

Annexure 1: Types of dominating species in each grid of Transect- A (November, 2017).

Grid No.	Vegetation code
A 1	7, 26, 46, 68, 6, 35, 2, 24, 70, 28, 35, 53, 21, 3
A 2	69, 62, 10, 61, 13, 7, 26, 46, 68, 6, 35, 2, 24, 70, 28, 55, 53, 21, 3
A 3	7, 26, 46, 68, 6, 35, 2, 24, 70, 28, 55
A 4	7, 24, 68, 6, 35, 8, 46, 11, 3, 58, 21, 22, 55, 2, 15, 80, 67, 5, 9, 41, 26, 14, 62
A 5	14, 57, 63, 58, 12, 44, 10, 3, 11, 23, 9, 6, 37, 35, 24, 39, 1, 65, 41, 22, 8, 17, 25, 52, 19, 13, 74, 29, 66, 64, 20, 45
A 6	14, 57, 63, 58, 12, 44, 10, 3, 11, 23, 9, 6, 37, 35, 24, 39, 1, 65, 41, 22, 8, 17, 25, 52, 19, 13, 74, 29, 66, 64, 20, 45
A 7	26, 8, 25, 3, 6, 11, 17, 54, 39, 1, 2, 42, 14, 60, 20, 10, 59, 24, 29, 25, 23, 16, 41, 45, 61, 53, 62, 15, 81, 33, 16, 60, 39
A 8	26, 8, 25, 3, 6, 11, 17, 54, 39, 1, 2, 42, 14, 60, 20, 10, 59, 24, 29, 25, 23, 16, 41, 45, 61, 53, 62
A 9	26, 8, 25, 3, 6, 11, 17, 54, 39, 1, 2, 42, 14, 60, 20, 10, 59, 24, 25, 29, 25, 23, 16, 41, 45, 61, 53, 62
A 10	26, 8, 25, 3, 6, 11, 17, 54, 39, 1, 2, 42, 14, 60, 20, 10, 59, 24, 29, 25, 23
A 11	26, 8, 25, 3, 6, 11, 17, 54, 39, 1, 2, 42, 14, 60, 20, 10, 59, 24, 29, 25, 23
A 12	26, 8, 25, 3, 6, 11, 17, 54, 39, 1, 2, 42, 14, 60, 20, 10, 59, 24
A 13	7, 26, 6, 3, 10, 24, 68, 82, 30, 50, 4, 9, 55, 5, 22, 17, 42, 40, 18, 1, 20, 41, 37, 52, 53, 54, 56, 57, 39, 58, 2
A 14	7, 26, 6, 3, 10, 24, 68, 82, 30, 50, 4, 9, 55, 5, 22, 17, 42, 40, 18, 1, 20, 41, 37, 52, 53, 54
A 15	15, 3, 83, 9, 54, 1, 29, 6, 41, 24, 10, 43, 7, 18, 20, 25, 4, 53, 19, 34, 33, 46, 58, 60, 57, 45, 12, 11, 15, 14, 26, 23, 40, 59, 84, 36, 37, 38, 39, 49
A 16	15, 3, 83, 9, 54, 1, 29, 6, 41, 24, 10, 43, 7, 18, 20, 25, 4, 53, 19, 34, 33, 46, 58, 60, 57, 45, 12, 11, 15, 14, 26, 23, 40, 59, 84, 36
A 17	15, 3, 83, 9, 54, 1, 29, 6, 41, 24, 10, 43, 7, 18, 20, 25, 4, 53, 19, 34, 33, 46, 58, 60, 57, 45, 12, 11, 15, 14, 26, 23, 40, 59
A 18	3, 10, 17, 9, 6, 2, 53, 11, 65, 23, 48, 13, 29, 74, 63, 5, 8, 4, 41, 88, 42, 12, 43, 4, 45, 46, 47, 87, 54
A 19	3, 10, 17, 9, 6, 2, 53, 11, 65, 23, 48, 13, 29, 74, 63, 5, 8, 4, 41, 88, 42, 12, 43, 4, 45, 46, 47, 87, 35, 19, 58
A 20	3, 10, 17, 9, 6, 2, 53, 11, 65, 23, 48, 13, 29, 74, 63, 5, 8, 4, 41, 88, 42, 12, 43, 4, 45, 46, 47, 87, 24, 33, 34
A 21	3, 10, 17, 9, 6, 2, 53, 11, 65, 23, 48, 13, 29, 74, 63, 5, 8, 4, 41, 88, 42, 12, 43, 4, 45, 46, 47, 87, 24, 33
A 22	3, 10, 17, 9, 6, 2, 53, 11, 65, 23, 48, 13, 29, 74, 63, 5, 8, 4, 41, 88, 42, 12, 43, 4, 45, 46, 47, 87
A 23	5, 3, 8, 10, 11, 12, 71, 54, 13, 14, 15, 16, 57, 21, 6, 22, 23, 9, 1, 17, 18, 19, 20, 25, 26, 63, 32, 27, 29, 30, 89, 28, 31
A 24	5, 3, 8, 10, 11, 12, 71, 54, 13, 14, 15, 16, 57, 21, 6, 22, 23, 9, 1, 17
A 25	3, 5, 11, 14, 8, 9, 10, 17, 13

Each grid is considered $500\text{ m} \times 500\text{ m} = 2,50,000\text{ m}^2$ (0.25 km^2)

Annexure 2: Types of dominating species in each grid of Transect- B (November, 2017).

Grid No.	Vegetation code
B 1	24, 26, 35, 6, 7, 55, 4, 8, 22, 1, 2, 3, 11
B 2	24, 26, 35, 6, 7, 55, 4, 8, 22, 1, 2, 3, 11, 23, 9, 33, 57, 25, 10, 53, 45, 37, 58, 17, 62
B 3	24, 26, 35, 6, 7, 55, 4, 8, 22, 1, 2, 3, 11, 23, 9, 33, 57, 25, 10, 53, 45, 37, 58, 17, 62, 18, 73, 100
B 4	24, 33, 19, 22, 1, 2, 4, 10, 17, 11, 23, 29, 54, 26, 8, 9, 71
B 5	24, 33, 19, 22, 1, 2, 4, 10, 17, 11, 23, 29, 54, 26, 8, 9, 71, 24, 58, 53
B 6	24, 33, 19, 22, 1, 2, 4, 10, 17, 11, 23, 29, 54, 26, 8, 9, 71, 24, 58, 53, 33, 20, 53, 101, 43, 58, 6, 18, 62
B 7	24, 33, 19, 22, 1, 2, 4, 10, 17, 11, 23, 29, 54, 26, 8, 9, 71, 24, 58, 53, 33, 20, 53, 101, 43, 58, 6, 18, 62, 37, 51, 25, 60, 74, 102, 103
B 8	24, 33, 19, 22, 1, 2, 4, 10, 17, 11, 23, 29, 54, 26, 8, 9, 71, 24, 58, 53, 33, 20, 53, 101, 43, 58, 6, 18, 62, 37, 51, 25, 60, 74, 102, 103, 66, 104, 15, 63, 4, 44, 60

B 9	24, 33, 19, 22, 1, 2, 4, 10, 17, 11, 23, 29, 54, 26, 8, 9, 71, 24, 58, 53, 33, 20, 53, 101, 43, 58, 6, 18, 62, 37, 51, 25, 60, 74, 102, 103, 66, 104, 15, 63, 4, 44, 60, 40
B 10	3, 10, 11, 17, 46, 9, 1, 2, 3, 9, 18, 20, 4, 24, 63, 93, 60, 13, 8, 54, 29, 73
B 11	3, 10, 11, 17, 46, 9, 1, 2, 3, 9, 18, 20, 4, 24, 63, 93, 60, 13, 8, 54, 29, 73, 5, 15, 12, 98
B 12	3, 10, 11, 17, 46, 9, 1, 2, 3, 9, 18, 20, 4, 24, 63, 93, 60, 13, 8, 54, 29, 73, 5, 15, 12, 98, 99
B 13	63, 6, 5, 74, 10, 13, 8, 17, 9, 24, 60, 18, 23, 37, 52, 20, 2, 22, 42, 19, 14, 97
B 14	63, 6, 5, 54, 10, 13, 8, 17, 8, 9, 24, 18, 60, 18, 23, 37, 52, 20, 2, 22, 42, 19, 14, 96, 4, 27, 29
B 15	63, 6, 5, 74, 10, 13, 8, 17, 9, 24, 60, 18, 23, 37, 52, 20, 2, 22, 42, 19, 22, 19, 96, 14, 4, 49, 27, 15, 12, 30, 21, 97, 5, 25, 35
B 16	18,8,20,30,95,27,24,13,15
B 17	18, 8, 20, 30, 95
B 18	2, 9, 35, 74, 63, 10, 1, 11, 17, 14, 94
B 19	6, 3, 10, 35, 1, 5, 9, 17, 28, 26, 69, 2, 49, 93, 33, 23, 54, 60, 20, 63
B 20	6, 35, 10, 3, 5, 9, 1, 17, 28, 24, 69, 2, 53
B 21	6, 3, 10, 35, 1, 5, 9, 17, 28, 26, 69, 2, 49, 93
B 22	10, 3, 9, 11, 65, 6, 57, 14, 23, 58, 46, 60
B 23	6, 9, 73, 35, 5, 74, 58, 65, 25, 11, 41, 15, 92
B 24	90, 72, 3, 17, 9, 1, 10, 58, 91, 19, 11, 22, 53, 31, 6, 35, 71, 46
Each grid is considered 500 m × 500 m = 2,50,000 m ² (0.25 km ²)	

Annexure 3: Types of dominating species in each grid of Transect- C (November, 2017).

