NMUN • NY

UNITED NATIONS ENVIRONMENT PROGRAMME
BACKGROUND GUIDE 2015

Written By: Jordan Drevdahl, Camille Ellison, Ariane Larouche, Katelyn Connell

EQUALITY

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Dear Delegates,

We are pleased to welcome you to the 2015 National Model United Nations New York Conference (NMUN•NY)! This year's United Nations Environment Programme (UNEP) staff is: Directors Jordan Drevdahl (Conference A) and Camille Ellison (Conference B), and Assistant Director Ariane Larouche (Conference A). Jordan is a middle school English teacher in California. She has a Master's degree in Teaching and Educational Theory from the University of California, Riverside. Camille has a Bachelor's degree in Political Science and Economics. She divides her time working with various non-profits specializing in HIV/AIDS policy and care. Ariane completed a Bachelor's degree in Public Affairs and International Relations at the Université Laval in Quebec City, Canada.

The topics under discussion for UNEP are:
   I.   Financing International Climate Technology Transfer
   II.   Sustainable Development in the Arctic
   III.   Promoting Resource Efficiency in Urban Development

The United Nations Environment Programme plays a unique role within the United Nations, as the leading global environmental authority. In this role, UNEP sets the global environmental agenda and promotes coherent implementation of sustainable development policies within the United Nations system.

We hope you will find this Background Guide useful as it serves to introduce you to the topics for this committee. It is not meant to replace further research and we highly encourage you to explore in-depth your countries' policies as well as use the Annotated Bibliography and Bibliography to further your knowledge on these topics.

In preparation for the conference, each delegation will be submitting a position paper. Please take note of the NMUN policies on the website and in the Delegate Preparation Guide regarding plagiarism, codes of conduct/dress code/sexual harassment, awards philosophy/evaluation method, etc. Adherence to these guidelines is mandatory.

The NMUN Rules of Procedure are available to download from the NMUN website. This document includes the long and short form of the rules, as well as an explanatory narrative and example script of the flow of procedure. It is thus an essential instrument in preparing for the conference, and a reference during committee.

If you have any questions concerning your preparation for the Committee or the Conference itself, feel free to contact the Under-Secretaries-General for Development, Sonia Patel (Conference A) and Patrick Parsons (Conference B). You can reach either USG by contacting them at: usg.development@nmun.org.

We wish you all the best for your preparation for the Conference and look forward to seeing you at the conference!

Sincerely,

Conference A	**Conference B**
Jordan Drevdahl, *Director*	Camille Ellison, *Director*
Ariane Larouche, *Assistant Director*	

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Abbreviations

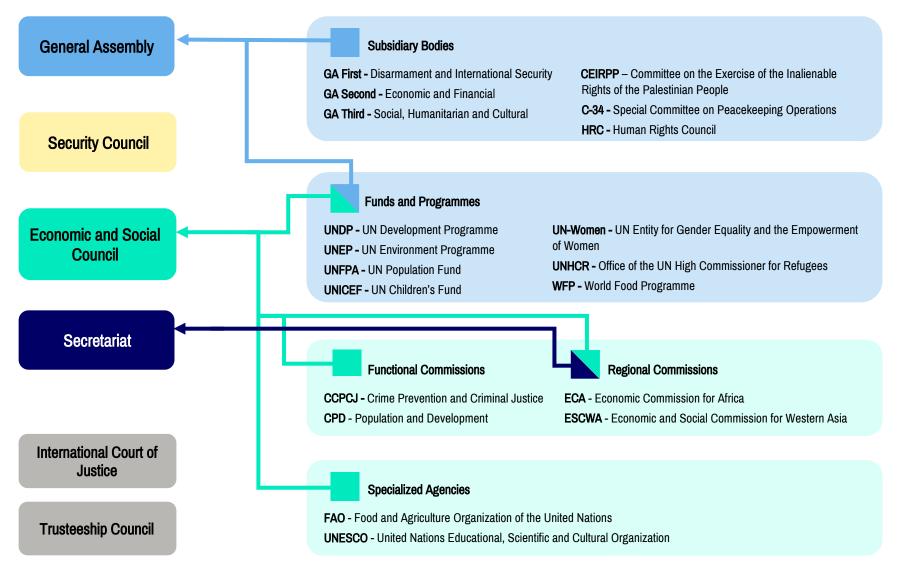|	
COP	Conference of Parties
CSO	Civil society organizations
CSR	Corporate Social Responsibility
CTCN	Climate Technology Centre and Network
DESA	Department of Economic and Social Affairs
DPSIR	Drivers, Pressures, States, Impacts, and Responses
ECOSOC	Economic and Social Council
EEZ	Exclusive Economic Zone
EIB	European Investment Bank
EIT	Economies in transition
EMG	Environmental Management Group
FDI	Foreign direct investment
GA	General Assembly
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEO	Global Environmental Outlook
GCF	Global Climate Fund
GHG	Greenhouse gases
GIZ	Deutsche Gesellschaft fur Internationale Zusammenarbeit
IACSD	Inter-Agency Committee on Sustainable Development
ICCPR	International Covenant on Civil and Political Rights
ICRW	International Convention for the Regulation of Whaling
ICTSD	International Centre for Trade and Sustainable Development
IMO	International Maritime Organization
IPR	Intellectual property rights
LCA	Life Cycle Assessment
LCSA	Life Cycle Sustainable Assessment
LDC	Least Developed Country
MARPOL	International Convention for the Prevention of Pollution from Ships
MDG	Millennium Development Goals
MNC	Multi-national corporation
MOI	Means of Implementation
NAMMCO	North Atlantic Marine Mammal Commission
NBSAP	National Biodiversity Strategies and Action Plans
NCCR	Swiss National Centre of Competence in Research
NGO	Non-Governmental Organizations
OECD	Organization for Economic Cooperation and Development
OSPAR	Convention for the Protection of the marine Environment of the North-East Atlantic
OWG	Open Working Group on Sustainable Development Goals
SCF	Standing Committee on Finance
SCP	Sustainable consumption and production
SDG	Sustainable Development Goals
SIDS	Small Island Developing States
STI	Science, Technology, and Innovation
TEC	Technology Executive Committee
TM	Technology Mechanism
TNA	Technology needs assessment
TRIPS	Trade Related Aspects of Intellectual Property
UMP	Urban Management Programme
UN	United Nations

UNCCC	United Nations Climate Change Conference
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UNCRD	United Nations Centre for Regional Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEA	United Nations Environment Assembly
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNIDO	United Nations Industrial Development Organization
VISC	Voluntary Indicative Scale of Contributions
WMO	World Meteorological Organization
WTO	World Trade Organization
WWF	World Wildlife Fund

United Nations System at NMUN•NY

This diagram illustrates the UN System simulated at NMUN•NY. It shows where each committee "sits" within the system, to help understand the reportage and relationships between the entities. Examine the diagram alongside the Committee Overview to gain a clear picture of the committee's position, purpose and powers within the UN System.

General Assembly

Security Council

Economic and Social Council

Secretariat

International Court of Justice

Trusteeship Council

Subsidiary Bodies

GA First - Disarmament and International Security

GA Second - Economic and Financial

GA Third - Social, Humanitarian and Cultural

CEIRPP – Committee on the Exercise of the Inalienable Rights of the Palestinian People

C-34 - Special Committee on Peacekeeping Operations

HRC - Human Rights Council

Funds and Programmes

UNDP - UN Development Programme

UNEP - UN Environment Programme

UNFPA - UN Population Fund

UNICEF - UN Children's Fund

UN-Women - UN Entity for Gender Equality and the Empowerment of Women

UNHCR - Office of the UN High Commissioner for Refugees

WFP - World Food Programme

Functional Commissions

CCPCJ - Crime Prevention and Criminal Justice

CPD - Population and Development

Regional Commissions

ECA - Economic Commission for Africa

ESCWA - Economic and Social Commission for Western Asia

Specialized Agencies

FAO - Food and Agriculture Organization of the United Nations

UNESCO - United Nations Educational, Scientific and Cultural Organization

Committee Overview

Introduction

The United Nations Environment Programme (UNEP) is the "advocate, educator, catalyst, and facilitator" in promoting environmentally friendly practices and policies in the United Nations (UN) system.[1] It is a specialized program that ensures international, regional, and local coordination for environmental issues, and also ensures that various other UN entities take environmental impact into

> The **United Nations Environment Programme** (UNEP) is a Programme and Fund of the United Nations, reporting to the Economic and Social Council and General Assembly.

account when executing their missions.[2] UNEP reports directly to the General Assembly (GA).[3] Their headquarters is located in Nairobi, Kenya, making it one of only two UN entities headquartered in a developing nation.[4] In May 2014, the GA, at the request of the Secretary-General, approved a budget increase for UNEP, which has given them the ability to improve their ongoing projects and to address various other environmental issues.[5]

History

The creation of UNEP was recommended at the United Nations Conference on Human Environment in Stockholm, Sweden in June 1972.[6] Six months later, in December 1972, the GA adopted resolution 2997 (XXVII) which established UNEP as the official body concerned with environmental issues of the UN.[7] Since that time, UNEP has played a significant role in coordinating environmental policy for various UN agencies. UNEP played a very pivotal role in the planning and execution of the UN Conference on Environment and Development (UNCED) in 1992.[8] UNCED was the conference that led to the adoption of *Agenda 21* and the *Rio Declaration on Environment and Development* (1992).[9] Chapter 38 of *Agenda 21* calls for the creation of an inter-agency task force that would research the best ways to identify and address environmental issues.[10] This led to the creation of the Inter-Agency Committee on Sustainable Development (IACSD), of which UNEP is a key member.[11] IACSD has a system of task managers, each in charge of specific thematic areas with UNEP being the task manager concerned with the areas of the atmosphere, toxic chemical, hazardous waste, desertification and drought, and biodiversity.[12] UNEP also takes an active role in other thematic areas of the organization, using their environmental expertise to ensure that no areas of concern go unnoticed.[13]

Mandate

Upon the adoption of resolution 2997 (XXVII), UNEP was mandated to promote international and regional environmental cooperation; help in establishing environmental policy; highlight global and regional problems; facilitate the transfer of scientific knowledge; assist developing Member States in environmental matters, review reports of the Executive Director; and approve the annual program on the allocation of UNEP's main source of funding, the Environment Fund.[14] Since 1972, UNEP's mandate has been amended and modified numerous times, including its most recent update in 2002.

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[1] UNEP, *What UNEP Does*.

[2] Ibid.

[3] UN General Assembly, *Institutional and financial arrangements for international environmental co-operation (A/RES/2997(XXVII))*, 1972.

[4] UNEP, *What UNEP Does*.

[5] UNEP, *Proposed revised biennial Programme of work and budget for 2014–2015 (UNEP/EA.1/7/Ad. 1)*, 2014.

[6] UNEP, *Declaration of the United Nations Conference on the Human Environment*. 1972.

[7] UN General Assembly, *Institutional and financial arrangements for international environmental co-operation (A/RES/2997(XXVII))*, 1972.

[8] UNEP, *UNEP's Coordination Mandate*.

[9] Ibid.

[10] UN Division on Sustainable Development, *Agenda 21*, 1992.

[11] UNEP, *UNEP's Coordination Mandate*.

[12] Ibid.

[13] Ibid.

[14] UN General Assembly, *Institutional and financial arrangements for international environmental co-operation (A/RES/2997(XXVII))*, 1972.

