2)	479	556	383	609	632	840	682	787	851	675	939	474	378	410	483	618	776	793	692	458	411	400
Severe erosion (e3)	64	183	77	167	158	82	89	68	6	-	11	4	11	78	40	-	29	-	-	-	164	87
Misc.	31	16	92	243	15	7	15	8	15	10	8	14	43	171	-	-	7	12	12	2	362	-
<b>Total</b>	<b>592</b>	<b>755</b>	<b>552</b>	<b>1053</b>	<b>815</b>	<b>942</b>	<b>877</b>	<b>879</b>	<b>915</b>	<b>722</b>	<b>1146</b>	<b>604</b>	<b>432</b>	<b>718</b>	<b>533</b>	<b>703</b>	<b>838</b>	<b>934</b>	<b>714</b>	<b>532</b>	<b>937</b>	<b>567</b>
% age	<b>1.7</b>	<b>2.2</b>	<b>1.6</b>	<b>3.1</b>	<b>2.4</b>	<b>2.8</b>	<b>2.6</b>	<b>2.6</b>	<b>2.7</b>	<b>2.1</b>	<b>3.4</b>	<b>1.8</b>	<b>1.3</b>	<b>2.1</b>	<b>1.6</b>	<b>2.1</b>	<b>2.5</b>	<b>2.8</b>	<b>2.1</b>	<b>1.6</b>	<b>2.8</b>	<b>1.7</b>

## 12. Series wise Distribution of Area under various Land Capability Classes:

Land Capability Unit	Area	% age	Others	Ambara	Bajwara	Chikhali	Chipabad	Kamtada	Kapsi	Khairi	Pokharni	Sawasra
Iles-1	14303	42.17	-	461	-	-	7	-	-	13803	-	32
IIs-1	1557	4.59	-	74	-	-	-	-	-	1483	-	-
IIIs-1	11811	34.82	-	450	-	263	741	-	-	10259	-	98
IIIs-2	342	1.01	-	-	166	-	-	-	-	-	176	-
IIIs-3	279	0.82	-	-	202	-	-	-	-	-	77	-
IVes-1	2580	7.61	-	-	-	544	10	-	-	1887	-	139
IVes-2	143	0.42	-	-	-	-	-	143	-	-	-	-
IVes-3	447	1.32	-	-	447	-	-	-	-	-	-	-
IVes-4	32	0.09	-	-	26	-	-	6	-	-	-	-
VIs-1	58	0.17	-	-	-	-	-	58	-	-	-	-
Misc.	2040	6.01	2040	-	-	-	-	-	-	-	-	-
Forest	326	0.96	-	-	-	-	-	-	326	-	-	-
<b>Total</b>	<b>33918</b>	<b>100.00</b>	<b>2040</b>	<b>985</b>	<b>841</b>	<b>807</b>	<b>758</b>	<b>207</b>	<b>326</b>	<b>27432</b>	<b>253</b>	<b>269</b>
% age	<b>100.0</b>		<b>6.0</b>	<b>2.9</b>	<b>2.5</b>	<b>2.4</b>	<b>2.2</b>	<b>0.6</b>	<b>1.0</b>	<b>80.9</b>	<b>0.7</b>	<b>0.8</b>

### 13. Conversion of old sub-watersheds into new micro watersheds :-

Old sub watersheds Code	New micro-watershed Code
Np1n	5D2D1f1-5
Np2a	5D2D2a1
Np2b	5D2D2b1-3
Np3j	5D2D3f1-6
Np3g	5D2D3h1-2
Np3a	5D2D3a1-6
Np3f	5D2D3d1-2
Np2c	5D2D2a3-8
Np2d	5D2D2c1-2,b4-5
Np3b	5D2D3b1-2,c1-2

### 14. Salient features:

- ❖ Out of the total surveyed area of 33,918 ha about 83.3 % (28,239 ha) is occupied by very deep soils, 5.9 % (2,012 ha) is occupied by deep soils followed by 4.8 % (1,627 ha) area under shallow to moderate soils.
- ❖ An area of 45.2 % (15,318 ha) of total reported area occurs on gentle sloping landforms. About 0.7 % (249 ha) occurs on moderate slope and about 0.3 % (109 ha) is under strong slopes.. An area of 1,557 ha (4.6%) occur on terraced lands, 14,645 ha (43.2%) occur on Very gentle slope, which are under cultivation.
- ❖ An area of 79.2 % (26,878 ha) of total area suffers from moderate erosion hazards. A large area of 3,443 ha (10.2%) area suffers from severe erosion which needs immediate attention for soil and water conservation measures.
- ❖ The bushy forest area which is subjected to unabated degradation due to illicit felling of trees/bushes needs immediate attention for afforestation programme, besides taking proper soil-water conservation measures.