Grid No.	Vegetation code
C 1	NA
C 2	NA
C 3	38, 24, 41, 3, 11, 4, 10, 58, 1, 8, 23, 54, 9, 61, 19, 46, 25, 2, 40, 70, 71, 17, 26
C 4	38, 24, 41, 3, 11, 4, 10, 58, 1, 8, 23, 54, 9, 61, 19, 46, 25, 2, 40, 70, 71, 17
C 5	7, 15, 5, 6, 24, 35, 46, 105
C 6	1, 74, 3, 6, 17, 11, 24, 9, 46, 73, 20, 13, 10, 22
C 7	19, 1, 3, 11, 43, 58, 24, 27, 54, 53, 10
C 8	15, 14, 6, 17, 10, 3, 9, 8, 46, 11, 63, 60, 53, 1, 35
C 9	19, 1, 3, 11, 43, 58, 24, 27, 54, 53, 10, 71, 9, 17, 25, 12, 18
C 10	54, 74, 10, 60, 3, 9, 6, 58, 43, 24, 17, 19, 20, 23, 46, 99
C 11	10, 9, 3, 17, 2, 6, 19, 46, 106
C 12	10, 60, 9, 3, 17, 2, 19, 6, 46
C 13	24, 74, 12, 11, 19, 9, 6, 1, 3, 10, 60, 35, 46
C 14	3, 34, 9, 18, 24, 19, 1, 6, 10, 54, 17, 35, 73, 33, 60
C 15	3, 1, 17, 8, 6, 35, 46, 13, 54, 10, 18, 5, 9, 29, 99, 11, 60, 20
C 16	1, 29, 35, 15, 3, 12, 19, 11, 17, 60, 71, 74, 8, 10, 49, 24, 27, 58, 65
C 17	1, 29, 35, 15, 3, 12, 19, 11, 17, 60, 71, 74, 8, 10, 49, 24, 27, 58, 65, 16, 4
C 18	15, 19, 74, 13, 8, 3, 17, 6, 9, 40
C 19	8, 17, 13, 3, 11, 9
C 20	1, 29, 35, 15, 3, 12, 19, 11, 17, 60, 71, 74, 8, 10, 49, 24, 27, 58, 65, 13, 40
C 21	1, 29, 35, 15, 3, 12, 19, 11, 17, 60, 71, 74, 8, 10, 49, 24, 27, 58, 65, 6, 9
C 22	NA
C 23	NA
C 24	NA
C 25	NA
C 26	NA

C 27	1, 29, 35, 15, 3, 12
C 28	15, 3, 12, 19, 11, 17, 60, 71, 74, 8
C 29	3, 5, 11, 14, 8, 9, 10, 17, 13

Each grid is considered 500 m × 500 m = 2,50,000 m² (0.25 km²)

Annexure 4: Field survey data sheet regarding plant ecology of Transect- A (Near Old Digha) November, 2017.

Grid No.	Plant Ecology					% of vegetation per grid	Areas of vegetation (m ²)	Elevation (m)	Field moisture
	Grass (%)	Heath (%)	Scrub (%)	Small trees (%)	Large trees (%)				
A 1			5	9	15	28.87	72173.29	5.01-8.17	Medium
A 2			10	15	60	85.03	212574	7.56-10.93	Medium
A 3	8		15	20	45	87.93	219820	7.04-9.33	Medium
A 4	6		20	30	35	91.46	228647	6.08-9.96	Medium
A 5	4		7	15	20	46.46	116161	4.01-7.95	Medium
A 6	1	1	1	2	2	6.63	16586	5.60-6.99	Medium
A 7	4		5	10	15	34.03	85077.78	3.38-6.58	Medium
A 8	4		5	15	20	44.35	110886	3.00-7.95	Medium
A 9	5		10	40	15	69.86	174689	4.07-6.98	Medium
A 10	4		8	20	10	41.64	104087	4.00-5.96	Medium
A 11	2		10	15	20	47.37	118420	4.73-7.80	Medium
A 12	2		7	10	15	34.30	85740.29	5.09-12.47	Medium
A 13	3		10	15	20	48.14	120345	9.29-12.99	Medium
A 14	4		10	20	45	79.31	198264	8.16-10.99	Medium
A 15	3		7	25	40	74.74	186860	8.01-10.94	High
A 16	7	4	15	20	45	90.67	226672	5.64-9.98	High
A 17	4	3	5	8	15	34.66	86646.78	4.00-7.96	High
A 18	0.5		1	1.5	1	4.02	10055	5.04-6.68	High
A 19	8		10	20	15	52.51	131287	4.03-5.62	High
A 20	1		3	5	8	17.16	42901.19	5.37-5.99	High
A 21	3	3	4	10	20	39.74	99338.78	4.00-5.80	High
A 22	4	2	5	15	5	31.04	77603	3.86-5.92	High
A 23	5	4	5	10	20	44.43	111091	5.38-7.85	High
A 24	6		10	15	25	56.26	140652	2.01-9.97	High
A 25	5		8	10	20	42.92	107341	4.00-6.98	Medium

Each grid is considered 500 m × 500 m = 2,50,000 m² (0.25 km²)

Annexure 5: Field survey data sheet regarding plant ecology of Transect- B (Near Tajpur) November, 2017.

Grid No.	Plant Ecology					% of vegetation per grid	Areas of vegetation (m ²)	Elevation (m)	Field moisture
	Grass (%)	Heath (%)	Scrub (%)	Small trees (%)	Large trees (%)				
B 1	10		10	15	20	54.63	136573	4.24-7.62	Medium
B 2	4		10	25	35	74.25	185640	6.14-10.11	Medium
B 3	5		5	20	35	65.56	163911	4.78-10.64	High
B 4	3		5	15	20	42.97	107427	6.66-13.70	High
B 5	0.5		0.5	0.5	1.5	3.57	8915.84	2.80-10.26	High
B 6	2		8	10	25	44.98	112462	3.86-7.35	High
B 7	6	4	8	10	20	47.93	119825	4.40-6.48	High

B 8	1	1	2	3	5	12.01	30037.60	3.95-5.86	Medium
B 9	1	1	3	4	5	14.20	35522	4.66-6.08	Medium
B 10	2		8	10	20	39.60	99004.5	4.32-7.60	Medium
B 11	6	3	10	25	55	99.31	248272	4.68-10.02	High
B 12	3	3	8	15	25	53.92	134807	3.86-10.60	Medium
B 13	5		8	10	20	42.97	107430	4.15-10.58	Medium
B 14	4		5	30	35	73.64	184091	3.20-11.06	Medium
B 15	3		10	45	15	73.39	183475	1.00-13.21	Medium
B 16	4		8	50	15	76.96	192411	6.80-14.59	Medium
B 17	4		10	25	30	69.17	172936	2.68-11.82	Medium
B 18	2		2	5	4	13.03	32578.80	1.98-5.70	Medium
B 19	3		5	5	10	23.12	57811.10	2.98-4.92	Medium
B 20	1		2	3	15	21.00	52510.69	2.40-6.24	Medium
B 21	0.5		1	1	1.5	3.91	9774.58	2.78-6.15	Low
B 22	0.5		0.5	1	0.5	2.30	5740.45	3.35-5.00	Low
B 23	2		3	8	4	16.51	41270.50	3.53-6.48	High
B 24	6		10	30	20	66.01	165034	3.42-6.96	Medium

Each grid is considered 500 m × 500 m = 2,50,000 m² (0.25 km²)

Annexure 6: Field survey data sheet regarding plant ecology of Transect- C (Near Jaldha Mohana) November, 2017.

Grid No.	Plant Ecology					% of vegetation per grid	Areas of vegetation (m ²)	Elevation (m)	Field moisture
	Grass (%)	Heath (%)	Scrub (%)	Small trees (%)	Large trees (%)				
C 1						NA		3.66-7.29	
C 2						NA		3.00-5.34	
C 3	3		5	10	8	25.51	63888.89	2.98-4.94	Medium
C 4	4		10	35	50	99.00	245327	4.66-6.12	Medium
C 5	2		15	30	15	62.39	155974	5.12-5.96	Low
C 6	3	1	10	55	20	88.72	221796	5.39-8.04	High
C 7	5		15	15	20	54.77	136915	2.92-8.32	High
C 8	2	1	3	5	8	18.40	46000.80	3.67-6.68	High
C 9	2		7	10	15	34.20	85503.80	4.17-5.52	High
C 10	7		8	10	10	34.60	86492.78	4.60-6.42	High
C 11	4		6	20	10	39.51	98773.39	3.02-5.94	High
C 12			0.5	2	0.5	2.63	6574.38	2.90-5.24	High
C 13	0.5		0.5	1.5	0.5	3.42	8544.90	3.82-7.08	High
C 14			2	5	3	9.55	23865.1	3.75-7.40	Medium
C 15	4		8	10	15	37.21	93015.39	2.48-6.54	High
C 16	2		2	5	10	19.42	48559.80	2.23-4.78	High
C 17	0.5		0.5	3	1	5.45	13620.80	2.90-4.92	Medium
C 18	1		1	10	2	14.09	35211	4.00-5.00	Medium
C 19	0.5		0.5	2.5	0.5	4.30	10743.80	4.18-5.54	Medium
C 20	5		8	10	20	41.91	104748	4.62-7.01	Medium
C 21	3		3	8	10	23.62	59037.89	5.41-6.88	Medium
C 22			0.25	0.5	0.25	1.27	3156.80	5.28-7.05	Medium
C 23	1		1	4	1	6.94	17348.30	3.95-6.88	Medium

C 24					NA	3.92-5.10	High	
C 25					NA	3.17-5.18	High	
C 26					NA	3.25-5.00	High	
C 27	1	1	2	1	4.80	11998.90	2.31-5.03	Medium
C 28	2	3	8	1	14.30	35762.30	1.39-5.52	High
C 29	8	10	10	3	30.59	76487.89	1.21-3.41	Medium

Each grid is considered 500 m × 500 m = 2,50,000 m² (0.25 km²)

Annexure 7: Classification of micro topographic units through high resolution DEM and field study of Transect- A.