The first amendment to UNEP's mandate came in 1992, via *Agenda 21*, which led to UNEP's involvement with IACSD.[15] Five years later, in 1995, the GA held a special session to review the implementation of *Agenda 21* and amended UNEP's mandate by stating "UNEP is to be the leading global environmental authority that sets the global environmental agenda."[16] In 1997, the Secretary-General requested the GA create a Task Force to review and propose reforms for UN activities concerning the environment and human settlements.[17] In October of 1998, per the guidance of the Task Force, the GA put forth a set of recommendations that would further amend UNEP's mandate.[18] As a result, the Executive Director of UNEP was placed in charge of a new committee called the Environmental Management Group (EMG).[19] The key purpose of EMG is to coordinate and facilitate access to relevant information and findings concerning the environment and human settlements, in order to ensure the most efficient and cost effective allocation of resources and information.[20]

The mandate was further amended upon UNEP's adoption of the *Nairobi Declaration* (1997).[21] This amendment was one of the most significant in UNEP's history, because it created a new "core mandate" for the organization.[22] The core mandate did not replace the original mandate, but it did shift the focus of UNEP to ensure a more modern and technologically friendly approach is taken to environmental issues.[23] It made UNEP responsible for: using the best available scientific methods and evidence to analyze global environmental trends; utilizing early warning systems; furthering the development of international environmental law and policy; monitoring and fostering Member State compliance with existing international environmental norms; strengthening its role in coordinating UN environmental activities; serving as a link between the scientific community and the UN when environmental policy is concerned; and providing key policy advice for UN bodies, governments, and other institutions.[24]

UNEP's mandate was most recently modified in 2002, through the *Johannesburg Declaration on Sustainable Development*.[25] *The Johannesburg Declaration* calls on UNEP to strengthen their ties and cooperation with the World Trade Organization (WTO), the United Nations Development Programme (UNDP), and all relevant Non-Governmental Organizations (NGOs) to ensure efficiency of programs, initiatives, and resources in all areas.[26]

After the UN Conference on Sustainable Development (Rio+20) in 2012, UNEP's Governing Council was expanded to include all Member States.[27] This was done to strengthen UNEP and to ensure its place as the global leader on the environment.[28] UNEP's first universal session was held in February 2013, where the decision was made to change the Governing Council to the United Nations Environmental Assembly of UNEP (UNEA).[29] The UNEA has its own mandate that allows the UNEA to make major strategic decisions for UNEP, provide political guidance (especially for Member State specific programs), and to promote strong scientifically based policies.[30]

UNEP's mandate strongly calls for the efficiency and accuracy of information sharing in order to ensure that environmental policy is scientifically and technologically accurate.[31] The mandate also emphasizes the need for strong ties between UNEP and other world organizations, such as the WTO and UNDP, to ensure that various projects, programs, and initiates are environmentally friendly in their execution.[32] Overall, UNEP's mandate permits UNEP to be the voice of the environment of the UN system, meaning that UNEP oversees the development and

[15] UNEP, *UNEP's Coordination Mandate*.
[16] UN General Assembly, *Programme for the Further Implementation of Agenda 21 (A/RES/S-19/2)*, 1997, paragraph 123.
[17] UNEP, *UNEP's Coordination Mandate*.
[18] Ibid.
[19] UN General Assembly, *Environment and Human Settlements: Report of the Secretary General (A/53/463),* 1998.
[20] Ibid.
[21] New Zealand Ministry of Foreign Affairs and Trade, *United Nations Handbook*, 2013, p. 243.
[22] Ibid.
[23] UNEP, *UNEP's Coordination Mandate*.
[24] New Zealand Ministry of Foreign Affairs and Trade, *United Nations Handbook*, 2013, p. 243.
[25] UNEP, *UNEP's Coordination Mandate*.
[26] World Summit on Sustainable Development, *Johannesburg Declaration on Sustainable Development (A/Conf.199/20)*, 2002.
[27] UNEP, *United Nations Environment Programme Upgraded to Universal Membership Following Rio+20 Summit*, 2012.
[28] UNEP, *About UNEA*.
[29] UN General Assembly, *Change of the designation of the Governing Council of the United Nations Environment Programme (A/67/784)*, 2013.
[30] UNEP, *About UNEA*.
[31] New Zealand, *United Nations Handbook*, 2013, p. 243.
[32] World Summit on Sustainable Development, *Johannesburg Declaration on Sustainable Development (A/Conf.199/20)*, 2002.

execution of any official environmental policies developed within the UN system.[33] In addition, UNEP's mandate requires UNEP to monitor the programs of other UN entities to ensure they too are executed in an environmentally sound manner.[34]

Governance, Structure, and Membership

UNEP's structure is ordered as: the United Nations Environmental Assembly of UNEP (UNEA), the Secretariat, the Environment Fund, and the Committee of Permanent Representatives.[35]

At its inception, a Governing Council of 58 members governed UNEP, but in 2013 the UNEA took its place.[36] UNEA meets biennially in order to set the global environmental agenda and to discuss policy about emerging challenges.[37] The UNEP Secretariat is also responsible for UNEA and consists of a rotating President, three Vice-Presidents, and a Rapporteur who oversee all of UNEP's activities.[38] The Environment Fund is UNEP's main source of funding.[39] Member State's financial contributions are based upon the Voluntary Indicative Scale of Contributions (VISC), which means Member States are not required to donate money to UNEP, though they are highly encouraged to donate.[40] If they choose to donate, the amount is determined according to their Gross Domestic Product (GDP).[41] UNEP's Committee of Permanent Representatives consists of all Permanent Missions to the UN, and their purpose is to give advice to the UNEA and to create subsidiary organs that may be necessary to complete UNEP's functions.[42] The Committee of Permanent Representatives is overseen by an Executive Bureau.[43] The Executive Bureau consists of a five Member State panel, which oversees all of the Committee's actions.[44] Executive Bureau members are elected for two-year terms, and the UN principles of equitable geographic distribution apply.[45]

UNEP has six regional offices throughout the world that undertake UNEP's projects on a regional, sub-regional, and local level.[46] Each office holds yearly Regional Consultation Meetings, where representatives from various civil society organizations are invited to engage in an environmental policy dialog.[47] The regional offices bring any concerns or ideas from these meetings to the next UNEA meeting for wider UNEP discussion and possible implementation.[48] The role of the regional offices was increased and enhanced to include the Regional Consultation Meetings and other projects in 2003, when the Governing Council approved Decision 22/14. This Decision called for UNEP's regional offices to strengthen their partnerships with other UN agencies in their region, create financial institutions to fund environmental causes, and establish and/or enhance partnerships with relevant local groups in order to strengthen UNEP's mission in each region.[49]

Functions and Powers

UNEP ensures the implementation of their mandate by promoting international cooperation on existing environmental policies and guiding the creation of new environmental policies.[50] They also monitor the state of the global environmental, on both an international and regional scale, and share the gathered information with interested

[33] UNEP, *UNEP's Coordination Mandate.*
[34] Ibid.
[35] UNEP, *UNEP Governance Structure.*
[36] UN General Assembly, *Institutional and financial arrangements for international environmental co-operation (A/RES/2997(XXVII)),* 1972.
[37] UNEP, *UNEP Governance Structure.*
[38] UN General Assembly, *Change of the designation of the Governing Council of the United Nations Environment Programme (A/67/784),* 2013.
[39] UNEP, *About our Funding.*
[40] Ibid.
[41] Ibid.
[42] UNEP, *Committee of Permanent Representatives.*
[43] Ibid.
[44] Ibid.
[45] Ibid.
[46] UNEP, *Regional Consultations.*
[47] Ibid.
[48] Ibid.
[49] UNEP, *Report of the Twenty-Second Session of the Governing Council/Global Ministerial Environment Forum,* 2003, p. 9.
[50] UNEP, *What UNEP Does.*

parties.[51] Another major way UNEP implements their mandate is by using environmental awareness to help governments, the private sector, and civil society work to address environmental threats.[52] UNEP contributes significantly in developing regional plans for environmental sustainability, helping Member States who are facing sizeable challenges to create and implement environmental policy, and providing individual Member States with support in environmental capacity-building.[53] On a more global scale, UNEP works to develop international environmental law and ensure the proper use of environmental information and instruments.[54] UNEP is also currently working with various UN activities to ensure their implementation is environmentally sound.[55]

UNEP has the ability to create task forces and subsidiaries in order to implement the environmental policy they develop.[56] However, any resolution concerning environmental policy that UNEP passes, or any proposed body to be created, must first be submitted to either the GA or the Economic and Social Council (ECOSOC) for approval.[57] If the GA or ECOSOC approves of UNEP's proposals, they become official policy of the UN, and UNEP can move forward with their implementation.[58]

An example of UNEP's function in action is their partnership with the Global Environment Facility (GEF).[59] The GEF is an organization that uses international cooperation to address environmental issues and has been an official partner of the UN since 1991.[60] UNEP is their project implementation agency, along with the World Bank and UNDP, which means they are the chief actors in the coordination and supervision of GEF projects in various Member States, especially developing nations.[61] UNEP also helps drive the policy creation of the organization and staffs the GEF's Scientific and Technical Advisory Panel.[62] GEF's areas of focus have specifically been aligned with UNEP's mandate and key thematic areas in order to ensure greater cooperation in order to enhance the impact of environmental programs.[63] This is an implementation of UNEP's mandate in a variety of ways. First, it helps coordinate and increase the ties between UNEP, the WTO, and UNDP.[64] Second, it ensures that the implementation of the GEF's programs are environmentally friendly, and finally, it helps UNEP stay up to date with the latest scientific advancements in the field of the environment.[65]

Conventions and regional plans
UNEP has eight major conventions that are each overseen by separate Secretariats: the *Convention of Biological Diversity*, the *Convention on International Trade of Endangered Species of Wild Flora and Fauna*, the *Convention on Migratory Species of Wild Animals*, the *Convention on Persistent Organic Pollutants*, the *Convention of Climate Change*, the *Convention on Desertification*, the *Regional Seas Convention*, and the *Rotterdam Convention on Informed Consent*.[66] The role of these Secretariats is to monitor, report on, and implement programs in the area that its internationally agreed-upon convention specifies.[67] For example, the Secretariat for the *Convention of International Trade of Endangered Species of Wild Flora and Fauna* is responsible for monitoring and stopping any black market trade of endangered plants or animals, and to help ensure that legal trade in these species is safe and does not threaten their existence.[68]

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[51] UNEP, *What UNEP Does*.
[52] Ibid.
[53] Ibid.
[54] Ibid..
[55] Ibid.
[56] UN System Chief Executive Board of Coordination, *United Nations Environment Programme*.
[57] Ibid.
[58] Ibid.
[59] UNEP, *UNEP in the GEF*.
[60] Global Environment Facility, *What is the GEF*.
[61] UNEP, *UNEP in the GEF*.
[62] Ibid.
[63] Ibid.
[64] UNEP, *UNEP's Coordination Mandate*.
[65] Ibid.
[66] UNEP, *Secretariats on Various Conventions*.
[67] Ibid.
[68] Ibid.

