International Environmental Law-making and Diplomacy Review 2014

Melissa Lewis, Ed Couzens and Tuula Honkonen (editors)

UNIVERSITY OF EASTERN FINLAND – UNEP COURSE SERIES 14

University of Eastern Finland
Joensuu, Finland, 2015

University of Eastern Finland – UNEP Course Series 14

Publisher
Law School
University of Eastern Finland
Joensuu Campus
P.O. Box 111, FI-80101 Joensuu, Finland

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Sales and Exchanges
University of Eastern Finland
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P.O. Box 107, FIN-80101 Joensuu, Finland
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E-mail: publication.sales@uef.fi
Website: <http://www.uef.fi/en/web/kirjasto>

ISSN 1795-6706
ISSN 1799-3008 (electronic version)
ISBN 978-952-61-1888-8
ISBN 978-952-61-1889-5 (electronic version)
ISSNL 1795-6706

Cover Design
Leea Wasenius

Layout
Taittopalvelu Yliveto Oy

Saarijärven Offset Oy
Saarijärvi 2015

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Foreword

In October 2014, the University of Eastern Finland and UNEP held the eleventh joint Course on Multilateral Environmental Agreements (MEAs) in Joensuu, Finland. The papers compiled in this volume of the *Review* are based on lectures presented on the theme of environmental security.

As we seek to strengthen environmental governance and negotiation capacity around the world, our aim is to help present and future MEA negotiators improve the implementation and impact of key treaties. Therefore, both the annual Course and this *Review* share the knowledge and experience of those working in the field of international environmental law-making, exposing students and practitioners to a variety of issues regarding environmental security, particularly in the context of transboundary water management.

These carefully selected papers, from lecturers and participants, explore the options for developing instruments to manage environmental security issues. They in turn then inform and enhance policy choices to address those issues through bilateral and multilateral cooperation. In publishing these papers, we hope to benefit not only the Course participants, but also the much wider audience who can access them through the internet, along with volumes from previous years.

We are grateful to everyone who contributed to the successful outcome of the eleventh Course and the *Review*, including the lecturers and authors. In particular, we would like to thank Melissa Lewis, Ed Couzens and Tuula Honkonen for their skillful and dedicated editing of the *Review*, as well as the members of the Editorial Board for providing guidance and oversight throughout this process.

Professor Jukka Mönkkönen
Rector of the University of Eastern Finland

Achim Steiner
Under Secretary-General of the United Nations and Executive Director,
United Nations Environment Programme

Editorial preface

1.1 General introduction

The lectures given on the eleventh annual University of Eastern Finland[1] – United Nations Environment Programme (UNEP) Course on Multilateral Environmental Agreements, from which most of the papers in the present *Review* originate, were delivered by experienced diplomats, members of government and senior academics.[2] One of the Course's principal objectives is to educate participants by imparting the practical experiences of experts involved in international environmental law-making and diplomacy – both to benefit the participants on each Course and to make a wider contribution to knowledge and research through publication in the present *Review*. The papers in this *Review* and the different approaches taken by the authors therefore reflect the professional backgrounds of the lecturers, resource persons and participants (some of whom are already experienced diplomats). The papers in the various *Reviews*, although usually having particular thematic focuses, present various aspects of the increasingly complicated field of international environmental law-making and diplomacy.

It is intended that the current *Review* will provide practical guidance, professional perspective and historical background for decision-makers, diplomats, negotiators, practitioners, researchers, role-players, stakeholders, students and teachers who work with international environmental law-making and diplomacy. The *Review*, in its multi-volume entirety, encompasses different approaches, doctrines, techniques and theories in the field, including international environmental compliance and enforcement, international environmental governance, international environmental law-making, environmental empowerment, and the enhancement of sustainable development generally. The papers in the *Review* are thoroughly edited, with this process being guided by rigorous academic standards.

The first and second Courses were hosted by the University of Eastern Finland, in Joensuu, Finland where the landscape is dominated by forests, lakes and rivers. The special themes of the first two Courses were, respectively, 'Water' and 'Forests'. An aim of the organizers of the Course is to move the Course occasionally to different parts of the world. In South Africa the coastal province of KwaZulu-Natal is an extremely biodiversity-rich area, both in natural and cultural terms, and the chosen special themes for the 2006 and 2008 Courses were therefore 'Biodiversity' and

[1] The University of Joensuu merged with the University of Kuopio on 1 January 2010 to constitute the University of Eastern Finland. Consequently, the University of Joensuu – UNEP Course was renamed the University of Eastern Finland – UNEP Course. The Course activities are concentrated on the Joensuu campus of the new university.

[2] General information on the University of Eastern Finland – UNEP Course on International Environmental Law–making and Diplomacy is available at <http://www.uef.fi/unep>.

'Oceans'. These two Courses were hosted by the University of KwaZulu-Natal, on its Pietermaritzburg campus. The fourth Course, held in Finland, had 'Chemicals' as its special theme – Finland having played an important role in the creation of international governance structures for chemicals management. The sixth Course was hosted by UNEP in Kenya in 2009, in Nairobi and at Lake Naivasha, with the special theme being 'Environmental Governance'. The theme for the seventh Course, which returned to Finland in 2010, was 'Climate Change'. The eighth Course was held in Bangkok, Thailand in 2011 with the theme being 'Synergies Among the Biodiversity-Related Conventions'. The ninth Course was held in 2012 on the island of Grenada, near the capital St George's, with the special theme being 'Ocean Governance'. The tenth Course, which in 2013 returned to its original venue in Joensuu, Finland, had 'Natural Resources' as its special theme. The eleventh Course was again held in Joensuu with a special theme of 'Environmental Security' – and this is therefore the special theme of the present volume of the *Review*.

The Course organizers, the Editorial Board and the editors of this *Review* believe that the ultimate value of the *Review* lies in the contribution which it can make, and hopefully is making, to knowledge, learning and understanding in the field of international environmental negotiation and diplomacy. Although only limited numbers of diplomats and scholars are able to participate in the Courses themselves, it is hoped that through the *Review* many more are reached. The papers contained in the *Review* are generally based on lectures or presentations given during the Course, but have enhanced value as their authors explore their ideas, and provide further evidence for their contentions.

All involved with the *Review* have been particularly grateful to receive ongoing contributions through the various editions by the same writers who have thereby been able to develop extended bodies of work. Many of the people who have contributed papers have been involved in some of the most important environmental negotiations the world has seen. Publication of these contributions means that their experiences, insights and reflections are recorded and disseminated, where they might not otherwise have been committed to print. The value of these contributions cannot be overstated. To complement this, an ongoing feature of the *Review* has been the publication of papers by Course participants who have brought many fresh ideas to the *Review*.

Before publication in the *Review*, all papers undergo a rigorous editorial process (which process includes careful scrutiny and research by the editors, numerous rewrites, and approval for publication only after consideration by, and approval of, the Editorial Board). Each paper is read and commented on several times by each of the editors, and returned several times to the authors for rewriting and the addressing of queries. All references are considered. By the time a paper is published in the *Review*, the editors and the Editorial Board are satisfied that it meets the expectations of formal academic presentation and high scholarly standards, and that it makes a genuine contribution both to the special theme and to knowledge generally.

While convinced of the quality of all of the papers in the *Review*, the editors introduced from the 2012 volume an anonymous peer-review process[3] where authors request this for their papers. This process has been followed since then.

1.2 International governance related to environmental security

One of the messages which emanated from the 1987 Report of the World Commission on Environment and Development (the 'Brundtland Report', published as *Our Common Future*), an entire chapter of which is dedicated to Peace, Security, Development, and the Environment, was that '[e]nvironmental stress is both a cause and an effect of political tension and military conflict':[4] On the one hand, environmental challenges, such as the depletion and pollution of freshwater resources, deforestation, desertification, declines in marine fisheries and the impacts of climate change, increase the likelihood of conflict;[5] and, on the other, military action itself causes environmental degradation.[6]

Since the end of the Cold War, discussions regarding global security have broadened to include a variety of non-traditional threats,[7] and the concept of 'environmental security' has steadily increased in importance. The concept is both informing government policy and increasingly being used as an alternative to other approaches to understanding and resolving environmental problems (such as the concept of sustainable development), which have thus far failed adequately to address most of the world's environmental challenges.[8] However, its precise meaning remains unclear. No universally accepted definition has yet been formulated, although several countries, organizations and initiatives have developed working definitions.[9] The Millennium Project,[10] for instance, after assessing a variety of definitions defined environmental security to mean:

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[3] Per generally accepted academic practice, the peer–review process followed involves the sending of the first version of the paper, with the identity of the author/s concealed, to two experts (selected for their experience and expertise) to consider and comment on. The editors then relay the comments of the reviewers, whose identities are not disclosed unless with their consent, to the authors. Where a paper is specifically so peer–reviewed, successfully, this is indicated in the first footnote of that paper. A paper may be sent to a third reviewer in appropriate circumstances. As part of the peer–review process, the editors work with the authors to ensure that any concerns raised or suggestions made by the reviewers are addressed.

[4] World Commission on Environment and Development, *Our Common Future*, (Oxford University Press, 1987) at Chapter 11, para. 2.

[5] The Report acknowledged that environmental stress will seldom be the *sole* cause of conflict (*ibid.* at para. 5).

[6] Military conflicts are further an impediment to sustainable development insofar as such conflicts 'pre-empt human resources and wealth that could be used to combat [*inter alia*] the collapse of environmental support systems'; and 'may stimulate an ethos that is antagonistic towards cooperation among nations whose ecological and economic interdependence requires them to overcome national or ideological antipathies' (*ibid*. at para. 16).

[7] Simon Dalby, *Environmental* Security (University of Minnesota Press, 2002) at xx.

[8] Jon Barnett, *The Meaning of Environmental Security: Ecological Politics and Policy in the New Security Era* (Zed Books Ltd., 2001) 2.

[9] Elizabeth Maruma Mrema, 'Understanding Environmental Security', in Part II of the current *Review.*

[10] The Millennium Project is an independent think tank, the mission of which is to '[i]mprove thinking

environmental viability for life support, with three sub-elements:

- preventing or repairing military damage to the environment;
- preventing or responding to environmentally caused conflicts; and
- protecting the environment due to its inherent moral value.[11]

The advantage of defining the environment as a component of security is that this can assist in elevating the environment as a political priority. As noted by Perelet, '[t]he security label is a useful way [of] both signalling danger and setting priority as well as characterizing environmental issues for political purposes'.[12] Barnett comments further that '[s]ecuritising environmental issues calls for extraordinary responses from governments equal in magnitude and urgency to their response to (military) security threats'.[13] Of course, environmental insecurity cannot be combated in the same manner as the more traditional threats to security (that is, through military solutions). As Myers observes, '[w]e cannot launch fighter planes to resist global warming, we cannot dispatch tanks to counter advancing deserts, we cannot fire the smartest missiles against rising sea levels'.[14] Nor can these threats be overcome by states working in isolation. Instead, threats to environmental security require international cooperation.[15] Frameworks for such cooperation are currently provided by a myriad of bilateral, regional and global instruments.

The majority of papers in the current *Review* focus particularly on the frameworks for managing shared water resources – the use of such resources providing a key illustration of an environmental issue with potential security implications.[16] Water scarcity and water-related problems are today one of the greatest challenges facing the international community. Competing water uses, such as agriculture, energy production and recreation, together with the expected significant impacts of climate change on water resources all over the world, make freshwater resources a potential source of conflict and a state and individual security threat in many areas of the world. Increasing threats to water supply and quality have indeed raised water security as a core ele-

about the future and make that thinking available through a variety of media for feedback to accumulate wisdom about the future for better decisions today' (The Millennium Project, available at <http://www.millennium–project.org/millennium/overview.html>). In the period July 2002 – June 2011, the Millennium Project produced monthly reports on emerging environmental security issues (see The Millennium Project, *Emerging Environmental Security Issues*, available at <http://www.millennium–project.org/millennium/env–scanning.html> (both visited 26 September 2015)).

11 *Ibid*.

12 Renat Perelet, *Environmental Security Study*, Commissioned Paper for the Millennium Project, available at <http://www.millennium-project.org/millennium/es-appc.html> (visited 25 September 2015).

13 Barnett, *The Meaning of Environmental*, *supra* note 8, at 10.

14 Norman Myers, 'Environmental Security: What's New and Different?', paper presented at The Hague Conference on Environment, Security and Sustainable Development (2004), available at <http://www.envirosecurity.org/conference/working.php> (visited 26 September 2015) at 6.

15 *Ibid.*

16 The focus on water security is explained by the research project 'Legal framework to promote water security' (WATSEC), financed by the Academy of Finland (268151) and at the time on-going at the UEF Law School between UEF scholars and scholars from the University of KwaZulu-Natal and North-West University in South Africa.

ment of many countries' security policies alongside the traditional military security.[17] Water security refers, on the one hand, to secure and sustainable access to water; and, on the other hand, to water as an element which potentially increases conflicts and tensions between states.[18] The individual level of the concept of water security refers to a (human) right to water, to meet individuals' basic water and sanitation needs. The state security dimension of water security, then, refers to the management of national and transboundary freshwater resources, with the aim of reconciling competing water uses and protecting the ecosystem functions of the water resources. The papers that focus on water security questions in the present *Review* specifically concentrate on the management of transboundary freshwater resources. There are numerous agreements – global, regional and bilateral – through which states attempt to regulate and manage their shared water resources. These play a crucial role in securing sufficient quality and quantity of transboundary freshwater resources, and assisting states to both avoid and resolve conflicts in respect thereof.

1.3 The papers in the 2014 *Review*

The papers collected in this volume of the *Review* explore international environmental law-making and diplomacy in the context of environmental security. It is the hope of the editors, the Editorial Board, and all involved with this *Review* that its publication will contribute to the body of research in the area of environmental security; and, indeed, to the development of international environmental law and diplomacy generally.

The present *Review* is divided into four Parts. In Part I, Tuomas Kuokkanen discusses the history and value of the University of Eastern Finland – UNEP Course on Multilateral Environmental Agreements. Kuokkanen explains how the Course came into being, describes the methods through which it is taught and the publications which have emanated from the Course, and provides an overview of the topics which have thus far been covered – these falling within the broad categories of international environmental law and policy, international environmental law-making and diplomacy, and an annually changing special theme. Apart from its value as a historical record, this paper should be of interest to any reader engaged with education initiatives in the field of international environmental law-making.

Part II contains two papers, each of which addresses general issues relating to environmental security. The first paper, by Elizabeth Maruma Mrema, introduces readers to the concept of environmental security, explaining that, although there is no uni-

[17] Harriet Bigas et al, *The Global Water Crisis: Addressing an Urgent Security Issue*, Papers for the InterAction Council, 2011–2012 (UNU–INWEH, 2012), available at <http://inweh.unu.edu/wp-content/uploads/2013/05/WaterSecurity_The-Global-Water-Crisis.pdf> (visited 30 September 2015) at 3.

[18] See UN Water Expert Panel on Water Security, 25 September 2012, available at <http://www.unwater.org/downloads/Panel_Water_Security_25Sep.pdf> (visited 30 September 2015).

versally accepted definition of this term, it generally relates to environmental threats that potentially threaten the life, health, safety, and security of humans. The paper then proceeds to provide an overview of several issues that have been associated with environmental security (for instance, the pollution of various media, the illegal wildlife trade, climate change, and the impacts of armed conflicts on the environment) and the role of MEAs in respect of these; and concludes by identifying some of the hurdles to effectively addressing the issues discussed. The second paper, by course participant Rodrigo Vazquez, examines the role of law in addressing environmental security issues. After exploring the concept of environmental security and the role that law can play in enhancing such security, the author presents three case studies aimed at demonstrating how the inclusion of legal elements in projects contributes to improving environmental security in practice, and argues that more governments need to include legal elements in projects as a tool for addressing environmental security.

Part III of the *Review* focuses specifically on environmental security in the context of regional freshwater governance. First, a paper by Annukka Lipponen examines the 1992 United Nations Economic Commission for Europe (UNECE) Water Convention[19] as a framework for managing shared waters. In the almost two decades that have passed since the Convention's entry into force, it has provided a model for various agreements on European transboundary waters and has supported cooperation in managing such waters by providing advice and policy guidance, facilitating negotiation, and supporting technical projects. The paper provides an overview of the Convention, its institutional structure, and main provisions; and examines its contribution to cooperation in the management of shared freshwater resources within the pan-European region. It is followed by a paper by Tuula Honkonen, which furthers the examination of transboundary water management in the European context by considering the role of the European Union's water directives in promoting transboundary freshwater regulation and water security. The author explores this issue with the use of a case study on the transboundary water agreements between Finland and its neighbouring countries – this situation being particularly interesting insofar as it involves a mixture of both EU and non-EU countries. In the third paper of Part III, Ed Couzens uses examples concerning hydropower projects and other issue-areas of actual or potential conflict to illustrate the potential for watercourse-related conflicts to arise in southern Africa; and examines the international legal framework for addressing such conflicts. The author argues that both the reluctance of countries in this region to ratify the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses[20] and their lack of recourse to the Southern African Development Community (SADC) Revised Protocol on Shared Watercourses[21] (which is modeled on the Convention) as a 'first re-

[19] Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Helsinki 17 March 1992, in force 6 October 1996, 31 *International Legal Materials* (1992) 1312.

[20] Convention on the Law of the Non-navigational Uses of International Watercourses, New York, 21 May 1997, in force 17 August 2014, 36 *International Legal Materials* (1997) 700.

[21] Protocol on Shared Watercourse Systems in the SADC Region, Windhoek, 7 August 2000, in force 22 September 2003, <http://www.sadc.int>.

sort' for resolving conflict represent a 'missed opportunity', which will hopefully be resolved in the future when conflicts arise over shared watercourses. The paper presents arguments generally on the nature of conflict over water, be such conflict international, national, regional or local.

Part IV of the *Review* reflects the interactive nature of the Course – and that education and dissemination of knowledge are at the core of the Course and of the publishing of this *Review*. During the Course international negotiation simulation exercises were organized to introduce the participants to the real-life challenges facing negotiators of international environmental agreements on issues related to environmental security. Participants were given individual instructions and a hypothetical, country-specific, negotiating mandate and were guided by international environmental negotiators. Excerpts from, explanations of, and consideration of the pedagogical value of, one of the exercises are included in Part IV. This paper describes a negotiation exercise which was devised and run by Cam Carruthers, who was assisted by Tuula Honkonen in preparing the exercise. The scenario for the negotiation simulation focused on multilateral negotiation issues relating to aquifers or aquifer systems. The simulation was hypothetical but drew upon issues at play in actual ongoing negotiations. In addition to requiring participants to explore a number of substantive issues, the simulation was intended to explore issues related to decision-making procedure in the context of multilateral environmental agreements, in particular as it relates to International Negotiation Committees and consensus decision-making.

While the majority of the papers in the present *Review* deal with specific environmental issues, or aspects of specific multilateral environmental agreements, and thereby provide a written memorial for the future; the negotiation exercises provide, in a sense, the core of each Course. This is because each Course is structured around the practical negotiation exercises which the participants undertake; and it is suggested that the papers explaining the exercises provide insights into the international law-making process. The inclusion of the simulation exercises has been a feature of every *Review* published to date, and the Editorial Board, editors and Course organizers believe that the collection of these exercises has significant potential value as a teaching tool for the reader or student seeking to understand international environmental negotiation. It does need to be understood, of course, that not all of the material used in each negotiation exercise is distributed in the *Review*. This is indeed a downside, but the material is often so large in volume that it cannot be reproduced in the Course publication.

The number of papers included in the present volume is less than usual, but this was unavoidable given the necessity to publish within 2015. Some papers have been held over for inclusion in the 2015 *Review*, to be published in 2016 under the theme of 'Climate Change'. Generally, it is the hope of the editors that the various papers in the present *Review*, and indeed the considerable number of *Review* volumes over

the years, will not be considered in isolation. Rather, it is suggested that the reader should make use of all of the *Reviews* (currently spanning the years 2004 to 2014), all of which are easily accessible on the internet through a website provided by the University of Eastern Finland,[22] to gain a broad understanding of international environmental law-making and diplomacy.

Melissa Lewis,[23] ***Ed Couzens***[24] ***and Tuula Honkonen***[25]

[22] See <http://www.uef.fi/en/unep/publications-and-materials>.

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Part I

Enhancing Environmental Security through Education

Reflections on International Environmental Law-making and Diplomacy on the basis of the University of Eastern Finland – UNEP Courses on Multilateral Environmental Agreements

Tuomas Kuokkanen[1]

1 Courses

Since 2004, the University of Eastern Finland (UEF – formerly the University of Joensuu) and the United Nations Environment Programme (UNEP) have jointly organized annual courses on Multilateral Environmental Agreements. These courses are concrete outcomes of the cooperation between the University of Eastern Finland and UNEP to advance local, regional and global environmental objectives. The basis for the cooperation is the joint aim to advance the implementation of the local, regional and world-wide objectives agreed at the World Summit on Sustainable Development[2] in Johannesburg in 2002.

After the Johannesburg Summit, Dr. Klaus Töpfer, then Executive Director of UNEP, and Dr. Perttu Vartiainen, then Rector of the University of Joensuu, signed an agreement of cooperation designating the University of Joensuu a UNEP Partner University on 12 May 2003.[3] Based on the agreement, Rector Vartiainen, on 24 Septem-

[1] PhD (University of Helsinki); Professor of International Environmental Law (part–time), University of Eastern Finland; Ministerial Adviser, Ministry of the Environment of Finland; e-mail: Tuomas.Kuokkanen@uef.fi.

[2] World Summit on Sustainable Development held in Johannesburg, South Africa, from 26 August to 4 September 2002.

[3] A new phase in the cooperation between the two parties began when the University of Joensuu and the University of Kuopio merged to form the University of Eastern Finland as of 1 January 2010. Due to the

ber 2003, proposed to UNEP the arrangement of a two-week International Summer School on Global Environmental Agreements and Environmental Diplomacy. The proposal included main substantive and organizational ideas for the course. According to the proposed tentative curriculum, the course would comprise of lectures and workshops on, *inter alia*, the history and development of international environmental law, drafting and negotiating environmental agreements, enforcement questions, and international environmental capacity-building issues.

On 17 October 2003, Mr. Shafqat Kakakhel, then Deputy Executive Director of the UNEP, welcomed the initiative on behalf of UNEP and provided comments on the draft structure of the course. On 24 November 2003, Professor Vartiainen confirmed to Mr. Kakakhel the readiness of the University of Joensuu to cooperate with the UNEP in organizing the University of Joensuu – UNEP Summer Course in International Environmental Law and Diplomacy. Professor Tapio Määttä, head of the Department of Law, submitted a letter on 22 December 2003 specifying further thoughts on the course. As a next step, a meeting between the representatives of the UNEP and the University of Joensuu was held in Nairobi from 26 to 28 January 2004. In that meeting, the structure and main elements for the first course were agreed.

The inaugural University of Joensuu – UNEP Course on International Environmental Law-making and Diplomacy was held from 22 August to 3 September 2004 in Joensuu, Finland. The second Course took place between 14 and 26 August 2005 in Joensuu; subsequently, the third Course was arranged in collaboration with the University of KwaZulu-Natal from 26 June to 7 July 2006 in Pietermaritzburg, South Africa. The fourth Course was held in Joensuu, from 12 to 24 August 2007. The fifth Course was again arranged together with the University of KwaZulu-Natal, and took place between 29 June and 11 July 2008 in Pietermaritzburg, South Africa. The sixth Course was, for the first time, hosted by UNEP in Kenya. The Course was arranged at UNEP Headquarters, Nairobi, and Lake Naivasha Sopa Lodge between 28 June and 10 July 2009. The seventh Course was held at the UEF Joensuu campus from 15 to 27 August 2010, and at this stage the title of the Course was changed to read 'UEF – UNEP Course on Multilateral Environmental Agreements'. The eighth Course took place in Bangkok, Thailand, between 4 and 16 September 2011, taking the Course to Asia for the first time. The Course was organized in collaboration with the Asian Institute of Technology (AIT). In 2012, the Course moved to yet another new region, taking place in Grenada, in the Caribbean between 19 and 31 August 2012. In 2013, when the Course celebrated its 10th anniversary, it was organized in Joensuu. In 2014, the eleventh Course was again organized in Joensuu from 20 to 30 October. The twelfth Course took place in Shanghai, China, from 2 to 12 November 2015. This most recent Course was organized in cooperation with the Law

merger, a new Memorandum of Understanding (MoU) between UNEP and UEF was signed in August 2010. The new MoU provides the framework for cooperation between the two parties.

School of the Fudan University and the UNEP-Tongji University Institute of Environment for Sustainable Development.

The aim of the Courses has been to enhance the capacities of future negotiators in international environmental negotiations. The Courses have also served as a forum to discuss recent and future developments in the negotiation and implementation of multilateral environmental agreements (MEAs) and to foster North–South cooperation. The Course is designed mainly for government officials engaged in international environmental negotiations. In addition, however, researchers and members of academia may be selected to participate in the Course. Representatives of non-governmental organizations and the private sector are also eligible. Between 2004 and 2015, 375 course participants in total, from 123 different countries, have attended the Course. The selection of participants has been based, in particular, on the participants' experience, expertise and training needs in international environmental law-making and diplomacy. In the selection process, a balance between developing and developed countries, equitable geographical distribution, and a gender balance has been aimed for. A limited number of full and partial fellowships have been available for participants from developing countries and countries with economies in transition. From the beginning, the Ministry for Foreign Affairs and the Ministry of the Environment of Finland, as well as numerous individuals and organizations, have strongly supported the University of Eastern Finland and UNEP in organizing the Course.

2 Teaching methods, Course materials and publications

2.1 Introduction

The working methods of the Courses have been a combination of lectures and interactive sessions in the form of plenary and group discussions, workshops and negotiation simulations.[4] As a preparatory task, the participants have usually been required to prepare a synopsis of their national situation in relation to certain international environmental instruments, their ratification and implementation. This has served as groundwork for the interactive sessions.

The lecturers in the Courses have included both experienced hands-on negotiators and members of academia. UNEP has provided its staff members to give lecturers during the Course. In addition, the government of Finland, the University of Eastern Finland and the University of KwaZulu-Natal have provided staff members to present lecturers on particular topics and to lead interactive sessions. Relevant MEA secretariats have also provided resource persons for the Courses. Between 2004 and

[4] The Course presentations are downloadable on the Course website, available at <http://www.uef.fi/en/unep/publications-and-materials>.

2015, a total of 291 lecturers, facilitators and other persons acted as resource persons during the Course.

2.2 The annual *Review* and other publications

Each year, papers commissioned from resource persons, based on lectures presented during the Courses, or submitted by Course participants, have been published in the *International Environmental Law-making and Diplomacy Review*.[5] The *Review* seeks to provide historical background, professional perspective and practical guidance to practitioners, researchers and stakeholders. The articles published in volumes of the *Review* cover a range of issues on international environmental law-making and form a valuable source of information. They can also be downloaded for free on the Course website.[6] In addition, hard copies of the *Review* are provided to university libraries.

It needs to be noted that papers are *submitted* to the *Review* for consideration for publication – there is no automatic right to be published. A number of papers which it was considered did not meet the required standard have been rejected; and many others accepted only after extensive revision. From the *Review 2012* a peer-review process was introduced, with papers being reviewed on a 'double-blind' basis by international experts from at least two different countries for each paper – the process adhering to high standards of anonymity and academic rigour, and with all correspondence being retained for future corroboration should this be required. Where a paper has been successfully reviewed, this is specifically indicated in the first footnote.

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[5] So far, *Reviews* 2004–2014 have been published. See Marko Berglund (ed.*), International Environmental Law–making and Diplomacy Review 2004*, 1 University of Joensuu – UNEP Course Series (University of Joensuu, 2005) (hereinafter *Review* 2005); Marko Berglund (ed.) *International Environmental Law–making and Diplomacy Review 2005*, 2 University of Joensuu – UNEP Course Series 2005 (University of Joensuu, 2006) (hereinafter *Review* 2005); Ed Couzens and Tuula Kolari (eds), *International Environmental Law–making and Diplomacy Review 2006*, 4 University of Joensuu – UNEP Course Series (University of Joensuu, 2007) (hereinafter *Review* 2006); Tuula Kolari and Ed Couzens (eds), *International Environmental Law–making and Diplomacy Review 2007*, 7 University of Joensuu – UNEP Course Series (University of Joensuu, 2008) (hereinafter *Review* 2007); Ed Couzens and Tuula Honkonen (eds), *International Environmental Law–making and Diplomacy Review 2008*, 8 University of Joensuu – UNEP Course Series (University of Joensuu, 2009) (hereinafter *Review* 2008); Tuula Honkonen and Ed Couzens (eds), *International Environmental Law–making and Diplomacy Review 2009*, 9 University of Joensuu – UNEP Course Series (University of Joensuu, 2010) (hereinafter *Review* 2009); Ed Couzens and Tuula Honkonen (eds), *International Environmental Law–making and Diplomacy Review 2010*, 10 University of Eastern Finland – UNEP Course Series (University of Eastern Finland, 2011) (hereinafter *Review* 2010); Tuula Honkonen and Ed Couzens (eds), *International Environmental Law–making and Diplomacy Review 2011*, 11 University of Eastern Finland – UNEP Course Series (University of Eastern Finland, 2013) (hereinafter *Review* 2011); Ed Couzens, Tuula Honkonen and Melissa Lewis (eds), *International Environmental Law–making and Diplomacy Review 2012*, 12 University of Eastern Finland – UNEP Course Series (University of Eastern Finland, 2013) (hereinafter *Review* 2012); Tuula Honkonen, Melissa Lewis and Ed Couzens (eds), *International Environmental Law–making and Diplomacy Review 2013*, 13 University of Eastern Finland – UNEP Course Series (University of Eastern Finland, 2014) (hereinafter *Review* 2013); Melissa Lewis, Ed Couzens and Tuula Honkonen (eds), *International Environmental Law–making and Diplomacy Review 2014*, 14 University of Eastern Finland – UNEP Course Series (University of Eastern Finland, 2015) (hereinafter *Review* 2014).

[6] Available at <http://www.uef.fi/en/unep/publications-and-materials>.

Before publication, all papers in the *Review* are subjected to an extensive editing process (including careful consideration by the editors, the addition of further research, extensive rewrites, and approval by the Editorial Board). Papers are returned several times to the authors for rewriting and the addressing of queries, after being read, discussed *inter se* and commented on several times by the editors, with difficult issues being managed through consultation with the Editorial Board. All references are carefully checked. By the time a paper is published in the *Review*, the editors and the Editorial Board have satisfied themselves that it makes a genuine contribution both to the special theme and to knowledge generally; and that it meets the expectations both of formal academic presentation and of high scholarly standards.

A notable contribution has been made over the years by writers who have submitted papers for different editions of the *Review*, and who have thereby been able to develop their ideas progressively. An important aspect is that many of the writers who have contributed papers are diplomats who have been involved in some of the most important environmental negotiations to date. Publication of these contributions means that the experiences, insights, observations and reflections of these people have now been recorded and disseminated, where they might not otherwise have been permanently recorded. The value of these contributions cannot be overstated. To complement this, an ongoing feature of the *Review* has been the publication of papers by Course participants, including diplomats and Doctoral students, who have shared innovative ideas through the *Review*.

In addition, the *Multilateral Environmental Agreement Negotiator's Handbook* was prepared under the auspices of the Course to provide a reference tool that will enhance the capacity of those working on MEAs and involved in international negotiations. The *Handbook* is a joint publication of the UEF – UNEP Course on MEAs and Environment Canada, which initiated and provided core contributions for the project. Both English and French versions are available for download from the Course website.[7]

In an effort to reach a market slightly different to that which the *Review* reaches, in late 2015 a 'stand alone' book will be published: *International Environmental Lawmaking and Diplomacy: Insights and Overviews*.[8] This book collects as chapters 13 papers published from the first decade of the *Review*, 2004-2013, with papers having been selected on the basis of their relevance to the core theme of international en-

[7] The first edition of the English version of the *Handbook* was published in 2006: Cam Carruthers (ed.), *Multilateral Environmental Agreement Negotiator's Handbook*, 3 University of Joensuu – UNEP Course Series (University of Joensuu, 2006). The second edition was published a year later: Cam Carruthers (ed.), *Multilateral Environmental Agreement Negotiator's Handbook*, 5 University of Joensuu – UNEP Course Series (University of Joensuu, 2007). Subsequently, the French version was published: Cam Carruthers (ed.), *Accords multilatéraux sur l'environnement Manual du Négociateur*, 6 Université de Joensuu – Cours du PNUÈ Séries (University of Joensuu, 2008). For the electronic versions, see <http://www2.uef.fi/en/unep/negotiators-handbook>.

[8] Tuomas Kuokkanen, Ed Couzens, Tuula Honkonen and Melissa Lewis (eds), *International Environmental Law–making and Diplomacy: Insights and Overviews* (Routledge, 2016).

vironmental law-making and diplomacy. The selected papers have not merely been copied, but have been extensively reworked, revised, and carefully edited in order to complement each other and the topic.

The book is not merely a selection, but is intended and offered as a 'thematic whole' with the chapters interwoven into a unique amalgam of theory and practice – of the writings of academics studying international environmental law and governance; and the experiences of practitioners, diplomats and negotiators, working in the field. There are chapters on substance, descriptions and explanations of events; and chapters on procedure and technique as these have manifested themselves in multilateral negotiations. In an important sense, all of the chapters are on the evolution of international environmental law, be this overall or specific. Yet, the chapters are not historical studies as many of the issues discussed are still relevant, not merely 'history'. Furthermore, one thing that all of the chapters have in common is that ultimately they all look to the future, seeking to draw lessons from the past for the improvement of future practice.

2.3 Negotiation exercises

International negotiation simulation exercises have been a very important part of the Courses – in many ways, they have provided the 'core' of each Course. They have been organized to introduce participants to the real-life challenges facing negotiators of international environmental agreements and to provide perspectives on the current international environmental governance system. Usually, there have been two main negotiation exercises during each Course. The negotiation exercises and other interactive sessions have dealt with the following themes: access and benefit sharing of genetic resources;[9] forest negotiations;[10] chemicals;[11] rules of procedure;[12] compliance;[13] synergies among chemical conventions;[14] synergies among biodiversity-

[9] Brook Boyer, 'Simulating Negotiations on Access to Genetic Resources and Benefit–Sharing (ABS)', *Review* 2006, 233–246.

[10] Brook Boeyer, 'Multilateral Negotiation Simulation Exercise: The Sustainable Management and Conservation of Forests', *Review* 2005, 299–310; Johannah Bernstein, 'Bloc Negotiation Exercise: UN Framework Convention on Forests Conference of the Parties', *Review* 2005, 311–318.

[11] Hannu Braunschweiler, 'Introduction to the Global Mercury Problem, Its Analysis and Solutions', *Review* 2007, 285–292.

[12] Cam Carruthers, 'Negotiating Rules of Procedure: A Multilateral Simulations Exercise Based on the Strategic Approach to International Chemicals Management (SAICM) – PrepCom II', *Review* 2007, 293–317.

[13] Cam Carruthers, 'Negotiating Rules of Procedure: A Multilateral Simulation Exercise Based on the Compliance Committee of the Cartagena Protocol', Review 2006, 245–268; Cam Carruthers and Marko Berglund, 'Negotiating Procedures: A Multilateral Simulation Exercise Based on the Compliance Procedure under the 1996 Protocol to the London Convention and the Prevention of Marine Pollution', *Review* 2008, 241–256; Cam Carruthers, Tuula Honkonen and Sonia Peña Moreno, 'The Joensuu Negotiation: A Multilateral Simulation Exercise – Compliance Negotiations in the Intergovernmental Committee for the Nagoya Protocol', *Review* 2013, 159–182.

[14] Cam Carruthers and Kerstin Stendahl, 'The Naivasha Ex–COP: A Multilateral Simulation Exercise of a Joint Extraordinary Conference of the Parties to the Basel, Rotterdam and Stockholm Conventions', *Review* 2009, 195–217.

related conventions;[15] the International Whaling Commission;[16] climate change;[17] climate-related geoengineering;[18] and transboundary aquifers.[19] Through the exercises the participants have learned skills and gained knowledge in respect of both procedural and substantive issues. Participants have been required to wrestle in realistic settings with issues of the substance of international environmental law, of legal and linguistic interpretation, of negotiation techniques and theories, and of the ways in which particular rules of procedure can be understood and used.

Many of the negotiation simulation exercises have been written up as papers and published in the *Review* in the belief that these will have significant pedagogic value for readers or students seeking to understand international environmental negotiation techniques.

Field trips have also been an important part of the Courses, and have been organized to provide a grass-root level understanding of the issues relating to environmental law-making. Excursions have been arranged, for instance, to national parks, forest sites, game reserves, industrial installations, and research stations. In all cases, strong efforts were made to integrate the content of the field trips with the content of the particular themed Courses.

3 Content of the Courses

The Courses have focused on a broad range of subjects in the area of international environmental law-making and diplomacy. The various topics can be divided into three main categories: international environmental law and policy; international environmental law-making and diplomacy; and a special theme. In order to provide readers with an idea of the number of issues discussed in the Courses, I will refer in the following to the *Review* articles based on lectures given during the courses.

[15] Sylvia Bankobeza, 'A Drafting Exercise on Biodiversity and Synergies', *Review* 2011, 157–164; Haruko Okusu, 'Workshop on the Strategic Plan for Biodiversity 2011–2020 and the Acihi Targets and Synergies', *Review* 2011, 165–186. Cam Carruthers and Niko Urho, 'The Bangkok Ad Hoc Joint Working Group: A Multilateral Simulation Exercise of an Ad Hoc Joint Working Group Meeting of the Biodiversity-related Conventions', *Review* 2011, 187–222.

[16] Ed Couzens, 'Negotiating an Impasse: A Multilateral Simulation Exercise Based on the International Whaling Commission', *Review* 2008, 257–267; Ed Couzens, 'A Strange Beast Swimming Upstream: The International Whaling Commission in the Context of Synergies between Biodiversity-related MEAs (Including a Multilateral Simulation Exercise)', *Review* 2011, 223–260; Ed Couzens, 'The International Whaling Commission, the St.Kitts and Nevis Declaration, and the Rio+20 Outcome Document Paragraphs on Ocean Governance: An International Negotiations Simulation Exercise', *Review* 2012, 195–224; Ed Couzens, 'Fighting for Sanctuary: A Multilateral Simulation Exercise Based on the International Whaling Commission', *Review* 2013, 183–205.

[17] Marko Berglund and Kati Kulovesi, 'Climate Change Negotiation Simulation', *Review* 2010, 257–276.

[18] Cam Carruthers, 'The Grenada Ad Hoc Joint Working Group: A Multilateral Simulation Exercise of an Ad Hoc Joint Working Group Meeting on Climate-related Geoengineering', *Review* 2012, 171–194.

[19] Cam Carruthers and Tuula Honkonen, 'The Joensuu Negotiation: a Multilateral Simulation Exercise: The UN Framework Convention on Transboundary Aquifers', published in this *Review*.

3.1 International environmental law and policy

Many lecturers have sought to provide an overview and general analysis of international environmental law and its development.[20] For instance, the basic elements as well as norms and principles of international environmental law have been addressed.[21] Many *Review* articles have dealt with the role of UNEP.[22] Furthermore, the functions of various international environmental regimes have been explored.[23] In addition, such issues as legitimacy,[24] fragmentation[25] and effectiveness[26] have been examined. The concepts of sustainable development[27] and sustainable development governance[28] have also been discussed in a comprehensive manner.

A number of lecturers have dealt with global and regional environmental issues.[29] For instance, usually there has been a scientific lecture of an introductory nature to the special theme of each Course.[30] In addition, recent policy developments in the field of

[20] Shafqat Kakakhel, 'International Environmental Diplomacy', Review 2004, 3–17; Ed Couzens, 'Individuals and Disasters: The Past and the Future of International Environmental Law', *Review* 2005, 71–96; Daniel Bodansky, 'The Development of International Environmental Law', *Review* 2010, 11–28.

[21] Marc Pallemaerts, 'An Introduction to the Sources, Principles and Regimes of International Environmental Law', *Review* 2004, 61–72; Tuomas Kuokkanen, 'Background and Evolution of the Principle of Permanent Sovereignty over Natural Resources', *Review* 2005, 97–108; Ed Couzens, 'Fundamental Environmental Rights', *Review* 2004, 199–206; Tuula Kolari, 'The Principle of Common but Differentiated Responsibility in Multilateral Environmental Agreements', *Review* 2007, 21–54.

[22] Donald Kaniaru, 'The Stockholm Conference and the Birth of the United Nations Environment Programme', *Review* 2005, 3–22; Shafqat Kakakhel, 'The Role of the United Nations Environment Programme in Promoting International Governance', *Review* 2005, 23–42; Sylvia Bankobeza, 'Strengthening and Upgrading of the United Nations Environment Programme', *Review* 2013, 73–84.

[23] Sachiiko Kuwabara–Yamamoto, 'International Legal Regimes for the Environmentally Sound Management of Hazardous Chemicals and Waste: A Practitioner's Perspective', *Review* 2004, 89–101; Ewan McIvor, 'Looking South: Antarctic Environmental Governance', *Review* 2008, 139–152; Jeremy Wates and Seita Romppanen, 'The Aarhus Convention: A Legally Binding Framework Promoting Procedural Environmental Rights', *Review* 2009, 101–126; Sonia Peña Moreno, 'Understanding the Nagoya Protocol on Access and Benefit Sharing', *Review* 2013, 87–108.

[24] Tuomas Kuokkanen, 'Legitimacy in International Environmental Law', *Review* 2008, 3–10.

[25] Louis Kotzé, 'Fragmentation of International Environmental Law: An Oceans Governance Case Study', *Review* 2008, 11–30.

[26] Ivana Zovko, 'International Law-making for the Environment: A Question of Effectiveness', *Review* 2005, 109–128; Tuomas Kuokkanen, 'The Problem-solving Role of International Environmental Law', *Review* 2007, 3–20.

[27] See Donald Kaniaru, 'The Concept of Sustainable Development from Theory to Practice', *Review* 2004, 19–30.

[28] Johannah Bernstein, 'Sustainable Development Governance Challenges in the New Millennium', *Review* 2004, 31–49; Ahmed Djoghlaf, 'Financing for Sustainable Development: The Global Environment Facility', *Review* 2005, 43–61; Matti Nummelin, 'The Global Environment Facility – A Brief Introduction', *Review* 2006, 281–284; Matti Nummelin, 'The Global Environment Facility: A Brief Introduction to the GEF and Its International Waters Focal Area', *Review* 2008, 133–138; Tadanori Inomata, 'Building Institutional and Managerial Foundations for Environmental Governance with the United Nations System – Towards a New Governance Structure for Environment Protection and Sustainable Development', *Review* 2009, 45–64; Elizabeth Maruma Mrema, 'Reactions to the Rio+20 Outcome Document "The Future We Want"', *Review* 2013, 33–50; Akpezi Ogbuigwe, 'The United Nations Decade of Education for Sustainable Development (2005–2014)', *Review* 2005, 179–185.

[29] Fritz Schlingemann, 'Global and Regional Environmental Issues and Dynamics', *Review* 2004, 81–87; Frits Schlingemann, 'The Environment and Security Initiative: An Introduction', *Review* 2005, 63–67.

[30] Michelle Hamer, 'Biodiversity: an Overview of Current Issues', *Review* 2006, 39–50; Mikko Alestalo, 'Man-made Climate Change: The Scientific Basis and the Main Implications', *Review* 2010, 3–10.

international environmental policy and sustainable development have been discussed. Moreover, specific regional and local environmental issues[31] have been addressed.

One specific aspect that has been addressed in a number of Courses has been the issue of synergies between international environmental regimes.[32] In particular, synergies among chemical and waste conventions[33] and among biodiversity-related conventions[34] have been explored. In addition, the relationship between the environmental field and other fields of international law has been discussed.[35]

3.2 International environmental law-making and diplomacy

The purpose of the Courses has been to provide an overview of the different steps in international environmental law-making, from problem identification to actual negotiations and to the conclusion and implementation of MEAs. For instance, the following topics have been discussed: the law of treaties;[36] the essence and fundamentals of MEA negotiations;[37] rules of procedure and procedural issues; transparency of negotiations;[38] and treaty drafting, implementation and compliance.[39]

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[31] Anna–Liisa Tanskanen, 'Water Co-operation between Finland and Russia on the Local and Regional Level', *Review* 2004, 198–196; Michael Kidd, 'Forest Issues in Africa', *Review* 2005, 189–212; Roger Porter, 'Protecting Biodiversity in the Ukhahlamba Drakensberg Park World Heritage Site', *Review* 2006, 217–229; Larissa Schmidt, 'Access and Benefit-Sharing: The Brazilian Legal Framework and the Necessity for a Legally Sound and Long-term International Solution', *Review* 2006, 145–156; Rudy P. van der Elst, 'The Oceanographic Research Institute: Half a Century of Marine Research towards Meeting Challenges in the West Indian Ocean', *Review* 2008, 91–106; Jarrah AlZu'bi, 'Transboundary Marine Life Issues in the Gulf of Aqaba: a Jordanian Case Study', *Review* 2008, 153–163; Warren Freeman, 'Integrated Coastal Management Boundaries and South Africa's New Integrated Coastal Management Act', *Review* 2008, 167–186; Tandi Breetzke, Omar Parak, Louis Celliers, Andrew Mather and Darryl Colenbrander, '"Living with Coastal Erosion": Steps That Might Be Taken, Based on the KwaZulu-Natal Best Practice Response Strategy', *Review* 2008, 219–228; Camilo-Mateo Botero Saltarén, Marlenny Diaz and Celene Milanes Batista, 'ICZM and International Instruments: A General Overview and Two Latin American Perspectives from Colombia and Cuba', *Review* 2012, 121–136.

[32] Cam Carruthers, 'Does the World Need a Super-COP? Integrated Global Decision-Making for Sustainable Development', *Review* 2004, 311–223; Kong Xiangwen, 'Clustering of MEAs', *Review* 2004, 207–210.

[33] Kerstin Stendahl, 'Enhancing Cooperation and Coordination among the Basel, Rotterdam and Stockholm Conventions', *Review* 2007, 127–141.

[34] Ines Verley and Jorge Ventocilla, 'Biodiversity Conventions and the IEG Agenda – The Need for an Integrated Approach Both Bottom-up and Top-down: a Case Study of TEMATEA', *Review* 2009, 89–100.

[35] Tuula Varis, 'The Negotiations of the Relationship between WTO Rules and MEAs: The Story so Far', *Review* 2004, 109–114; Gerhard Loibl, 'Trade and the Environment – A Difficult Relationship', *Review* 2007, 277–286; Tuomas Kuokkanen, 'Relationships between Multilateral Environmental Agreements and Other Agreements', *Review* 2011, 19–32.

