

Annexes

Annex I List of contributing authors

Name	Institutional affiliation	Country	Field of Work
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Jaime Sainz	Instituto Nacional de Ecología (INE)	Mexico	Environmental policy analysis
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Carlos Muñoz Piña	Instituto Nacional de Ecología (INE)	Mexico	Environmental policy analysis
Ivan Parra	World Wildlife Fund (WWF) Mexico	Mexico	Terrestrial Ecology and Coastal Zone management
Mary Albar	World Wildlife Fund (WWF) Mexico	Mexico	Natural Protected Areas and marine and coastal conservation

Annex II

Detailed scoring tables

I: Freshwater shortage

Environmental issues	Score	Weight %	Environmental concern	Weight averaged score
1. Modification of stream flow	3	70	Freshwater shortage	2.6
2. Pollution of existing supplies	1	15		
3. Changes in the water table	2	15		

Criteria for Economic impacts	Raw score	Score	Weight %
Size of economic or public sectors affected	Very small Very large	2	40
Degree of impact (cost, output changes etc.)	Minimum Severe	2	40
Frequency/Duration	Occasion/Short Continuous	1	20
Weight average score for Economic impacts			1.8

Criteria for Health impacts	Raw score	Score	Weight %
Number of people affected	Very small Very large	1	30
Degree of severity	Minimum Severe	1	40
Frequency/Duration	Occasion/Short Continuous	1	30
Weight average score for Health impacts			1.0

Criteria for Other social and community impacts	Raw score	Score	Weight %
Number and/or size of community affected	Very small Very large	1	10
Degree of severity	Minimum Severe	2	50
Frequency/Duration	Occasion/Short Continuous	3	40
Weight average score for Other social and community impacts			2.3

II: Pollution

Environmental issues	Score	Weight %	Environmental concern	Weight averaged score
4. Microbiological	1	10	Pollution	1.1
5. Eutrophication	1	10		
6. Chemical	2	20		
7. Suspended solids	1	20		
8. Solid wastes	1	10		
9. Thermal	0	10		
10. Radionuclide	1	10		
11. Spills	1	10		

Criteria for Economic impacts	Raw score	Score	Weight %
Size of economic or public sectors affected	Very small Very large	2	30
Degree of impact (cost, output changes etc.)	Minimum Severe	2	40
Frequency/Duration	Occasion/Short Continuous	3	30
Weight average score for Economic impacts			2.3

Criteria for Health impacts	Raw score	Score	Weight %
Number of people affected	Very small Very large	1	20
Degree of severity	Minimum Severe	2	40
Frequency/Duration	Occasion/Short Continuous	3	40
Weight average score for Health impacts			2.2

Criteria for Other social and community impacts	Raw score	Score	Weight %
Number and/or size of community affected	Very small Very large	3	20
Degree of severity	Minimum Severe	1	30
Frequency/Duration	Occasion/Short Continuous	3	50
Weight average score for Other social and community impacts			2.4

III: Habitat and community modification

Environmental issues	Score	Weight %	Environmental concern	Weight averaged score
12. Loss of ecosystems	3	60	Habitat and community modification	3.0
13. Modification of ecosystems or ecotones, including community structure and/or species composition	3	40		

Criteria for Economic impacts	Raw score	Score	Weight %
Size of economic or public sectors affected	Very small Very large	1	20
Degree of impact (cost, output changes etc.)	Minimum Severe	1	40
Frequency/Duration	Occasion/Short Continuous	2	40
Weight average score for Economic impacts			1.8
Criteria for Health impacts	Raw score	Score	Weight %
Number of people affected	Very small Very large	0	34
Degree of severity	Minimum Severe	0	33
Frequency/Duration	Occasion/Short Continuous	0	33
Weight average score for Health impacts			0
Criteria for Other social and community impacts	Raw score	Score	Weight %
Number and/or size of community affected	Very small Very large	2	20
Degree of severity	Minimum Severe	1	40
Frequency/Duration	Occasion/Short Continuous	2	40
Weight average score for Other social and community impacts			1.6