Current Priorities

UNEP currently has six priority areas: climate change, resource efficiency, disaster and conflict, environmental governance, harmful substances and hazardous waste, and ecosystem management.[69] Their focus was put onto these areas in 2010 in order to "work more efficiently and effectively [… and to] strengthen the capacity of UNEP to deliver on its mission."[70] These six areas were chosen because they represent the largest areas of need and allow UNEP to focus on both broad and particular needs internationally, regionally, and in Member State specific ways.[71]

In 2012, UNEP released their medium term strategy plan for 2014-2017.[72] Their medium term strategy involves four key areas that will help UNEP to further implement their mandate, improve the state of the global environment, and ensure human wellness through the improvement and maintenance of the environment.[73] UNEP's four key areas for their medium term strategy are: to continuously review the world's environmental situation, improve early warning systems and global environmental policy by using the best available science, improve relationships and technical support specific to the needs of various Member States, and contributing to the formulation, development, and improvement of environmental policy and laws around the world.[74] All four of these key areas promote UNEP's main goal for their medium term plan: to decrease carbon emissions globally and promote the use of sustainable technologies in order to improve and maintain the state of the world's environments.[75]

Recent Sessions

In 2012, UNEP was significantly involved in the Rio+20 Conference.[76] UNEP's plan for Member States to transition to more green economies, by improving human livelihood and social equity while maintaining environmentally conscience policy, was accepted and put into the outcome document, *The Future We Want*.[77] This plan, among others, was laid out in UNEP's fifth edition of the Global Environmental Outlook document (GEO-5), *Environment for the Future We Want*.[78] The GEO series is a collection of scientific reports and analysis on the state of the global environment, and GEO-5 was specifically written with Rio+20 in mind.[79] GEO-5 aimed to make sure that the best and most up to date information was discussed when the attendants were creating new environmental policy.[80]

UNEP's first universal session of the UNEA was held in Nairobi, Kenya in February 2013. At the end of the session UNEP adopted resolution *GC.27/CW/L.2/Add.1*, which calls for the strengthening of the *Regional Seas Convention* and encourages all Member States to honor their commitments to the environment such as those outlines in the Rio+20 outcome document.[81] The resolution also established the *International Water Quality Guidelines for Ecosystems*, which call for water conservation in a variety of regionally specific ways.[82]

In September 2014, the UN held the 69th Special Session of the General Assembly, and UNEP introduced their major plans for a blue-green economy in Small Island Developing States (SIDS).[83] Blue-green economy refers to natural resource exploitation for economic growth (blue), but ensuring these practices are environmentally sustainable (green).[84] This type of economy is important for SIDS because natural resources are their main source of economic prosperity, particularly water based resources, but it is imperative to ensure resources are not depleted and

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[69] UNEP, *Six Priority Areas Factsheet*, 2013.
[70] Ibid., p. 1.
[71] UNEP, *Policy Statement by Achim Steiner, UN Under-Secretary-General and UNEP Executive Director,* 2014.
[72] UNEP, *2014-2017 Medium Term Strategy*, 2012.
[73] Ibid.
[74] Ibid.
[75] Ibid.
[76] UNEP, *Inclusive Green Economy Given Go Ahead by Heads of State at Rio+20*, 2012.
[77] UN Conference on Sustainable Development, *The Future We Want (A/Conf.216/L.1*)*, 2012.
[78] UNEP, *Global Environmental Outlook 5: Environment for the Future We Want*, 2012.
[79] Ibid.
[80] Ibid.
[81] International Institute for Sustainable Development, *Earth Negotiations Bulletin*, February 2013.
[82] Ibid.
[83] UN Web TV, *UNEP: An Alternative Future for SIDS: New UNEP Report Outlines Blue-Green Economy Solutions*, 2014.
[84] Ibid.

processes do not destroy the environment.[85] At their press conference, UNEP explained that this plan allows SIDS to "move forward" and develop economically while maintaining a high level of environmental sustainability.[86]

Conclusion

UNEP is the UN's official program concerned with the environment. Their expertise and knowledge is crucial for the implementation of a variety of established programs within the UN and Member States' governments. UNEP's mission is to ensure that the work of all UN entities, programs, funds, and Member States, civil society organizations, and private industry is environmentally sustainable and in line with international laws and norms concerning the environment.

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[85] UN Web TV, *UNEP: An Alternative Future for SIDS: New UNEP Report Outlines Blue-Green Economy Solutions*, 2014.
[86] Ibid.

Annotated Bibliography

United Nations Environment Programme. (n.d.) *About UNEP.* [Website]. Retrieved 2 August 2014 from: http://www.unep.org/About/
> *This website provides all of the basic information about UNEP, who they are, what they do, and why they are important in the UN system. The main page provides links to more detailed information about UNEP's various functions, programs, and their structure. This is an important starting point for delegates, because it will lead them to an understanding of the committee and what they can actual accomplish as a body. Through the pages linked in the "About" section, delegates will also be able to find valuable resources when researching the committee's topics of discussion.*

United Nations Environment Programme. (n.d.) *UNEP's Coordination Mandate*. [Website]. Retrieved 9 July 2014 from: http://www.unep.org/newyork/UNEPsCoordinationMandate/tabid/56200/Default.aspx
> *This webpage contains the entirety of UNEP's official mandate, including all amendments and updates. It gives dates, membership information, information about the Secretary-General Review requirements, and a multitude of other important facts that govern UNEP. This document is one of the most important sources of delegates participating in UNEP, because it gives detailed information about what can be done and/or suggested by the body. It contains links to programs, various UN entities, and other relevant links delegates will find useful in further research for a variety of topics.*

United Nations Environment Programme. (29 November 2012). *UNEP's Medium Term Strategy for 2014-2017* [Strategy Document]. Retrieved 2 August 2014 from: http://www.unep.org/about/funding/portals/50199/documents/MTS_draft_29Nov2012_clean%20copy.doc
> *The current medium term strategy for UNEP explains what UNEP has focused on in the past, what has been successful, what needs improvement, and where UNEP is headed in the future. This document gives a complete, comprehensive look into the next few years for UNEP and what their main goals are. This document will be very valuable in delegates' research because it explains specifically what UNEP wants to achieve by 2017 and how they plan on achieving it. Also, understanding UNEP's current medium term strategy will help delegates to understand what UNEP is currently working on and priorities for the environment agenda.*

United Nations Environment Programme. (n.d.) *What UNEP Does.* [Website]. Retrieved 2 August 2014 from: http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=493&ArticleID=5391
> *This webpage gives the basic information concerning what UNEP does, and their responsibilities are executed. It gives a basic overview of what UNEP's mandate allows and how proposed programs and resolutions get put into action. Delegates should read over this page, and utilize the links to more detailed information, in order to fully understand UNEP as a committee and what they can achieve or implement.*

United Nations System Chief Executive Board of Coordination. (n.d.) *United Nations Environment Programme*. [Website]. Retrieved 6 September 2014 from http://www.unsceb.org/content/unep
> *The webpage is a crucial resource for delegates researching UNEP. The page gives UNEP's history, mandate, purpose, and place within the UN system all in one, easy to navigate place. This page also contains links to UNEP's important publications, such as the GEO series, their annual report, and the Environment Data Explorer. There is also important information regarding the leadership of UNEP. Delegates should use this source liberally to familiarize themselves with UNEP and its functions.*

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I. Financing International Climate Change Technology Transfer

Introduction

One of the primary functions of the United Nations Environment Programme (UNEP) is the promotion of environmental science and the spread of information.[87] Climate change is the first of UNEP's six thematic priorities, and as such, UNEP often collaborates with various agencies and non-governmental organizations (NGOs) to assist in numerous climate change projects and activities.[88] Another key actor in the negotiations to combat climate change is the *United Nations Framework Convention on Climate Change* (UNFCCC). The UNFCCC was drafted at the 1992 United Nations Conference on Environment and Development (Earth Summit) and the Convention became operational on 21 March 1994.[89] Article 7 of the Convention establishes the Conference of Parties (COP) as the chief decision-making authority of the UNFCCC.[90] The COP meets annually for the United Nations Climate Change Conference (UNCCC) to adopt international reports and decisions that achieve the objective of the Convention.[91] UNEP consults with the UNFCCC Secretariat and aims to inform and support the negotiation process of the UNFCCC.[92] The joint work program between UNEP and UNFCCC as of 2008 includes using "UNEP's analytical capacity to support the negation process" and assist in capacity-building "such as the role of public finance institutions in spurring low carbon investment."[93] Additionally, all of UNEP's work on climate change is shaped by UNFCCC negotiations.[94]

While the issue of climate technology transfer and its financing has become a rising concern in the past two decades, definitions of the terms referring to the process remain broad and at times indistinguishable. Article 1 of the UNFCCC defines climate change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods."[95] The 2000 special report of the Intergovernmental Panel on Climate Change states that technology transfer is "a broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change among different stakeholders such as governments, private sector entities, financial institutions, non-governmental organizations and research/education institutions."[96]

In discussing climate change technologies, definitions become even more ambiguous. As the definition for technology transfer states, climate technologies should either mitigate the effects of greenhouse gases (GHGs) or adapt the environment, thus reducing vulnerability to climate change.[97] The United Nations Development Programme (UNDP) states that technologies for mitigation are "technologies that can be applied in the process of minimizing GHG emissions" and technologies for adaptation are "technologies that can be applied in adapting to climate variability and climate change."[98] In terms of mitigating technologies, classification is more clear-cut and is always based on a reduction in GHG emissions.[99] Examples of mitigation technologies in the area of transportation, for example, would be more fuel-efficient vehicles.[100] Another example of mitigation technologies is in energy generation by upgrading from coal to renewable sources such as wind, solar, or hydropower.[101] Adaptation technologies, on the other hand, are less obvious forms of technology. Examples of adaptation technologies in the transportation sector may include relocation or design standards for the planning of public roads.[102] Another example would be in water management, through application of water re-use techniques like desalination or perfecting the

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[87] FAO, *United Nations Environment Programme*.
[88] UNEP, *UNEP and Partners United to Combat Climate Change*, 2010, pp. 7-8.
[89] UNFCCC, *First steps to a safer future: Introducing the United Nations Framework Convention on Climate Change*.
[90] UN, *United Nations Framework Convention on Climate Change*, 1994, p. 17.
[91] Ibid., pp. 18-19.
[92] UNEP, *UNEP and Partners United to Combat Climate Change*, 2010, p. 9.
[93] Ibid.
[94] UNEP, *Climate Change Factsheet*, 2010, p. 2.
[95] UN, *United Nations Framework Convention on Climate Change*, 1994, p. 7.
[96] IPCC, *IPCC Special Report: Methodological and Technological Issues in Technology Transfer*, 2000, p. 3.
[97] Ibid.
[98] UNDP, *Handbook for Conducting Technology Needs Assessment for Climate Change*, 2010, p. 11.
[99] Ibid., p. 10.
[100] IPCC, *Climate Change 2007: Synthesis Report*, 2007, p. 60.
[101] Ibid.
[102] Ibid., p. 57.

efficiency of water irrigation systems.[103] Some researchers fear that the lack of globally agreed-upon, suitable definitions, such as the case with "adaptation," causes difficulty in differentiating "adaptation technologies" from "adaptation measures."[104] In turn, countries may not be using the international framework to its full capacity.[105]

Most transfers occur through market-based routes of trade, foreign direct investment (FDI), or licensing.[106] Trade and technology transfer usually involves a developed country importing commodities and exporting companies with technical knowledge to a Least Developed Country (LDC). While beneficial, trade also leaves little independence separate from the developed country.[107] Technology transfer occurring through FDI usually takes place when a multi-national corporation (MNC) is established within new borders.[108] This allows for technologies to be introduced to the new country for minimal cost, as training and dissemination are often funded through the MNC.[109] While this method of transfer may seem ideal, FDI is only attractive to the investor if the host country can offer favorable policies, regulations, and a sizeable market allowing for profit.[110] Licensing requires the purchasing of knowledge and the right to produce a technology protected by intellectual property rights (IPR).[111] This is a safe option, but the price of certain licenses may be more than an LDC may be able to afford.

