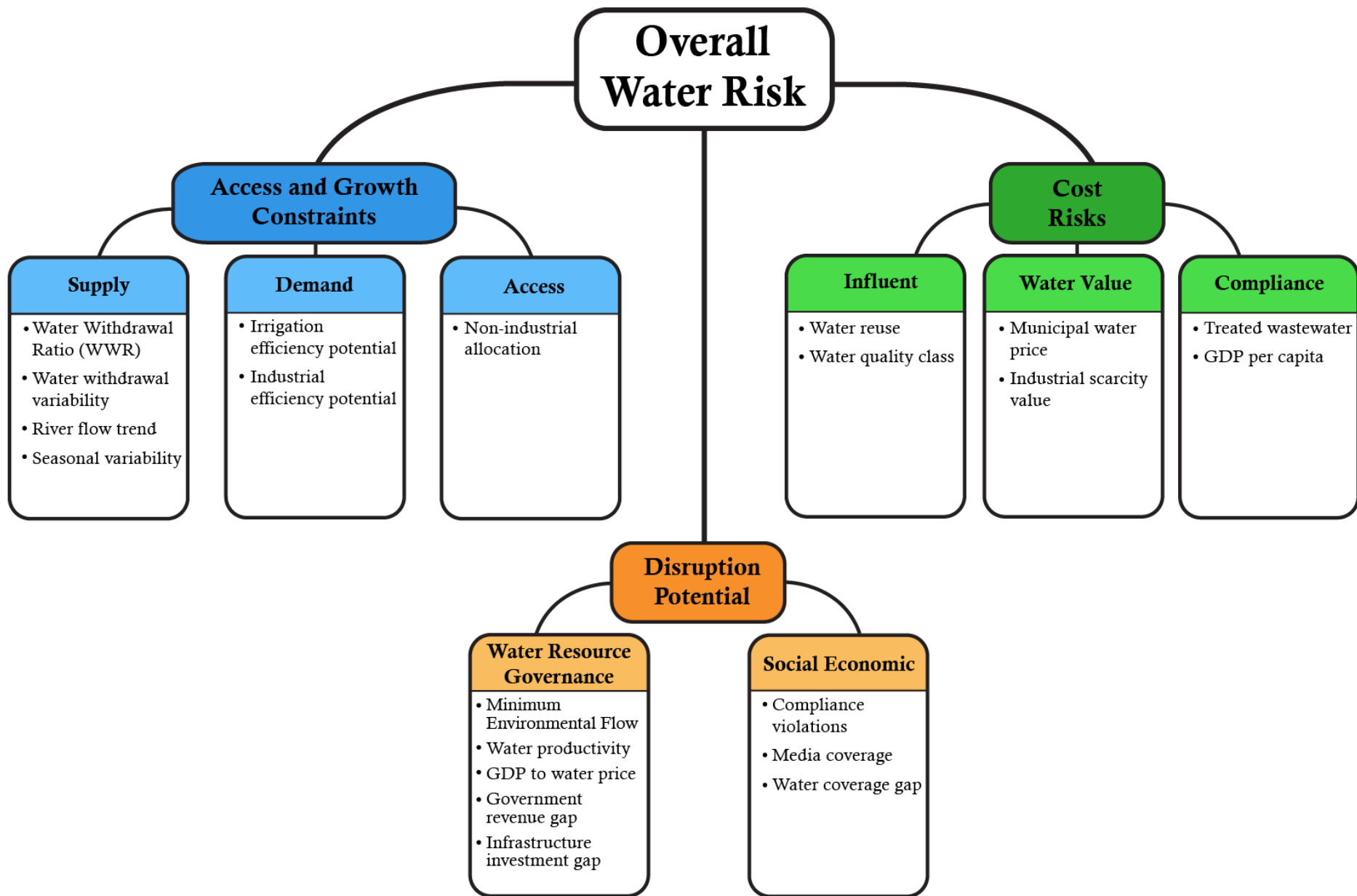


The image shows a large, ancient stone aqueduct with multiple tiers of arches. The structure is built from light-colored stone and spans a river. The water in the river is calm, reflecting the arches of the aqueduct. The sky is a clear, bright blue. The overall scene is a classic representation of ancient Roman engineering.

