APPENDIX A

COEFFICIENTS AT THE FARM LEVEL

Table A1 Labor coefficients for small farm using chemicals

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
R5	5.35	4.90	0.40	0.41	0.02	0.04	0.10	0.07	1.53	0.77	0.03	0.23	0.00
R6	5.21	4.82	0.56	0.58	0.40	0.24	0.17	0.16	1.58	0.87	0.03	0.02	0.00
R7	4.41	4.02	0.69	0.63	0.09	0.22	0.24	0.21	2.24	1.48	0.31	0.34	0.00
R8	3.15	3.05	0.80	0.75	0.26	0.33	0.21	0.21	0.01	0.05	0.03	0.13	0.00
R9	3.05	3.00	0.73	0.68	0.43	0.70	0.51	0.54	0.01	0.06	0.41	0.51	2.94
R10	3.24	2.96	0.77	0.62	3.64	2.51	2.63	2.28	1.41	1.66	0.41	0.47	2.16
R11	2.88	2.70	0.66	0.96	5.08	3.30	2.66	2.58	0.14	0.27	0.78	0.58	4.22
R12	2.51	2.56	3.86	4.00	0.26	0.99	0.68	0.68	0.02	0.15	0.41	0.31	0.97
R13	2.59	2.62	3.72	4.46	0.09	0.06	0.07	0.06	0.09	0.25	0.41	0.44	0.79
R14	2.63	2.79	3.31	3.94	0.16	0.09	0.20	0.19	1.87	1.25	2.09	2.39	4.53
R15	3.33	3.30	1.85	1.82	0.00	0.02	0.03	0.02	2.33	1.41	1.10	1.30	0.00
R16	5.21	5.02	0.71	0.66	0.05	0.02	0.05	0.04	1.54	0.77	1.82	1.72	0.00

Table A1 Continue

Constraints /Decision variable	X14	X15	X15	X17	X18	X19	X20	X21	X22	X23	X24	X25
R5	0.00	3.57	0.00	3.57	2.74	0.00	3.15	3.57	2.26	3.15	3.57	1
R6	0.00	3.35	0.00	3.35	1.60	0.00	20.60	3.35	1.72	20.60	3.35	1
R7	0.00	14.14	0.00	14.14	4.22	4.28	0.00	14.14	6.47	4.28	18.42	1
R8	0.00	0.00	0.00	0.00	0.97	2.26	0.00	0.00	2.26	2.26	2.32	1
R9	4.44	0.00	4.44	0.00	3.73	4.67	2.94	2.94	4.67	4.67	4.67	1
R10	2.26	4.28	2.26	4.28	6.69	4.36	2.16	2.16	4.36	4.36	4.36	1
R11	1.72	2.42	1.72	2.42	4.22	4.22	4.22	4.22	4.22	4.22	4.22	1
R12	2.19	1.72	2.19	1.72	0.97	0.97	0.97	0.97	0.97	0.97	1.03	1
R13	4.44	2.19	4.44	2.19	0.79	0.79	0.79	0.79	0.79	0.79	0.79	1
R14	2.26	5.51	2.26	5.51	4.53	4.53	17.86	10.03	4.53	17.86	10.03	1
R15	1.72	23.77	1.72	23.77	0.00	0.00	18.40	23.77	0.00	18.40	23.77	1
R16	2.19	4.84	2.19	4.84	0.00	0.16	4.35	4.84	4.60	4.51	5.00	1

Table A2 Labor coefficients for small farm using chemicals and bioextract

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
R5	7.52	6.69	0.40	0.41	0.02	0.04	0.10	0.07	1.53	0.77	0.03	0.23	0.00
R6	5.83	5.41	0.56	0.58	0.40	0.24	0.17	0.16	1.58	0.87	0.03	0.02	0.00
R7	5.42	4.71	0.69	0.63	0.09	0.22	0.24	0.21	2.24	1.48	0.31	0.34	0.00
R8	3.77	3.48	0.80	0.75	0.26	0.33	0.21	0.21	0.01	0.05	0.03	0.13	0.00
R9	3.69	3.42	0.73	0.68	0.43	0.70	0.51	0.54	0.01	0.06	0.41	0.51	2.94
R10	3.92	3.88	0.77	0.62	3.64	2.51	2.63	2.28	1.41	1.66	0.41	0.47	2.16
R11	3.31	2.96	0.66	0.96	5.08	3.30	2.66	2.58	0.14	0.27	0.78	0.58	4.22
R12	2.91	2.83	3.86	4.00	0.26	0.99	0.68	0.68	0.02	0.15	0.41	0.31	0.97
R13	2.78	2.86	3.72	4.46	0.09	0.06	0.07	0.06	0.09	0.25	0.41	0.44	0.79
R14	3.06	3.16	3.31	3.94	0.16	0.09	0.20	0.19	1.87	1.25	2.09	2.39	4.53
R15	3.59	3.60	1.85	1.82	0.00	0.02	0.03	0.02	2.33	1.41	1.10	1.30	0.00
R16	6.87	6.58	0.71	0.66	0.05	0.02	0.05	0.04	1.54	0.77	1.82	1.72	0.00

Table A2 Continue

Constraints /Decision variable	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R5	0.00	3.57	0.00	3.57	2.74	0.00	3.15	3.57	2.26	3.15	3.57	1
R6	0.00	3.35	0.00	3.35	1.60	0.00	20.60	3.35	1.72	20.60	3.35	1
R7	0.00	14.14	0.00	14.14	4.22	4.28	0.00	14.14	6.47	4.28	18.42	1
R8	0.00	0.00	0.00	0.00	0.97	2.26	0.00	0.00	2.26	2.26	2.32	1
R9	4.44	0.00	4.44	0.00	3.73	4.67	2.94	2.94	4.67	4.67	4.67	1
R10	2.26	4.28	2.26	4.28	6.69	4.36	2.16	2.16	4.36	4.36	4.36	1
R11	1.72	2.42	1.72	2.42	4.22	4.22	4.22	4.22	4.22	4.22	4.22	1
R12	2.19	1.72	2.19	1.72	0.97	0.97	0.97	0.97	0.97	0.97	1.03	1
R13	4.44	2.19	4.44	2.19	0.79	0.79	0.79	0.79	0.79	0.79	0.79	1
R14	2.26	5.51	2.26	5.51	4.53	4.53	17.86	10.03	4.53	17.86	10.03	1
R15	1.72	23.77	1.72	23.77	0.00	0.00	18.40	23.77	0.00	18.40	23.77	1
R16	2.19	4.84	2.19	4.84	0.00	0.16	4.35	4.84	4.60	4.51	5.00	1

