

Cooperation in the Law of Transboundary Water Resources

Climate change, population growth and the increasing demand for water are all capable of leading to disputes over transboundary water systems. Addressing these challenges will require enhancement of adaptive capacity, improvement of the quality of water resources management and reduction in the risk of conflict among riparian states. Such changes can be brought about only through significant international cooperation.

Christina Leb's analysis of the duty to cooperate, as well as the related rights and obligations, highlights the interlinkages between this duty and the principles of equitable and reasonable utilisation and the prevention of transboundary harm. In her analysis, she considers the law to be applicable to both international watercourses and transboundary aquifers. She explores the complementarities and interaction between the rules of international water law and the related obligations of climate change and human rights law.

CHRISTINA LEB is an associate member of the Platform for International Water Law at the University of Geneva and a consultant for the World Bank. Her primary focus is on transboundary water resources management and cooperation.



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Christina Leb





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In memoriam Professor Enzo Grilli



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2000	Revised Protocol on Shared Watercourses in the Southern African Development Community (SADC Revised Protocol), Windhoek, Namibia, 7 August 2000, www.sadc.int,ECOLEX_TRE-001360 55, 64, 87, 92, 118, 126, 133, 135, 137–140, 148, 153, 203, 208, 255 EU Water Framework Directive, Brussels, 23 October 2000,
	Directive 2000/60/EC, OJ 2000 L 327/1 64, 118, 128, 157, 160,
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2002	Senegal Water Charter (Charte des eaux du fleuve Sénégal), 18 May 2002, in L. Boisson de Chazournes, R. Desgagné, M.
	Mbengue et C. Romano, Protection internationale de
	l'environnement, 2nd edition (Paris: Pedone, 2005), pp. 301-314
	55, 67, 91, 93, 101, 118, 134, 137, 148, 169, 208, 209, 220, 234
	Tripartite Interim Agreement for Cooperation on the Protection and Sustainable Utilization of the Water Resources
	of the Incomati and Maputo Watercourses, Johannesburg,
	29 August 2002, FAOLEX, No. LEX-FAOC034943 92, 131
	Framework Agreement on the Sava River, Kranjska Gora,
	Slovenia, 3 December 2002, 2366 UNTS 479 93, 101, 128, 161, 169, 186, 188
2003	Convention on the Sustainable Management of Lake
	Tanganyika, Dar es Salaam, 12 June 2003, www.ltbp.org 133,
	160, 163, 165, 166, 208
	Protocol to the African Charter on Human and People's Rights on the Rights of Women in Africa, Maputo, Mozambique,
	11 July 2003, OAU Doc. CAB/LEG/66.6 201
	Protocol for Sustainable Development of Lake Victoria Basin
	(Lake Victoria Protocol), Arusha, Tanzania, 29 November 2003,
2004	FAOLEX, No. LEX-FAOC041042 55, 64, 161, 163, 165, 169, 183 Agreement for the Protection and Sustainable Development
_001	of Lake Ohrid and its Watershed, Skopje, Macedonia, 17 June
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2006	Convention on the Rights of Persons with Disabilities, New
2007	York, 13 December 2006, UN Doc. A/61/611 201 Directive 2007/60/EC on the Assessment and Management of
	Flood Risks, Brussels, 23 October 2007, OJ 2007 L 288/27 233
2008	Niger Basin Charter (Charte de l'eau du bassin du Niger), Niamey,
	30 April 2008, www.abn.ne 92, 132, 133, 137–139, 166, 174, 208, 209, 234
2010	Agreement on the Guaraní Aquifer, San Juan, 2 August 2010,
_010	http://internationalwaterlaw.org/documents/regionaldocs/
	Guarani_Aquifer_Agreement-Spanish.pdf 140, 162
2012	2012 Protocol Amending the Agreement between the United States of America and Canada on Great Lakes Water Quality, 1978, as amended on 16 October 1983 and 18 November 1987,
	Washington, 7 September 2012, www.ec.gc.ca/Publications 159



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- Cleveland Award, 24 March 1888, published as 'The Costa Rica Boundary President Cleveland's Decision as Arbitrator', *New York Times*, 25 March 1888 141
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- In the Matter of an Arbitration before a Tribunal Constituted in Accordance with Article 5 of the Arbitration Agreement between the Government of Sudan and the Sudan People's Liberation Movement/Army on Delimiting the Abyei Area, final award, 22 July 2009, www.pca-cpa. org 210
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- Lake Lanoux Arbitration (France v. Spain) Sentence arbitral rendue le 16 novembre 1957 entre la France et l'Espagne dans l'affaire du lac Lanoux, 16 November 1957 (1958), 29 RGDIP 79–119 34, 46–48, 83, 100, 134, 135, 140, 142, 143
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- Case Concerning Pulp Mills on the River Uruguay (Argentina v. Uruguay), judgment (2010), ICJ Reports 14 54, 95, 100, 101, 106, 110–113, 125, 133, 134, 136, 142, 143, 145
- Case Concerning the Dispute Regarding Navigational and Related Rights (Costa Rica v. Nicaragua), judgment (2009), ICJ Reports 213 141, 209, 210
- Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, advisory opinion (2004), ICJ Reports 136 213, 216, 217
- Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria: Equatorial Guinea Intervening), judgment (2002), ICJ Reports 303 79, 184, 193
- Case Concerning Land and Maritime Boundary between Cameroon and Nigeria, Preliminary Objections, judgment (1998), ICJ Reports 275 31
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The Diversion of Water from the Meuse, judgment (1937), PCIJ Ser. A./B. No. 70 60