In the case of high and middle income countries, studies show that the above routes are successful means for accessing new technologies, and that after their introduction, can be pushed further in the new domestic market, bringing economic gain.[112] Investors are attracted by an established economy and enabling environments to ensure the future success of the technology, and thus a return on investment.[113] The less competitive or underdeveloped markets often found in LDCs deter such international investments.[114] This is why many international decisions regarding technology transfer refer to the reluctance of transferring to LDCs or unstable economies, and encourage capacity-building, to be accompanied along with transfers.[115] Once the technology can be admitted to an equipped national environment, public-private and civil society partnerships are crucial in the transfer.[116] Even if foreign assistance is involved in the process, it is important that technologies are received through domestic government bodies or entrepreneurs to ensure a responsible vehicle for distributing them to the public.[117] As an entity separate from governments and markets, civil society plays a crucial role in representing public interests and contributes to capacity-building through policy reform, reduced corruption, and implementing technologies in LDCs.[118]

International and Regional Framework

The topic of financing international climate change technology transfer is quite technical. The first major international document that acknowledged the issue was *Agenda 21*, established at the Earth Summit held in Rio de Janeiro, Brazil, in 1992.[119] The entirety of Chapter 34 of the plan of action is dedicated to the transfer of environmentally sound technologies, cooperation, and capacity-building to address the need for access to clean

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[103] IPCC, *Climate Change 2007: Synthesis Report*, 2007, p. 57.
[104] Christiansen, *Technologies for Adaptation: Perspectives and Practical Experiences*, 2011, p. viii.
[105] Ibid.
[106] Foray, *Technology Transfer in the TRIPS Age: The Need for New Types of Partnerships between the Least Developed and Most Advanced Countries*, 2009.
[107] Ibid.
[108] Ibid., p. 22.
[109] Ibid.
[110] Ibid.
[111] Ibid.
[112] Ibid., p. 6.
[113] CPI, *The Global Landscape of Climate Finance 2013*, 2013, p. 1.
[114] Foray, *Technology Transfer in the TRIPS Age: The Need for New Types of Partnerships between the Least Developed and Most Advanced Countries*, 2009, p. 7.
[115] CPI, *The Global Landscape of Climate Finance 2013*, 2013, p. 1.
[116] Ibid., p. 10.
[117] Foray, *Technology Transfer in the TRIPS Age: The Need for New Types of Partnerships between the Least Developed and Most Advanced Countries*, 2009, pp. 8, 22.
[118] Forsyth, *Promoting the ''Development Dividend'' of Climate Technology Transfer: Can Cross-sector Partnerships Help?*, 2007, p. 1692; UNFCCC, *Practical Experience and Lessons Learned in the Climate Related-Transfer of Technologies in Africa*.
[119] UN Conference on Environment and Development, *Agenda 21*, 1992.

technologies, particularly in the developing world.[120] Chapter 34 also gives a broad context for how technologies should be transferred but offers little in regards to financing.[121] *Agenda 21* became the foundation for many future international negotiations on climate change technology transfer.[122]

As briefly discussed in the introduction, the UNFCCC entered into force in 1994 and soon became the guiding document in international climate change technology transfer.[123] Under the UNFCCC, the COP is divided into annexes with specific commitments.[124] Annex I parties include developed countries that are members of the Organization for Economic Cooperation and Development (OECD) and some countries with economies in transition (EIT Parties).[125] Annex II is made up of the OECD members of Annex I but not the EIT Parties.[126] Lastly Non-Annex I Parties consist mostly of the developing countries of the COP.[127] The Convention requires Annex II Parties to offer financing to developing states and also encourages the development and transfer of clean technologies.[128] Article 4 of the Convention particularly refers to technology transfer, financing, and the role of Annex II Parties and the COP has additionally made reference to the need for transfer of environmentally sound technologies in nearly all of the UNCCC meetings.[129] The 2001 meeting of the COP resulted in the *Marrakesh Accords*, which added depth to the "technology transfer framework" that Article 4, paragraph 5 of the UNFCCC created, and stated that technology transfer could successfully be achieved by following the process of "technology needs assessment (TNA), technology information, enabling environments, capacity-building and mechanisms for technology transfer."[130]

Another UNCCC outcome that further emphasizes the need for climate change technology transfer and financing is the *Bali Road Map* of 2007.[131] The *Bali Road Map* includes the *Bali Action Plan*, which set goals up to and beyond 2012 for further efforts on technology development and transfer, as well as financing and investment for technology cooperation.[132] The 2010 *Cancun Agreements* called for the establishment of a Technology Mechanism (TM) to further enhance the means of the technology transfer process.[133] The TM is comprised of the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN).[134] While the TEC received its mandate at this session, the CTCN was not operational until the UNCCC in 2012 in the *Doha Gateway*, where UNEP also became leader of a group of organizations to host the CTCN.[135] The decision also offers the constitution of the CTCN, thus finally making the TM fully functioning.[136] In assigning UNEP as the leading host of the CTCN, the *Doha Gateway* also acknowledges that UNEP, as the principle body of the UN system regarding environment, has the authority to facilitate financing for climate technologies.[137]

While the meetings of the COP under the UNFCCC have contributed greatly to climate change technology transfer and offer a great structure for successful international transfers, some important areas are overlooked including the need for public-private partnerships and the challenge of IPR. Additionally, while funds and a "financial mechanism" are often discussed, language regarding financing of climate change technology transfer, specifically, is vague. The 2012 United Nations Conference on Sustainable Development produced the *The Future We Want*, which called for the establishment of the Sustainable Development Goals (SDGs) and also strengthened the governing body of UNEP by creating the United Nations Environment Assembly (UNEA).[138] Under the direction of the

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[120] UN Conference on Environment and Development, *Agenda 21*, 1992.
[121] Ibid.
[122] UNFCCC, *Five Steps to a Safer Future: Introducing the United Nations Framework Convention on Climate Change*.
[123] Ibid.
[124] UNFCCC, *Parties and Observers*.
[125] Ibid.
[126] Ibid.
[127] Ibid.
[128] Ibid.
[129] UN, *United Nations Framework Convention on Climate Change*, 1994.; Christiansen, *Technologies for Adaptation: Perspectives and Practical Experiences*, 2011.
[130] UNFCCC, *The Marrakesh Accords and Marrakesh Declaration*, 2001.
[131] UNFCCC, *Report of the Conference of the Parties on its thirteenth session, held in Bali,* 2007.
[132] Ibid., pp. 4-5.
[133] UNFCCC, *Report of the Conference of the Parties on its sixteenth session, held in Cancun*, 2010, pp.18-19.
[134] Ibid.
[135] UNFCCC, *Report of the Conference of the Parties on its eighteenth session, held in Doha*, 2012, p. 8.
[136] Ibid.
[137] Ibid., p. 10.
[138] UN Conference on Sustainable Development, *The Future We Want (A/CONF.216/L.1)*, 2012.

UNEA, UNEP was persuaded to further encourage and aid access to technology and promote advancement of its regional bodies.[139] In reference to climate change technology transfer, *The Future We Want* observed the role of IPR, FDI, the public and private sectors, and international trade and requested negotiations towards a "technology facilitation mechanism" in the General Assembly's (GA) 67th session.[140] The GA went on to adopt *Implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the outcomes of the World Summit on Sustainable Development and of the United Nations Conference on Sustainable Development (A/RES/67/203)* in 2012 and a second by the same name *(A/RES/68/210)* in 2013.[141] The two resolutions contributed further work towards a "technology facilitation mechanism" and increased the coherence of existing programs like the TM. The GA's 68th session also produced resolution 68/220 that recognized the difficulties for LDCs in obtaining climate technologies and requested further sharing of research through North-South, South-South, and triangular collaboration.[142]

The *Istanbul Programme of Action*, adopted at the Fourth United Nations Conference on the Least Developed Countries in 2011, sought to create a Technology Bank and a Science, Technology, and Innovation (STI) supporting mechanism specifically for use by LDCs.[143] The purpose of the Technology Bank and STI mechanism would be to broaden research for LDCs, support networking, and further access to needed technologies.[144] This idea was pursued by LDCs due to their dissatisfaction with the implementation of Article 66.2 of the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS).[145] The article provides that "developed country members shall provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to least developed country members in order to enable them to create a sound and viable technology base."[146] To address the neglect of Article 66.2, the Technology Bank would consist of a Patents Bank that would allow for the licensing of patents and access to patents otherwise protected by IPR.[147] Resolution 68/220 supported the *Istanbul Programme of Action* and furthered the process of establishing the Technology Bank and STI mechanism for LDCs.[148] All of the above GA resolutions state the relevance of the topic to the post-2015 agenda and request that it is given appropriate concern in agenda negotiations.[149]

The Open Working Group (OWG) for the SDGs has indeed considered this topic and has placed many key components to the process in its proposed goal 17.[150] The suggested themes under goal 17 include: finance, technology, capacity-building, trade, policy and institutional coherence, multi-stakeholder partnerships and data, monitoring and accountability; all of which may apply to the technology transfer process.[151] The proposal encourages improvements in access to science and technology through increased North-South, South-South, and triangular relationships through use of the technology facilitation mechanism.[152] In addition, the OWG set a goal of 2017 for the open operation of the Technology Bank and STI capacity-building mechanism, and also recognized the

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[139] UN Conference on Sustainable Development, *The Future We Want (A/CONF.216/L.1)*, 2012.
[140] Ibid.
[141] UN General Assembly, *Implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the outcomes of the World Summit on Sustainable Development and of the United Nations Conference on Sustainable Development (A/RES/67/203)*, 2012.; UN General Assembly, *Implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the outcomes of the World Summit on Sustainable Development and of the United Nations Conference on Sustainable Development (A/RES/68/210)*, 2013.
[142] UN General Assembly, *Science, technology and innovation for development (A/RES/68/220)*, 2013.
[143] United Nations, *Report of the Fourth United Nations Conference on the Least Developed Countries (A/CONF.219/7)*, 2011.
[144] Ibid.
[145] UN General Assembly, *Technology bank and science, technology and innovation supported mechanism dedicated to the least developed countries: Report of the Secretary General (A/68/217)*, 2013.
[146] WTO, *Agreement on Trade-Related Aspects of Intellectual Property Rights*, 1994.
[147] UN General Assembly, *Technology bank and science, technology and innovation supported mechanism dedicated to the least developed countries: Report of the Secretary General (A/68/217)*, 2013, p. 12.
[148] UN General Assembly, *Follow-up to the Fourth United Nations Conference on the Least Developed Countries (A/RES/67/220)*, 2012.
[149] Ibid.
[150] UNEP, *Proposal of the Open Working Group for Sustainable Development Goals*, 2014.
[151] Ibid., pp. 18-19.
[152] Ibid.

need for cooperation between various sectors and encouraged partnerships between public and private sectors as well as civil society.[153]