Table A3 Labor coefficients for large farm using chemicals

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
R5	3.21	3.50	0.40	0.41	0.02	0.04	0.10	0.07	1.53	0.77	0.03	0.23	0.00
R6	3.39	3.81	0.56	0.58	0.40	0.24	0.17	0.16	1.58	0.87	0.03	0.02	0.00
R7	3.36	3.63	0.69	0.63	0.09	0.22	0.24	0.21	2.24	1.48	0.31	0.34	0.00
R8	2.69	3.09	0.80	0.75	0.26	0.33	0.21	0.21	0.01	0.05	0.03	0.13	0.00
R9	1.80	1.74	0.73	0.68	0.43	0.70	0.51	0.54	0.01	0.06	0.41	0.51	2.94
R10	1.96	1.62	0.77	0.62	3.64	2.51	2.63	2.28	1.41	1.66	0.41	0.47	2.16
R11	2.11	1.75	0.66	0.96	5.08	3.30	2.66	2.58	0.14	0.27	0.78	0.58	4.22
R12	1.99	1.87	3.86	4.00	0.26	0.99	0.68	0.68	0.02	0.15	0.41	0.31	0.97
R13	1.77	1.64	3.72	4.46	0.09	0.06	0.07	0.06	0.09	0.25	0.41	0.44	0.79
R14	2.06	1.98	3.31	3.94	0.16	0.09	0.20	0.19	1.87	1.25	2.09	2.39	4.53
R15	2.47	2.58	1.85	1.82	0.00	0.02	0.03	0.02	2.33	1.41	1.10	1.30	0.00
R16	3.21	3.77	0.71	0.66	0.05	0.02	0.05	0.04	1.54	0.77	1.82	1.72	0.00

Table A3 Continue

Constraints /Decision variable	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R5	0.00	3.57	0.00	3.57	2.74	0.00	3.15	3.57	2.26	3.15	3.57	1
R6	0.00	3.35	0.00	3.35	1.60	0.00	20.60	3.35	1.72	20.60	3.35	1
R7	0.00	14.14	0.00	14.14	4.22	4.28	0.00	14.14	6.47	4.28	18.42	1
R8	0.00	0.00	0.00	0.00	0.97	2.26	0.00	0.00	2.26	2.26	2.32	1
R9	4.44	0.00	4.44	0.00	3.73	4.67	2.94	2.94	4.67	4.67	4.67	1
R10	2.26	4.28	2.26	4.28	6.69	4.36	2.16	2.16	4.36	4.36	4.36	1
R11	1.72	2.42	1.72	2.42	4.22	4.22	4.22	4.22	4.22	4.22	4.22	1
R12	2.19	1.72	2.19	1.72	0.97	0.97	0.97	0.97	0.97	0.97	1.03	1
R13	4.44	2.19	4.44	2.19	0.79	0.79	0.79	0.79	0.79	0.79	0.79	1
R14	2.26	5.51	2.26	5.51	4.53	4.53	17.86	10.03	4.53	17.86	10.03	1
R15	1.72	23.77	1.72	23.77	0.00	0.00	18.40	23.77	0.00	18.40	23.77	1
R16	2.19	4.84	2.19	4.84	0.00	0.16	4.35	4.84	4.60	4.51	5.00	1

Table A4 Labor coefficients for large farm using chemicals and bioextract

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
R5	4.72	3.96	0.40	0.41	0.02	0.04	0.10	0.07	1.53	0.77	0.03	0.23	0.00
R6	4.56	3.87	0.56	0.58	0.40	0.24	0.17	0.16	1.58	0.87	0.03	0.02	0.00
R7	4.20	3.50	0.69	0.63	0.09	0.22	0.24	0.21	2.24	1.48	0.31	0.34	0.00
R8	4.04	3.38	0.80	0.75	0.26	0.33	0.21	0.21	0.01	0.05	0.03	0.13	0.00
R9	2.12	1.71	0.73	0.68	0.43	0.70	0.51	0.54	0.01	0.06	0.41	0.51	2.94
R10	2.01	1.94	0.77	0.62	3.64	2.51	2.63	2.28	1.41	1.66	0.41	0.47	2.16
R11	1.88	1.52	0.66	0.96	5.08	3.30	2.66	2.58	0.14	0.27	0.78	0.58	4.22
R12	2.55	1.45	3.86	4.00	0.26	0.99	0.68	0.68	0.02	0.15	0.41	0.31	0.97
R13	1.66	1.41	3.72	4.46	0.09	0.06	0.07	0.06	0.09	0.25	0.41	0.44	0.79
R14	1.80	1.53	3.31	3.94	0.16	0.09	0.20	0.19	1.87	1.25	2.09	2.39	4.53
R15	2.48	2.06	1.85	1.82	0.00	0.02	0.03	0.02	2.33	1.41	1.10	1.30	0.00
R16	3.96	3.06	0.71	0.66	0.05	0.02	0.05	0.04	1.54	0.77	1.82	1.72	0.00

