

Annexes

Annex I GIWA workshop participants.

Name	Institutional affiliation	Country	Field of work
Dr. Johnson A. Oguntola (regional co-ordinator)	Lake Chad Basin Commission	Chad	Chief Water Resources Unit
Mr. Martin Gbafolo	Lake Chad Basin Commission	Chad	Director, Department of Water Resources and Environment
Mr. Alainaye Jogromel	Direction des Ressources en Eau et de la Météorologie	Chad	Hydrologist
Mr. Anza Zakara	Lake Chad Basin Commission,	Chad	Fishery Expert
Mr. Abdallah Adam Mohamed	Société du Développement du Lac (SODELAC),	Chad	Agronomist
Mr. Dodo Garba	Direction Régional de l'Environnement	Niger	Deputy Regional Director of Environment
Mr. Timothée Essang	Institut des Recherches Agronomiques pour le Développement (IRAD)	Cameroon	Agro-Economist
Mr. Maman Moussa	Direction Régional de l'Hydraulique	Niger	Directeur Régional de l'Hydraulique
Mr. Mahmat Mey	Lake Chad Basin Commission	Chad	Live stock
Mr. Ndong Ebozo'o Daniel	Délégué Provincial des Mines, de l'Eau et de l'Energie de l'Extrême Nord	Cameroon	Ingénieur du Génie Rural
Engr. Usman K. Sandabe	Chad Basin Development Authority (CBDA)	Nigeria	Assistant Chief Irrigation Engineer (SCIP)
Mr. Anada Tiega	Lake Chad Basin Commission,	Chad	GEF Project Manager
Dr. Belomal Yongar	Sécretaire Exécutif, ONU-SIDA, s/c Commission du Bassin du Lac Tchad (CBLT)	Chad	Health Project Manager
Mme. Asta Morombaye	Lake Chad Basin Commission	Chad	Translator
Mr. Marcus Njumbe Ediage	Lake Chad Basin Commission	Chad	Translator
Mr. Yakubu Ramoni	Lake Chad Basin Commission	Chad	Technician
Mr. Matthew Fortnam	Global International Waters Assessment (GIWA)	Sweden	Consultant
Ms. Edith Mussukuya	Global International Waters Assessment (GIWA)	Sweden	GIWA coordinator, sub-Saharan Africa
Dr. Juan-Carlos Belausteguigoitia	Global International Waters Assessment (GIWA)	Sweden	GIWA coordinator for the Southern Hemisphere
Mr. Stephen Donkor	United Nations Economic Commission for Africa (UNECA)	Ethiopia	Senior Regional Adviser

Annex II

Detailed scoring tables.

I: Freshwater shortage

Environmental Issues	Score	Weight %	Environmental Concerns	Weight-Averaged Score
1. Modification of streamflow	3	60	Freshwater shortage	2.5
2. Pollution of existing supplies	1	10		
3. Changes in the water table	2	30		

Criteria for Economic Impacts	Raw Score	Score	Weight %
Size of Economic or Public Sectors Affected	Very Small Very Large	3	40
Degree of Impact (cost, output changes etc)	Minimum Severe	3	35
Frequency/Duration	Occasion/Short Continuous	3	25
Weight Average Score for Economic Impacts		3.0	
Criteria for Health Impacts	Raw Score	Score	Weight %
Number of People Affected	Very Small Very Large	2	40
Degree of Severity	Minimum Severe	2	35
Frequency/Duration	Occasion/Short Continuous	2	25
Weight Average Score for Health Impacts		2.0	
Criteria for Other Social and Community Impacts	Raw Score	Score	Weight %
Number and/or Size of Community Affected	Very Small Very Large	2	30
Degree of Severity	Minimum Severe	2	40
Frequency/Duration	Occasion/Short Continuous	2	30
Weight Average Score for Other Social and Community Impacts		2.0	

II: Pollution

Environmental Issues	Score	Weight %	Environmental Concerns	Weight-Averaged Score
4. Microbiological	0	0	Pollution	1.0
5. Eutrophication	1	15		
6. Chemical	1	15		
7. Suspended solids	1	40		
8. Solid wastes	1	30		
9. Thermal	0	0		
10. Radio nuclide	0	0		
11. Spills	0	0		

Criteria for Economic Impacts	Raw Score	Score	Weight %
Size of Economic or Public Sectors Affected	Very Small Very Large	1	55
Degree of Impact (cost, output changes etc)	Minimum Severe	1	45
Frequency/Duration	Occasion/Short Continuous	0	0
Weight Average Score for Economic Impacts		1.0	
Criteria for Health Impacts	Raw Score	Score	Weight %
Number of People Affected	Very Small Very Large	1	50
Degree of Severity	Minimum Severe	1	30
Frequency/Duration	Occasion/Short Continuous	1	20
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	50
Degree of Severity	Minimum Severe	1	30
Frequency/Duration	Occasion/Short Continuous	1	20
Weight Average Score for Other Social and Community Impacts		1.0	

