Valuation of Hidden Water Ecosystem Services: The Replacement Cost of the Aquifer System in Central Mexico

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Table S1. Unitary O&M costs.

Unitary costs of O&M	
Supply Alternative	**US 2016 Dollars/m^3**
Aquifer recharge	0.34
Taxhimay	0.11
Oriental-Libres	0.22
Amacuzac	0.66
Tecolultla	0.86
Temascaltepec	0.72

Unitary costs in US 2016 dollars reflect costs for operation and maintenance per cubic meter delivered in each of the supply alternatives. Numbers are based on the work by Carrera-Hernández, J.J. & Gaskin, S.J. (2009). Water management in the Basin of Mexico: current state and alternative scenarios. *Hydrogeology Journal 17*(6), 1483–1494.

Table S2. Unitary O&M costs 26 years.

		Unitary Costs. US 2016 Dollars/m³					
Year	**Discount Factor**	**Supply Alternative**					
		Aquifer Recharge	**Taxhimay**	**Oriental-Libres**	**Amacuzac**	**Tecolultla**	**Temascaltepec**
0	1.00	0.34	0.10	0.22	0.66	0.86	0.72
1	0.94	0.33	0.10	0.21	0.64	0.84	0.70
2	0.89	0.33	0.10	0.21	0.63	0.82	0.68
3	0.84	0.32	0.09	0.20	0.61	0.80	0.67
4	0.79	0.31	0.09	0.20	0.60	0.78	0.65
5	0.75	0.30	0.09	0.19	0.58	0.76	0.63
6	0.70	0.30	0.09	0.19	0.57	0.74	0.62
7	0.67	0.29	0.09	0.18	0.56	0.73	0.61
8	0.63	0.28	0.08	0.18	0.54	0.71	0.59
9	0.59	0.28	0.08	0.17	0.53	0.69	0.58
10	0.56	0.27	0.08	0.17	0.52	0.68	0.56
11	0.53	0.26	0.08	0.17	0.51	0.66	0.55
12	0.50	0.26	0.08	0.16	0.49	0.64	0.54
13	0.47	0.25	0.07	0.16	0.48	0.63	0.52
14	0.44	0.25	0.07	0.15	0.47	0.61	0.51
15	0.42	0.24	0.07	0.15	0.46	0.60	0.50
16	0.39	0.23	0.07	0.15	0.45	0.59	0.49
17	0.37	0.23	0.07	0.14	0.44	0.57	0.48
18	0.35	0.22	0.07	0.14	0.43	0.56	0.47
19	0.33	0.22	0.06	0.14	0.42	0.55	0.45
20	0.31	0.21	0.06	0.13	0.41	0.53	0.44
21	0.29	0.21	0.06	0.13	0.40	0.52	0.43
22	0.28	0.20	0.06	0.13	0.39	0.51	0.42
23	0.26	0.20	0.06	0.12	0.38	0.50	0.41
24	0.25	0.19	0.06	0.12	0.37	0.48	0.40
25	0.23	0.19	0.06	0.12	0.36	0.47	0.39

<p style="text-align:center;">Table S3. Construction costs.</p>

Total Construction Costs and Annuities Foe The Supply Alternatives		
Supply Alternative	**Construction Costs**	**Annuities**
	US 2016 Dollars in Millions	**US 2016 Dollars in Millions**
Aquifer recharge	709.5	60.15
Taxhimay	638.7	54.15
Oriental-Libres	1005.3	85.23
Amacuzac	2161.3	183.24
Tecolultla	2140.1	181.44
Temascaltepec	1055.8	89.51

Total construction costs represent total investment for each of the supply alternatives. The column "Construction Costs" contains the variables C_i in the model (see text). The column "Annuities" contains the variables A_{it} in the model, as related to Ci as in Equation (2) (see text). Numbers are based on the work by Carrera-Hernández, J.J. & Gaskin, S.J. (2009). Water management in the Basin of Mexico: Current state and alternative scenarios. *Hydrogeology Journal 17*(6), 1483–1494.

Table S4. Annuities 26 years.

		Annuities. US 2016 Dollars in Millions					
		Supply Alternative					
Year	Discount Factor	Aquifer Recharge	Taxhimay	Oriental-Libres	Amacuzac	Tecolultla	Temascaltepec
0	1.00	60.2	54.2	85.2	183.2	181.4	89.5
1	0.94	56.8	51.1	80.4	172.9	171.2	84.4
2	0.89	53.5	48.2	75.9	163.1	161.5	79.7
3	0.84	50.5	45.5	71.6	153.9	152.3	75.2
4	0.79	47.6	42.9	67.5	145.1	143.7	70.9
5	0.75	45.0	40.5	63.7	136.9	135.6	66.9
6	0.70	42.4	38.2	60.1	129.2	127.9	63.1
7	0.67	40.0	36.0	56.7	121.9	120.7	59.5
8	0.63	37.7	34.0	53.5	115.0	113.8	56.2
9	0.59	35.6	32.1	50.4	108.5	107.4	53.0
10	0.56	33.6	30.2	47.6	102.3	101.3	50.0
11	0.53	31.7	28.5	44.9	96.5	95.6	47.2
12	0.50	29.9	26.9	42.4	91.1	90.2	44.5
13	0.47	28.2	25.4	40.0	85.9	85.1	42.0
14	0.44	26.6	24.0	37.7	81.0	80.3	39.6
15	0.42	25.1	22.6	35.6	76.5	75.7	37.4
16	0.39	23.7	21.3	33.6	72.1	71.4	35.2
17	0.37	22.3	20.1	31.7	68.0	67.4	33.2
18	0.35	21.1	19.0	29.9	64.2	63.6	31.4
19	0.33	19.9	17.9	28.2	60.6	60.0	29.6
20	0.31	18.8	16.9	26.6	57.1	56.6	27.9
21	0.29	17.7	15.9	25.1	53.9	53.4	26.3
22	0.28	16.7	15.0	23.7	50.9	50.4	24.8
23	0.26	15.7	14.2	22.3	48.0	47.5	23.4
24	0.25	14.9	13.4	21.1	45.3	44.8	22.1
25	0.23	14.0	12.6	19.9	42.7	42.3	20.9

This table displays the present value of the annuities Ait of the previous sheet. These represent the variables A_{it} $(1 + r)^{-t}$ in the model (see text). Source: Spreadsheet "Construction Costs" in this file.