Delivering information
on water risk

AQUEDUCT

World Resources Institute



Good Formulas 02-15-11

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	
3			Supply							Demand				Access		Influent			Effluent					
4			Water Withdrawal Ratio		River Flow Trend		Seasonal Variability		Irrigation Efficiency Potential		Industrial Efficiency Potential		Non- Industrial Allocation		Water Reuse Index		Water Quality Class		Treated Wastewater		GDP Per Capita		Sewerage Coverage	
5	Hydrologic Units	Geographic Units	ratio	Score	100 mil m³	Score	ratio	Score	m³ / m³	Score	Yuan / m³		ratio			ratio		Class		%		Yuan / 10,000 people		person/ meter pipe
6	9211	0	0.16	1.99	203.9%	10.00	11.71	0.59	3.55	10.00	120.72	5.31	429.76%	4.23	1.03	10.00	3.00	5.00	98.86%	7.13	11,582.08	4.51	0.97	
7	9211	1	0.16	1.99	203.9%	10.00	11.71	0.59	0.32	4.08	347.44	10.00	663.69%	4.41	1.03	10.00	3.00	5.00	98.86%	7.13	14,731.84	4.90	0.97	
8	9212	2	1.85	10.00	203.9%	10.00	18.00	2.19	0.29	4.00	317.37	10.00	436.47%	4.23	0.73	9.10	6.00	10.00	98.86%	7.13	8,489.65	4.12	0.97	
9	9212	3	1.85	10.00	161.9%	6.15	17.08	1.96	4.53	10.00	37.82	2.64	324.56%	4.15	0.73	9.10	6.00	10.00	94.87%	6.56	3,654.53	3.53	2.70	
10	9212	4	1.85	10.00	203.9%	10.00	11.71	0.59	0.29	4.00	317.37	10.00	971.16%	4.64	0.73	9.10	6.00	10.00	98.86%	7.13	10,993.16	4.43	0.97	
11	9212	5	1.85	10.00	203.9%	10.00	13.94	1.16	0.29	4.00	326.69	10.00	785.78%	4.50	0.73	9.10	6.00	10.00	98.86%	7.13	11,776.28	4.53	0.97	
12	9213	6	0.09	1.14	203.9%	10.00	16.26	1.75	0.25	3.88	53.28	3.14	505.77%	4.29	0.90	10.00	5.00	9.00	94.87%	6.56	4,563.16	3.64	2.70	
13	9213	7	0.09	1.14	203.9%	10.00	19.17	2.49	0.20	3.76	42.51	2.79	251.14%	4.09	0.90	10.00	5.00	9.00	94.87%	6.56	5,148.32	3.71	2.70	
14	9213	8	0.09	1.14	203.9%	10.00	16.37	1.78	0.34	4.13	310.76	10.00	1293.23%	4.89	0.90	10.00	3.00	5.00	98.86%	7.13	10,263.71	4.34	0.97	
15	9213	9	0.09	1.14	161.9%	6.15	23.08	3.48	5.11	10.00	85.17	4.17	149.83%	4.01	0.90	10.00	6.00	10.00	85.61%	5.25	7,377.65	3.99	3.39	
16	9214	10	2.95	10.00	161.9%	6.15	22.08	3.23	0.22	3.82	42.92	2.80	207.78%	4.06	1.41	10.00	3.00	5.00	94.87%	6.56	6,147.86	3.83	2.70	
17	9214	11	2.95	10.00	161.9%	6.15	23.08	3.48	0.23	3.83	98.62	4.60	767.83%	4.49	1.41	10.00	6.00	10.00	85.61%	5.25	6,403.04	3.87	3.39	
18	9215	12	0.04	0.46	161.9%	6.15	22.59	3.36	0.22	3.82	45.69	2.89	137.89%	4.00	0.83	10.00	3.00	5.00	94.87%	6.56	5,968.14	3.81	2.70	
19	9215	13	0.04	0.46	161.9%	6.15	18.01	2.19	0.23	3.84	282.00	10.00	2076.62%	5.50	0.83	10.00	3.00	5.00	98.86%	7.13	7,854.45	4.05	0.97	
20	9216	14	0.98	10.00	161.9%	6.15	23.10	3.49	0.22	3.80	43.65	2.82	141.28%	4.01	0.57	7.15	6.00	10.00	94.87%	6.56	5,475.53	3.75	2.70	
21	9216	15	0.98	10.00	161.9%	6.15	24.08	3.73	0.34	4.13	106.44	4.85	70.92%	3.95	0.57	7.15	5.00	9.00	85.61%	5.25	10,914.04	4.42	3.39	
22	9217	16	0.02	0.22	158.4%	5.79	21.28	3.02	0.24	3.87	43.00	2.80	176.02%	4.03	0.81	10.00	5.00	9.00	94.87%	6.56	7,044.65	3.95	2.70	
23	9217	17	0.02	0.22	158.4%	5.79	24.08	3.73	0.25	3.89	85.64	4.18	8214.98%	10.00	0.81	10.00	6.00	10.00	85.61%	5.25	6,018.27	3.82	3.39	
24	9218	18	0.77	9.60	143.6%	4.24	19.71	2.62	0.23	3.84	42.90	2.80	117.37%	3.99	0.43	5.41	3.50	6.00	94.87%	6.56	5,843.77	3.80	2.70	
25	9218	19	0.77	9.60	143.6%	4.24	12.53	0.80	3.42	10.00	153.54	6.38	1015.36%	4.68	0.43	5.41	6.00	10.00	97.23%	6.90	7,959.65	4.06	3.50	
26	9219	20	0.05	0.57	158.4%	5.79	19.14	2.48	0.21	3.78	41.92	2.77	203.22%	4.05	0.80	9.94	5.00	9.00	94.87%	6.56	6,439.84	3.87	2.70	
27	9219	21	0.05	0.57	172.0%	7.20	19.14	2.48	0.56	4.69	164.32	6.72	412.09%	4.21	0.80	9.94	5.00	9.00	97.23%	6.90	14,315.43	4.85	3.50	
28	9219	22	0.05	0.57	172.0%	7.20	20.79	2.90	0.31	4.06	98.93	4.61	338.53%	4.16	0.80	9.94	5.00	9.00	85.61%	5.25	6,755.04	3.91	3.39	
29	9221	23	0.01	0.10	147.2%	4.61	17.86	2.15	0.35	4.16	155.15	6.43	702.80%	4.44	0.94	10.00	6.00	10.00	97.23%	6.90	21,199.56	5.70	3.50	
30	9221	24	0.01	0.10	147.2%	4.61	17.86	2.15	0.29	3.99	99.00	4.61	763.90%	4.49	0.94	10.00	6.00	10.00	85.61%	5.25	16,532.68	5.12	3.39	
31	9222	25	0.47	5.92	147.2%	4.61	33.95	6.24	2.84	10.00	101.46	4.69	504.70%	4.29	0.26	3.26	5.50	10.00	59.49%	1.56	10,770.82	4.41	2.94	
32	9222	26	0.47	5.92	147.2%	4.61	22.63	3.37	0.48	4.48	165.49	6.76	232.60%	4.08	0.26	3.26	5.50	10.00	97.23%	6.90	18,429.64	5.36	3.50	
33	9223	27	0.42	5.25	147.2%	4.61	16.58	1.83	0.42	4.33	163.16	6.69	765.02%	4.49	0.90	10.00	6.00	10.00	97.23%	6.90	10,961.43	4.43	3.50	
34	9224	28	0.74	9.26	147.2%	4.61	30.45	5.35	0.46	4.44	101.46	4.69	378.46%	4.19	0.35	4.41	5.50	10.00	59.49%	1.56	6,651.43	3.90	2.94	
35	9224	29	0.74	9.26	147.2%	4.61	32.54	5.89	0.78	5.28	30.17	2.39	3579.69%	6.65	0.35	4.41	5.50	10.00	87.46%	5.52	7,982.39	4.06	1.41	
36	9224	30	0.74	9.26	147.2%	4.61	21.14	2.99	0.44	4.38	160.31	6.59	585.84%	4.35	0.35	4.41	5.00	9.00	97.23%	6.90	10,720.05	4.40	3.50	
37	9225	31	0.20	2.51	147.2%	4.61	15.99	1.68	0.39	4.25	177.20	7.14	448.56%	4.24	1.07	10.00	3.00	5.00	97.23%	6.90	11,262.22	4.47	3.50	
38	9226	32	2.21	10.00	147.2%	4.61	21.86	3.17	0.41	4.31	163.30	6.69	970.16%	4.64	0.99	10.00	6.00	10.00	97.23%	6.90	10,076.21	4.32	3.50	
39	9227	33	0.73	9.13	158.6%	5.80	25.53	4.10	0.38	4.24	101.98	4.71	383.89%	4.19	0.51	6.44	4.00	7.00	59.49%	1.56	6,500.81	3.88	2.94	
40	9227	34	0.73	9.13	147.2%	4.61	22.25	3.27	0.38	4.22	172.31	6.98	605.75%	4.36	0.51	6.44	5.00	9.00	97.23%	6.90	13,618.77	4.76	3.50	
JOE			YRAB2		JOE2		ra		All Data		Province Graphs (Score)		Province Graphs (Value)		Geo Unit Graphs (Value)		Geo Unit Graphs (Score)							