Table A4 Continue

Constraints /Decision variable	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R5	0.00	3.57	0.00	3.57	2.74	0.00	3.15	3.57	2.26	3.15	3.57	1
R6	0.00	3.35	0.00	3.35	1.60	0.00	20.60	3.35	1.72	20.60	3.35	1
R7	0.00	14.14	0.00	14.14	4.22	4.28	0.00	14.14	6.47	4.28	18.42	1
R8	0.00	0.00	0.00	0.00	0.97	2.26	0.00	0.00	2.26	2.26	2.32	1
R9	4.44	0.00	4.44	0.00	3.73	4.67	2.94	2.94	4.67	4.67	4.67	1
R10	2.26	4.28	2.26	4.28	6.69	4.36	2.16	2.16	4.36	4.36	4.36	1
R11	1.72	2.42	1.72	2.42	4.22	4.22	4.22	4.22	4.22	4.22	4.22	1
R12	2.19	1.72	2.19	1.72	0.97	0.97	0.97	0.97	0.97	0.97	1.03	1
R13	4.44	2.19	4.44	2.19	0.79	0.79	0.79	0.79	0.79	0.79	0.79	1
R14	2.26	5.51	2.26	5.51	4.53	4.53	17.86	10.03	4.53	17.86	10.03	1
R15	1.72	23.77	1.72	23.77	0.00	0.00	18.40	23.77	0.00	18.40	23.77	1
R16	2.19	4.84	2.19	4.84	0.00	0.16	4.35	4.84	4.60	4.51	5.00	1

Table A5 Capital coefficients for small farm using chemicals

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
R29	2,420.56	2,562.66	395.97	359.28	45.60	50.57	107.93	92.71	25.14	34.96	68.86	44.19	0.00
R30	2,459.27	2,477.62	573.37	556.68	560.08	407.06	298.80	316.06	40.29	52.66	68.86	44.19	0.00
R31	2,282.36	2,290.56	622.47	404.00	66.96	288.46	245.12	222.97	336.28	399.74	140.52	145.92	0.00
R32	1,974.26	1,947.65	462.99	370.06	447.16	662.63	424.48	364.05	12.94	19.29	68.86	44.19	0.00
R33	2,250.05	2,208.17	556.57	420.76	841.76	465.50	424.45	403.64	65.07	62.31	110.94	138.87	37.97
R34	2,594.68	2,163.58	540.66	326.82	677.08	256.42	222.98	328.40	586.32	658.22	308.53	138.87	959.26
R35	2,059.01	1,964.41	458.21	609.30	553.16	81.78	185.35	170.63	60.20	63.87	182.60	389.08	808.20
R36	2,006.93	2,028.62	417.21	702.57	43.20	313.18	179.27	198.45	58.96	59.83	110.94	140.51	585.07
R37	2,024.01	1,999.62	349.32	682.64	95.72	57.86	51.04	46.47	66.37	32.43	110.94	140.51	556.54
R38	2,293.96	2,161.54	453.85	923.18	72.40	86.53	166.13	112.41	336.48	404.38	561.36	1,289.91	182.11
R39	2,209.97	2,179.76	255.93	429.65	0.00	5.56	8.85	5.56	67.21	68.93	252.71	347.25	0.00
R40	2,439.45	2,451.19	154.11	225.25	19.20	20.00	33.45	24.85	18.00	35.54	181.05	242.16	0.00

Table A5 Continue

Constraints /Decision variable	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R29	0.00	1,616.17	0.00	1,616.17	0.00	861.84	3,432.67	3,332.62	861.84	3,432.67	3,332.62	0
R30	0.00	1,716.45	0.00	1,716.45	997.23	0.00	3,169.15	3,010.99	0.00	3,169.15	3,010.99	0
R31	0.00	3,010.99	0.00	3,010.99	808.20	0.00	0.00	2,519.77	1,926.11	1,926.11	2,519.77	0
R32	0.00	1,927.33	0.00	1,927.33	585.07	0.00	0.00	0.00	1,024.11	1,024.11	1,926.11	0
R33	0.00	592.44	0.00	592.44	738.65	0.00	0.00	0.00	861.84	861.84	1,024.11	0
R34	1,926.11	1,926.11	1,926.11	1,926.11	0.00	0.00	0.00	0.00	0.00	0.00	861.84	0
R35	1,024.11	1,024.11	1,024.11	1,024.11	997.23	997.23	997.23	997.23	997.23	997.23	997.23	0
R36	861.84	861.84	861.84	861.84	808.20	808.20	808.20	808.20	808.20	808.20	808.20	0
R37	1,926.11	0.00	1,926.11	0.00	585.07	585.07	585.07	585.07	585.07	585.07	585.07	0
R38	1,024.11	8,022.42	1,024.11	8,022.42	738.65	738.65	738.65	8,761.08	738.65	738.65	8,761.08	0
R39	861.84	6,800.02	861.84	6,800.02	0.00	1,926.11	2,536.36	6,800.02	1,926.11	2,536.36	6,800.02	0
R40	0.00	3,612.69	0.00	3,612.69	0.00	1,024.11	10,100.28	3,612.69	1,024.11	10,100.28	3,612.69	0

Table A6 Capital coefficients for small farm using chemicals and bioextract

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
R29	1,800.23	1,598.15	395.97	359.28	45.60	50.57	107.93	92.71	25.14	34.96	68.86	44.19	0.00
R30	1,778.04	1,545.77	573.37	556.68	560.08	407.06	298.80	316.06	40.29	52.66	68.86	44.19	0.00
R31	1,817.54	1,693.78	622.47	404.00	66.96	288.46	245.12	222.97	336.28	399.74	140.52	145.92	0.00
R32	1,441.66	1,353.74	462.99	370.06	447.16	662.63	424.48	364.05	12.94	19.29	68.86	44.19	0.00
R33	1,547.13	1,385.87	556.57	420.76	841.76	465.50	424.45	403.64	65.07	62.31	110.94	138.87	37.97
R34	2,287.18	2,139.66	540.66	326.82	677.08	256.42	222.98	328.40	586.32	658.22	308.53	138.87	959.26
R35	1,756.16	1,563.05	458.21	609.30	553.16	81.78	185.35	170.63	60.20	63.87	182.60	389.08	808.20
R36	1,465.62	1,652.30	417.21	702.57	43.20	313.18	179.27	198.45	58.96	59.83	110.94	140.51	585.07
R37	1,573.45	1,603.46	349.32	682.64	95.72	57.86	51.04	46.47	66.37	32.43	110.94	140.51	556.54
R38	1,647.36	1,594.35	453.85	923.18	72.40	86.53	166.13	112.41	336.48	404.38	561.36	1,289.91	182.11
R39	1,702.97	1,664.44	255.93	429.65	0.00	5.56	8.85	5.56	67.21	68.93	252.71	347.25	0.00
R40	1,753.24	1,590.29	154.11	225.25	19.20	20.00	33.45	24.85	18.00	35.54	181.05	242.16	0.00