Grid No.	Landscape units	Vegetation types
A 1	Inner coastal plain surface	15
A 2	Inner coastal plain surface with beach ridge slope	21
A 3	Beach ridge surface with narrow swale valley	13
A 4	Beach ridge surface	23
A 5	Beach ridge fringed coastal plain surface	32
A 6	Inner coastal plain surface	32
A 7	Inner coastal plain surface with narrow beach ridge segment	33
A 8	Inner coastal plain surface with narrow beach ridge segment	27
A 9	Inner coastal plain dominated by beach ridge surface	28
A 10	Inner coastal plain dominated by beach ridge surface	21
A 11	Inner coastal plain surface with beach ridge remnant surface	21
A 12	Inner coastal plain surface with beach ridge slope	18
A 13	Beach ridge surface	31
A 14	Beach ridge surface	26
A 15	Beach ridge separated by swale valley	40
A 16	Beach ridge surface	36
A 17	Inner coastal plain surface	34
A 18	Inner coastal plain surface	29
A 19	Inner coastal plain surface with levee bank	31
A 20	Inner coastal plain surface	31
A 21	Inner coastal plain surface with levee bank	20
A 22	Inner coastal plain surface with beach ridge remnant	28
A 23	Inner coastal plain surface with beach ridge and modified wetland remnant	33
A 24	Back shore beach ridge surface	20
A 25	Foreshore beach dune landscape	09

Each grid is considered 500 m × 500 m = 2,50,000 m² (0.25 km²)

Annexure 8: Classification of micro topographic units through high resolution DEM and field study of Transect- B.

Grid No.	Landscape units	Vegetation types
B 1	Beach ridge landscape	13
B 2	Beach ridge landscape	25
B 3	Beach ridge with swale topography	28
B 4	Inner coastal plain with beach ridges	17
B 5	Inner coastal plain surface	20
B 6	Inner coastal plain surface with older levee bank	29

B 7	Inner coastal plain surface with older levee bank	36
B 8	Inner coastal plain surface with older levee bank	43
B 9	Inner coastal plain surface on the bank of Champa river	44
B 10	Inner coastal plain with levees bank	22
B 11	Inner coastal plain with levees bank	26
B 12	Inner coastal plain with Champa river	27
B 13	Inner coastal plain with Champa river	22
B 14	Inner coastal plain surface with beach ridge slope and Champa river course	27
B 15	Inner coastal plain with beach ridge surface and Champa river course	35
B 16	Inner coastal plain with beach ridge surface and Champa river course	09
B 17	Inner coastal plain with beach ridge surface and Champa river course	05
B 18	Inner coastal plain surface on the bank of Champa river course	11
B 19	Inner coastal plain surface with older levee ridge	19
B 20	Inner coastal plain surface with older levee ridge	13
B 21	Inner coastal plain surface	14
B 22	Inner coastal plain surface	12
B 23	Back shore low land surface	13
B 24	Foreshore dune landscape	18
Each grid is considered $500\text{ m} \times 500\text{ m} = 2,50,000\text{ m}^2$ (0.25 km ²)		

Annexure 9: Classification of micro topographic units through high resolution DEM and field study of Transect- C.

Grid No.	Landscape units	Vegetation types
C 1	Inner coastal plain surface	NA
C 2	Inner coastal plain surface	NA
C 3	Beach ridge fringed coastal plain	23
C 4	Beach ridge	22
C 5	Beach ridge	08
C 6	Southern beach ridge slope	14
C 7	Inner coastal plain with older levee	11
C 8	Inner coastal plain with older levee	15
C 9	Inner coastal plain with older levee	17
C 10	Inner coastal plain with older levee	16
C 11	Inner coastal plain with older levee	09
C 12	Inner coastal plain	09
C 13	Inner coastal plain	13
C 14	Inner coastal plain	15
C 15	Inner coastal plain with abandoned channel with beach ridge remnant surface	18
C 16	Inner coastal plain with beach ridge remnant surface	19
C 17	Inner coastal plain with abandoned creeks	21
C 18	Inner coastal plain with active tidal channel surface	10
C 19	Inner coastal plain with active tidal channel surface	06
C 20	Inner coastal plain with active tidal channel surface	21
C 21	Inner coastal plain with tidal channel across beach ridges	21
C 22	Inner coastal plain with tidal channel across beach ridges	NA
C 23	Modified wetlands with abandoned salt pan and fisheries	NA
C 24	Modified wetlands with abandoned salt pan and fisheries	NA

C 25	Modified wetlands with abandoned salt pan and fisheries	NA
C 26	Modified wetlands with abandoned salt pan and fisheries	NA
C 27	Back shore dunes and wetlands	15
C 28	Back shore dune landscape	13
C 29	Foreshore beach dune landscape	10

Each grid is considered $500\text{ m} \times 500\text{ m} = 2,50,000\text{ m}^2$ (0.25 km^2)

Annexure 10: Vegetation diversity estimation through Shannon-Weiner Diversity Index of 'A' Transect.

Sl. No.	Vegetation code of Transect-A	No. of presence per transect	Pi	Ln (pi)	pi*Ln (pi)	H	H max	Shannon's Equitability
1	1	13	0.020281	-3.898080	-0.079056	Shannon diversity index (H) = 4.006753867	The Maximum Diversity (H_{max}) = 4.248495242	Evenness = 0.94309953
2	2	16	0.024961	-3.690441	-0.092117			
3	3	24	0.037441	-3.284976	-0.122994			
4	4	15	0.023401	-3.754979	-0.087870			
5	5	14	0.021841	-3.823972	-0.083519			
6	6	24	0.037441	-3.284976	-0.122994			
7	7	9	0.014041	-4.265805	-0.059894			
8	8	17	0.026521	-3.629816	-0.096267			
9	9	19	0.029641	-3.518590	-0.104295			
10	10	22	0.034321	-3.371987	-0.115731			
11	11	20	0.031201	-3.467297	-0.108184			
12	12	12	0.018721	-3.978123	-0.074473			
13	13	11	0.017161	-4.065134	-0.069760			
14	14	15	0.023401	-3.754979	-0.087870			
15	15	10	0.015601	-4.160444	-0.064906			
16	16	6	0.009360	-4.671270	-0.043725			
17	17	18	0.028081	-3.572658	-0.100324			
18	18	6	0.009360	-4.671270	-0.043725			
19	19	7	0.010920	-4.517119	-0.049329			
20	20	14	0.021841	-3.823972	-0.083519			
21	21	5	0.007800	-4.853592	-0.037860			
22	22	7	0.010920	-4.517119	-0.049329			
23	23	17	0.026521	-3.629816	-0.096267			
24	24	19	0.029641	-3.518590	-0.104295			
25	25	18	0.028081	-3.572658	-0.100324			
26	26	16	0.024961	-3.690441	-0.092117			
27	27	1	0.001560	-6.463029	-0.010083			
28	28	4	0.006240	-5.076735	-0.031680			
29	29	16	0.024961	-3.690441	-0.092117			
30	30	3	0.004680	-5.364417	-0.025106			
31	31	1	0.001560	-6.463029	-0.010083			
32	32	2	0.003120	-5.769882	-0.018003			
33	33	6	0.009360	-4.671270	-0.043725			
34	34	4	0.006240	-5.076735	-0.031680			
35	35	8	0.012480	-4.383588	-0.054709			
36	36	2	0.003120	-5.769882	-0.018003			
37	37	5	0.007800	-4.853592	-0.037860			

38	38	1	0.001560	-6.463029	-0.010083
39	39	11	0.017161	-4.065134	-0.069760
40	40	5	0.007800	-4.853592	-0.037860
41	41	16	0.024961	-3.690441	-0.092117
42	42	13	0.020281	-3.898080	-0.079056
43	43	8	0.012480	-4.383588	-0.054709
44	44	2	0.003120	-5.769882	-0.018003
45	45	13	0.020281	-3.898080	-0.079056
46	46	12	0.018721	-3.978123	-0.074473
47	47	5	0.007800	-4.853592	-0.037860
48	48	5	0.007800	-4.853592	-0.037860
49	49	1	0.001560	-6.463029	-0.010083
50	50	2	0.003120	-5.769882	-0.018003
51	52	4	0.006240	-5.076735	-0.031680
52	53	15	0.023401	-3.754979	-0.087870
53	54	14	0.021841	-3.823972	-0.083519
54	55	5	0.007800	-4.853592	-0.037860
55	56	1	0.001560	-6.463029	-0.010083
56	57	8	0.012480	-4.383588	-0.054709
57	58	8	0.012480	-4.383588	-0.054709
58	59	6	0.009360	-4.671270	-0.043725
59	60	10	0.015601	-4.160444	-0.064906
60	61	6	0.009360	-4.671270	-0.043725
61	62	5	0.007800	-4.853592	-0.037860
62	63	8	0.012480	-4.383588	-0.054709
63	65	7	0.010920	-4.517119	-0.049329
64	66	2	0.003120	-5.769882	-0.018003
65	67	1	0.001560	-6.463029	-0.010083
66	68	6	0.009360	-4.671270	-0.043725
67	69	3	0.004680	-5.364417	-0.025106
68	70	3	0.004680	-5.364417	-0.025106
69	71	2	0.003120	-5.769882	-0.018003
70	74	7	0.010920	-4.517119	-0.049329
Total		641			-4.006753

Annexure 11: Vegetation diversity estimation through Shannon-Weiner Diversity Index of 'B' Transect.