[36] Päivi Kaukoranta, 'The Treaty-making Process and Basic Concepts', *Review* 2004, 53–60.

[37] Brook Boyer, 'Multilateral Environmental Negotiation', *Review* 2004, 73–79.

[38] Kati Kulovesi, 'Independent Reporting: The Role of the *Earth Negotiation Bulletin* in the Climate Change Negotiations', *Review* 2010, 31–40.

[39] The UNEP Guidelines on Compliance with and Enforcement of MEAs would form an important element of this topic. In addition, the recent practice relating to MEA compliance and implementation issues, including regional instruments for implementation, has been discussed. See Patrick Széll, 'Introduction to the Discussion of Compliance', *Review* 2004, 117–124; Elizabeth Maruma Mrema, 'Implementation, Compliance and Enforcement of MEAs: UNEP's Role', *Review* 2004, 125–135; Elizabeth Maruma Mrema, 'Cross-cutting Issues in Compliance with and Enforcement of Multilateral Environmental Agreements', *Review* 2005, 129–154; Tuomas Kuokkanen, 'Developing Compliance Mechanisms under

With regard to environmental diplomacy,[40] diplomatic skills have been addressed in particular during negotiation simulations. In addition, the functions of different negotiating blocs[41] – such as the EU,[42] AOSIS[43] and SIDS[44] – have been dealt with. Moreover, the role of the national preparatory process[45] and national governance[46] has been discussed; and the role of NGOs,[47] national parliaments[48] and other stakeholders[49] has been examined.

3.3 Annually changing special theme

Each Course has had a special theme: water (2004);[50] forests (2005);[51] biodiversity (2006);[52]

Multilateral Environmental Agreements', *Review* 2006, 27–36; Tammy de Wright, 'The Lessons from Montreal and Basel for Rotterdam and Stockholm: Ongoing Developments in (Non-)Compliance Mechanism', *Review* 2007, 247–274; Sebastian Oberthür and René Lefeber, 'The Experience of the First Five Years of the Kyoto Protocol's Compliance System', *Review* 2010, 65–94.

40 Sylvia Bankobeza, 'Multilateral Environmental Diplomacy and Negotiations', *Review* 2011, 3–18; Sylvia Bankobeza and Elizabeth Mrema, 'International Environmental Diplomacy and Negotiations', *Review* 2012, 1–14; Melissa Lewis and Katileena Lohtander-Buckbee, 'Compliance Negotiations within the Intergovernmental Committee for the Nagoya Protocol', *Review* 2013, 109–136.

41 Donald Kaniauru, 'International Environmental Negotiation Blocs', *Review* 2006, 3–16; Elizabeth Mrema and Ramakrishna Kilaparti, 'The Importance of Alliances, Groups and Partnerships in International Environmental Negotiations', *Review* 2009, 183–192.

42 Nicola Notaro, 'International Environmental Negotiations and the EU: A Practical View-point', *Review* 2006, 17–26; Nicola Notaro, 'The New European Union Reform Treaty: What's in It for EU Environmental Negotiators?', *Review* 2007, 65–75.

43 Lisa Benjamin, 'The Role of the Alliance of Small Island States (AOSIS) in UNFCCC Negotiations', *Review* 2010, 117–132.

44 Lisa Benjamin, 'Small Island Developing States in International Negotiations involving Ocean Governance: UNCLOS, UNFCCC and the Doha Development Round of the WTO', *Review* 2012, 17–45.

45 Marina von Weissenberg, 'Coordination of National Positions in Connection with Biodiversity-related International Issues', *Review* 2006, 269–280.

46 Ander Pothin, 'National Governace in Forest Isssues', *Review* 2005, 287–294; Tuomas Kuokkanen, 'Adoption and Implementation of Multilateral Environmental Agreements from a National Governance Point of View', *Review* 2009, 21–27

47 Tim Cadman, 'Theory and Practice of Non-state Participation in Environmental and Forest-related Decision-making', *Review* 2005, 155–178.

48 Heidi Hautala, 'The Role of NGOs and National Parliaments in International Environmental Law-making', *Review* 2004, 103–108.

49 Akpezi Ogbuigwe, 'The Role of Public Participation and Ethics in Environmental Law Implementation and Diplomacy', *Review* 2007, 55–64; Olivier Deleuze, 'The Role of Major Groups and Stakeholders in Environmental Negotiations and Governance', *Review* 2009, 127–136.

50 Esko Kuusisto, 'World Water Resources and Problems', *Review* 2004, 153–164; Tuomas Kuokkanen, 'International Law and Water', *Review* 2004, 167–187; Nies Ipsen and Marko Berglund, 'Integrated Water Resource Management: International Freshwater Agreements and National Water Policy and Law Reforms', *Review* 2004, 179–188.

51 Tiina Vähänen, 'Forest and the Millennium Development Goals', *Review* 2005, 213–222; Pekka Patosaari, 'The United Nations Forum on Forests: Building a Stronger Regime', *Review* 2005, 223–230; Restricting the Import of Timber and Timber Products Harvested through Illegal Logging: A Review of Relevant Multilateral Environmental Agreements', *Review* 2005, 253–286.

52 Iwona Rummel–Bulska, 'The Negotiating Process Leading to the Convention on Biological Diversity', *Review* 2006, 39–50; Tewolde Egziabher, 'The Cartagena Protocol on Biosafety: History, Content and Implementation', *Review* 2006, 73–92; Ahmed Djoghlaf, 'National Implementation of the Convention on Biological Diversity', *Review* 2006, 93–102; Elizabeth Maruma Mrema, 'Establishing a National Policy Framework for Implementation of the Convention on Biological Diversity', *Review* 2006, 103–123; Loretta Feris, 'The Protection of Biodiversity-Related Traditional Knowledge', *Review* 2006, 127–144; Ed

chemicals (2007);[53] oceans (2008);[54] environmental governance (2009);[55] climate change (2010);[56] synergies among the biodiversity-related conventions (2011);[57] ocean

Couzens, 'The Problem That Categorization of Species in MEAs Poses for the Protection of Biodiversity', *Review* 2006, 185–216; Kuphakwenkosi Gumede, 'The Threat to Biodiversity Posed by Alien Species Transported in Ballast Water: the 2004 Ballast Water Convention', *Review* 2006, 157–164; Minna Pyhälä, 'Marine Biodiversity Conservation with a Special Focus on the Work Carried out under the Helsinki Convention', *Review* 2006, 165–184.

53 Shafqat Kakakhel, 'Global Governance: Chemicals', *Review* 2007, 79–90; Iwona Rummel-Bulska, 'The Basel Convention on Hazardous Wastes: Problems, Negotiations and Solutions', *Review* 2007, 91–118; Maged Younes, 'Chemicals: the Global Context', *Review* 2007, 119–126; Donald Kaniaru, 'Managing Chemicals and Waste: Challenges for Developing Countries', *Review* 2007, 143–186; Arielle Delprado, 'Trade in Chemicals and the Protection of the Environment in CARICOM', *Review* 2007, 187–201; Sheila Logan, Brenda Koekkoek, Desiree Narvaez and Maged Younes, 'Mercury – Searching for Solutions to a Global Problem', *Review* 2007, 205–212; Michael Kidd, 'DDT, Malaria Control and the Stockholm Convention on Persistent Organic Pollutants', *Review* 2007, 213–230; Ed Couzens, 'Chemicals and Marine Mammals', *Review* 2007, 231–246.

54 Michael Kidd, 'International Fisheries: An Overview of the International Legal Response', *Review* 2008, 31–38; Albert Hoffman, 'UNCLOS and the Resources of the Seabed in Areas beyond National Jurisdiction', *Review* 2008, 41–54; Marko Berglund, 'Protection of Marine Biodiversity in Areas Beyond National Jurisdiction', *Review* (2008) 55–65; Dire Tladi, 'Marine Genetic Resources on the Deep Seabed: The Continuing Search for a Legally Sound Interpretation of UNCLOS', *Review* 2008, 65–80; Ed Couzens, 'How the Whale Got Its Impasse', *Review* 2008, 81–88; Catherine Zengerling, 'NGOs versus European Pirates: Fisheries Agreements, IUU Fishing and the ITLOS in West African Seas', *Review* 2008, 107–132; Robert Mortassagne, 'Challenges of Policing Ports and Harbours', *Review* 2008, 229–238; Robert Wabuonoha, 'Drafting Integrated Legislation for the Conservation and Sustainable Use of Marine and Coastal Environments', *Review* 2008, 187–218.

55 Louis Kotzé, 'Towards a Tentative Legal Formulation of Environmental Governance', *Review* 2009, 3–20; Roy Brooke, 'Environmental Governance in Post–conflict Situations: Lessons from Rwanda', *Review* 2009, 45–64. Daniel Schramm and Carl Bruch, 'Adapting Laws and Institutions to a Changing Climate', *Review* 2009, 65–88; Patricia Kameri–Mbote, 'Gender and International Environmental Governance', *Review* 2009, 137–162; Donald Kaniaru, 'National Environmental Governance: The Role of National Environmental Tribunals', *Review* 2009, 163–182.

56 Tuomas Kuokkanen, 'Perspectives within the Climate Change Regime', *Review* 2010, 41–50; Harri Laurikka and Anna–Pia Schreyögg, 'The Global Carbon Market – a Disappearing Vision?' *Review* 2010, 51–64; Maria Pohjanpalo, 'A Perspective from UN Headquarters on Climate Change', *Review* 2010, 95–102; Mark Radka, 'Technology Transfer and the UN Framework Convention on Climate Change', *Review* 2010, 103–113; Michael Kidd, 'South Africa's Position on Climate Change: Fiddling while the Earth Burns', *Review* 2010, 133–162; Natascha Trennepohl, 'Brazil's National Policy on Climate Change and the Carbon Market', *Review* 2010, 163–182; Ed Couzens, 'International Law Relating to Climate Change and Marine Issues', *Review* 2010, 185–216; Niklas Hagelberg, 'Forests' Contribution to Sustainable Development and the Role of REDD+ as a Catalyst for a Green Economy Transformation', *Review* 2010, 217–230; Aline Kühl and Elizabeth Maruma Mrema, 'Impacts of Climate Change on Biodiversity with a Focus on Migratory Species', *Review* 2010, 231–244; Leila Suvantola, 'Ecosystem Services and Climate Change', *Review* 2010, 245–254.

57 Marko Berglund and Wanhua Yang, 'Compliance with Biodiversity-Related Multilateral Environmental Agreements and Potential for Synergies', *Review* 2011, 35–58; Erie Tamale, 'Global Biodiversity Trends and Synergistic Strategic Policy Responses', *Review* 2011, 71–92; Peter Herkenrath, 'How Biodiversity Synergies Support and Facilitate National Implementation of Multilateral Environmental Agreements to Halt Biodiversity Loss', *Review* 2011, 95–108; Melissa Lewis, 'Synergies within the International Regime on Access and Benefit-sharing: Cooperation between the Nagoya Protocol and the ITPGRFA', *Review* 2011, 109–122; Marina von Weissenberg, 'Opportunities and Challenges for Establishing Synergies and Areas for Enhanced Cooperation in the Biodiversity Cluster', *Review* 2011, 123–134; Marceil Yeater, 'CITES Secretariat: Synergies Based on Species-level Conservation with Trade Implications', *Review* 2011, 135–153.

governance (2012);[58] natural resources (2013);[59] environmental security (2014)[60]; and climate change (2015).

During the first Course, the special theme was only one of the course modules. Since 2005, however, the special theme has been integrated in a comprehensive manner into the Course programme. Rather than dealing separately with general topics and the special theme, the idea has been to teach general topics through specific themes. For instance, interactive sessions have been arranged taking examples from the special theme of each year.

5 Conclusions

By focusing in a specialized area of international environmental law-making and by applying an original style which combines practice and theory, UNEP and the University of Eastern Finland have sought to develop a unique course. Over the years, a large number of topics have been covered during the Courses.

The University of Eastern Finland and UNEP have also carefully evaluated each Course and developed the following Course further on the basis of the feedback form completed by participants. The overall evaluation grade over the years has been good or very good, which is a clear indication of the value of the Course. In particular, participants have appreciated enhanced skills on MEA-related issues, relationships created across cultures and governments, and exposure to bodies of knowledge they would otherwise not have encountered. Participants have also mentioned the narrow scope of the Course content as a specific strength, providing insights to specific topics and ensuring the depth of coverage. Moreover, it appears that the Courses have given participants a chance to meet on neutral ground to discuss freely and even engaged them in viewing country positions and the world from a different perspective,

[58] Michael Kidd, 'Marine Biodiversity and Fisheries Governance: An overview', *Review* 2012, 45–72; Tuomas Kuokkanen, 'Ocean-based Geoengineering and International Law', *Review* 2012, 73–84; Niko Soininen, 'Planning the Marine Area Spatially – A Reconciliation of Competing Interests?', *Review* 2012, 85–117; Alana Malinde S.N. Lancaster, 'An Overview of Marine Management and Ocean Governance in the Caribbean Community and the Organisation of Eastern Caribbean Regions of the Caribbean', *Review* 2012, 137–160; Spencer Thomas, 'Development and Implementation of Ocean-Related Multilateral Environment Agreements in the Caribbean Region', *Review* 2012, 161–167.

[59] Tuomas Kuokkanen, 'The Relationship between the Exploitation of Natural Resources and the Protection of the Environment', *Review* 2013, 1–12; Sylvia Bankobeza, 'International Agreements on Transboundary Natural Resources', *Review* 2013, 13–29; Ville Niinistö and Niko Urho, 'Future Prospects for Enhancing Sustainable Use of Natural Resources: The Role of International Environmental Governance and Finland's Priorities after Rio+20', *Review* 2013, 51–72; Seita Romppanen, 'Promotion of Renewable Energy for Climate Change and the "Facilitative" Function of IRENA', *Review* 2013, 137–156.

[60] Elizabeth Maruma Mrema, 'Understanding Environmental Security', *Review 2014*; Annukka Lipponen, 'The UNECE Water Convention and Its Support to the Management of Shared Waters: From Obligations to Practical Implementation', *Review 2014*; Tuula Honkonen, 'The Effectiveness of EU Water Directives in Promoting Transboundary Water Cooperation and Security: the Case of Finland', *Review 2014;* Ed Couzens, 'Water-related Conflict and Security in Southern Africa: the SADC Protocol on Shared Watercourses', *Review 2014.*

in particular through negotiation simulation exercises. Even several years afterwards participants have appreciated the Courses. They have, for instance, positively mentioned networking opportunities, negotiation skills and contribution by the Course to their professional career.

Thus, the Course appears to be a well-balanced and structured entity which corresponds with the vision laid down by the organizers when they started to plan the Course way back in 2003. One important factor has been that over the years the Courses have been run with enthusiasm on the part of trainers and participants. Moreover, over the years participants have given valuable input into further improvement of the Course by making recommendations for the future. Again over the years, a notable feature has been the return as lecturers of former Course participants with special expertise.

This said, there are of course a number of constraints or challenges for the Course. One weakness over the years has been that due to its limited management resources the Course has not been able to sufficiently respond to various networking opportunities and to connect participants across different years. Moreover, each year the number of applications for the Course have exceeded the positions offered. While this is a sign of the continued relevance of the Course it also causes some frustration as more participants have not been able to be included.

In light of the above, it appears that it has taken many years and hard work by organizing institutions and by numerous individuals to create the Course and develop it further. In pondering the true value of such efforts, one can point out that the Courses have, in many ways, had a lot of intangible value for participants and trainers, for instance, in the creation of human capacity and imparting of knowledge. The proponents of similar courses might usefully, in planning the launches of these, consider the recorded experiences of the UEF-UNEP Course. In addition, the Course organizers have tried to reach a potentially unlimited pool of negotiators, practitioners, scholars and students through the publication of the *International Environmental Law-making and Diplomacy Review* and the *Multilateral Environmental Agreement Negotiator's Handbook.* The various articles referred in the footnotes of this paper seek to illustrate the number of different topics discussed over the years.

Part II

General Issues Related to Environmental Security

Understanding Environmental Security

Elizabeth Maruma Mrema[1]

1 Introduction

'Environmental security' is a term that is gaining much prominence and has been used by both states and academic commentators in a variety of ways. Most of these are attempting to articulate the issues around environmental security, without a clear attempt to define the concept, or to reach agreement on what it really means. While attempts, both at the international and national levels, to define environmental security conclusively have not yet borne fruit, it appears that a number of countries have developed nationally agreed working definitions of this term.[2] Some international organizations also have working definitions of environmental security,[3] while others do not have, or are silent on, a working definition.[4] Attempts to reach an agreed definition have not yet been successful, due to divergent dimensions, which relate to or connote the term. Environmental security covers a wide range of issues, such as water, peace, national security, resource scarcity, human rights, etc. It affects humankind, institutions and organizations alike.[5]

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[2] A study produced for the Millennium Project identified several countries with working definitions of 'environmental security', including the United States, Argentina, India, and the Russian Federation. See Environmental Security Study, Section 2 – Definitions of Environmental Security, in Jerome C. Glenn, Theodore J. Gordon and Elizabeth Florescu, 2009 State of the Future (the Millennium Project, 2009), available at <http://www.millennium–project.org/millennium/es–2def.html> (visited 18 October 2015).

[3] For instance: the United Nations Development Programme (UNDP) and the North Atlantic Treaty Organization (NATO). *Ibid*.

[4] Such as UNEP and the World Health Organization (WHO). *Ibid*.

[5] See, generally, Institute for Environmental Security, available at <http://www.envirosecurity.org>.

The nexus between 'environment and security' tends to be linked superficially to threats posed directly by environment-related phenomena, activities, or products that can affect human health, other species and the environment. The threats posed can potentially threaten the life, health, safety, and security of humans. The concept of environmental security also concerns itself with actions that can cause a breakdown of law and order – for instance, when communities fight over scarce resources, such as water and pasture, pitting farmers and pastoralists into conflicts over the use of natural resources – including armed conflict. Tackling wildlife crime is also an environmental security issue. International scientific reports published in recent years have continued to highlight additional threats that cause serious and, in some instances, irreversible damage to the environment, thus threatening the security of humans and their well-being.[6]

The paper will therefore begin by identifying some of the factors which pose threats to human health and the environment and the actions being taken both at national and international levels to address these. This will be followed by a more detailed discussion of several threats, such as those posed by (i) pollution of various media and from different point and non-point sources; (ii) natural resource loss and illegal trade; (iii) climate change impacts and environmental disasters resulting in population movements; and (iv) conflicts and addressing post-conflict situations. The paper concludes with a call to elevate environmental security to a more prominent level so that the concept can be further clarified and explained, considering that many areas of threats to the environment and human health are associated with it. Challenges faced by countries that hinder or deter them from taking effective measures to deal with issues related to environmental security are also identified. Solutions for addressing such challenges need to be identified if environmental sustainability is to be secured for present and future generations.

2 Threats to human health and the environment associated with environmental security

It is clear that environmental security goes beyond the protection of countries' national boundaries and sovereignty, and focuses more on environmental threats causing serious or irreversible damage to human health, livelihoods, species and the environment. Threats to human health and the environment which are considered to be associated with environmental security at the national and international levels include, *inter alia*:

[6] See, for instance, Global Environmental Outlook reports (<http://www.unep.org/geo/>); Global Biodiversity Outlook reports (<https://www.cbd.int/gbo/>); the Global Chemical Outlook annual reports (http://www.unep.org/chemicalsandwaste/UNEPsWork/Mainstreaming/GlobalChemicalsOutlook/tabid/56356/Default.aspx>); Intergovernmental Panel on Climate Change (IPCC) reports (<http://www.ipcc.ch/>); and the Scientific Assessments of Ozone Depletion (<http://www.esrl.noaa.gov/csd/assessments/ozone/>) (all visited 17 November 2015).

- threats posed by the pollution of various media (air, water, land and sea) from different point sources and non-point sources;
- threats posed by unsustainable utilization of natural resources, including overexploitation of resources and habitat, species loss and degradation of ecosystems;
- threats posed by human activities that cause climate change;
- threats posed by armed conflicts and disasters that impact human health and the environment;
- threats caused by the management of shared natural resources when issues are not resolved through agreements among states; and
- threats causing population movements (environmental refugees or internally displaced people (IDPs), environmental migrants or climate change refugees) within or outside a country's national borders.

In order to address these threats and to protect human health and the environment, countries need to take action at the national level, as well as joint action at the international level. At the national level, countries will be expected to enact environment-related legislation and to set up institutions to manage and protect the environment.[7] It is also important for countries to ensure that their pursuit of development does not occur at the expense of environmental sustainability or sustainable development.

At the international level, the reason for negotiating most bilateral environmental agreements, as well as global and regional multilateral environmental agreements (MEAs), has been, and continues to be, to address environmental management concerns for specific environmental conservation issues, such as endangered species, water and forests. Such concerns are over different types of threats to these resources and the effects of such threats on human well-being. These threats include, for instance, increasing biodiversity loss, which led to the adoption of the Convention on Biological Diversity (CBD)[8] and its three protocols on biosafety,[9] access and benefit-sharing (ABS)[10] and a biosafety liability regime;[11] and the depletion of the ozone layer, which led to the Vienna Convention on the Protection of the Ozone Layer[12] and its Montreal Protocol on Substances that Deplete the Ozone Layer.[13] Climate

[7] See, for instance, The Gateway to Environmental Law Database ECOLEX for national legislation relating to the environment, available at <http://www.ecolex.org>.

[8] Convention on Biological Diversity, Rio de Janeiro, 5 June 1992, in force 29 December 1993, 31 *International Legal Materials* (1992) 822, <http://www.biodiv.org>.

[9] Cartagena Protocol on Biosafety, Montreal, 29 January 2000, in force 11 September 2003, 39 *International Legal Materials* (2000) 1027, <http://www.cbd.int/biosafety>.

[10] Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, Nagoya, 29 October 2010, in force 16 October 2014, <http://www.cbd.int/abs/>.

[11] Nagoya–Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, Nagoya, 15 October 2010, <http://bch.cbd.int/protocol/supplementary/>.

[12] Convention on the Protection of the Ozone Layer, Vienna, 22 March 1985, in force 22 September 1988, 26 *International Legal Materials* (1985) 1529.

[13] Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal, 16 September 1987, in force 1 January 1989, 26 *International Legal Materials* (1987) 154, <http://ozone.unep.org/>.

change impacts led to the 1992 United Nations Framework Convention on Climate Change (UNFCCC)[14] and its related instruments.[15]

Other MEAs whose creation was induced by specific environmental threats include the Stockholm Convention on Persistent Organic Pollutants (POPs),[16] the Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC)[17] and the Minamata Convention on Mercury,[18] which were all developed in response to pollution by chemicals. The transportation of hazardous wastes led to the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal.[19] Pollution of transboundary freshwater resources, and the need to manage these jointly, led to the United Nations Convention on the Law of Non-Navigational Uses of International Watercourses (Water Convention);[20] while concerns regarding the use and protection of marine and coastal resources led, at least partly, to the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and several regional seas conventions and action plans (RSCAPs).[21] The need to ensure the survival of endangered species and to regulate international trade in wildlife and combat illegal trade led to the Convention on the Conservation of Migratory Species of Wild Animals (CMS)[22] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)[23] respectively. This list is not exhaustive. The instruments mentioned also add to, and influence, national legislation regarding the protection and use of natural resources and the conservation, preservation and/or management of the environment. All these MEAs were developed as a result of scientific underpinnings and findings on the need to conserve environmental resources and to address pollution to protect human health and the environment.

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[14] United Nations Framework Convention on Climate Change, New York, 9 May 1992, in force 21 March 1994, 31 *International Legal Materials* (1992) 849, <http://unfccc.int>.

[15] Kyoto Protocol (Kyoto Protocol to the United Nations Framework Convention on Climate Change, Kyoto, 11 December 1997, in force 16 February 2005, 37 *International Legal Materials* (1998) 22) and currently the Doha Amendment establishing the second commitment period of the Protocol; at the time of writing this paper, the 2015 Paris climate change regime text was under negotiations.

[16] Convention on Persistent Organic Pollutants, Stockholm, 22 May 2001, in force 17 May 2004, 40 *International Legal Materials* (2001) 532, <http://www.pops.int>.

[17] Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, Rotterdam, 11 September, 1998, in force 24 February, 38 *International Legal Materials* (1999) 1, <http://www.pic.int>.

[18] Minamata Convention on Mercury, Geneva, 19 January 2013, not yet in force, <http://www.mercuryconvention.org/>.

[19] Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Basel, 22 March 1989, in force 5 May 1992, 28 *International Legal Materials* (1989) 657, <http://www.basel.int>.

[20] Convention on the Law of Non-Navigational Uses of International Watercourses, New York, 21 May 1997, in force 17 August 2014, 36 *International Legal Materials* (1997) 713.

[21] For more information, see UNEP, 'Regional Seas Programme', available at <http://www.unep.org/regionalseas/>.

[22] Convention on the Conservation of Migratory Species of Wild Animals, Bonn, 23 June 1979, in force 1 November 1983, 19 *International Legal Materials* (1980) 15, <http://www.cms.int>.

[23] Convention on International Trade in Endangered Species of Wild Fauna and Flora, Washington DC, 3 March 1973, in force 1 July 1975, 993 *United Nations Treaty Series* 243, <http://www.cites.org>.

Over the years, countries have continued to take environmental threats seriously, so that even when there is a lack of scientific certainty, the precautionary approach or principle has been used as a measure to take *a priori* action before damage is done. This widely applied approach, which has arguably acquired the status of being a principle of customary international law through its reiteration in numerous international instruments,[24] national statutes,[25] and judicial pronouncements[26] (though this status is still debatable[27]), has advanced environmental protection. The result is the standards set by legal instruments and various institutions at the global, regional and national levels to secure the environment from further degradation. Countries negotiated and adopted the UNFCCC, for instance, because they were unwilling to risk not taking measures to address threats caused by the changing climate as a result of greenhouse gases, and thus took precaution to protect human health and the environment. In this regard, Article 3 of the UNFCCC, for instance, calls on Parties in paragraph 3 to 'take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures…'. More examples could be given from other global or regional MEAs, as well as from national constitutions and national legislation to demonstrate the use of the principle to deal with environmental security for sustainability.

The issues that have been associated with environmental security, and the role of MEAs and governments in addressing them, set the stage for understanding the concept of environmental security. The above discussion of these issues does not, however, attempt to define this term or claim to be exhaustive on what environmental security really is. Rather, it is intended to give one the scope and parameters to understand what environmental security entails.

[24] See the Stockholm POPs Convention of 2001, Preamble and Article 1; Montreal Protocol of 1987, Preamble; CBD) of 1992, Preamble; and Cartagena Protocol on Biosafety, Preamble, Arts 1, 10(6), 11(8) and Annex III, to mention but few examples.

[25] See, for instance, Rabbi Deloso, 'The Precautionary Principle: Relevance in International Law and Climate Change', a Dissertation for MSc in International Environmental Science, Lund University (2005), available at <http://home.agh.edu.pl/~awyrwa/Regulacje/UNFCCC/Precautionary.pdf> (visited 19 October 2015) at 38–40.

[26] *Ibid*.

[27] See, for instance, Philippe Sands and Jacqueline Peel with Adriana Fabra and Ruth MacKenzie, *Principles of International Environmental Law* (3rd ed., Cambridge University Press, 2012) 217–227; and Rosie Cooney, The Precautionary Principle in Biodiversity Conservation and Natural Resource Management: An Issues Paper for Policy-makers, Researchers and Practitioners (IUCN, 2004), available at <http://www.sehn.org/pdf/PrecautionaryPrincipleissuespaper.pdf> (visited 19 October 2015) at 12.

3 Environmental security and threats posed by pollution of various media from different point and non-point sources

Threats posed by pollution result from the introduction of pollutants or contaminants into the environment, which can affect the quality of the air, water, soil, marine and coastal environment and pose a threat to human health, species and the environment. As countries have developed and industrialized, there has been an increase of vehicles, industries, chemicals, fuels, hazardous substances, toxins, waste and sewage, effluent, ozone-depleting substances, noise, greenhouse gases, etc. Over the years, these have caused different types of pollution, which many countries are currently grappling with in various ways.

As a result of these threats, countries have suffered from contaminated air, which causes diseases. Pollution of freshwater resources by industrial chemicals and effluent have affected drinking water. Soils have been polluted with pesticides and chemicals, resulting in degraded land resources and affecting agriculture and yields. A number of diseases are currently emerging which are caused by ingesting toxins from various sources. The marine and coastal environments are being polluted by various sources, including effluent, sewage, oil and dumping of wastes, thus threatening the health and lives of those who use these resources – both human beings as well as other species of animals and plants.

To address these threats, countries are obliged under different MEAs to take pollution prevention and control measures and actions through effective and enforceable national legislation and regulations that address the threats for the purpose of protecting and securing the environment and thus achieving sustainability.

Where these threats transcend national borders, both national and joint actions are also required to implement the various MEAs. A good example is air pollution caused by smog and haze, which is affecting countries of the Association of Southeast Asian Nations (ASEAN) region. In response, these countries have developed and adopted a regional agreement, namely, the 2002 ASEAN Agreement on Transboundary Haze Pollution.[28] At an earlier stage, the European countries had adopted the 1979 UN-ECE Convention on Long-range Trans boundary Air Pollution.[29]

Other relevant MEAs negotiated in response to threats posed by pollution to human health and the environment include the United Nations Convention on the Law of

[28] ASEAN Agreement on Transboundary Haze Pollution, Kuala Lumpur, 10 June 2002, in force 25 November 2003, <http://environment.asean.org/wp-content/uploads/2015/06/ASEANAgreementonTransboundaryHazePollution.pdf> (visited 14 August 2015).

[29] Convention on Long-Range Transboundary Air Pollution, Geneva, November 13 1979, in force 16 March 1983, 18 *International Legal Materials* (1979) 1442, <http://www.unece.org/env/lrtap/>.

the Sea;[30] regional seas conventions;[31] the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the London Dumping Convention);[32] the Montreal Protocol on Substances that Deplete the Ozone Layer; the UN Framework Convention on Climate Change; the POPs and PIC Conventions; the Basel Convention on Hazardous Wastes and Their Disposal; and the Kiev Protocol on Pollutant Release and Transfer Register,[33] to mention but a few.

4 Environmental security and threats posed by the degradation of the environment due to natural resources loss and illegal trade

Natural resources, including terrestrial and marine species, are threatened by unsustainable utilization. The depletion of resources and degradation of ecosystems, including the loss of habitat and species, impact negatively on human health and livelihoods as well as species and the environment as a whole. Poverty and limited access result in the overexploitation of resources and affect their regeneration. This situation can cause conflicts as communities fight over access to arable land, fishstocks, the use of water resources etc. The scarcity of resources is the main cause of conflicts between farmers and pastoralist communities in water-stressed arid areas, where there is diminished arable land and inadequate pasture.[34] Measures to be taken include strengthening the legal and governance structures for better management of the scarce resources. In recent years, there has been a major shift from what tended to be predominantly centralized natural resource management towards more devolved models of engaging communities in the management of natural resources.[35]

As for the potential for conflict regarding shared natural resources, a state cannot act unilaterally when it shares a natural resource with a neighbouring country or coun-

[30] United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982, in force 16 November 1994, 21 *International Legal Materials* (1982) 1261.

[31] See UNEP, 'Regional Seas Programme', *supra* note 21.

[32] Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, London, 13 November 1972, in force 30 August 1975, 11 *International Legal Materials* (1972) 1294; 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, London, 7 November 1996, in force 24 March 2006, <http://www.imo.org>.

[33] Protocol on Pollutant Release and Transfer Registers to the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, Kiev, 21 May 2003, in force 8 October 2009, <http://www.unece.org/fileadmin/DAM/env/pp/prtr/Protocol%20texts/PRTR_Protocol_e.pdf> (visited 14 August 2015).

[34] See, for instance, Janet Koske, 'Vulnerability to Climate Change and Conflicts, Its Impact on Livelihood and the Enjoyment of Human Rights Case Study: Pastoral Communities in Northern Kenya, Master thesis, Norwegian University of Life Sciences (2014), available at <http://brage.bibsys.no/xmlui/bitstream/handle/11250/225296/koske_master2014.pdf?sequence=4&isAllowed=y> (visited 19 October 2015) at 12–15.

[35] For specific examples of community natural resources management in different countries in Africa, see Dilys Roe, Fred Nelson and Chris Sandbrook, *Community Management of Natural Resources in Africa: Impacts, Experiences and Future Directions* (IIED, 2009), available at <http://pubs.iied.org/pdfs/17503IIED.pdf> (visited 19 October 2015).

tries, without regard to other states sharing that resource. When resources are shared between two or more states, the actions of one state may affect other states' ability to secure the full benefits of such resources. This can raise concerns over the equitable apportionment of the resource, its management and development, as well as the degradation and change of such resources. The global population is expected to reach 8 billion by the year 2020, which will necessitate increasing demand for resources such as food and water. The shortage of such resources will certainly create a security threat and thus environmental insecurity.

Impact on people, species and livelihoods is normally the main underlying concern which brings countries to the negotiation table to deliberate on the issues regarding transboundary resources and/or to conclude agreements. In a situation where states share transboundary water resources, for instance, the riparian state that is located downstream can be affected by pollution or flooding from an upstream state. In this regard, state cooperation plays an important role when it opens dialogue and develops agreements to resolve any concerns.[36]

Abundance of valuable resources, such as oil, gas and minerals, has also caused conflicts between investors and local populations that have disrupted law and order and threatened the safety and security of areas.[37] Where these conflicts have been caused by pollution of water bodies or land resources, including soil, the consequences have resulted in severely negative impacts on human health and the environment.

The increase in poaching and transnational environmental crimes (such as illegal trade) involving endangered species and their products continue to pose serious challenges and impacts upon the economic development of many countries, despite the

[36] Legal agreements on water sharing have been negotiated and maintained even as conflicts have persisted over other issues. For instance, Cambodia, Laos, Thailand and Vietnam have been able to cooperate since 1957 within the framework of the Mekong River Commission and had technical exchanges throughout the Vietnam War. The Indus River Commission survived two wars between India and Pakistan. The framework for the Nile River Basin, home to 160 million people and shared among 10 countries, was agreed in February 1999 in order to fight poverty and spur economic development in the region by promoting equitable use of, and benefits from, common water resources. The US–Mexico Transboundary Hydrocarbons agreement of 2012 (Agreement between the United States and Mexico Concerning Transboundary Hydrocarbon Reservoirs in the Gulf of Mexico, Los Cabos, 20 February 2012, available at <http://www.state.gov/p/wha/rls/2012/185259.htm> (visited 16 November 2015)) provides for a cooperation arrangement in oil and gas development and to jointly develop transboundary reservoirs in the maritime boundary in the Gulf of Mexico.

The *Trail Smelter* arbitration (1935–1941) provides an example of a dispute that arose when one state's polluting activities transcended national borders and caused damage in another state. At the time of arbitral judgment it was not clear whether Canada owed a duty to the United States not to cause damage within the United States through lawful activities inside Canada, and whether compensation needed to be paid if such duty was owed – the arbitral tribunal ruled that such a duty was owed and that compensation should be paid. The United States and Canada later entered into an international agreement to address transboundary pollution concerns that were affecting areas beyond national jurisdiction. Trail Smelter Arbitration (USA v Canada), 35 *American Journal of International Law* (1941), 684.

[37] See UNEP, *From Conflict to Peacebuilding: The Role of Natural Resources and the Environment* (UNEP, 2009), available at <http://postconflict.unep.ch/publications/pcdmb_policy_01.pdf> (visited 19 October 2015).

existence of a number of global and regional MEAs aimed at protecting species (for instance, the CMS); regulating their trade (for instance, the CITES); and/or curbing illegal trade (for instance, the regional wildlife enforcement agreement for Africa – the Lusaka Agreement).[38] The fact remains that for these treaties to be effectively implemented and enforced, and thus to bear fruitful results, countries involved in both the demand and supply of wildlife products need to be engaged and participate.

Unfortunately, wildlife and forest crime continues to play an important role in fueling illegal trade and organized syndicates in poaching, thus threatening the economic and social development of many countries and, consequently, the security of their environment. A recent report launched by UNEP in 2014, *Environmental Crime Crisis, A Rapid Response Assessment*,[39] gave alarming figures on the illegal trade in fauna and flora, charcoal, poaching, etc. These activities result in huge financial losses to the affected countries. For instance, it is estimated that US$ 723 billion are lost every year through illegal trade in wild fauna and flora. Out of the 420,000 – 640,000 elephants remaining, 20,000 – 25,000 are killed every year, and organized crimes involving elephant poaching rose from 50 in 2007 to 1,000 in 2013.[40] This deprivation of resources significantly contributes to environmental insecurity while denying local populations legitimate revenues and prosperity. With regard to illegal logging and forest crime, figures are even more alarming. US$ 30–100 billion are lost annually through illegal logging and deforestation. Illegal and unregulated charcoal trade account for US$ 9-24 billion annually.[41] Increased population growth and thereby increased demand for charcoal may further fuel illegal trade by the syndicates if this continues unchecked.

5 Environmental security, climate change impacts and environmental disasters resulting in population movements

The Earth's changing climate and the adverse effects thereof are a security concern to humankind. This threat is caused by human activities that are substantially increasing the atmospheric concentrations of greenhouse gases. These increases enhance the natural greenhouse effect, which will result on average in an additional warming of the Earth's surface and atmosphere and will thus continue to adversely affect natural ecosystems and humankind.[42]

Threats to the environment posed by climate change include, *inter alia*, rising temperatures, sea level rise, expanding deserts, rising levels of lakes and rivers, increasing

[38] Lusaka Agreement on Co-operative Enforcement Operations directed at Illegal Trade in Wild Fauna and Flora, Lusaka, 8 September 1994, in force 10 December 1996; <http://www.lusakaagreement.org/>.
[39] Available at <http://www.unep.org/unea/docs/RRAcrimecrisis.pdf> (visited 19 October 2015).
[40] *Ibid*. at 23–27.
[41] *Ibid*. at 61 and 70–71 respectively.
[42] For more information, see the reports of the Intergovernmental Panel on Climate Change (IPCC), available at <http://www.ipcc.ch>.

and more frequent floods, and emergence of new pests and diseases that affect plants, animals and human beings. Countries need to take measures to address these threats.

Climate change is expected to increase the frequency of extreme weather events such as droughts, floods and heat waves. The impacts on countries have already included drought, floods and changing weather patterns that are affecting agriculture. There is a need to invest more in low carbon and energy efficient technologies with increased focus on renewable energy and to commit to reduce greenhouse gas emissions to limit the effects of climate change. There is also a need to address the destruction of forests because they will have an impact on climate change and affect food production.[43]

To avert the impacts of climate change, an international response is required by all countries to work together in controlling the global emissions of greenhouse gases. This is reflected in the 1992 UNFCCC and its Kyoto Protocol, which call for the stabilization of greenhouse gas concentrations in the atmosphere to levels that would prevent dangerous anthropogenic interference with the climate system. The existing treaty regime did not require emission reduction commitments from developing countries, and some major contributors to global emissions did not sign up to the treaty, and so the trajectory of emissions has continued to rise since, and over the last 10 years it has become evident that a new and more effective global agreement is required to meet the original objective of the UNFCCC.

Governments around the world have invested significantly in trying to reach a more ambitious agreement that includes both developed and developing countries in some form of legally binding emission reduction commitment arrangements. Capacity-building and financial assistance for developing countries to cope with the effects of climate change will need to accompany this. A recent, novel concept in this regard relates to compensation for loss and damage as a result of climate change, which is envisaged to function as some form of an insurance mechanism for those effects of climate change that cannot be adapted to, such as extreme weather events. In its proposed format, it should provide a safety net in the form of monetary compensation as a bulwark against environmental disasters, and as a catalyst towards increased environmental security.

A final agreement on these issues is expected in Paris in December 2015. Should agreement not be reached, or should the outcome in Paris lack the degree of ambition required to keep concentrations of greenhouse gases within specified limits, this will likely result in decreased levels of environmental security, manifested in conflicts for scarce natural resources, decrease in food security and greater incidences of climate-related migration. Failure to act now and agree on an effective, legally binding treaty will make the costs of abatement even higher in the future. Developed

[43] See 'Climate Change and Agriculture: Physical and Human Dimensions' in FAO, *World Agriculture: Towards 2015/2030. An FAO Perspective* (FAO, 2003), available at <http://www.fao.org/docrep/005/y4252e/y4252e15.htm> (visited 19 October 2015).

countries are expected to set up appropriate targets that reduce emissions and commit to supporting programmes and providing climate finance from a range of funding sources. Developing countries are being assisted to cope with climate change by undertaking adaptation or mitigation programs, including in pursuing clean energy initiatives, smart agriculture and tree planting programs. More innovative measures are still needed to solve existing as well as emerging challenges caused by climate change impacts.[44]

Movement of people both within and across state borders continues to pose serious environmental security risks and depletion of resources in both the countries of origin and the recipient countries. To date, there is no internationally recognized legal protection, in the strict sense, for these refugees or displaced populations who flee from their home countries, or within their countries, as a result of change of climatic conditions or environmental degradation, such as natural disasters, water scarcity, droughts, floods, etc. The international refugee law guided by the 1951 UN Convention on the Status of Refugees[45] and its 1967 Protocol[46] is silent on this group of refugees, considering only those who flee from their countries either for fear of persecution or because they suffer persecution.[47] One can, however, understand that, at the time that these instruments were negotiated and adopted, the environmental issues with which we are dealing today had not yet arisen.[48]

Legal scholars and other commentators[49] have, over the years, called for the amendment of these United Nations Refugee Agency (UNHCR)[50] treaties to extend/expand the definition of refugees, but without success. Others[51] have been calling for the development of a new treaty to address the needs of these environmental/climate change refugees. Currently, Parties to the UNHCR treaties have been left with discretion to interpret or extend the definition as they deem fit. The practice of many

[44] See the latest IPCC reports for updates on the status of the climate change phenomenon and on measures that are being taken by countries to combat climate change under the UNFCCC.

[45] Convention Relating to the Status of Refugees, Geneva, 28 July 1951, in force 22 April 1954, <http://www.unhcr.org/3b66c2aa10.html> (visited 15 August 2015).

[46] Protocol Relating to the Status of Refugees, New York, 13 January 1967, in force 4 October 1967, <http://www.unhcr.org/3b66c2aa10.html> (visited 15 August 2015).

[47] See, for instance, Human Rights Education Associates (HREA), *Study Guide: The Rights of Refugees* (HREA, 2003), available at <http://www1.umn.edu/humanrts/edumat/studyguides/refugees.htm> (visited 19 October 2015).

[48] For a discussion on the development of international environmental law through different stages, see Tuomas Kuokkanen, 'The Relationship between the Exploitation of Natural Resources and the Protection of the Environment', in Tuula Honkonen, Melissa Lewis and Ed Couzens (eds), *International Environmental Law-making and Diplomacy Review 2013,* University of Eastern Finland – UNEP Course Series 13 (University of Eastern Finland, 2014) 1–11.

[49] See, for instance, Bonnie Docherty and Tyler Giannini, 'Confronting a Rising Tide: A Proposal for a Convention on Climate Change Refugees', 33 *Havard Environmental Law Review* (2009) 349–403; and Frank Biermann and Ingrid Boas, 'Protecting Climate Change Refugees: The Case for a Global Protocol', 50 *Environment* (2008), available at <http://www.environmentmagazine.org/Archives/Back%20Issues/November-December%202008/Biermann-Boas-full.html> (visited 19 October 2015).

[50] See <http://www.unhcr.org>.

[51] Biermann and Boas, 'Protecting Climate Change Refugees', *supra* note 49.

countries[52] has been to construe or interpret the definition narrowly to reduce the number of persons that qualify for protection within their borders.

The International Organization for Migration (IOM),[53] however, for practical purposes, does recognize this cluster of environmental refugees or environmental or climate change migrants or displaced persons. It has developed a working definition with criteria for this group of refugees or displaced populations.[54] Hence, although not legally protected under the UNHCR treaties, these people are recognized and protected by the IOM. The IOM does this by applying its comprehensive migration management approach, which links climate change, environment and migration to reduce the vulnerability of populations exposed to environmental risk factors. It helps build capacities of governments and other stakeholders to cope with challenges of environmental migration.[55]

Various recent reports, including those of the IPCC, indicate that by 2050, climate change is likely to be the single most significant cause of migration due, but not limited, to factors like sea level rise, shoreline erosion, drought, etc. The number of environmental/climate change refugees will continue to increase to between 150 and 200 million, with about 50 million refugees produced every year, not counting those fleeing from persecution or fear of persecution.[56] This will be a major impediment to sustainable development and environmental security in both the countries of origin as well as the recipient countries of these population movements.[57] Just as sustainable development, migration too has three dimensions, namely: economic, social and environmental. Thus, both share similar overarching objectives, which include poverty eradication, and protecting and managing the natural resource base for economic and social development. The link between migration and sustainable development was also highlighted in the Rio+20 Outcome Document 'The Future We Want'.[58, 59]

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[52] See Albert Kraler, Tatiana Cernei and Marion Noack, '"Climate refugees". Legal and policy responses to environmentally induced migration', a Study undertaken for the European Parliament (European Parliament's Committee on Civil Liberties, Justice and Home Affairs, 2011), available at <http://www.europarl.europa.eu/RegData/etudes/etudes/join/2011/462422/IPOL-LIBE_ET(2011)462422_EN.pdf> (visited 19 October 2015).

[53] See <http://www.iom.int>.

[54] See Muhammad Tawfiq Ladan, 'Addressing the Plight of Environmental Migrants through African Union and ECOWAS Community Laws: A Case for Climate Justice' (2012), available at <http://ssrn.com/abstract=2336108> (visited 19 October 2015) at 4–5.

[55] See IOM, 'Immigration and Climate Change', available at <http://www.iom.int/migration-and-climate-change> (visited 19 October 2015).

[56] See IOM, 'Migration and Climate Change', IOM Migration Research Series No. 31(2008), available at <http://www.iom.cz/files/Migration_and_Climate_Change_-_IOM_Migration_Research_Series_No_31.pdf> (visited 19 October 2015) at 11.

[57] See IPCC, Climate Change 2014: Synthesis Report – Summary for Policy Makers (IPCC, 2014), available at <http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf> (visited 19 October 2015).

[58] Rio+20 Outcome Document 'The Future We Want', UNGA Res. 66/288 of 11 September 2012, available at <http://www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%201230pm.pdf> (visited 19 October 2015) at para 144 and 157.