IV: Unsustainable exploitation of fish and other living resources

Environmental issues	Score	Weight %	Environmental concern	Weight averaged score
14. Overexploitation	3	15	Unsustainable exploitation of fish	2.9
15. Excessive by-catch and discards	3	30		
16. Destructive fishing practices	3	30		
17. Decreased viability of stock through pollution and disease	2	5		
18. Impact on biological and genetic diversity	3	20		

Criteria for Economic impacts	Raw score	Score	Weight %
Size of economic or public sectors affected	Very small Very large	1	40
Degree of impact (cost, output changes etc.)	Minimum Severe	1	40
Frequency/Duration	Occasion/Short Continuous	3	20
Weight average score for Economic impacts			1.4
Criteria for Health impacts	Raw score	Score	Weight %
Number of people affected	Very small Very large	0	34
Degree of severity	Minimum Severe	0	33
Frequency/Duration	Occasion/Short Continuous	0	33
Weight average score for Health impacts			0
Criteria for Other social and community impacts	Raw score	Score	Weight %
Number and/or size of community affected	Very small Very large	1	40
Degree of severity	Minimum Severe	2	30
Frequency/Duration	Occasion/Short Continuous	2	30
Weight average score for Other social and community impacts			1.6

V: Global change

Environmental issues	Score	Weight %	Environmental concern	Weight averaged score
19. Changes in the hydrological cycle	0		Global change	0
20. Sea level change	0			
21. Increased UV-B radiation as a result of ozone depletion	0			
22. Changes in ocean CO ₂ source/sink function	0			

Criteria for Economic impacts	Raw score	Score	Weight %
Size of economic or public sectors affected	Very small Very large	0	
Degree of impact (cost, output changes etc.)	Minimum Severe	0	
Frequency/Duration	Occasion/Short Continuous	0	
Weight average score for Economic impacts		0	
Criteria for Health impacts	Raw score	Score	Weight %
Number of people affected	Very small Very large	0	
Degree of severity	Minimum Severe	0	
Frequency/Duration	Occasion/Short Continuous	0	
Weight average score for Health impacts		0	
Criteria for Other social and community impacts	Raw score	Score	Weight %
Number and/or size of community affected	Very small Very large	0	
Degree of severity	Minimum Severe	0	
Frequency/Duration	Occasion/Short Continuous	0	
Weight average score for Other social and community impacts		0	

Comparative environmental and socio-economic impacts of each GIWA concern

Concern	Types of impacts								Overall score	Priority
	Environmental score		Economic score		Human health score		Social and community score			
	Present (a)	Future (b)	Present (c)	Future (d)	Present (e)	Future (f)	Present (g)	Future (h)		
Freshwater shortage	2.6	2.4	1.8	2.3	1	1	2.3	2.7	2.0	1
Pollution	1.1	1.2	2.3	2.5	2.2	2.0	2.4	2.6	2.0	2
Habitat and community modification	3.0	2.5	1.8	1.6	0	0	1.6	1.4	1.5	3
Unsustainable exploitation of fish and other living resources	2.9	2.0	1.4	1.2	0	0	1.6	1.6	1.3	4
Global change	0	0	0	0	0	0	0	0	0	5

Annex III

List of important water-related programmes in the region

Binational Programmes

1889 International Boundary and Water Commission
1944 Water Utilization Treaty
1983 The United States-Mexico Border Environmental Cooperation Agreement (The la Paz Agreement)
1994 The Border Environment Cooperation Commission (BECC)
1994 North American Development Bank (NADbank)

United States

Programmes

The Colorado River Basin Salinity Act
The Federal Clean Water Act
The National Environmental Policy Act (NEPA)
The Safe Drinking Water Act
The Federal Endangered Species Act
The Fish And Wildlife Coordination Act
The Wild and Scenic Rivers Act
The Pacific Northwest Power Planning and Conservation Act