Table A6 Continue

Constraints /Decision variable	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R29	0.00	1616.17	0.00	1616.17		861.84	3432.67	3332.62	861.84	3432.67	3332.62	0
R30	0.00	1716.45	0.00	1716.45	997.23	0.00	3169.15	3010.99		3169.15	3010.99	0
R31	0.00	3010.99	0.00	3010.99	808.20	0.00	0.00	2519.77	1926.11	1926.11	2519.77	0
R32	0.00	1927.33	0.00	1927.33	585.07	0.00	0.00	0.00	1024.11	1024.11	1926.11	0
R33	0.00	592.44	0.00	592.44	738.65	0.00	0.00	0.00	861.84	861.84	1024.11	0
R34	1926.11	1926.11	1926.11	1926.11	0.00	0.00	0.00	0.00	0.00	0.00	861.84	0
R35	1024.11	1024.11	1024.11	1024.11	997.23	997.23	997.23	997.23	997.23	997.23	997.23	0
R36	861.84	861.84	861.84	861.84	808.20	808.20	808.20	808.20	808.20	808.20	808.20	0
R37	1926.11	0.00	1926.11	0.00	585.07	585.07	585.07	585.07	585.07	585.07	585.07	0
R38	1024.11	8022.42	1024.11	8022.42	738.65	738.65	738.65	8761.08	738.65	738.65	8761.08	0
R39	861.84	6800.02	861.84	6800.02	0.00	1926.11	2536.36	6800.02	1926.11	2536.36	6800.02	0
R40	0.00	3612.69	0.00	3612.69	0.00	1024.11	10100.28	3612.69	1024.11	10100.28	3612.69	0

Table A7 Capital coefficients for large farm using chemicals

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
R29	1,279.44	1,739.86	395.97	359.28	45.60	50.57	107.93	92.71	25.14	34.96	68.86	44.19	0.00
R30	1,382.56	1,547.44	573.37	556.68	560.08	407.06	298.80	316.06	40.29	52.66	68.86	44.19	0.00
R31	1,426.87	1,628.15	622.47	404.00	66.96	288.46	245.12	222.97	336.28	399.74	140.52	145.92	0.00
R32	1,511.90	1,644.70	462.99	370.06	447.16	662.63	424.48	364.05	12.94	19.29	68.86	44.19	0.00
R33	1,437.75	1,597.71	556.57	420.76	841.76	465.50	424.45	403.64	65.07	62.31	110.94	138.87	37.97
R34	1,957.41	1,387.02	540.66	326.82	677.08	256.42	222.98	328.40	586.32	658.22	308.53	138.87	959.26
R35	1,627.63	1,672.61	458.21	609.30	553.16	81.78	185.35	170.63	60.20	63.87	182.60	389.08	808.20
R36	1,523.42	1,518.80	417.21	702.57	43.20	313.18	179.27	198.45	58.96	59.83	110.94	140.51	585.07
R37	1,605.10	1,611.98	349.32	682.64	95.72	57.86	51.04	46.47	66.37	32.43	110.94	140.51	556.54
R38	1,652.54	1,666.68	453.85	923.18	72.40	86.53	166.13	112.41	336.48	404.38	561.36	1,289.91	182.11
R39	1,947.81	1,771.72	255.93	429.65	0.00	5.56	8.85	5.56	67.21	68.93	252.71	347.25	0.00
R40	1,487.37	1,699.28	154.11	225.25	19.20	20.00	33.45	24.85	18.00	35.54	181.05	242.16	0.00

Table A7 Continue

Constraints /Decision variable	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R29	0.00	1616.17	0.00	1616.17	0.00	861.84	3432.67	3332.62	861.84	3432.67	3332.62	0
R30	0.00	1716.45	0.00	1716.45	997.23	0.00	3169.15	3010.99	0.00	3169.15	3010.99	0
R31	0.00	3010.99	0.00	3010.99	808.20	0.00	0.00	2519.77	1926.11	1926.11	2519.77	0
R32	0.00	1927.33	0.00	1927.33	585.07	0.00	0.00	0.00	1024.11	1024.11	1926.11	0
R33	0.00	592.44	0.00	592.44	738.65	0.00	0.00	0.00	861.84	861.84	1024.11	0
R34	1926.11	1926.11	1926.11	1926.11	0.00	0.00	0.00	0.00	0.00	0.00	861.84	0
R35	1024.11	1024.11	1024.11	1024.11	997.23	997.23	997.23	997.23	997.23	997.23	997.23	0
R36	861.84	861.84	861.84	861.84	808.20	808.20	808.20	808.20	808.20	808.20	808.20	0
R37	1926.11		1926.11	0.00	585.07	585.07	585.07	585.07	585.07	585.07	585.07	0
R38	1024.11	8022.42	1024.11	8022.42	738.65	738.65	738.65	8761.08	738.65	738.65	8761.08	0
R39	861.84	6800.02	861.84	6800.02	0.00	1926.11	2536.36	6800.02	1926.11	2536.36	6800.02	0
R40	0.00	3612.69	0.00	3612.69	0.00	1024.11	10100.28	3612.69	1024.11	10100.28	3612.69	0