[59] See also Oxford Associates for International Development, 'Background Paper: Patterns and Trends in

6 Environmental security and the threats that conflicts pose to the environment

Armed conflicts and disasters continue to devastate the environment in spite of having related conventions that are intended to protect the environment in the time of armed conflicts.[60] Of interest at the time and after the conflict is always the issue of valuing the damage to the environment in the legal and administrative sense, which continues to be a challenge.[61] How does one quantify or value damage to natural habitats, flora and fauna and to aesthetic and natural resources, personal injury, loss, and damage of property? Laws need to establish liability and redress and thus be able to call for preventive measures and responsibility under civil and administrative law. A number of methodologies to assess such environmental damage have been devised by countries. Countries that are affected by conflict situations that have affected the environment need to assess the damage and consider ways to rehabilitate or to restore the environment.

7 Conclusion

In conclusion, the examples provided above elevate environmental security to a more prominent role, which calls for this term to be further profiled, clarified and explained. Its parameters will be widely appreciated by all when defined, to enable its wide application by policy-makers and its contribution to the advancement of the protection of the environment and the progressive development of international environmental law. All of us should take leadership toward stirring this process, hoping that governments will take it up with the necessary enthusiasm.

It can be noted that the extent to which MEAs have been able to address the threats posed to species, for instance, has been limited. Whatever the factors that are limiting the effectiveness of MEAs, it is clear that concerted efforts are needed by all stakeholders to continue interrogating the reasons for the weaknesses of the existing international instruments and their compliance and enforcement mechanisms. With regard to the protection of species, organized criminals and networks that are fueling illegal traffic and illegal trade of endangered species and their products should be stemmed in tandem with mobilizing international cooperation and partnerships

Migration and Sustainable Development' (2013), available at <https://sustainabledevelopment.un.org/content/documents/1743migrationbackground.pdf> (visited 19 October 2015).

60 See Elizabeth Maruma Mrema, Carl Bruch and Jordan Diamond, *Protecting the Environment During Armed Conflicts: An Inventory and Analysis of International Law* (UNEP, 2009), available at <http://www.un.org/zh/events/environmentconflictday/pdfs/int_law.pdf> (visited 19 October 2015).

61 See the work done by UNEP for the UN Compensation Commission established by the UN Security Council to hear claims and assess damage caused during the Iraq invasion of Kuwait and the subsequent firing of gas and oil wells as Iraq was held responsible for the adverse consequences of its military acts by the UN Security Council. See: Alexandre Timoshenko, *Liability and Compensation for Environmental Damage: Compilation of Documents* (UNEP, 1998).

targeting both demand and supply countries and chains to resolve environmental security concerns.

Countries face many and different challenges that hinder or deter them from taking effective measures or actions to deal with all issues leading to environmental insecurity, some beyond their control but others within their control – but political will and commitment are necessary to make a difference. Examples of the challenges faced include:

- inadequate national legislation with appropriately severe sentences, fines or penalties to deter future offenders;
- inadequate technical skills and capacity, including human and financial resources, for effective enforcement;
- inadequate appreciation of the seriousness of environmental, wildlife and forest related crimes;
- inadequate or lack of arrangements to extradite environmental offenders across national borders;
- inadequate or lack of mechanisms to enforce sentences awarded – especially against big polluters;
- inadequate or lack of awareness and appreciation of environmental protection as beneficial to human well-being;
- corrupt practices in handling, harboring and protecting criminals who get increasingly sophisticated due to the high economic value of their crimes;
- inadequate or lack of political will and commitment at higher levels of the Government to address weaknesses in the environmental governance systems;
- lack of or inadequate numbers of courts or tribunals to deal with the increasing number of environment-related cases; and,
- lack of specialized environmental courts or tribunals in many countries, to specifically deal with environmental matters.

In view of this non-exhaustive list of challenges and problems, what should be done at all levels to alleviate these problems for the environmental sustainability of the present and future generations is an issue that should concern everyone.

Environmental Security and the Role of Law

Rodrigo Alberto Vazquez Martinez[1]

1 Introduction

This paper considers the concept of environmental security and the role that law can play in enhancing such security. Specifically, this paper elaborates on how law can be used as a tool to address environmental security threats. First, the paper provides a brief background on the concept of environmental security. Second, it provides a brief overview of the role of law in addressing environmental security threats, including a description of the 'rule of law' concept. Next, the paper gives three examples of countries that have enhanced their efforts to address different environmental security threats by integrating legal changes – to help protect a population of single-horned Asiatic rhinoceros in Nepal; to help indigenous people obtain recognition of their rights to land and natural resources in Nicaragua; and to decrease deforestation rates in the Atlantic forest in Paraguay. Lastly, the paper concludes with a call to expand the use of law as a tool to address environmental security threats.

2 The concept of environmental security

Human societies have always depended on the environment for their survival and advancement. Human beings need clean air, safe water and healthy food as a source of energy to subsist, as well as to produce and transport goods; and natural resources to serve as raw materials for goods and services.[2] In today's modern era, human societies are collectively exploiting the environment at an increasing and alarming pace

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[2] United Nations Environmental Programme, *Global Environmental Outlook 5: Environment for the Future*

in order to obtain natural resources to further advance humans needs. The collective exploitation of the environment is being conducted in an unsustainable manner, resulting in rapid depletion and degradation.[3]

In the last few decades, we have come to understand better the imminent threat that environmental degradation and scarcity of natural resources poses to humans, not only as individuals but also as societies, in relation to international peace and security. This understanding establishes the foundation for the concept known as 'environmental security'; a two-fold concept that mixes security and environmental aspects together. First, the concept places emphasis on the environmental aspects related to security, as to the maintenance of ecosystems, and the use of natural resources in a sustainable manner.[4] Further, the concept also places emphasis on the traditional aspects of security in relation to the prevention and management of natural disasters, and conflicts triggered by the degradation of the environment and scarcity of natural resources.[5] In brief, the underlying idea behind environmental security is to establish a balance between humans and the environment in relation to the maintenance and sustainable use of natural resources by all human societies, with the ultimate goal being the promotion of international cooperation, peace, and security.[6]

The concept of environmental security evolved from the concept of 'national security'.[7] National security has traditionally been seen as a matter associated with the military defence of a sovereign territory from any foreign threat – that is to say, any threat from any other sovereign territory, an exogenous threat.[8] However, endogenous threats such as civil conflicts, overpopulation, and public health crises are also matters associated with national security.[9] In the last few decades, it has been recognized that environmental threats – such as climate change, deforestation, extreme weather events, and lack of water and food security – add a new level of complexity to the matter of national security, since threats can either be exogenous or endogenous, or both.[10] Thus, it is more than clear that both exogenous and endogenous threats have an impact on national security. As a result, countries hoping to address environmental threats must not only be ready to deal with them within their own territory, but must also collaborate with other countries to address them. In other words, there is a need to address environmental threats at both the national and the international levels.

We Want (UNEP, 2012), available at <http://www.unep.org/geo/geo5.asp> (visited 17 November 2015) at xviii.

3 *Ibid.*

4 Jutta Brunnée, 'Environmental Security in the Twenty-First Century: New Momentum for the Development of International Environmental Law?', 18 *Fordham International Law Journal* (1994–1995) 1742–1747 at 1742.

5 *Ibid.*

6 *Ibid.*

7 Elizabeth L. Chaleckiat, *Environmental Security: A Guide to the Issues* (ABC-CLIO, 2013) 5–14.

8 *Ibid.*

9 *Ibid.* at 3.

10 *Ibid.* at 15–23.

Today, the concept of environmental security is linked to concerns related to human security (food security, freedom, human rights, etc.); to the security of the environment (deforestation, extension of species, ecosystems, etc.); to environmental factors (climate change, floods, droughts, and resource scarcity, etc.); and to armed conflicts (civil wars, terrorism related conflicts, etc.), to name but a few. A thorough definition of the concept of environmental security, and a detailed explanation on the different environmental security threats and linked concepts and ideas, are beyond the scope of this paper.[11]

It is worth nothing that different elements of the concept of environmental security – such as the depletion of natural resources, climate change, deforestation, extreme weather events, water and food security, transboundary pollution, and environmental protection during armed conflicts – have been core global issues for the international community for decades. Major global discussions and negotiations on the relationship between human beings and the environment have taken place, resulting in the development of influential legally binding and non-legally binding international environmental instruments.[12] By setting international agendas and raising global awareness on environmental issues, these and many other instruments have demonstrated the need to address environmental threats systematically, collaboratively and with attention to integration of different sectors. Perceptions and understandings of the concept of environmental security and related threats have evolved over the years, making environmental security an evolving concept adaptable to the changing needs and circumstances (mainly as a result of the scientific advances and evidence over the years) at all of international, regional, national and local levels. Although not many of these instruments have included the topic of security *per se*, many have suggested implementing approaches that address a range of environmental threats with potential security implications.

Global discussions and negotiations have played an important role in shaping the general environmental principles known today. These environmental principles have emerged, and can be said currently to be evolving, to address the changing needs and

[11] For more information on the concept of environmental security and related threats see Rita Floyd and Richard Matthew, *Environmental Security: Approaches and Issues* (Routledge, 2013); and Chaleckiat, *Environmental Security*, *supra* note 7.

[12] Such as the United Nations Conference on the Human Environment held in Stockholm, Sweden from 5 to 16 June 1972, which produced the Stockholm Declaration (Declaration of the United Nations Conference on the Human Environment, Stockholm, 16 June 1972, UN Doc. A/CONF.48/14/Rev.1 (1973), 11 *International Legal Materials* (1972) 1416); the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil from 3 to 14 June 1992, which produced the Rio Declaration (UN Declaration on Environment and Development, Rio de Janeiro, 14 June 1992, UN Doc. A/CONF.151/5/Rev.1 (1992), 31 *International Legal Materials* (1992) 876); the World Summit on Sustainable Development held in Johannesburg, South Africa from 26 August to 4 September 2002, which produced the Johannesburg Declaration (Johannesburg Declaration on Sustainable Development 'From our origins to the future', Johannesburg, South Africa, 4 September 2002, UN Doc. A/CONF.199/20 (2002)); the United Nations Conference on Sustainable Development held in Rio de Janeiro, Brazil from 13 to 22 June 2012, which produced the Rio+20 Outcome Document 'The Future We Want' (UNGA Res. 66/288 of 11 September 2012).

circumstances of each decade. Environmental principles have been developed to address intertwined environmental security threats related to food production, access to water, management of natural resources, energy, climate change, and natural disasters, to name just a few. Some of the general environmental principles that have acquired broad recognition include the principles of sustainable development; integration and interdependence; inter-generational and intra-generational equity; responsibility for transboundary harm; transparency, public participation and access to information and remedies; common but differentiated responsibilities; precaution; prevention; polluter pays; common heritage; and good governance.[13] These environmental principles combine to create the basic rules and minimum standards for the interaction between humans and the environment at all levels — at the international, regional, national and local levels.

Notably, these developments aid in the evolution of the concept of environmental security and related threats as we understand them today – a need for human societies to conserve natural resources and to use them sustainably to prevent conflicts, to cooperate to address natural disasters, and to maintain international peace and security.

3 The role of law in environmental security

It is increasingly apparent that environmental projects need to be underpinned and supported by sound legal principles. The role of law needs to be adapted to the changing needs and circumstances of particular projects in particular societies. Jurisprudential justification for including legal components is provided by the 'rule of law' concept.

This paper will not provide a detailed analysis of the rule of law concept,[14] but it will provide a general overview of the concept as understood and accepted by the international community today. The rule of law concept is embedded in the United Nations system, where it is defined as:

> [a] principle of governance in which all persons, institutions and entities, public and private, including the State itself, are accountable to laws that are publicly promulgated, equally enforced and independently adjudicated, and which are consistent with international human rights norms and standards. It requires, as well, measures to ensure adherence to the principles of supremacy of law, equal-

[13] See, for instance, Lal Kurukulasuriya and Nicholas A. Robinson (eds), *Training Manual on International Environmental Law* (UNEP, 2006) 23–37; Ole W. Pedersen, 'Environmental Principles and Environmental Justice', 12 *Environmental Law Review* (2010) 26–49; Bruce Party, 'Towards an Environmental Rule of Law', 17 *Asia Pacific Journal of Environmental Law* (2014) 163–175 at 165; see also Brunnée, 'Environmental Security', *supra* note 4, at 1745–1747.

[14] For more information on the rule of law concept, see Pietro Costa and Danilo Zolo (eds), *The Rule of Law History, Theory and Criticism* (Springer Science & Business Media, 2007); and Brian Z. Tamanaha, *On the Rule of Law: History, Politics, Theory* (Cambridge University Press, 2004).

> ity before the law, accountability to the law, fairness in the application of the law, separation of powers, participation in decision-making, legal certainty, avoidance of arbitrariness and procedural and legal transparency.[15]

A strict interpretation of the rule of law concept can simply see it as a procedure of international and national governance, requiring states and citizens, institutions and entities, public and private, to be accountable to the law. However, a practical interpretation of the concept of the rule of law can see it as an enabling tool for change, where linkages exist between the rule of law concept and the concept of development. For instance, the rule of law concept can be used in a proactive manner to enable economic growth; promote equality, inclusion and social justice; prevent and mitigate crime and conflicts; strengthen accountability and checks on powers; and support sustainable development and natural resource management.[16] As a result, a practical interpretation of the rule of law calls for adequate and effective laws and judicial systems, access to justice and information, public participation, accountability, transparency, fair and just enforcement, and human rights.

In relation to environmental security, the rule of law concept can be used as a tool to address environmental security related threats. Specifically, the rule of law concept can be used to promote accountability of governments, businesses and citizens; just and inclusive environmental frameworks; and processes for the enforcement of environmental laws and policies. In fact, the past decades have observed important developments in relation to the rule of law concept and environmental security related threats at the international level. As is explained below, the international community is increasingly looking at the rule of law concept as a practical and fundamental tool to address present and future environmental security threats.

In 2012, the United Nations Environment Programme (UNEP) World Congress on Justice, Governance and Law for Environmental Sustainability,[17] held in parallel to the Rio+20 Conference, brought together leading legal experts from around the world to contribute to the debate on the environment. They declared that diplomatic outcomes related to the environment will require adherence to the rule of law for their effective implementation at the national level – resulting in a new affirmation on the importance of the rule of law for addressing environmental security related threats.[18] In the same year, the United Nations General Assembly adopted of a resolution on the rule of law,[19] which underlined the importance of fair, stable and pre-

[15] Report of the Secretary General on the rule of law and transitional justice in conflict and post-conflict societies to the Security Council, UN Doc. S/2004/616 (2004).

[16] UNEP, 'Integrating Rule of Law in the Post-2015 Development Framework', *Issue Briefs*, January 2013, 1–11 at 3–4.

[17] UNEP World Congress on Justice, Governance and Law for Environmental Sustainability held in Rio de Janeiro, Brazil, in June 2012.

[18] UNEP, 'About the World Congress', available at <http://www.unep.org/delc/worldcongress/TheWorldCongress/tabid/55695/Default.aspx> (visited 13 April 2015).

[19] 'Declaration of the high-level meeting of the General Assembly on the rule of law at the national and international levels', UNGA Res. 67/1 of 30 November 2012.

dictable legal frameworks for generating inclusive and equitable development and maintaining peace and security.[20] In addition, a report was placed in front of the UNEP Governing Council in 2013 providing information on developments related to the rule of law, particularly environmental law, and suggesting the need to further advance justice, governance, and law for environmental sustainability.[21] As a result, the UNEP Governing Council adopted a decision[22] that recognized the importance of the rule of law for environmental security, particularly in relation to reducing violations of environmental law and to achieving sustainable development overall. The decision states that: '[t]he violation of environmental law has the potential to undermine sustainable development and the implementation of agreed environmental goals and objectives at all levels and that the rule of law and effective governance play an essential role in reducing such violations.'[23]

These developments have led to the recent Global Symposium on Environmental Rule of Law, held in parallel to the first session of the United Nations Environmental Assembly in 2014.[24] The Symposium built on UNEP's World Congress from 2012 and convened leading legal experts from around the world to discuss the ways and means by which the rule of law can further support societies in addressing environmental security threats and promoting development that ensures just and sustainable outcomes.[25]

Overall, the key messages from the Global Symposium on Environmental Rule of Law called upon the international community and for the first United Nations Environmental Assembly to recognize the rule of law as a fundamental tool for addressing environmental security related threats by realizing its intrinsic value for environmental justice and sustainable development.[26] Consequently, the resolutions and decisions adopted by the first UNEA highlight the importance of the rule of law for addressing threats related to environmental security, and make a call to the international community not to undermine the rule of law and to recognize it as a vital tool for sustainable development at the national, regional and international levels.[27] As a result, there is a growing awareness of the importance of the rule of law for environmental security.

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[20] *Ibid*. para. 8.

[21] Report of the Executive Director on Justice, governance and law for environmental sustainability to the Governing Council of the United Nations Environmental Programme, UN Doc. UNEP/GC.27/13 (2012).

[22] 'Advancing justice, governance and law for environmental sustainability in the Proceedings of the Governing Council/Global Ministerial Environment Forum at its first universal session', UN GC Dec. 27/9 (2013).

[23] *Ibid*. para. 5.

[24] UNEP, 'A Global Symposium on Environmental Rule of Law', available at <http://www.unep.org/unea/erl2.asp> (visited 13 April 2015).

[25] *Ibid.*

[26] Summary and key messages from the Environmental Justice and Sustainable Development: A Global Symposium on Environmental Rule of Law, UN Doc. UNEP/EA.1/CRP.1 (2014).

[27] Proceedings of the Governing Council/Global Ministerial Environment Forum at its first universal session, UN Doc. UNEP/GC.27/17 (2013).

In practice, including the 'rule of law' in environmental projects implies that when an environmental problem becomes apparent and it is obvious that the problem has no one simple cause and no one obvious solution, then projects designed to deal with the problem should include legal components. One can go further and argue that such projects should in fact do more than merely *include* legal components – projects should include relevant legal principles as integral components.

This is equally true for both international and national laws. While the majority of projects will probably be national in scope, significant numbers of projects will deal with problems that have transboundary implications and are influenced by physical or human actions – such as those presented by shared watercourses affected by floods, alien invasive species introduced by humans, migratory species affected by climate change, and trade-related influences.

In the environmental field, the intricate relationship between international and national laws is increasingly understood. There is an ebb-and-flow between them. International agreements are often reflective of national experiences. National laws, on the other hand, are often influenced by, and even enacted to implement, international environmental agreements. The extent to which national legal regimes prove effective will depend on a range of factors, such as the extent to which society accepts the rationale for laws regulating the environment; the extent to which the state is willing to enact legislation and has capacity to enforce such; and the extent to which actors, both in the international and the national spheres, consider the costs of abiding by such laws to outweigh the advantages than can be gained by disobeying them.[28]

4 Improving environmental security in practice

Developments at the international level with regard to the rule of law and environmental security are being coupled with developments at the national level. Increasingly, countries are combining the rule of law concept with the general environmental principles when designing and implementing environmental laws, policies, plans, programs and strategies. While the conditions and needs of countries as regards environmental security differ, countries are increasingly using the rule of law to establish effective national environmental governance – with the development of laws; the disclosure of information to the public; the participation of stakeholders in decision-making; the accountability of decision-makers; the creation of clear roles and responsibilities; the establishment of dispute resolution mechanisms; and with the promotion of public integrity, to name a few.[29]

[28] See, generally, UNEP-CAEC, *Enforcement of Environmental Law: Good Practices from Africa, Central Asia, ASEAN Countries and China* (UNEP, 2015), available at <http://www.unep.org/delc/Portals/119/publications/enforcement-environmental-laws.pdf> (visited 17 November 2015) at 2–3.

[29] Scott Fulton and Antonio Benjamin, 'Foundations of Sustainability', 28 *The Environmental Forum* (2013) 32–36 at 34.

This section of the paper will provide some country experiences of how the rule of law concept has been used to address issues related to environmental security in Nepal, Nicaragua, and Paraguay. It must be noted that these rule of law approaches are not perfect examples and are necessarily only snapshots, but they are potentially useful examples of the use of the rule of law as a tool to address environment-related threats in developing countries. The experiences of three developing countries were selected, as these are less documented than are the experiences of developed countries. The examples are intended to demonstrate how these three developing countries have come to use rule of law approaches to address environmental security related threats, but most importantly to inspire the further use of such approaches and the sharing of experiences.

4.1 Nepal – protection of the last population of single-horned Asiatic rhinoceros

Most biological diversity is found within developing countries, and in many cases depletion of biodiversity represents one of the greatest environmental security threats. It is important to preserve as much biodiversity as possible, and the local or even global extinction of high profile species is to be avoided at all costs. The importance of high-profile species is multifold. Often, the reason they are high-profile is because they have important, and often poorly understood, ecological roles to play; sometimes because losing them might mean that the area will never host them again, and its ecology will be forced to change; and often because there are many security-related aspects that arise. These latter aspects might include lost economic opportunities, such as are presented by eco-tourism; as well as direct security threats posed by armed poachers, traffickers and concomitant illegal activities.

The country experience of Nepal relates to environmental security in relation to the protection of a species in danger of extinction, but also in relation to human security that is threatened by illegal activities and armed conflicts that derive from the killing of single-horned Asiatic rhinoceros. The Chitwan National Park located at the foot of the Himalayas covering an area of 93,200 hectares has a rich flora and fauna, and is home to one of the last populations of single-horned Asiatic rhinoceros.[30] In 1973, the Nepalese government designated the Chitwan region as Nepal's first national park and provided for its legal protection under the National Parks and Wildlife Conservation Act of 1973.[31] In addition, the Chitwan National Park Regulation of 1974[32] and the Buffer Zone Management Regulation of 1996[33] were enacted to ensure adequate protection of natural resources and people's participation in conservation, as well as socio-economic benefits to people living in the buffer zone – mak-

[30] United Nations Educational, Scientific and Cultural Organization (UNESCO), 'Chitwan National Park', available at <http://whc.unesco.org/en/list/284> (visited 13 April 2015).
[31] National Parks and Wildlife Conservation Act, No. 2029, 1973.
[32] Chitwan National Park Rules, No. 2030, 1974.
[33] Buffer Zone Management Regulation, No. 2052, 1996.

ing the Chitwan National Park an example of government–community partnership for the conservation of the environment.[34]

In addition, since 1975, the Nepalese Army has been deployed to protect the Chitwan National Park after an amendment to the National Parks and Wildlife Conservation Act.[35] The amendment calls for five to fifteen years of imprisonment to be imposed on offenders for killing any animal listed in schedule one of the Act, including the single-horned Asiatic rhinoceros.[36] The National Parks and Wildlife Conservation Act was enacted by the Nepalese authorities to curb the killing of protected animals in Nepal, and its implementation has apparently resulted in a heavy decrease in poaching.[37] In 2014, no incident of animal poaching, including the single-horned Asiatic rhinoceros, was recorded by park authorities.[38]

The National Park and Wildlife Conservation Act of 1973 and its subsequent amendments and supporting regulations have played an important role in strengthening Nepal's conservation efforts. In fact, the population of the single-horned Asiatic rhinoceros has increased from less than one hundred in the late 1950s to more than five hundred by 2011.[39] Importantly, it is also worth noting that the fight against wildlife crimes is more than a simple interest in environmental protection, as wildlife crimes also represent a serious threat to human security. Today, organized transnational criminal and terrorist groups are found deeply involved in wildlife crimes, as these groups use the profits from wildlife crimes to buy weapons, and to subsidize civil wars and terrorist activities. For these groups, the trade of wildlife goods constitutes a quick profit in addition to the profits deriving from drug, human, and gun trafficking. Importantly, the illegal actions of these groups undermine good governance and undercut development efforts in the countries they operate. Thus, the country experience from Nepal demonstrates the rule of law, seen in the establishment of a regulatory framework supported by the efforts of the government to implement it, is assisting a country both to address a danger to a specific species; and also to address difficult multidimensional environmental security threats.

One of the inherent weaknesses faced by developing countries dealing with threats to their environments is that enforcement and implementation are rarely effective,

[34] UNESCO, 'Chitwan National Park', *supra* note 30.

[35] Krishna Prasad Subedi, 'Environmental Rule of law as a Key to Sustainable Development and Environmental Sustainability: Nepalese Perspective', article prepared for the Global Symposium on Environmental Rule (2014), available at <http://www.unep.org/unea/docs/erl/ERoL-Key-SD-Environmental-Sustainability.pdf> (visited 10 June 2015) at 6.

[36] *Ibid.*

[37] *Ibid.*

[38] International Union for Conservation of Nature (IUCN), 'Nepal celebrates "zero poaching year" for rhino, tiger and elephant', available at <http://www.iucn.org/news_homepage/news_by_date/?14555/Nepal-celebrates-zero-poaching-year-for-rhino-tiger-and-elephant> (visited 13 April 2015).

[39] Government of Nepal, The Greater One-horned Rhinoceros Conservation Action Plan for Nepal (2006–2011) (World Wildlife Fund Nepal, 2006); World Wildlife Fund Global, 'Nepal rhino census shows increase', available at <http://wwf.panda.org/wwf_news/?200112/Collective-conservation-efforts-boosted-rhino-population-in-Nepal> (visited 13 April 2015).

even where legislation and policy are in place. A range of factors contribute to this weakness, including financial constraints, technological limitations, lack of human capacity and the desperation of people who often rely on natural resources to make a living. The concept of the rule of law requires that these issues be addressed.

4.2 Nicaragua – recognition of indigenous peoples' right to land and natural resources

The Nicaraguan experience is linked to environmental security in relation to human security, specifically in relation to the indigenous people in the country. The experience illustrates how an indigenous community obtained the recognition of their rights over land and natural resources through a rule a law approach, which has empowered them to participate in the protection of the environment and in addressing environmental security threats through their customs and way of life. This will also help address national conflicts related to the rights that they have been awarded.

In 2001, a case against the government of Nicaragua concerning the protection of the rights of indigenous peoples to land and natural resources was brought to the Inter-American Court of Human Rights.[40] The case challenged the legality of a thirty-year logging concession by the Nicaraguan government to a foreign corporation on lands claimed by the Awas Tingni, an indigenous community of the Mayangna located in the North Atlantic Autonomous Region of Nicaragua.[41] The Awas Tingni community is comprised of around 1,100 persons and has always depended on the land for subsistence farming, gathering, hunting, and fishing.[42] In fact, the Awas Tingni community has always played an important role in protecting the forest and animals within their lands, as these are vital for their cultural, religious, and family development and continuity.[43]

The Inter-American Court of Human Rights examined the case and declared that the American Convention on Human Rights guarantees and protects the rights of indigenous peoples in relation to their communal lands and the natural resources within their lands.[44] Consequently, the Court held that the laws in Nicaragua were ineffective to regulate the lands held by the Awas Tingni community, and that remedies were illusory; [45] and requested that the government of Nicaragua reform its laws

[40] *Mayagna (Sumo) Awas Tingni Community* v. *Nicaragua*, a judgment by the Inter-American Court of Human Rights on 31 August 2001.

[41] S. James Anaya and Claudio Grossman, 'The Case of Awas Tingni v. Nicaragua: A New Step in the International Law of Indigenous Peoples', 19 *Arizona Journal of International and Comparative Law* (2002) 1–15; Jeremy Firestone, Jonathan Lilley and Isabel Torres de Noronha, 'Cultural Diversity, Human Rights, and the Emergence of Indigenous Peoples in International and Comparative Environmental Law', 20 *American University International Law Review* (2005) 219–292 at 265–268.

[42] The University of Arizona, 'Nicaragua issues title to Awas Tingni's Lands!', available at <http://www.law.arizona.edu/iplp/outreach/pdf/Awas%20Tingni.pdf> (visited 24 February 2015).

[43] *Mayagna (Sumo) Awas Tingni Community* v. *Nicaragua, supra* note 40, at 19.

[44] *Ibid.* at 82–84.

[45] See Firestone et al, 'Cultural Diversity', *supra* note 41, at 266.

to address this inefficiency. In addition, the Inter-American Court of Human Rights stated that the Awas Tingni community has the right to have its communal lands delimited, demarcated and titled by the Nicaraguan government in accordance with their customary laws[46] – a remarkable recognition of customary laws of indigenous peoples by an international tribunal. Furthermore, the Court added that the possession of land should be sufficient for the Awas Tingni community to obtain official recognition and registration, in cases where the community lacks legal land titles.[47] In response, the government of Nicaragua handed over to the Awas Tingni community the title to its communal territory, 20,000 hectares of land, in 2008.[48]

This case represents an important precedent, as it was the first legally binding decision by an international tribunal to uphold the right of indigenous peoples to communal land and associated natural resources.[49] The Court decision and response from the government of Nicaragua is an illustration of the rule of law in action. It recognizes the right of indigenous peoples (who are usually the poorest and most vulnerable groups in society) to advocate for the protection of the environment and the management of natural resources through their customs and way of life, and most importantly to guarantee their well-being (water and food security). It is also worth noting that the recognition of indigenous peoples' right to land and natural resources can play a significant role in preventing or resolving internal conflicts related to environmental security (within indigenous communities or between the government and indigenous communities), and in empowering and safeguarding indigenous peoples from interventions from mining, oil, forestry, and water companies seeking to exploit the environment – their home. It is evident that indigenous peoples can contribute to addressing environmental security threats, such as deforestation and consequently climate change, while enjoying their fundamental rights. Thus, this rule of law based decision and response-action by the government makes it easier for the Awas Tingni community to uphold their rights related to human security and to participate in addressing environmental security related threats that are directly connected to their livelihoods.

4.3 Paraguay – moratorium to halt deforestation in the Atlantic forest

The Paraguayan country experience relates to environmental security in relation to the protection of the environment and to environmental factors that affect human security, specifically deforestation in this case, but also related environmental factors such as climate change, natural resources depletion and environmental degradation. Deforestation is an environmental security threat that can result in many negative effects on human, physical, social and economic wellbeing. It contributes to the instability of territories and societies, as it adversely adds to climate change, the deple-

[46] *Ibid.* at 267.
[47] *Ibid.*
[48] The University of Arizona, 'Nicaragua issues', *supra* note 42.
[49] See Firestone et al, 'Cultural Diversity', *supra* note 41, at 267–268.

tion of the ozone layer and pollution. Deforestation for unsustainable agricultural practices can also lead to soil erosion, loss of fauna, and displacement of people – all of this potentially contributing to the decline of farmland, inefficiency of agriculture, food shortages, formation of conflicts, and ultimately lack of human security.

The experience of Paraguay depicts how the country is taking a protectionist rule of law-based approach towards deforestation, coupled with alternative solutions to incentivize forest owners to participate in forest conservation practices, in order to mitigate the negative consequences of deforestation and ensure human security for its people and territory. Paraguay has a population of approximately six million people, with most living in the eastern territory of the country.[50] This region of Paraguay is part of the Atlantic forest, a terrestrial biome and region in South America, and one the most biodiverse ecosystems remaining in the world.[51] Until 2004, Paraguay had the second highest deforestation rate in the world, which resulted in the loss of seven million hectares of forest over a few decades.[52] Most of this forest loss was due to clearing in order to expand agriculture and cattle ranching, the backbone of Paraguay's economy.[53]

It became clear to the Paraguayan government that it would lose all of its Atlantic forest within a few years if nothing was done to bring down deforestation rates. As a result, the Paraguayan Congress passed the Zero Deforestation Law in 2004.[54] This law placed a moratorium on deforestation for two years, making it illegal to clear any forested land in the Atlantic forests of eastern Paraguay.[55] The deforestation of the Atlantic forest could have reached a point of no return. However, the Zero Deforestation Law was instrumental in bringing down the country's deforestation rate in the Atlantic forest by 90 per cent, which was complemented with reforestation efforts and with a voluntary movement of farmers to comply with the law.[56] The support of the Paraguayan government was key for the enactment of the Zero Deforestation Law. However, it was the establishment of a multi-stakeholder coalition that made the law operational and successful. Civil society, both at the national and local levels, played a crucial role by campaigning to raise awareness on the deforestation of the Atlantic forest among the general public, government and producers.[57] As a result, a Social Pact for the Conservation of the Atlantic Forest – a network of support for the implementation of the Zero Deforestation Law – was created in 2005.[58]

[50] World Wildlife Fund Paraguay, 'Forests – Making a pack to tackle deforestation in Paraguay', (2011), <http://internationaltreefoundation.org/wp-content/uploads/2011/04/Paraguay-FINAL-30-march-2011.pdf> (visited 10 June 2015) at 1.
[51] *Ibid.*
[52] *Ibid.*
[53] *Ibid.*
[54] Ley de prohibición en la Región Oriental de las Actividades de Transformación y Conversión de Superficies con Cobertura Boscosa, No. 2524, 2004.
[55] World Wildlife Fund Paraguay, 'Forests', *supra* note 50, at 2.
[56] *Ibid.*
[57] *Ibid.*
[58] *Ibid.*, at 3.

The Zero Deforestation Law was extended for two years in 2006,[59] for five more years in 2008,[60] and for another five years in 2014[61] as the result of its apparent success in decreasing Paraguay's deforestation rate. In addition, in 2006 a law on payment for environmental services[62] was enacted to support further the country's efforts to control deforestation.[63] This new law established a mechanism for forest owners to receive compensation for preserving their forest reserves, intended as a mechanism to incentivize forest owners to undertake forest conservation. Apart from these apparent successes in conserving the Atlantic Forest, the Paraguayan government continues to work with stakeholders to reduce emissions from deforestation and forest degradation, and to preserve the livelihoods of forest dependent communities with the establishment of a self-sustaining forest governance system which is to be applicable after the Zero Deforestation Law is lifted.[64]

It is worth noting that deforestation intertwines with other environmental security threats. It has a direct effect on climate change that in turn can affect global food production and human security. For instance, global poverty reduction efforts can be affected by decreases in food production causing instability. In addition, deforestation can lead to decreases in rain and snow in some regions, while in other regions can lead to increases in draughts, floods and forest fires. Thus, the country experience from Paraguay demonstrates a rule of law approach that contributes to addressing a multidimensional environmental security threat, that of deforestation and its related aspects, by establishing a deforestation moratorium and developing supplementary measures for after the moratorium comes to an end. In particular, the experience of Paraguay demonstrates that a strict stand on deforestation is not sufficient to address an environmental security threat, but that incentives are also necessary to influence and change human behaviour.

5 Conclusion

Significant progress has been made in the development of international and national laws, policies, case law and principles in relation to environmental security issues. As can be seen from the decadal international conferences on environmental issues, there is heightened awareness and improved understanding of the increasingly complicated nature of environmental problems in an increasingly globalized world. However, environmental degradation continues and is becoming an eminent (and increasingly an imminent!) problem for the international community. Over the last decade, threats have become more complex with issues such as deforestation, natural disas-

[59] *Ibid.* at 4.
[60] *Ibid.*
[61] World Wildlife Fund Global, 'Paraguay extends Zero Deforestation Law to 2018', available at <http://wwf.panda.org/?210224/Paraguay-extends-Zero-Deforestation-Law-to-2018> (visited 13 April 2015).
[62] Ley de valoración y retribución de los servicios ambientales, No. 3.001/06, 2016.
[63] World Wildlife Fund Paraguay, 'Forests', *supra* note 50, at 11.
[64] See World Wildlife Fund Global, 'Paraguay extends', *supra* note 61.

ters, and climate change stemming from causes that are not necessarily within the control of affected states, but which are increasingly having impacts both within and beyond national jurisdictions. Thus, environmental security is a growing global concern as environmental issues are posing more and more threats to all humans and to the international community as a whole.[65]

Presently, the international community is promoting the sustainable development approach to address environmental security threats. In addition, there is a growing realization by the international community of the importance of the role of law for addressing environmental threats, both at the international and national levels. It is not enough simply to enact legislation or adopt international legal instruments, to be effective these need to be implemented and supported. There is thus a broader understanding of what role law needs to play, and a deeper understanding of how this role can be filled. At the international level, world leaders are increasingly highlighting the importance of the rule of law to address environmental threats, and making a global call to all governments around the world to use the rule of law pragmatically to solve international and national problems related to environmental security. At the same time, governments around the world are progressively providing for a greater role for law (ie: for legal changes), both at the national and international levels, to advance their efforts to tackle environmental threats in their territories. These country experiences are not perfect from a theoretical point of view, but they illustrate how legal changes can play a role in improving projects designed to address environmental security threats from a practical point of view. It is the linking of ideas, laws and policies with practical enforcement measures, and innovative adaptations to local circumstances, that will lead to the identification of good practices and inspire others to work towards closing the gap between practice and theory.

With this in mind, the present author advocates that more countries around the world need to join the movement of integrating legal changes into efforts to address threats to environmental security. Governments need to become both active and innovative in the development and implementation of projects to address issues of environmental security at the national level – taking into consideration what laws and judicial systems might be most effective; how access to justice and information might be improved; and how attention might be given to public participation, accountability, transparency, and fair and just enforcement. However, all these should be supported by the general public, who should also become active in the development and implementation of legal approaches for addressing environmental security threats at the national level. Only the legitimacy and support provided by the general public can give efforts to improve environmental security the requisite support for its success. Most importantly, integrating the rule of law concept into projects, and indeed into legal systems as a whole, should be a learning process through which countries

[65] See Brunnée, *supra* note 4, at 1743.

share their successes and failures with the ultimate goal of developing efficient governance models to address environmental security threats at the international, regional, national and local levels.

Part III

Specific Issues related to Regional Freshwater Governance and Environmental Security

The UNECE Water Convention and the Support it gives to the Management of Shared Waters: From Obligations to Practical Implementation

Annukka Lipponen[1]

1 Introduction

Transboundary waters and their management influence the lives of a significant number of people. Such basins cover more than 40 per cent of the European and Asian surface of the United Nations Economic Commission for Europe (UNECE) region[2] and are home to approximately 460 million inhabitants.[3]

Divergent national interests and competing sectoral uses of transboundary waters are potential sources of conflict which affect various shared river basins around the world.[4] International water law's instruments and fora, such as joint bodies for transboundary cooperation, can help to reconcile different water uses; and it has been ar-

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[2] The 56 Member States of the UNECE include European countries (including the Commonwealth of Independent States), and also countries from Central Asia and North America.

[3] UNECE, *Second Assessment of Transboundary Rivers, Lakes and Groundwaters* (UN, 2011), available at <http://www.unece.org/fileadmin/DAM/env/water/publications/assessment/English/ECE_Second_Assessment_En.pdf> (visited 15 September 2015).

[4] Aaron T. Wolf and Joshua T. Newton, 'Case Studies of Transboundary Dispute Resolution' in Jerome Delli Priscoli and Aaron T. Wolf, *Managing and Transforming Water Conflicts* (Cambridge University Press, 2010) Appendix C.

gued that evolving international legal frameworks governing transboundary water resources provide an appropriate platform for addressing water security concerns.[5] The Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE Water Convention),[6] which was signed in Helsinki on 18 March 1992 and entered into force on 6 October 1996, provides a legal and institutional framework for improving the management of shared waters, including their protection. The Water Convention has subsequently been strengthened by two protocols: on Water and Health (2005)[7] and on Civil Liability (2003).[8]

The Water Convention has contributed to international water law: firstly, through the development and codification of new norms; secondly, through its institutional set-up advancing the interpretation and further development of its principles and provisions; and, finally, through practical support to implementing the provisions of the Convention.[9] During the almost 20 years that the Convention has been in force, it has provided a model for various agreements on transboundary waters in Europe. The Convention's institutional platform has also supported cooperation in managing such waters through providing advice and policy guidance, facilitating negotiation and supporting technical projects, for instance on monitoring and assessment.

The present paper provides an overview of the UNECE Water Convention and its main provisions; briefly describes selected developments in the scope of work under the Convention; and, using several examples, provides a picture of the Convention's practical relevance in the development of cooperation in managing transboundary waters.

2 Institutional structure

The Convention's Meeting of the Parties (MoP) is the highest decision-making body under the Convention. The Meeting of the Parties is held every three years. It adopts a programme of work and establishes working or subsidiary bodies to develop spe-

[5] Patricia Wouters, Sergei Vinogradov and Bjørn-Oliver Magsig, 'Water Security, Hydrosolidarity, and International Law: A River Runs Through It…', 19 *Yearbook of International Environmental Law* (2008) 97–134.

[6] Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Helsinki 17 March 1992, in force 6 October 1996, 31 *International Legal Materials* (1992) 1312.

[7] Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, London, 17 June 1999, in force 4 August 2005, <http://www.unece.org/env/water/pwh_text/text_protocol.html> (visited 15 September 2015).

[8] Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes and to the 1992 Convention on the Transboundary Effects of Industrial Accidents, Kiev, 21 May 2003. <http://www.unece.org/env/civil-liability/welcome.html> (visited 15 September 2015).

[9] Iulia Trombitcaia and Sonja Koeppel, 'From a Regional towards a Global Instrument – The 2003 Amendment to the UNECE Water Convention' in Attila Tanzi, Owen McIntyre, Alexandros Kolliopoulos, Alistair Rieu-Clarke and Rémy Kinna (eds), *The UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes: Its Contribution to International Water Cooperation* (Brill Nijhoff, 2015) 15–31 at 26.

cific areas of work. The constellation of such bodies evolves, but currently includes, among others, the Working Group on Integrated Water Resources Management, the Implementation Committee and the Legal Board. The Bureau, an elected body consisting of 11 Parties to the Convention, guides the work under the Convention in between the sessions of the MoP.[10]

The institutional structure of the Convention has, over the years, adjusted to the needs of the Parties and the programme of work. For instance, a Core Group on Groundwater was established under the Legal Board to draft, in 2011–2012, the Model Provisions on Transboundary Groundwaters.[11] The Group brought together legal and technical expertise for the specific exercise of developing this soft-law instrument. Another relevant example of the adjustment of the Water Convention's institutional structure is that the Working Group on Monitoring and Assessment was made inactive during the implementation of the programme of work for 2013–2015[12] because of the intersectoral nature of the assessment undertaken then, which required a different kind of representation both thematically and geographically. The Task Force on the Water-Food-Energy-Ecosystems Nexus was established to provide oversight to the 'nexus' assessment.[13]

The most recent addition to the institutional structure is the Implementation Committee, which was established by a decision of the sixth session of the Meeting of the Parties (Rome, November 2012), with the objective to facilitate the implementation of, and compliance with, the Convention. The Committee considers and provides advice in response to requests, mainly from Parties, to specific issues concerning difficulties in implementation and compliance, or may examine such issues at the request of the Meeting of the Parties. In accordance with specific conditions, the Committee may consider undertaking a Committee initiative. The members of the Implementation Committee serve in their personal capacity.[14]

The various bodies are serviced by a secretariat.

[10] UNECE, *The Global Opening of the 1992 Water Convention* (UN, 2013), available at <http://www.unece.org/fileadmin/DAM/env/water/publications/brochure/Brochure_on_opening/Brochure_ECE_ENG_WEB_OK.pdf> (visited 15 September 2015).

[11] UNECE, *Model Provisions on Transboundary Groundwaters* (UN, 2014), available at <http://www.unece.org/fileadmin/DAM/env/water/publications/WAT_model_provisions/ece_mp.wat_40_eng.pdf> (visited 15 September 2015).

[12] Programme of work for 2013–2015, Report of the Meeting of the Parties on its sixth session, Rome, 28–30 November 2012, Appendum, UNECE Doc. ECE/MP.WAT/37/Add.1 (2013).

[13] For more information, see < http://www.unece.org/env/water/task_force_nexus.html>.

[14] For a more comprehensive description of the tasks and functioning of the Implementation Committee, see 'Support to implementation and compliance of the Meeting of the Parties to the Water Convention', UNECE Water Convention Dec. VI/1 (2012).

3 The holistic and integrated approach of the Convention

The UNECE Water Convention provides a comprehensive framework for the sustainable management of shared water resources. The Convention takes a holistic approach, based on the understanding that water resources play an integral part in ecosystems, as well as in human societies and economies.

The Water Convention defines 'transboundary waters' to mean any surface or ground waters which mark, cross or are located on boundaries between two or more states.[15] The catchment area concept is among the Convention's basic principles and, in addition to applying to surface waters and groundwaters alike, the Convention also makes a link to recipient seas.[16] Cooperation, according to the Convention, is not confined to the body of water but has to be applied to the relevant catchment area or at least parts thereof.[17]

The ecosystem approach to water management is also an integral part of the Water Convention. Accordingly, the various components of the aquatic and riparian ecosystems supported by the water system in the catchment area of a transboundary watercourse should also be taken into account in the planning and development of the shared water resource.[18]

The Convention covers aspects related to both water quality and quantity. Early work within the framework of the Convention concentrated on water quality and prevention of pollution, and several guidance documents were developed in that regard.[19] Even though water quantity aspects are less explicitly regulated under the Convention, they are also an integral part of the Convention's scope, and are subject to the application of the same general principles and obligations, described in the next section.

Due to the integrated approach that the Convention promotes, it provides a framework that the Parties may use to implement integrated water resources management

[15] Art. 1

[16] Art. 2 requires Parties to protect the environment influenced by their transboundary waters, including the marine environment.

[17] Art. 2(6).

[18] UNECE, 'Guidelines on the Ecosystems Approach in Water Management', UNECE Doc. ECE/ENVWA/31 (1993), available at <http://www.unece.org/fileadmin/DAM/env/water/publications/documents/Library/Old_documents_found_library/ECE_ENVWA_31_eng.pdf> (visited 15 September 2015); UNECE Working Group on Monitoring & Assessment, 'Guidelines for the Monitoring and Assessment of Transboundary and International Lakes. Part A: Strategy document' (UNECE, 2002), available at <http://www.unece.org/fileadmin/DAM/env/water/publications/documents/lakesstrategydoc.pdf> (visited 26 October 2015).

[19] The guidance developed includes topics of water quality monitoring and assessment (1996); water quality criteria and objectives (1996); licensing of waste-water discharges from point sources (1996); water pollution from fertilizers and pesticides in agriculture (1995); and prevention of water pollution from hazardous substances (1994). These instruments can be found at UNECE, 'Water publications', available at <http://www.unece.org/env/water/publications/pub.html> (visited 15 September 2015).