Institutional Framework

Environmental Protection Agency (EPA)
Council of Environmental Quality (CEQ)
Department of Agriculture (USDA)
Department of Energy (DOE)
Department of the Interior (DOI)
US Coast Guard

Interstate Compact Commissions

Colorado River Commission
Native American Government

Mexico

Programmes

National Water Act

Institutional Framework

Secretaría del Medio Ambiente y Recursos Naturales (SEMARNAT)
Comisión Nacional del Agua (CNA)

Annex IV

List of conventions and specific laws that affects water use in the region

Major components of the Law of the River

The River and Harbor Act, March 3, 1889.

The Reclamation Act of June 17, 1902.

Reclamation of Indian Lands in Yuma, Colorado River, and Pyramid Lake Indian Reservations Act of April 21, 1904.

Yuma Project authorised by the Secretary of the Interior on May 10, 1904, pursuant to section 4 of the reclamation Act of June 17, 1902.

Protection of Property Along the Colorado River Act of June 25, 1910.

Warren Act of February 21, 1910.

Patents and Water-Right Certificates Acts of August 9, 1912 and August 26, 1912.

Yuma Auxiliary Project Act of January 25, 1917.

Availability of Money for Yuma Auxiliary Project Act of February 11.

Sale of Water for Miscellaneous Purposes Act of February 25, 1920.

Federal Power Act of June 10, 1920.

The Colorado River Compact of Santa Fe, 1922.

The Colorado River Front Work and Levee System Acts of March 3, 1925; June 21, 1927.

The Boulder Canyon Project Act of December 21, 1928.

The California Limitation Act of March 4, 1929.

The California Seven Party Agreement of August 18, 1931.

The Rivers and Harbors Act of August 30, 1935.

The Parker Dam Power Project Appropriation Act of May 2, 1939.

The Reclamation Project Act of August 4, 1939.

The Boulder Canyon Project Adjustment Act of July 19, 1940.

The Mexican Water Treaty, February 3, 1944.

Gila Project Act of July 30, 1947.

The Upper Colorado River Basin Compact of October 11, 1948.

Consolidate Parker Dam Power Project and Davis Dam Project Act of May 28, 1954.

Palo Verde Diversion Dam Act of August 31, 1954.

Change Boundaries, Yuma Auxiliary Project Act of February 15, 1956.

The Colorado River Storage Project Act of April 11, 1956.

Water Supply Act of July 3, 1958.

Boulder City Act of September 2, 1958.

Report of the Special Master, Simon H. Rifkind, Arizona v. California, et al., December 5, 1960.

United States Supreme Court Decree, Arizona vs. California, March 9, 1964.

International Flood Control Measures, Lower Colorado River Act of August 10, 1964.

Southern Nevada (Robert B. Griffith) Water Project Act of October 22, 1965.

The Colorado River Basin Act of September 30, 1968.

The National Environmental Policy Act of 1969.

Criteria for the Coordinated Long Range Operation of the Colorado River Reservoirs, June 8, 1970.

Supplemental Irrigation Facilities, Yuma Division, Act of September 25, 1970.

Minutes 218, March 22, 1965; 241, July 14, 1972 (replaced 218); and 242, August 30, 1973, (replaced 241) of the International Boundary and Water Commission, Pursuant to the Mexican Water Treaty.

The Endangered Species Act of 1973.

The Colorado River Basin Salinity Act of June 24 1974.

The Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977.

United States Supreme Court Supplemental Decrees, Arizona vs. California, January 9, 1979, and April 16, 1984.

Hoover Power Plant Act of August 17, 1984 (98 Stat. 1333).

The Grand Canyon Protection Act of 1992

The Numerous Colorado River Water Delivery and Project Repayment Contracts with the States of Arizona and Nevada, cities, water districts, and individuals.

Hoover and Parker-Davis Power Marketing Contracts.