Table A8 Capital coefficients for large farm using chemicals and bioextract

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
R29	1,744.16	1,452.51	395.97	359.28	45.60	50.57	107.93	92.71	25.14	34.96	68.86	44.19	0.00
R30	2,412.49	1,760.60	573.37	556.68	560.08	407.06	298.80	316.06	40.29	52.66	68.86	44.19	0.00
R31	2,355.10	1,921.56	622.47	404.00	66.96	288.46	245.12	222.97	336.28	399.74	140.52	145.92	0.00
R32	2,125.58	1,757.36	462.99	370.06	447.16	662.63	424.48	364.05	12.94	19.29	68.86	44.19	0.00
R33	1,965.12	1,640.63	556.57	420.76	841.76	465.50	424.45	403.64	65.07	62.31	110.94	138.87	37.97
R34	1,859.69	1,608.49	540.66	326.82	677.08	256.42	222.98	328.40	586.32	658.22	308.53	138.87	959.26
R35	2,839.51	2,762.21	458.21	609.30	553.16	81.78	185.35	170.63	60.20	63.87	182.60	389.08	808.20
R36	1,591.40	1,341.73	417.21	702.57	43.20	313.18	179.27	198.45	58.96	59.83	110.94	140.51	585.07
R37	1,484.33	1,325.24	349.32	682.64	95.72	57.86	51.04	46.47	66.37	32.43	110.94	140.51	556.54
R38	1,712.65	1,560.70	453.85	923.18	72.40	86.53	166.13	112.41	336.48	404.38	561.36	1,289.91	182.11
R39	1,994.64	1,795.88	255.93	429.65	0.00	5.56	8.85	5.56	67.21	68.93	252.71	347.25	0.00
R40	1,824.03	1,592.32	154.11	225.25	19.20	20.00	33.45	24.85	18.00	35.54	181.05	242.16	0.00

Table A8 Continue

Constraints /Decision variable	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R29	0.00	1616.17	0.00	1616.17		861.84	3432.67	3332.62	861.84	3432.67	3332.62	0
R30	0.00	1716.45	0.00	1716.45	997.23	0.00	3169.15	3010.99		3169.15	3010.99	0
R31	0.00	3010.99	0.00	3010.99	808.20	0.00	0.00	2519.77	1926.11	1926.11	2519.77	0
R32	0.00	1927.33	0.00	1927.33	585.07	0.00	0.00	0.00	1024.11	1024.11	1926.11	0
R33	0.00	592.44	0.00	592.44	738.65	0.00	0.00	0.00	861.84	861.84	1024.11	0
R34	1926.11	1926.11	1926.11	1926.11	0.00	0.00	0.00	0.00	0.00	0.00	861.84	0
R35	1024.11	1024.11	1024.11	1024.11	997.23	997.23	997.23	997.23	997.23	997.23	997.23	0
R36	861.84	861.84	861.84	861.84	808.20	808.20	808.20	808.20	808.20	808.20	808.20	0
R37	1926.11	0.00	1926.11	0.00	585.07	585.07	585.07	585.07	585.07	585.07	585.07	0
R38	1024.11	8022.42	1024.11	8022.42	738.65	738.65	738.65	8761.08	738.65	738.65	8761.08	0
R39	861.84	6800.02	861.84	6800.02	0.00	1926.11	2536.36	6800.02	1926.11	2536.36	6800.02	0
R40	0.00	3612.69	0.00	3612.69	0.00	1024.11	10100.28	3612.69	1024.11	10100.28	3612.69	0

Table A9 Revenue coefficients for small farm using chemicals

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12
R44												
R45												
R46												
R47					9,694.19	9,561.17	9,761.25	9,320.89				
R48			16,082.50	14,233.08								
R49												
R50												
R51									15,518.45	14,620.84		
R52	47,034.10	44,447.59									9,659.12	8,839.58

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Table A9 Continue

Constraints /Decision variable	X13	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R44							10,130.80			10,130.80			0
R45								33,806.85			33,806.85		0
R46									47,175.65			47,175.65	0
R47			47,175.65		47,175.65	10,499.97				10,130.80	10,130.80	10,130.80	0
R48													0
R49		10,130.80	10,130.80	10,130.80	10,130.80								0
R50	10,499.97					10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	0
R51		10,130.80		10,130.80									0
R52													0

Table A10 Revenue coefficients for small farm using chemicals and bioextract

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12
R44												
R45												
R46												
R47					9,694.19	9,561.17	9,761.25	9,320.89				
R48			16,082.50	14,233.08								
R49												
R50												
R51									15,518.45	14,620.84		
R52	49,929.08	49,426.45									9,659.12	8,839.58

Table A10 Continue

Constraints /Decision variable	X13	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R44							10,130.80			10,130.80			0
R45								33,806.85			33,806.85		0
R46									47,175.65			47,175.65	0
R47			47,175.65		47,175.65	10,499.97				10,130.80	10,130.80	10,130.80	0
R48													0
R49		10,130.80	10,130.80	10,130.80	10,130.80								0
R50	10,499.97					10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	0
R51		10,130.80		10,130.80									0
R52													0

Table A11 Revenue coefficients for large farm using chemicals

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12
R44												
R45												
R46												
R47					9,694.19	9,561.17	9,761.25	9,320.89				
R48			16,082.50	14,233.08								
R49												
R50												
R51									15,518.45	14,620.84		
R52	57,792.91	57,307.90									9659.12	8,839.58

Table A11 Continue

Constraints /Decision variable	X13	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R44							10,130.80			10,130.80			0
R45								33,806.85			33,806.85		0
R46									47,175.65			47,175.65	0
R47			47,175.65		47,175.65	10,499.97				10,130.80	10,130.80	10,130.80	0
R48													0
R49		10,130.80	10,130.80	10,130.80	10,130.80								0
R50	10,499.97					10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	0
R51		10,130.80		10,130.80									0
R52													0

Table A12 Revenue coefficients for large farm using chemicals and bioextract

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12
R44												
R45												
R46												
R47					9,694.19	9,561.17	9,761.25	9,320.89				
R48			16,082.50	14,233.08								
R49												
R50												
R51									15,518.45	14,620.84		
R52	53,936.07	53,782.30									9659.12	8,839.58

Table A12 Continue

Constraints /Decision variable	X13	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R44							10,130.80			10,130.80			0
R45								33,806.85			33,806.85		0
R46									47,175.65			47,175.65	0
R47			47,175.65		47,175.65	10,499.97				10,130.80	10,130.80	10,130.80	0
R48													0
R49		10,130.80	10,130.80	10,130.80	10,130.80								0
R50	10,499.97					10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	10,499.97	0
R51		10,130.80		10,130.80									0
R52													0