Regional framework
While international frameworks continuously encourage developed countries to promote and finance technology transfer to the developing world, developing regions are also working to improve their "readiness" to receive assistance and promote capacity-building from within.[154] One example of this is the Arab Environment Facility, hosted by the Union of Arab Banks, which encourages finance in the environment and broader private sector investments within the region.[155] Regional investment banks in the developed world, such as the European Investment Bank (EIB), also support financing in developing regions.[156] While the EIB endorses projects within its own area, the Bank also works externally on projects that specifically advance regional development and combat climate change, while also establishing accountability standards.[157] Another example can be seen in the support offered by Deutsche Gesellschaft fur Internationale Zusammenarbeit, the German institution that offers climate change financing projects and training in the Asia-Pacific Region.[158]

In response to the *Poznan Strategic Program on Technology Transfer* created under the UNFCCC, the Global Environment Facility (GEF), as a body of the UNFCCC financing mechanism, proposed forming regional pilot projects to further investment in technology transfer to developing states.[159] As such, UNEP is working with the Asian Development Bank in creating the Pilot Asia-Pacific Climate Technology Center, which would join investors, technology suppliers, and other stakeholders in the transfer process.[160] The project also collaborates with the CTCN for further networking and though still in the pilot stage, appears to be forming a beneficial regional technology facilitation process.[161] GEF is supporting three other regional development banks to launch similar pilot programs including the European Bank for Reconstruction and Development's work on a Regional Climate Technology Transfer Center specifically to benefit Early Transition Countries and Mediterranean countries, the African Development Bank and its African Climate Technology Finance Center and Network, and the Inter-American Development Bank and the project entitled Climate Technology Transfer Mechanisms and Networks, all of which build and strengthen regional capabilities, networking, and access to financing climate technologies.[162]

Role of the International System

The bilateral transfer of climate change technologies requires assistance from numerous international organizations. UNEP/UNEA may help in facilitating partnerships and access to information, but it is also the ideal organization to consider methods of financing the process.[163] UNEP, the World Bank, and UNDP are Implementing Agencies for the GEF, meaning these three agencies are responsible for implementing GEF projects under each agency's given mandate.[164] As the only agency to focus solely on the environment, UNEP is able to facilitate the use of GEF funding for projects that include "innovation, technology transfer and lifting barriers."[165] UNEP is also one of the four implementing agencies to the Multilateral Fund for the Implementation of the Montreal Protocol.[166] This fund is devoted to combating the diminishment of the ozone layer and often contributes to technology transfer.[167] More broadly, UNEP is also involved in the UNEP Finance Initiative, which joins public and private groups from all

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[153] UNEP, *Proposal of the Open Working Group for Sustainable Development Goals*, 2014. pp. 18-19; Ghaus-Pasha, *Role of Civil Society Organizations in Governance*, 2004, p. 37.
[154] AEF, *The Arab Environment Facility*, 2007.
[155] Ibid.
[156] EIB, *EIB: Priorities*.
[157] Ibid.
[158] GIZ, *About GIZ's Finance Approach*.
[159] UNFCCC, *Report of the Global Environment Facility on the progress made in carrying out the Poznan strategic programme on technology transfer (FCCC/SBI/2014/INF.3)*, 2014, p. 8.
[160] Ibid., p 17.
[161] Ibid., p 17.
[162] Ibid., pp. 17-21.
[163] UNEP, *Division of Global Environment Facility Coordination*.
[164] GEF, *Global Environment Facility: What is the GEF*.
[165] UNEP, *UNEP in the GEF*.
[166] UNEP, *OzonAction under the Multilateral Fund*.
[167] Ibid.

sectors of finance including banking, insurance, and investment.[168] Finally, as the host of the CTCN, UNEP is a lead facilitator in connecting the various parties needed to complete technology transfer, including leaders in finance.[169]

Joining mechanisms
The *Marrakesh Accords* introduced necessary steps in climate technology transfer such as TNAs and capacity-building.[170] The update of the TM in the *Cancun Agreements,* however, allowed the process to become much stronger.[171] The TEC aids countries in the generation of TNAs and national action plans and programs for both mitigation and adaptation, and in addition to numerous other responsibilities, also compiles its observation of national policies, transfer outcomes, and related activities to improve future technology transfers.[172] The second body under the TM, the CTCN, works with developing states, at the request of their National Designated Entity, to improve technology transfer based on the state's needs, as identified through TNAs.[173] Once the country priorities are identified, the CTCN assesses the need and provides support and solutions, and with other stakeholders, identifies common needs that allow for knowledge sharing and networking.[174] In addition to developing the TM, the *Cancun Agreements* also called for the creation of a Green Climate Fund (GCF) to join the GEF as an entity of the UNFCCC financial mechanism, as well as a Standing Committee on Finance (SCF) to oversee the operation of the financial mechanism.[175] The COP asked the SCF to "rationalize" the financial mechanism and "mobilize" financial resources, as well as requested that possible links in the TM and the financial mechanism be located.[176] The COP meeting in Warsaw in 2013 also focused on financing and the Convention's financial mechanism, and requested the SCF to present the fifth review of the financial mechanism at the COP meeting in late 2014.[177] This will be the first review of the financial mechanism since the creation of GCF and the TM, and may find links within these mechanisms of the UNFCCC as well as to similar networks and programs developed through separate UN agencies.[178]

Stages of technology transfer
The report of the Secretary-General in reference to the GA's call for a technology facilitation mechanism notes that the stages of technology transfer should follow a process from research, to development, to demonstration, to market information, and finally to diffusion.[179] Each stage listed needs capacity-building, as well as financing, and prices and processes vary by sector or even specific technologies.[180] Specific investment providers may change within the various stages of the process, but once the technology is developed and possesses potential for market value, funding requirements increase and private investors become the predominant investors in demonstration and diffusion.[181] The diffusion phase is often where funds are needed most, and the financing mechanism and other funds under the Convention are often used in this stage.[182] The majority of funding comes from outside the Convention, however, through export credit agencies and bilateral and multilateral sources.[183] While the stage funded depends on the given situation, most LDCs lack the economic infrastructure needed to finance, or attract finance, for the technology transfer process.[184]

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[168] UNEP, *UNEP Finance Initiative: About*.
[169] UNEP, *CTCN: Who We Are*.
[170] UNFCCC, *The Marrakesh Accords and Marrakesh Declaration*, 2001.
[171] UNFCCC, *Report of the Conference of the Parties on its sixteenth session, held in Cancun*, 2009.
[172] Ibid.
[173] CTCN, *CTCN Operating Manual for National Designated Entities*, 2014, p. 2.
[174] Ibid.
[175] UNFCCC, *Report of the Conference of the Parties on its sixteenth session, held in Cancun*, 2010.
[176] Ibid.
[177] UNFCCC, *Report of the Conference of the Parties on its nineteenth session, held in Warsaw*, 2013.
[178] UN General Assembly, *Technology bank and science, technology and innovation supported mechanism dedicated to the least developed countries: Report of the Secretary General (A/68/217)*, 2013, p. 23; ICTSD, *The Climate Technology Mechanism: Issues and Challenges*, 2011.
[179] UN General Assembly, *Options for a facilitation mechanism that promotes the development, transfer and dissemination of clean and environmentally sound technologies: Report of the Secretary General (A/67/348),* 2012.
[180] Ibid.; UNFCCC, *Investment and Financial Flows to Address Climate Change*. 2007, p. 188.
[181] UNFCCC, *Investment and Financial Flows to Address Climate Change*. 2007, p. 189; UNFCCC, *Investment and financial flows to address climate change: an update*, 2008, p. 58.
[182] UNFCCC, *Investment and financial flows to address climate change: an update*, 2008, p. 70.
[183] Ibid.
[184] Corvaglia, *South-South Technology Transfer Addressing Climate Change*, 2009.

Challenges and Opportunities

IPR and international agreements, such as TRIPS, protect knowledge, technologies, and innovative thought, but they also allow for high prices that prevent the sharing of new technologies to the developing world.[185] TRIPS indeed poses a barrier in technology diffusion, however the protection of such rights also allows for opportunities to patent indigenous techniques and technologies that may in turn benefit LDCs.[186] Even without the challenge of IPR, states must have a welcoming national environment and competitive economy, free of corruption and impeding policies, that invites investors and is able to maintain technology development.[187] While certain areas can be dealt with nationally, further capacity-building and preparation in this area may take time and require further investment.[188]

The technology transfer process caters primarily to the transfer of mitigation technologies.[189] Adaptation technologies are usually site-specific, and the adaptation technology ideal for one area may not be suitable in a new environment.[190] This issue either highlights a need to further develop a technology transfer process or mechanism specific to adaptation or that countries are often dedicating efforts to obtain a mitigation technology when funds could actually be used to research and develop a more suiting adaptation technology.[191] Further, the upgrades to the TM and the financial mechanism under the UNFCCC seem to have links that have not yet been identified during the recent COP meetings, for example how the GCF may benefit the TEC and CTCN.[192] Further clarification, as well as defined connections to other UN efforts like the Technology Bank, and the technology facilitation mechanism discussed under the GA may allow for better, more appropriate use.[193]

Conclusion

Financing international climate change technology transfer is a multi-faceted, complex issue that involves governments, the private sector, economics, science, and many other players. When the issue arose in the 1990s, negotiations simply sought to further the transfer of environmentally sound technologies to the developing world. Two decades later, many organizations and international agreements have advanced the process and its efficiency. Financing is no less important today in achieving the goal than it was in 1992. UNEP and the UN Environment Assembly faces a plethora of opportunities and barriers in financing climate change technology transfer.[194]

Further Research

Some questions to consider in further research: The TEC and CTCN work together under the UNFCCC TM to further technology transfer, but could their relationship be more defined? Moreover, several mechanisms, networks, banks and other entities have been created separately, yet simultaneously, within the past few years. Are any of the functions overlapping? Could connections or further affiliations between the groups improve the situation at hand? How can Member States better prepare domestically to give or receive investments? How can improved partnerships between the public sector, private sector and civil society further improve the technology transfer process? Can the broad terminology within agreements of the international framework be clarified, and if so, could this combat challenges faced such as IPR or technology transfer itself? And finally, how can financing climate technology transfer be further addressed in the post-2015 development agenda?[195]

[185] ICTSD, *Climate Change, Technology Transfer and Intellectual Property Rights,* 2008.
[186] Foray, *Technology Transfer in the TRIPS Age: The Need for New Types of Partnerships between the Least Developed and Most Advanced Countries*, 2009.
[187] Corvaglia, *South-South Technology Transfer Addressing Climate Change*, 2009.
[188] Ibid.
[189] Ibid.
[190] Christiansen, *Technologies for Adaptation: Perspectives and Practical Experiences*, 2011.
[191] Ibid.
[192] ICTSD, *The Climate Technology Mechanism: Issues and Challenges*, 2011.
[193] Ibid.
[194] IISD, *UNGA 68 Agrees to Continue Discussing technology Transfer,* 15 September 2014; IISD, *UNGA President Submits Draft Procedural Resolution on Technology Dialogues,* 2014.
[195] IISD, *Sustainable Development Policy & Practice*; IISD, *Sustainable Development Policy & Practice: Technology*; IISD, *Climate Change Policy & Practice*.