Sl. No.	Vegetation code of Transect-B	No. of presence per transect	Pi	Ln (pi)	pi*Ln (pi)	H	H max	Shannon's Equitability
1	1	18	0.032316	-3.432193	-0.110915	Shannon diversity index (H) = 3.934110831	The Maximum Diversity (H _{max}) = 4.290459441	Evenness = 0.916967258
2	2	21	0.037702	-3.278043	-0.123589			
3	3	16	0.028725	-3.549977	-0.101974			
4	4	18	0.032316	-3.432193	-0.110915			
5	5	11	0.019749	-3.924670	-0.077507			
6	6	16	0.028725	-3.549977	-0.101974			
7	7	3	0.005386	-5.223953	-0.028136			
8	8	18	0.032316	-3.432193	-0.110915			
9	9	25	0.044883	-3.103689	-0.139304			

10	10	21	0.037702	-3.278043	-0.123589
11	11	17	0.030521	-3.489352	-0.106497
12	12	3	0.005386	-5.223953	-0.028136
13	13	8	0.014363	-4.243124	-0.060943
14	14	5	0.008977	-4.713127	-0.042308
15	15	7	0.012567	-4.376655	-0.055003
16	17	20	0.035907	-3.326833	-0.119455
17	18	16	0.028725	-3.549977	-0.101974
18	19	12	0.021544	-3.837659	-0.082678
19	20	15	0.026930	-3.614515	-0.097339
20	21	1	0.001795	-6.322565	-0.011351
21	22	15	0.026930	-3.614515	-0.097339
22	23	15	0.026930	-3.614515	-0.097339
23	24	22	0.039497	-3.231523	-0.127636
24	25	7	0.012567	-4.376655	-0.055003
25	26	12	0.021544	-3.837659	-0.082678
26	27	3	0.005386	-5.223953	-0.028136
27	28	3	0.005386	-5.223953	-0.028136
28	29	11	0.019749	-3.924670	-0.077507
29	30	3	0.005386	-5.223953	-0.028136
30	31	1	0.001795	-6.322565	-0.011351
31	33	13	0.023339	-3.757616	-0.087700
32	35	10	0.017953	-4.019980	-0.072172
33	37	8	0.014363	-4.243124	-0.060943
34	40	1	0.001795	-6.322565	-0.011351
35	41	1	0.001795	-6.322565	-0.011351
36	42	4	0.007181	-4.936271	-0.035449
37	43	4	0.007181	-4.936271	-0.035449
38	44	2	0.003591	-5.629418	-0.020213
39	45	2	0.003591	-5.629418	-0.020213
40	46	6	0.010772	-4.530806	-0.048806
41	49	3	0.005386	-5.223953	-0.028136
42	51	3	0.005386	-5.223953	-0.028136
43	52	4	0.007181	-4.936271	-0.035449
44	53	14	0.025135	-3.683508	-0.092584
45	54	10	0.017953	-4.019980	-0.072172
46	55	3	0.005386	-5.223953	-0.028136
47	57	3	0.005386	-5.223953	-0.028136
48	58	14	0.025135	-3.683508	-0.092584
49	60	13	0.023339	-3.757616	-0.087700
50	62	5	0.008977	-4.713127	-0.042308
51	63	11	0.019749	-3.924670	-0.077507
52	65	2	0.003591	-5.629418	-0.020213
53	66	2	0.003591	-5.629418	-0.020213
54	69	3	0.005386	-5.223953	-0.028136
55	71	7	0.012567	-4.376655	-0.055003
56	72	1	0.001795	-6.322565	-0.011351
57	73	5	0.008977	-4.713127	-0.042308

58	74	7	0.012567	-4.376655	-0.055003			
59	90	1	0.001795	-6.322565	-0.011351			
60	91	1	0.001795	-6.322565	-0.011351			
61	92	1	0.001795	-6.322565	-0.011351			
62	93	6	0.010772	-4.530806	-0.048806			
63	94	1	0.001795	-6.322565	-0.011351			
64	95	2	0.003591	-5.629418	-0.020213			
65	96	3	0.005386	-5.223953	-0.028136			
66	97	2	0.003591	-5.629418	-0.020213			
67	98	2	0.003591	-5.629418	-0.020213			
68	99	1	0.001795	-6.322565	-0.011351			
69	100	1	0.001795	-6.322565	-0.011351			
70	101	4	0.007181	-4.936271	-0.035449			
71	102	3	0.005386	-5.223953	-0.028136			
72	103	3	0.005386	-5.223953	-0.028136			
73	104	2	0.003591	-5.629418	-0.020213			
Total		557			-3.934110			

Annexure 12: Vegetation diversity estimation through Shannon-Weiner Diversity Index of 'C' Transect.

Sl. No.	Vegetation code of Transect-C	No. of presence per transect	Pi	Ln (pi)	pi*Ln (pi)	H	H max	Shannon's Equitability
1	1	13	0.045455	-3.091042	-0.140502			
2	2	4	0.013986	-4.269697	-0.059716			
3	3	18	0.062937	-2.765620	-0.174060			
4	4	3	0.010490	-4.557380	-0.047805			
5	5	2	0.006993	-4.962845	-0.034705			
6	6	11	0.038462	-3.258097	-0.125311			
7	7	1	0.003497	-5.655992	-0.019776			
8	8	10	0.034965	-3.353407	-0.117252			
9	9	14	0.048951	-3.016934	-0.147682			
10	10	16	0.055944	-2.883403	-0.161309			
11	11	13	0.045455	-3.091042	-0.140502			
12	12	6	0.020979	-3.864232	-0.081068			
13	13	5	0.017483	-4.046554	-0.070744			
14	14	1	0.003497	-5.655992	-0.019776			
15	15	7	0.024476	-3.710082	-0.090806			
16	16	1	0.003497	-5.655992	-0.019776			
17	17	16	0.055944	-2.883403	-0.161309			
18	18	3	0.010490	-4.557380	-0.047805			
19	19	14	0.048951	-3.016934	-0.147682			
20	20	3	0.010490	-4.557380	-0.047805			
21	22	1	0.003497	-5.655992	-0.019776			
22	23	3	0.010490	-4.557380	-0.047805			
23	24	13	0.045455	-3.091042	-0.140502			
24	25	3	0.010490	-4.557380	-0.047805			
25	26	1	0.003497	-5.655992	-0.019776			
26	27	6	0.020979	-3.864232	-0.081068			

Shannon diversity index (H) = 3.57000621
 The Maximum Diversity (H_{max}) = 3.891820298
 Evenness = 0.917310137

27	29	5	0.017483	-4.046554	-0.070744
28	33	1	0.003497	-5.655992	-0.019776
29	34	2	0.006993	-4.962845	-0.034705
30	35	8	0.027972	-3.576550	-0.100043
31	38	2	0.006993	-4.962845	-0.034705
32	40	4	0.013986	-4.269697	-0.059716
33	41	2	0.006993	-4.962845	-0.034705
34	43	3	0.010490	-4.557380	-0.047805
35	46	10	0.034965	-3.353407	-0.117252
36	49	4	0.013986	-4.269697	-0.059716
37	53	3	0.010490	-4.557380	-0.047805
38	54	7	0.024476	-3.710082	-0.090806
39	58	9	0.031469	-3.458767	-0.108842
40	60	10	0.034965	-3.353407	-0.117252
41	61	2	0.006993	-4.962845	-0.034705
42	63	1	0.003497	-5.655992	-0.019776
43	65	4	0.013986	-4.269697	-0.059716
44	70	2	0.006993	-4.962845	-0.034705
45	71	7	0.024476	-3.710082	-0.090806
46	73	2	0.006993	-4.962845	-0.034705
47	74	8	0.027972	-3.576550	-0.100043
48	105	1	0.003497	-5.655992	-0.019776
49	106	1	0.003497	-5.655992	-0.019776
Total		286			-3.570006

Annexure 13: Grid wise vegetation sample survey for biomass estimation (November, 2017).