Table A13 Goal coefficients for small farm using chemicals

Goals	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
GA	15,237.67	14,735.04	5,099.53	6,948.95	4,255.09	4,122.07	4,322.15	3,881.79	10,143.86	9,246.25	6,745.55	5,926.01	5,120.05
GH	28.92	26.70	9.01	11.24	7.04	7.17	5.00	5.55	6.47	6.86	4.90	4.40	5.75
GI	26,297.17	25,466.98	5,892.80	6,660.38	3,422.32	2,695.54	3,465.71	2,308.55	3,575.55	3,395.54	2,281.67	2,253.60	4,042.95
GL	17,711.15	14,698.76	1,847.31	1,926.85	637.25	583.44	613.10	580.28	565.61	454.32	262.80	327.80	2,174.70
GY	1,278.250	1298.134	231.63	201.32	291.19	241.19	294.91	299.12	336.22	311.19	112.00	128.00	114.23
GR	36,677.77	37,120.42	3,403.89	3,004.40	5,406.31	5,340.63	5,234.92	5,990.72	5,794.76	5,962.37	1,748.32	1,865.00	1729.98
GS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A13 Continue

Goals	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
GA	10,746.83	15,031.45	10,746.83	15,031.45	10,240.10	10,493.46	11,212.09	14,778.09	15,866.88	16,585.50	20,151.50	0
GH	7.03	28.53	7.03	28.53	11.49	9.26	23.91	30.76	12.77	27.42	34.27	0
GI	7,609.84	38,805.68	7,609.84	38,805.68	8,085.90	7,847.87	26,893.51	39,043.71	11,652.79	30,698.43	42,848.63	0
GL	2,147.50	28,185.34	2,147.50	28,185.34	4,349.41	4,349.41	17,331.48	29,286.29	4,322.20	18,405.23	30,360.04	0
GY	457.37	1,044.63	457.37	1,044.63	228.47	342.92	230.79	930.18	571.61	459.48	1,158.86	0
GR	2,472.23	13,722.36	2,472.23	13,722.36	3,459.96	2,966.10	5,778.42	14,216.23	4,202.21	7,014.53	15,452.34	0
GS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	200

Table A14 Goal coefficients for small farm using chemicals and bioextract

Goals	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
GA	15,237.67	14,735.04	5,099.53	6,948.95	4,255.09	4,122.07	4,322.15	3,881.79	10,143.86	9,246.25	6,745.55	5,926.01	5,120.05
GH	28.92	26.70	9.01	11.24	7.04	7.17	5.00	5.55	6.47	6.86	4.90	4.40	5.75
GI	26,297.17	25,466.98	5,892.80	6,660.38	3,422.32	2,695.54	3,465.71	2,308.55	3,575.55	3,395.54	2,281.67	2,253.60	4,042.95
GL	17,711.15	14,698.76	1,847.31	1,926.85	637.25	583.44	613.10	580.28	565.61	454.32	262.80	327.80	2,174.70
GY	1,278.250	1298.134	231.63	201.32	291.19	241.19	294.91	299.12	336.22	311.19	112.00	128.00	114.23
GR	36,677.77	37,120.42	3,403.89	3,004.40	5,406.31	5,340.63	5,234.92	5,990.72	5,794.76	5,962.37	1,748.32	1,865.00	1729.98
GS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A14 Continue

Goals	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
GA	10,746.83	15,031.45	10,746.83	15,031.45	10,240.10	10,493.46	11,212.09	14,778.09	15,866.88	16,585.50	20,151.50	0
GH	7.03	28.53	7.03	28.53	11.49	9.26	23.91	30.76	12.77	27.42	34.27	0
GI	7,609.84	38,805.68	7,609.84	38,805.68	8,085.90	7,847.87	26,893.51	39,043.71	11,652.79	30,698.43	42,848.63	0
GL	2,147.50	28,185.34	2,147.50	28,185.34	4,349.41	4,349.41	17,331.48	29,286.29	4,322.20	18,405.23	30,360.04	0
GY	457.37	1,044.63	457.37	1,044.63	228.47	342.92	230.79	930.18	571.61	459.48	1,158.86	0
GR	2,472.23	13,722.36	2,472.23	13,722.36	3,459.96	2,966.10	5,778.42	14,216.23	4,202.21	7,014.53	15,452.34	0
GS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	200

Table A15 Goal coefficients for large farm using chemicals

Goals	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
GA	24,999.19	24,514.18	5,099.53	6,948.95	4,255.09	4,122.07	4,322.15	3,881.79	10,143.86	9,246.25	6,745.55	5,926.01	5,120.05
GH	28.50	28.73	9.01	11.24	7.04	7.17	5.00	5.55	6.47	6.86	4.90	4.40	5.75
GI	24,405.60	25,451.57	5,892.80	6,660.38	3,422.32	2,695.54	3,465.71	2,308.55	3,575.55	3,395.54	2,281.67	2,253.60	4,042.95
GL	16,437.17	16,076.05	1,847.31	1,926.85	637.25	583.44	613.10	580.28	565.61	454.32	262.80	327.80	2,174.70
GY	1,381.74	1,452.98	231.63	201.32	291.19	241.19	294.91	299.12	336.22	311.19	112.00	128.00	114.23
GR	24,750.04	25,874.16	3,403.89	3,004.40	5,406.31	5,340.63	5,234.92	5,990.72	5,794.76	5,962.37	1,748.32	1,865.00	1729.98
GS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A15 Continue

Goals	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
GA	10,746.83	15,031.45	10,746.83	15,031.45	10,240.10	10,493.46	11,212.09	14,778.09	15,866.88	16,585.50	20,151.50	0
GH	7.03	28.53	7.03	28.53	11.49	9.26	23.91	30.76	12.77	27.42	34.27	0
GI	7,609.84	38,805.68	7,609.84	38,805.68	8,085.90	7,847.87	26,893.51	39,043.71	11,652.79	30,698.43	42,848.63	0
GL	2,147.50	28,185.34	2,147.50	28,185.34	4,349.41	4,349.41	17,331.48	29,286.29	4,322.20	18,405.23	30,360.04	0
GY	457.37	1,044.63	457.37	1,044.63	228.47	342.92	230.79	930.18	571.61	459.48	1,158.86	0
GR	2,472.23	13,722.36	2,472.23	13,722.36	3,459.96	2,966.10	5,778.42	14,216.23	4,202.21	7,014.53	15,452.34	0
GS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	200

