



Landcare Research
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Initial assessment of the economic value of wetlands in West Asia

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Status of wetlands and policy

Wetlands and wildlife at risk

Population & income growth -> urban development

Economic diversification -> water use & quality

Many challenges for integrated policy response

Valuation exercise to help raise awareness

Wetlands in West Asia

107,000 km²

Coastal

Mangroves

Other coastal

Freshwater

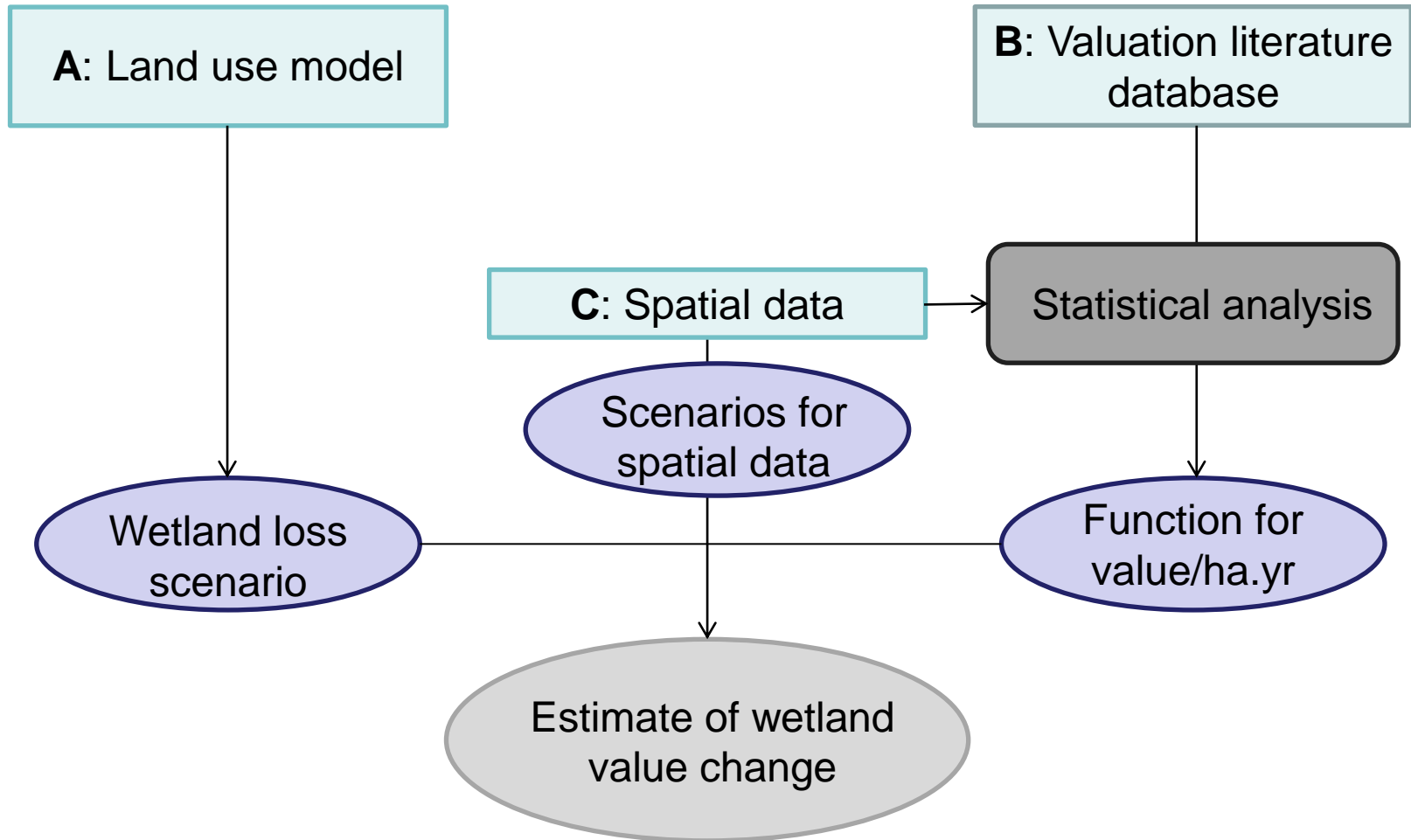
Pan

Marsh

(Wadi)