Grid No.	No. of tree present in the grid	Longitude	Latitude	Average diameter of the tree in cm	Average elevation angel (θ) in degree	Distance of the tree from the instrument (D) in m	Eye height from the tree bottom in m
1	60	87° 31'40.65"E	21° 43' 19.56"N	45.72	35°	14.99	Eye Height (h) = 1.5 m (59 inch)
2	35	87° 30'58.59"E	21° 42' 35.71"N	63.50	15°	7.89	
3	110	87° 30'51.23"E	21° 41' 57.10"N	27.94	32°	10.25	
4	45	87° 30'29.19"E	21° 40' 24.86"N	30.48	30°	6.95	
5	55	87° 30'28.59"E	21° 40' 17.56"N	55.88	38°	11.02	
6	72	87° 31'34.22"E	21° 39' 57.31"N	50.80	35°	9.61	
7	16	87° 32'21.58"E	21° 38' 28.98"N	58.42	20°	5.19	
8	21	87° 33'46.43"E	21° 38' 8.49"N	55.88	21°	8.52	
9	70	87° 34'48.85"E	21° 40' 43.75"N	17.78	23°	5.38	
10	30	87° 38' 3.59"E	21° 41' 4.78"N	63.50	27°	8.49	
11	75	87° 39'39.20"E	21° 41' 58.19"N	25.40	18°	6.45	
12	105	87° 39'31.30"E	21° 42' 6.34"N	33.02	19°	4.12	
13	35	87° 31'11.92"E	21° 38' 2.53"N	40.64	20°	8.16	
14	58	87° 34' 5.07"E	21° 41' 55.78"N	30.48	31°	10.67	
15	70	87° 33' 0.94"E	21° 43' 24.84"N	45.72	33°	8.43	
16	150	87° 33'21.33"E	21° 44' 6.65"N	38.10	38°	7.45	

(Tan $\Theta \times D$) + h (eye height)
Each grid is considered 15 m x 15 m (225 m²)

Annexure 14: Estimation of fuel wood value for each grid.

Grid No.	No. of tree present in the grid	Average diameter of the tree in cm	Height of the tree in m	Volume ($\pi r^2 h$)	Fuel wood in kg/tree	Fuel wood in kg/4 year	Fuel Wood in kg/year
1	60	45.72	14.99	2.46	61.76	3705.83	926.46
2	35	63.5	7.89	2.50	62.71	2194.89	548.72
3	110	27.94	10.25	0.63	15.77	1734.96	433.74
4	45	30.48	6.95	0.51	12.73	572.73	143.18
5	55	55.88	11.02	2.70	67.83	3730.59	932.65
6	72	50.8	9.61	1.95	48.88	3519.69	879.92
7	16	58.42	5.19	1.39	34.91	558.64	139.66
8	21	55.88	8.52	2.09	52.44	1101.27	275.32
9	70	17.78	5.38	0.13	3.35	234.67	58.67
10	30	63.5	8.49	2.69	67.48	2024.40	506.10
11	75	25.4	6.45	0.33	8.20	615.19	153.80
12	105	33.02	4.12	0.35	8.85	929.74	232.43
13	35	40.64	8.16	1.06	26.57	929.79	232.45
14	58	30.48	10.67	0.78	19.54	1133.30	283.32
15	70	45.72	8.43	1.38	34.73	2431.41	607.85
16	150	38.1	7.45	0.85	21.32	3197.56	799.39

Each grid is considered 15 m x 15 m (225 m²)

Annexure 15: Pre-designed questionnaire survey schedule for agricultural productivity per/year (March, 2017).

Name of the respondent, place with GPS location	Types of cropping		Irrigation source		Fluctuation of ground water table (BGL)	
	Amon or Boro	Amon and Boro (Both)	Rain water or other	Submersible	April (Feet)	November (Feet)
Name: Swapan Dhara Vill.- Chandanpur Long. 87° 36' 4.146" E Lat. 21° 39' 7.143" N	Boro	Aamon+Boro	Rain water for Amon	Submersible for Boro	240-250	200-220

Cont...

Production of paddy per Bigha in quintal (1 Bigha= 50 Decimal)	Investment for the paddy cultivation per Bigha (Rs.)	Market value of paddy per quintal (Rs.)	Land value of paddy field per Bigha (Rs.)	Leased value of the paddy field for the fishery conversion (Rs.)	Damaged costs of the agriculture plot by salt water breaches from fish farm plot (Rs.)
Boro=13 Amon=10	Boro=8,500 Amon= 6,000	Boro=1,600 Amon=1,400	2,30,000 per Bigha	50,000 per Bigha	20,000 per Bigha

Annexure 16: Sample survey sites for the calculation of agricultural productivity (March, 2017).

Sl. No.	Respondent name	Village name	Block name	Longitude	Latitude
1	Swapan Dhara	Chandanpur	Ramnagar-I	87° 36' 4.14"E	21° 39' 7.14"N
2	Satyan Khara	Fatepur	Ramnagar-I	87° 32' 29.49"E	21° 40' 4.45"N
3	Ganesh Kamilya	Champabani	Ramnagar-I	87° 30' 25.28"E	21° 38' 1.32"N

4	Purna Khatua	Bheri Baranga	Ramnagar-II	87° 31' 22.99"E	21° 42' 41.53"N
5	Gopal Chanda	Kismathiar	Ramnagar-II	87° 34' 55.43"E	21° 42' 11.55"N
6	Sanatan Bodhuk	Kantabani	Ramnagar-I	87° 30' 35.88"E	21° 40' 32.19"N
7	Manas Tripathi	Kadua	Ramnagar-II	87° 35' 47.47"E	21° 44' 12.55"N
8	Nimai Dinda	Uttar Maithuna	Ramnagar-II	87° 37' 8.852"E	21° 44' 31.82"N
9	Basanta Bag	Islampur	Ramnagar-II	87° 38' 17.38"E	21° 42' 28.68"N
10	Babu Bag	Dakshin Purushottampur	Ramnagar-II	87° 44' 41.26"E	21° 41' 29.15"N
11	Nakul Bera	Jagadishpur	Ramnagar-I	87° 31' 41.30"E	21° 38' 31.83"N
12	Shakti Nayek	Karonji	Ramnagar-II	87° 35' 51.11"E	21° 42' 1.27"N
13	Ranjit Patra	Santeshwarpur	Ramnagar-I	87° 28' 47.95"E	21° 42' 18.40"N
14	Bimal Nag	Badhia	Ramnagar-I	87° 28' 49.66"E	21° 43' 56.06"N
15	Swapan Jana	Dera	Ramnagar-II	87° 40' 44.36"E	21° 41' 18.69"N
16	Anupam Pani	Mandar	Ramnagar-II	87° 33' 24.65"E	21° 41' 31.97"N
17	Probodh Mondal	Dakshin Shitala	Ramnagar-II	87° 39' 44.79"E	21° 42' 34.53"N
18	Sukumar Patra	Kuliyata	Ramnagar-I	87° 34' 30.25"E	21° 39' 55.99"N
19	Rathikanta Giri	Shikarbar	Ramnagar-II	87° 33' 57.18"E	21° 43' 36.36"N
20	Kalyan Sardar	Jinandipur	Ramnagar-II	87° 37' 43.11"E	21° 43' 17.94"N

Annexure 17: Calculation of economic value for agricultural production per/year in INR.

Sl. No.	Farmer's name	Production of paddy per Bigha in Quintal	Prices of paddy per Quintal (Rs.)	Production of paddy per Bigha (Rs.)	Investment for production per Bigha (Rs.)	Net profit per Bigha (Rs.)	Annual profit of double & single cropping land (Rs.)
1	Swapan Dhara	Boro=13 + Amon=10	1,600 1,400	20,800 14,000	8,500 6,000	12,300 8,000	Annual Profit of Single Cropping Land Rs. 6,800 Per Year Profit of Double Cropping Land (Boro)Rs. 8,292 Per Year Profit of Double Cropping Land (Amon)Rs. 6,367 Per Year Annual Profit of Double Cropping Land Rs. 14,659 Per Year
2	Satyan Khara	Boro=13 + Amon=8	1,500 1,300	19,500 10,400	10,000 5,000	9,500 5,400	
3	Ganesh Kamilya	Boro=10 + Amon=9	1,500 1,400	15,000 12,600	8,000 7,000	7,000 5,600	
4	Purna Khatua	Boro=13 + Amon=8	1,400 1,300	18,200 10,400	8,000 6,000	10,200 4,400	
5	Gopal Chanda	Boro=12 + Amon=10	1,500 1,350	18,000 13,500	12,000 7,000	6,000 6,500	
6	Sanatan Bodhuk	Boro=12 + Amon=8	1,400 1,300	16,800 10,400	9,000 5,000	7,800 5,400	
7	Manas Tripathi	Boro=14 + Amon=10	1,500 1,400	21,000 14,000	10,000 6,000	11,000 8,000	
8	Nimai Dinda	Boro=12 + Amon=9	1,500 1,400	18,000 12,600	14,000 7,000	4,000 5,600	
9	Basanta Bag	Boro=10 + Amon=8	1,400 1,300	14,000 10,400	7,000 5,000	7,000 5,400	
10	Babu Bag	Boro=12 + Amon=10	1,600 1,400	19,200 14,000	9,000 6,000	10,200 8,000	
11	NakulBera	Boro=10 + Amon=8	1,600 1,450	16,000 11,600	8,500 6,000	7,500 5,600	
12	Shakti Nayek	Boro=10 + Amon=10	1,500 1,350	15,000 13,500	8,000 5,000	7,000 8,500	
13	Ranjit Patra	Amon=8	1,400	11,200	6,000	5,200	
14	Bimal Nag	Amon=12	1,450	17,400	8,000	9,400	
15	Swapan Jana	Amon=10	1,400	14,000	6,000	8,000	
16	Anupam Pani	Amon=8	1,450	11,600	5,000	6,600	

17	Probodh Mondal	Amon=10	1,400	14,000	6,500	7,500
18	Sukumar Patra	Amon=8	1,500	12,000	5,000	7,000
19	Rathikanta Giri	Amon=7	1,500	10,500	5,000	5,500
20	Kalyan Sardar	Amon=8	1,400	11,200	6000	5,200

(1 Decimal = 436 F²); (1 Decimal = 40.5 m²); (1 Hectare (ha) = 10, 000 m²); (1 Acre = 100 Decimal); (1 Acre = 0.405 ha)

Annexure 18: Pre-designed questionnaire survey sheet for commercial fishing (one time) March, 2017.