Table A16 Goal coefficients for large farm using chemicals and bioextract

Goals	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
GA	24,629.44	24,475.67	5,099.53	6,948.95	4,255.09	4,122.07	4,322.15	3,881.79	10,143.86	9,246.25	6,745.55	5,926.01	5,120.05
GH	31.92	33.76	9.01	11.24	7.04	7.17	5.00	5.55	6.47	6.86	4.90	4.40	5.75
GI	29,514.10	25,309.06	5,892.80	6,660.38	3,422.32	2,695.54	3,465.71	2,308.55	3,575.55	3,395.54	2,281.67	2,253.60	4,042.95
GL	19,877.74	16,076.05	1,847.31	1,926.85	637.25	583.44	613.10	580.28	565.61	454.32	262.80	327.80	2,174.70
GY	1,322.60	1,242.72	231.63	201.32	291.19	241.19	294.91	299.12	336.22	311.19	112.00	128.00	114.23
GR	27,601.93	29,285.76	3,403.89	3,004.40	5,406.31	5,340.63	5,234.92	5,990.72	5,794.76	5,962.37	1,748.32	1,865.00	1729.98
GS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Table A16 Continue

Goals	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
GA	10,746.83	15,031.45	10,746.83	15,031.45	10,240.10	10,493.46	11,212.09	14,778.09	15,866.88	16,585.50	20,151.50	0
GH	7.03	28.53	7.03	28.53	11.49	9.26	23.91	30.76	12.77	27.42	34.27	0
GI	7,609.84	38,805.68	7,609.84	38,805.68	8,085.90	7,847.87	26,893.51	39,043.71	11,652.79	30,698.43	42,848.63	0
GL	2,147.50	28,185.34	2,147.50	28,185.34	4,349.41	4,349.41	17,331.48	29,286.29	4,322.20	18,405.23	30,360.04	0
GY	457.37	1,044.63	457.37	1,044.63	228.47	342.92	230.79	930.18	571.61	459.48	1,158.86	0
GR	2,472.23	13,722.36	2,472.23	13,722.36	3,459.96	2,966.10	5,778.42	14,216.23	4,202.21	7,014.53	15,452.34	0
GS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	200

Table A17 Labor coefficients at the watershed level

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
R5	5.35	4.05	0.40	0.41	0.02	0.04	0.10	0.07	1.53	0.77	0.03	0.23	0.00
R6	5.21	4.11	0.56	0.58	0.40	0.24	0.17	0.16	1.58	0.87	0.03	0.02	0.00
R7	4.41	3.77	0.69	0.63	0.09	0.22	0.24	0.21	2.24	1.48	0.31	0.34	0.00
R8	3.15	3.19	0.80	0.75	0.26	0.33	0.21	0.21	0.01	0.05	0.03	0.13	0.00
R9	3.05	1.93	0.73	0.68	0.43	0.70	0.51	0.54	0.01	0.06	0.41	0.51	2.94
R10	3.24	1.83	0.77	0.62	3.64	2.51	2.63	2.28	1.41	1.66	0.41	0.47	2.16
R11	2.88	2.10	0.66	0.96	5.08	3.30	2.66	2.58	0.14	0.27	0.78	0.58	4.22
R12	2.51	1.85	3.86	4.00	0.26	0.99	0.68	0.68	0.02	0.15	0.41	0.31	0.97
R13	2.59	1.76	3.72	4.46	0.09	0.06	0.07	0.06	0.09	0.25	0.41	0.44	0.79
R14	2.63	1.99	3.31	3.94	0.16	0.09	0.20	0.19	1.87	1.25	2.09	2.39	4.53
R15	3.33	2.60	1.85	1.82	0.00	0.02	0.03	0.02	2.33	1.41	1.10	1.30	0.00
R16	5.21	3.91	0.71	0.66	0.05	0.02	0.05	0.04	1.54	0.77	1.82	1.72	0.00

Table A17 Continue

Constraints /Decision variable	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R5	0.00	3.57	0.00	3.57	2.74	0.00	3.15	3.57	2.26	3.15	3.57	1
R6	0.00	3.35	0.00	3.35	1.60	0.00	20.60	3.35	1.72	20.60	3.35	1
R7	0.00	14.14	0.00	14.14	4.22	4.28	0.00	14.14	6.47	4.28	18.42	1
R8	0.00	0.00	0.00	0.00	0.97	2.26	0.00	0.00	2.26	2.26	2.32	1
R9	4.44	0.00	4.44	0.00	3.73	4.67	2.94	2.94	4.67	4.67	4.67	1
R10	2.26	4.28	2.26	4.28	6.69	4.36	2.16	2.16	4.36	4.36	4.36	1
R11	1.72	2.42	1.72	2.42	4.22	4.22	4.22	4.22	4.22	4.22	4.22	1
R12	2.19	1.72	2.19	1.72	0.97	0.97	0.97	0.97	0.97	0.97	1.03	1
R13	4.44	2.19	4.44	2.19	0.79	0.79	0.79	0.79	0.79	0.79	0.79	1
R14	2.26	5.51	2.26	5.51	4.53	4.53	17.86	10.03	4.53	17.86	10.03	1
R15	1.72	23.77	1.72	23.77	0.00	0.00	18.40	23.77	0.00	18.40	23.77	1
R16	2.19	4.84	2.19	4.84	0.00	0.16	4.35	4.84	4.60	4.51	5.00	1