(IWRM).[20] In addition to having a river basin as the management unit, IWRM also involves the integration of various aspects in water resources management, notably surface water and groundwater, water quantity and quality, and considers different water uses.[21]

A further demonstration of the Convention's holistic nature is that it considers diverse transboundary impacts, as described in the obligation of the Parties to prevent and control transboundary impacts. Transboundary impact is defined in the Convention as significant adverse effect on the environment including 'human health and safety, flora, fauna, soil, air, water, climate, landscape and structures, and socio-economic conditions resulting from a change ... caused by a human activity'.[22]

4 Main obligations

The main obligations of the Parties to the UNECE Water Convention are to:

- take all appropriate measures to prevent, control and reduce any transboundary impacts;
- ensure that transboundary waters are used in a reasonable and equitable way; and
- cooperate on the basis of equality and reciprocity.[23]

These make up the Water Convention's normative pillars and provide basic guidance for the application of its other substantive and procedural rules.[24]

Part I of the Convention contains provisions which are applicable to all Parties. Compliance with these provisions also involves benefits for national water management when, for instance, the control of wastewater discharges or other pollution control measures are enshrined in water legislation, contributing to a better quality of water within the country. This part of the Convention specifies a series of measures to be taken by the Parties, such as reduction of inputs of nutrients and hazardous substances from diffuse sources, and the application of environmental impact assessment.[25]

[20] UNECE, *Guide to Implementing the Water Convention* (UN, 2013), available at <http://www.unece.org/fileadmin/DAM/env/water/publications/WAT_Guide_to_implementing_Convention/ECE_MP.WAT_39_Guide_to_implementing_water_convention_small_size_ENG.pdf> (visited 15 September 2015) at 14.

[21] Global Water Partnership (GWP), 'Integrated Water Resources Management', TAC Background Papers No. 4 (GWP, 2000), available at <http://www.gwp.org/Global/ToolBox/Publications/Background%20papers/04%20Integrated%20Water%20Resources%20Management%20%282000%29%20English.pdf> (visited 15 September 2015).

[22] Francesca Bernardini, 'The Normative and Institutional Evolution of the Convention' in Tanzi, et al (eds), *The UNECE Convention*, *supra* note 9, at 32–48. The full definition of a 'transboundary impact' is given in Art. 1 of the Convention.

[23] Art. 2.

[24] UNECE, *Guide to Implementing the Water Convention*, *supra* note 20.

[25] Art. 3.

The second set of obligations articulated by the Convention concerns riparian Parties, that is, states bordering the same transboundary waters. Notably, the Water Convention requires that the riparian Parties enter into agreements and establish joint bodies relating to their transboundary waters,[26] cooperating bilaterally and multilaterally. The Convention also specifies a number of concrete tasks for the joint bodies for transboundary cooperation; including, for example, inventorying pollution sources, the elaboration of joint monitoring programmes concerning water quality and quantity, the establishment of warning and alarm procedures, and serving as a forum for information exchange.[27] Further obligations of riparian Parties concern consultation, joint monitoring and assessment, as well as the exchange of information, the establishment of warning and alarm systems, provision of mutual assistance in critical situations; and provision of information to the public.[28]

The Water Convention builds upon international customary law, including the work of the International Law Commission on the 1994 Draft Articles on the Law of Non-Navigational Uses of International Watercourses,[29] which later became the United Nations Convention on the Law of Non-Navigational Uses of International Watercourses (1997 Watercourses Convention).[30] The Watercourses Convention was adopted in 1997 and entered into force in 2014. A comprehensive analysis by Professor Attila Tanzi concludes as follows:

> … the two Conventions are not only compatible, but largely complementary. In other words, owing to the basic compatibility of their individual provisions on the especially same subject matter, the more detailed rules contained in either Convention offer important elements of guidance for interpretation and application of less-detailed provisions on the same subject matter in the other Convention.[31]

In 2012, the UNECE Water Convention's MoP decided to promote synergies and coordination with the 1997 Watercourses Convention by sharing the experience collected under the Water Convention to support the the Watercourses Convention's implementation, promoting exchanges and coordination between the Parties to the

[26] Art. 9.
[27] Art. 9.
[28] Arts 9 to 16.
[29] Draft Articles on the Law of Non-Navigational Uses of International Watercourses, adopted by the International Law Commission at its fortyösixth session, 1994, available at <http://legal.un.org/ilc/texts/instruments/english/commentaries/8_3_1994.pdf> (visited 16 September 2015).
[30] Convention on the Law of Non-Navigational Uses of International Watercourses, New York, 21 May 1997, in force 17 August 2014, 36 *International Legal Materials* (1997) 713.
[31] Attila Tanzi, 'The Economic Commission for Europe Water Convention and the United Nations Watercourses Convention. An analysis of their harmonized contribution to international water law', Water Series 6 (UN, 2015), available at <http://www.unece.org/fileadmin/DAM/env/water/publications/WAT_Comparing_two_UN_Conventions/ece_mp.wat_42_eng_web.pdf> (visited 26 October 2015), at 74–75.

two Conventions and offering an intergovernmental framework for discussion on the two Conventions.[32]

Some obligations under the UNECE Water Convention can be better understood by referring to other, 'kindred' conventions that are more specific on some aspects. There are such links with the other UNECE environmental conventions: for example, the obligations concerning public information (Article 16) can be interpreted in the light of the Aarhus Convention.[33] If an activity, plan or programme likely to cause transboundary impact is proposed under the jurisdiction of a Party to the Water Convention, notification and possible consultation should be carried out in accordance with the relevant provisions of the Espoo Convention[34] when both/all countries concerned have joined the Espoo Convention.[35]

5 Geographical scope and opening the Convention to countries in other regions

The UNECE Water Convention was initially negotiated as a regional instrument for the UNECE region. To date (ie: in late 2015), 40 countries from the pan-European region and the EU have joined the Convention.[36]

Parties to the Water Convention are a heterogeneous group in many ways. Not only are almost all the EU Member States Parties, but also most former Soviet Union countries. The Convention's Parties include countries which are both upstream and downstream on transboundary rivers. The pressures on waters differ between countries, as do the means available to address such pressures. The pan-European region is not homogeneous in terms of the Parties' economic development either. This is demonstrated by the diversity of the gross domestic product per capita, which ranges from the Republic of Moldova's 4,700 USD to Austria's 45,200 USD.[37]

The Convention was amended in 2003 in order to open up the possibility for accession to the United Nations member states from outside the UNECE region.[38] The amendments entered into force in February 2013. They will soon be operational

[32] Report of the Meeting of the Parties on its sixth session, *supra* note 12, Appendum; UNECE, *The Global Opening of the 1992 Water Convention, supra* note 10, at 15.

[33] Convention on Access to Information, Public Participation in Decision–Making and Access to Justice in Environmental Matters, Aarhus, 25 June 1998, in force 30 October 2001, 38 *International Legal Materials* (1999) 517, <http://www.unece.org/env/pp/>.

[34] Convention on Environmental Impact Assessment in a Transboundary Context, Espoo, 25 February 1991, in force 10 September 1997, 30 *International Legal Materials* (1991) 802. The Water Convention's Article 3(1)(h) refers to environmental impact assessment.

[35] UNECE, *Guide to Implementing the Water Convention, supra* note 20, 53–54.

[36] See UNECE, 'Status of ratification', available at <http://www.unece.org/env/water/status/legal1.html> (visited 15 September 2015).

[37] The figures are from 2013, at current prices and purchase power parity. UNECE, 'Economic Statistics, Statistical Database', available at <http://w3.unece.org/PXWeb/en> (visited 26 October 2015).

[38] The Amendment to the Convention's Articles 25 and 26 was adopted at the third session of the Meeting

when Ukraine as the last Party completes the procedure of depositing its instrument of ratification of the amendments, thereby making it possible for UN member states from other regions of the world to accede to the Convention.[39]

At its sixth session, the Meeting of the Parties gave a blanket approval to all future requests for accession from non-UNECE region countries,[40] therefore making the process of accession by non-UNECE countries the same as for UNECE member states. Future Parties from outside the UNECE region will have the same rights and obligations as Parties from the UNECE region,[41] i.e. they will be able to participate in decision-making in the Meeting of the Parties, to be elected to the Convention's bodies, to lead the activities under the Convention, and to receive assistance for the implementation of the Convention and participation in the Convention's activities.[42]

6 The Convention's achievements in assisting countries and its contribution to water diplomacy

During more than 20 years of work under the UNECE Water Convention, and through the provision of assistance to countries through the UNECE secretariat, rich experience has been accumulated in facilitating transboundary water cooperation. The Water Convention and its institutional framework provide an intergovernmental platform, contributing to water conflict prevention and resolution, both through broader exchange of experience on diverse themes and through tailored assistance in treaty implementation.

The various guidelines and other soft-law instruments, such as model provisions, that have been developed under the Convention transmit substantive experience. This is both because the preparation of these instruments has usually involved expertise from countries of both Western and Eastern Europe, and because in the case of quite a few of them, stock is taken at a later point in time, when some experience has been acquired by the Parties about their practical application. For instance, the Guidelines on monitoring and assessment of transboundary rivers,[43] first issued in 1996, were

of the Parties, Madrid, 26–28 November 2003. See 'Amendment to the Water Convention', UNECE Dec. III/1 (2003).

39 On 7 October 2015, the Ukrainian Parliament passed a law accepting the amendments opening the Convention, thereby lifting the last legal obstacle to countries outside the UNECE region from acceding to the Convention. UNECE, 'Ukraine paves the way for globalising the Water Convention', a press release of 13 October 2015, available at <http://www.unece.org/info/media/presscurrent-press-h/environment/2015/ukraine-paves-the-way-for-globalising-the-water-convention/doc.html> (visited 21 October 2015).

40 'Decisions and vision for the future of the Convention', Report of the Meeting of the Parties on its sixth session, *supra* note 12, Addendum

41 Malgosia Fitzmaurice and Panos Merkouris, 'Scope of the UNECE Water Convention' in Tanzi, et al (eds), *The UNECE Convention*, *supra* note 9, 103–115, at 111–115.

42 UNECE, *The Global Opening of the 1992 Water Convention, supra* note 10.

43 UNECE, 'Guidelines on Water Quality Monitoring and Assessment of Transboundary Rivers', UNECE Doc. ECE/CEP/11 (1996).

revised in 1998–2000[44] – firstly, to incorporate the considerable experience that had been gathered under the Convention during a series of pilot projects implemented in the 1990s; and, secondly, to reflect new strategic and scientific developments.[45] Support regarding the monitoring and assessment of transboundary waters was a major component of many of the early projects and practical on-the-ground assistance established under the Convention. The monitoring and assessment guidelines, as well as the capacity-building related thereto, helped Eastern and Central European countries in improving their monitoring of waters, which was a pre-requisite to meeting the EU requirements.[46]

Upon request, the UNECE secretariat generally assists countries in preparing for accession to the Water Convention and in implementing their obligations under the Convention. As the assistance provided in the Chu and Talas, Dniester and the Drin Basins, for instance, demonstrates, the approach of providing support has been adapted to the specificities of the circumstances, including the relationships between the basin countries. With frameworks for cooperation already in place, the support for the Chu and Talas Basins as well as in the Dniester Basin also included practical efforts, such as joint monitoring and exchange of information. On the Drin Basin, a Memorandum of Understanding (MoU) between individual institutions was negotiated and concluded instead of an intergovernmental agreement, allowing some political bottlenecks to be avoided.[47]

The process of developing the programme of work for activities of the Parties in the Convention's framework provides opportunities for countries to voice their needs, and such opportunities are not limited to the Convention's Parties but are also available to non-Parties within the UNECE.[48] Thematic activities organized as part of implementing the programme of work, such as workshops on adaptation to climate change in transboundary basins, also provide countries with opportunities to exchange views and experiences.

Among the features that characterize the activities under the Convention is the strong participation of non-Parties in the UNECE region and increasingly of countries from other regions of the world. The pan-European assessment on the status of transboundary waters,[49] which was carried out from 2009 to 2011, for instance,

[44] UNECE, 'Guidelines on Monitoring and Assessment of Transboundary Rivers. First review of the 1996 Guidelines on Water-quality Monitoring and Assessment of Transboundary Rivers' (UNECE, 2000), available at <http://www.unece.org/fileadmin/DAM/env/water/publications/documents/guidelinestransrivers2000.pdf> (visited 16 September 2015).

[45] Annukka Lipponen and Lea Kauppi, 'Monitoring and Assessment and the Duty of Cooperation under the Water Convention: Exchange of Information Among the Riparian Parties' in Tanzi, et al (eds), *The UNECE Convention*, *supra* note 9, 251–267, at 266.

[46] *Ibid*.

[47] Bo Libert, 'The UNECE Water Convention and the Development of Transboundary Cooperation in the Chu-Talas, Kura, Drin and Dniester River Basins', 40 *Water International* (2015) 168–182.

[48] *Ibid*.

[49] UNECE, *Second Assessment of Transboundary Rivers, supra* note 3.

involved active participation of several countries sharing waters with the UNECE countries, notably Afghanistan, the Islamic Republic of Iran and Mongolia. In recent years, a number of requests from countries outside the UNECE region to organize awareness-raising workshops have been responded to, among them requests from Jordan, Lebanon and Tunisia.

The work programme themes under the Water Convention have evolved over the years to meet the needs of the Parties and to include a mix of policy work (such as the European Union Water Initiative's National Policy Dialogues[50]) and technical work (such as assistance to improve dam safety in Central Asia) through supporting the development of model technical norms and regulations.

For the time being, activities such as the above-mentioned regional assessments have served to keep the status of transboundary waters in the pan-European region under scrutiny. A reporting mechanism will be presented for consideration by the seventh Meeting of the Parties (Budapest, 17–19 November 2015), which would provide for regular reporting by Parties on their water cooperation to foster implementation of the Convention. Under a number of global and regional conventions, the Parties have an obligation to report on progress in meeting their commitments. For instance, all multilateral environmental agreements (MEAs) of the UNECE, except the Water Convention, use periodic mandatory national reporting. The secretariats of the UNECE MEAs confirm the added value of reporting, with synthesis reports contributing, among others, to the design of the programme of work; the review of compliance and the refinement of guidance; and the targeting of technical assistance; just to mention a few of the associated benefits.[51]

The analysis conducted on the needs for reporting under the Water Convention shows that the introduction of reporting is expected to contribute to strengthening the effectiveness of the Convention and to enhance its implementation through stimulating concrete measures to address gaps in implementation and enhancing cooperation between Parties in specific transboundary waters and basins. The introduction of reporting would complement the compliance mechanism put into place with the establishment of the Implementation Committee. So far, the Parties to the Water Convention have been invited to provide information for specific initiatives, such as the regional assessments of transboundary waters.

Support in preparing for accession to the Convention and in the monitoring and assessment of transboundary waters and the negotiation of agreements are among the more traditional areas of work under the Water Convention. An example of a more recent thematic area that involves conflict potential is adaptation to climate change

[50] For more information, see UNECE, 'National Policy Dialogues on Integrated Water Resources Management', available at <http://www.unece.org/env/water/npd> (visited 16 September 2015).

[51] UNECE Committee on Environmental Policy, 'Multilateral environmental agreements: overview of national implementation', UNECE Doc. ECE/CEP/2014/16 (2014).

in transboundary basins. Building on the guidance on water and climate[52] which has been developed within the framework of the Water Convention, cooperation in the development of adaptation strategies and in their implementation in transboundary basins is being promoted. The work on a programme of pilot projects, by the Task Force on Water and Climate, has led to the formation of an increasingly global platform and a collection of good practices and lessons learned.[53]

7 The landscape of cooperation in the pan-European region and the Water Convention's contribution

An uneven level of transboundary water cooperation is observed across the pan-European region, influenced by, for instance, varying political priorities, finances, institutional capacities or conflicting interests of countries.[54] Drawing upon the more than 150 freshwater agreements inventoried in UNECE's latest regional assessment,[55] the following three categories of agreements can be roughly outlined, based on the timing of their conclusion:

- a third signed by 1991 (most during the 1950s or 1960s);
- a third from the 1990s (in response to the break-up of the Soviet Union and Yugoslavia, with new agreements mostly being modeled on the UNECE Water Convention); and
- a third from the 2000s (many being revisions related to the EU Water Framework Directive,[56] and concluded between UNECE countries that are also EU Member States).

The institutions established to implement transboundary water agreements in the UNECE region are highly diverse, from river basin commissions with a relatively broad mandate involving different sectors to bilateral commissions in charge of agreements on parts of transboundary waters or a specific water use.[57] Due to the requirement of the Convention that riparian Parties should enter into joint arrangements and establish joint bodies relating to their transboundary waters, the Convention has

[52] UNECE, 'Guidance on Water and Adaptation to Climate Change' (UN, 2009), available at <http://www.unece.org/fileadmin/DAM/env/water/publications/documents/Guidance_water_climate.pdf> (visited 26 October 2015).

[53] UNECE and International Network of Basin Organizations, 'Water and Climate Change Adaptation in Transboundary Basins: Lessons Learned and Good Practices' (UN, 2015), available at <http://www.unece.org/fileadmin/DAM/env/water/publications/WAT_Good_practices/ece.mp.wat.45.pdf> (visited 26 October 2015).

[54] UNECE, *Second Assessment of Transboundary Rivers, supra* note 3.

[55] *Ibid*.

[56] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ 2000 L 327/1.

[57] UNECE, *River Basin Commissions and Other Institutions for Transboundary Water Cooperation* (UN, 2009), available at <http://www.unece.org/fileadmin/DAM/env/water/documents/CWC_publication_joint_bodies.pdf> (visited 15 September 2015).

contributed to their establishment. Such bodies play an active role in many activities under the Convention involving exchange of experience.

Among the factors that differentiate the joint bodies are, for example, the scope of application of the respective agreement, competence, functions, powers and organizational structure.[58] Despite the diversity – from multilateral basin-specific commissions with permanent secretariats to institutions of plenipotentiaries – making it challenging to generalize, some features related to organization and activities can be identified that contribute to effective functioning of such bodies. Drawing upon the experience reviewed in the framework of the Convention, these features have been synthesized into the *Draft principles for effective joint bodies for transboundary water cooperation*, proposed for adoption at the seventh session of the Meeting of the Parties.[59]

The Water Convention has contributed to strengthening the legal and institutional basis for transboundary water cooperation in Europe. It served as a model for most of the freshwater agreements developed in the 1990s (in the former Soviet Union, former Yugoslavia, etc.). Examples, to mention just a few, include: the Convention on Cooperation for the Protection and Sustainable Use of the Danube River (1994),[60] the Framework Agreement on the Sava River Basin (2002),[61] and the bilateral treaties between Estonia and the Russian Federation (1997), between the Russian Federation and Kazakhstan (1992), and between Belarus and Ukraine (2001).[62]

The European Union's Water Framework Directive (WFD), another regional legal framework in which IWRM is firmly enshrined, has close links with the Water Convention: the European Union became a Party to the Convention in 1995 and the WFD explicitly states that it must contribute to the implementation of the UNECE Water Convention.[63] The WFD has built on the foundation laid by the UNECE Water Convention, and the Convention has provided a framework for coordinating implementation of the WFD in transboundary basins which include countries that are not EU Member States (such as in the Danube and the Sava river basins). In these basins, there are also various bilateral agreements between the riparian countries which detail the legal framework further, as relevant to each particular case.[64]

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[58] *Ibid.*

[59] UNECE, Draft principles for effective joint bodies for transboundary water cooperation, Meeting of the Parties, seventh session, Budapest, 17–19 November 2015, UNECE Doc. ECE/MP.WAT/2015/6 (2015).

[60] Convention on Cooperation for the Protection and Sustainable Use of the Danube River, Sofia, 29 June 1994, in force 22 October 1998, <http://www.icpdr.org/main/>.

[61] Framework Agreement on the Sava River Basin, Kranjska Gora, 3 December 2002, in force 29 December 2004, <http://www.savacommission.org/dms/docs/dokumenti/documents_publications/basic_documents/fasrb.pdf> (visited 16 September 2015).

[62] UNECE, *Strengthening Water Management and Transboundary Cooperation in Central Asia: the Role of UNECE Environmental Conventions* (UN, 2011), available at <http://www.unece.org/fileadmin/DAM/env/water/publications/documents/Water_Management_En.pdf> (visited 15 September 2015); UNECE, *Second Assessment of Transboundary Rivers*, *supra* note 3.

[63] The WFD refers to the Water Convention in its Recital no. 35.

[64] UNECE, *Second Assessment of Transboundary Rivers*, *supra* note 3.

This illustrates the mutual supportiveness and complementarity of international instruments at multiple levels.

The overall quality of European waters has markedly improved since the early 1990s[65] and the development of environmental legislation and regulation has contributed to this in an important way. The regional instruments, including the Water Convention, which obliges its Parties to limit discharges, have played a role in this development. Gradually, point sources of pollution, notably discharges of municipal wastewaters, have been brought under control, although diffuse pollution by nutrients and agrochemicals continues to pose challenges to the quality of European waters.

8 Discussion and future outlook

The UNECE Water Convention has fostered the development of transboundary agreements, the establishment of joint bodies and cooperation at the political and technical levels for some 20 years. It does not replace basin-level agreements, but provides a basis and a framework for the conclusion of such agreements. It is currently the platform for cooperation and sharing experience for more than 40 Parties. The Convention's institutional structure, scope and focus of work have evolved to respond to changing needs.

The work under the Convention has experienced a gradual shift of emphasis to the east, to the Caucasus and in particular to Central Asia.[66] Now, a shift is occurring beyond the UNECE region. Recent years have also seen increasing participation by countries from other regions in the Convention's meetings and activities. A number of non-UNECE countries have formally expressed interest in acceding to the Convention once this becomes possible.[67] Hence, the opening of the Convention to accession by countries from other regions is expected to gradually shape the work under the Convention.

There are various problems related to the status and availability of water resources, and addressing these problems effectively requires transboundary coordination and cooperation. For instance, the binding targets set in the EU for renewable energy[68] have led to a renewed interest in developing hydropower, and since hydropower developments commonly affect river flow there may be transboundary implications on downstream uses and ecosystems. Where institutional arrangements for transbound-

[65] European Environment Agency (EEA), *European Waters – Assessment of Status and Pressures*, EEA Report No 8/2012 (EEA, 2012), available at <http://www.eea.europa.eu/publications/european-waters-assessment-2012> (visited 15 September 2015).

[66] Lipponen and Kauppi, 'Monitoring and Assessment', *supra* note 45, at 266.

[67] Trombitcaia and Koeppel, 'From a Regional', *supra* note 9.

[68] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources, OJ 2009 L140/16. The Directive lays down lays down legally binding targets; notably, a 20 per cent share of renewable energy in the EU by 2020.

ary cooperation are in place and functioning, there is a better basis for consultation of co-riparian countries and assessment of impacts, reducing potential for conflict. Mitigating impacts of hydrological extremes, flood management in particular, is an area where good cooperation through exchange of monitoring information, early warning arrangements and smart management of infrastructure can greatly reduce the potential damage to all countries sharing the watercourse. At the other extreme, drought situations may put pressure on the water allocation agreed between the riparian countries.[69] To support countries and joint bodies in dealing with challenges related to climate variability and change, good experiences and practices of adaptation to climate change have been collected from all over the world in this thematic area of work under the Water Convention.[70] Another topical area where the Water Convention can provide assistance is in reconciling different water uses and reducing intersectoral frictions in transboundary basins.[71] It is increasingly clear that water administrations need to work closely with other sectors to improve coherence between sectoral policies and to reduce impacts on shared waters.

To move forward and promote the principles of international water law, it will be essential to provide countries with assistance in implementing the Convention, and to strengthen the related capacity. One new means to that end is the Implementation Committee, which was established to render practical, case-tailored assistance to prevent water-related disputes and to support Parties in their efforts to implement the Convention. Overall, rich experience has accumulated in the framework of the Convention, as documented in the guidelines and other soft-law instruments which have been developed thereunder. These are expected to find wider application in the future, supported by increasing dissemination in additional UN official languages.

Many bilateral and multilateral agreements in Eastern Europe, the Caucasus and Central Asia either make no explicit reference to groundwater, or have only a very limited application thereto. The Model Provisions on Transboundary Groundwa-

[69] The Convention on Cooperation for the Protection and Sustainable Use of the Waters of Portuguese-Spanish River Basins (Albufeira, 30 November 1998, in force 17 January 2000) regulates the transboundary waters in the shared basins between Spain and Portugal. It includes the transboundary Tagus, Minho, Duero/Douro, and Guadiana Rivers. This so-called Albufeira agreement was amended to be better able to account for the seasonal variability of flows and for low flows (Protocol of Revision of the Agreement on Cooperation for the Protection and Sustainable Use of the Waters of the Spanish-Portuguese Hydrographic Basins and the Additional Protocol, Madrid and Lisbon, 4 April 2008, in force 5 August 2009). The amendment is discussed from the point of view of climate variability and change in Els Otterman and Sonja Koeppel 'Case study: The UNECE Water Convention and its Program of Adaptation to Climate Change in transboundary Basins' in Juan Carlos Sanchez and Joshua Roberts (eds), *Transboundary Water Governance: Adaptation to Climate Change* (IUCN, 2014), available at <https://portals.iucn.org/library/efiles/documents/IUCN–EPLP–no.075.pdf> (visited 26 October 2015) 159–174, at 172–173.

[70] UNECE, *Water and Climate Change Adaptation in Transboundary Basins: Lessons Learned and Good Practices* (UNECE, 2015), available at <http://www.unece.org/index.php?id=39417> (visited 26 October 2015).

[71] UNECE, *Reconciling resource uses in transboundary basins: assessment of the water–food–energy–ecosystems nexus* (UNECE, 2015), available through <http://www.unece.org/env/water/publications/pub.html>.

ters[72] may provide practical assistance to countries in addressing this gap by providing a model that could be adapted, for instance, to revise the scope of existing agreements or to complement them with a protocol on groundwaters. The Model Provisions build on the 2008 Articles on the Law of Transboundary Aquifers,[73] developed by the United Nations International Law Commission – a development which has drawn attention to the application of international water law to groundwaters and aquifers. Challenges in groundwater cooperation are technical, legal and also institutional, and the work under the Water Convention tries to address all of these aspects. On the technical side, the guidelines on monitoring and assessment of transboundary groundwaters are still relevant despite technical progress in groundwater monitoring and the Model Provisions are a helpful new soft-law instrument for supporting the development of the related legal and institutional basis.

The seventh Meeting of the Parties, to be held in November 2015, will decide on a number of issues that are important for the future of the Water Convention, among them the proposed regular reporting by Parties on transboundary cooperation, as well as the programme of work for 2016–2018. It will also be an important occasion for forging partnerships which will be key for extending the outreach of the Convention and also for mobilizing resources to support countries in the development and regularization of their transboundary cooperation.

The fact that the Sustainable Development Goal on water (Goal 6), adopted by 193 UN Member States in September 2015 as part of the global Sustainable Development Agenda for the period 2015 to 2030,[74] has a target on IWRM (target 6.5) which explicitly mentions transboundary cooperation is a high-level recognition of its importance. Especially if the eventual monitoring of the transboundary cooperation aspect of target 6.5 will be based on the availability of operational agreements, arrangements or institutions for transboundary cooperation in shared basins as proposed by UN-Water,[75] the inter-agency coordination mechanism on water issues, the reporting under the Convention and the regular assessments of transboundary waters can contribute to monitoring progress.

[72] See *supra* note 11.

[73] Articles on The Law of Transboundary Aquifers of the United Nations International Law Commission, adopted by the International Law Commission at its sixtieth session, in 2008, available at <http://legal.un.org/docs/?path=../ilc/texts/instruments/english/draft_articles/8_5_2008.pdf&lang=EF> (visited 26 October 2015).

[74] The Sustainable Development Agenda with 17 global Goals was adopted at the Summit on Sustainable Development on 25 September 2015 in New York. For more information, see 2015 – Time for Global Action for People and Planet, 'Historic New Sustainable Development Agenda Unanimously Adopted by 193 UN Members', available at <http://www.un.org/sustainabledevelopment/blog/2015/09/historic-new-sustainable-development-agenda-unanimously-adopted-by-193-un-members/> (visited 26 October 2015).

[75] UN-Water, 'Metadata on Suggested Indicators for Global Monitoring of the Sustainable Development Goal 6 on Water and Sanitation' (2015), available at <http://www.unwater.org/fileadmin/user_upload/unwater_new/docs/Goal%206_Metadata%20Compilation%20for%20Suggested%20Indicators_UN–Water_v2015–10–20.pdf> (visited 26 October 2015).

The Role of EU Water Directives in Promoting Transboundary Water Cooperation and Water Security through Water Agreements – with a Special Focus on Finland

Tuula Honkonen[1]

1 Introduction

1.1 Transboundary water cooperation

There are approximately 263 transboundary water basins in the world, covering nearly half of the Earth's land surface and accounting for an estimated 60 per cent of global freshwater flow. A total of 145 states have territory within such basins, and 30 countries lie entirely within them.[2] On a European scale, the continent has the largest number of international basins: 68.[3] About 60 per cent of the EU's surface area lies in river basins that cross at least one national border. In addition, all Member States except Cyprus and Malta have territory on at least one established international river basin district (IRBD).[4] With regard to transboundary groundwater,

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[2] UN Water, *Transboundary Waters: Sharing Benefits, Sharing Responsibilities* (UN, 2008), available at <http://www.unwater.org/downloads/UNW_TRANSBOUNDARY.pdf> (visited 5 August 2015) at 1.

[3] UN Water, 'Transboundary Waters', a fact sheet (UN, 2013), available at <http://www.unwater.org/fileadmin/user_upload/unwater_new/docs/transboundary_waters.pdf> (visited 5 August 2015).

[4] 'Joining Forces for Europe's Shared Waters: Coordination in international river basin districts', Water Information System for Europe (WISE) Water Note 1 (European Commission, 2008), available at

there are 592 identified transboundary aquifers in the world, underlying almost every nation.[5] Within Europe, there are 92 transboundary aquifers and 226 identified groundwater bodies.[6]

Numerous transboundary water agreements have been established in order to govern transboundary rivers and lakes and foster cooperation among riparian states. These agreements lay down common principles and rules for the protection and use of transboundary waters. They cover a wide spectrum of issues, ranging from rules for energy production and irrigation to navigation and fishing. In addition to regulating the services which are provided by shared waters, bilateral and multilateral transboundary water agreements often regulate the fundamental elements of the water resource itself: its quantity and quality; and the associated ecosystems. Under these agreements, it is common for riparian states to establish joint bodies to promote coordination and cooperation in the management of shared water resources.

1.2 Transboundary water regulation within the EU

Transboundary water management in Europe is affected not only by legislation of national origin and agreements among riparian countries, but also regulations adopted under the European Union (EU). The EU Water Framework Directive (WFD),[7] which came into force in 2000, established an overarching legal framework to protect and restore the aquatic environment across Europe and to ensure long-term sustainable use of freshwater resources. The Directive established a new integrated approach to the protection, improvement and sustainable use of freshwater resources in Europe.

The WFD was introduced partly 'to contribute to the implementation of Community obligations under international conventions on water protection and management, notably the United Nations Convention on the Protection and Use of Transboundary Watercourses and International Lakes … and any succeeding agreements on its application'.[8, 9] The Convention was negotiated under the UN Economic Commission for Europe (UNECE) and it used only to be open to states belonging to UNECE, until in 2013 treaty amendments were ratified to open the Convention for all interested UN member states to join.

<http://ec.europa.eu/environment/water/participation/pdf/waternotes/water_note1_joining_forces.pdf> (visited 5 August 2015) at 1.

5 International Groundwater Resources Assessment Centre (IGRAC), 'Transboundary Aquifers of the World', Special edition for the 7th World Water Forum 2015, available at <http://www.un-igrac.org/download/file/fid/179> (visited 18 September 2015).

6 *Ibid*.

7 Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ 2000 L 327/1.

8 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Helsinki 17 March 1992, in force 6 October 1996, 31 *International Legal Materials* (1992) 1312.

9 Explanatory note 35 of the Directive.

The UNECE Convention aims at preventing, reducing and controlling pollution in transboundary waters (specifically, obligations under Articles 2 and 4) and promoting cooperation in their sustainable management. States are to create specific agreements and establish joint bodies for this purpose. According to Article 9, the riparian Parties shall cooperate on the basis of equality and reciprocity, in particular through bilateral and multilateral agreements (adapting existing ones or creating totally new ones), in order to develop, *inter alia*, harmonized policies and programmes. The agreements should define the mutual relations and conduct of states *vis-à-vis* the prevention, control and reduction of transboundary impact (Article 9). Cooperation among Parties or riparian states is also needed in research and development (Articles 5 and 12); exchange of information (Articles 7 and 13); consultations (Article 10); joint monitoring and assessment (Article 11); warning and alarm systems (Article 14); and in mutual assistance (Article 15). The actual management of the transboundary waters under bilateral or multilateral agreements is to be done by new bodies, which are to be created. The Convention describes a long list of tasks for these bodies (Article 9): for instance, to collect, compile and evaluate data in order to identify pollution sources likely to cause transboundary impact; and to elaborate joint monitoring programmes concerning water quality and quantity. Recently, 'Principles for effective joint bodies' have been under preparation under the UNECE Water Convention.[10]

A river basin approach, the central feature of the Water Framework Directive, is also implicit in the substantive rules and principles of the 1997 UN Convention on the Law of Non-Navigational Uses of International Watercourses (UNWC).[11] The 1997 Convention has always been global in scope, but a slow rate of ratifications hampered it from becoming effective; the Convention finally entered into force in August 2014.

The UNWC is a framework that establishes basic rules and standards for cooperation between states that share a watercourse. These rules regulate the use, management and protection of international watercourses. The UNWC does not obligate Parties to create agreements for the management of international watercourses; it merely states that Parties 'may, where necessary, consider harmonizing such agreements with

[10] The aim of the project is to identify certain principles of organization and activities that increase the efficiency of joint bodies for transboundary water management and contribute to reaching a mature level of cooperation between the riparian states. The draft principles are being circulated to the parties and partners of the Water Convention for comments, and it is expected that the Meeting of the Parties will adopt them in November 2015. See Principles for effective joint bodies, draft, Second Workshop 'River Basin Commissions and Other Joint Bodies for Transboundary Water Cooperation: Technical Aspects' (2014), available at <http://www.unece.org/fileadmin/DAM/env/documents/2014/WAT/04April_9-10_Geneva/Principles_jointBodies_final.docx> (visited 18 September 2015).

[11] Convention on the Law of Non-Navigational Uses of International Watercourses, New York, 21 May 1997, in force 17 August 2014, 36 *International Legal Materials* (1997) 713. See also Alistair S. Rieu-Clarke and Patricia Wouters, *The Role and Relevance of the UN Convention on the Law of the Non-navigational Uses of International Watercourses to the EU and Its Member States* (Univ. of Dundee Centre for Water, Policy and Science, 2008), available at <http://www.internationalwaterlaw.org/bibliography/WWF/RA_European_Union.pdf> (visited 8 October 2014) at 11.

the basic principles of the present Convention' (Article 3(2)), or may enter into new agreements to implement the Convention (Article 3(3)).

The UNWC includes several principles relevant to the management of an international watercourse: equitable and reasonable utilization and participation (Article 5); the obligation not to cause significant harm (Article 7); and a general obligation to cooperate (Article 8). Article 10 specifically states that '[i]n the absence of agreement or custom to the contrary, no use of an international watercourse enjoys inherent priority over other uses' and that '[i]n the event of a conflict between uses of an international watercourse, it shall be resolved with reference to articles 5 to 7, with special regard being given to the requirements of vital human needs'. Cooperation among state Parties is promoted through regular exchange of data and information (Article 9); exchange of information and consultation on the possible effects of planned measures on the condition of an international watercourse (Article 11) and a notification obligation regarding planned measures with possible adverse effects (Articles 12–19). The obligations of environmental protection are divided into protection and preservation of ecosystems (Article 20); prevention, reduction and control of pollution (Article 21); introduction of alien or new species (Article 22); and protection and preservation of the marine environment (Article 23).

These two international treaties on transboundary waters reflect, to some extent, customary norms in the area (for instance, regarding the UNWC, Article 5 on equitable and reasonable utilization; and Article 9 on prior notification). Generally, the coordination of the implementation of the EU freshwater directives takes place within the framework of these conventions.[12]

The Water Framework Directive is by far the most important piece of Community legislation regulating freshwater resources in Europe. In addition to the WFD, the EU Floods Directive,[13] adopted in 2007, is a significant legal instrument within this context. It established a legal framework for the assessment and management of flood risks across the EU Member States. The Directive aims at reducing the adverse consequences of floods to human health, the environment, cultural heritage and economic activity. Similarly to the WFD, the Floods Directive has adopted a river basin approach as the basis for regulation.

Of the broad selection of EU water-related legislation, the 2006 Groundwater Directive[14] could be picked up as the third particularly significant instrument regulating freshwater resources, also in a transboundary context, in Europe. The Directive

[12] Marleen van Rijswick, Herman Kasper Gilissen and Jasper van Kempen, 'The Need for International and Regional Transboundary Cooperation in European River Basin Management as a Result of New Approaches in EC Water Law', 11 *ERA Forum* (2010) 129–157 at 140–141 and 142.

[13] Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks, OJ 2007 L288.

[14] Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration, OJ 2006 L372.

is focused on preventing pollution of the groundwater by setting quality standards and introducing measures to prevent or limit pollutants getting into groundwater. The Groundwater Directive complements the Water Framework Directive and for its part contributes to the achievement of the environmental objectives of the WFD.

It is notable that these three Directives – the WFD, the Floods Directive and the Groundwater Directive – lay down significant obligations concerning transboundary water management. These will be discussed in greater detail in subsequent sections of this paper.

1.3 Water security and its promotion through transboundary water agreements

The notion of water security is a relatively recent phenomenon,[15] and is attracting increasing attention amongst academics, politicians and decision-makers. Furthermore, it is important to recognize that the concept of water security goes beyond the sphere of the (nowadays quite popular) environmental security discourse, since freshwater is essential for many purposes other than merely ecosystem-related services – for instance, power generation, irrigation, flood control, transportation and recreation, to name but a few.[16]

There exist many definitions or framings for the concept of water security.[17] Briefly stated, Cook and Bakker have distinguished four dimensions for the concept: water availability; human vulnerability to hazards; human needs (with an emphasis on food security); and sustainability.[18] According to Lautze and Manthrithilake, water security consists of the availability of water for basic human needs; availability of water for productive activities (such as agriculture); environmental protection; prevention of water-related disasters (risk-management); and of risks of water for national security.[19] Along the same lines, Grey and Sadoff have defined water security as focused on 'the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies'.[20] Finally, the United Nations has

[15] See, for instance, Patricia Wouters, Sergei Vinogradov, and Bjørn-Oliver Magsig, 'Water Security, Hydrosolidarity, and International Law: A River Runs Through It …', 19 *Yearbook of International Environmental Law* (2008) 97–134 at 102.

[16] Bjørn-Oliver Magsig, 'Introducing an Analytical Framework for Water Security: A Platform for the Refinement of International Water Law, 20 *Water Law* (2010) 61–69 at 64–65. See also, for instance, Jutta Brunneè and Stephen J. Toope, 'Environmental Security and Freshwater Resources: Ecosystem Regime Building', 91 *American Journal of International Law* (1997) 26–59.

[17] Christina Cook and Karen Bakker, 'Water Security: Debating an Emerging Paradigm', 22 *Global Environmental Change* (2012) 94–102; Jonathan Lautze and Herath Manthrithilake, 'Water Security: Old Concepts, New Package, What Value?', 36 *Natural Resources Forum* (2012) 76–87; and Wouters et al, 'Water Security, Hydrosolidarity', *supra* note 15.

[18] See, for instance, Cook and Bakker, 'Water Security', *supra* note 17, at 97–98.

[19] Lautze and Manthrithilake, 'Water Security', *supra* note 17, at 77.

[20] David Grey and Claudia W. Sadoff, 'Sink or Swim? Water Security for Growth and Development', 9 *Water Policy* (2007) 545–571 at 548.

formulated water security as 'the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being …, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability'.[21] Common to these definitions is the emphasis on the availability of water, (people's) access to water for different essential purposes, and the existence of risks related to water and conflicts over water use.[22] Nevertheless, the precise scope and content of the notion of water security remain broad or somewhat elusive.

How, then, could water security be promoted, maintained or improved? At the international level, good relations between states sharing a freshwater basin (even the existence of so-called hydro-solidarity)[23] most often lead to effective joint management of the shared resource, which is then apt to contribute to the realization of water security within and among the riparian states. Good water governance at all levels is essential for water security at all levels. It has been argued that a broad concept of water security and good water governance may be symbiotic, each facilitating the other: water security sets goals, general or more specific, for good water governance, and good water governance is necessary to move towards water security at an operational level.[24] In encouraging and guiding this kind of cooperation and coordination, international, regional and bilateral treaties and other regulatory instruments often play a key role.

In general, using treaties to govern the relations between states sharing freshwater resources contributes to water security in a variety of ways. Perhaps the main function of treaties is that they stabilize state relations, providing them with certainty and predictability and 'forcing' riparian states to engage in dialogue and to be interested in the development of cooperation.

Transboundary water agreements allow states to define rules to govern all aspects of their relations involving freshwater resources: from allocation of water and sharing of benefits to the control of pollution, the construction of works and navigation.[25] In addition, it is important that many agreements have provisions on monitoring

[21] UN Water, *Transboundary Waters*, *supra* note 2, at 1.

[22] Similarly, see Wouters et al, 'Water Security, Hydrosolidarity', *supra* note 15, at 106.

[23] The term refers to the state of harmony of interests and responsibilities among riparian states and is manifested in effective joint management of a shared freshwater basin. See Wouters et al, 'Water Security, Hydrosolidarity', *supra* note 15, at 132. On hydrosolidarity, see, for instance, Malin Falkenmark et al, 'Hydrosolidarity through Catchment Based Balancing of Human Security and Ecological Security', contribution to the Virtual World Water Forum, Kyoto (2003); Andrea K. Gerlak, Robert G. Varady and Arin C. Haverland, 'Hydrosolidarity and International Water Governance', 14 *International Negotiation* (2009) 311–328; and more recently Cameron Harrington, 'Toward a Critical Water Security: Hydrosolidarity and Emancipation', 21 *Canadian Foreign Policy Journal* (2015) 28–44.

[24] Cook and Bakker, 'Water Security', *supra* note 17, at 100.

[25] Stephen C. McCaffrey, 'The Need for Flexibility in Freshwater Treaty Regimes', 27 *Natural Resources Forum* (2003) 156–162 at 157.

and data-sharing as well as on measures to be taken in the case of exceptional circumstances actualizing within the shared basin. These effectively contribute towards reducing tensions and (potentially) preventing conflicts between Parties. Furthermore, water security is promoted when the measures and plans taken under the transboundary regime are consistent and directly linked with the national strategies and action programs of the riparian states. This is precisely what the EU Water Framework Directive requires from Member States.

Concrete mechanisms through which transboundary water agreements promote water security include, *inter alia*, notification requirements whereby Parties are obliged to notify each other on projects and plans that may have an effect on the basin. Parties may then consult each other and negotiate a solution that is the least harmful to the other riparian(s). Another common requirement that is intended to reduce concrete water security risks is dispute settlement within the framework and mechanisms provided by the agreement. A conflict or dispute may arise if a Party perceives that the shared basin is not governed according to its interests due to, for instance, the pollution of water or unequal allocation of the water resources. It is also possible that there is a risk of a greater (water) security threat emerging within the ambit of the treaty arrangement, for instance in the form of a direct conflict over the allocation or use of scarce water resources.

Of the different aspects of water security, transboundary water treaties primarily address the need to prepare for water-related risks and to secure sustainable use of freshwater resources. In contrast, the human right dimension of water security is not usually directly addressed through water agreements among riparian states; and is instead accounted for in other regulations, be they national or international. In the same vein, transboundary water agreements often regulate the quantity rather than quality of the water. This enables the agreements to apply concrete mechanisms to share the waters among Parties and to determine between different, often competing, uses of the water resources. However, it is notable that the EU Water Framework Directive, which sets the framework for many transboundary freshwater agreements among the Member States, also sets a qualitative objective for the water: to achieve a 'good ecological status' for all surface water by 2015.[26]

The main benefits of transboundary water agreements from the viewpoint of water security is that they address shared water management and development issues and may directly prescribe how to address issues and situations that are likely to cause conflicts; or, alternatively, encourage or allow Parties to enter negotiations aimed at addressing such issues and situations. A key requirement for the agreements is flexibility, which allows the agreements to react to changes and situations that were not foreseen at the time of their adoption.

[26] Art. 4(1)(a)(ii) of the WFD.

1.4 Structure of the paper

This paper deals with transboundary freshwater regulation and agreements, water security and the role of the EU water directives in promoting these. The paper is structured as follows: After the introduction, section 2 presents an overview of the implications of the relevant EU directives on transboundary water cooperation involving EU Member States. Section 3 deals with a number of implementation issues and challenges in this respect. Section 4 provides a case study of the transboundary water agreements between Finland and its neighboring countries, with a focus on implementing the EU water directives in the cooperation established between these countries. The paper ends with a concluding section, in which the findings are summed up and a future outlook is provided concerning the issues on which the paper has focused.