Name of the respondent, place with Latitude/Longitude	Area of fishery plot	Water quality	Types of fish	Production of fish in kg	Investment for fishing in Rs.	Market value of production fishes in Rs.
Name: Tuhin Dinda Vill.- Junbani Long. 87° 37' 38.173"E Lat. 21° 40' 22.649"N	4 Acre	Saline water	Venami	100 Quintal (10 ton)	35 Lakh	47 Lakh
Cont...						
Number of fish culture per year	Duration of fishing in month	Market value of fish per kg in Rs.	Name of the selling market	Land value of fish farm plot in Rs.		
2	4 Month (February to May and July to October)	470 /kg.	Kanthi/Kolkata	5 Lakh/Bigha (1Bigha=50 Decimal)		

Annexure 19: Pre-designed questionnaire survey sheet for subsistence fishing in the coastal wetlands (March, 2017).

Name of the respondent, place with Latitude/Longitude	Area of fishery plot	Water quality	Types of fish	Production of fish in kg	Investment for fishing in Rs.	Market value of production fishes in Rs.
Name: Jayanta Bar Vill.- Dadanpatrabar 87° 42' 2.679" E 21° 40' 32.119" N	1 Bigha (1 Bigha=50 Decimal)	Saline water	Taori, Vagor, Vetki, Kunkuni, Gule, Cnigri etc.	220	45, 000	77, 000
Cont...						
Number of fish culture per year	Duration of Fishing	market value of fish per kg in Rs.	Name of the selling market	Land value of fish farm plot in Rs.		
1	1 Year	200 (Small) 500 (Big)	Kanthi	3 Lakh/Bigha (1Bigha=50 Decimal)		

Annexure 20: Pre-designed questionnaire survey sheet for village pond fishing (March, 2017).

Name of the respondent, place with Latitude/Longitude	Area of fishery plot	Water quality	Types of fish	Production of fish in kg	Investment for fishing in Rs.	Market value of production fishes in Rs.
Name: Pinaki Maity Vill.- Satilapur 87° 37' 27.615" E 21° 41' 12.725" N	5 Decimal	Sweet water	Rui, Katla, Talapia, Magur etc.	150	5,000	22,500
Cont...						
Number of fish culture per year	Duration of fishing	Market value of fish per kg in Rs.	Name of the selling market	Land value of fish farm plot in Rs.		

1	1 Year	150	Paniparul, Ramnagar and Kanthi	15,000/Decimal
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Annexure 21: Pre-designed questionnaire survey sheet for open marine fishing (March, 2017).

Name of the respondent, place and Latitude/Longitude	Distance of the marine fishing venue from the destination	Duration of marine fishing in one operation	Amount of the fuel required for one operation	Amount of fish catch per operation
Name: Prasanta Majhi Sankarpur 87° 34' 14.369" E 21° 38' 27.663" N	140-150 km	10-12 Days	2000 Liter	200 C (1C=20 kg.)
Cont...				
No. of crew members per operation per boat	Name of the selling/auction market	Value of the commercially targeted fishes	Value of the non targeted marine fishes	Investment for one operation
12-15 Person	Digha Mohana	Ilish- Rs. 500/kg, Pabda- Rs.350/kg Pample- Rs.400/ kg	Babla, Tapse & Lote (Rs. 250/kg.)	Rs. 1,80,000

Annexure 22: Field survey sites of different fishery plots (March, 2017).

Sl. No.	Longitude	Latitude	Village name	Name of the fishing activities
1	87° 44' 46.946" E	21° 41' 39.381" N	Dakshin Purusotyampur	Open marine fishing (Soula Mouth)
2	87° 38' 31.096" E	21° 39' 24.142" N	Mandarmoni	Open marine fishing (Jaldha)
3	87° 38' 36.757" E	21° 39' 17.904" N	Mandarmoni	Open marine fishing (Jaldha)
4	87° 32' 37.717" E	21° 37' 56.017" N	Gangadharpur	Open marine fishing (Digha Mohana)
5	87° 29' 7.943" E	21° 36' 38.432" N	Duttapur	Open marine fishing (Udaipur)
6	87° 34' 14.369" E	21° 38' 27.663" N	Digha	Open marine fishing (Sankarpur)
7	87° 43' 9.847" E	21° 40' 8.941" N	Dadanpatrabar	Open marine fishing (Dadanpatrabar)
8	87° 44' 44.582" E	21° 41' 30.648" N	Dakshin Purusotyampur	Commercial fishing (Sankar mandi)
9	87° 40' 51.053" E	21° 40' 11.810" N	Sonamui	Commercial fishing (Astik Das)
10	87° 42' 29.182" E	21° 41' 48.979" N	Dakshin Purusotyampur	Commercial fishing
11	87° 43' 3.408" E	21° 41' 6.364" N	Dakshin Purusotyampur	Commercial fishing
12	87° 42' 0.451" E	21° 40' 6.705" N	Dadanpatrabar	Commercial fishing
13	87° 39' 49.023" E	21° 39' 21.473" N	Silampur	Commercial fishing
14	87° 37' 38.173" E	21° 40' 22.649" N	Junbani	Commercial fishing
15	87° 37' 7.203" E	21° 39' 45.902" N	Jaldha	Commercial fishing
16	87° 36' 22.230" E	21° 40' 15.293" N	Dublabari	Commercial fishing
17	87° 33' 34.121" E	21° 38' 27.798" N	Purba Mukundapur	Commercial fishing
18	87° 33' 41.822" E	21° 40' 6.411" N	Deulbatta	Commercial fishing
19	87° 32' 49.200" E	21° 38' 19.646" N	Maitrapur	Commercial fishing
20	87° 31' 41.604" E	21° 38' 3.739" N	Ghersai	Commercial fishing
21	87° 42' 2.679" E	21° 40' 32.119" N	Dadanpatrabar	Subsistence fishing in the coastal wetlands (Joyanta Bar)
22	87° 42' 20.130" E	21° 41' 27.215" N	Dakshin Purusotyampur	Subsistence fishing in the coastal wetlands
23	87° 42' 59.661" E	21° 41' 25.784" N	Dakshin Purusotyampur	Subsistence fishing in the coastal wetlands

24	87° 42' 55.554" E	21° 40' 26.389" N	Dadanpatrabar	Subsistence fishing in the coastal wetlands
25	87° 42' 7.039" E	21° 41' 14.335" N	Mania	Subsistence fishing in the coastal wetlands
26	87° 40' 13.067" E	21° 40' 29.252" N	Baichibonia	Subsistence fishing in the coastal wetlands
27	87° 38' 36.550" E	21° 40' 46.427" N	Patharmuha	Subsistence fishing in the coastal wetlands
28	87° 38' 24.742" E	21° 40' 2.773" N	Silampur	Subsistence fishing in the coastal wetlands
29	87° 37' 59.843" E	21° 40' 16.609" N	Junbani	Subsistence fishing in the coastal wetlands
30	87° 33' 56.582" E	21° 38' 55.257" N	Purba Mukundapur	Subsistence fishing in the coastal wetlands
31	87° 35' 59.819" E	21° 38' 35.154" N	Chandanpur	Village pond (Anita Majhi)
32	87° 35' 18.733" E	21° 39' 4.283" N	Tengramari	Village pond
33	87° 29' 43.063" E	21° 38' 13.462" N	Saripur	Village pond
34	87° 30' 29.267" E	21° 38' 14.735" N	Dakshinsimulia	Village pond
35	87° 32' 55.583" E	21° 38' 37.959" N	Purba Mukundapur	Village pond
36	87° 30' 29.374" E	21° 40' 16.748" N	Gangpura	Village pond
37	87° 29' 45.565" E	21° 43' 5.296" N	Chandapur	Village pond
38	87° 37' 27.615" E	21° 41' 12.725" N	Satilapur	Village pond
39	87° 41' 23.773" E	21° 40' 50.462" N	Rania	Village pond
40	87° 40' 20.113" E	21° 42' 36.043" N	Purbba Bar	Village pond
41	87° 37' 25.561" E	21° 42' 59.573" N	Sherpur	Village pond
42	87° 36' 17.109" E	21° 44' 27.960" N	Kadua	Village pond
43	87° 34' 40.592" E	21° 42' 58.937" N	Kanpur	Village pond

Annexure 23: Field survey data of open marine fishing in one (1) operation, (March, 2017).

Open marine fishing sectors	Amount of fish capture in one operation	Investment for one operation	Market value of captured fish in Rs./kg	Profit for one operation in Rs.	Area in km ²
Udaypur Sector	100 kg	7,000	150	8,000	15.70
Digha Mohana	40 C (1C=30kg)	95,000	150	85,000	310.80
Sankarpur Sector	200 C (1C=20kg)	1,80,000	150	4,20,000	984.20
Jalda Mohana	50kg	4,000	150	3,500	5.34
Dadanpatrabar Sector	700 kg	45,000	150	60,000	24.57
Soula River Mouth	20 C (1 C=60 kg)	90,000	150	90,000	9.28

Annexure 24: Village wise number of households and population data (Census, 2011).

