

Report on Prioritization of Microwatersheds of 4G1D1-5 Watersheds in 4G1D Subcatchment of Mahanadi Basin (Non RVP/FPR), Districts Angul, Sambalpur and Sonapur of Odisha State.

Abstract

1.	Surveyed Area	:	4G1D Subcatchment of Mahanadi Basin, districts Angul, Sambalpur and Sonapur of Odisha State.
2.	Location	:	83°49' 10" to 84° 41' 05" East Longitude 20° 47' 27" to 21° 40' 29" North Latitude
3.	Total Area	:	3,97,487 ha
4.	Agroclimatic Region	:	VII (Eastern Plateau and hills) as per planning Commission Classification
5.	Type of Survey	:	Rapid Reconnaissance Survey for Prioritization of Microwatersheds.
6.	Period of Survey	:	December, 2009 to June, 20010
7.	Base Material used	:	Survey of India Topographical maps on 1:50,000 scale.
8.	Hydrological Sub division	:	a) Region – ‘4’ All Drainage flowing into Bay of Bengal except those 2 & 3
		:	b) Basin - ‘4G’ (Mahanadi Basin)
		:	c) Catchment – ‘4G1’
		:	d) Sub-Catchment – ‘4G1D
		:	e) Watersheds –‘4G1D1 to D5
		:	f) Subwatersheds – 4G1D1a, 4G1D1b,.....
		:	g) Microwatersheds – 4G1D1a1, 4G1D1a2.....

9. Extent of Area (in ha) under Different Runoff Potential Mapping Units (RPMU)

Sl. No	RPMU	Runoff Potential Value	Area (ha)	Area %
1	A01	57	169	0.04
2	A05	69	3356	0.84
3	L01	69	751	0.19
4	L04	67	1730	0.44
5	L07	65	66	0.02
6	S02	76	14501	3.65
7	S03	78	8101	2.04
8	S04	71	4767	1.20
9	S05	66	1560	0.39
10	S06	57	29242	7.36
11	S07	57	36103	9.08
12	S08	56	844	0.21
13	S12	59	72	0.02
14	G01	82	4510	1.13
15	G02	90	2917	0.73
16	G03	62	568	0.14
17	G04	59	1445	0.36
18	G05	60	1616	0.41
19	G06	60	1055	0.27
20	G07	57	268	0.07
21	G08	56	1185	0.30
22	G09	66	2178	0.55
23	G11	57	58	0.01
24	G12	56	2716	0.68
25	G13	58	2441	0.61
26	G16	56	624	0.16
27	G17	58	159	0.04
28	C01	81	1078	0.27
29	C02	86	33427	8.41
30	C03	91	16556	4.17
31	C04	61	9791	2.46
32	C05	66	4491	1.13
33	C06	72	274	0.07
34	C07	59	583	0.15
35	C08	64	58241	14.65
36	C09	70	1917	0.48
37	C10	60	13410	3.37
38	C11	57	27348	6.88
39	C12	57	1486	0.37
40	C13	63	10965	2.76
41	C15	68	12910	3.25
42	C16	59	44865	11.29
43	C17	59	21157	5.32
44	C18	76	343	0.09
Subtotal			381844	96.06
Misc.			15643	3.94
Grand Total			397487	100

10. Districtwise Distribution of Area under Different Runoff Potential Mapping Units (RPMU).

RPMU	Angul	Sambalpur	Sonapur	Total Area	% area
A01	132	37		169	0.04
A05	115	3241		3356	0.84
L01		751		751	0.19
L04		1730		1730	0.44
L07		66		66	0.02
S02	9135	5337	29	14501	3.65
S03	5242	2859		8101	2.04
S04	3258	1509		4767	1.20
S05	1280	280		1560	0.39
S06	14861	14085	296	29242	7.36
S07	26079	9591	433	36103	9.08
S08	674	170		844	0.21
S12	72			72	0.02
G01		4510		4510	1.13
G02		2917		2917	0.73
G03		568		568	0.14
G04		1445		1445	0.36
G05		1616		1616	0.41
G06		1055		1055	0.27
G07		268		268	0.07
G08		1185		1185	0.30
G09		2178		2178	0.55
G11		58		58	0.01
G12		2716		2716	0.68
G13		2441		2441	0.61
G16		624		624	0.16
G17		159		159	0.04
C01		1078		1078	0.27
C02		28874	4553	33427	8.41
C03		16504	52	16556	4.17
C04		3642	6149	9791	2.46
C05		4056	435	4491	1.13
C06		250	24	274	0.07
C07		301	282	583	0.15
C08		41477	16764	58241	14.65
C09		1917		1917	0.48
C10		11686	1724	13410	3.37
C11		22319	5029	27348	6.88
C12		1390	96	1486	0.37
C13		4179	6786	10965	2.76
C15		11876	1034	12910	3.25
C16		21884	22981	44865	11.29
C17		10205	10952	21157	5.32
C18		328	15	343	0.09
Subtotal	60848	243362	77634	381844	96.06
Misc.				15643	3.94
Grand Total				397487	100

11. Districtwise Distribution of Area (in ha) under Different Soil Erosion Hazard.

Erosion	Angul	Sambalpur	Sonapur	Total Area
None to slight erosion	26753	38661	5462	70876
Slight to moderate	14861	14085	296	29242
Moderate erosion	204	56429	42184	98817
Moderate to Severe erosion	6522	67722	25019	99263
Severe erosion	12393	14929	68	27390
Severe to very severe erosion	115	51536	4605	56256
Misc.	2137	8717	4789	15643
Total	62985	252079	82423	397487

12. Priority Categorization

Sl. No.	Priority Category	No. of Microwatersheds	Area (in ha)	Area %
1.	Very high (above 70)	100	80833	20.34
2.	High (66 – 70)	85	69661	17.53
3.	Medium (61-65)	170	137578	34.61
4.	Low (56-60)	146	109415	27.53
Grand Total		501	397487	100.00

13. Watershedwise Distribution of Area (in ha) under Different Priority Categories

Sl. No.	Priority Category	Watersheds					Total
		4G1D1	4G1D2	4G1D3	4G1D4	4G1D5	
1	Very high (above 70)	6338	23363	8412	16713	26007	80833
2	High (66 – 70)	15412	8663	15068	17199	13319	69661
3	Medium (61-65)	32151	22258	20476	25510	37183	137578
4	Low (56-60)	44262	11809	18845	5978	28521	109415
Total		98163	66093	62801	65400	105030	397487

14 Salient Features of the Area:

- The survey area consists of 501 microwatersheds covering 397487 ha. The survey area has 100 and 85 microwatersheds coming under the category of very high and high priority respectively, covering an area of 80833 ha (20.34%) and 69661ha (17.53%). Under medium priority 170 microwatersheds covering 137578 ha (34.61%) are categorised in this category. An area of 109415 ha (27.53%) covered by 146 microwatersheds is coming under low priority category.
- Severe and severe to very severely eroded lands occupy 83646 ha (21.04%) and it needs proper soil conservation practices. The moderate erosion and moderate to severe erosion category occupies 198080 ha (49.83%). Under the moderate to severe erosion and severe erosion categories occupies an area of 126653 ha (31.86%), the Sambalpur and Sonapur districts have maximum area under this category. Angul district has area of 12393 ha under severe erosion hazard. The maximum area of 100118 ha (25.19%) does not have problem of soil erosion hazard.