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Quantifying Carbon Sequestration of Forest Ecosystem Using GIS and Remote Sensing: The Case of Yeraba State Forest East Gojjam Zone Amhara Regional State

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APPENDICES

Appendix 1: Sample plot central coordinate.

Sample plot	X	Y
1	362747	1138860
2	363175	1138860
3	363603	1138860
4	364031	1138860
5	363175	1139288
6	363603	1139288
7	364031	1139288
8	363603	1139716
9	364031	1139716
10	364459	1139716
11	363603	1140144
12	364031	1140144
13	364459	1140144
14	364887	1140144
15	363603	1140572
16	364031	1140572

17	364459	1140572

Appendix 2: Above and below ground biomass per plot.

Plot ID	X	Y	DBH (cm)	Tree height (m)	No. of species	AGB (ton)	BGB (ton)	AGC (ton)	BGC (ton)
1	362747	113886 0	196.35	429.72	18	5.325	0.651	2.503	0.651
2	363175	113886 0	182.631	695.81	28	73.8	9.018	34.686	9.018
3	363603	113886 0	387.736	662.27	87	7.492	0.915	3.521	0.915
4	364031	113886 0	246.2153	393.7	63	28.477	3.48	13.384	3.48
5	363175	113928 8	347.191	569.74	32	4.795	0.586	2.254	0.586
6	363603	113928 8	326.7357	562.59	71	26.733	3.267	12.564	3.267
7	364031	113928 8	419.0446	796.4	108	22.873	2.795	10.75	2.795
8	363603	113971 6	258.9252	635.8	45	2.192	0.268	1.03	0.268
9	364031	113971 6	532.0621	750.8	46	4.903	0.599	2.305	0.599
10	364459	113971 6	357.0541	558.41	84	4.894	0.598	2.3	0.598
11	363603	114014 4	727.508	1079.3	52	12.417	1.517	5.836	1.517
12	364031	114014 4	459.1083	529.72	39	63.557	7.767	29.872	7.767
13	364459	114014 4	779.2118	1008.4	48	10.924	1.335	5.134	1.335
14	364887	114014 4	523.6704	504.58	35	5.48	0.67	2.576	0.67
13	363603	114057 2	504.3153	851.5	44	9.509	1.162	4.469	1.162
16	364031	114057 2	277.4682	533.7	25	16.564	2.024	7.785	2.024
17	364459	114057 2	429.0605	861.5	84	6.621	0.809	3.112	0.809

Appendix 3: Species information.

Species	DBH (cm)	Height (m)	P (Specific wood density)	No. of species	Frequency (%)	DBH average	Height average
Cupressus lusitanica	6700.92	5027.55	0.414	468	51.49	14.32	10.74

Acacia dicurusne	875.69	741.4	0.557	96	10.56	9.12	7.72
eucallyptus globuse	4346.6	2423.567	0.7093	154	16.94	28.22	15.74
Acacia melanoxylon	1556.37	1131.967	0.538	69	7.59	22.56	16.41
Grevillea roubsta	386.92	253.06	0.536	44	4.84	8.79	5.75
pinus patula	693.76	1144.615	0.45	78	8.58	8.89	14.67
Total	14560.27	10722.16		909	100	91.91	71.03

Appendix 4: Litter carbon pool.

Plot ID	**X**	**Y**	**Wet wt. (g)**	**Fresh wt. (g)**	**Oven-dry wt. (g)**	**LB (ton)**	**% Carbon**	**Litter carbon (ton)**
ID 1	362747	1138860	832	100	89.961	0.075	48.3	3.62
ID 2	363175	1138860	956	100	84.291	0.081	43.6	3.51
ID 3	363603	1138860	858	100	85.672	0.074	51.05	3.75
ID 4	364031	1138860	765	100	83.586	0.064	43.9	2.81
ID 5	363175	1139288	750	100	86.875	0.065	47.52	3.1
ID 6	363603	1139288	960	100	85.854	0.082	46.8	3.86
ID 7	364031	1139288	1010	100	91.395	0.092	49.6	4.58
ID 8	363603	1139716	1050	100	90.237	0.095	45.4	4.3
ID 9	364031	1139716	950	100	88.976	0.085	43.8	3.7
ID 10	364459	1139716	1020	100	89.374	0.091	49.6	4.52
ID 11	363603	1140144	840	100	86.0152	0.072	46.45	3.36
ID 12	364031	1140144	658	100	79.935	0.053	46.2	2.43
ID 13	364459	1140144	695	100	81.431	0.057	44.8	2.54
ID 14	364887	1140144	730	100	86.372	0.063	42.9	2.7
ID 15	363603	1140572	725	100	83.096	0.06	48.41	2.92
ID 16	364031	1140572	635	100	85.67	0.054	46.5	2.53

ID 17	364459	1140572	865	100	87.36	0.076	49.6	3.75

Appendix 5: Soil carbon pool.

Plot ID	**X**	**Y**	**Fresh weight (g)**	**Dry weight (g)**	**depth (30 cm)**	**Augur radius**	**volume (cm^3)**	**BD (g/cm^3)**	**% of C**	**Soil carbon (ton)**
ID 1	362747	1138860	100	81.27	30	1.5	211.95	0.383	10.87	125.04
ID 2	363175	1138860	100	88.37	30	1.5	211.95	0.417	12.63	157.978
ID 3	363603	1138860	100	84.91	30	1.5	211.95	0.401	8.25	99.152
ID 4	364031	1138860	100	85.33	30	1.5	211.95	0.403	8.94	107.976
ID 5	363175	1139288	100	83.62	30	1.5	211.95	0.395	11.24	133.035
ID 6	363603	1139288	100	87.83	30	1.5	211.95	0.414	8.57	106.54
ID 7	364031	1139288	100	93.24	30	1.5	211.95	0.44	9.65	127.355
ID 8	363603	1139716	100	84.66	30	1.5	211.95	0.399	9.23	110.603
ID 9	364031	1139716	100	86.88	30	1.5	211.95	0.41	10.57	129.982
ID 10	364459	1139716	100	90.39	30	1.5	211.95	0.426	8.77	112.204
ID 11	363603	1140144	100	85.64	30	1.5	211.95	0.404	8.82	106.914
ID 12	364031	1140144	100	82.75	30	1.5	211.95	0.39	10.27	120.289
ID 13	364459	1140144	100	91.63	30	1.5	211.95	0.432	11.86	153.819
ID 14	364887	1140144	100	86.67	30	1.5	211.95	0.409	8.93	109.549
ID 15	363603	1140572	100	79.84	30	1.5	211.95	0.377	8.42	95.153
ID 16	364031	1140572	100	87.6	30	1.5	211.95	0.413	9.71	120.396
ID 17	364459	1140572	100	89.87	30	1.5	211.95	0.424	9.32	118.555