2 The EU water directives' implications for transboundary water cooperation

The Water Framework Directive aims at reaching a 'good status' of surface water across the Member States. This has to be achieved through establishing river basin districts (RBDs) for freshwater basins and by producing relevant action plans and river basin management plans for each basin district within the territories of the Member States.[27] In order to achieve the objectives established under Article 4 of the WFD, the Member States are also obliged to draw up a programme of measures for each RBD within their territory.[28]

The Directive contains regulations on, *inter alia*, the contents of river basin management plans and on public information and consultation with regard to the formulation, review and revision of these plans. Most importantly within the present setting, the WFD also obliges Member States to establish specific river basin districts in a transboundary waters context and to draw up the relevant action plans and river basin management plans.[29]

Furthermore, according to the Directive, where a river basin extends outside the European Community (EC), the relevant Member State must endeavour to establish the appropriate cooperation with the relevant non-Member State with the aim of achieving the objectives of the Directive throughout the river basin district.[30] In such instances, the Member States shall endeavour to produce a single coordinated river basin management plan. If that is not possible, the plan should at least cover the part of the international river basin district lying within the territory of the Mem-

[27] Art. 5.
[28] Art 11.
[29] Art. 3(3).
[30] Art. 3(5).

ber State concerned and cover the measures needed to achieve the objectives of the WFD and the Floods Directive.[31]

Where a river basin lies solely within the territory of one Member State, that state must assign a 'competent authority', responsible for the application of the EU water legislation in the area of the entire river basin.[32] In the case of a transboundary river basin, there is no obligation to assign a competent authority, but states have to coordinate the application of the relevant EU legislation across the watershed with other co-basin Member States. This means that the Member States shall together ensure that the requirements of the WFD for the achievement of the environmental objectives, and in particular all programmes of measures, are coordinated for the whole of the international river basin district. To that end, Member States may use existing cooperation arrangements,[33] stemming from international agreements, for instance. Where a river basin district extends beyond the borders of the EC, there is no obligation to adopt a river basin approach; coordination with non-Member States is simply encouraged.[34] The Water Framework Directive does not oblige Member States to establish joint governance bodies to coordinate the management of transboundary waters. Generally, Member State cooperation in the implementation of the WFD has taken place either between state actors or between regional authorities.[35]

Among the ca. 110 river basin districts established across the EU, 40 are international river basin districts. The international river basin districts cover more than 60 per cent of the territory of the EU. This has been said to make international coordination one of the most significant issues and challenges for the WFD's implementation.[36]

The aims of the EU Floods Directive have to be achieved by the Member States in three successive steps: first, by undertaking preliminary flood risk assessments; second, by preparing flood hazard maps and flood risk maps; and third, by establishing flood risk management plans in those areas for which potential significant flood risk has been assessed.[37] Implementation shall be carried out in coordination with the Water Framework Directive, by coordinating flood risk management plans and river basin management plans, and by coordinating the public participation procedures in the preparation of these plans.[38] Furthermore, Member States shall coor-

[31] Art. 13(3) of the WFD and Art. 12 of the Floods Directive.
[32] Art. 3(2) of the WFD.
[33] Art. 3(4).
[34] Art. 3(5). This could take place under the 1992 UNECE Convention.
[35] See, generally, Rijswick et al, 'The Need for International', *supra* note 12.
[36] International Network of Basin Organizations (INBO), 'WFD contributions to water management in transboundary river basins: progress report and needs identified by the basin organizations' (2008), available at <http://www.inbo–news.org/IMG/pdf/20081120_INBO_report.pdf> (visited 6 August 2015) at 3. A map of national and international river basin districts (2012) is available at <http://ec.europa.eu/environment/water/water-framework/facts_figures/pdf/River%20Basin%20Districts-2012.pdf> (visited 18 September 2015).
[37] Arts 4, 6 and 7.
[38] Art. 9 of the Floods Directive.

dinate their flood risk management practices in shared river basins, including with non-Member States, and shall in solidarity not undertake measures that would increase the flood risk in neighboring countries.[39] In addition, competent authorities are required to engage in information exchange and/or coordination in transboundary river basin districts.[40]

The EU Groundwater Directive lays down criteria for assessing groundwater chemical status. This provision has transboundary elements: it is provided that 'threshold values can be established at the national level, at the level of the river basin district or the part of the international river basin district falling within the territory of a Member State, or at the level of a body or a group of bodies of groundwater'.[41] Furthermore, the Member States are to 'ensure that, for bodies of groundwater shared by two or more Member States and for bodies of groundwater within which groundwater flows across a Member State's boundary, the establishment of threshold values is subject to coordination between the Member States concerned, in accordance with Article 3(4) of Directive 2000/60/EC [the Water Framework Directive]'.[42] Finally, where a body or a group of bodies of groundwater extends beyond the territory of the Community, 'the Member State(s) concerned shall endeavour to establish threshold values in coordination with the non-Member State(s) concerned, in accordance with Article 3(5) of Directive 2000/60/EC'.[43] The Directive further prescribes the procedure for assessing the chemical status of groundwater and for the publication of the summary of the assessment established at the level of the river basin district or the part of the international river basin district falling within the territory of a Member State (Article 4).

3 Some implementation issues

3.1 Introduction

The management of a shared freshwater basin is seldom a straightforward job for the riparian states. When a number of relevant international and regional regulatory instruments are added to the picture, the management challenge grows in complexity. EU water-related directives have acknowledged implications, deriving from the number of international and regional instruments that are applicable in this region, on the transboundary water cooperation involving EU Member States (see the preceding section of this paper). Below, two specific implementation challenges receive closer scrutiny. These are also both issues that bear some relevance beyond the immediate context of transboundary water management.

[39] Arts 4(3), 5(2), 7(4) and 8.
[40] Recital 15 and Arts 4.3, 5.2, 6.2 and 8 of the Floods Directive.
[41] Art. 3(2).
[42] Art. 3(3).
[43] Art. 3(4).

3.2 The problem of shared responsibilities

The much appraised river basin approach adopted in the EU water directives has also been identified as producing potential implementation problems where it leads to shared responsibilities between Member States in one transboundary river basin. The obligations of the EU water directives are directed at the Member States individually and so the EC water law does not contain any provisions to hold Member States collectively responsible for achieving the required results of the regulation in an international river basin district.[44] Moreover, the EC water law does not provide for exemptions if the results are not achieved by a Member State because of certain acts or omissions by another (Member) State.[45] It has been established that absence of cooperation (or poor cooperation) with/by other Member States is not an acceptable reason for an individual Member State not to meet its obligations.[46] In line with this, the WFD, the Floods Directive and the Groundwater Directive do not contain any exemptions for Member States that do not achieve the prescribed results due to unsuccessful cooperation.[47] However, the Member State in this situation, having suffered damage, may naturally institute proceedings for non-compliance before the European Court of Justice against the Member State that fails to comply with its obligations under the WFD or the Floods Directive.[48] This situation as a whole has been argued to lead to the conclusion that EC water law today does not itself provide for a satisfactory solution to one of the major problems in European water management: transboundary pollution and the transboundary effects of flood risk management.[49]

It is to be noted that insofar as the obligations contained in the EU water directives are directly implementing the commitments of the UNECE Water Convention, to which most EU Member States are Parties, the work of the Implementation Committee under the Convention becomes relevant in assuring compliance with the ob-

[44] See Rijswick et al, 'The Need for International', *supra* note 12, at 130–131.

[45] *Ibid*. at 131. Consequently, a policy guidance document adopted within the EU has recognized the need to coordinate exemptions in international river basin districts within the Union. It has been stated that exemptions can be applied in cases where a certain Member State cannot resolve the reasons for not achieving the environmental objectives of the Water Framework Directive because they lay outside the competence and jurisdiction of the Member State. In these cases, a country causing the problem should be obliged to provide sufficient information for justification of the application of exemptions for the affected Member State. The WFD also includes the provision of Article 12 on the involvement of the Commission to solve the issue. See Common Implementation Strategy for the Water Framework Directive (2000/60/EC). Guidance Document No. 20 'Guidance Document on Exemptions to the Environmental Objectives' (2009), available at <http://ec.europa.eu/environment/water/water-framework/objectives/pdf/Guidance_document_20.pdf> (visited 6 August 2015) at 15.

[46] See Rijswick et al, 'The Need for International', *supra* note 12, at 137; and Case C–58/89 Commission/Germany (1989) ECR I–2849.

[47] Rijswick et al, 'The Need for International', *supra* note 12, at 137; and Andrea M. Keessen, Jasper J. H. van Kempen and Helena F. M. W. van Rijswick, 'Transboundary River Basin Management in Europe. Legal Instruments to Comply with European Water Management Obligations in Case of Transboundary Water Pollution and Floods', 4 *Utrech Law Review* (2008) 35–56 at 46. On exemptions within this context, see *ibid*. at 41–42.

[48] *Ibid*. at 46.

[49] Rijswick et al, 'The Need for International', *supra* note 12, at 131.

ligations. The Committee has the aim to facilitate, promote and safeguard the implementation and application of and compliance with the Convention.[50] A Party may bring a submission before the Implementation Committee concluding that, despite its best endeavors, it is or will be unable to comply fully with the Convention. Within this context, the Party may express that it may have been or may be affected by another Party's difficulties in implementing and/or complying with the Convention. In this case, the submitting Party should, before so doing, inform the Party whose implementation and/or compliance is in question.[51] It is to be noted that the compliance procedures may also involve non-Parties to the Convention subject to their consent.[52] Among the facilitative measures that the Committee may take in response to a Party's submission regarding alleged non-compliance with the Convention is the provision of advice and assistance regarding not only states' domestic regulatory regimes but also concerning transboundary water cooperation agreements.[53]

In light of the above conclusions regarding the implementation of the EU water directives, it becomes clear that the relationship between shared responsibilities and individual obligations, as imposed by the water directives in the context of international river basin districts, requires more effective transboundary cooperation among the Member States sharing a basin. This arguably concerns the whole process of implementing the water directives, including goal-setting, the use of exemptions, planning, and the taking of practical measures.[54] Increased cooperation between Member States within this context becomes all the more important given that, despite the WFD containing a general obligation for Member States to cooperate,[55] the EU water directives do not prescribe any concrete instruments to shape this cooperation.[56] It is, therefore, up to the Member States themselves to establish and maintain the cooperation.[57] Some assistance in this task is provided by the EU WFD Common Implementation Strategy.[58] In the preparation of this Strategy, it was recognized that, in the context of shared river basins, 'a common understanding and approach is crucial to successful and effective implementation [of the requirements of the WFD]'.[59] The Common Implementation Strategy is envisioned to potentially 'limit the risks of bad application of the Directive and subsequent dispute'.[60] In addition, the UNECE Water Convention contains a general obligation for Parties to prevent, control and reduce any transboundary impacts.[61] This is the basis for the relatively detailed

[50] 'Support to implementation and compliance', UNECE Water Convention Dec. VI/ 1 (2012) para. 1.
[51] *Ibid.* paras 24–25.
[52] *Ibid.* para. 20.
[53] *Ibid.* para. 41(a).
[54] Rijswick et al, 'The Need for International', *supra* note 12, at 136.
[55] Art. 3(4).
[56] See Rijswick et al, 'The Need for International', *supra* note 12, at 131.
[57] *Ibid*. See also INBO, 'WFD contributions to water', *supra* note 36, at 3.
[58] Common Implementation Strategy for the Water Framework Directive (2000/60/EC). Strategic document as agreed by the directors under Swedish presidency (2001), available at <http://ec.europa.eu/environment/water/water-framework/objectives/pdf/strategy.pdf> (visited 7 August 2015).
[59] *Ibid*. at 2.
[60] *Ibid*.
[61] Art. 2.

obligations of the Convention that are to shape the cooperation on transboundary freshwaters between Parties.

To date, implementation of the Water Framework Directive has shown that real cooperation in transboundary basins is best facilitated when there are already established legal and institutional frameworks for transboundary cooperation, such as agreements and commissions.[62] This is understandable, since existing transboundary river basin management frameworks usually have effective mechanisms and established methods of cooperation in place that can be modified with relative ease to be compatible with the requirements of the EU water law.

3.3 Cooperation with non-Member States

There are a number of transboundary water basins and established international river basin districts in Europe which involve both EU Member States and non-EU riparian states. According to the Water Framework Directive, there is no legal obligation for the Member States to coordinate with non-EU countries in the management of the shared basin. However, coordination is encouraged and Member States 'shall endeavour' to produce a single coordinated river basin management plan for the shared basin. In the same vein, there is no legal obligation for Member States to establish a joint management regime with an appropriate institutional framework with the non-EU riparian(s).

In practice, most river basins that are shared between EU Member States and non-Members have been designated as international river basin districts according to the WFD, and remarkable coordination in the management of the transboundary waters is taking place among the states involved. Joint implementation of the WFD with non-EU countries has been considered as a major issue of concern for EU Member States.[63] It is indeed important to engage non-Member States, since their contribution and active involvement in sustainable management practices is often significant, if not crucial, for achieving the objectives of EU water law; most importantly for reaching and maintaining the good status of the waters in a transboundary context.

The level of cooperation varies from flexible cooperation projects involving all riparians to coordination programs and participation in the work of established transboundary water institutions.

Funding from the EU often plays an important role in fostering cooperation and building capacity in non-EU Member States within the context of transboundary water management.

[62] INBO, 'WFD contributions to water', *supra* note 36, at 3. It has been studied that 158 of the world's 263 international river basins lack any type of cooperative management framework. UN Water, *Transboundary Waters*, *supra* note 2, at 6.

[63] INBO, 'WFD contributions to water', *supra* note 36, at 21.

An example of a transboundary river that is shared by EU Member States and non-Members and that has a sophisticated management regime is the Rhine. An international convention to govern the river was first established in as early as 1804;[64] and new Conventions and Protocols have subsequently been added, the latest being the Convention on the Protection of the Rhine, which entered into force in 2003.[65] The Rhine Convention has been ratified by Germany, France, Luxembourg and the Netherlands (EU Member States), Switzerland (a non-Member State) and the European Community. The joint management body established under the Convention is the International Commission for the Protection of the Rhine (ICPR).[66]

The Rhine has been designated as an international river basin district under the EU Water Framework Directive. Consequently, a coordinated management plan, as required by the WFD, has been created by the riparian states.[67] The Rhine Coordination Committee,[68] working under the ICPR, has as one of its aims to coordinate and harmonize the implementation of the Water Framework Directive among the Parties to the Rhine Convention. The need for the Committee arose because it was seen that the Rhine Convention and the ICPR are not suitable for the task as a non-Member State and the European Community are also Parties to the Convention on the one hand,[69] and as some EU Member States that are lying in the Rhine catchment area are not Contracting Parties to the ICPR, on the other hand.

In spite of the separate Coordination Committee being responsible for coordinating the implementation of the WFD in the area of application of the Rhine Convention, some have seen the Directive rather as an impediment than as a contributor to the development of further measures by the ICPR. In the background, there is the perceived tendency of Member States to focus more on the implementation of the WFD in their own territory rather than investing in the ICPR to take active measures in transboundary issues.[70] Nevertheless, it could be that the focus will shift back to transboundary questions when pressures in that direction become more intense, for instance due to increased transboundary pollution problems and/or if there is found to be inadequate compliance with the objectives of the WFD.

Another good example within this context is the Danube River. Altogether, this river flows through the territories of 19 states, which makes it the world's most inter-

[64] Convention Respecting the Navigation of Rhine between the Empire and France, Paris, 15 August 1804, 57 *Consolidated Treaty Series* 465.

[65] Convention on the Protection of the Rhine, Bern, 12 April 1999, in force 1 January 2003, available at <http://www.iksr.org/fileadmin/user_upload/Dokumente_en/convention_on_tthe_protection_of__the_rhine.pdf> (visited 11 August 2015).

[66] See <http://www.iksr.org/en/index.html>.

[67] For more information, see ICPR, 'Management Plan 2009', available at <http://www.iksr.org/index.php?id=171&L=3> (visited 11 August 2015).

[68] See <http://www.iksr.org/en/international-cooperation/about-us/organisation/coordinating-committee-cc/index.html> (visited 25 September 2015).

[69] Rijswick et al, 'The Need for International', *supra* note 12, at 143.

[70] Keessen et al, 'Transboundary River Basin Management', *supra* note 47, at 38.

national river basin. The Convention on Co-operation for the Protection and Sustainable Use of the River Danube, or the Danube River Protection Convention (DRPC),[71] entered into force in 1998 and has 15 Contracting Parties.[72] It is notable that not all Parties are EU Member States (i.e. Bosnia-Herzegovina, Croatia, Moldova, Montenegro, Serbia and Ukraine). In addition to the general Danube River Protection Convention, numerous bilateral treaties exist between states in the Danube river basin district. There treaties are usually of older origin than the EU WFD and so they do not directly fulfill the requirement of the Directive that agreements should be 'established in order to ensure coordination' in the implementation of the WFD.[73] However, they are generally used as the platform for coordination needed to fulfil the requirements of the WFD.[74]

The River Basin Management Expert Group (RBM EG)[75] was created under the Danube management regime to prepare and coordinate the necessary actions for the implementation of the EU Water Framework Directive. The Expert Group developed a strategy on how to coordinate the actions of the riparian countries, how to develop a coordinated river basin management plan, and how to report to the European Commission on the actions taken. This strategy was accepted in 2002.[76] The members of the DRPC report regularly to the Danube Commission on the progress of their implementation of the EU WFD, and these national reports serve as a means for exchanging information between the riparian states and for streamlining implementation activities at the national level.[77] The Danube River Basin Management Plan was created in 2009, in part to comply with the requirements for international river basin districts set out in the WFD.[78]

[71] Convention on Co-operation for the Protection and Sustainable Use of the River Danube, Sofia, 29 June 1994, in force 22 October 1998, <http://www.icpdr.org/main/sites/default/files/DRPC%20English%20ver.pdf> (visited 11 August 2015).

[72] The membership of the Convention has been restricted, and is open only to those states that have territories of more than 2000 km² within the Danube Basin.

[73] Annex I of the WFD.

[74] ICPDR, 'Danube River Basin District Part A – Roof report Information required according to Art. 3 (8) and Annex I of the EU Water Framework Directive' (2004), available at <http://www.icpdr.org/main/sites/default/files/Roof%20report%202003%20-%20Main%20document_FINAL.pdf> (visited 11 August 2015) at 16.

[75] See <http://www.icpdr.org/main/icpdr/river-basin-management-expert-group>.

[76] Ursula Schmedtje, 'Development of the Danube River Basin District Management Plan – Strategy for coordination in a large international river basin', draft (2005), available at <http://projects.inweh.unu.edu/inweh/inweh/content/342/Proj%20website/Strategic_Paper_for_River_Basin_Management_Plan_-_draft_9s.html> (visited 11 August 2015).

[77] ICPDR, 'Danube River Basin District', *supra* note 74.

[78] See ICPDR, 'Danube River Basin Management Plan (2009)', available at <http://www.icpdr.org/main/activities-projects/danube-river-basin-management-plan-2009> (visited 11 August 2015).

4 The case of Finland

4.1 Introduction

Finland is located in Scandinavia, Northern Europe. The northern part of the country, Lapland, is bordered with Sweden in the west, with Norway in the north (for the full length of the northern border) and with Russia in the east. Below Lapland, Finland shares the whole of its eastern border with Russia. The length of the border that goes through water areas is 617 km with Sweden, 715 km with Norway, and 370 km with Russia.[79] With Sweden, a river forms part of the state boundary.

To manage these large areas of shared fresh water (most importantly, rivers and lakes), Finland has established bilateral transboundary waters agreements with its neighbouring countries. The joint bodies under all three agreements are particularly concerned with the quality of the waters and factors influencing such quality, and with exchange of information in the field.[80]

On the basis of the EU Water Framework Directive, Finland has two international river basin districts: the Torne River and Muonio River basin with Sweden, and the Tana, Neiden, Munkelva and Paats River (which all flow into the Arctic Sea) basin with Norway. Finland's third international river basin is shared with Russia; it essentially remains outside the scope of the Directive since Russia is not a member of the European Union.

4.2 Cooperation with Sweden

Cooperation between Finland and Sweden regarding transboundary rivers was first formalized by a Border River Agreement in 1971.[81] The Agreement was quite a unique boundary water agreement in that it replaced the national legislation that applied within its thematic scope both in Finland and Sweden. This resulted in strong powers (for instance, permit authority) being vested in the Border River Commission established by the Agreement.

Towards the turn of the century it became apparent that the Finnish-Swedish Agreement should be improved and updated. The EU Water Framework Directive was one of the main catalysts for the Agreement's revisions, along with developments in national legislation, which was made more rigorous in both countries, and with the

[79] Joint website of Finland's environmental administration, 'Rajavesistöyhteistyö Lapissa', available at <http://www.ymparisto.fi/fi-FI/Vesi_ja_meri/Vesien_ja_merensuojelu/Rajavesistoyhteistyo_Lapissa> (visited 26 September 2014).

[80] Finnish Government, 'Suomi on rajavesiyhteistyön edelläkävijä', available at <http://valtioneuvosto.fi/ajankohtaista/tiedotteet/tiedote/fi.jsp?oid=256717> (visited 26 September 2014).

[81] Agreement between the Republic of Finland and the Kingdom of Sweden concerning Frontier Rivers, 16 September 1971, 825 *United Nations Treaty Series* 191.

international agreements on freshwaters concluded during the 1990s. These developments rendered the 1971 Agreement obsolete.

A new Agreement between Finland and Sweden Concerning Transboundary Rivers came into force in 2010.[82] The new Agreement addresses both water and fishing issues, and it replaces the 1971 Agreement between the two countries. The objectives of the Agreement include securing equal opportunities for both Parties to use transboundary rivers;[83] and preventing flood and environmental damages.[84] The Agreement also seeks to reconcile those programmes, plans and measures in the water management area which are necessary for reaching the objectives set for the status and sustainable use of waters in light of the Parties' international obligations and the EU water law. The institution to manage the cooperation is the Finnish-Swedish Transboundary River Commission, established by the Agreement.

The 2010 Agreement establishes the Torne River and Muonio River international river basin district. In this respect, it implements the EU's Water Framework Directive and is in line with the EU Floods Directive's requirement concerning cooperation in transboundary waters.

The Parties realize cooperation in the management of transboundary rivers through joint programmes and plans, which their respective authorities are required to prepare.[85] Coordination in setting national objectives for the status of the aquatic environment in the transboundary waters of the Parties is also recommended in relatively strong language ('shall … as far as possible …') that falls only a little short of a robust legally binding obligation.[86] Parties are also to monitor flow relations constantly at a specified point of the transboundary river basin, and to report the information gathered to the cooperation body, the Finnish-Swedish Transboundary River Commission.

4.3 Cooperation with Norway

The largest river basins that Finland shares with Norway are the catchment areas of the Tana (Tenojoki), Neiden (Näätämöjoki) and Pasvik (Paatsjoki) Rivers, all located in Lapland, in the north. The total length of the River Tana is 334 km, of which 255 km is on the frontier.[87] The River is one of the most famous salmon habitat rivers in Europe, which gives it a high profile in transboundary regulation.

[82] Agreement between Finland and Sweden Concerning Transboundary Rivers, Stockholm, 11. November 2009, in force 1 October 2010, <http://www.fsgk.se/2013/KORJATTU-VERSIO–24.6.2013_Finnish–Swedish-Transboundary-Rivers-Agreement-2009.doc-Finnish-Swedish-Transboundary-Rivers-Agreement-2009.pdf> (visited 11 August 2015).

[83] This is based, in particular, on principles of international water law and the UNECE Water Convention.

[84] This is based, in particular, on the UNECE Water Convention and the EU Floods Directive.

[85] Art. 4.

[86] Art. 5.

[87] Timo Kotkasaari, 'Transboundary Cooperation Between Finland and Its Neighbouring Countries' in Olli

Finland and Norway concluded an Agreement on the Frontier Water Commission in 1980.[88] The Agreement complements other agreements (of smaller scope) concerning the shared waters, which were concluded in the 1950s.[89] The purpose of the Agreement is to preserve the border waters and their unique natural environment, as well as to safeguard the environmental interests of both states and of the residents of the border region, with a view to using the boundary waters.[90]

The Finnish-Norwegian Transboundary Water Commission functions as a body of cooperation between the governments of the countries in questions concerning boundary waters.

Even though Norway is not a member of the European Union (but a European Economic Area (EEA) country), it is obliged to implement the EU Water Framework Directive – though with a delayed schedule.[91] In order for both Finland and Norway to implement the WFD's requirements concerning transboundary waters, the countries concluded an Agreement on the Finnish-Norwegian River Basin District in 2014.[92] The specific objective of the Agreement is to create a framework for bilateral cooperation and administration for river basins that lie in both Finland and Norway, for the purpose of fulfilling the requirements laid down in the WFD.[93] It is to be noted, however, that bilateral administrative cooperation already existed before the 2014 Agreement; the Frontier Water Commission has implemented a common water quality monitoring and reporting program for the River Tenojoki, common multiple use plans for the main rivers and many common research and planning programs.[94] These have improved cooperation with the border municipalities as well as improved water quality in the border rivers.

Varis, Asit K. Biswas and Cecilia Tortajada (eds), *Management of Transboudary Rivers* (Springer, 2008) 123–141 at 123.

88 Agreement between Finland and Norway on a Finnish–Norwegian Transboundary Water Commission, Helsinki, 5 November 1980.

89 Agreement on the transfer from the courses of the Näätämö River to the course of the Gandvik River of water from the Garsjöen, Kjerringvatn and Förstevannene Lakes, Oslo, 25 April 1951; Agreement between Finland, Norway and the Soviet Union Concerning the Regulation of Lake Inarijärvi, Moscow, 29 April 1959 and its additional Protocol concerning compensation for loss and damage and for the works to be carried out by Finland in connexion with the implementation of the agreement of 29 April 1959 between the USSR, Finland and Norway, Moscow, 29 April 1959.

90 Preamble.

91 Norway is formally committed to implementing the Water Framework Directive through the framework of its EEA–agreement, into which the WFD was incorporated in 2007 (Joint Commission Decision No 125/2007 of 28 September 2007). The Directive entered into force in Norway on 1 May 2009. The deadlines stated in the Directive were extended to give Norway the same amount of time to implement the WFD obligations as the EU Member States.

92 Agreement on the Finnish–Norwegian River Basin District, Oslo, 30 October 2013.

93 Art. 1.

94 See, for instance, Kari Kinnunen, 'Finnish Transboundary Cooperation', a presentation at the first Steering Committee meeting under the EU Water Initiative National Policy Dialogue in Georgia 11 – 12 June 2012, available at http://www.unece.org/fileadmin/DAM/env/water/npd/Kari_Kinnunen_finnish_transboundary_water_cooperation.pdf> (visited 9 October 2014), slide 22; and Vannportalen, 'Norway as part of International River Basin Districts', available at <http://www.vannportalen.no/english/norway-as-part-of-international-river-basin-districts/> (visited 11 August 2015).

Through the new Agreement on the Finnish-Norwegian River Basin District, Finland and Norway establish an international river basin district. Each country is to prepare and approve a river basin management plan that covers the parts of the Finnish-Norwegian river basin district that are located in the country's area. The competent authorities of both countries shall cooperate when drafting their national river basin management plans through which they implement the environmental objectives of the WFD. The national plans are then to be coordinated to produce a single international river basin management plan for the transboundary basin,[95] as required by the Directive. Consultations with the public and the Frontier Water Commission should be undertaken during the preparation of the river basin management plans.[96] In practice, the river basin authorities of the two countries started meetings in 2013, aiming at the production of a common 'Roof Report' for the whole international river basin district in 2015, in the form of a comprehensive 'executive summary' of the two national river basin management plans, in order to meet the requirements of the Water Framework Directive.[97] In addition, there will be a common monitoring program for the international water district, stemming from national programs.

The countries are currently negotiating the role of the Finnish-Norwegian Frontier Water Commission in the implementation of this new transboundary river basin management instrument. The Commission will be heard in the preparation of the river basin management plans, but no decision has been made on its other rights or functions within this context.

In October 2013, Finland and Norway signed a Memorandum of Understanding (MoU) pursuant to the Agreement on the Norwegian-Finnish River Basin District. The purpose of the MoU is to create more detailed procedures for cooperation in preparing and coordinating river basin management plans, with the stated aim to achieve the environmental objectives of the EU Water Framework Directive.[98] According to the MoU, the competent authorities will exchange information. It is preferable that the procedures for exchanging such information will facilitate efficient cooperation and enhance public information and consultation, ensuring also the involvement of the Norwegian-Finnish Transboundary Water Commission.[99]

The competent authorities will endeavor to achieve coordinated characterization (common terminology) and risk assessment for the water bodies in the Norwegian-Finnish River Basin District, including both surface waters and groundwater bodies. In addition, the competent authorities endeavor to harmonize the determination of the environmental status of the water bodies in the shared river basin district, with the aim of achieving uniform results.[100] Finally, the competent authorities will en-

[95] Art. 4.
[96] Art. 5.
[97] Vannportalen, 'Norway as part of International', *supra* note 94.
[98] Section 1.
[99] Section 3.
[100] Section 7.

deavor to produce a common river basin management plan for the river basin district. The competent national authority may also produce and adopt more detailed river basin management plans for the parts of the common river basin district lying within its respective area of competence.[101] The national programmes of measures should also be coordinated on the basis of the results of the coordination of characterization, monitoring, classification and exemptions, so that the measures mutually support the achievement of the environmental objectives.[102] In addition, there should be coordination of monitoring among the Parties so that the monitoring programmes are mutually complementary and cost effective.[103]

Overall, the transboundary water agreements and other cooperative arrangements between Finland and Norway have improved cooperation between Norwegian and Finnish (water management) authorities and border municipalities, and have led to improved water quality in border rivers.[104]

It is notable that the River Tana, Neiden and Pasvik international river basin district reaches across the border to Russia. Finland and Norway have sought cooperation with Russia concerning water management in the joint river basins. This is also in accordance with the EU Water Framework Directive. In matters related to River Paatsjoki, Murmansk regional environment authorities from Russia work in cooperation with the Frontier Water Commission. Russia has participated in the work of the Commission in the role of an observer and expert since 1991;[105] having partnered, for instance, in the preparation of a multiple-use plan for the River Paatsjoki.[106] The three riparians have also created a common environmental monitoring programme for the River.[107]

4.4 Cooperation with Russia

Finland and the Russian Federation share a land border of ca. 1,300 kilometres. In the border region, there are 20 watersheds and 800 water bodies, but none of the major rivers runs on the Finnish-Russian borderline. Most of the transboundary wa-

[101] Section 9.
[102] Section 10.
[103] Section 6.
[104] Eira Luokkanen and Pekka Räinä, 'Cooperation in Transboundary River Basins – Tornionjoki River Basin District' in Milla Laita (ed.), Water *Management and Assessment of Ecological Status in Transboundary River Basins,* Abstracts of presentations, Final Seminar of the TRABANT project, Helsinki, Finland, 11–13 September 2007, 18–20 at 18.
[105] Bente Christiansen, 'River basin management in a transboundary context: Norwegian experience', available at <http://www.unece.org/fileadmin/DAM/env/water/meetings/Assessment/Kiev%20workshop/Presentations/Presentation_2ndAssessment_Kiev_Christiansen.pdf> (visited 8 October 2014), slide 5.
[106] *Ibid*. at slide 7.
[107] Tenon–Näätämöjoen–Paatsjoen vesienhoitoalueen toimenpideohjelma pintavesille vuoteen 2015 (2009), available at <http://www.ymparisto.fi/download/noname/%7B6A779490-FE54-4D69-9204-3582E9755B5A%7D/47769> (visited 9 October 2014) at 7.

ters flow from Finland to the Russian side. The largest transboundary watercourses are those of the Vuoksi (68 500 km^2) and Paatsjoki (14 500 km^2) Rivers.[108]

Finland has a long tradition of cooperation with Russia (and before that with the Soviet Union) on transboundary waters. Formal cooperation through bilateral agreements started soon after Finland received its independence from Russia in 1917.

The Agreement Concerning Frontier Watercourses[109] between Finland and the Soviet Union entered into force in 1965. The Agreement was adopted by the Russian Federation after the dissolution of the Soviet Union in the early 1990s. The Finnish-Russian Frontier Watercourses Agreement is concerned with a variety of issues: water flow and structural measures; flood control and water scarcity; timber floating and water traffic; fisheries and fish migration; pollution and water quality; and public health and economy.

The Agreement established the Joint Finnish-Russian Commission on the Utilization of Frontier Waters.[110] The Commission examines matters relating to the utilization of frontier watercourses, such as the utilization or protection of transboundary waters or fishing – as included in the Frontier Watercourses Agreement. In addition, the Commission oversees, in general, that the Agreement is complied with and monitors the state of the transboundary waters.[111]

Parties' principal obligation under the Finnish-Russian Agreement is not to cause transboundary harm. The Agreement does not, as such, address many of the issues which fall within the scope of the EU water directives. This is understandable since the Agreement is relatively old, and there has not been a pressing need to amend it to ensure its compatibility with subsequently adopted EU regulations. Perhaps the Lake Saimaa and River Vuoksi Discharge Rule,[112] which was enacted in 1991 and is an integral part of the Finnish-Russian Agreement Concerning Frontier Watercourses, is the most relevant instrument under the regime from this perspective, as it addresses some issues that are central to the EU Floods Directive.

The Discharge Rule provides for rapid and flexible changes, accounting for the impacts in both countries, in the discharge volumes to control flood and drought risks. The discharge program is negotiated and agreed between Finland and the Russian Federation on a yearly basis.[113] The Joint Commission is responsible for supervising

[108] See Kai Kaatra, 'Outcomes of Vuoksi River Cooperation and Tasks between Finland and Russia since the 1960s' in Creating a Peace and Ecology Lake Park in the Upriver of Bukhan River and the Cases of International River Cooperation, Korea DMZ Council Third International Conference (2012) 57–71 at 57.

[109] Agreement between the Republic of Finland and the Union of Soviet Socialist Republics Concerning Frontier Watercourses, 24 April 1964, in force 6 May 1965, 537 *UNTS* 231.

[110] Art. 6.

[111] Art. 8.

[112] Discharge Rule of Lake Saimaa and the River Vuoksi, Helsinki, 26 October 1989.

[113] Section 2.2 of the Discharge Rule.

the implementation of the Discharge Rule; Parties are to report on the implementation, discuss implications and, in some cases, agree on compensation through the Commission.[114] Finland is responsible for monitoring the water situation and making forecasts for Lake Saimaa and River Vuoksi. Each Party informs the other of any relevant reports, projects, plans and developments.[115] The Discharge Rule does not contain an obligation to prepare official flood risk assessments and management plans as recommended by the Floods Directive in the case of an international river basin district that extends beyond the boundaries of the Community.[116] Nevertheless, studies and assessments have been conducted under the Finnish-Russian regime, and the Discharge Rule is being used as an instrument to regulate flood risks within the shared basin.

4.5 Assessment

Overall, it is a slight challenge to the administrative arrangements for the management of the boundary fresh water areas between Finland and its neighbours that the countries have different status with regard to membership of the European Union. For example, the Torne River basin involves two EU Member States, Finland and Sweden.[117] In contrast, the Tana River basin is managed jointly by Finland and Norway, which is an EEA country; Norway is obliged to implement the WFD, but is entitled to do so in accordance with a delayed schedule. With regard to the eastern border waters, Finland cooperates with Russia, which is not an EU Member State.

The above sections have shown that the transboundary water agreements that Finland has concluded with its neighboring countries address issues contained in the EU water directives, and implement such directives, to varying degrees. It is clear that the Water Framework Directive and the Floods Directive have shaped the relatively recently adopted agreements that Finland has with Sweden and Norway. In particular, the cooperation established and the Agreement (and MoU) concluded on the shared water management district with Norway is a prime example of effective implementation of the WFD in a transboundary context. Combined with the adopted MoU, the Finnish-Norwegian Agreement implements the requirements of the WFD very thoroughly. The 2010 Agreement with Sweden creates the conditions for the implementation of the EU water directives in the transboundary water cooperation and

[114] 'Capacity for Water Cooperation in Eastern Europe, Caucasus and Central Asia. River Basin Commissions and Other Institutions for Transboundary Water Cooperation' (UNECE, 2009), available at <http://www.unece.org/fileadmin/DAM/env/water/documents/CWC%20publication%20joint%20bodies.pdf> (visited 9 October 2014) at 20. The Commission has harmonized the monitoring methods and country reports are comparable with each other. See Kaatra, 'Outcomes of Vuoksi River', *supra* note 108, at 66.

[115] *Ibid*. at 64.

[116] Art. 8(3) of the Directive.

[117] Minor areas of the northernmost part of the Torne Rivers catchment area reach up to three river basin districts in Norway. There is cooperation that includes Norway in the harmonization of the management plans under the Water Framework Directive. The organization 'Northern Calotte Water Authority' held meetings in 2011–2013 where issues common to all three countries within the Torne River Basin were discussed.

management between Finland and Sweden; though the Agreement is not quite as detailed as that with Norway.

The 1964 Agreement Concerning Frontier Watercourses between Finland and Russia stresses the importance of cooperation in the management of the transboundary watercourses. The 1964 Agreement is relatively old but still highly relevant for the Parties.

The implementation of the EU Water Framework Directive has received attention in Russia even though the country is not a member of the European Union. Russia has signalled that it would like to integrate the implementation of the WFD into the work of the Finnish-Russian Commission on the Utilization of Frontier Waters in order to create the necessary monitoring and assessment procedures for the status of the shared waters. It appears that no very profound changes to the existing cooperation structures would be needed to realize this aspiration and increase the collaboration of the Parties, since the Agreement of 1964 has been drafted in a flexible manner.[118] Through the work of the Joint Commission, new issues can be discussed under the framework of cooperation. Thus, the Agreement may not even be in need of modification if Russia would like to adopt some measures in accordance with the EU water directives.

Interestingly within this context, the Estonian-Russian Joint Transboundary Commission on Lake Peipsi already adopted a decision in 1998 that the Estonian-Russian transboundary waters will be managed in accordance with the EU Water Framework Directive.[119] However, that cooperation has not been very effective in practice. For instance, it has been pointed out that the Commission lacks capacity to implement integrated water management approaches in the basin and to involve stakeholders in the management of the Lake.[120]

5 Concluding remarks

The EU Water Framework Directive and the Floods Directive have led to the need to amend or supplement many, if not most, of the existing transboundary water agreements in Europe. This has been necessary to make the agreements comply with the new concepts and obligations presented by these directives, such as the objective of a good ecological status of the waters, the development of coordinated management plans and programmes of measures, and coordination in respect of flood/drought

[118] Kaatra, 'Outcomes of Vuoksi River', *supra* note 108, at 68.

[119] Per Stålnacke and Gulnara Roll, 'Lake Peipsi: A Transboundary Lake on the Future Border of the European Union' in Lars Hedegaard and Bjarne Lindström (eds), *The NEBI (North European and Baltic Sea Integration) Yearbook* 2001/2002 (Springer, 2002) 159–178 at 174.

[120] See Gulnara Roll et al, 'Lake Peipsi/Chudskoe. Experience and Lessons Learned Brief', *Third World Water Forum* (2006) 335–346 at 340.

prevention and control.[121] The transboundary water agreements to which Finland is a party are no exception to this. The agreements with neighboring countries that have a similar obligation to implement the Directives (i.e. Sweden and Norway) have been significantly updated or supplemented with new regulations in order to fulfill the requirements of the EU water law. The Agreement with Russia has not seen a similar development for an obvious reason (Russia being a non-EU country). However, even under that Agreement, discussions have begun regarding the adoption of some measures from the sphere of the EU water directives. Russia does not have any legal obligation regarding this kind of effort, but clearly perceives the WFD, or at least some elements thereof, as a potentially effective and useful instrument for freshwater management.

It has been assessed that the general efficiency of international freshwater commissions has been increased by the WFD approach.[122] That sounds to be a reasonable conclusion. The commissions benefit from the increased cooperation and coordination of the national water administration authorities and they are often engaged in the preparation of joint management practices and instruments.

Overall, the EU Water Framework Directive commits Member States to the same objectives in their freshwater management and to coordinated planning and implementation of management in shared river basins. Member States are individually responsible for the proper implementation of the water directives and, at the same time, strongly committed to cooperation with fellow Member State riparian countries. The commitment to cooperation with the non-Member States sharing the basin is not quite as strong, but there has been an emerging trend to also engage these countries more strongly in cooperative arrangements. Sometimes, this initiative has come from the non-Member State, as evidenced, for instance, by the case of the Finnish-Russian cooperation.

The fact that the role of existing treaty arrangements and their governing bodies (commissions) has been reinforced by the EU water directives also has implications for improved water security in the area of the Union and beyond. The directives allow and encourage the participation of all riparian countries, including non-EU Member States, in the preparation of assessments and regulatory measures and in the actual implementation of genuinely joint freshwater management in shared basins. Then again, active cooperation with non-Member States is only encouraged by the directives and so the level of regulation remains rather weak. In any case, early and active involvement of all riparians is apt to reduce water-related conflicts among states, especially through effective sharing of information and a sense of participation in the process and influencing the outcomes of the joint management scheme.

[121] INBO, 'WFD contributions to water', *supra* note 36, at 4.
[122] *Ibid.*

Finland has traditionally had open and reliable relations with Sweden and Norway, including in the management of shared freshwater resources. The recently adopted agreements and the implementation of the EU water directives more generally within this context will ensure that the potential for freshwater-related conflict situations will be further reduced among these states. With regard to the cooperation with Russia on frontier waters, the influence of EU water directives has naturally been of much less significance. Nevertheless, the future is looking interesting, as Russia has been indicating its willingness to adopt elements from the relevant EU legislation into its freshwater management regulation.[123] The current Finnish-Russian regime has been cited as being one of the success stories of international water law,[124] and the integration of relevant pieces of the EU water directives into that scheme of cooperation will certainly not weaken the regime's effectiveness.

[123] See, for instance, Veli-Pekka Tynkkynen, 'Russia' in Sigrid Hedin et al, *The Water Framework Directive in the Baltic Sea Region Countries – Vertical Implementation, Horizontal Integration and Transnational Cooperation*, Nordregio Report 2007:2, available at <https://www.diva-portal.org/smash/get/diva2:700419/FULLTEXT01.pdf> (visited 12 October 2015) 131–137 at 134.

[124] Antti Belinskij, 'Cooperation between Finland and the Russian Federation' in Attila Tanzi, Owen McIntyre, Alexandros Kolliopoulos and Alistair Rieu–Clarke (eds), *The UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes: Its Contribution to International Water Cooperation* (Brill, 2015) 310–315. This is also how the parties themselves view it. See Minna Hanski, 'Reconciling flood protection and energy in the transboundary cooperation on water management between Finland and the Russian Federation', a presentation in a UNECE Workshop on Transboundary Water Cooperation 11–12 June 2013, Buenos Aires, Argentina, available at <http://www.unece.org/fileadmin/DAM/env/documents/2012/wat/workshops/Latin_American_workshop_in_Buenos_Aires/3.3.Minna_Hanski_FiRuCooperation_En.pdf> (visited 13 August 2015), slide 11.

Water-related Conflict and Security in Southern Africa: The SADC Protocol on Shared Watercourses

Ed Couzens[1]

1 Introduction

Southern Africa (the SADC region – Southern African Development Community)[2] is one of the most arid regions in the world, with many of its countries being water-stressed or in places even water-scarce.[3] All central and most southern African countries are considered water-scarce – those that are not water-scarce are either 'approaching water-scarcity' or have not been estimated.[4] The region is also one of those with the greatest imperatives for rapid economic growth in order to lift its inhabitants from poverty. The region is currently heavily dependent on coal for elec-

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[2] The SADC comprises 15 member states: Angola, Botswana, the Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, the Seychelles, South Africa, Swaziland, the United Republic of Tanzania, Zambia and Zimbabwe. See <http://www.sadc.int/>.

[3] According to the UN Department of Economic and Social Affairs (UNDESA), a water-stressed area is one in which annual water supply drops below 1 700m^3 per person, a water-scarce area is one in which the supply drops below 1,000m^3 per person, and 'absolute scarcity' means a supply of less than 500m^3 per person. UNDESA, 'International Decade for Action "WATER FOR LIFE" 2005–2015' (24 November 2014), <http://www.un.org/waterforlifedecade/scarcity.shtml> (visited 8 November 2015).

[4] *Ibid*. See map drawn from World Water Assessment Programme (WWAP), 'World Water Development Report 4' (March 2012), available at <http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/wwdr/wwdr4-2012/> (visited 8 November 2015).

tricity production, with the various problems associated with mining and burning coal. Hydro-electric power, which has been used as a particular focus in this paper, has the potential to provide an alternative, but does come with many problems of its own.[5] Amongst these are potential conflicts between the users of watercourses shared between southern African states. According to Meissner, 'many scholars and practitioners are convinced that water will, in the future, lead to violent conflict in many parts of the world' with '[r]egions that are pronounced to develop "water wars" includ[ing] the Middle East and southern Africa'.[6]

The role of the SADC's Revised Protocol on Shared Watercourses[7] is considered. While the aim of the Revised Protocol is to further cooperation, there are some warning signs that some SADC member states might be taking a wary approach toward it. This can be seen in the paucity of references to the Revised Protocol in the political bickering over high-profile examples of regional water-related conflict; and in the failure of most members to ratify the 1997 UN Convention on International Watercourses,[8] which is now in force, even though the Revised Protocol was designed to reflect the provisions of this Convention.

2 Water security and conflict in southern Africa

While the SADC's member states are at different stages of development, say Braune and Xu, they are 'predominantly underdeveloped' with poverty being 'widespread in the sub-region, with an estimated 70 [per cent] of the population living below the international poverty line of [US$ 2 per day], and 40 [per cent] living in extreme poverty (less than [US$ 1 per day])'.[9] According to Braune and Xu, further, the SADC region is characterized by socio-economic conditions that include: 'rapid population growth, high rates of urbanisation, high HIV/AIDS and malaria prevalence, high levels of poverty and income inequality, and a high incidence of food insecurity'.[10] 'These socioeconomic drivers', they say, 'have placed an increasing demand for water resulting in increased stress on the limited water resources, and exacerbated

[5] As Böge points out, 'any endeavours to develop [a] river economically and make use of its resources that necessitate the usage of the river as a whole, e.g. production of hydroenergy, can become issues of contention. A dam for the purpose of producing hydropower cannot be built on one half of the river bed only'. Volker Böge, *Water Governance in Southern Africa – Cooperation and Conflict Prevention in Transboundary River Basins, BICC Brief 33* (Bonn International Center for Conversion, 2006), available at <https://www.bicc.de/uploads/tx_bicctools/brief33.pdf> (visited 8 November 2015) at 6.

[6] Richard Meissner, 'Drawing the Line', 2 *Conflict Trends* (2001) 34–37 at 34.

[7] Revised Protocol on Shared Watercourses in the Southern African Development Community, Windhoek, 7 August 2000, in force 22 September 2003. See below, Part 4.

[8] UN Convention on the Law of the Non-Navigational Uses of International Watercourses, New York, 21 May 1997, in force 17 August 2014. See below, Part 7.

[9] Eberhard Braune and Yongxin Xu, 'Groundwater management issues in Southern Africa – An IWRM perspective', 34 *Water SA* (2008) 699–706 at 702, at this point citing the Economic Commission for Africa, 2006 (see <http://www.uneca.org/publications/economic-report-africa-2006>).

[10] *Ibid.*

competition and conflict between and among sectoral users'.[11] According to Ashton and Turton, '[e]very southern African country faces equally daunting pressures to stimulate national and regional development so as to alleviate poverty and improve the living standards of their populations'.[12] Swatuk describes SADC states as being 'primarily a collection of economically weak, primary commodity exporting, debt distressed countries with unconsolidated democracies'.[13]

If southern Africa is to achieve its developmental goals, a key factor will be the ways in which it makes use of its water resources; Braune and Xu argue this, but point out that the African continent as a whole has so far used only a relatively small proportion of its available water resources.[14] Their argument then becomes that the 'African water crisis, often referred to in international forums', is more complex than simple availability indicates. Key, according to these writers, is the 'large spatial and temporal variability of resource availability', alongside the arid climates found in most (approximately 60 per cent of) African countries; and the 'widespread lack of skilled and experienced human resources to manage the irregular availability of water'. As examples of such human resources-based weaknesses they cite 'building balancing storage', the 'transfer [of] water between water-rich and water-poor areas' and 'implementing water conservation and demand management'.[15]

According to the UN Department of Economic and Social Affairs (UNDESA), water-scarcity is defined as 'the point at which the aggregate impact of all users impinges on the supply or quality of water under prevailing institutional arrangements to the extent that the demand by all sectors, including the environment, cannot be satisfied fully'. Water-scarcity, says UNDESA, is 'a relative concept [which] can occur at any level of supply or demand' and which 'may be a social construct (a product of affluence, expectations and customary behaviour) or the consequence of altered supply patterns'.[16]

South Africa, in particular, is an example of a country that is heavily reliant on shared river basins, with approximately 60 per cent of the country being located within international river basins (these being the Inkomati, the Limpopo, the Maputo and the Orange).[17] These four river systems are shared with South Africa's six immediate

[11] *Ibid*.