Framework Indicators with Adjustable Weights

Access & Growth Constraints

Cost Risks

Disruption Potential

Cost Risks

5.06  20 [Map Cost Risks](#)

Influent

7.50  20 [Map Influent](#)

Water Reuse

10.00  60

[Map Water Reuse](#)

Absolute Value: 1.03 (ratio)

Water Quality Class

5.00  40


[Map Water Quality Class](#)

Absolute Value: 3 (class)

Effluent

2.79  75 [Map Effluent](#)

Treated Wastewater

2.87  80

[Map Treated Wastewater](#)

Absolute Value: 0.9886%


GDP per Capita

4.90  10

[Map GDP per Capita](#)

Absolute Value: 14731.84 Yuan/10,000 people

Sewerage Coverage

0.59  10

[Map Sewerage Coverage](#)

Absolute Value: 0.97 Person/meter of pipe

Productivity

4.89  5 [Map Productivity](#)

Municipal Water Price

6.82  50

[Map Municipal Water Price](#)

Absolute Value: 3.7 Yuan/m³

Industrial Scarcity Value

2.97  50

[Map Industrial Scarcity Value](#)

Absolute Value: 11.86 (ratio)

Water Risk Atlas

Results

Note: There are 4 values that exceed the critical threshold.

Overall Water Risk

7.92

Map Overall Risk

Refresh Map

Show/Hide Detailed Results

Show/Hide Inputs

[1] Facility 14 Activate Delete

[2] Facility 15 Activate Delete

[3] Facility 16 Activate Delete

[4] Facility 17 Activate Delete

[5] Facility

Activate Delete

[7] Facility 20 Activate Delete

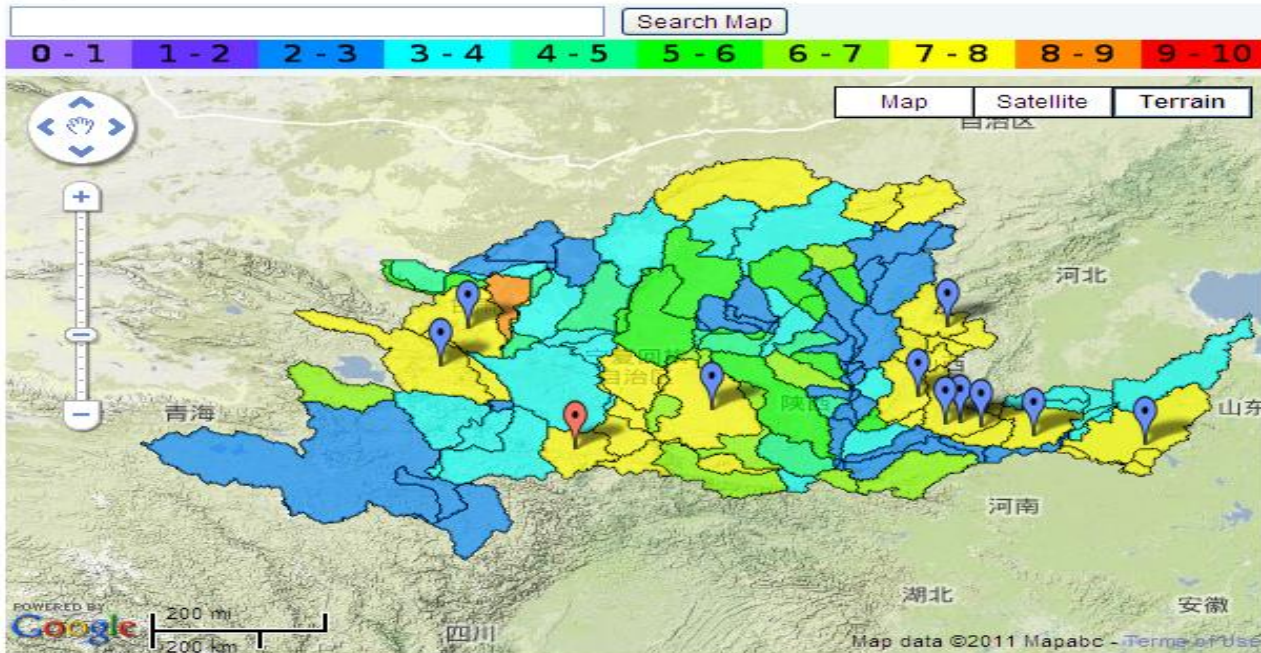
[8] Facility 21 Activate Delete

[9] Facility 22 Activate Delete

[10] Facility 23 Activate D

Delete

Map - Overall Water Risk



Results

Note: There are 4 values that exceed the critical threshold.