Valuation framework



Value transfer functions

<i>Variable</i>	<i>Coefficient (Mangroves) ¹</i>	<i>S.E.</i>	<i>Coefficient (Wetlands) ¹</i>	<i>p-value</i>
Constant	-0.590	2.193	-0.970	0.709
Coastal protection ²	1.456 ***	0.491	-	-
Water quality ²	1.714 **	0.752	-	-
Fisheries ²	0.860 **	0.355	-	-
Fuel wood ²	-1.085 **	0.437	-	-
Recreational fishing ²	-	-	-1.355 ***	0.002
Natural habitat ²	-	-	1.211 **	0.012
Peatbogs ²	-	-	-2.266 ***	0.004
Mangrove area (ha; ln)	-0.343 ***	0.065	-	-
Mangrove abundance (km ² within 50km radius; ln)	0.248 ***	0.082	-	-
Wetland area (ha; ln)	-	-	-0.218 ***	0.000
Wetland abundance (ha within 50km radius; ln)	-	-	-0.125	0.118
Roads (km within 50 km radius; ln)	-0.312 *	0.175	-	-
GDP per capita (US\$; ln)	0.785 ***	0.174	0.430 ***	0.004
Population (within 50km radius; ln)	0.284	0.149	0.503 ***	0.000
N	130		222	
R-squared	0.45		0.36	

Results mangroves

Country	Mangrove area in 2000 (1,000 ha)	Change in mangrove area 2000-2050 (%)	Value change 2050 (1,000 US\$/year)	Prediction interval 95% (1,000 US\$/year)	Present value 2000 (1,000 US\$; 4% rate)
Emirates	12	-7	-13,195	-12,402 to -13,989	-101,149
Bahrain	0.1	-14	-65	-0.6 to -154	-496
Iran	12	-41	-15,565	-9672 to -21,474	-119,315
Oman	0.3	-4	-109	-87 to -131	-837
Qatar	0.4	-7	-178	-103 to -252	-1361
Saudi Arabia	8	-18	-4548	-3456 to -5649	-34,862
Yemen	1	-23	-1117	-759 to -1479	-8563
Total	33.9	-21.9	-34,776	-26,480 to -43,129	-266,583

Results wetlands

Country	Wetland area in 2000 (1,000 ha)	Change in wetland area 2000-2050 (%)	Value change 2050 (1,000 US\$/year)	Prediction interval 95% (1,000 US\$/year)	Present value 2000 (1,000 US\$; 4% rate)
Emirates	785	-0.01	-252	-152 to -352	-1,938
Bahrain	274	-2	-865	-52 to -6,196	-6,649
Iran	4,466	-3,9	-91,351	-28,984 to -188,878	-702,082
Iraq	934	-0.6	-25,580	-19,849 to -31,376	-196,594
Jordan	189	-29	-22,096	-5,580 to -38,985	-169,816
Oman	1,112	-4	-20,946	-2,220 to -61,433	-160,981
Qatar	115	-6	-4,221	-185 to -13,374	-32,447
Saudi Arabia	1,857	-5	-76,954	-30,958 to -135,679	-591,430
Syria	87	-1	-1,714	-1,487 to -1,941	-13,173
Turkey	457	-3	-10,130	-1,897 to -18,499	-77,853
Yemen	395	-0.7	-7,952	-4,796 to -11,158	-61,112
Total	10,672	-3.8	-262,061	-96,161 to -507,871	-2,014,076

Results

Overall Present Value
of conservation:

US\$ 2.3 bln – 7.2 bln

7 sites with extreme values



Conclusion

Need for recognition of the value of ecosystem services

Economic value demonstrated, but issues

Local pilot studies could be the way forward

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Thank you

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