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> *In this report, the Climate Policy Initiative analyzes international climate investments for the third consecutive year. With specific figures and outlines, this is an excellent source for observing where and how financing is applied towards climate technologies. This document also points out numerous commonly used terms of the topic that could be more properly defined in order to improve the systems in place.*

Christiansen, L. & A. Olhoff & S. Traerup. (2011). *Technologies for Adaptation: Perspectives and Practical Experience*. United Nations Environment Programme Riso Centre. Retrieved 9 July 2014 from: http://www.unep.org/pdf/technologiesadaptation_perspectivesexperiences.pdf
> *This second edition of the Technology Transfer series of research by the Riso Centre gives superb definitions for mitigation and adaptation and differentiating the two. The piece is particularly unique in that it offers supporting information on adaptation. Most research of the topic at hand focuses on offering aid from developed member states to developing in the form of mitigation. This paper encourages adaptation and questions the over financing of mitigation where not needed. It is an excellent resource for delegates that will encourage thinking towards alternative solutions.*

Foray, D. (2009). *Technology Transfer in the TRIPS Age: The Need for New Types of Partnerships between the Least Developed and Most Advanced Countries*. ICTSD Programme on IPRs and Sustainable Development. Retrieved 10 July 2014 from: http://www.iprsonline.org/unctadictsd/docs/New%202009/foray_may2009.pdf
> *This report focuses on the act of technology transfer and the numerous intricacies that must take place for its success, and offers critical information for understanding the TRIPS Agreement and how it applies to technology transfer. The paper details the paths for licensing, direct investment, and other sources of transfer. This source is particularly useful to delegates in explaining the relationships between parties within a given stage of the technology transfer process.*

United Nations. (1994). *United Nations Framework Convention on Climate Change*. Retrieved 9 July 2014 from: http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf
> *The above link is to the founding United Nations Framework Convention on Climate Change. Basic knowledge of the articles, particularly Article 4, is crucial for understanding the annual COP negotiations and decisions as they are all expansions to further strengthen this Convention. Further links to all COP meetings may also be found on this site.*

United Nations, General Assembly, Sixty-seventh session. (2012). *Options for a facilitation mechanism that promotes the development, transfer and dissemination of clean and environmentally sound technologies: Report of the Secretary-General (A/67/348)*. Retrieved 5 August 2014 from: http://www.un.org/ga/search/view_doc.asp?symbol=A/67/348&Lang=E
> *This report of the Secretary-General observes the technology facilitation mechanism considered by the General Assembly, and makes connections to existing organizations and agreements already put into place that could further this effort. Complete with graphs and explanations, delegates may more fully associate efforts and bodies for their collaboration.*

United Nations Development Programme. (2010). *Handbook for Conducting Technology Needs Assessment for Climate Change*. Retrieved on 3 August 2014 from: http://unfccc.int/ttclear/sunsetcms/storage/contents/stored-file-20130321154847356/TNA_Handbook_Nov2010.pdf
> *Written at the request of the UNFCCC, the Handbook for Conducting TNAs will clarify the technology transfer framework under the UNFCCC and also provide numerous definitions and key terms further explaining the process. The handbook is used as the model for how countries should conduct TNAs, and as the start of the technology transfer process, delegates should clearly understand a TNA's function and purpose.*

United Nations Environment Programme. (2014). *Proposal of the Open Working Group for Sustainable Development Goals*. Retrieved 3 August 2014 from:

http://www.unep.org/post2015/Portals/50240/Documents/Other%20documents/4518SDGs%20FINAL_approved_1 9%20July%20at%201320hrs.pdf

> *Though not yet concrete, the proposed Sustainable Development Goals should be reviewed and considered. As the future of the UN, delegates should consider these proposals and deliberate on how further negotiation may ensure their completion. Delegates may also notice how proposed goal 17 may apply to this topic for further inspiration.*

United Nations Framework Convention on Climate Change. (2007*). Investment and Financial Flows to Address Climate Change.* Retrieved 12 July 2014 from: http://unfccc.int/resource/docs/publications/financial_flows.pdf

> *This report by the UNFCCC Secretariat offers knowledge on where financing takes place within the technology transfer process. This resource will also help delegates understand the different financing areas that pertain to mitigation and adaptation respectively. This report stands out among others as it also provides an analysis of markets that may work well together and reasonable predictions for climate change in the future.*

United Nations Framework Convention on Climate Change. (2010). *Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010*. Retrieved 10 July 2014 from: http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf

> *The COP meeting at Cancun set the stage for many projects under the UNFCCC still under works today. As this Accord furthers the technology transfer framework and creates the Technology Mechanism, and many other groundbreaking decisions regarding finance and technology transfer, delegates should have a thorough understanding of its contents. This resource is heavily cited in current climate technology transfer resources.*

United Nations Framework Convention on Climate Change. (2013). *Report of the Conference of the Parties on its nineteenth session, held in Warsaw*. Retrieved 10 July 2014 from: http://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf

> *As the most recent of the UNCCCs, delegates should become familiar with this decisions and reports within to understand recent developments of the mechanisms under the UNFCCC. This decision also gives further instruction to the GCF and the bodies within the Technology Mechanism and sets criteria for the fifth review of the financial mechanism. The review to be released at the end of 2014 may make great changes to the financial mechanism, as this will be the first to include the GCF. Delegates should understand the roles of GCF and GEF and how they may be applied to technology transfer.*

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II. Sustainable Development in the Arctic

"As one of the first areas of the world to experience the impacts of climate change, the Arctic serves as a barometer for the change in the rest of the world."[196]

Introduction

Commonly known "as the region within the Arctic Circle," the Arctic is a vast ice ocean surrounded by land.[197] Several countries have a portion of their territory included in this region, namely Canada, Finland, Denmark (with its jurisdiction in Greenland), Sweden, Norway, Iceland, United States of America (specifically Alaska), and the Russian Federation.[198] Global warming, the melting of sea ice, the increase of greenhouse gas emissions, and short-lived pollutants are different signs of those environmental changes in the Arctic that will have global repercussions, such as rising sea levels and more frequent extreme weather patterns in the Northern hemisphere.[199]

From an economic point of view, there are also positive consequences to climate change in the Arctic, such as easier access to the oil resources and shorter transportation routes that allow for important cost-saving measures.[200] On the other hand, these activities are also likely to increase the risk of oil spills, pollution, and a greater emission of pollutants.[201] As suggested by the United Nations Environment Programme (UNEP) and the Arctic Council, a compromise between corporate interests in the region and the protection of the Arctic's fragile environment must be based on sustainable development principles.[202] As defined by the *Brundtland Report*, sustainable development allows for the fulfillment of economic and social needs without compromising the needs of future generations.[203] It consists of a balance between economic and social development and environmental protection.[204]

In order to achieve sustainable development, the discussion must be widened to include the different stakeholders and non-Arctic actors in order to establish solid global governance mechanisms.[205] UNEP is working in close cooperation with the Arctic Council, indigenous populations, and civil society organizations (CSOs) to provide scientific assessment of the issue and to find solutions that accommodate biodiversity and local populations while allowing sustainable development of Arctic resources.[206] UNEP must work with all stakeholders to develop a framework based on sustainable development and corporate social responsibility principles.[207]

International and Regional Framework

During the 2002 Johannesburg World Summit on Sustainable Development, participating Member States were called to "support initiatives to assess the consequences of climate change, such as the Arctic Council initiative, including the environmental, economic and social impacts on local and indigenous communities."[208] It is important to underline that unlike Antarctica, which does not have a native population and is governed by the Antarctic Treaty System, the Arctic and its lands, seabed, and islands are under the sovereignty of the five Member States who have territory in the region according to the United Nations *Convention on the Law of the Sea* (UNCLOS).[209] These five Arctic Member States are Denmark, Canada, Norway, the Russian Federation, and the United States of America.[210]

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[196] UNEP, *New Awareness of and Opportunities for the UNEP to Address Climate Change in the Arctic*, 2013, p. 4.
[197] Ibid., p. 5; National Snow and Ice Data Center, *What is the Arctic?*, 2014.
[198] UNEP, *New Awareness of and Opportunities for the UNEP to Address Climate Change in the Arctic*, 2013, p. 5.
[199] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013. p. 19; Conservation of Arctic Flora and Fauna, (2013), *Life linked to Ice*, p. 10.
[200] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013. p. 27.
[201] UNEP, *New Awareness of and Opportunities for the UNEP to Address Climate Change in the Arctic*, 2013, p. 29.
[202] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013, p. 32.
[203] World Commission on Environment and Development, *Our Common Future (A/42/427)*, 1987, para. 27.
[204] Ibid.
[205] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013, p. 29.
[206] Ibid., p. 29.
[207] Ibid., p. 32.
[208] United Nations, *Report of the World Summit on Sustainable Development (A/CONF.199/20*)*, 2002, p. 29.
[209] Arctic & Antarctica Collection, *Differences between the Arctic and Antarctica*; American Society of International Law, *Increasing Relevance of Treaties: The case of the Arctic*, 2014; UNEP, *New Awareness of and Opportunities for the UNEP to Address Climate Change in the Arctic*, 2013, p. 4.
[210] Ibid.

Over the past few decades, multiple environmental changes with global repercussions demand better coordination between all Member States, and the implementation of solid governance mechanisms.[211] Though there are international actors campaigning for further cooperation and agreements on the Arctic issue, the Arctic Member States do not feel it necessary to conduct international discussions on the current issues.[212] The Arctic Member States feel that it is in their best interest discuss Arctic economic issues among themselves, because the ideas of non-Arctic actors may be far from reality.[213] The Arctic states work with each other on a variety of topics such as biodiversity management, decrease of short-term pollutants, and sustainable development.[214] The 2008 *Ilulissat Declaration* underlines the five coastal Arctic states' determination to assess scientific issues, and especially the protection of the marine ecosystems.[215] One important point discussed in this Declaration is the need to respect the disposition of the Law of the Sea regarding marine biodiversity protection, scientific research, resources exploitation, and navigation.[216]

United Nations Convention on the Law of the Sea
The 1982 United Nations Convention on the Law of the Sea (UNCLOS) is an international treaty that provides regulation on the use of waters, international seas and oceans, and delimits maritime frontiers.[217] Though UNCLOS is not focused specifically on the Arctic region, Part I of the treaty explains how maritime borders are determined, and Part VI is focused on economic activities and the natural resources within states' maritime borders.[218] These parts of the Convention provide a better understanding of which portion of the Arctic Ocean falls under a state's jurisdiction, and what the rights and obligations are for the exploitation of the resources within the maritime boundaries of a state.[219] It is important to understand that the Convention is divided into two distinct jurisdictions: one for the different water zones and the other for marine seabed.[220]

In accordance with the Article 3 of UNCLOS, the maritime borders of a state can be referred to as the territorial sea that does not exceed 12 nautical miles from the coast.[221] In regards to economic usage of the sea, coastal states have access to an Exclusive Economic Zone (EEZ), which stretches as far as 200 nautical miles from the coast in accordance with Articles 55 and 57 of UNCLOS.[222] The EEZ can be used by each coastal state for different purposes such as exploration, exploitation of natural resources, and protection of marine ecosystems.[223] As recalled in the *Illulissat Declaration*, the Law of the Sea gives rights and obligations to the Arctic Member States, such as the protection of marine biodiversity, freedom of navigation, and marine scientific research.[224] The increase of cruise ships and maritime traffic also encourage the states to collaborate with each other to increase the safety of maritime transportation, and to protect the Arctic environment.[225]