[12] Peter Ashton and Anthony Turton, 'Transboundary Water Resource Management in Southern Africa: Opportunities, Challenges and Lessons Learned' in Lars Wirkus (ed.), *Water, Development and Cooperation – Comparative Perspective: Euphrates-Tigris and Southern Africa, BICC Brief 46* (Bonn International Center for Conversion, 2005), available at <https://www.bicc.de/uploads/tx_bicctools/paper46.pdf> (visited 8 November 2015), 5–32 at 25.

[13] Larry Swatuk, 'Political Challenges to Sustainably Managing Intra-Basin Water Resources in Southern Africa: Drawing Lessons from Cases' in *Wirkus, Water, Development and Cooperation*, *supra* note 12, 157–183 at 173.

[14] Braune and Xu, 'Groundwater management issues', *supra* note 9, at 699.

[15] *Ibid*.

[16] UNDESA, 'International Decade for Action', *supra* note 3.

[17] Charles M. Breen, 'Part I: Overview' in Charles M. Breen, et al, *Strategic Review of River Research. Water Research Commission Project K5/1198: Final Report* (Water Research Commission, 2003), available at

neighbouring states: Botswana, Lesotho, Mozambique, Namibia, Swaziland and Zimbabwe.[18] The strategic importance of this, evaluates Breen, is to be found 'not only in the urgency to deal constructively with establishing dynamic equity, but also in the lessons to be learned that may have much wider application in Africa and beyond'.[19] Jansen van Vuuren tells us that the sharing of these river basins 'raise[s] the importance of water in the regional integration agenda [within the] SADC' and that 'South Africa's policy and legislation recognises international obligations in allocation protocol'.[20] Botswana is another example of a country heavily reliant on other countries, and particularly vulnerable to management decisions taken within those countries, with only some 6 per cent of its water originating from within its own borders.[21] Per Ashton, Botswana obtains 94 per cent of its total freshwater from neighbouring states.[22] Broadly speaking, every member of the SADC faces water-related challenges – most common to all, a few unique.

According to Church, the issues which concern international water systems are 'far more complex than a linear equation allows'; as the 'stakes are high, as water is a key element to national prosperity, in so far as it is a form of cheap energy, used in irrigation and food production'.[23] Water, she says, is 'also the crucial element in flood and drought control schemes' and conflict due to water is therefore 'integrally related to many factors, such as the degree of inequality of distribution within a region, particularly between bordering states, as well as the extent to which the river basin is shared by one or more states'.[24] Moreover, she adds, 'one cannot ignore the importance of power politics in these scenarios, or the relative power relationship between sharing states'.[25]

Swatuk records that '[f]or perhaps the last 25 years, there has been a great deal of speculation as to whether [] persistent water problems [in Africa] will one day lead to violent or acute conflict, within and between states'[26] – the World Bank, he notes, 'echoed by many others', turned its attention in the mid-1990s 'to freshwater resources, arguing that the wars of the future would be about water'.[27] Swatuk notes also that the 'fear of scarcity-driven conflict in SADC is pervasive in regional and international water resources scholarship' and characterizes the 'standard argument'

<http://www.wrc.org.za/Knowledge%20Hub%20Documents/Research%20Reports/1198-1-03.pdf> (visited 9 November 2015) 7–25 at 22–23.

18 Richard Jansen van Vuuren, 'Water Resource Strategy Part 2: The blueprint for our survival', 38 *IMIESA* (2013) 9–11 at 9.

19 Breen, 'Part I: Overview', *supra* note 17, at 22–23.

20 Jansen van Vuuren, 'Water Resource Strategy', *supra* note 18, at 9.

21 Cheyanne Church, 'Water: A Threat of War or an Opportunity for Peace?', 2 *Conflict Trends* (2000) 18–23 at 18.

22 Peter J. Ashton, 'Avoiding Conflicts over Africa's Water Resources' 31 *Ambio* (2002) 236–242 at 240.

23 Church, 'Water: A Threat of War', *supra* note 21, at 20–21.

24 *Ibid*.

25 *Ibid*.

26 Larry A. Swatuk, 'Water conflict and cooperation in Southern Africa', 2 *WIREs Water* (2015) 215–230 at 215.

27 *Ibid*. at 218.

as being to the effect that 'while cooperation predominates now, there is no guarantee that conflict will not arise in the near future particularly if current trends continue'.[28] Along the same lines, Böge suggests that possible 'conflicts at international, regional and local levels regarding access to and use of freshwater [] poses a serious threat to both human security and the security of states'; and that '[i]t is against this background that the imminent danger of "water wars" has become a prominent issue in the political and scientific discourse and in the perception of the general public'.[29] Böge then tells us that international tensions have many times arisen with regard to water; and reminds us of Egypt's oft-repeated threats that it would be willing to go to war over threats to its supply of water from the river Nile.[30] He identifies 'almost half of the international water courses in [s]outhern Africa' as being 'potential hot spots of intensified tensions and possible conflict escalation'.[31]

According to Ashton, 'the broad scale and imminence of the threats posed to many African countries' by 'increasing pressures for finite quantities of water' are factors that 'demand our urgent attention if we are to avoid large-scale hardship and possible future conflicts' – with '[s]ome authorities' even having 'extended these arguments [] and postulated the strong likelihood that reduced availability of water could ultimately lead to "water wars" between countries that may compete for the same scarce resources'.[32] Beck and Bernauer consider how climate change may exacerbate the impacts of changes in water demand and, projecting that 'current water abundance [] is unlikely to last'[33] in their chosen study area,[34] argue that 'the greatest conflict potential is among Mozambique, Zambia and Zimbabwe' with 'all three countries [being] likely to experience a large decrease in water availability' and it 'appear[ing] quite likely that (downstream) Mozambique and (contiguous) Zimbabwe will challenge Zambia at some not too distant point in time if the latter expands its water consumption as assumed'.[35]

History, says Church, 'does indicate that water can cause or contribute to internal conflict within states' with such conflict 'generally manifest[ing] itself at the intra-state level between tribes, communities or water-use sectors'.[36] Additionally, she says,

[28] *Ibid*. at 220. As factors likely to contribute to conflict, Swatuk notes

> a history of intrastate and interstate violence, a dominant state in need of water for development, limited human, financial, and other key resource capacities [ ] limiting adaptive capacity [ ], poor states with (relatively or absolutely) authoritarian elites presiding over weak civil societies and poor populations, difficult and sometimes unpredictable hydrological regimes, and many shared rivers.

Ibid. at 217.

[29] Böge, *Water Governance in Southern Africa*, *supra* note 5, at 4.

[30] *Ibid*. at 6–7.

[31] *Ibid*. at 18.

[32] Ashton, 'Avoiding Conflicts', *supra* note 22, at 237.

[33] Lucas Beck and Thomas Bernauer, 'How will combined changes in water demand and climate affect water availability in the Zambezi River Basin?', 21 *Global Environmental Change* (2011) 1061–1072 at 1062.

[34] The Zambezi River basin, the largest river system in the SAC area, which is shared by eight countries (Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia, Zimbabwe).

[35] Beck and Bernauer, 'How will combined changes', *supra* note 33, at 1070–1071.

[36] Church, 'Water: A Threat of War', *supra* note 21, at 21.

both 'political instability' and 'increased intra-state tensions' can arise from water-related causes; and conflict can be a result of '[p]oor government water management schemes, the lack of a social safety net in times of drought, and the use of water as a political lever by governments to marginalise or aid select groups within society'.[37] Despite this potential for conflict, she argues that studies of conflict[38] involving water 'have proven that cooperation over shared water resources is more the norm than the exception' with there being 'more than 300 treaties dealing with non-navigational uses of water, such as flood control, hydropower projects, allocation for consumption and water management'.[39] In general, she says, 'co-riparians stand to gain far more through cooperative measures and the creation of a mutually beneficial treaty, than by fighting'.[40]

Muller takes a cautious approach to claims that conflicts may arise in southern Africa, pointing out that in some situations of apparent conflict over water there may actually be a supply of water 'vastly greater than is needed to meet the economic and social needs of the communities who share the common resource'; and arguing that what is really being seen is 'conflict over the protection of the environmental resource which the water sustains, and more specifically, the extent to which that resource may be impacted upon'.[41] Muller acknowledges, however, that there are tensions, with these including who would have the authority to make decisions – especially where an ecosystem to be protected 'might lie in one country, which also derives the tourism benefits from its preservation, while other riparian states bear the costs of conservation, but receive no benefits'.[42]

It must be acknowledged, though, that the argument of commentators such as Church, Böge, Swatuk, Ashton, Beck and Bernauer, and Muller is that while the *potential* for conflict exists, this potential is tempered by the reality that 'there is far more cooperation than there is conflict where shared waters are concerned' and that 'the "chorus of doom" that persistently echoes around the world of water politics, governance, and management finds little resonance among scholars of [s]outhern Africa'.[43] According to Swatuk, 'conflict and cooperation are generally simultaneously to be found'.[44] Böge suggests that 'in the SADC context it does not make much sense to talk about conflict or cooperation as mutually exclusive alternatives'; instead, 'one

[37] *Ibid*.
[38] On such studies, Church references AaronT. Wolf, '"Water Wars" and Water Reality: Conflict and Cooperation Along International Waterways' (University of Alabama, 1997).
[39] Church, 'Water: A Threat of War', *supra* note 21, at 22.
[40] *Ibid*.
[41] Mike Muller, 'Water Wars?' 3 *Conflict Trends* (2001) 32–35 at 34.
[42] *Ibid*.
[43] Swatuk, 'Water conflict and cooperation', *supra* note 26, at 215–216.
[44] *Ibid*. at 223. According to Jägerskog, '[w]hile it was previously assumed that shared waters could and would be a source of conflict, and even war, it has been demonstrated more recently that they can serve as a strong unifying force if addressed in a coherent manner'. Anders Jägerskog, 'Why States Cooperate over Shared Waters: The Example of the Jordan River basin' in Wirkus, *Water, Development and Cooperation*, *supra* note 12, 82–100 at 82. Jägerskog concludes that it might even be possible to see 'the international water regimes that exist […] as a conflict-mitigating factor since they promote basin-wide interstate cooperation and thereby increase water security'. *Ibid*. at 98.

has to talk about conflict and cooperation, the interesting development being that the conflict-side has been transformed: from conflict about the resource to conflict about the ways of cooperation with regard to the commonly beneficial use of the resource'.[45]

Generally, it may be that commentators on 'security issues' are 'alarmist' in their nature. Warner tells us that '[w]riting on security has traditionally been dominated by international relations scholars, who focused on the art of war and diplomacy'.[46] In the water context, Gupta and van der Zaag point to an apparent 'bias' in literature toward writing about 'water conflict' than about 'water cooperation', positing that 'nearly three times more scientific articles are published on the topic of water conflict than on water cooperation' and that 'the articles on conflict are cited five times more frequently'.[47] Katz and Postel and Wolf quote past and former UN Secretary-Generals as having said that '[t]he next war in the Middle East will be fought over water, not politics' (Boutrous Ghali),[48] that 'fierce competition for fresh water may well become a source of conflict and wars in the future' (Annan),[49] and that water scarcity has created 'a high risk of violent conflict' (Ki-moon).[50]

Katz points out that 'proclamations that water wars are imminent remain prevalent' despite there being 'weak supporting evidence and numerous theoretical challenges to the water wars hypothesis' – and that there is a 'growing body of literature [which] has challenged both the empirical and theoretical foundations of such a hypothesis'.[51] According to Katz, there are various reasons why commentators might choose to overemphasize conflict, including 'highlight[ing] the risks of water wars in order to bring attention to other environmental goals'.[52] While arguing that '[o]verstating risks of water wars or oversimplifying causal links may be detrimental to intended objectives', Katz does admit, however, that '[w]ater has been and continues to be a source of political conflict, at times even violent conflict, a prospect which may worsen as populations grow, economies develop, and climatic conditions change'.[53] Although he argues that '"true" water wars have happened very rarely, if at all', with other factors such as territorial sovereignty being 'implicated in virtually every dispute or conflict that has taken place over, or near to, water',[54] Ashton argues that this is 'no reason for complacency on our part' and that '[b]ased on the available

[45] Böge, *Water Governance in Southern Africa*, *supra* note 5, at 24–25.
[46] Jeroen Warner, 'Mending the GAP – Hydro-Hegemonic Stability in the Euphrates-Tigris Basin' in Wirkus, *Water, Development and Cooperation*, *supra* note 12, 184–214 at 185.
[47] Joyeeta Gupta and Pieter van der Zaag, 'The Politics of Water Science: On Unresolved Water Problems and Biased Research Agendas', 9 *Global Environmental Politics* (2009) 14–23 at 15–16.
[48] David Katz, 'Hydro-Political Hyperbole: Examining Incentives for Overemphasizing the Risks of Water Wars', 11 *Global Environmental Politics* (2011) 12–35 at 12.
[49] Sandra L. Postel and Aaron T. Wolf, 'Dehydrating Conflict', 126 *Foreign Policy* (2001) 60–67 at 60.
[50] Katz, 'Hydro-Political Hyperbole', *supra* note 48, at 12.
[51] *Ibid*. at 12–13. Katz says that 'despite some instances of violent conflict over water, there is little systematic evidence of war over water resources' with '[e]vidence for a deterministic relationship between water scarcity and the outbreak of armed conflict [being] particularly weak'. *Ibid*. at 17.
[52] *Ibid*. at 21.
[53] *Ibid*. at 29.
[54] Ashton, 'Avoiding Conflicts', *supra* note 22, at 239.

evidence, we can conclude that conflicts over water in Africa will be inevitable unless we can jointly take preventive actions'.[55]

Jacobs has argued that 'the 1990s saw the resurgence in transboundary water diplomacy beyond technical collaboration in the region' and that '[t]he nature of cooperative arrangements reflects a shift in focus from bilateral arrangements to the creation of joint water commissions with multilateral basin-wide agreements being established in all SADC basins with a significant level of development'.[56]

It is important also to acknowledge that conflicts may occur at all of the local, regional, national and international levels – or in combinations thereof. As Swatuk puts it, transboundary conflicts do occur, but they 'pale in comparison to the numerous, primarily non-violent intrabasin user conflicts within states' - he suggests that the reason for this might be 'the immediacy of user concerns, as most conflicts tend to arise in the dry season'.[57] At the local level, Funder et al have argued, based on a case study in Zambia, that 'the relationship between conflict and cooperation [] is dynamic, with cooperative events often following from conflictive events and vice versa, being related to the same situation'.[58] The writers conclude that 'many local water conflict and cooperation events' are *very* local, taking place '*within* individual communities'; and that it remains important 'to ensure that […] high-profile situations do not lead us to overlook or ignore everyday water conflict and cooperation events'.[59] The creation of new norms, says Jacobs, 'may face local resistance if they appear to contradict longstanding local norms'.[60] Turton et al note that 'although conflict at the international scale is unlikely, this does not mean that conflict cannot occur at the sub-state level'.[61] It may even be that, as Curtin puts it, '[c]onflicts related to water resources tend to be at their most intense at the local level, between different sectors and stakeholders in direct competition over inadequate water supplies'.[62] Conflicts between different sectors might well arise. As Salman notes, '[w]ater serves different sectors and its value differs from one sector to another'.[63]

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55 *Ibid*. at 242.

56 Inga M. Jacobs, 'A Community in the Orange: The development of a multi-level water governance framework in the Orange-Senqu River basin in southern Africa', 12 *International Environmental Agreements* (2012) 187–210 at 203.

57 Swatuk, 'Political Challenges', *supra* note 13, at 171.

58 Mikkel Funder et al, 'Understanding Local Water Conflict and Cooperation: The case of Namwala District, Zambia', 35 *Physics and Chemistry of the Earth* (2010) 758–764 at 760.

59 *Ibid*. at 763. The writers point out that such situations 'may have a more localized impact, they appear to be more numerous, affect a considerable total number of people, and evolve around critical everyday livelihood- and water access issues for communities' and argue that they are therefore 'important to take into consideration in IWRM and water governance in general'. *Ibid*.

60 Jacobs, 'A Community in the Orange', *supra* note 56, at 204. As an example of this, Jacobs offers the illegal abstraction of water from the Orange-Senqu River by farmers in South Africa. *Ibid*.

61 Anthony Turton, Marian J. Patrick and Frederic Julien, 'Transboundary Water Resources in Southern Africa: Conflict or Cooperation?', 49 *Development* (2006) 22–31 at 29.

62 Fiona Curtin, 'Emerging Trends in Water Resources Conflict Prevention: Public Participation and the Role of Civil Society' in Wirkus, Water, *Development and Cooperation*, *supra* note 12, 33–54 at 34.

63 Salman M. A. Salman, 'The Euphrates and Tigris: South Boundary Utilization and Views' in Wirkus, *Water, Development and Cooperation*, *supra* note 12, 136–156 at 137.

Much will depend, of course, on how 'conflict' is defined. Meissner tells us that 'a dispute does not always and necessarily imply armed violence between states, or states and non-state actors … [a] dispute can also be an argument or a disagreement between two people or collectivities, like an interest group and a government'.[64]

According to Postel and Wolf, 'water disputes between countries, though typically not leading to war directly, have fuelled decades of regional tensions, thwarted economic development, and risked provoking larger conflicts before eventually giving way to cooperation'.[65] 'History', they say, 'supports the hopeful notion that fresh water may foster cooperation more often than conflict in the years ahead' with '[w]ater sharing hav[ing] regularly brought even hostile neighbouring states together' – but they do caution that 'the unprecedented degree of current water stress is creating more zero-sum situations – in which one party's gain is perceived as another's loss – both within and between countries'.[66]

Against this backdrop of both conflict and cooperation, states in the region have created a number of important regional legal instruments with the potential to assist in managing conflict. The chief such instrument is the SADC Protocol on Shared Watercourses (Revised), 2000, which came into force in 2003.[67] This instrument imposes numerous obligations on its member states, and should assist in resolving conflicts, but is little used. A number of examples of actual or potential conflict, drawn from hydropower-related projects and similar, are considered to illustrate this. After establishing that there is this potential for conflict, the point of this paper is ultimately to raise the fact that the SADC has adopted an instrument for pre-empting the arising of, or resolving after it has arisen, such conflict, but which it does not appear is being used for this purpose. The argument is made that while the Revised Protocol may be providing a useful backdrop for cooperation over water-related conflicts, much more could be achieved if the instrument were one of the first to which states involved in conflicts had recourse – and that there must be reservations over states' commitment to the instrument in the light of their virtually unanimous failure to ratify the United Nations on the Law of the Non-Navigational Uses of International Watercourses.[68]

There probably are a number of reasons related to political considerations and financial and capacity constraints for the apparent lack of enthusiasm for resort to the Revised Protocol,[69] but it does give rise to a curious anomaly. The Revised Protocol was

[64] Richard Meissner, 'Interest Groups as Local Stakeholders involved in the Water Politics of a Transboundary River: The Case of the Proposed Epupa Dam across the Kunene River' in Wirkus, *Water, Development and Cooperation*, *supra* note 12, 101–121 at 107.

[65] Postel and Wolf, 'Dehydrating Conflict', *supra* note 49, at 61.

[66] *Ibid*. at 65.

[67] See Part 4, below.

[68] See Part 7, below.

[69] It could (in addition) be argued that SADC member states have simply 'not bothered' to ratify the Convention because their membership of the Revised Protocol makes such ratification superfluous, but this cannot be assumed – after all, Tanzania abstained from the original adoption of the UN Convention

apparently adopted, and then brought into force, to give effect to the provisions of the UN Convention – more than a decade before this Convention came into force.

Despite this, member states to the Revised Protocol seem reluctant now to ratify the Convention. While it might be objected that it is 'conjecture' on the present writer's part to describe this failure to ratify as 'reluctance', it seems to me that there is cause to do so. While no overt reason has been offered by the states themselves, Salman and Eckstein have suggested that their reluctance might relate to concern over riparian rights. According to these writers, although the SADC countries adopted the Revised Protocol in 2000 to make the Protocol 'consistent with the Convention, they tried to maintain parity between [] two principles by subjecting each to the other,[70] thus keeping the actual relationship in abeyance and unresolved'.[71] As such, it seems to the present writer most likely that SADC member states are showing a reticence to being bound by a global Convention, the full implications of which they might not yet consider foreseeable, rather than by a regional instrument which probably seems to them more 'controllable'. The failure to ratify remains worthy of study, in the present writer's view.

It is argued finally that this reluctance to ratify the Convention and the lack of application in practice of the Revised Protocol (in other words, the loss of an opportunity to begin building platforms for cooperation sooner rather than later) represent a missed opportunity which will hopefully be resolved in the future when (rather than *if*) conflicts[72] arise over shared watercourses in southern Africa.

3 Examples of current schemes and problems

3.1 Potential conflicts

Even a quick scan of the current situation in the SADC region will show that there are numerous conflicts currently simmering, albeit not yet boiling over. Access to water, to waterways and to water-related resources are a major source of international conflict. Hydropower projects can cause tensions; and so can other related and similar projects. It has been suggested that '[f]or decades water resources was equated with construction of water infrastructure' and that '[e]xperience has showed this

(see Part 8 below). Failure to ratify an international convention is not a purely neutral act in international law.

70 Instead of subordinating the obligation not to cause harm to the principle of equitable and reasonable utilization, as does the Convention. Salman M. A. Salman and Gabriel Eckstein, 'Concluding Thoughts on the Implications of the Entry into Force of the United Nations Watercourses Convention' *International Water law Project Blog* (1 September 2014), available at <http://www.internationalwaterlaw.org/blog/category/un-watercourses-convention/> (visited 9 November 2015).

71 *Ibid*. The writers point out that the 'same concerns' seem to be a reason for similar reluctance by South Asian countries.

72 Wherever such conflicts might fall on a continuum between diplomatic hostility and armed force.

to be a major error, for economic, social, and environmental reasons'.[73] Despite this claim, that the building of dams should not be hastily undertaken, it appears that in southern Africa a number of new dams are being considered – most, if not all, without apparent consideration of every relevant potentially affected population or environment.

3.1.1 The Popa Falls dam: Namibia/Botswana/Zambia/Angola

Namibia currently imports more than 50 per cent of its power from South Africa, at high cost, and is understandably keen to reduce this reliance. In 2003 Namibia (through Nampower, its electricity authority) concluded a study (a 'Feasibility Study') of a proposed dam at Popa Falls on the Okavango River to supply hydroelectric power.

There is, however, a significant transboundary aspect to this idea. Numerous potential negative impacts could arise for the Okavango inland delta (swamps) in Botswana, including loss of biodiversity and habitats; changes in water flow and flooding rates; interruption of free flow of sediments; riverbed scouring; erosion of riverbanks; animal migration routes could change; changes to fish habitats and breeding sites; loss of homes and villages; and loss to local communities of fishing and reed-collecting.[74]

The Feasibility Study was concluded in 2003 and no action since then has been taken. From time to time (including as recently as May 2014) rumours circulate that Namibia is considering reviving the plan. Nampower, however, denied this in June 2014 and said that although the environmental concerns could have been resolved by engineering solutions, the amount of power that would have been introduced would have been too small to be viable.[75]

Namibia, says Böge, 'at present uses very little water from the Okavango River [but] in the future it intends to use Okavango River water [] to augment the water supplies in the central area of Namibia'; and Botswana is 'especially vulnerable as it obtains 94 percent of its fresh water from neighbouring countries'.[76] Böge suggests, however, that although

[73] Philippe Gourbesville, 'Challenges for Integrated Water Resources Management', 33 *Physics and Chemistry of the Earth* (2008) 284–289 at 284.

[74] See, generally and *inter alia*, the references in note 75 below, which touch on potential environmental problems which could arise.

[75] See, generally and *inter alia*, Southern African Institute for Environmental Assessment (SAIEA), 'Pre-Feasibility Study for the Popa Falls Hydro Power Project: Preliminary Environmental Assessment' (2009), available at <http://www.saiea.com/case_studies09/08%20PopaFallsHydropower.pdf>; thewaterpage.com, 'Dam Proposed for Kavango River' (Und., 2012), available at <http://www.thewaterpage.com/okavango_article.htm>; Steve Boyes, 'Sold Up the River? Hydro Power Threat Re-Opens Debate' *National Geographic* (27 May 2014), available at <http://voices.nationalgeographic.com/2014/05/27/sold-up-the-river-hydro-power-threatens-okavango-delta/> (all visited 9 November 2015).

[76] Böge, *Water Governance in Southern Africa*, *supra* note 5, at 42.

> there have been considerable tensions between Namibia and Botswana because of Namibia's [ ] plans [to increase its use of Okavango River water] in the past (which Botswana perceived as a threat to national security), the [ ] countries so far have demonstrated their willingness to solve the problems related to the Okavango River in a mutually acceptable and beneficial way.[77]

3.1.2 The Inga III and Grand Inga dams: DR Congo (Kinshasa)/Congo (Brazzaville)/Central and Southern Africa

The Grand Inga Hydroelectric project is proposed for siting in the Democratic Republic of Congo (DRC). Two projects are currently planned. The first is the 'Inga III' project – one phase of which is under construction. The Congo River is a river which (unusually) has rapids close to its mouth and the dam site will be on the world's largest waterfall by volume (it is 4 km wide), Inga Falls. There already are two dams (Inga I, 1972, and Inga II, 1982), and the effects of the proposed Inga III project will need to be considered in relation to these. In May 2013 the DRC and South Africa signed a cooperation treaty in terms of which South Africa will purchase more than half of the electricity produced by Inga III. Construction should commence in 2016.

Much more significantly, the Grand Inga Hydroelectric Project (which was first proposed in the 1970s) in western DRC (50 km from the mouth of the Congo River) will be, when built, the largest hydro-electric project in the world. It is anticipated that it will produce 40,000 MW, which is twice the capacity of China's Three Gorges Dam. It is a project approved and potentially partially funded by the World Bank, amongst other international investors; the total cost of the project being estimated at US$80 billion.

Potential negative impacts from the combined projects overall include possible loss, or at least significant reduction, of the 800 km Congo plume; nutrient and sediment trapping; inescapable flooding of the Bundi Valley, inundating local agriculture efforts; loss of, and shifts in, biodiversity; the clearing of forests for roads and infrastructure; a need for dedicated power sources/plants; and severe socio-economic effects on local communities, with benefits to these people being small.

If it does go ahead and is successful, Grand Inga should be able to supply electricity to most of southern and central Africa; in other words to more than 500 million people. The effects on neighbouring countries are potentially positive in a region where far too few people have adequate power sources, but many of the negative side-effects may be difficult to justify.[78]

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[77] *Ibid*.

[78] See, generally and *inter alia*, reuters.com, 'World Bank Approves Funds to Study Congo's Inga Dam' (20 March 2014), available at <http://www.reuters.com/article/2014/03/20/us-congodemocratic-worldbank-idUSBREA2J1Y220140320>; Katrina Manson, 'Congo renews push for Grand Inga Dam, an African white elephant' ft.com African Economy, (8 September 2014), available at <http://www.ft.com/cms/s/0/207ac48c-34ef-11e4-aa47-00144feabdc0.html#slide0>; Daniel Wesangula, 'From Cape Town to Kinshasa: could the Grand Inga Dam Power Half of Africa?' theguardian.com (19 September 2014),

3.1.3 The CESUL project: Mozambique/South Africa/Zimbabwe

A project known as CESUL (Strategic Regional Environmental and Social Assessment) – Mozambique Backbone is planned. A double transmission line is planned to link two new Zambezi River hydro power plants from Mphanda Nkuwa and Cahora Bassa North in Tete in the North of Mozambique to Maputo and to South Africa. In addition, two new coal-fired plants are planned at Moatize and Benga. The project incorporates the building of a new dam, to be named 'Mphanda Nkuwa', some 60 km downstream from the Cahora Bassa dam on the Zambezi River.

According to the CESUL plan, '[i]mpacts resulting from resettlement and relocation are expected to be offset by a properly executed Resettlement Action Plan, plus the indirect benefits of economic development and increase to community well-being that are expected to result from electrification of rural and peri-urban areas'. There are likely to be various environmental and social impacts but, according to the plan, 'the cumulative effects to the natural, social and economic environment are expected to be net positive once a Zambezi River Watershed Management Plan is in place, supported by all riparian countries within the Basin'.

However, there are likely to be significant negative environmental and social impacts, as has already happened below the Cahora Bassa dam on the Zambezi,[79] and the majority of the power produced will be sold to South Africa – whether for a fair price[80] or not, given South Africa's economic hegemony in southern Africa, is as yet unknown. Several countries, and the region as a whole, will be affected – if not directly by the electricity lines, then at least by the effects of the new dam and the coal-fired plants.

There have also been hints of corruption, or at least of conflict of interest. There have, for instance, been allegations (as recently as October 2013) that both President Armando Guebuza of Mozambique and President Jacob Zuma of South Africa have family members involved in the project.[81] While it is not unusual for elected politi-

available at <http://www.theguardian.com/global-development-professionals-network/2014/sep/19/south-africa-drc-grand-inga-dam>; internationalrivers.org (und., 2015), 'Grand Inga Hydroelectric Project: An Overview', available at <http://www.internationalrivers.org/resources/grand-inga-hydroelectric-project-an-overview-3356>; Nathaniel Green, Benjamin K. Sovacool and Kathleen Hancock, 'Who Will the DRC's Grand Inga Dam Benefit?' *Mail & Guardian* (17 June 2015), <http://mg.co.za/article/2015-06-11-who-will-the-grand-inga-dam-benefit> (all visited 9 November 2015).

79 See part 3.1.5 below.

80 The calculation of such a price, to be truly fair, would need to take into account negative environmental effects – but these 'external' costs are often not considered.

81 See, generally, and *inter alia*, European Investment Bank, 'EIB – Strategic Regional Environmental and Social Assessment (SRESA)- Mozambique Regional Transmission Development Project (MZ-Maputo) 2009/S 200-286868' (16 October 2009), available at <http://www.eu-africa-infrastructure-tf.net/attachments/Tender-documents/sresa-2009s-200-286868-new.pdf>; Adriana Lafleur and Stephen Lindley, 'SRESA of a Regional Transmission development in Mozambique' IAIA13 Conference Proceedings (13 May 2013), available at <http://www.iaia.org/conferences/iaia13/proceedings/Final%20papers%20review%20process%2013/SRESA%20of%20a%20Regional%20Transmission%20development%20in%20Mozambique.pdf>; Lionel Faull, 'Zuma blood thickens hydro scheme' *Mail & Guardian* (25 October 2013), available at <http://mg.co.za/article/2013-10-25-00-zuma-blood-thickens-

cians and/or their family members to be involved in large-scale infrastructure projects, and it may never be known whether there was wrongdoing or not, it is worrying to see potential financial enrichment of decision-makers as this implies that benefits for relevant people may not be the only criteria which led to approval of the projects.

3.1.4 The Lesotho Highlands Water Project: Lesotho/South Africa

The Lesotho Highlands Water Project (LHWP), which has been ongoing since the 1950s and was formally created by treaty in 1986,[82] sees dams built in Lesotho both to meet Lesotho's power needs and to send water to the Gauteng region of South Africa. So far the Katse and Mohale dams have been built, in 1998 and 2002 respectively. Phase 2 of the project was launched in March 2014. Amongst other things, this will require construction of the Polihali dam, extension of the Muela hydroelectric complex, and construction of a 38.2 km water transfer tunnel connecting the Polihali reservoir with the hydroelectric complex.

Although largely successful, there have over the years been many problems such as corruption (Lesotho has bravely prosecuted a number of international construction companies); displacement of villages; pollution of watercourses; and the country remains very poor. According to Mirumachi and van Wyk, problems that have been raised (largely by NGOs) include livelihood issues suffered by local people displaced during the dam construction process; the failure of restoration efforts for such local people and inadequate livelihood compensation; and various environmental problems – to the extent that South Africa's former Minister responsible for Water Affairs, Kader Asmal, apparently even 'pledged' that there would not be further implementation of the project.[83, 84]

Ali, writing in 1999, tells us that the project, which is 'the largest water transfer project in southern Africa', 'has recently been the subject of serious environmental misgivings' and that '[m]ore than 20 000 people, residing in over 5 000 hectares of land, will be displaced' thereby.[85] Ali records also that only a small amount of money was

hydro-scheme>; Anon., 'Feasibility Studies of CESUL Project Nearing Completion in Mozambique' *macauhub.com* (17 November 2014), available at <http://www.macauhub.com.mo/en/2014/11/17/feasibility-studies-of-cesul-project-nearing-completion-in-mozambique/> (all visited 9 November 2015).

82 Treaty on the Lesotho highlands water project between the government of the Kingdom of Lesotho and the government of the Republic of South Africa, Maseru, 24 October 1986; available at <http://www.fao.org/docrep/w7414b/w7414b0w.htm> (visited 9 November 2015).

83 Naho Mirumachi and Ernita van Wyk, 'Cooperation at Different Scales: Challenges for Local and International Water Resource Governance in South Africa', 176 *The Geographical Journal* (2010) 25–38 at 31–32.

84 See, generally and *inter alia*, Trans-Caledon Tunnel Authority (TCTA), 'Lesotho Highlands Water Project' (2013), available at <http://www.tcta.co.za/Projects/Pages/LesothoHighlands.aspx>; Lesotho Highlands Water Project (LHDA) (2014), available at <http://www.lhda.org.ls/>; The World Bank, 'Lesotho Highlands Water Project – Phase 1A' (2015), available at <http://www.worldbank.org/projects/P001396/lesotho-highlands-water-project-phase-1a?lang=en>;
International Rivers, 'Lesotho Water Project' (2015), available at <http://www.internationalrivers.org/campaigns/lesotho-water-project> (all visited 9 November 2015).

85 Saleem H. Ali, 'Water Scarcity and Institutional Reform in Southern Africa', 24 *Water International* (1999) 116–125 at 119.

allocated for an 'environmental action plan'; and that 'Namibia, which is a downstream riparian [], was given peripheral opportunities to participate in the planning of the project, which may seriously hamper long-term viability of water extraction for usage in southern Namibia'.[86] Namibia, says Jacobs, 'is the most downstream riparian state and is highly reliant on the Orange-Senqu for agricultural activity in the south of the country' and, 'suffer[ing] an extremely arid hydroclimate', is 'therefore very dependent on international water resources to meet internal demand'.[87]

Mokorosi and van der Zaag point out that the bulk of the 'environmental and social impacts of the project [have been] felt in Lesotho', with more than 3,000 households being directly affected, of which more than 680 were displaced and resettled, with losses to 'private and communal properties and resources', and 'experiences of reduction of fish stocks, loss of wild vegetation, and medicinal plants due to reduced water flows'.[88] The treaty does provide for 'social and environmental considerations' to be taken into account. Article 15 reads:

> [t]he Parties agree to take all reasonable measures to ensure that the implementation and maintenance of the Project are compatible with the protection of the existing quality of the environment and, in particular, shall pay due regard to the maintenance of the welfare of persons and communities immediately affected by the Project.[89]

As a safeguard for the interests both of the environment and of local people, this Article is weak and it appears that negative impacts have been the rule.

The LHWP has been cited as an example of actual interstate conflict, with reference being made to the 1998 intervention by the SADC (using a military force provided by South Africa and, nominally, Botswana) in Lesotho to 'restore order in the face of internal power struggles' – '[o]ne main reason for this military intervention', says Böge, 'was to protect the LHWP and especially to safeguard the Katse dam, and thus the water supply to the RSA … Seventeen people were killed in a firefight that took place [] at the dam site'.[90] Swatuk maintains that the evidence supporting the claim that this was an example of a 'water war' is 'conjectural and anecdotal';[91] but Böge says that even if this was not '[s]outhern Africa's first water war', which claim he calls an 'exaggeration', one 'has to concede that the LHWP holds some potential for further conflict in the future'.[92]

[86] *Ibid*. at 120.
[87] Jacobs, 'A Community in the Orange', *supra* note 56, at 191.
[88] Palesa S. Mokorosi and Pieter van der Zaag, 'Can Local People also Benefit from Benefit Sharing in Water Resources Development? Experiences from the Orange-Senqu River basin', *Physics and Chemistry of the Earth* (2007) 1–13 at 7–8.
[89] Treaty on the Lesotho highlands water project, *supra* note 82.
[90] Böge, *Water Governance in Southern Africa*, *supra* note 5, at 21.
[91] Swatuk, 'Water conflict and cooperation', *supra* note 26, at 219–220.
[92] Böge, *Water Governance in Southern Africa*, *supra* note 5, at 21.

3.1.5 The Batoka Gorge dam: Zimbabwe/Zambia/Angola/Mozambique

The Batoka Gorge dam on the Zambezi River is planned downstream from Victoria Falls, on the Zambian/Zimbabwean boundary. It is not a recent proposal, having been planned for 70 years, and with studies having been conducted in 1993 and 1998 – there is recent momentum, however, with a Memorandum of Understanding having been signed in 2012, and international investors were being sought in 2012 and 2013.

The dam will not inundate land but will back water up and flood upstream rapids. There will be many impacts on bird and animal species in both Zimbabwe and Zambia, and many financial impacts on tourism. The dam will be the river's third large hydropower development – after Kariba and Cahora Bassa – and the tenth large reservoir; but there are already dam safety risks in the area, with the Kariba dam being old and having structural problems. As far as environmental concerns go, existing dams have already affected coastal mangroves; freshwater fisheries have been reduced; floodplain agriculture has been reduced; wildlife habitats have been reduced; and water table reductions have been caused.

The new dam will affect Zimbabwe, Zambia, Mozambique and perhaps Angola – and the amount of electricity produced will not be large.[93] According to Ali, the project 'could potentially disrupt the capacity of Kariba Dam and Ca[h]ora Bassa'; and 'the tribes that live along the Zambezi have [already] poignantly felt the disruptions to their lives of hydroelectric projects'.[94] It has been recorded that the Kariba and Cahora Bassa dams (on the middle and lower Zambezi, respectively) have already altered the hydrological regime of the Zambezi River delta in Mozambique so substantially that 'the natural flood cycles of the [l]ower Zambezi River are now a phenomenon of the past'.[95] According to Beilfuss and Brown, '[n]umerous adverse biophysical changes have been associated with' these changes; as have '[s]ocio-economic impacts [been] attributed to these deleterious hydrological changes' – such impacts 'include[ing] a reduction in floodplain and riverbank agriculture, inland fisheries, prawn fisheries,[96] and safari hunting opportunity (through reduced carrying capacity

[93] See, generally and *inter alia*, Brian Hatyoka, 'Zambia: Batoka Project to Ease Power Shortage', allAfrica.com/Times of Zambia (3 October 2013), available at <http://allafrica.com/stories/201310031305.html>; International Rivers, 'Batoka Gorge Dam, Zambezi River: Flooding out a Natural Wonder' (7 April 2014), available at <http://www.internationalrivers.org/resources/batoka-gorge-dam-zambezi-river-8291>; The World Bank, 'Board Approves CIWA Support for the Zambezi River Authority's Zambezi River Development Project' (1 July 2014), available at <http://www.worldbank.org/en/news/feature/2014/07/01/board-approves-ciwa-support-for-the-zambezi-river-authoritys-zambezi-river-development-project>; Regional Investment Agency/COMESA, 'Batoka Gorge Hydro-Power Station' (2015), available at <http://www.comesaria.org/site/en/opportunities_details.php?chaine=batoka-gorge-hydro-power-station&id_opportunities=430&id_article=290> (all visited 9 November 2015).

[94] Ali, 'Water Scarcity and Institutional Reform', *supra* note 85, at 120.

[95] Richard Beilfuss and Cate Brown, 'Assessing environmental flow requirements and trade-offs for the Lower Zambezi River and Delta, Mozambique', 8 *International Journal of River Basin Management* (2010) 127–138 at 127.

[96] It has, for instance, been reported that shrimp fisheries outside of the mouth of the Zambezi River have seen considerable drop-offs in abundance and that this can be attributed, at least in part, to changes in

for several trophy species)'.[97] The writers conclude that 'reinstating the annual flood [can be] singled out as the most valuable change that could be made to the delta flow regime'[98] – the construction of another dam on the Zambezi can hardly be conducive to such reinstatement, however.

Reinforcing these views much more recently, Fanaian et al record that before the Kariba and Cahora Bassa[99] dams were constructed 'the floodwaters of the lower Zambezi Basin supported a wide variety of aquatic plants and wildlife', but the 'loss of seasonal variations in flow has reduced the quality of the environment to sustain ecosystem functions and services downstream'.[100] The authors suggest that a 'holistic, integrated approach for assessing the economic value of river flow regime[s]' be adopted; and argue that when this approach is applied to the lower Zambezi in Mozambique, 'additional ecosystem benefits produced as a result of environmental friendly flow regimes may outweigh by a wide margin the benefits forgone by the current economic use of water – in this case hydropower production'.[101]

Is it likely that the changes suggested will be implemented soon? Probably only after considerable political turbulence has been weathered. In late 2015, as this paper was going to press, it was reported that water levels in Lake Kariba were so low that power production was being seriously affected, especially in Zimbabwe – and traditional chiefs on both sides of the lake were turning to religious ceremonies to appease the river god 'Nyaminyami', blamed by some for the low water levels.[102] While it is more likely that low rainfall and mismanagement of water flows has led to the problem, local beliefs are one of many issues which will need to be taken into account, and skillfully negotiated, before upstream users (be these users national governments or local authorities) can be persuaded to release valuable water to benefit users downstream.

downstream ecological systems since the construction of the Cahora Bassa dam. Tor Gammelsrød, 'Variation in Shrimp Abundance on the Sofala Bank, Mozambique, and its Relation to the Zambezi River Runoff', 21 *Ambio* (1992) 145–147 at 145.

97 Beilfuss and Brown, 'Assessing environmental flow', *supra* note 95, at 128.

98 *Ibid*. at 136.

99 Although the Cahora Bassa dam is inside Mozambique, it should be noted that it was constructed in the 1960s under the Portuguese colonial regime. As Pazvakavambwa notes, the dam was 'intended to boost the energy requirements of the urban industrial and mining conurbation of South Africa, with a small proportion of the energy going directly to Mozambique' and '[t]here is little evidence of consultations (if any) having been undertaken prior to [] construction'. Simon C. Pazvakavambwa, 'The Politics of Water Use and Water Access: How National Water Development Plans Affect Regional Cooperation (Focus on Zimbabwe and South Africa)' in Wirkus, *Water, Development and Cooperation*, *supra* note 12, 122–134 at 124.

100 Safa Fanaian et al, 'An Ecological Economic Assessment of the Flow Regimes in a Hydropower Dominated River Basin: The case of the lower Zambezi River, Mozambique', 505 *Science of the Total Environment* (2015) 464–473 at 468.

101 *Ibid*. at 471.

102 See, for instance, Anon., 'Angry river god blamed for parched Kariba', *News24.com* (28 October 2015), available at <http://www.news24.com/Africa/Zimbabwe/Angry-river-god-blamed-for-parched-Kariba-20151028>. Anon., 'ZESA loadshedding: Shocking details about Nyami Nyami snake which caused Kariba dam to dry up', *myzimbabwe.co.zw* (29 October 2015), available at <http://www.myzimbabwe.co.zw/news/4213-zesa-loadshedding-shocking-details-about-nyami-nyami-snake-which-caused-kariba-dam-to-dry-up.html> (all visited 9 November 2015).

3.1.6 The De Hoop dam: South Africa/Mozambique

Between 2003 and 2006, the Department of Water Affairs and Forestry (DWAF) in South Africa proposed to build a dam (the 'De Hoop' dam) on the Olifants River, which runs into the Kruger National Park (KNP) and then on into Mozambique. The Department of Environmental Affairs and Tourism (DEAT) then provided authorization by way of a Record of Decision (RoD), November 2005.

The RoD was handed down despite objections (including from SANParks, the organ of state responsible for the management of all national parks in South Africa, and from a Mozambican NGO, Geasphere). Potentially, this matter could have resulted in an interdepartmental crisis, with SANParks (an organ of state) threatening litigation against both DWAF and DEAT (its own principal) – as well as involving an international dispute between Mozambique and South Africa.

In November 2005 a Record of Decision was released by DEAT in terms of which DWAF was authorized to build the proposed dam. In reaching its decision, DEAT took into account the final environmental impact report (EIR) and environmental management plan (EMP) dated October 2005; and also comments received from the South African Heritage Resources Agency (SAHRA), and the Departments of Health and Social Services (Mpumalanga), Minerals and Energy (Limpopo), Economic Development, Environment and Tourism (Limpopo), and Agriculture and Land Administration (Mpumalanga). Curiously, nothing was said about the Kruger National Park and about Mozambique. It was as though the research toward the EIR had simply stopped at the border of the KNP.

Formal objections were then made to the RoD based, firstly, on environmental concerns, including the potential impact on the Kruger National Park; the potential impact on Mozambique; the loss of the Sekhukhune Centre of Plant Endemism; and that no 'ecological reserve' had been determined as required by the National Water Act. Secondly, the objections were based on socio-economic concerns, these including that the dam would benefit mining interests, but not the poor in the area; and that tourism would be negatively affected. Thirdly, the objections were based on procedural concerns, including that insufficient time had been given for appeal; that there had been insufficient public consultation; and that the conditions laid down provided insufficient safeguards.

In October 2006, releasing a Revised Record of Decision (RRoD), the Minister of Environmental Affairs acknowledged that the objections had merit, and so argued the appeals were partially upheld. The Minister concluded that the need for the dam has been demonstrated, with there being 'no viable alternative to a supply-side solution for the demands envisaged on the system'; that the construction and operation of the dam will, however, 'have definite and substantial detrimental impacts on the environment'; and that the substantial impacts 'cannot therefore be avoided, but measures must be put in place to mitigate the potential impacts to acceptable levels'.

Still nothing was said about Mozambique, however! As difficult to believe as it may be, no acknowledgement was made – even in the RRoD – that a neighbouring country would almost certainly be affected. This probably indicates the general lack of concern which countries show for their international obligations.

The dam was officially opened in March 2014,[103] and in coming years it will be seen what effects it will have.