Overall Water Risk

7.92

Map Overall Risk

Refresh Map

Show/Hide Detailed Results

Show/Hide Inputs

[1] Facility 14 Activate Delete

[2] Facility 15 Activate Delete

[3] Facility 16 Activate Delete

[4] Facility 17 Activate Delete

[5] Facility

Activate Delete

[7] Facility 20 Activate Delete

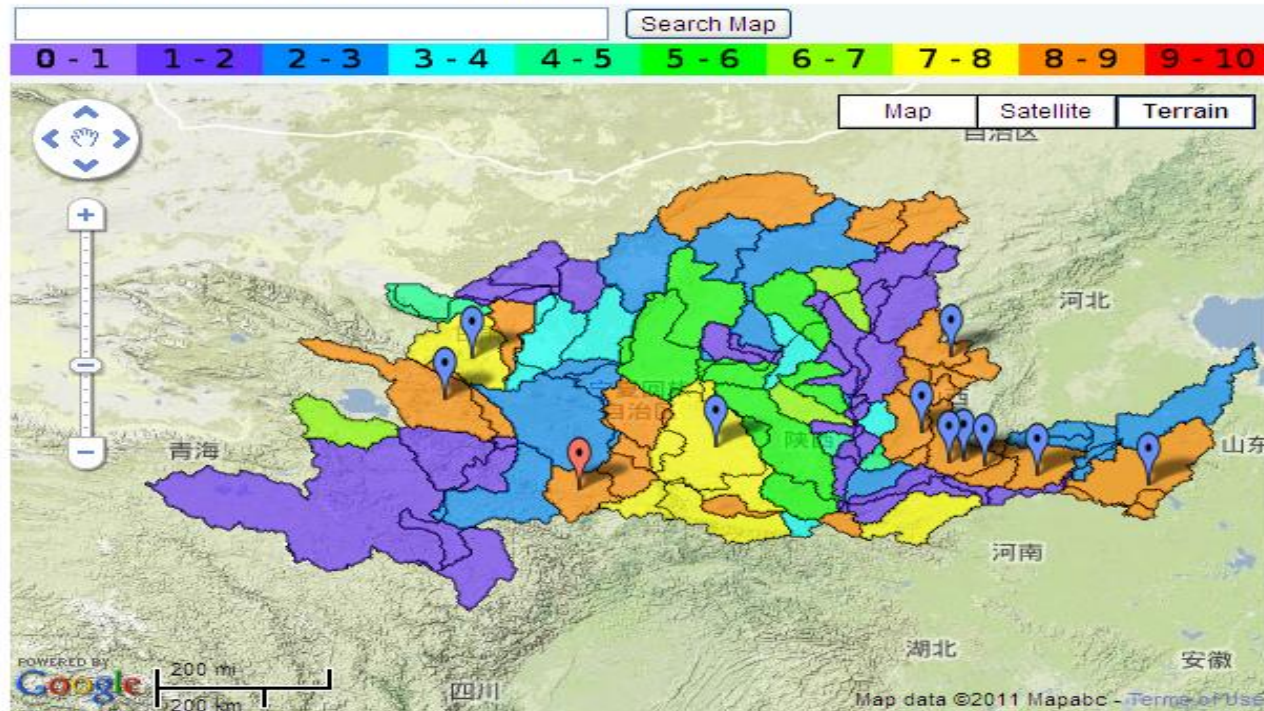
[8] Facility 21 Activate Delete

[9] Facility 22 Activate Delete

[10] Facility 23 Activate D

Delete

Map - Access & Growth Constraints



Results

Note: There are 4 values that exceed the critical threshold.