Arctic Council
Established in 1996 by the *Ottawa Declaration*, the Arctic Council is an intergovernmental platform where the participating Member States (Canada, United States, Finland, Iceland, Russian Federation, Norway, Denmark, and Sweden) discuss, cooperate and coordinate projects on the emerging issues of the Arctic.[226] Initially created to promote cooperation and coordination among the Arctic Member States, indigenous communities, and other

[211] American Society of International Law, *Increasing Relevance of Treaties: The Case of the Arctic [Agora: The End of Treaties]*, 2014; Fajardo, *Oxford bibliographies: Soft Law*, 2014.
[212] Ibid.
[213] Arctic Institute, *From Seal Ban to Svalbard - The European Parliament Engages in Arctic Matters*, 2014; Osthagen, *The European Union-An Arctic actor?*, 2013, pp. 81-83.
[214] Arctic Council, *Establishment of the Arctic Council*, 2011.
[215] Arctic Council, *The Ilulissat Declaration*, 2008.
[216] Ibid.
[217] Permanent Court of Arbitration, *Ad hoc Arbitration Under the Annex VII of the United Nations Convention on the Law of the Sea*, n.d.
[218] *United Nations Convention on the Law of the Sea*, 1982.
[219] Ibid.
[220] Ibid., preamble.
[221] *United Nations Convention on the Law of the Sea*, 1982, art. 2; *United Nations Convention on the Law of the Sea*, 1982, art. 3.
[222] *United Nations Convention on the Law of the Sea*, 1982, art. 55-57.
[223] Ibid., art. 57.
[224] Arctic Council, *The Ilulissat Declaration*, 2008.
[225] Arctic Council, *The Ilulissat Declaration*, 2008.
[226] Arctic Council, *Establishment of the Arctic Council*, 2011.

stakeholders, the Council's current actions are mainly focused on sustainable development and environmental protection.[227] The Arctic Council is divided in six working groups focused on certain issues in order to provide advice and recommendations on: contaminants, fauna and flora, emergency prevention, and sustainable development among others.[228] The Arctic Council regularly holds meetings, consultations, and forums with indigenous communities concerning "sustainable development and environmental protection."[229] Taken by consensus, the decisions guide the Arctic Member States policies and actions on the issue.[230]

In recent years, the Arctic Council has adopted several agreements to strengthen their cooperation on environmental protection and economic development of the region.[231] In 2011 and 2013, the Arctic Council adopted its first legally binding agreements.[232] In 2011, the *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic* was adopted, and in 2013, the council adopted the *Agreement on Cooperation on Marine Oil Pollution, Preparedness and Response in the Arctic*.[233] This can is explained by the rapidity of the changes experienced in the region and its important effects on the Arctic.[234] Some other Arctic Member States have seen the treaties as a way to achieve better coordination on the changes faced by the region.[235]

Legal instruments for the protection of environment and biodiversity
The protection of the environment and biodiversity in the Arctic are two important issues addressed in the last 40 years by Arctic and non-Arctic Member States, as well as civil society organizations (CSOs) and indigenous communities.[236] Due to the number of economic activities, the impact on the marine ecosystems is most likely to significantly increase.[237] Some treaties are specific to a regional portion of the Arctic, such as the 1992 *Convention on the Protection of the Marine Environment of the North-East Atlantic* (OSPAR) and the 1992 *North Atlantic Marine Mammal Commission Agreement* (*NAMMCO Agreement*), which aims to get a better understanding of the maritime biodiversity in this region and their importance for the ecosystems.[238] Other treaties concern specific species, for example the 1946 *International Convention for the Regulation of Whaling* (ICRW) and the 1995 *UN Fish Stocks Agreement*.[239] Other international treaties highlight the importance of fighting against pollution and the damaging effects of economic activities on the environment.[240] The 1973 *International Convention for the Prevention of Pollution from Ships* (MARPOL) "includes regulations aimed at preventing and minimizing pollution from ships – both accidental pollution and that from routine operations."[241] The 1972 *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter* (*London Convention*) also encourages all States Parties to prevent maritime pollution that could have effects on the biodiversity and environment.[242]

Human rights
Home of four million people, with most of them belonging to indigenous groups, the Arctic populations cannot stay indifferent to the impact of climate change in the Arctic.[243] Plans to build infrastructure, for example, require governments to sit at the table with indigenous people and to review their rights to ancestral land.[244] The displacement of caribou or other sources for food, due to climate change and rising temperatures, might force indigenous people to move from their ancestral hunting path or to petition their government to act for the protection

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[227] Arctic Council, *Establishment of the Arctic Council*, 2011.
[228] Arctic Council, *Frequently Asked Questions*, 2011
[229] Arctic Council, *Establishment of the Arctic Council*, 2011.
[230] Arctic Council, *Frequently Asked Questions*, 2011
[231] American Society of International Law*, Increasing Relevance of Treaties: The case of the Arctic*, 2014.
[232] Ibid.
[233] Ibid.
[234] Arctic Council, *Frequently Asked Questions*, 2011
[235] American Society of International Law*, Increasing Relevance of Treaties: The case of the Arctic*, 2014.
[236] De Roo and al, *Environmental Governance in the Marine Arctic*, 2008, p. 2.
[237] Ibid.
[238] De Roo and al, *Environmental Governance in the Marine Arctic*, 2008, p. 3; North Atlantic Marine Mammal Commission, *NAMMCO Agreement*, 2005.
[239] De Roo and al, *Environmental Governance in the Marine Arctic*, 2008.
[240] International Maritime Organization, *List of IMO Conventions*, 2014.
[241] International Maritime Organization*, International Convention for the Prevention of Pollution from Ships (MARPOL)*, 2014.
[242] *Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matters*, 1972, preamble.
[243] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013, p. 27.
[244] Ibid.

of biodiversity.[245] Different international human rights instruments can be applied in consideration of environmental impacts and the economic aspect of the Arctic.[246] For instance, the 1966 *International Covenant on Civil and Political Rights* (ICCPR) grants the right to self-determination, which includes the right to "freely dispose of their natural wealth and resources without prejudice to any obligations arising out of the international economic cooperation, based upon the principle of mutual benefit, and the international law" (Article 1).[247] This article allows the communities to benefit from the natural resources in their territory for their economic benefits.[248] If a state government or a corporation decides to build infrastructure on the community's territory, a compromise or a mutual benefit agreement must be concluded.[249] Article 27 protects the right to culture for minorities to live in community, "enjoy their own culture, profess or practice their own religion, and to use their own language."[250] Another convention, the 2007 *Declaration on the Rights of Indigenous Peoples*, protects the rights to "strengthen their distinct political, social and economic" systems and to fully participate in them.[251] While some corporations and governments are eager to build new infrastructures to benefit from the Arctic's natural resources, these projects may have, or already have had, significant impacts that have forced some populations to move from other locations or to make major changes in their life styles.[252]

Role of the International System

Acknowledging the previous international discussions on the Arctic issue, the UNEP Governing Council adopted Decision 22/11 on "Sustainable Development of the Arctic" in February 2003.[253] This text urges the UNEP Executive Director as well as the Member States to provide updates and assessment on the emerging issues in the Arctic region.[254] It also encourages Member States to cooperate with UNEP, the Arctic Council, indigenous peoples, and corporations on issues such as climate change, biodiversity, and pollution, which concerns the Arctic.[255] Decision SS.X/10 on "Sustainable Development of the Arctic," reiterates the importance of working in close cooperation with the different stakeholders, and was adopted in March 2008.[256] Following the second decision of 2008, UNEP has taken several initiatives on the Arctic issue, including the creation of "The Climate and Clean Air Coalition" (CCAC).[257] Founded in 2012, CCAC aims to reduce short-life pollutants that effect climate change.[258] Another of UNEP's initiative includes the "Arctic Agenda 2020 Programme," which addresses the issues of sustainable development in the Russian Arctic.[259].

UNEP has also worked in close cooperation with the Arctic Council.[260] For instance, UNEP'S Chemical Programme has collaborated with the Arctic Council Contaminant Action Programme to reduce toxic chemicals, along with mercury, from being released into the environment to avoid their effects on human health and the environment.[261] UNEP's World Conservation Monitoring Centre cooperated with the Arctic Council in order to improve the understanding of the biodiversity and ecosystems important for the region.[262] UNEP also works in close cooperation with Member States on the Council on other topics such as the protection of the marine ecosystems, short-life pollutants and their impacts on the Arctic, and preservation of the fauna and flora.[263] By cooperating with these

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[245] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013, p. 27.
[246] Henriksen, *Oil and Gas Exploitation in Indigenous peoples lands and territories in the Arctic*, 2006, p. 24
[247] *United Nations General Assembly, International Covenant on Civil and Political Rights (A/RES/2200 (XXI)), 1966,* art. 1.
[248] Henriksen, *Oil and Gas Exploitation in Indigenous peoples lands and territories in the Arctic,* 2006, p. 35.
[249] Ibid.
[250] *United Nations General Assembly, International Covenant on Civil and Political Rights (A/RES/2200 (XXI)), 1966,* art. 27.
[251] United Nations Permanent Forum on Indigenous Issues, *Declaration on the Rights of Indigenous Peoples*, n.d.
[252] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013, p. 28.
[253] UNEP, *Sustainable development of the Arctic (UNEP/GC22/11 (2003)*, 2003, p. 9.
[254] Ibid., p.59.
[255] Ibid.
[256] UNEP, *Sustainable development of the Arctic region (UNEP/GCSS.X/10),* 2008, p. 12.
[257] UNEP, *New Awareness of and Opportunities for the UNEP to Address Climate Change in the Arctic*, 2013, p. 6.
[258] UNEP, *About the Climate and Clear Air Coalition to Reduce Short-Lived Climate Pollutants,* n.d.
[259] UNEP, *New Awareness of and Opportunities for the UNEP to Address Climate Change in the Arctic*, 2013, p. 9.
[260] Ibid.
[261] Ibid.
[262] UNEP, *New Awareness of and Opportunities for the UNEP to Address Climate Change in the Arctic*, 2013, p. 9.
[263] Ibid., p. 10.

programs and monitoring, UNEP has contributed to producing information for decision-makers.[264] These efforts have led, for instance, to the creation of a national reserve in the Russian Federation, near the American border of the Bering Strait.[265]

UN entities and specialized agencies have also addressed this issue. For example, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has worked on a vast range of issues concerning the Arctic, such as the protection of the culture of Arctic's indigenous populations, their historical and cultural sites, and their public education regarding climate change in the Arctic.[266] The World Meteorological Organization (WMO) is another partner of UNEP. In its resolution 11.9/4, the WMO recalls the effects on the increasing human presence in activities in the Polar Regions, which consist of the Antarctic and Arctic regions, and calls on every Member State to financially cooperate with each other and to share expertise.[267] Through its Polar Observations, Research and Services platform, the WMO supports research and several programs carried by the Member States in the Arctic region.[268]

The Arctic situation has also drawn attention from certain non-governmental organizations (NGOs). The World Wildlife Fund (WWF) has actively worked in close cooperation with some Member States (Canada, Denmark, Finland, Norway, Netherlands, the Russian Federation, Sweden, United Kingdom, and the United States of America) to reduce the footprint of their industrial activities in the Arctic and to implement an international agreement on resource management.[269] As cruise ships and other tourist activities have significant impact on marine pollution and the local populations, the WWF has worked in close cooperation with the Sustainable Arctic Tourism Association to come up with a code of ten good practices for operators and visitors.[270] The code includes measures such as the reduction of waste and consumption, the respect of local cultural and historical sites, and providing educational opportunities for visitors during their trips.[271] In relation, Greenpeace has asked governments to stop their unsustainable use of the Arctic natural resources.[272] A symbolic expedition was also organized to reaffirm the NGO's commitment to protect the biodiversity of this area.[273]

Environmental Governance

Resource exploitation and Corporate Social Responsibility
Environmental changes in the Arctic will create more opportunities for the exploitation of resources in this region.[274] As suggested by the Sustainable Development Working Group of the Arctic Council, a sustainable approach for the Arctic cannot be implemented without taking efforts to protect the Arctic's environment and to promote the local peoples' lifestyle, economy, and culture.[275]

These indigenous populations have already experienced major displacement of food sources due to migrating species.[276] For instance, the Nenets, living in the Western part of Siberia, have been forced to relinquish some parts of their traditional lifestyle.[277] Some of the infrastructure used for natural gas exploitation crosses two of the main Nenet migration paths, forcing them to relocate some of their traditional campgrounds.[278] The situation faced by this population might happen again if no protective measures are taken as economic interest in the region grows.[279] There

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[264] Conservation of Arctic Fauna and Flora, *About CAFF*; UNEP, *UNEP Year Book 2014: Emerging issues in our global environment*, 2014, p. 32.