Writing some 15 years ago of Mozambique's water-related situation generally, Carmo Vaz and Lopes Pereira suggest that '[u]unfortunately, in Mozabique there is very little information and hydrometric data regarding [] other basin countries' and '[t] here is no information in Mozambique regarding the present water uses and planned future developments in [] upstream countries, besides sparse information that is presented in various types of fora'.[104] They conclude that Mozambique has achieved little 'in its relations with SADC countries with whom it shares river basins' and that '[b]asically, the general attitude has been that each country promoted its own water developments, trying to cope with increasing water demands'.[105] Mozambique, they say, has 'been too passive in face of the developments taking place in the other countries'.[106] Ashton and Turton reinforce this view, writing of the Limpopo Basin that Mozambique is 'located downstream of three of the four regional pivotal states' and that 'in most years, negligible quantities of water are left in the river once the strategic needs of the upstream pivotal states have been taken care of'.[107]

3.1.7 The Nsanje inland port: Malawi/Mozambique

Malawi is landlocked and proposed the Nsanje inland port (which cost US$ 6 billion to build) to link the country, through the Shire-Zambezi Waterway, with the Indian Ocean port of Chinde, 238 km away in Mozambique. The port officially opened in October 2010, but has not yet become operational, as Mozambique is refusing to allow barges to traverse its waters until various feasibility studies have been completed.

In mid-2013, however, international companies were contracted to conduct the feasibility studies; and the two countries' leaders agreed to renew the project. One of those leaders (Malawi's) has since been ousted, however, and much remains uncertain.[108]

[103] See, generally and *inter* alia, Department of Water Affairs and Forestry, 'Olifants River Water Resources Development Project (ORWRDP) (2005), available at <https://www.dwa.gov.za/ORWRDP/documents/Strategic%20Perspective%20FINAL.pdf>; Ed Couzens and Mark Dent, 'Finding NEMA: The National Environmental Management Act, the De Hoop Dam, Conflict Resolution and Alternative Dispute Resolution in Environmental Disputes', 9 *Potchefstroom Electronic Law Journal* (2006) 2–51, available at <http://www.nwu.ac.za/p-per/volume-9-2006-no-3>; SouthAfrica.info, 'South Africa opens R3bn De Hoop dam' (24 March 2014), available at <http://www.southafrica.info/business/economy/infrastructure/dams-240314.htm> (all visited 9 November 2015).

[104] Álvaro Carmo Vaz and Arnaldo Lopes Pereira, 'The Incomati and Limpopo international river basins: a view from downstream', 2 *Water Policy* (2000) 99–112 at 104.

[105] *Ibid*. at 109.

[106] *Ibid*. at 110.

[107] Ashton and Turton, 'Transboundary Water Resource', *supra* note 12, at 14.

[108] See, generally and *inter alia*, Claire Ngozo, 'Southern Africa: New Inland Port Set to Improve Regional

While this matter concerns navigation and so does not technically relate to either the UN Convention or the Revised Protocol, it has been cited here as an example of water-related international conflict in the region – it being important to note that hydropower projects are not the only possible source of conflict.

3.1.8 The Lake Malawi dispute: Malawi/Tanzania

There is an ongoing territorial dispute between Malawi and Tanzania concerning the boundaries of Lake Malawi (Lake Nyasa), which has led to threats of military action and of international legal action. Malawi claims that it owns the entire lake up to the Tanzanian shore; Tanzania claims that the boundary is in the middle of the lake.

The matter became particularly contentious in 2011 and 2012 because Malawi awarded gas and oil exploration licences to a UK-based private company (Surestream Petroleum Co.). In 2012 the two countries agreed to mediation by a number of African heads or former heads of state (Joaquim Chissano, Thabo Mbeki and Festus Mogae of Mozambique, South Africa and Botswana respectively) facilitated by the SADC, and the mediation process began but reached deadlock in March 2013. In April 2013, Malawi withdrew from the process on the basis of alleged bias by SADC officials. Malawi has always been reluctant to go through mediation, and seems to prefer the option of going to the International Court of Justice on this matter.

As recently as July 2013 Tanzania's President Kikwete implied strongly that military force might be used to maintain access to the lake. As at February 2014, the two countries had agreed to meet the panel of mediators again. In November 2014, however, Malawi's President Mutharika again insisted that Malawi owns the entire lake.[109]

Trade', InterPressService (25 October 2010), available at <http://www.ipsnews.net/2010/10/southern-africa-new-inland-port-set-to-improve-regional-trade/>; IRINnews, 'Malawi: Dream Fades for Inland Port', *IRINnews* (10 May 2012), available at <http://www.irinnews.org/report/95438/malawi-dream-fades-for-inland-port-project>; Diana Phiri, 'Malawi: AGOA Pledges to Support Nsanje World Inland Port', allAfrica.com/Malawi News Agency (21 April 2015), available at <http://allafrica.com/stories/201504270101.html>; Frank Chirwa, 'Quelimane Port Much Better Option for Malawi than Unrealistic Nsanje Inland Port', *Nyasa Times* (1 June 2015), available at <http://www.nyasatimes.com/2015/06/01/quelimane-port-much-better-option-for-malawi-than-unrealistic-nsanje-inland-port/> (all visited 10 November 2015).

[109] James Mayall, 'The Malawi-Tanzania Boundary Dispute', 11 *The Journal of Modern African Studies* (1973) 611–628; Aditi Lalbahadur, 'Malawi v Tanzania v SADC: Regional Dispute Resolution Bites the Dust' (South African Institute of International Affairs (SAIIA, 2013), available at <http://www.saiia.org.za/opinion-analysis/malawi-vs-tanzania-vs-sadc-regional-dispute-resolution-bites-the-dust>; Mangengesa Mdimi, 'Malawi-Tanzania Border Dispute an Eye-Sore in 2013', allAfrica.com/*Tanzania Daily News* (25 December 2013), available at <http://allafrica.com/stories/201312250011.html>; Chris Mahony, *et al*, 'Where Politics Borders Law: The Malawi-Tanzania Border Dispute', *New Zealand Centre for Human Rights Law, Policy and Practice – WP 21* (2014), available at <https://cdn.auckland.ac.nz/assets/humanrights/Research/MalawiTanzania-NZCHRLPP-final.pdf>; Green Muheya, 'Mutharika Maintains Lake Malawi Ownership Non-Negotiable', *Nyasa Times* (20 November 2014), available at <http://www.nyasatimes.com/2014/11/20/mutharika-maintains-lake-malawi-ownership-non-negotiable-no-war-with-tanzania/> (all visited 10 November 2015).

While this matter concerns territorial boundaries and so does not technically relate to either the UN Convention or the Revised Protocol, it has been cited here as a further example of water-related international conflict in the region – demonstrating (as did the example concerning the Nsanje inland port) that hydropower projects are not the only possible source of conflict.

3.2 Comment

These are just eight examples, which have been provided in order to give a 'snapshot' of what is happening in the SADC with hydropower projects and other, water-related international issues.[110] As should be apparent, hydropower projects have the potential for major transboundary impacts and to give rise to serious conflict. It is to be expected that, exacerbated by climate change, more prevalent water shortages and increased demand, these and other conflicts will need to be dealt with in the future. In fact, they will probably need to be dealt with sooner rather than later – and certainly before the region is prepared to deal with the conflict.

4 The SADC Protocol on Shared Watercourses (Revised), 2000

There are 12 continental member states of the Southern African Development Community (SADC), these being: Angola, Botswana, the Democratic Republic of Congo, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe; and three 'offshore' member states, Madagascar, Mauritius, and the Seychelles.[111] Obviously, watercourse-related conflict will mainly concern the continental members. The main objectives of the SADC, according to its own website, are to 'achieve development, peace and security, and economic growth [and] to alleviate poverty'; as well as 'enhanc[ing] the standard and quality of life of the peoples of Southern Africa' and 'support[ing] the socially disadvantaged through regional integration, built on democratic principles and equitable and sustainable development'.[112]

Southern African countries face many environmental constraints, and insufficient water is one of the gravest of these. As said,[113] the region is generally water-stressed or water-scarce, and is subject also to extreme regional and/or economic class differences in availability of water. The region suffers also from major problems related to

[110] There are other actual or potential conflicts which could have been considered, such as a dispute between Namibia and South Africa over their boundary where the Orange River is concerned. South Africa maintains that the boundary should be the pre-colonial boundary of the northern bank; Namibia maintains that the boundary should be redrawn to be the middle of the river. This issue may have repercussions for the mining- and water-related interests of both countries. See, for instance, Richard Meissner 'Drawing the Line', *supra* note 6, at 36–37.

[111] SADC, 'Member States', (2012), available at <http://www.sadc.int/member-states>.

[112] SADC, 'Overview', (2012), available at <http://www.sadc.int/about-sadc/overview/>.

[113] See Parts 1 and 2 above.

lack of infrastructure and many of its people live without adequate access to electric or other power. Energy insecurity is a real problem which has many corollary problems, such as deforestation as people turn to the use of wood burning as a source of power. As the region is not densely forested, except in scattered pockets, it is hardly surprising that many southern African countries see possible energy solutions in hydropower projects, despite the lack of water and the concomitant problems caused by large-scale hydropower projects.

In the words of the SADC itself, on its own website, Southern Africa's water resources are vital for sustainable economic and social development in the region – in fact, according to the SADC these resources are 'critical for meeting the basic needs related to water supply for domestic, industrial and agricultural requirements and for sanitation and waste management for over 250 million people'.[114] Further, the SADC records that more than 70 per cent of the fresh water resources of the region 'are shared between two or more Member States, a situation that has been the basis for the development and adoption of a series of regional instruments to support the joint management and development of shared watercourses'.[115]

In particular, there is a Protocol on Shared Watercourses. According, again, to the SADC itself, water is of 'special concern' for the SADC 'as much of Southern Africa relies on agriculture for its subsistence'; and many of the region's watercourses 'are shared among several Member States, a situation that demands their development in an environmentally sound manner'.[116] The SADC adopted the Protocol on Shared Watercourse Systems in the Southern African Development Community on 28 August 1995 but then, as will be explained below, adopted a revised version on 7 August 2000. The term 'shared watercourse' is defined in the Protocol as meaning 'a watercourse passing through or forming the border between two or more Watercourse States'.[117]

According to the SADC, the aim of the Protocol is to 'foster closer cooperation among Member States for protection, management, and use of shared watercourses in the region'; with those members 'agree[ing] to cooperate on projects and exchange information on shared watercourses, consulting with each other and collaborating on initiatives that balance development of watercourses with conservation of the environment'.[118]

[114] SADC, 'SADC Water Sector' (2012), available at <http://www.sadc.int/sadc-secretariat/directorates/office-deputy-executive-secretary-regional-integration/infrastructure-services/sadc-water-sector/> (visited 12 November 2015).
[115] *Ibid*.
[116] SADC, 'Documents and Publications: Revised Protocol on Shared Watercourses (2000)' (2012), available at <http://www.sadc.int/documents-publications/show/1975> (visited 12 November 2015).
[117] Art. 1: Definitions. It should be noted that this definition is shared with that of the United Nations Convention on Shared Watercourses, 1997, discussed below.
[118] SADC, 'Documents and Publications', *supra* note 116.

5 Consideration of the Revised Protocol

The SADC Protocol was revised in order to reflect the UN Convention. As Böge puts it, 'after the UN Convention [ ] had been adopted there was a general feeling among SADC members that the Water Protocol should be revised to bring it more in line with the UN Convention' and '[h]ence the revision process [ ] was pursued'.[119]

One of the reasons for the importance of the SADC Revised Protocol, according to Turton, is that it provides 'the basis of regional cooperation in the Southern African water sector'; with Turton drawing an analogy with 'coal and atomic cooperation [ ] as the basis of European integration' in order to argue that 'water can [ ] become the basis for Southern African regional integration'.[120] In this regard, he sees the Revised Protocol as potentially 'being the foundation to functional integration and not simply a water-sharing agreement'; arguing that while 'the main emphasis is at the regional scale [ ] the impacts are felt down to the national and river basin level if that basin is shared between two or more riparian states' and with there being 'no real impact below that scale'.[121]

Ashton and Turton consider it significant that the Protocol on Shared Watercourses was the first cooperation protocol signed within the SADC region – they say that this illustrates the 'significant role played by water in southern Africa'.[122]

According to Church, most cooperative situations are based on bilateral – and occasionally, as in the case of the SADC, multilateral – agreements, and states are too concerned about potential erosion of their sovereignty to be willing to broaden the number of stakeholders, despite the better results that would follow from increased cooperation.[123] The SADC itself, she points out, has only 'limited supranational capability' as it 'devolves the authority and responsibility for initiating policy-related actions down to the relevant state actors'.[124] It would, she says, 'be expected that the adoption of this model would facilitate other issues and create a more stable regional environment'.[125]

Mirumachi and van Wyk argue that despite some contentious issues,[126] the Treaty on the Lesotho Highlands Water Project' (Lesotho/South Africa, 1986) 'has been

[119] Böge, *Water Governance in Southern Africa*, *supra* note 5, at 23.

[120] Anthony Turton, 'Report on the Hydropolitical Dimension' in Breen et al, Strategic Review of River Research. Water Research Commission Project K5/1198: Final Report (Water Research Commission, 2003), available at <http://www.wrc.org.za/Knowledge%20Hub%20Documents/Research%20Reports/1198-1-03.pdf> (visited 9 November 2015) 59–92 at 86.

[121] *Ibid*.

[122] Ashton and Turton, 'Transboundary Water Resource', *supra* note 12, at 10.

[123] Church, 'Water: A Threat of War', *supra* note 21, at 22–23.

[124] *Ibid*. at 23.

[125] *Ibid*.

[126] The authors cite 'speculation regarding South African manipulation of the Lesotho government to sign the project treaty'; 'adverse environmental and social impacts in the project area, which raise questions of how beneficial the project is to the Basotho locals'; 'South African led military intervention at a major project dam site'; and 'a corruption scandal between the project authority and multilateral corporations'. Mirumachi and van Wyk, 'Cooperation at Different Scales', *supra* note 83, at 30.

regarded as an example of successful regional cooperative initiatives over water, particularly among the implementing agencies'.[127] They argue that this success has 'implications for the regional water management principles' and claim that 'with the creation of the Southern African Development Community (SADC) and their mandate for economic development the water sector has been considered as the motor for achieving these goals'.[128] The writers argue that the SADC Revised Protocol on Shared Watercourses 'emphasises the need for collective effort in sustainable management of water for socio-economic development'; that there are examples of 'horizontal cooperation between riparian states' and 'encourage[ment of] the vertical linkage of water users for user-oriented, participatory management of [ ] waters'.[129]

According to Muller, the Revised Protocol 'provides the basic framework whereby an equitable approach to the use of shared waters can be promoted' – he criticizes the Protocol, however, on the basis that it contains 'no clear mechanisms through which the financial benefits, accrued from the allocation of water for use within the territory of only one of the riparian countries, could be shared'; his point being that 'such mechanisms could help to reduce contention'.[130]

Unfortunately, the optimism apparent in much of the writing available on the Revised Protocol appears to be coming from researchers, such as Church or Mirumachi and van Wyk, writing from a scientific or a humanistic (social sciences) angle – not from an international legal perspective. In most cases commentators, from whatever perspective they are writing, appear simply to note the existence of the Protocol, offer a quick description of its objectives, and to assume that it is functioning as it is intended to do. As a legal instrument, the Revised Protocol is probably being observed more in the breach.[131]

[127] *Ibid*.
[128] *Ibid*.
[129] As an example they give the Orange Senqu River Basin Commission (ORASECOM), established in 2000 by Botswana, Lesotho, Namibia and South Africa, which they say 'acknowledges the cooperative initiative of the SADC protocol for better management between the riparian states'. *Ibid*.
[130] Muller, 'Water Wars?', *supra* note 41, at 34–35.
[131] Cawthra, writing of the challenges which face 'security cooperation' within the SADC, summarizes challenges as being 'the absence of common values; weak institutional capacity; member states' guarding of their sovereignty'. Gavin Cawthra (2006), quoted in Naomi Kok, 'Post-Conflict Development: What South Africa Can Achieve through SADC', *ISS Paper No. 279* (Institute for Security Studies (ISS), 2015), available at <http://www.issafrica.org/uploads/Paper279.pdf> (visited 12 November 2015). These points arguably apply also to the issue of cooperation on watercourses.

6 The Revised Protocol in operation

6.1 Operational instruments

While there are various instruments which have been concluded to 'operationalize' the Revised Protocol, such as the SADC Regional Water Policy of 2005,[132] these have not been considered[133] in this paper, which concentrates on the relationship between the Revised Protocol and the UN Convention.

Briefly, however, it should be mentioned that the Regional Water Policy provides that 'regional cooperation in shared watercourses shall be guided by the Revised protocol';[134] that member states 'shall pursue all avenues of amicable prevention and resolution of conflicts, in accordance with the principles enshrined in the SADC Treaty';[135] and that 'SADC shall actively participate in and support other African Initiatives, as well as creating relationships with international initiatives on water resources management'.[136] Given these policy imperatives, it is even less clear why SADC member states continue not to refer to the Revised Protocol as a first recourse in water-related conflict situations – and why so many have still failed to ratify the UN Convention.

6.2 Missed opportunities

'In some ways', says Swatuk, 'the [southern African] region was ahead of the global curve in contesting "the water wars" and "resource wars" hypotheses'.[137] On paper, the Protocol provides an excellent framework for cooperation and improved environmental management. South Africa, for instance, has been described as being 'committed to managing shared river basins in line with the Revised Protocol on Shared Watercourses in the Southern African Development Community (SADC) and in terms of specific agreements with riparian states'; and as having as its 'second highest priority'[138] the 'meeting of international water requirements in terms of [] agreements with riparian states'.[139]

One noticeable feature, however, of the various actual or potential conflicts described above,[140] and other such actual or potential conflicts, is that the SADC Revised Pro-

[132] Available at <http://www.sadc.int/files/1913/5292/8376/Regional_Water_Policy.pdf> (visited 12 November 2015).

[133] Nor have the various river basin commissions which have been created. These include the Limpopo Watercourse Commission (LIMCOM), see <http://www.limcom.org/>; the Permanent Okavango River Basin Water Commission (OKACOM), see <http://www.okacom.org/>; the Orange-Senqu River Commission (ORASECOM), see <http://www.orasecom.org/>; and the Zambezi Commission (ZAMCOM), see <http://www.zambezicommission.org/>.

[134] Section 9(a) 'Water for Peace'.

[135] Section 9(a) 'Conflict Management'.

[136] Section 9(a) 'Water for International Cooperation'.

[137] Swatuk, 'Water conflict and cooperation', *supra* note 26, at 218.

[138] In terms of its National Water Resource Strategy 2 (2013).

[139] Jansen van Vuuren, 'Water Resource Strategy', *supra* note 18, at 13.

[140] In Part 3 of this paper, above.

tocol on Shared Watercourses of 2000 does not appear to have been considered by any of the various roleplayers in any of the examples given as providing them with their first (or even with any!) recourse for conflict resolution. This seems a great pity, and a missed opportunity, as the Revised Protocol is well-placed to provide a forum for conciliation.

The Revised Protocol recognizes the legitimacy of industrial use, including for the generation of electricity, while emphasizing regional cooperation over territorial sovereignty. 'Industrial use', according to the Revised Protocol, means 'use of water for commercial, electrical power generation, industrial, manufacturing and mining purposes'.[141]

Using, and perhaps strategically strengthening, the SADC Protocol now would undoubtedly assist states to deal better with the future conflicts which will, it seems inevitable, arise – either from the conflicts presently incipient or from sets of circumstances as yet unforeseen.

6.3 The Revised Protocol and the Helsinki Rules

The Helsinki Rules on the Uses of the Waters of International Rivers[142] are a set of suggested rules for regulating both the exploitation and the protection of international watercourses. While they have no legally binding effect, they remained until the adoption in 1997 of the UN Convention on the Law of the Non-Navigational Uses of International Watercourses[143] the 'single most authoritative and widely quoted set of rules for regulating the use and protection of international watercourses'.[144] According to Salman, the Rules 'established the principle of "reasonable and equitable utilization" of the waters of an international drainage basin among the riparian states as the basic principle of international water law'.[145]

Heyns, Patrick and Turton suggest that the Helsinki Rules were adopted by the International Law Association (ILA) 'in order to devise international laws concerning the equitable allocation of shared water resources between states', with the Rules provide 'a set of guidelines for reasonable and equitable sharing of common water resources'.[146] According to these authors, the Rules indicate that 'each state is entitled to a reasonable and equitable share in the beneficial uses of the waters in the drainage basin; a use or category of uses is not entitled to any inherent preference over any

[141] Art. 1: Definitions.
[142] Adopted by the International Law Association's 52nd Conference, Helsinki, August 1966. Report of the Committee on the Uses of the Waters of International Rivers (International Law Association, 1967).
[143] See Part 7, below.
[144] Salman M. A. Salman, 'The Helsinki Rules, the UN Watercourses Convention and the Berlin Rules: Perspectives on International Water Law', 23 *Water Resources Development* (2007) 625–640 at 630.
[145] *Ibid*. at 629.
[146] Pieter S. V. H. Heyns, Marian J. Patrick and Anthony R. Turton, 'Transboundary Water Resource Management in Southern Africa: Meeting the Challenge of Joint Planning and Management in the Orange River Basin', 24 *International Journal of Water Resources Development* (2008) 371–383 at 373.

other use or category of uses; and a state may not be denied the present reasonable use of water in order to reserve for a co-basin state the right to future use'.[147]

It has been recognized under the United Nations Watercourses Convention that the Helsinki Rules have 'played an important role in shaping subsequent treaty practice, particularly in Africa', with a number of the principles suggested by the Helsinki Rules being reflected in the subsequent UN Watercourses Convention.[148]

The original Protocol of 1995, which came into force in 1998, reflected the Helsinki Rules – the Revised Protocol of 2000, which came into force in 2003, was changed to reflect the introduction of the UN Convention on the Law of the Non-Navigational Uses of International Watercourses, 1997.

The essential difference between the old and the new Protocols is that the new (ie: Revised) Protocol stresses the importance of taking a basin-wide approach to water management, rather than emphasizing the principle of territorial sovereignty. The difference between the Helsinki Rules and the Convention, and thus between the Protocol and the Revised Protocol, might be what van der Zaag calls a 'false dilemma'.[149] According to van der Zaag, the Helsinki Rules 'codified the principle that "[e]ach basin state is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin'; whereas the Convention formulated 'the principle of the obligation not to cause significant harm' (in Article 7) – both principles, van der Zaag says, 'apply concurrently and represent, as it were, two sides of the same coin [as t]hey convey the basic tenet that riparians have rights and duties in the uses of water resources'.[150] Nevertheless, the importance of de-emphasizing territorial sovereignty is something that cannot be denied in the southern African region. This is particularly so if Ashton is correct that there have been no 'true' water wars, but that these have often been a part of conflicts over territorial sovereignty.[151]

Of the SADC member states, Botswana, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, and Zambia have all ratified the Revised Protocol. Angola and Zimbabwe have signed. The Democratic Republic of Congo and the Seychelles have neither signed nor ratified.

147 *Ibid*. at 373–374.

148 UN Watercourses Convention Online User's Guide, 'Importance: Evolution of the UN Watercourses Convention', available at <http://www.unwatercoursesconvention.org/importance/evolution-of-the-un-watercourses-convention/> (visited 6 May 2015).

149 Pieter van der Zaag, 'Asymmetry and Equity in Water Resources Management: Critical Institutional Issues for Southern Africa', 21 *Water Resources Management* (2007) 1993–2004 at 1997.

150 *Ibid*.

151 Ashton, 'Avoiding Conflicts', *supra* note 22.

6.4 The Helsinki Rules and the Berlin Rules

The Helsinki Rules were replaced by the Berlin Rules on Water Resources,[152] approved[153] in 2004 by the ILA's Water Resources Law Committee. The Berlin Rules are intended to set out customary international law in respect of fresh water resources and to replace the Helsinki Rules by making changes including the incorporation of concepts from international environmental and human rights law. According to Salman, the 'major distinction between the Helsinki Rules and the UN Convention [on the Law of the Non-Navigational Uses of International Watercourses][154] on the one hand, and the Berlin Rules on the other, is that the former establish and emphasize the right of each basin state to a reasonable and equitable share' while the latter 'oblige[] each basin state to manage the waters of an international drainage basin in an equitable and reasonable manner'.[155]

As the UN Convention has now come into force, the place and status of the Berlin Rules will not be discussed further in the present paper – it has been included here for historical completeness.

6.5 The provisions of the Revised Protocol

The overall objective of the Revised Protocol is to 'foster closer cooperation for judicious, sustainable and co-ordinated management, protection and utilisation of shared watercourses and advance the SADC agenda of regional integration and poverty alleviation'.[156] In order to achieve this objective, the Protocol seeks to 'promote and facilitate the establishment of shared watercourse agreements and Shared Watercourse Institutions for the management of shared watercourses';[157] 'advance the sustainable, equitable and reasonable utilisation of the shared watercourses';[158] and 'promote a co-ordinated and integrated environmentally sound development and management of shared watercourses'.[159] Further, the Protocol's objective includes promotion of 'the harmonisation and monitoring of legislation and policies for planning, development, conservation, protection of shared watercourses, and allocation

[152] The Berlin Rules on Water Resources, International Law Association, Berlin Conference (2004), available at <http://internationalwaterlaw.org/documents/intldocs/ILA_Berlin_Rules-2004.pdf> (visited 12 November 2015).

[153] Although with a 'dissenting opinion' – see International Water Law Project, 'ILA Berlin Conference 2004 – Water Resources Committee Report Dissenting Opinion' (9 August 2004), available at <http://www.internationalwaterlaw.org/documents/intldocs/ila_berlin_rules_dissent.html> (visited 12 November 2015).

[154] See Part 7, below.

[155] Salman, 'The Helsinki Rules', *supra* note 144, at 636. Salman summarizes the difference by suggesting that 'whereas the Helsinki Rules and the UN Convention establish and emphasize the right of each of the riparian states to a reasonable and equitable share, the Berlin Rules emphasize the obligation to manage the shared watercourse in an equitable and reasonable manner'. *Ibid*.

[156] Art. 2: 'Objective'.

[157] Art. 2(a).

[158] Art. 2(b).

[159] Art. 2(c).

of the resources thereof';[160] and the promotion of 'research and technology development, information exchange, capacity building, and the application of appropriate technologies in shared watercourses management'.[161]

There are specific provisions[162] in the Protocol which concern both environmental protection and preservation[163] and the prevention and mitigation of harmful conditions.[164] Under the sub-heading '[p]rotection and preservation of ecosystems' it is provided that 'State Parties shall, individually and, where appropriate, jointly, protect and preserve the ecosystems of a shared watercourse'.[165] Under the sub-heading '[p]revention, reduction and control of pollution'[166] it is provided that 'State Parties shall, individually and, where appropriate, jointly, prevent, reduce and control the pollution and environmental degradation of a shared watercourse' where this 'may cause significant harm to other Watercourse States or to their environment, including harm to human health or safety, to the use of the waters for any beneficial purpose or to the living resources of the watercourse'.[167]

It is then further provided that 'Watercourse States shall take steps to harmonise their policies and legislation in this connection';[168] and that 'State Parties shall, at the request of any one or more of them, consult with a view to arriving at mutually agreeable measures and methods to prevent, reduce and control pollution of a shared watercourse'.[169] In respect of this latter obligation, examples of such 'measures and methods' are given, such as the setting of 'joint water quality objectives and criteria';[170] the establishing of 'techniques and practices to address pollution from point and non-point sources';[171] and the establishing of 'lists of substances the introduction of which, into the waters of a shared watercourse, is to be prohibited, limited, investigated or monitored'.[172]

Under the sub-heading '[i]ntroduction of alien or new species' it is further provided that 'State Parties shall take all measures necessary to prevent the introduction of species, alien or new, into a shared watercourse which may have effects detrimental to

[160] Art. 2(d).
[161] Art. 2(e).
[162] Art. 4.
[163] Art. 4(2).
[164] Art. 4(4).
[165] Art. 4(2)(a).
[166] Art. 4(2)(b).
[167] Art. 4(2)(b)(i). As Böge notes, conflicts over 'pollution/contamination result from the fact that the upstream riparian can externalize the costs of using the river as a sink to the detriment of the downstream riparian. Urban sewage, pesticides for agricultural use, contaminated mine tailings, industrial pollution, etc. all contribute to the qualitative decline of the resource'. Böge, *Water Governance in Southern Africa*, *supra* note 5, above.
[168] Art. 4(2)(b)(ii).
[169] Art. 4(2)(b)(iii).
[170] Art. 4(2)(b)(iii)(aa).
[171] Art. 4(2)(b)(iii)(bb).
[172] Art. 4(2)(b)(iii)(cc).

the ecosystems of the watercourse resulting in significant harm to other Watercourse States'.[173] Finally, under the sub-heading [p]rotection and preservation of the aquatic environment', it is provided that 'State Parties shall individually and, where appropriate, in co-operation with other States, take all measures with respect to a shared watercourse that are necessary to protect and preserve the aquatic environment, including estuaries, taking into account generally accepted international rules and standards'.[174]

Under the Article sub-heading '[p]revention and mitigation of harmful conditions' it is provided that '[s]tate Parties shall individually and, where appropriate, jointly take all appropriate measures to prevent or mitigate conditions related to a shared watercourse that may be harmful to other Watercourse States', whether such conditions result 'from natural causes or human conduct, such as floods, water-borne diseases, siltation, erosion, salt-water intrusion, drought or desertification'.[175] It is then further provided that

> State Parties shall require any person intending to use the waters of a shared watercourse within their respective territories for purposes other than domestic or environmental use or who intends to discharge any type of waste into such waters, to first obtain a permit, licence or other similar authorisation from the relevant authority within the State concerned;

with the stipulation that such 'permit or other similar authorisation shall be granted only after such State has determined that the intended use or discharge will not cause significant harm on the regime of the watercourse'.[176]

Also of relevance for purposes of the present paper is Article 7, which is headed '[s]ettlement of [d]isputes' and which provides that 'State Parties shall strive to resolve all disputes regarding the implementation, interpretation or application of the provisions of this Protocol amicably in accordance with the principles enshrined in Article 4 of the Treaty'.[177] It is then provided that '[d]isputes between State Parties regarding the interpretation or application of the provisions of this Protocol which are not settled amicably, shall be referred to the Tribunal;[178] and that '[i]f a dispute arises between SADC on the one hand and a State Party on the other, a request shall be made for an advisory opinion in accordance with article 16(4) of the Treaty'.[179]

[173] Art. 4(2)(c).
[174] Art. 4(2)(d).
[175] Art. 4(4)(a).
[176] Art. 4(4)(b).
[177] Art. 7(1).
[178] Art. 7(2). It should be noted, however, that the Tribunal is currently suspended after a dispute over whether its jurisdiction included human rights-based complaints or not. After a SADC review, the Tribunal was suspended in 2010. In 2012 the SADC agreed to create a new Tribunal with jurisdiction limited to inter-state complaints only. See, for instance, International Justice Resource Center (IJRC), 'SADC Tribunal', available at <http://www.ijrcenter.org/regional-communities/southern-african-development-community-tribunal/> (visited 12 November 2015).
[179] Art. 7(3).

7 The United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses

The UN Convention on the Law of the Non-Navigational Uses of International Watercourses entered into force in August 2014. The Convention applies to non-navigational use of international watercourses and measures to protect, preserve and manage those waters. It has been described as 'the only treaty governing shared freshwater resources that is of universal applicability'; and as 'a framework convention, in the sense that it provides a framework of principles and rules that may be applied and adjusted to suit the characteristics of particular international watercourses'.[180]

The Convention contains principles on equitable and reasonable utilization;[181] the obligation not to cause significant harm;[182] the general obligation to cooperate;[183] regular exchange of data and information;[184] the relationship between types of uses;[185] notification and response, relating to planned measures;[186] protection and preservation of ecosystems;[187] prevent, reduce and control pollution;[188] introduction of alien or new species;[189] protection and preservation of the marine environment;[190] and international watercourses and installations during time of armed conflict.[191] Further, the Convention contains an innovative dispute resolution mechanism, which includes possible use of an impartial fact-finding commission in the event negotiations are unable to resolve the conflict.[192]

The UN Watercourses Convention was not adopted with universal acclaim. It was adopted on 21 May 1997, with 103 votes in favour,[193] 3 votes against[194] and 26 abstentions.[195] The Convention then took time to come into force – two decades.

[180] Stephen C. McCaffrey, 'Introductory Note: The Convention on the Law of the Non-Navigational Uses of International Watercourses', in *UN Audiovisual Library of International Law: Historic Archives*, (Und.), available at <http://legal.un.org/avl/ha/clnuiw/clnuiw.html> (visited 12 November 2015).
[181] Part II. Art. 5.
[182] Part II. Art. 7.
[183] Part II. Art. 8.
[184] Part II. Art. 9.
[185] Part II. Art. 10.
[186] Part III. Arts 11 and 12.
[187] Part IV. Art. 20.
[188] Part IV. Art. 21.
[189] Part IV. Art. 22.
[190] Part IV. Art. 23.
[191] Part VI. Art. 29.
[192] Part VI. Art. 33.
[193] This number could have been 106. Belgium, Fiji and Nigeria did not vote in favour, but indicated subsequently that they had intended to do so. Salman M. A. Salman, 'The United Nations Watercourses Convention Ten Years Later: Why Has its Entry into Force Proven Difficult?', 32 *Water International* (2007) 1–15 at 4; and Alistair Rieu-Clarke, Ruby Moynihan and Bjørn-Oliver Magsig, *UN Watercourses Convention User's Guide* (IHP-HELP Centre for Water Law, Policy and Science, 2012), available at <http://www.gwp.org/Global/Our%20Approach/Strategic%20Allies/User's%20Guide%20to%20the%20UN%20Watercourses%20Convention%20%282012%29.pdf> (visited 12 November 2015) at 37.
[194] Burundi, China and Turkey.
[195] UN Watercourses Convention Online User's Guide, 'Importance: Evolution of the UN Watercourses

One of the contentious issues is that the Convention 'embraces the principle of equitable and reasonable utilization'[196] and provides 'certain factors and circumstances which should be taken into account for determining such'.[197] In this, comments Salman, the Convention 'follows the same approach adopted thirty years earlier by the Helsinki Rules, which established the principle of equitable and reasonable utilization as the guiding principle for international water law'.[198] However, the Convention deals also[199] with the 'obligation not to cause significant harm, and requires the watercourse states to take all appropriate measures to prevent the causing of significant harm to other watercourse states'; with agreement on which of these rules takes priority having proved quite difficult to achieve during the negotiation phase.[200] The compromise reached, per Salman, was that Article 7 'requires the state that causes significant harm to take measures to eliminate or mitigate such harm "having due regard to [A]rticles 5 and 6"'.[201] However, comments Salman, 'the prevailing view is that the Convention has subordinated the obligation not to cause significant harm to the principle of equitable and reasonable utilization'.[202] Salman considers this issue to have been the 'first and most important area of contention' which led to reluctance to ratify.[203]

8 The SADC's Revised Protocol and the UN Watercourses Convention

Of SADC Member States present at the Conference which adopted the UN Watercourses Convention, Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa and Zambia voted in favour; the United Republic of Tanzania abstained.[204] The only countries which have ratified *both* the UN Watercourses Convention *and* the SADC Revised Protocol on Shared Watercourses are Namibia and South Africa. However, for most SADC countries the principles of the Convention effectively entered into force in 2003!

According to Salman, writing before the Convention came into force and at a time when it was not certain that it ever would, the 'Convention has already shown con-

Convention', (Und., 2015), available at <http://www.unwatercoursesconvention.org/importance/evolution-of-the-un-watercourses-convention/> (visited 12 November 2015).

196 Part II. Art. 6.

197 Salman, 'The United Nations Watercourses', *supra* note 193, at 5.

198 *Ibid*.

199 In Part II. Art. 7.

200 Salman, 'The United Nations Watercourses', *supra* note 193, at 5.

201 *Ibid*. at 6.

202 *Ibid*.

203 *Ibid*. at 8. Other issues of concern included a view, held by upper riparian states, that the notification process under the Convention favoured downstream riparians, even providing them with a veto power over projects; the manner in which the Convention deals with existing agreements; and the belief that the Convention's dispute settlement provisions are too weak. *Ibid*. at 9–11.

204 Rieu-Clarke, et al, *UN Watercourses Convention User's Guide, supra* note 193, at 37.

siderable influence on multilateral and bilateral water treaties'.[205] He then comments that 'most of the articles of the [Revised Protocol of the SADC] are a copy of the articles of the Convention'; and points out that the same definition of 'watercourse' is adopted, and that the 'environmental provisions and those related to management, regulation and installations are largely a reiteration of those of the Convention'.[206]

Jacobs argues that, despite only two southern African states having ratified the Convention, 'all SADC members indirectly adhere to the principles contained therein and are still bound by these core principles, due to their compliance with the Revised SADC Protocol'.[207, 208] She points out that the 'regional legal framework reflects the international context in terms of the adoption of the global principles of equitable utilization, no harm and prior notification found in […] the UN Convention as well as the Helsinki Rules'; and that the Revised Protocol 'is a valuable legal instrument, which illustrates how norm convergence is taking place at the regional level'.[209] Heyns adds to this, arguing that '[i]t can [] be inferred [] that those SADC states that have abstained or were not present when the vote was taken on the UN Convention are now bound by those concepts included in the Protocol'.[210] This probably is putting the position too strongly. While the argument can certainly be made that conventions which states have adhered to provide strong evidence of binding rules of customary international law, where states have specifically declined to ratify conventions their deliberate failure to do so is a factor that needs to be taken into account.

National environmental problems are becoming more complicated and international environmental problems even more so.[211] Disputes over water-related issues will never be easy to resolve, and it is not likely that they will lessen in the future. It is important that we learn from mistakes made and from the experiences of international legal instruments.

Mirumachi and van Wyk comment that 'due to the multiple and non-linear interconnectedness between river system components and the complex societal use

[205] Salman, 'The United Nations Watercourses', *supra* note 193, at 12.
[206] *Ibid*.
[207] Jacobs, 'A Community in the Orange', *supra* note 56, at 194.
[208] Although not conclusive, in support of Jacobs' point it can be pointed out that in terms of Article 18 of the Vienna Convention on the Law of Treaties (Vienna, 22 May 1969, in force 27 January 1980, 1155 *United Nations Treaty Series* 331), a state which has signed (but has not ratified) a treaty is obliged to refrain from acts which would defeat the object and purpose of the treaty. Not all states have ratified the Vienna Convention itself, but it does arguably reflect customary international law.
[209] Jacobs, 'A Community in the Orange', *supra* note 56, at 195.
[210] Pieter Heyns, 'Strategic and Technical Considerations in the Assessment of Transboundary Water Management with Reference to Southern Africa' in Wirkus, *Water, Development and Cooperation*, *supra* note 12, 55–81 at 60.
[211] See, for instance, the discussion of the 'complex chains of causation' of international environmental problems in Daniel Bodansky, *The Art and Craft of International Environmental Law* (Harvard University Press, 2010) 37–56; and the discussion of 'environmental problem-solving' in Tuomas Kuokkanen, 'The Problem-Solving Role in International Environmental Law' in Tuula Kolari and Ed Couzens (eds), *International Environmental Law-making and Diplomacy Review 2007* University of Joensuu – UNEP Course Series 7 (University of Joensuu, 2008)3–19.

system, it is very difficult to regulate resource supply and demand transactions effectively in a mechanistic way' and suggest that 'even at the direct level of use, where resource use patterns are presumably most explicit, the connections between users and the resource are nonetheless complex and sometimes hidden'.[212]

Breen tells us that 'the notion that river systems might be regarded as "production units" delivering goods and services valued by society directs us to reflect upon how access to use of such goods and services is regulated'.[213] 'Since', Breen adds, 'not all uses of goods and services are compatible, use brings with it benefits for some and costs for others'; with the 'distribution of costs [being] a potential source of conflict'.[214] To overcome this, in Breen's terms, we need 'equity in access to opportunity to use and benefit from goods and services, and equity in the distribution of costs borne through use of goods and services'.[215]

According to Heyns, Patrick and Turton, 'when the same watercourse system covers the territory of more than one state, it is clear that conflicts may arise between the upstream and downstream states because of potentially contradictory priorities' and 'the only way to prevent such conflicts is through cooperation and joint planning'.[216] Further to this, they say, 'it is clear that national and international water management are not separate matters that can be achieved in isolation of each other' and 'in managing shared water resources within a country, the authorities must take the principles of international water law into account and they must establish institutions that have been mandated to advise them on the best and most beneficial use of shared water'.[217]

9 Conclusion

It is not possible to overstate the value of water, and the value of seeking to understand and ultimately to prevent conflict over access thereto and use thereof. As Carmo Vaz and Lopes Pereira comment,

> while it is well accepted that water has an economic value, we must not go to the extreme of considering water in the same way as any other common trading commodity. Economic efficiency, when applied to water resources and water development, must be considered with extreme care so that all other fundamental dimensions of water – an essential resource for life, public health and social well-being, for the conservation of the environment – are not simply forgotten or dismissed.[218]

[212] Mirumachi and van Wyk, 'Cooperation at Different Scales', *supra* note 83, at 32.
[213] Breen, 'Part I: Overview', *supra* note 17, at 15.
[214] *Ibid*. at 18.
[215] *Ibid*.
[216] Heyns *et al*, 'Transboundary Water Resource', *supra* note 146, at 372.
[217] *Ibid*. at 373.
[218] Carmo Vaz and Lopes Pereira, 'The Incomati and Limpopo', *supra* note 104, at 112.

Achieving this will require a change in approach. According to Al Radif, while '[o]ld practices focused solely on maximizing the quantity of water available for direct use and only considered costs and benefits [of projects, t]he new allocation strategies consider both the economic and the social and cultural benefits[219] and the best use of water resources to ensure their sustainability for future generations'.[220] It does seem that this may be happening. Derman and Ferguson tell us that there are increasingly conceptualizations in southern Africa that 'water management and rights should be used as a means of environmental and social transformation and justice'.[221] Mehta does caution that 'there are signs of IWRM fatigue in Europe', but notes that it seems to have 'acquired a new life of its own in southern Africa'.[222]

Savenije and van der Zaag point out that it is 'important to recognize the asymmetrical situation that exists in river basins, whereby downstream uses hardly impact [on] upstream users, if at all, but upstream uses do cause downstream impacts'; and that '[t]he possibility that conflicts over water arise [is] real, but it is also possible, and empirically assessed, that cooperative deals can emerge between riparian countries that so much depend on each other'.[223]

Writing in 2006, Turton et al suggest that 'it is still too early to predict either a conflictual or cooperative outcome' for the difficulties raised by competing needs in respect of transboundary water resources in southern Africa – although they argue that 'the propensity to cooperation seems to be the most likely outcome', given an empirical history of cooperation in the water sector and given that 'the existence of water scarcity constraints to future economic development within basin hegemonic states

[219] 'Alternative water resource benefits', according to Thomas and Durham, 'are well proven' and '[t]he economic and environmental benefits are a reality […] driven by the recognition of the social and environmental impact of water stress and the advantages of integrated water resource solutions'. Jean-Sébastien Thomas and Bruce Durham, 'Integrated Water Resource Management: Looking at the Whole Picture', 156 *Desalination* (200 21–28 at 27. According to Mokorosi and van der Zaag, '[t]he argument in favour of benefit sharing is that all involved parties eventually gain from the arrangement, while on the other hand sharing water may introduce losers'. Mokorosi and van der Zaag, 'Can Local People also Benefit', *supra* note 88, at 1.

[220] Adil Al Radif, 'Integrated Water Resources Management (IWRM): An Approach to Face the Challenges of the Next Century and to Avert Future Crises', 124 *Desalination* (1999) 145–153 at 151.

[221] Bill Derman and Anne Ferguson, 'Value of Water: Political Ecology and Water Reform in Southern Africa', 62 *Human Organization* (2003) 277–288 at 280.

[222] Lyla Mehta, 'Politics of Integrated Water Resources Management in Southern Africa [Guest Blog]' *AllAfrica.com* (8 October 2015), available at <http://allafrica.com/stories/201510121869.html> (visited 12 November 2015). Mehta notes, however, that '[i]n Zimbabwe, despite a promising start, IWRM reform was destroyed by the land reform process and many irrigation systems are now non-functional and the usage of productive water has dramatically declined'. *Ibid*.

[223] Hubert H. G. Savenije and Pieter van der Zaag, 'Integrated Water Resources Management: Concepts and Issues', 33 *Physics and Chemistry of the Earth* (2008) 290–297 at 295. The authors note that '[b]ecause of this asymmetry the equitable sharing of water resources between upstream and downstream users will always imply that upstream users have to forego some of the potential water benefits'. *Ibid*. Van der Zaag has noted elsewhere that '[d]ownstream users may affect upstream users, such as through interfering with navigation, or through the construction of reservoirs which may have upstream impacts such as on fish migration, … [h]owever, in most cases these impacts are small [by comparison]'. Van der Zaag, 'Asymmetry and Equity', *supra* note 149, at 1994.

[] might be sufficient inducement to seek future cooperative solutions'.[224] Böge queries why it is that 'water obviously is a special resource which does not lend itself as easily to violent conflict as [do] other natural resources'.[225] In answer, he suggests that water 'is not of considerable economic value on the global market, and it is not (at least not easily) tradable' and it '[t]herefore cannot serve as a basis for economic power and political might'.[226] He cautions, though, that water 'comes into the picture again if one looks at the issues from […] the angle of environmental degradation as a cause of (violent) conflict'.[227]

In the context of southern Africa, important questions that arise are, first, why the SADC countries chose to revise their own Protocol to embody the UN Convention, but the majority now seem apparently reluctant to ratify the Convention; and, second, why the SADC countries are generally ignoring the Revised Protocol.

Answers to these two questions are elusive. Probably both have the same answer, that the SADC countries remain (politically) obsessed by a belief in the value of territorial sovereignty over natural resources – and water is a particularly important such resource.

It is arguable that there is a generally cautious approach visible in African states' willingness to embrace international conventions – this may reflect both capacity and financial constraints and a political reluctance toward being seen to be 'told what to do'.[228] However, this makes the history of the adoption of the Revised Protocol *particularly* curious, given that its member states effectively pre-empted the coming into force of the UN Convention, instead of showing more customary caution.