Table A18 Capital coefficients at the watershed level

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
R29	1,527.16	1,470.89	395.97	359.28	45.60	50.57	107.93	92.71	25.14	34.96	68.86	44.19	0.00
R30	1,582.69	1,405.45	573.37	556.68	560.08	407.06	298.80	316.06	40.29	52.66	68.86	44.19	0.00
R31	1,638.35	1,693.05	622.47	404.00	66.96	288.46	245.12	222.97	336.28	399.74	140.52	145.92	0.00
R32	1,489.65	1,696.29	462.99	370.06	447.16	662.63	424.48	364.05	12.94	19.29	68.86	44.19	0.00
R33	1,489.20	1,193.15	556.57	420.76	841.76	465.50	424.45	403.64	65.07	62.31	110.94	138.87	37.97
R34	5,025.00	4,394.29	540.66	326.82	677.08	256.42	222.98	328.40	586.32	658.22	308.53	138.87	959.26
R35	1,702.77	2,658.54	458.21	609.30	553.16	81.78	185.35	170.63	60.20	63.87	182.60	389.08	808.20
R36	1,485.24	1,320.43	417.21	702.57	43.20	313.18	179.27	198.45	58.96	59.83	110.94	140.51	585.07
R37	1,495.80	1,362.07	349.32	682.64	95.72	57.86	51.04	46.47	66.37	32.43	110.94	140.51	556.54
R38	1,778.49	1,595.35	453.85	923.18	72.40	86.53	166.13	112.41	336.48	404.38	561.36	1,289.91	182.11
R39	1,540.43	1,527.15	255.93	429.65	0.00	5.56	8.85	5.56	67.21	68.93	252.71	347.25	0.00
R40	3,246.34	3,153.60	154.11	225.25	19.20	20.00	33.45	24.85	18.00	35.54	181.05	242.16	0.00

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Table A18 Continue

Constraints /Decision variable	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R29	0.00	1,616.17	0.00	1,616.17		861.84	3,432.67	3,332.62	861.84	3,432.67	3,332.62	0
R30	0.00	1,716.45	0.00	1,716.45	997.23	0.00	3,169.15	3,010.99		3,169.15	3,010.99	0
R31	0.00	3,010.99	0.00	3,010.99	808.20	0.00	0.00	2,519.77	1,926.11	1,926.11	2,519.77	0
R32	0.00	1,927.33	0.00	1,927.33	585.07	0.00	0.00	0.00	1,024.11	1,024.11	1,926.11	0
R33	0.00	592.44	0.00	592.44	738.65	0.00	0.00	0.00	861.84	861.84	1,024.11	0
R34	1,926.11	1,926.11	1,926.11	1,926.11	0.00	0.00	0.00	0.00	0.00	0.00	861.84	0
R35	1,024.11	1,024.11	1,024.11	1,024.11	997.23	997.23	997.23	997.23	997.23	997.23	997.23	0
R36	861.84	861.84	861.84	861.84	808.20	808.20	808.20	808.20	808.20	808.20	808.20	0
R37	1,926.11	0.00	1,926.11	0.00	585.07	585.07	585.07	585.07	585.07	585.07	585.07	0
R38	1,024.11	8,022.42	1,024.11	8,022.42	738.65	738.65	738.65	8,761.08	738.65	738.65	8,761.08	0
R39	861.84	6,800.02	861.84	6,800.02	0.00	1,926.11	2,536.36	6,800.02	1,926.11	2,536.36	6,800.02	0
R40	0.00	3,612.69	0.00	3,612.69	0.00	1,024.11	10,100.28	3,612.69	1,024.11	10,100.28	3,612.69	0

Table A19 Revenue coefficients at the watershed level

Constraints /Decision variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12
R45												
R46												
R47												
R48					4,255.09	4,122.07	4,322.15	3,881.79				
R49			5,099.53	6,948.95								
R50												
R51												
R52									10,143.86	9,246.25		
R53	22,931.73	20,479.1									6,745.55	5,926.01

Table A19 Continue

Constraints /Decision variable	X13	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
R45							5,373.41			5,373.41			0
R46								6,092.04			6,092.04		0
R47									9,658.04			9,658.04	0
R48			9,658.04		9,658.04	5,120.05				5,373.41	5,373.41	5,373.41	0
R49													0
R50		5,373.41	5,373.41	5,373.41	5,373.41								0
R51	5,120.05					5,120.05	5,120.05	5,120.05	5,120.05	5,120.05	5,120.05	5,120.05	0
R52		5,373.41		5,373.41									0
R53													0

Table A20 Goal coefficients at the watershed level

Goals	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
GA	30,093.45	29,943.40	5,099.53	6,948.95	4,255.09	4,122.07	4,322.15	3,881.79	10,143.86	9,246.25	6,745.55	5,926.01	5,120.05
GH	27.60	28.89	9.01	11.24	7.04	7.17	5.00	5.55	6.47	6.86	4.90	4.40	5.75
GI	25,637.68	26,573.90	5,892.80	6,660.38	3,422.32	2,695.54	3,465.71	2,308.55	3,575.55	3,395.54	2,281.67	2,253.60	4,042.95
GE	8,536.52	8,951.85	1,661.33	1,550.74	971.02	736.48	585.86	935.71	13.03	6.86	0	0	620.27
GN	36.80	35.56	12.57	13.93	14.97	14.69	14.11	14.26	8.86	8.62	7.69	7.93	8.62
GS	0.26	0	0.08	0	0.06	0.05	0	0	0.025	0.025	0.03	0.03	0
GR	22,931.73	20,479.1	3,403.89	3,004.40	5,406.31	5,340.63	5,234.92	5,990.72	5,794.76	5,962.37	1,748.32	1,865.00	1729.98
GF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A20 Continue

Goals	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25
GA	10,746.83	15,031.45	10,746.83	15,031.45	10,240.10	10,493.46	11,212.09	14,778.09	15,866.88	16,585.50	20,151.50	0
GH	7.03	28.53	7.03	28.53	11.49	9.26	23.91	30.76	12.77	27.42	34.27	0
GI	7,609.84	38,805.68	7,609.84	38,805.68	8,085.90	7,847.87	26,893.51	39,043.71	11,652.79	30,698.43	42,848.63	0
GE	2,576.37	11,504.39	2,576.37	11,504.39	1,240.55	1,908.46	3,818.11	10,836.47	3,196.65	5,106.30	12,124.66	0
GN	31.50	77.82	31.50	77.82	17.24	24.37	44.22	70.69	40.11	59.97	86.44	0
GS	0.049	0.049	0.049	0.049	0	0	0	0	0	0	0	0
GR	2,472.23	13,722.36	2,472.23	13,722.36	3,459.96	2,966.10	5,778.42	14,216.23	4,202.21	7,014.53	15,452.34	0
GF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	208.62