III: Habitat and community modification

Environmental Issues	Score	Weight %	Environmental Concerns	Weight-Averaged Score
12. Loss of ecosystems	2	60	Habitat and Community Modification	2.0
13. Modification of ecosystems or ecotones, including community structure and/or species composition	2	40		

Criteria for Economic Impacts	Raw Score	Score	Weight %
Size of Economic or Public Sectors Affected	Very Small Very Large	2	45
Degree of Impact (cost, output changes etc)	Minimum Severe	2	30
Frequency/Duration	Occasion/Short Continuous	2	25
Weight Average Score for Economic Impacts		2.0	
Criteria for Health Impacts	Raw Score	Score	Weight %
Number of People Affected	Very Small Very Large	2	40
Degree of Severity	Minimum Severe	2	30
Frequency/Duration	Occasion/Short Continuous	2	30
Weight Average Score for Health Impacts		2.0	
Criteria for Other Social and Community Impacts	Raw Score	Score	Weight %
Number and/or Size of Community Affected	Very Small Very Large	2	40
Degree of Severity	Minimum Severe	2	30
Frequency/Duration	Occasion/Short Continuous	2	30
Weight Average Score for Other Social and Community Impacts		2.0	

IV: Unsustainable exploitation of fish

Environmental Issues	Score	Weight %	Environmental Concerns	Weight-Averaged Score
14. Overexploitation	2	25	Unsustainable exploitation of fish	2.0
15. Excessive by-catch and discards	2	25		
16. Destructive fishing practices	2	50		
17. Decreased viability of stock through pollution and disease	0	0		
18. Impact on biological and genetic diversity	0	0		

Criteria for Economic Impacts	Raw Score	Score	Weight %
Size of Economic or Public Sectors Affected	Very Small Very Large	2	33.3
Degree of Impact (cost, output changes etc)	Minimum Severe	2	33.3
Frequency/Duration	Occasion/Short Continuous	2	33.3
Weight Average Score for Economic Impacts		2.0	
Criteria for Health Impacts	Raw Score	Score	Weight %
Number of People Affected	Very Small Very Large	2	33.3
Degree of Severity	Minimum Severe	2	33.3
Frequency/Duration	Occasion/Short Continuous	2	33.3
Weight Average Score for Health Impacts		2.0	
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	1	35
Frequency/Duration	Occasion/Short Continuous	1	25
Weight Average Score for Other Social and Community Impacts		1.0	

V: Global change

Environmental Issues	Score	Weight %	Environmental Concerns	Weight-Averaged Score
19. Changes in the hydrological cycle	2	100	Global change	2.0
20. Sea level change	0	0		
21. Increase UV-B radiation as a result of ozone depletion	0	0		
22. Changes in ocean CO ₂ source/sink function	0	0		

Criteria for Economic Impacts	Raw Score	Score	Weight %
Size of Economic or Public Sectors Affected	Very Small Very Large	3	30
Degree of Impact (cost, output changes etc)	Minimum Severe	3	40
Frequency/Duration	Occasion/Short Continuous	3	30
Weight Average Score for Economic Impacts		3.0	
Criteria for Health Impacts	Raw Score	Score	Weight %
Number of People Affected	Very Small Very Large	2	40
Degree of Severity	Minimum Severe	2	30
Frequency/Duration	Occasion/Short Continuous	2	30
Weight Average Score for Health Impacts		2.0	
Criteria for Other Social and Community Impacts	Raw Score	Score	Weight %
Number and/or Size of Community Affected	Very Small Very Large	2	40
Degree of Severity	Minimum Severe	2	30
Frequency/Duration	Occasion/Short Continuous	2	30
Weight Average Score for Other Social and Community Impacts		2.0	

Comparative environmental and socio-economic impacts of each GIWA concern

Concern	Types of Impacts								Overall Score
	Environmental Score		Economic Score		Human Health Score		Social & Community Score		
	Present (a)	Future (b)	Present (c)	Future (d)	Present (e)	Future (f)	Present (g)	Future (h)	
Freshwater shortage	3	3	3	3	2	3	2	3	2.8
Pollution	1	2	1	2	1	2	1	2	1.5
Habitat and community modification	2	3	2	3	2	3	2	2	2.4
Unsustainable exploitation of fish and other living resources	2	2	2	3	2	3	1	2	2.1
Global change	2	3	3	1	2	3	2	3	2.4