Even though the SADC countries incorporated the principles of the UN Convention into their Revised Protocol, and brought the Revised Protocol into force more than a decade before the UN Convention came into force, they now seem reluctant to ratify the Convention. Probably this reflects an expression of 'African solidarity' and an approach that seeks 'African solutions for African problems' … unfortunately, the Protocol is not currently being used as it should be. This is a great pity, and hopefully the recent coming into force of the UN Convention will provide some impetus toward change.

[224] Turton et al, 'Transboundary Water Resources', *supra* note 61, at 29.
[225] Böge, *Water Governance in Southern Africa*, *supra* note 5, at 12.
[226] *Ibid*.
[227] *Ibid*. at 13.
[228] *Vide* recent threats by various African governments to withdraw from the Statute of the International Criminal Court.

Part IV

Interactive Negotiation Skills in the Area of International Freshwater Governance and Environmental Security

The Joensuu negotiation: a multilateral simulation exercise: The UN Framework Convention on Transboundary Aquifers[1]

Cam Carruthers[2] and Tuula Honkonen[3]

1 Overview

1.1 Introduction

These materials set out the elements and structure of a negotiation simulation exercise for the University of Eastern Finland – UNEP Course on Multilateral Environmental Agreements (MEAs), held 28-29 October, 2014.

The scenario for the negotiation simulation focused on susbstantive, institutional and procedural issues related to aquifers or aquifer systems. The simulation was hypothetical but drew on issues at play in actual ongoing negotiations. Four groups (A–D) were asked to produce agreed text on the following issues:

[1] The primary materials for this simulation exercise are contained in this document, including annexes. Individual instructions are provided separately. These materials are for professional development purposes only. With the exception of the text of official documents of UNEP and UN bodies, these materials may not be used, reproduced, revised or translated in whole or in part, by any means, without written permission of the authors. They are not intended to represent any official policy, positions or views of any state, organization, legal entity or individual. Any views expressed in these materials are solely those of the authors. This paper was written as part of the research project 'Legal framework to promote water security' (WATSEC), financed by the Academy of Finland (268151).

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A. Acquired state sovereignty and the obligation not to cause harm/cooperate; and emergency situations and protection in armed conflict.
B. Equitable and reasonable utilization versus sustainable use; and preservation.
C. Institutional arrangements.
D. Financial mechanism; capacity building; and bilateral and regional agreements.

In addition, the simulation was intended to explore issues related to MEA decision-making procedure, in particular as it relates to International Negotiation Committees; and as it relates to consensus decision-making.

A supplementary objective of this exercise was to produce discussion and results, including through this paper in the Course *Review*. The theme also provided an opportunity for participants to gain perspective on the complexity of international environmental law-making in the current international environmental governance (IEG) context.

This paper contains key elements of the primary materials provided to partcipants for the simulation exercise, including general instructions and supporting material. Individual instructions were provided separately to each negotiation simulation participant.

1.2 Importance of procedures and rules of procedure in MEA negotiations

In MEAs decisions, procedures and/or rules of procedure (rules) are set up to govern activities in decision-making bodies, based on a provision in the MEA itself which usually stipulates that Parties are to agree on such rules. The Conference of the Parties (COP, or other similar body), serves as the supreme decision-making body of the agreement. A COP takes decisions to implement the agreement, and reviews and evaluates implementation of the agreement, including related decisions. Even in the case of the negotiation of a completely new MEA, procedures are still very important and there are generally accepted norms of practice which are generally followed. The participating states in an INC may agree on their own rules of procedure, though in UN fora the base must be consensus. Where a new legal instrument, such as a protocol, is being negotiated under the umbrella of an existing treaty, generally the rules of procedure of the existing treaty would apply, absent an alternative agreement.

Rules of procedure generally regulate the activities of decision-making bodies (Intergovernmental Negotiating Committees or COPs) including subjects such as membership, officers, conduct of business, decision-making, agendas, languages and amendments to the rules, and for an MEA that is in force, secretariat functions. Among other things, the rules reflect fundamental principles of transparency and procedural fairness, the latter of which is based largely on the principle of equality of sovereign states. Another principle reflected in the rules is that in internation-

al law, authority is ultimately derived from states. While the fundamental principles are common, each set of rules is adapted to its specific context. A good knowledge of the rules of procedure of the forum a negotiator works in is invaluable. Knowing the rules means knowing what one can do to advance or protect one's position, and how to do it.[4]

However, all too often negotiators in multilateral environmental fora have only a limited awareness of the rules that define the arena in which they operate. The rules and related issues may seem either mundane or arcane, and only incidental to the more compelling questions of substance. Negotiators are often more concerned with strategy or technical priorities. Some may not even be aware of the influence of the rules on the process, which can be subtle. Even when no reference is made to the rules they have a profound influence on outcomes. A key example is decision-making: votes are generally avoided, but whether and how consensus is obtained on a given issue may depend to some degree on the understanding of how Parties would vote if they did vote. Negotiators who fail to understand the underlying dynamics on such issues can make serious strategic errors.

Indeed, ignorance of the rules can lead to major failures and frustrations with the process, especially since problems may be discovered after key decisions have been taken. It is difficult, if not practically impossible, to undo multilateral process decisions, once taken. So, it is important to consider strategic issues about decision-making processes and relevant rules early in any multilateral endeavour. Once a process is underway, it may result in a proliferation of sub-processes based on a set of interrelated decisions. While these processes are susceptible to congestion and inertia, it is also possible that they can move toward an unexpected direction or conclusion very quickly, with major outcomes in the balance.

This simulation was designed, in part, to open up certain procedural issues so that participants could strengthen their knowledge and understanding of the procedures and rules as tools for more effective and efficient negotiation of individual and common objectives. The idea was for participants to negotiate conceptual ownership of procedures while they negotiated practical textual solutions. The premise was that the procedures and rules constitute a code which reflects the values and interests of Parties and informs the way negotiators work together to take decisions. The rules frame what happens, who can make it happen, when, where and how. The higher the level of common understanding and agreement of the rules in any given body, the more efficiently and effectively that body can operate and reach agreement to attain common objectives.

[4] For an analysis of the importance of the rules of procedure in a particular MEA see Joanna Depledge, *The Organization of Global Negotiations: Constructing the Climate Change Regime* (Earthscan, 2005), particularly at 80–102.

1.3 Simulation objectives

This negotiation simulation exercise focused on multinational negotiation issues related to aquifers and aquifer systems. The general objectives were to promote among participants, through simulation experience:

1) understanding of the challenges and opportunities related to adopting a new international legal instrument, both in general and in this specific MEA context;
2) understanding of the principles and practices of multilateral negotiation (including high level segments) and appreciation of the value and role of the rules of procedure;
3) familiarity with specific substantive and drafting issues; and,
4) discussion and appreciation of different perspectives on substantive and institutional issues related to multilateral groundwater issues.

Within the exercise, the specific objective of the meeting was to produce agreement on the four issues set out in section 1.1 above.

1.4 Procedural scenario

The scenario was set in an International Negotiation Committee, on two levels: drafting groups and plenary. The negotiation simulation scenario and the issues set out within it were hypothetical, but based on actual and recent discussions.

The premise of the scenario was that an INC session took place in Joensuu, Finland, 28-29 October 2014, with the objective of adopting a new legal instrument, a Framework Convention on Transboundary Aquifers. The exercise began on the first day of the INC with a plenary followed by three drafting groups and one Friends of the Chairs group. Then on the second day the exercise returned to the INC plenary for the planned adoption of an agreed text. When the action began in the INC, the body had before it the draft convention text drafted by the Co-Chairs. The Parties were taken to have agreed on the establishment of a drafting group to address each of three of four key issues, but to have been unable to agree on a drafting group for the fourth issue. The INC Co-Chairs therefore asked for a group of Friends of the Chair to negotiate this proposed text.

The first day of the simulation was also understood as ending on the last day of the drafting group activity; and because of difficulties in the negotiations and limited availability of rooms, this was also taken to be the second last day of the High Level Segment. The second day of the simulation was the last day of the High Level Segment.

The INC had two Co-Chairs and one rapporteur for the whole simulation. These officials were elected by Parties for the third meeting of the INC, at the opening

plenary. The Parties followed established practice and sought to balance developed country and developing country representation in these elected positions. In addition, the drafting groups each elected one facilitator and one rapporteur. The elections would normally have taken place at a previous session, but for simulation purposes they took place at the introductory session after initial informal consultations (participants were encouraged to consult ahead of time).

The negotiation text provided to the INC is found below in subsection 3.3. The draft text addresses both substantive and institutional issues.

Four drafting groups were set up for four issue clusters, as set out in section 1.1 above.

1.5 Introduction to the exercise

The following introduction was provided to participants:

Each participant plays a specific role, representing a state (once an MEA is in force, delegates are generally considered Party representatives). Participants are encouraged to play their part in the overall scenario for the simulation, following general and individual instructions.

Where possible, it is a good idea to make alliances and develop coordinated strategies to intervene in support of others, or to take the lead in other cases. Participants are particularly encouraged to seek support in the context of their negotiation group. No specific time allocation has been made for negotiation group coordination, nor has any organizational approach been set out for such groups. In real life, negotiation groups differ widely in their internal organization and they usually have very limited status in official multilateral negotiations (with the exception of the European Commission, which now often has Party status in MEAs). However, they can be very effective at driving negotiation outcomes, particularly when their members have consistent interests and positions, and when they are well-organized.

Some roles, including the Co-Chairs, play a resource function and can be useful to participants. Those playing such roles are to serve all participants and work for a positive outcome in addition to their individual instructions (They are encouraged to signal to the other Parties when they take up their partisan roles, e.g. 'I'm taking off my Chair's hat …').

Participants should keep in mind their interests and positions with respect to all four issues, but focus on the issue assigned to their drafting group. The groups should narrow their focus as quickly as possible to identify issues to be addressed, and to dispose of issues expeditiously where possible. Participants should work hard to achieve their objectives.

Participants are strongly urged to follow their instructions, and to elaborate interventions with a compelling rationale to advance their positions, for example by drawing on context provided by their twin (see below for an explanation of 'twinning'). Participants are also encouraged to take the initiative and be inventive and to intervene in drafting groups and in plenary even if they have no specific instructions on a particular issue. Participants representing Parties are highly encouraged to seek support from other participants for, and identify opposition to, their positions, including positions discussed in drafting groups in which they do not participate. To this end, participants should consider developing joint drafting proposals and making interventions on behalf of more than one state, and may wish to consider using regional and negotiation groups as a point of departure. Participants are also asked to think about issues for discussion in the 'post-mortem', a facilitated review of the exercise, which will immediately follow the final plenary, and include issues of both process and substance within the exercise, as well as issues relating to the structure and management of the exercise itself.

The simulation is designed to focus on both the negotiation process as well as the substantive issues, and it is designed to be difficult, with failure to reach agreement being a real possibility. Unavoidably, a random distribution of positions is likely to result in making some Parties appear more or less constructive, and indeed for simulation purposes some positions are designed to cause difficulties. It is important to note that the positions in individual instructions are developed and assigned randomly. They are entirely hypothetical and are not intended to reflect specific positions of particular Parties or the views of organizations or individuals.

Individual delegates often face situations similar to this exercise, where they have little opportunity to prepare, but should still define objectives and develop a strategy. Informal diplomacy is where most progress toward agreement on concepts is made, while drafting group and plenary discussion is often required for agreement on specific texts. Drafting often involves a fine balance between accommodation and clarity. In real life, decision-making on final text in plenary may appear to be simply '*pro-forma*' (merely a formal repetition of what has already been agreed) but there can be surprises. Decisions in the plenary are critical and can sometimes move very quickly, at times moving back and forth on an agenda, so that being prepared with an effective intervention at any moment is essential.

The Co-Chairs and the four drafting group facilitators play important roles, setting up and managing the process – and managing time – to produce agreement. They are encouraged to consult broadly, including with facilitators and state representatives (note that the simulation organizers may be able to provide advice acting as senior secretariat officials). The key to success will be thoughtful organization of the work of the groups, including strategic management of how the smaller drafting groups and the plenary sessions function and are linked.

1.6 Drafting v. High Level Segment

The following advice was given to participants:

Participants should focus on drafting, and then shift to more discussion of trade-offs and accommodations with other Parties for the High Level Segment of the INC. Participants should also expect that there Ministers and Heads of Delegation will only have limited time to deal with a few issues, perhaps only one issue. On the one hand, it is often important to settle complex issues at the technical level and in settings like drafting groups, and it is very risky to rely on outcomes from the High Level Segment. In the latter, issues that can be formulated as a 'yes' or a 'no' are most susceptible to High Level discussion. The formulation of the question can be critical.

2 Instructions

The instructions below were provided to participants.

2.1 Individual instructions

The core of the simulation is set out in **confidential** individual instructions of 1-2 pages in length. They provide very brief positions and fall-back positions on each of the issues being negotiated, but no rationale or strategy (this must be developed by each participant). *In some cases, the instructions may seem internally inconsistent and even contradictory (this happens in real life, and is interesting to watch!).* For this exercise, instructions are provided in a simplified form rather than that of official delegation instructions. In some cases, instructions will stipulate that a position cannot be abandoned for a fall-back without consulting a designated senior official in the state's capital. For the purposes of this simulation the simulation coordinators will serve in this capacity. For further guidance in dealing with procedural and strategic issues, see the *MEA Negotiators' Handbook*.[5]

2.2 General instructions

At a minimum, please review the general and individual instructions and the key simulation documents (subsection 3.1).[6]

1) Each participant is assigned dual role as a Lead Negotiator (in the INC Drafting Groups and Friends of the Chair sessions) and then as Head of Delega-

[5] Cam Carruthers (ed.), *Multilateral Environmental Agreement Negotiator's Handbook* (2nd ed., University of Joensuu, 2007), available in English and French at <http://www.uef.fi/en/unep/publications-and-materials>.

[6] See also *ibid*. sections 3.1, 3.2, 3.3, 3.6, 2.4, 4.3 and 5, in particular.

tion (in the INC High Level Segment) for a particular state (these are both 'speaking roles'); each participant will also play the role of a Delegation Expert (see subsection 2.4 below) in the delegation of another participant, to whom they provide advice about their country or region of origin (a non-speaking role); in addition, each participant will also be asked to rotate into a secretariat support role at least once in the exercise.[7] Additional **confidential** individual instructions will be provided to each participant.

2) *Participants representing Parties* have been sent with full credentials from their governments to participate in the meeting of the INC, using their confidential individual instructions as a guide.[8]
   a. Participants *should do their best to achieve the objectives laid out in their instructions.* You should develop a strategy and an integrated rationale to support your positions.
   b. On any issues which you do not have a position in your individual instructions, you should develop your own positions, with a view to securing agreement on the issues where you do have a position;
   c. Do not share your confidential individual instructions with other participants.
   d. Do not concede to a fall-back position without a serious effort to achieve your primary objective (and not on the first day!).
   e. You should work with your negotiation group and allies as much as possible – within the scope of your individual instructions. If possible, consult with others before the session, to identify and coordinate with those who have similar instructions, and even prepare joint interventions. *You should build alliances and try to support anyone with a similar position who is outnumbered. You should try to identify participants with opposing views, and influence them both in formal negotiations, as well as in informal settings.*
   f. *At any time, you may receive supplementary instructions.* Participants should, of course, always be respectful of each other's views and background.
3) All participants will temporarily play the role of a secretariat official to support the Parties, Chair and rapporteurs, including in both plenaries and drafting groups, as appropriate (only in a support / advisory role).
   a. Participants will rotate into a secretariat role based on time 'Slots' set out in the table of roles in section 2.3 and in the schedule for the simulation annexed to these instructions. (Participants may agree among themselves to switch slots – for instance, if elected as a Co-Chair.)
   b. Secretariat officials should keep speakers lists, take notes and intervene as needed to respond to Parties. You should focus on matters of procedure and organization of work, as well as issues related to secretariat resources

[7] There are no IGO or NGO roles in this exercise, based largely on feed–back from participants in earlier simulations who indicated that they found such roles very limited.

[8] **Confidential** individual instructions have been developed without reference to actual country positions, and it is not necessary for this simulation that participants attempt to follow positions in the real negotiations.

and capacity, but are required to maintain neutrality on issues where there is a divergence of views among Parties.

c. Participants temporarily in a secretariat role may also switch roles and intervene in their state representative role as a last resort if necessary to maintain their position. (When acting as a secretariat official they should use a secretariat flag; when as a state, their state flag.)

d. There is no intended link between a participant's role as a state representative and their temporary functions as a secretariat official.

4) Simulation Coordinators may, as needed, act as senior secretariat officials and/or a designated senior government official in a state's capital authorized to provide supplementary instructions to their delegations. Coordinators will remain as far as possible outside of the simulation and should not be consulted unless necessary. Questions on procedure, etc. should be addressed to the Co-Chairs, drafting group facilitators or secretariat officials.

5) In the plenaries, the Co-Chairs sit at the head of the room, with secretariat officials beside them. Parties will have the opportunity to select a 'flag' or country nameplate (fold it twice, so the name is in the mid panel). To speak, raise your 'flag' and signal the secretariat official keeping the speakers' list. Secretariat officials will also have nameplates.

6) The simulation will begin and end in the INC plenary. As explained in subsections 1.1 and 1.4, the INC will establish three drafting groups and one Friends of the Chair group (Groups A-D). No arrangements will be made for regional groups unless made by participants themselves.

7) The first task for Parties is to elect two Co-Chairs, and then a facilitator for each group. The usual practice is that developing country Parties and developed country Parties are equally represented. Selection should be based on informal consultations, and decided by consensus.

8) When the INC breaks into the four groups, please join the group identified in your individual instructions. The groups will operate consistent with MEA practice for these groups (see the *MEA Negotiator's Handbook*).

9) The four drafting groups must reach agreement on what to report back to the plenary. Each drafting group selects a facilitator to manage the meeting and a rapporteur to record agreed text (see the *MEA Negotiator's Handbook* on drafting, especially use of brackets).

10) Once elected, the Co-Chairs and facilitators must each play their role in the session of the body they manage, and in that body, generally refrain from openly taking positions. If they do, they should explicitly indicate that they are 'taking their Chair's hat off'.

11) Please use only the materials provided, as well as advice and information from other participants, and do not be distracted by Internet resources or use any precedent found there or elsewhere (even though this is often a good idea in real life!).

12) The exercise will take place over a two-day period. Participants are encouraged to consult informally before the exercise for nominations to the official

positions and in the evening of the first day to form alliances and broker solutions (as in real life).

2.3 List of participants, roles, groups and twinning

Participants were provided with a list of their 'twins' for the exercise, and their negotiation group (A, B, C, or D).[9]

2.4 Roles

Each participant was assigned to represent one state, playing the role of a Lead Negotiator. They also played temporary and secondary roles as a Delegation Expert on the delegation of their twin, and a Secretariat Official.

2.4.1 State Representative

Each participant was assigned to represent one state, playing the role of a Lead Negotiator on the first day of the simulation, and of the Head of Delegation on the second day. In these roles, participants negotiated directly with other participants, including by speaking 'at the microphone'. Each participant represented the state of another participant with whom they were 'twinned', or represented a state from the same region as their twin.

As a Lead Negotiator or Head of Delegation, each participant was encouraged to consult their twin (or twins, as the case may be), in order to develop the rationale for their positions and interventions and to put their negotiation instructions in the substantive context of the country they represented. In particular, participants were expected to seek information from their twin about economic, social, cultural and environmental drivers that could inform their approach to negotiations and support their individual instructions (which were not intended to represent the position of any actual state, as noted above).

Participants were each provided with a 'flag' (country nameplate) for use in the formal meeting. Each participant was asked to select the flag of their 'twin' (see below). If that flag was not available (for example, if there was more than one participant from that country), then they were to select a flag from a country in the same region or negotiating group (if known) as their twin. Alternatively, if there were multiple participants from the same state, for purposes of this exercise any one of them was permitted to create a new fictional state based on a province, region or city in their country (which was the case, for instance, for Finland). They then provided expert advice as a representative of that 'country'.

[9] For more information on negotiation groups, see *ibid.* section 3.2.2.

2.4.2 Delegation Expert

In the Delegation Expert role, participants never spoke 'at the microphone' or negotiated directly with other Parties; their only function was to advise their twin on substantive issues related to their actual home country (or in some cases, a country with which they had some affiliation), or about a country from the same region as their home country.

In their role as Delegation Experts, participants were not expected to provide any information on actual official or political positions, but rather to focus on economic, social, cultural and environmental issues and drivers with which they were familiar. No research was required in this regard. This role was temporary (in the early stages) and secondary to their role as a state representative.

2.4.3 Secretariat Official

Each participant temporarily played the role of a secretariat official. In this role, their objective was to support all Parties and the process, including officers elected by the Parties (Co-Chair and rapporteurs), including in both plenaries and drafting groups.

2.5 Twinning

Twinning in this exercise was intended to promote general understanding of how different perspectives may affect approaches to substantive and process issues – and to add some dramatic interest to the scenario. Each participant was 'twinned' with at least one other participant from another country, usually from another UN group or region and usually twins were not both developed or developing country participants. Some participants had more than one twin, based on the number of participants and the distribution of countries of origin among participants.

The intention was to have each participant twinned with another whose background or experience is different. Instruction sets and roles were otherwise assigned randomly, adjusted for regional, gender and sectoral balance. Participants were 'twinned' and assigned roles and positions based on numbered instruction sets.

There was no intended link between the positions and instructions of each State Representative (Lead Negotiator or Head of Delegation) and their twin's positions or instructions as a State Representative. Twins were not expected to act as allies or coordinate in any way when acting as State Representatives. Given the random distribution of positions, some twins had conflicting positions and others did not. Twins were asked not to disclose their fall-back positions to each other, only their opening positions. If they accidentally learned about their twin's fall-back positions, they were asked not to reveal them to any other participant. Twining was arranged to minimize the possibility that both twins were in the same drafting group.

Individual instructions were developed without reference to actual country positions, and it was not expected for this simulation that participants would attempt to follow such positions. It was suggested, however, that participants develop their positions and interventions with the economic, cultural and social context of the country, or at least the regional group, of their twin in mind.

In addition to providing substantive information, Delegation Experts were alo encouraged to provide their twin with cultural references, local sayings or anecdotes to help them illustrate a point related to the negotiation process or to substantive positions – as negotiators often do.[10] While humour is often an effective negotiation tool, participants were asked to always be respectful of each other's views and background.

3 Key simulation documents

3.1 Background material

In this fictional scenario, an INC on Transboundary Aquifers takes place against the backdrop of increased domestic and international tension with respect to groundwater issues, as increased water scarcity and drought affects more and more countries. Some states are examining ways to address these issues under other MEAs, including the United Nations Convention to Combat Desertification.[11] Other states have returned to the idea of a more specific framework convention on groundwater. Some states and stakeholders have very high expectations and specific goals, other states and stakeholders are even more concerned and wary of the implications for their sovereignty and interests. The media environment has become increasingly dramatic. Participants were provided with a range of reference and historical material from current media, academic and United Nations sources, including relevant international decisions and agreements.[12]

[10] An informal competition and vote for the best use of such a saying took place. One example is from the late Malaysian 'Chairman' Chow Kok Kee's use of a 'walk through a rose garden' metaphor in United Nations Framework Convention on Climate Change (UNFCCC, New York, 9 May 1992, in force 21 March 1994, 31 International Legal Materials (1992) 849, <http://unfccc.int>) negotiations, see Depledge, *The Organization of Global*, *supra* note 4, at 43. A second example is when the Chair of a Strategic Approach to International Chemicals Management (SAICM) session, Halldor Thorgeirsson of Iceland, used a 'boat' metaphor in the negotiations; see IISD *Earth Negotiations Bulletin* (ENB), 15 (89), 11 November 2003. These simple metaphors were repeatedly used by each chair, and embellished with reference by each to their home country. In both cases, other negotiators made interventions drawing on the same metaphor and adding their own personal or national perspective.

[11] UN Convention to Combat Desertification in Countries Experiencing Serious Drought and or Desertification, Particularly in Africa, Paris, 17 June 1994, in force 26 December 1996, 33 *International Legal Materials* (1994) 1309, <http://www.unccd.int>.

[12] Harriet Bigas et al (eds), The Global Water Crisis: Addressing an Urgent Security Issue (UNU–INWEH, 2012), available at <http://inweh.unu.edu/wp-content/uploads/2013/05/WaterSecurity_The-Global-Water-Crisis.pdf≥; Suzanne Goldenberg, 'Why global water shortages pose threat of terror and war', The Guardian, 9 February 2014, available at <http://www.theguardian.com/environment/2014/feb/09/global-water-shortages-threat-terror-war≥; Stephen C. McCaffrey, 'Convention on the Law of the Non–Navigational Uses of International Watercourses', UN Audiovisual Library of International Law, available at

3.2 Proposed drafting groups

Participants were informed that the Co-Chairs of the INC had prepared a draft negotiation text based on a request from the INC at its last session. While the Co-Chairs were said to have provided a clean text, in a cover note a divergence of views was highlighted with respect to specific articles, with a proposal to the INC that the issues should be addressed in drafting groups. At the same time, it was noted that many participating states had indicated that 'nothing is agreed until everything is agreed' and that much hard work remained for the INC, given diverging views expressed by participating states on fundamental issues. The stated goal of negotiating partners was nonetheless to have a final legal text for adoption at the end of the Joensuu INC. At the same time participants were warned that informal discussion in the corridors suggested considerable doubt about whether there was sufficient political will to compromise and overcome obstacles to agreement. For simplicity, the issues were organized into four clusteres, with corresponding drafting groups labelled A, B, C and D.

Group A was requested to provide a clean and agreed proposal of text for adoption on acquired state sovereignty and the obligation not to cause harm et al.; and on emergency situations and protection in armed conflict (focusing on Articles 3, 6, 7, 19, 21–21.3 in particular – and 22).

Group B was requested to provide a clean and agreed proposal of text for adoption on equitable and reasonable utilization versus sustainable use, and preservation (focusing on Articles 4 and 5, and 14–18).

Group C was requested to provide a clean and agreed proposal of text for adoption on institutional arrangements (Part IV, focusing on Articles 8, 10, 17 and 20) in a Friends of the Chair format.

<http://legal.un.org/avl/ha/clnuiw/clnuiw.html≥; Convention on the Law of Non–Navigational Uses of International Watercourses, New York, 21 May 1997, in force 17 August 2014, 36 *International Legal Materials* (1997) 713; UN International Law Commision (ILC), Report on the work of its fifty-ninth session, UN Doc. A/62/10 (2007), paras. 160–183 (shared natural resources); Topical summaries in UN docs A/CN.4/577 (2007; Report of the ILC on the work of its fifty-eighth session; Topical summary of the discussion held in the Sixth Committee of the General Assembly during its sixty-first session, prepared by the Secretariat); A/CN.4/588 (2008; Report of the ILC on the work of its fifty-ninth session; Topical summary of the discussion held in the Sixth Committee of the General Assembly during its sixty-second session, prepared by the Secretariat); A/CN.4/595 (2008; ILC, Shared natural resources: comments and observations by Governments on the draft articles on the law of transboundary aquifers); and A/CN.4/595/Add.1 (8; ILC, Shared natural resources: comments and observations by Governments on the draft articles on the law of transboundary aquifers, Appendum: United States of America); Stefano Burchi and Kerstin Mechlem, *Groundwater in International Law: Compilation of Treaties and Other Legal Instruments* (FAO/UNESCO, 2005), available at <http://www.fao.org/3/a-y5739e.pdf>; International Institute for Sustainable Development (ISSD), 'Experts identify lack of adequate governance of transboundary aquifer systems in Africa', available at <http://water-l.iisd.org/news/experts-identify-lack-of-adequate-governance-of-transboundary-aquifer-systems-in-africa/>; and ISSD, 'Workshop addresses transboundary aquifers in the Amercas', available at <http://water-l.iisd.org/news/workshop-addresses-transboundary-aquifers-in-the-americas/> (all visited 28 June 2015).

Group D was requested to provide a clean and agreed proposal of text for adoption on a financial mechanism and capacity building; and on bilateral and regional agreements (focusing on Articles 10(2)(d), 11, 13 and 20).

3.3 Draft texts for negotiation and rules

Praticipants received a draft text for negotiation based on the *DRAFT United Nations Framework Convention on Transboundary Aquifers (UNFCT),*[13] along with selected rules of procedure on officers, conduct of business and voting,[14] and a proposed daily schedule.

4 Review of the exercise

4.1 Introduction

The following is a brief summary of the proceedings and analysis based on observations made by the facilitators during the simulation as well as the post-mortem conducted immediately following the simulation, written evaluations from participants, and notes from additional verbal feedback.

There were 31 official participants in all, not including the facilitators and the other resource people who supported or played various roles in respect of the simulation.[15] The participants were mainly from Ministries of Foreign Affairs or from ministries responsible for environmental matters of their respective countries. Academic and non-governmental organizations were also represented.

This was the eighth time that a simulation exercise based on the same basic organizational model has been run in a UEF – UNEP Course and published in this *Review*. In each exercise, there has been a different substantive focus, while at the same time each has included key issues related to the rules of procedure. In each case, the procedural settings and mechanics have varied in important respects, while there has consistently been a focus on two aspects of negotiation: informal drafting groups,

[13] Based on 'Draft articles on the Law of Transboundary Aquifers' (Official Records of the General Assembly, Sixty-third Session, Supplement No. 10, UN Doc. A/63/10), text adopted by the International Law Commission at its sixtieth session, in 2008, and submitted to the UN General Assembly as a part of the Commission's report covering the work of that session. The report also contains commentaries on the draft articles. Additions to the text of Articles 8–11 and 24–34 include modified text from analogous articles of the UNFCCC.

[14] Annex to Dec. I/1 and V/20, as abridged for this exercise. Selected rules related to participation, conduct of business, voting and language have been included for the six participating MEAs. See section 3.1.1 of Carruthers, *MEA Negotiators' Handbook, supra* note 5, for an overview of the subjects most commonly covered by rules of procedure in MEAs.

[15] The 31 participants included 17 women and 14 men from 22 countries: Afghanistan, Albania, Algeria, Belize, Brazil, Bulgaria, Burkina Faso, Egypt, Finland, Germany, India, Kenya, Lebanon, Macedonia, Moldova, Morocco, Nepal, Paraguay, Russia, Serbia, Sri Lanka (2) and the USA.

and then formal processes for adoption of agreed text. This is the fifth time that the exercise was set to run over two full days. The positive results achieved were largely the product of the creativity of the participants in overcoming the challenges of the exercise. The simulation organizers were able to monitor and influence the negotiations by providing supplementary instructions 'from capitals' to individual participants, in order to ensure that the process remained challenging, but also to allow room for positive progress. However, concrete substantive and procedural proposals and strategies were produced exclusively by participants.

4.2 General comments

As reflected in the plenary post-mortem held immediately following the simulation, as well as in written evaluations, the exercise was considered to be a success by the organizers and by all of the participants who provided feedback.[16] In particular, one participant wrote: 'Good introduction to basic negotiation structure and procedure, good opportunity to build skill set'. Another noted: '[t]he exercises harnessed the best possible learning given the group we had. Participants had very little negotiation experience so the common denominator was rather low'.

However, there were also suggestions for improvement. One participant said that while it was '[v]ery useful, pragmatic. Guidance to negotiation workshop on 28–29 Oct. was confusing'.

In previous years, there were calls for access to course materials in advance for the purpose of preparation. For a second year in a row, the 'Primary materials' (not including individual positions/instructions) were shared approximately two weeks before the Course began, which seemed to effectively address this concern.

4.3 Feed-back on the simulation objectives

The debriefing session focussed initially on the four objectives of the exercise:

1) understanding of the challenges and opportunities related to adopting a new international legal instrument, both in general and in this specific MEA context;
2) understanding of the principles and practices of multilateral negotiation (including high level segments) and appreciation of the value and role of the rules of procedure;
3) familiarity with specific substantive and drafting issues; and,
4) discussion and appreciation of different perspectives on substantive and institutional issues related to multilateral groundwater issues.

[16] On a scale of 1–5, with 1 as very poor and 5 as very good, the two introductions to the exercise were rated at 4.4/5 and 4.3/ by the participants in terms of relevance; and 4.2/5 and 4.0/5 in terms of quality. Participation in the exercise was rated at 4.5/5 in terms of relevance and 4.3/5 in terms of quality.

4.3.1 Understanding of the challenges and opportunities related to adopting a new international legal instrument, both in general and in this specific MEA context

This was the first time in this series of MEA negotiation simulations that the objective was to adopt a new legally binding multilateral instrument. There was limited discussion about challenges specific to an International Negotiation Committee (INC), and the organizers noted that this aspect of the simulation likely merited further exploration.

At the same time, there was positive feedback about the support and information provided by the resource experts who led relevant sessions in the Course related to water security and transboundary aquifers.

4.3.2 Understanding of the principles and practices of multilateral negotiation (including high level segments) and appreciation of the value and role of the rules of procedure

The simulation organizers highlighted that the goal of the exercise was not for all groups to achieve consensus. On the contrary, the intent was to present participants with possibly irresolvable issues so that there would be more than usual pressure on the rules and procedures of MEA negotiation, and, in turn, more pressure on participants to use – or even misuse – the rules.

In past exercises, the facilitators had not been as transparent with participants about this objective and, as a result, frustration was expressed by participants and course lecturers. The organizers recognize that it is more usual during MEA negotiations for delegates to cooperate and work in a collegial effort to reach consensus toward progressive agreed outcomes. However, participants were warned not to assume that they could simply rely on experts to intervene once there is an issue with rules of procedure – the problem often is that it is very hard to undo procedural decisions.

It was noted that a number of participants had specific instructions to be obstructionist, and to use rules of procedure aggressively. Some had instructions to raise points of order and this was the second year in a row where some participants were to look for opportunities to challenge rulings by the Chair.[17] This is extremely rare in actual MEA negotiations, and participants expressed appreciation for the opportunity to consider how to resolve such issues. Participants were generally congratulated on their perseverance and creativity, as the outcome produced a higher than expected amount of agreed text, with only a few outstanding issues reflected in bracketed text from one drafting group. There was substantial discussion among participants, including several with considerable negotiation experience, about how best to negotiate high stakes procedural issues, such as a motion to overrule the Chair. The organizers of the exercise noted that the Chair who was faced with the motion to overrule,

[17] Note that both Co–Chairs and the President may be referred to as the 'Chair'.

and all involved with the motion, played their roles effectively. They were organized and thoughtful, and managed to maintain good diplomatic relationships even while making very forceful interventions.

Participants were confronted with results that would be untenable within the terms of their instructions and they were forced to grapple with the constraints of the rules of procedure, as well as the frustrations of being unable to reach agreement. Participants nonetheless worked through challenges and appreciated the learning opportunity in the exercise. The underlying objective was to highlight the importance of knowing the rules of procedure in the very rare instances where participants could be involved in actual negotiations with such difficulties, and this objective was clearly achieved.

In the end, participants were unable to overcome a key negotiation challenge and were prevented from adopting an agreed outcome by two intransigent Parties. Different negotiation and procedural approaches were made by different participants, but to no avail. There was some debate about the principle of consensus decision-making, and some questions about whether one or two Parties had taken sufficient steps in blocking consensus. The Chair, supported by those in the roles of secretariat officials, wisely chose to suspend the formal session more than once in order to provide for informal consultations among Parties and review of the key rules of procedure.

As discussed in the post-mortem, although instances of such procedural conflict might be rare and therefore not reflect typical negotiations, the techniques employed during the exercise are both useful and valid. It is not uncommon for a few Parties to have serious difficulties at some point in any MEA negotiation process leading to the adoption of a major decision. Parties in this position often have to consider the possibility of blocking consensus. In these situations, the importance of the rules of procedure increases, as Parties may seek procedural solutions. The assumption behind this objective is that many negotiators could be better prepared to deal with such challenges. It should be noted that some instructions and the roles of some groups were somewhat exaggerated in order to give these participants stronger roles and to contribute to the inter-locking sets of challenges confronting participants.

Most of the challenges facing participants were based on actual experience and all were based on real issues. Only a few of the instructions were somewhat unrealistic. One of the concerns noted by participants was the lack of detailed explanations for positions, some of which contained internal contradictions. Internal contradictions appear to be relatively common in MEA fora, and so were purposefully included in the simulation. The organizers recalled that participants were intentionally being challenged to impose a coherent logic on their set of positions, in part because delegates in real negotiations often face such challenges, as domestic interests are not always easy to reconcile. They also noted that because positions were allocated to different participants in a random manner, this also led to further contradictions. While

some participants agreed that internal contradictions were not uncommon in real negotiation mandates, others suggested that there were enough challenges in the exercise, and that this aspect only caused unnecessary confusion.

Most of the questions involved subjective assessments of different kinds of negotiation tactics and strategies. Much of the discussion focused on the motion to overrule the Chair put forward in the final plenary session. As noted above, the participants were able to make forceful interventions in line with their instructions, and yet maintain a diplomatic approach that was largely realistic. It was emphasized that such a motion is extremely rare in actual MEA negotiations. However, participants agreed that this situation in the exercise helped in gaining an appreciation of how MEA rules can be used, and prepared them for dealing with high stakes procedural issues in the future.

Specifically, some Parties were given instructions to question the approach of the presiding officers and some other Parties, and to specifically challenge them on whether they had respected proper procedure with respect to properly setting up discussion on a particular issue, where Parties had been unable to agree to set up a drafting group, and the Co-Chairs had asked a 'Friends of the Chair' group to negotiate the proposed text. This text was subsequently presented for adoption. Issues were raised about whether the rules had been respected, and the text had any 'standing' before the INC, as well as fundamental principles of transparency and participation by sovereign states. This scenario was based on COP 15 COP/MOP 5 of the Kyoto Protocol.[18] Some Parties with concerns had further instructions to block consensus on the issue.

As a first step, these Parties were to work to ensure that the Chair had to make a ruling on whether a document produced by the Friends of the Chair group could be adopted by the Parties, since the document was not produced at the request of the Parties, and not all Parties had the opportunity to negotiate it, given that it was produced by a select group of 'Friends of the Chair'. If unsatisfied with such a ruling, and if they judged they had enough support, they were to ask the Parties to over-rule the Chair. Parties on the other side of these issues had equally forceful instructions.

4.3.3 Familiarity with specific substantive and drafting issues

Some participants wanted more focus on drafting techniques in the negotiation exercise, and indicated that they would be interested in more instruction on technical drafting issues, as well as a glossary of technical terms. The organizers recognized that the exercise involves procedural issues, negotiation techniques and drafting, and that while drafting is an important activity in the negotiations, techniques are not much discussed.

[18] See 'Summary of the Copenhagen Climate Change Conference, 7–19 Dec., 2009', 12 (459) *the Earth Negotiations Bulletin*, 22 December 2009. That situation was different in that it took place within a treaty body as opposed to an INC.

Some participants suggested that the negotiation exercise and drafting exercise could be linked, so that participants could focus on a specific text and take it through a more complete process. This is a suggestion that will be considered for any future versions of the exercise led by the organizers. In particular, participants noted one particular drafting issue with respect to how to balance clarity and 'constructive ambiguity' in a negotiated text in order bridge divergent views and to reach agreement. This was one of the key issues discussed in the drafting exercise earlier in the Course.

Participants and organizers noted that the negotiated outcome of this exercise reflects considerable 'constructive ambiguity' on a few issues, but that it also appeared to have sufficient clarity and specificity to be considered useful in practical terms. There were a number of comments from participants who found the Course sessions on negotiation and drafting techniques, which preceded the simulation, as well as the *MEA Negotiator's Handbook*, very useful with respect to drafting.

4.3.4 Discussion and appreciation of different perspectives on substantive and institutional issues related to multilateral groundwater issues

On the fourth and final objective, the organizers suggested that achievement of this objective was driven by participants themselves, and that the simulation only provided a platform for exchange among participants. They noted with appreciation that all participants took the exercise seriously and the simulation, indeed, reflected real-life multilateral discussions on the subject. Participants agreed that they had learned more about the issues and different perspectives on the issues in some ways than they could have through readings or lectures alone.

4.4 Specific issues

Both participants and organizers raised specific issues for review of the exercise, both in the post-mortem plenary, bilaterally and in written evaluations. Those issues which generated the most substantive comments and discussion are reflected below.

4.4.1 Materials

As noted above, participants were provided with a Primary Materials document, which contained general instructions and supporting material, and which was reflected in an introductory presentation. There were many general positive comments about the materials, contents, structure and accessibility. The only concerns expressed related to those seeking greater clarity with respect to twinning (see below). There were more positive comments about the *MEA Negotiator's Handbook*. Some participants suggested that the latter could be updated.

It was noted by the organizers that, in response to participant responses in previous simulation exercises, participants in this exercise were provided with an introduction and materials about two weeks before the exercise took place; they were not given detailed substantive background to their instructions, nor were they provided with

detailed rationales for the linkage – or lack of linkages – between their positions. Instead, participants were encouraged to develop their own rationales and given the freedom to do so.

4.4.2 Roles and individual instructions

Consistent with feedback from previous simulation exercises, there were no NGO or IGO roles. Some participants noted this absence, and it was discussed how the simulation might be adapted to bring in these perspectives. For the same reasons, full-time secretariat roles were also not included in this simulation, and participants took turns to play secretariat roles only for brief 'time slots'. Feedback on this arrangement was positive. The mere presence of participants in secretariat roles allowed the Chair of a session the opportunity to consult and seek advice. Participants in secretariat roles were able to provide substantive support and advice by, among other things, identifying applicable rules of procedure, or other relevant material for the Chair, while allowing the Chair to focus on the flow of discussion.

Other participants who played secretariat officials at key points in the process were faced with managing logistical demands of Parties, and helped to organize interaction with course support staff providing services such as document reproduction. While these activities were often simple and practical, many participants noted that they gained an appreciation of secretariat roles and perspectives, including on substantive issues, such as institutional or procedural issues, which would have implications for secretariat management. There was general agreement that this approach was preferable to having one or more participants dedicated entirely to a secretariat role or roles, where they would have less scope to intervene and engage on substance.

4.4.3 Twinning

Most participants indicated that mutual mentoring between 'twinned' partners was a challenge and a source of confusion, particularly when considered in addition to other elements of the exercise. On balance most participants felt that twinning should be dropped from the simulation model, or somehow modified.

Nonetheless, most recognized that it was a useful way of exploring and learning about different perspectives. Twinning was helpful in initiating discussion about cultural, regional and country-specific views, and was also conducive to improving the social dynamic amongst participants. Most felt that twinning provided a useful opportunity to put themselves in 'someone else's shoes'.

As in previous years, several participants expressed some disappointment that they had not been able better to engage with their twins and draw out more relevant views and perspectives, largely owing to the limited timeframe of the exercise. Others suggested that the concepts could have been better explained, or that twinning could have been set up earlier in the course, or even before the course began.

The organizers questioned participants during the post mortem on their experiences playing different roles. This edition of the exercise was the second time that the role of 'technical advisor' was formalized. Some participants found that this concept helped them to understand 'twinning'. There was also support for the two-day format, in part as the extra day helped participants to take advantage of opportunities to learn more from their twin. While, as in previous years, there was some interest in having twinning done before the Course, it was recognized that this would not be fair to those participants twinned later (some whose participation is confirmed late would be twinned as late as the first day of the course).

4.4.4 Chairing and lead roles

In this simulation, it was clear that those in a Chair role were kept working hard on substantive and procedural issues, so that keeping track of the real and simulation names of all participants became a concern. The Chairs in this simulation were given greater flexibility to design the process and to respond to ongoing developments. This was particularly challenging and increased the intensity of the simulation. However, the Chairs were closely supported by participants in secretariat roles, and effectively used their time between and during sessions to consult with each other. Participants congratulated their Chairs on dealing effectively with rules of procedure, issues and motions, and felt that the Chair did an excellent job of continuing to effectively manage the meeting, even when dealing with a motion to overrule the Chair.

4.4.5 High Level Segment strategies

For the second time in this series of simulations, a High Level Segment was added, with participants switching roles from lead negotiators (in drafting groups) on the first day, to Heads of Delegation in the plenary on the second day. There was general support for this structure and for the way it made participants shift their focus from drafting to higher level strategies leading to adoption of decisions by Parties. However, while there was a general recognition of time limitations, there was some concern about this being yet another level of complexity within an already challenging simulation, and disappointment that there was not more specific general guidance as well as more detailed individual instructions for participants to help distinguish between these two roles.

There was discussion of how to deal with Parties threatening to block consensus, and how to deal with situations when a majority of Parties seek agreement against the strong objection of one or more isolated Parties. There were different views on how MEA decision-making may evolve in the wake of the UNFCCC Copenhagen[19] and Cancun[20] results, with almost equally divided opinions. Most participants emphasized the need for the rules to provide Parties with flexibility to produce meaningful decisions that work for the majority of Parties, while a large minority emphasized

[19] See 12 (459) *Earth Negotiations Bulletin*, 22 December 2010.
[20] See 12 (498) *Earth Negotiations Bulletin*, 11 November 2011.

the need to respect the principle that no Party should be bound against its will, and the recognition that if this principle is not respected, it could also have practical implications where Parties avoid certain kinds of multilateral engagement.

Annex A: Schedule

MONDAY	**27th October 2014**
Session 24 4.30 – 5.30. p.m.	Introduction to the negotiation workshop – Slot 1.

MONDAY	**27th October 2014**
Session TBD	Informal consultations (optional) – Slot 1.

TUESDAY	**28th October 2014**
Session 25 9.00 – 9:15 a.m.	Election - Informals/INC Plenary - Slot 2.
9:15 – 10:30 a.m.	INC Plenary - Slot 2.
10.30 – 11.00 a.m.	**TEA/COFFEE BREAK**
11.00 a.m. – 12.30 p.m.	INC Groups – Slot 3
12.30 – 2.00 p.m.	LUNCH BREAK
2.00 – 3.30 p.m.	INC Groups – Slot 4
3.30 – 4.00 p.m.	TEA/COFFEE BREAK
4.00 – 5.00 p.m.	INC Groups – Slot 5
5.00 – 5.30 p.m.	Report to INC Co-Chairs – Slot 5

WEDNESDAY	**28th October 2014**
9.00 – 10.30 a.m.	INC plenary - Slot 6
10.30 – 11.00 a.m.	**TEA/COFFEE BREAK**
High-level segment	
11.00 a.m. – 12.30 p.m.	INC Plenary - Slot 7
12.30 – 2.00 p.m.	**LUNCH BREAK**
2.00 – 3.30 p.m.	INC Plenary - Slot 8 (cont.)
3.30 – 4.00 p.m.	**TEA/COFFEE BREAK**
4.00 – 5.30 p.m.	INC Plenary - adoption of decisions - Slot 9 -
5:30 – 6:30 p.m.	SimX Post-Mortem / Awards

N.B. – This schedule is subject to change by agreement of the Parties.