Overall Water Risk

7.92

Map Overall Risk

Refresh Map

Show/Hide Detailed Results

Show/Hide Inputs

[1] Facility 14 Activate Delete

[2] Facility 15 Activate Delete

[3] Facility 16 Activate Delete

[4] Facility 17 Activate Delete

[5] Facility

Activate Delete

[7] Facility 20 Activate Delete

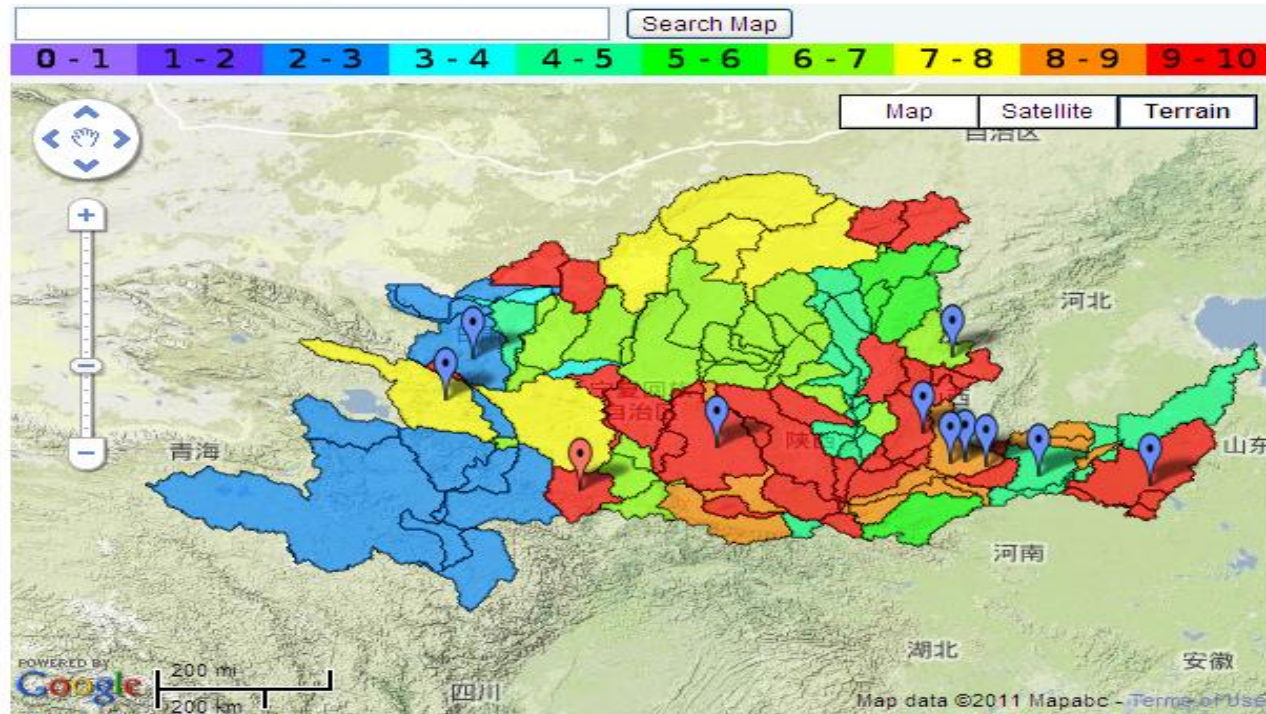
[8] Facility 21 Activate Delete

[9] Facility 22 Activate Delete

[10] Facility 23 Activate

Delete

Map - Water Quality Class



Results

Note: There are 4 values that exceed the critical threshold.