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Case Relating to the Territorial Jurisdiction of the International Commission of the River Oder, judgment (1929), PCIJ Ser. A.23 8, 51, 53, 54, 57

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List of abbreviations

ACTO Amazon Cooperation Treaty Organization

ADB Asian Development Bank AfDB African Development Bank

AJIL American Journal of International Law
ASEAN Association of Southeast Asian Nations

AU African Union

AWG-LCA Ad-Hoc Working Group on Long-Term Cooperative Action

BBl Bundesblatt (Switzerland)

BYIL British Yearbook of International Law

CARU Administrative Commission of the River Uruguay

CBDR common but differentiated responsibilities

CESCR Committee on Economic, Social and Cultural Rights

CJIELP Colorado Journal of International Environmental Law and Policy

Consol. TS Parry's Consolidated Treaty Series

COP Conference of the Parties cusecs cubic feet per second EC European Community

ECAFE Economic Commission for Asia and the Far East

EEC European Economic Community
EFAS European Flood Alert System
EIA environmental impact assessment
ENVSEC Environment and Security Initiative

EU European Union

EU WFD European Union Water Framework Directive

EUTSer EU Treaty Series

FAO Food and Agriculture Organization (UN)

GA General Assembly

GEF Global Environmental Facility

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LIST OF ABBREVIATIONS

XXV

GHG greenhouse gas

GoS Government of Sudan **HRC** Human Rights Council

ICCPR International Covenant on Civil and Political Rights International Covenant on Economic, Social and Cultural **ICESCR**

Rights

International Court of Justice ICI

ICPDR International Commission for the Protection of the

Danube River

International Commission for the Protection of the Rhine **ICPR**

International Development Agency IDA IIL Institute of International Law

IIC International Joint Commission (United States, Canada)

International Journal of Global Environmental Issues IIGEnvI

ILA International Law Association

United Nations International Law Commission ILC

ILM **International Legal Materials**

INIWEH Institute for Water, Environment and Health **IPCC** Intergovernmental Panel on Climate Change

International Union for the Conservation of Nature **IUCN**

IWRM integrated water resources management

JAWRA Journal of the American Water Resources Association

Kagera Basin Organization **KBO LCBC** Lake Chad Basin Commission Least Developed Countries Fund **LDCF**

LN League of Nations

League of Nations Treaty Series LNTS

LVFO Lake Victoria Fisheries Organization Millennium Development Goal **MDG**

MEA multilateral environmental agreement

MOP Meeting of the Parties **MRC Mekong River Commission**

National Adaptation Programs of Action NAPAs

Nile Basin Initiative **NBI**

OAU Organization of African Unity

OAU Doc. Official Document of the Organization of African Unity **OECD** Organisation for Economic Cooperation and Development Official Journal of the European Union (unless otherwise OJ

indicated)

OMVS Organisation pour la Mise en Valeur du Fleuve Sénégal



XXVI LIST OF ABBREVIATION

OSCE	Organization for Security and Cooperation in Europe
COCL	Organization for occurry and cooperation in Europe

PCIJ Permanent Court of International Justice

ppm parts per million

RCADI Recueil de Cours de l'Académie de Droit International

RECIEL Review of European Community International Environmental

Law

RGDIP Revue Générale de Droit International Public RIAA Reports of International Arbitral Awards

SADC Southern African Development Community

SBSTA Subsidiary Body for Scientific and Technological Advice

SCCF Special Climate Change Fund

SDD USSR Treaty Collection (Sbornik desitvuiushchikh dogovorov,

soglashenii I konventsii zakliuchenyuhk SSR inostranymi

gosudarstvami)

SICI Statute of the International Court of Justice

SOGED Agence de Gestion et d'Exploitation du barrage de Diama

SOGEM Société de Gestion de l'Energie de Manantali

SPA Strategic Priority for Adaptation

SPLM/A Sudan People's Liberation Movement/Army

UN United Nations

UNC Charter of the United Nations

UNCED United Nations Conference on Environment and

Development

UNCLOS United Nations Convention on the Law of the Seas

UN Doc. Official Document of the United Nations
UNDP United Nations Development Program

UNECE United Nations Economic Commission for Europe

UNEP United Nations Environment Programme

UNESCO United Nations Educational, Scientific and Cultural

Organization

UNESCWA United Nations Economic and Social Commission for

Western Asia

UNFCCC United Nations Framework Convention on Climate

Change

UNFPA United Nations Population Fund

UNITAR United Nations Institute for Training and Research

UNTS United Nations Treaty Series
UNU United Nations University
US United States of America
USTS United States Treaty Series



LIST OF ABBREVIATIONS XXVII

WFD Water Framework Directive WHO World Health Organization

WMO World Meteorological Organization

WTO World Trade Organization

YBILC Yearbook of the International Law Commission