Serial No.	Block name	Village name	No. of households	Total population
1	Ramnagar-I	Kanda Gram	273	988
2	Ramnagar-I	Kachua	46	227
3	Ramnagar-I	Barbatia	112	552
4	Ramnagar-I	Bakharpur	127	516
5	Ramnagar-I	Badhia	1261	5979
6	Ramnagar-I	Bag Brajakishor	164	927
7	Ramnagar-I	Santeshwarpur	550	2857
8	Ramnagar-I	Shakhamudi	62	351
9	Ramnagar-I	Shyamsundarpur	6	39
10	Ramnagar-I	Purushottampur	544	2715

11	Ramnagar-I	Damadarpur	860	4236
12	Ramnagar-I	Chandanpur Patna	193	979
13	Ramnagar-I	Minabag	79	406
14	Ramnagar-I	Padubar	326	1671
15	Ramnagar-I	Juki	525	2410
16	Ramnagar-I	Chandanpur	368	1766
17	Ramnagar-I	Bidyadharpur	163	806
18	Ramnagar-I	Uttar Mukundapur	253	1176
19	Ramnagar-I	Baliharpur	30	138
20	Ramnagar-I	Haldia	754	3370
21	Ramnagar-I	Khairanda	397	1767
22	Ramnagar-I	Rania	175	837
23	Ramnagar-I	Nilkantapur	236	1125
24	Ramnagar-I	Jharpadima	105	524
25	Ramnagar-I	Sadi	482	2152
26	Ramnagar-I	Arjjuni	121	601
27	Ramnagar-I	Akhuya Dangri	209	982
28	Ramnagar-I	Kholaberya	178	841
29	Ramnagar-I	Kainara	618	2875
30	Ramnagar-I	Dedanri	355	1812
31	Ramnagar-I	Ashwatthapur	344	1920
32	Ramnagar-I	Ranisai	748	3976
33	Ramnagar-I	Nonaari	246	1124
34	Ramnagar-I	Mukundapur	923	5054
35	Ramnagar-I	Kiyakuli	176	892
36	Ramnagar-I	Jashateghari	224	1176
37	Ramnagar-I	Hinari	74	362
38	Ramnagar-I	Santra	567	2612
39	Ramnagar-I	Shonpur	292	1508
40	Ramnagar-I	Durgapur	429	2194
41	Ramnagar-I	Deuli	331	1584
42	Ramnagar-I	Rautrapur	119	653
43	Ramnagar-I	Dihibir Kul	501	2430
44	Ramnagar-I	Madhupur	146	776
45	Ramnagar-I	Tangabani	54	258
46	Ramnagar-I	Shukra Shani	126	562
47	Ramnagar-I	Hajipur	49	228
48	Ramnagar-I	Bandhmuri	151	750
49	Ramnagar-I	Kulbudhi	249	1259
50	Ramnagar-I	Uttar Shimulia	174	943
51	Ramnagar-I	Shanbalishai	177	785
52	Ramnagar-I	Hirapur	323	1514
53	Ramnagar-I	Bagmari	263	1271
54	Ramnagar-I	Mangalpur	219	1117
55	Ramnagar-I	Kantabani	366	1896
56	Ramnagar-I	Gangpura	247	1344
57	Ramnagar-I	Gobra	547	2661
58	Ramnagar-I	Basantapur	289	1364

59	Ramnagar-I	Ullaspur	191	909
60	Ramnagar-I	Paschimbar	196	949
61	Ramnagar-I	Mahajan	241	1136
62	Ramnagar-I	Akna	165	674
63	Ramnagar-I	Ghanta Shala	154	688
64	Ramnagar-I	Dakshin Kaya	100	515
65	Ramnagar-I	Birampur	203	975
66	Ramnagar-I	Fatepur	222	1012
67	Ramnagar-I	Pariharpur	72	334
68	Ramnagar-I	Kabra	351	1658
69	Ramnagar-I	Tikra	193	904
70	Ramnagar-I	Talga Chhari	712	3421
71	Ramnagar-I	Ghritapura	76	359
72	Ramnagar-I	Diksal	235	1117
73	Ramnagar-I	Potapara	54	239
74	Ramnagar-I	Uttar Basulipat	110	558
75	Ramnagar-I	Bagpura	654	3270
76	Ramnagar-I	Dakshin Basulipat	192	909
77	Ramnagar-I	Saiyadpur	306	1383
78	Ramnagar-I	Ramnagar	411	1914
79	Ramnagar-I	Jhaugerya	144	746
80	Ramnagar-I	Deulbatta	86	461
81	Ramnagar-I	Bahadurpur	79	405
82	Ramnagar-I	Dakshin Gopalpur	131	650
83	Ramnagar-I	Chhota Balarampur	1	1
84	Ramnagar-I	Jamra Shyampur	137	702
85	Ramnagar-I	Lachhimpur	161	842
86	Ramnagar-I	Dalbaladya	34	177
87	Ramnagar-I	Panch Daria	63	337
88	Ramnagar-I	Dakshin Balarampur	32	130
89	Ramnagar-I	Shankarpur	98	545
90	Ramnagar-I	Kuliyata	34	143
91	Ramnagar-I	Jashipur	92	470
92	Ramnagar-I	Kaluya Sanda	56	224
93	Ramnagar-I	Bara Solemanpur	491	2321
94	Ramnagar-I	Narina	376	1580
95	Ramnagar-I	Nandi Chak	61	208
96	Ramnagar-I	Biswanathpur	192	941
97	Ramnagar-I	Bodhora	369	1775
98	Ramnagar-I	Tengramari	326	1460
99	Ramnagar-I	Kaema	49	248
100	Ramnagar-I	Chandapur	443	1944
101	Ramnagar-I	Kshirpal	146	671
102	Ramnagar-I	Bherichauli	96	446
103	Ramnagar-I	Dublbari	128	612
104	Ramnagar-I	Alampur	18	29
105	Ramnagar-I	Jaldha	431	2177
106	Ramnagar-I	Tajpur	209	920

107	Ramnagar-I	Nardanda	124	530
108	Ramnagar-I	Medinipur	445	2083
109	Ramnagar-I	Paya	101	458
110	Ramnagar-I	Kashipur	150	661
111	Ramnagar-I	Bansbani	126	597
112	Ramnagar-I	Mandala	250	1220
113	Ramnagar-I	Mrijapur	201	1037
114	Ramnagar-I	Saripur	63	290
115	Ramnagar-I	Padima	257	1458
116	Ramnagar-I	Duttapur	187	812
117	Ramnagar-I	Gadadharpur	125	588
118	Ramnagar-I	Bhagibaharampur	206	970
119	Ramnagar-I	Chanpabani	224	1026
120	Ramnagar-I	Palsandapur	59	210
121	Ramnagar-I	Ratanpur	157	926
122	Ramnagar-I	Jatimati	398	2133
123	Ramnagar-I	Dakshinshimulia	333	1543
124	Ramnagar-I	Bilamria	296	1516
125	Ramnagar-I	Jagadishpur	154	718
126	Ramnagar-I	Ghersai	178	901
127	Ramnagar-I	Gobindabasan	246	1007
128	Ramnagar-I	Somaibasan	49	269
129	Ramnagar-I	Gangadharpur	70	359
130	Ramnagar-I	Atili	11	42
131	Ramnagar-I	Jagai Basan	25	102
132	Ramnagar-I	Maitrapur	238	1204
133	Ramnagar-I	Mirjapur	69	362
134	Ramnagar-I	Haropur	239	1070
135	Ramnagar-I	Alankarpur	303	1481
136	Ramnagar-I	Daha Daya	376	1720
137	Ramnagar-I	Purba Mukundapur	543	2766
138	Ramnagar-I	Khadalgobra	1198	5344
139	Ramnagar-II	Kasafaltalya	155	731
140	Ramnagar-II	Gobindapur	176	958
141	Ramnagar-II	Hamirpur	241	1203
142	Ramnagar-II	Baranga	444	2212
143	Ramnagar-II	Chakghuli	135	628
144	Ramnagar-II	Bheri Baranga	479	2496
145	Ramnagar-II	Jagadishpur	205	1026
146	Ramnagar-II	Kan Kaneswar	71	369
147	Ramnagar-II	Kanoa	68	309
148	Ramnagar-II	Mandar	743	3583
149	Ramnagar-II	Paldhui	789	3813
150	Ramnagar-II	Raghunathpur	178	836
151	Ramnagar-II	Kanpur	874	4523
152	Ramnagar-II	Talkanpur	195	919
153	Ramnagar-II	Sabitrapur	720	3367
154	Ramnagar-II	Madhabpur	645	3191