Overall Water Risk

7.92

Map Overall Risk

Refresh Map

Show/Hide Detailed Results

Show/Hide Inputs

[1] Facility 14 Activate Delete

[2] Facility 15 Activate Delete

[3] Facility 16 Activate Delete

[4] Facility 17 Activate Delete

[5] Facility 18 Activate Delete

Activate Delete

[7] Facility 20 Activate Delete

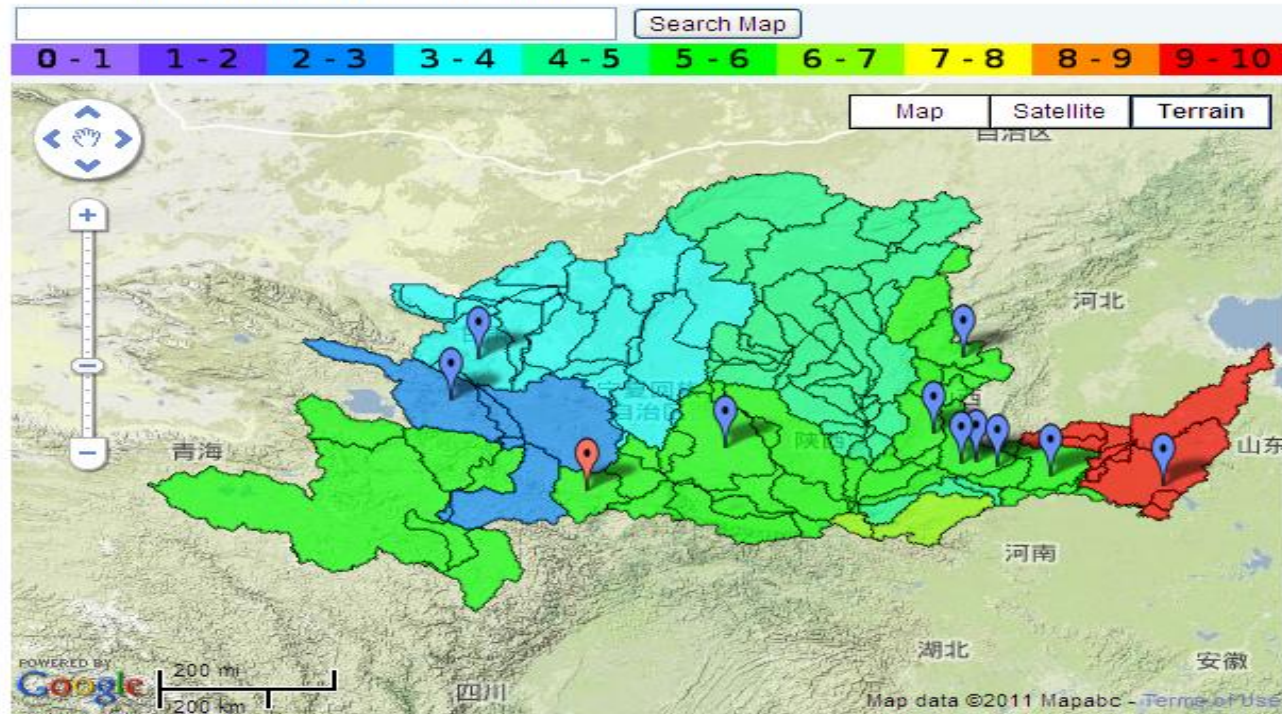
[8] Facility 21 Activate Delete