155	Ramnagar-II	Nashirpur	50	246
156	Ramnagar-II	Gaurangabar	31	156
157	Ramnagar-II	Shikarbar	74	340
158	Ramnagar-II	Dayanidhibar	94	440
159	Ramnagar-II	Akulbar	80	365
160	Ramnagar-II	Jagadish Paschimbar	206	1015
161	Ramnagar-II	Depar Shasanbar	380	1805
162	Ramnagar-II	Ranichak	84	459
163	Ramnagar-II	Depal	694	3359
164	Ramnagar-II	Kanjia	211	1074
165	Ramnagar-II	Arya Padyapur	244	1358
166	Ramnagar-II	Naya Shyampur	19	123
167	Ramnagar-II	Kadua	690	3615
168	Ramnagar-II	Dharash	284	1337
169	Ramnagar-II	Manikbasan	260	1261
170	Ramnagar-II	Malancha	193	1024
171	Ramnagar-II	Kalapunja	734	3637
172	Ramnagar-II	Chata Padmapur	189	961
173	Ramnagar-II	Sonakania	191	879
174	Ramnagar-II	Dumana Paikbar	64	326
175	Ramnagar-II	Dumaria	252	1168
176	Ramnagar-II	Paikbar	8	42
177	Ramnagar-II	Katmundi	163	856
178	Ramnagar-II	Maithna Paikbar	33	154
179	Ramnagar-II	Mandarpur	290	1682
180	Ramnagar-II	Khojabar	58	314
181	Ramnagar-II	Mahammadpur	47	295
182	Ramnagar-II	Bali Pukhuria	104	564
183	Ramnagar-II	Nij Maithuna	423	1937
184	Ramnagar-II	Senapatibar	42	198
185	Ramnagar-II	Baksipur	326	1475
186	Ramnagar-II	Uttar Maithuna	136	613
187	Ramnagar-II	Danda Belbani	510	2705
188	Ramnagar-II	Lalpur	82	367
189	Ramnagar-II	Shonamui	155	736
190	Ramnagar-II	Bhuianjibar	246	1209
191	Ramnagar-II	Dakshin Maithuna	189	866
192	Ramnagar-II	Haripur	37	191
193	Ramnagar-II	Sikharpur	10	58
194	Ramnagar-II	Dakshin Tentultala	279	1603
195	Ramnagar-II	Uttar Tentultala	237	1289
196	Ramnagar-II	Uttar Kalyanpur Betulya Rampurbar	39	214
197	Ramnagar-II	Betulya Rampurbar Subarna Dighi	2	8
198	Ramnagar-II	Rautarapur	60	290
199	Ramnagar-II	Kalyanpur	30	150
200	Ramnagar-II	Raipur	35	168
201	Ramnagar-II	Dakshin Kalayanpur	147	711
202	Ramnagar-II	Balarampur	59	255

203	Ramnagar-II	Shahapur	108	538
204	Ramnagar-II	Khidirpur	216	1023
205	Ramnagar-II	Ahammadpur	80	398
206	Ramnagar-II	Jinandipur	276	1474
207	Ramnagar-II	Tatkapur	174	811
208	Ramnagar-II	Sherpur	138	730
209	Ramnagar-II	Khoyapur	96	431
210	Ramnagar-II	Dhanubar	64	313
211	Ramnagar-II	Pashchim Ramchandrapur	87	454
212	Ramnagar-II	Uttar Gopalpur	308	1564
213	Ramnagar-II	Purbba Raghunathpur	69	300
214	Ramnagar-II	Tajpur Purbbar	304	1594
215	Ramnagar-II	Gopal Chak	73	361
216	Ramnagar-II	Amritbar	73	346
217	Ramnagar-II	Nachhimpur	222	1093
218	Ramnagar-II	Shyampur	161	847
219	Ramnagar-II	Kismathiar	206	918
220	Ramnagar-II	Thiar	425	2180
221	Ramnagar-II	Uttar Kachua	124	577
222	Ramnagar-II	Tajpur Dakshinbar	248	1196
223	Ramnagar-II	Radhapur	56	339
224	Ramnagar-II	Bar Badalpur	9	55
225	Ramnagar-II	Badalpur	224	1096
226	Ramnagar-II	Chhota Kashinathpur	27	147
227	Ramnagar-II	Bara Kashinathpur	22	116
228	Ramnagar-II	Chahaka	123	623
229	Ramnagar-II	Satilapur	926	4570
230	Ramnagar-II	Karonji	898	4329
231	Ramnagar-II	Narandia	514	2404
232	Ramnagar-II	Talkatalia	506	2211
233	Ramnagar-II	Bara Bankuya	1298	6169
234	Ramnagar-II	Narkuli	529	2597
235	Ramnagar-II	Mandarmani	97	507
236	Ramnagar-II	Silampur	169	963
237	Ramnagar-II	Deuli	472	2357
238	Ramnagar-II	Phulbari	124	738
239	Ramnagar-II	Kalikapur	110	675
240	Ramnagar-II	Kandarpapur	370	1862
241	Ramnagar-II	Nalguna	14	67
242	Ramnagar-II	Kanchibar	47	231
243	Ramnagar-II	Chak Pratappur	10	44
244	Ramnagar-II	Islampur	599	2847
245	Ramnagar-II	Satbatia	98	496
246	Ramnagar-II	Ghol	391	1844
247	Ramnagar-II	Banbar	72	401
248	Ramnagar-II	Uttar Shitala	246	1204
249	Ramnagar-II	Dakshin Shitala	307	1605
250	Ramnagar-II	Keishnapur	36	214

251	Ramnagar-II	Chhota Chaulkhola	21	88
252	Ramnagar-II	Keshabpur	101	539
253	Ramnagar-II	Kalindi	980	4893
254	Ramnagar-II	Suberia	283	1431
255	Ramnagar-II	Purbba Bar	223	1065
256	Ramnagar-II	Purbba Gadhaharpur	85	349
257	Ramnagar-II	Ramchandra Nagar	155	716
258	Ramnagar-II	Purbba Ramchandrapur	25	126
259	Ramnagar-II	Lachhandrapur	165	793
260	Ramnagar-II	Bishnupur	68	310
261	Ramnagar-II	Haurburi	47	265
262	Ramnagar-II	Kismat Haurburi	72	354
263	Ramnagar-II	Teghari	270	1283
264	Ramnagar-II	Purbba Purushottampur	265	1045
265	Ramnagar-II	Daudpur	29	141
266	Ramnagar-II	Dhunja Baraj	63	291
267	Ramnagar-II	Dera	730	3628
268	Ramnagar-II	Sona Muhi	122	712
269	Ramnagar-II	Rania	494	2313
270	Ramnagar-II	Dadanpatra	301	1391
271	Ramnagar-II	Mania	2	6
272	Ramnagar-II	Dakshin Purushottampur	476	2394
273	Ramnagar-I	Udampur	NA	NA
274	Ramnagar-I	Junbania	NA	NA
275	Ramnagar-I	Talaria	NA	NA
276	Ramnagar-I	Katindiha	NA	NA
277	Ramnagar-I	Birampur	NA	NA
278	Ramnagar-I	Nilpur	NA	NA
279	Ramnagar-I	Chandanpur	NA	NA
280	Ramnagar-I	Rerakhana	NA	NA
281	Ramnagar-I	Raypur	NA	NA
282	Ramnagar-I	Digha	NA	NA
283	Ramnagar-I	Jhaua	NA	NA
284	Ramnagar-I	Kiagoria	NA	NA
285	Ramnagar-I	Begunadiha	NA	NA
286	Ramnagar-II	Chhotta Kashimpur	NA	NA
287	Ramnagar-II	Patharmuha	NA	NA
288	Ramnagar-II	Baichibonia	NA	NA

Annexure 25: Local name of the plant community in the studied coast (November, 2017).

Sl. No.	Vegetation code	Local name of the vegetation	9	9	Neem
			10	10	Kala
1	1	Aam	11	11	Khejur
2	2	Jaam	12	12	Aswastha
3	3	Narikel	13	13	Pepe
4	4	Kanthal	14	14	Aakanda
5	5	Jhao	15	15	Bot
6	6	Aakashmoni	16	16	Chanpa
7	7	Kaaju	17	17	Supari
8	8	Sajne	18	18	Sobeda

19	19	Tentul	79	79	Patka
20	20	Peyara	80	80	Beguna
21	21	Chaatim	81	81	Sar
22	22	Devdaru	82	82	Berakalmi
23	23	Mehagini	83	83	Daab
24	24	Baans	84	84	Sishu
25	25	Beel	85	85	Ghamar
26	26	Keya	86	86	Poksunga
27	27	Simul	87	87	Kushum
28	28	Manasha	88	88	Dhutura
29	29	Kolke	89	89	Challa
30	30	Aata	90	90	Mon
31	31	Chorpolte	91	91	Chandan
32	32	Kantababla	92	92	Karabi
33	33	Arjun	93	93	China Badam
34	34	Patabahar	94	94	Kachra
35	35	Eucalyptus	95	95	Radhachura
36	36	Kuchla	96	96	Dalim
37	37	Dumur	97	97	Arahar
38	38	Beth	98	98	Baksha Badam
39	39	Khari	99	99	Fanimanasha
40	40	Chalta	101	101	Challa
41	41	Kadam	102	102	Nalkhagra
42	42	Jamrul	103	103	Ritha
43	43	Kachu	104	104	Doodhkanchan
44	44	Kachuripana	105	105	Chanpa
45	45	Joba	106	106	Sirish
46	46	Taal			
47	47	Pakur			
48	48	Mousambi			
49	49	Madar			
50	50	Tejpata			
51	51	Kalmi			
52	52	Maan			
53	53	Shaoura			
54	54	Khiris			
55	55	Pulang			
56	56	Aakh			
57	57	Kool			
58	58	Karanja			
59	59	Lichu			
60	60	Paan			
61	61	Batabi			
62	62	Lebu			
63	63	Babla			
64	64	Halud			
65	65	Segun			
66	66	Togor			
67	67	Kurchi			
68	68	Saal			
69	69	Gaab			
70	70	Aanarash			
71	71	Bakul			
72	72	Krishnachura			
73	73	Aamra			
74	74	Sthal Padma			
75	75	Parthenioum			
76	76	Nol			
77	77	Luaghaas			
78	78	Patharkuchi			