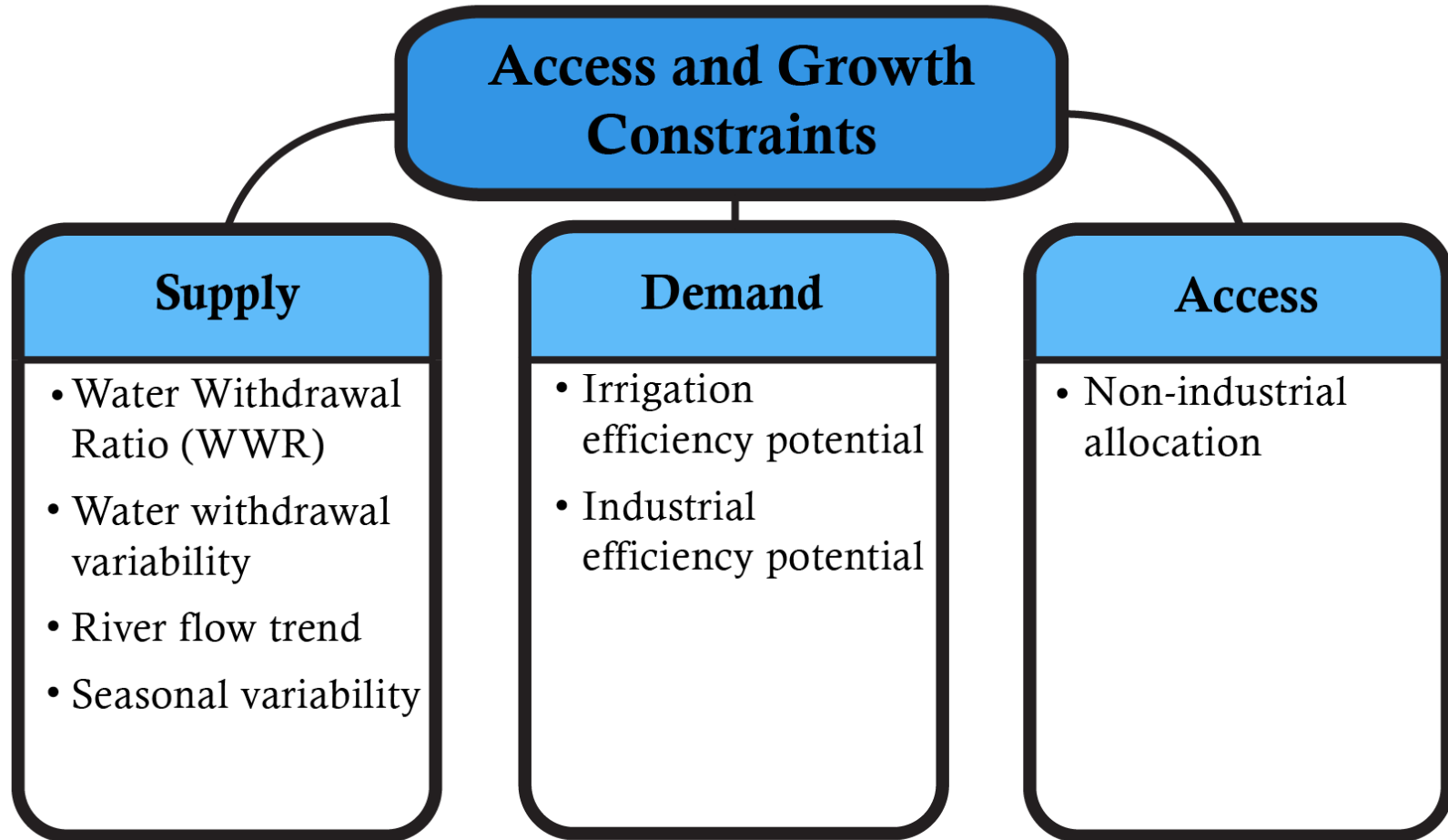
[9] Facility 22 Activate Delete

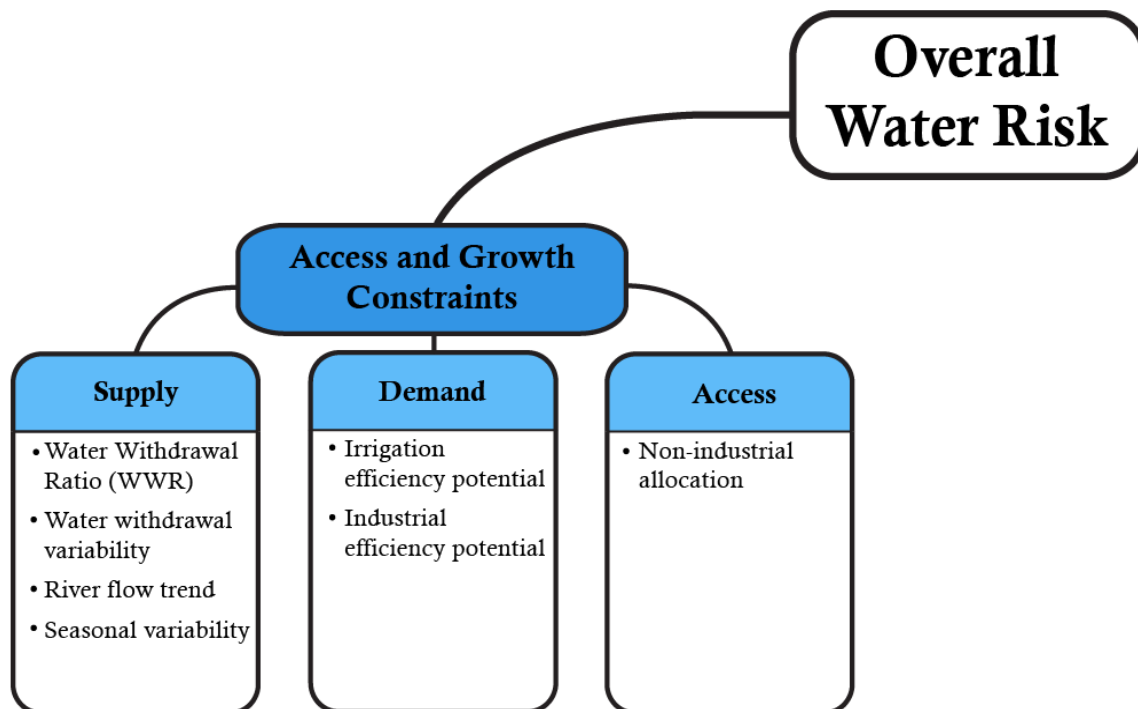
[10] Facility 23 Activate Delete

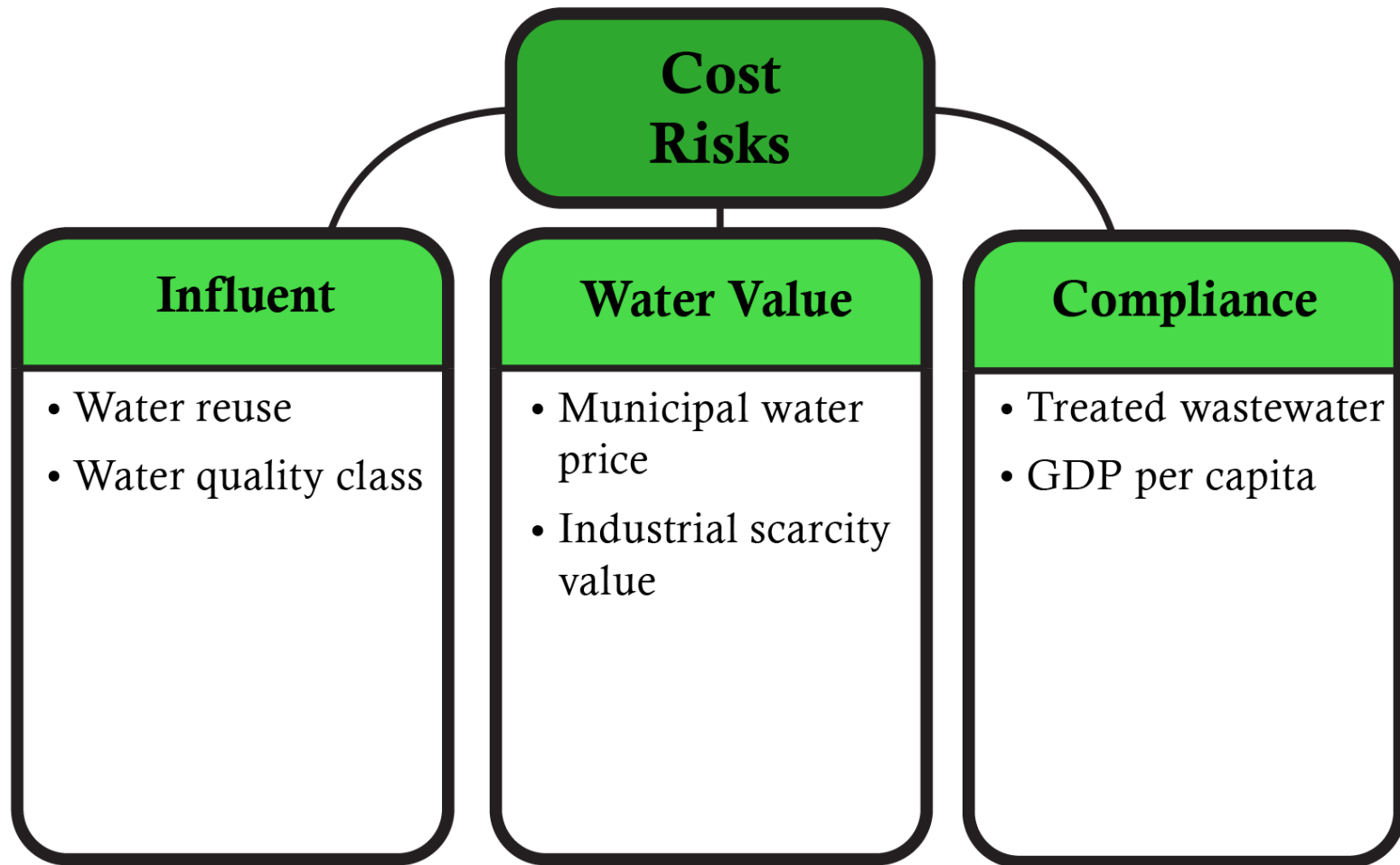
Delete

Map - Minimum Environmental Flow









Overall Water Risk

Access and Growth Constraints

Supply

- Water Withdrawal Ratio (WWR)
- Water withdrawal variability
- River flow trend
- Seasonal variability

Demand

- Irrigation efficiency potential
- Industrial efficiency potential

Access

- Non-industrial allocation

Cost Risks

Influent

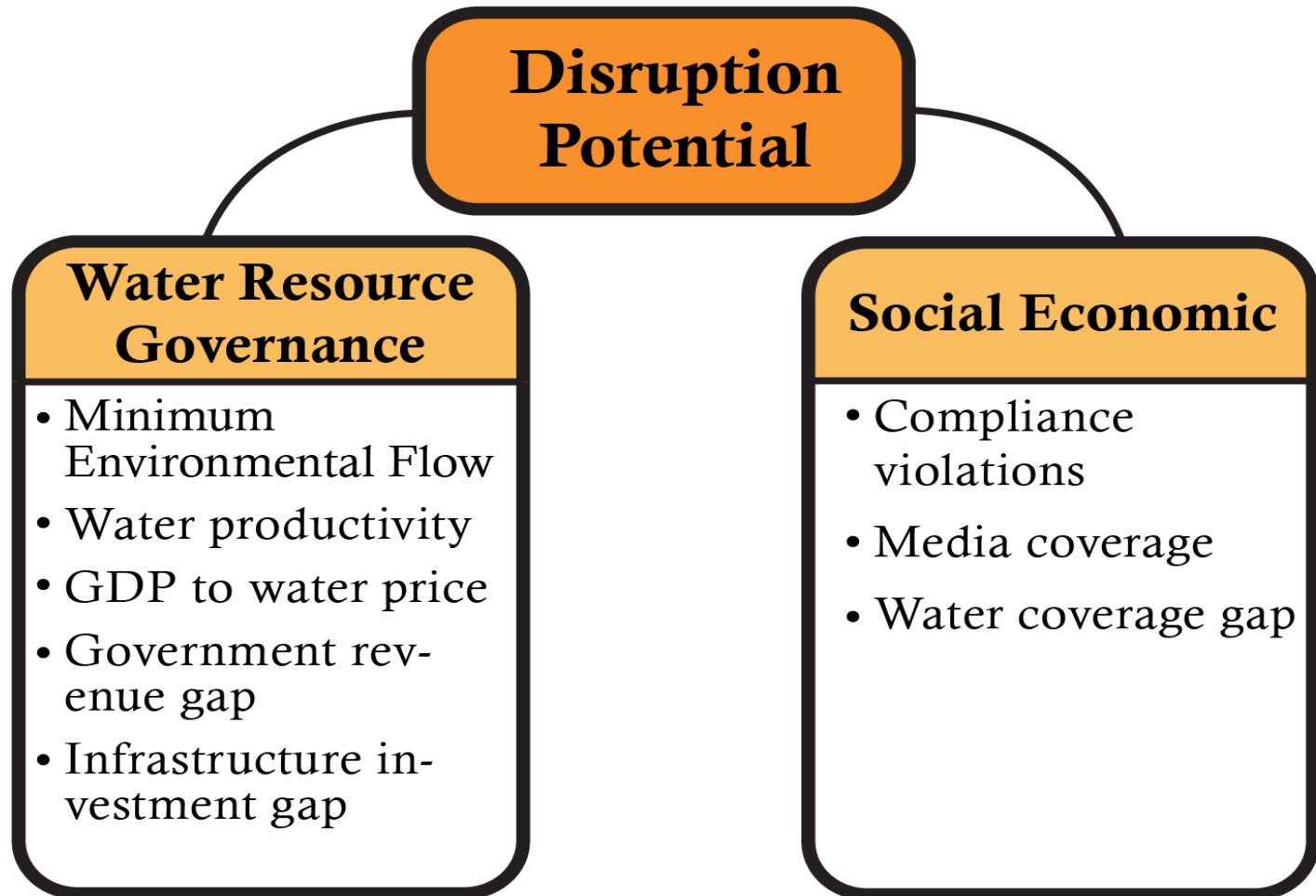
- Water reuse
- Water quality class

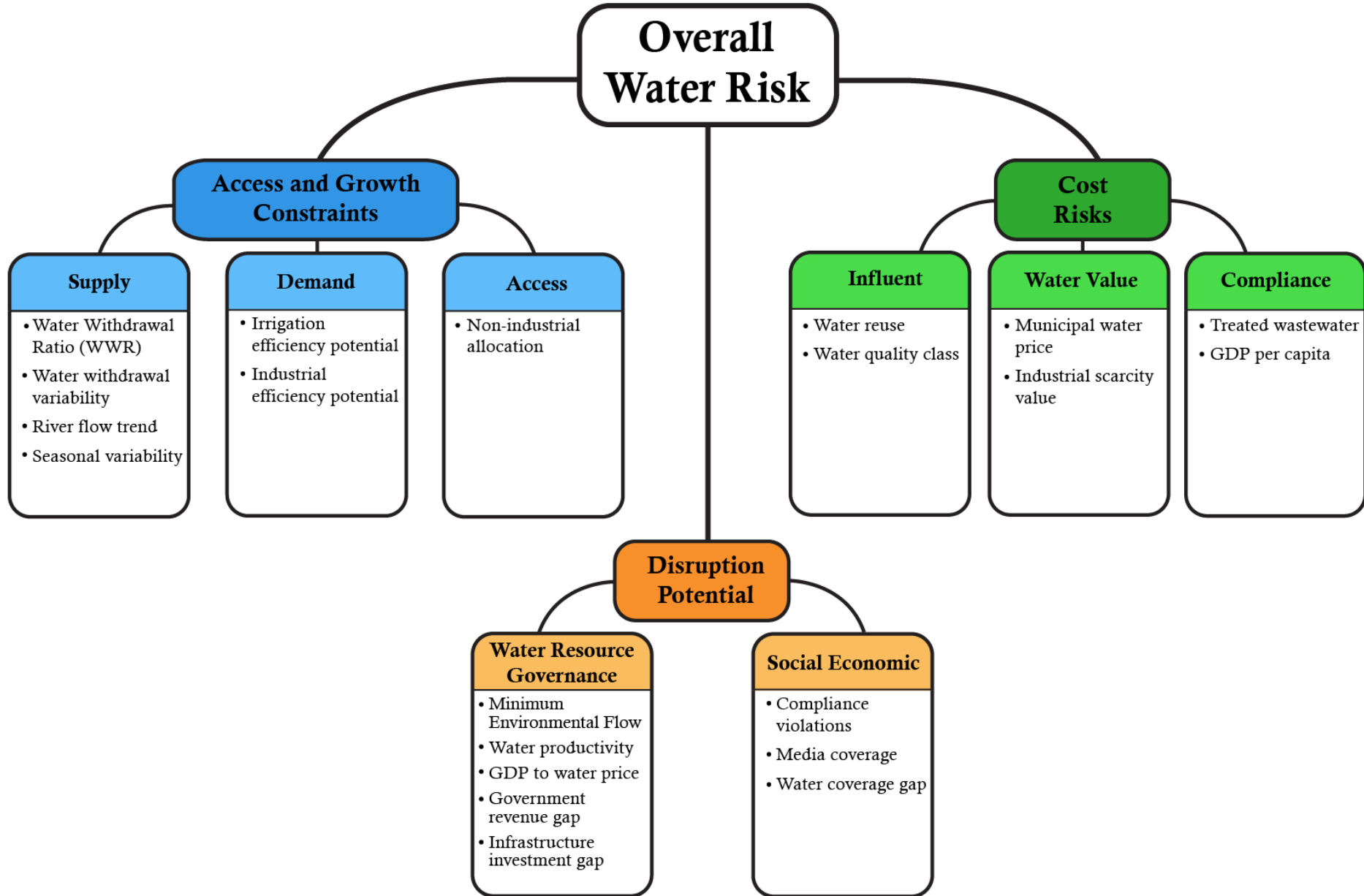
Water Value

- Municipal water price
- Industrial scarcity value

Compliance

- Treated wastewater
- GDP per capita





Thank you!

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