[265] UNEP, *UNEP Year Book 2014: Emerging issues in our global environment*, 2014, p. 63.

[266] UNESCO, *World Heritage and the Arctic*, 2007.

[267] World Meteorological Organization, *WMO Polar Activities (Res. 11.9/4 (Cg-XVI))*, 2014, p. 2.

[268] World Meteorological Organization, *Polar Observations, Research and Services*.

[269] World Wildlife Fund, *Our solutions*, 2014.

[270] World Wildlife Fund, *Linking Tourism and Conservation in the Arctic*, n.d., p. 2-3.

[271] Ibid.

[272] Greenpeace, *Arctic,* 2014.

[273] Greenpeace, *Project Aurora - A journey to save the Arctic*, 2014.

[274] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013, p. 29.

[275] Arctic Council, *Sustainable Development Working Group*, 2014.

[276] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013, p. 28.

[277] UNEP*, UNEP Year Book 2013: Emerging issues in our global environment,* 2013, p. 28.

[278] Ibid.

[279] Ibid.

is a need for discussions on how to respect traditional rights to land and natural resources of the indigenous people while "making economic development environmentally safe."[280]

Reinforcing existing Corporate Social Responsibility (CSR) mechanisms among the businesses currently working in the Arctic could address the issue.[281] CSR can be defined as uniform standards used by corporations as a way to manage environmental, human, and labor rights.[282] CSR mechanisms could include discussion and participation of the communities related to the company activities, involvement in the community's activities, and financial compensation.[283] For example, Sibneft, a Russian business, established a CSR policy for efficiently cooperating with indigenous populations, which include meetings with the communities and economic agreements to compensate for some damages.[284] Also, in 2010, the Inuits living in Northern Alaska enthusiastically welcomed the infrastructures of oil exploitation on their land, as it would eventually bring jobs and "civil amenities" for them.[285]

Management of biodiversity and ecosystems
The rapidity of climate change in the Arctic has effects on the living species of the area. For instance, the warming temperature of the Arctic had caused some animals to move further north, which creates competition between species for food and territory.[286] The case of the fisheries in the Arctic is an example of the urgent need for solid environmental governance mechanisms and ecosystems management systems.[287] Due to the rapid melting of the ice and the warming of the Arctic Ocean, fish populations are migrating from their typical northern Arctic region.[288] This is not without tension between Member States, especially between communities with an economy centered on fishing.[289]

Economic Development and Resources in the Arctic

The melting of sea ice and an increase in the temperature of the Arctic will have significant impact on the economic development of the region.[290] While companies have an increasing interest in Arctic natural resources, some governments have started to invest in the construction of public infrastructure.[291] For instance, India, the Republic of Korea, and Singapore invested in the construction of "ice-strengthened cargo ships and tankers" while waiting for the opening of the Northern Sea Route.[292] In 2011, the Northern Sea Route (through Northern Russia) was opened and allowed for the passage of dozens of ships.[293] Some Asian countries could save up to $120 billion USD per year by taking this shorter passage.[294] This passage is also expected to benefit tourism, especially the cruise ship industry, as the Arctic gains popularity.[295] However, the denser the shipping traffic in this area, the more likely an increase in the number of accidents and environmental damages.[296] Compliance with UNCLOS and dialogue with concerned Arctic Member States and intergovernmental organizations are necessary steps that must be taken.[297]

Oil and gas resource exploitation
It is estimated that a large amount of the undiscovered reserves of oil are located in the Arctic.[298] However, past experiences shows that there are lessons to be learned in order to avoid tragic consequences. In 2006, the Prudhoe

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[280] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013, p. 28; Henriksen, *Oil and Gas Exploitation in Indigenous peoples lands and territories in the Arctic*, 2006, p. 24.

[281] Henriksen, *Oil and Gas Exploitation in Indigenous people's lands and territories in the Arctic*, 2006, p. 29.

[282] Fjellheim, *Arctic Oil and Gas - Corporate Responsibility*, 2006, p.17.

[283] Ibid.

[284] Ibid.

[285] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013, p.28.

[286] Ibid., p. 23.

[287] Ibid., p. 31.

[288] Ibid., p. 30.

[289] Ibid.

[290] Ibid., p. 31.

[291] Ibid.

[292] Byers, *How the Arctic Ocean could Transform the world trade?*, 2013.

[293] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013, p. 31.

[294] Byers, *How the Arctic Ocean could Transform the world trade?*, 2013.

[295] Arctic Council, *Chair of the Senior Arctic Officials Patrick Borbey on sustainable Arctic shipping*, 2014.

[296] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013, p. 31.

[297] Arctic Council, *Chair of the Senior Arctic Officials Patrick Borbey on sustainable Arctic shipping*, 2014.

[298] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013.

Bay oil spills resulted in over one million liters of oil spilled in the tundra of Alaska.[299] Some environmental interest groups raised questions over whether the region's oil reserves should be further exploited, or not.[300] Estimated as one of the largest oil spills in Alaska, it took up to five days before the disaster was recognized.[301] These delays had significant impacts, not only on the cleaning process, but also on the environment.[302] It was estimated that the spillage had damaging effects on the biodiversity of the region, including a number of migratory species such as caribou.[303] Some European countries, such as the United Kingdom, have called for other Member States to stop exploiting the Arctic resources until all human and environmental impacts of the economic activities are fully known and adequate management framework have been put in place.[304] An approach based on sustainable development principles, where economic activities in the Arctic could be done in respect of the environment and populations, is considered a key to success. The economic activities of the Arctic have to benefit, not only to the corporations, but also to local people and communities for employment and infrastructures.[305]

Conclusion

The Arctic continues to draw attention, mainly due to the exploitation of natural resources. While some Member States are eager to benefit from these new economic activities, others urge full awareness of the impacts of their actions on the ecosystems and local populations.[306] The UK Parliament has urged the UN Member States to stop exploiting and drilling oil and gas "until a pan-Arctic system" has been established to handle large oil spills, like the Prudhoe Bay Oil Spill in Alaska in 2006, or other consequences of these economic activities.[307] This episode shows that dialogue between the different stakeholders is crucial in order to come up with a sustainable development framework and stronger international governance mechanisms on the issue. While certain organizations, such as Greenpeace, are talking about reducing the rapidity of changes, some are advocating improving the resilience and adaptation capacity of the ecosystems and communities. Therefore, these changes cannot happen without solid environmental governance mechanisms. A good initial step to take could be to build on already existing scientific and environmental organizations and their expertise.[308]

Further Research

Delegates should research what their country's specific interests are in sustainable development, and in the Arctic region. How does the country perceive the rapid changes in the Arctic and the threats it faces? What consequences could development, both sustainable and unsustainable, in the Arctic region have on the country itself? How has they been involved in relevant policymaking in these areas over recent years? How did they get involved in the international discussions on climate change and what expertise could they bring forward? Finally, what could be their biggest contributions to improve global governance on this issue?

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[299] Roach, *Alaska Oil Spills Fuels Concerns Over Arctic Wildlife, Future Drilling*, 2006.
[300] Ibid.
[301] Ibid.
[302] Ibid.
[303] Ibid.
[304] UNEP, *UNEP Year Book 2013: Emerging issues in our global environment*, 2013.
[305] Ibid.
[306] Ibid., p. 30.
[307] Ibid., p. 30.
[308] Ibid., p. 32.

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http://www.sdwg.org/media.php?mid=1694
> *As the impacts of global warming and climate change are more visible, significant changes can be seen in the Arctic. This document is useful for delegates because it summarizes the work of the different Arctic Council programs on the issue. It also presents several aspects, such as resilience capacity and biodiversity, which are essential for a better understanding of the topic.*

Arctic Council. (2014). *Sustainable Development Working Group* [Website]. Retrieved 8 September 2014 from:
http://www.arctic-council.org/index.php/en/about-us/working-groups/sustainable-development-working-group-sdwg
> *This webpage briefly introduces the work of the Arctic Council on the topic of sustainable development. This resource is a great help for delegates in order to get a quick understanding of the work and priorities of the Council. It describes the area of activity and lists some of the current projects of the Arctic Council on sustainable development.*

Berkman, P. & O. Young. (2009). Governance and Environmental Change in the Arctic Ocean. *Science*. 324: 339-340.
> *This paper gives a summary of the actual environmental changes in the Arctic. It also presents some important treaties and policies about this issue such as the United Nations Convention on the Law of the Sea (UNCLOS). It is a great summary for delegates researching the pertinent international framework. This article can be a great tool to get a better understanding of the remaining challenges on environmental governance and security.*

Henriksen, J. (2006). Oil and Gas Operations in Indigenous Peoples Land and Territories in the Arctic: A Human Rights Perspective. *Journal of Indigenous Peoples Rights - Oil and Gas Exploitation in Indigenous Peoples Lands and Territories in the Arctic: A Human Rights Perspective.* 4: 24-51. Retrieved 9 September 2014 from: http://www.galdu.org/govat/doc/oilengelsk2.pdf
> *Understanding the impacts of climate change in the Arctic on the environment and the local populations is crucial in order to find solutions to get better environmental governance in the Arctic. This article will give a better understanding to delegates of the impact of economic activities, especially oil and gas exploitation, on the Indigenous People. It discusses the issue of Corporate Social Responsibility, an interesting source of reflection on the question of sustainable development.*

United Nations Educational, Scientific and Cultural Organisation. (2007). *World Heritage and the Arctic* [Website]. Retrieved 11 August 2014 from: http://whc.unesco.org/archive/websites/arctic2008/index.html
> *This webpage will allow delegates to see the involvement of the UNESCO and NGOs on the question of sustainable development in the Arctic. It will give a better picture of the complexity of the issue on the social and cultural aspects. It also presents some documents and statements written by different interest groups (NGO, environmental groups, Indigenous people societies. etc.)*

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http://www.ecotourism.org/filedepot_private/14/DTIx0938xPA-PolarTourismEN.pdf
> *This document highlights a new activity gaining in popularity in the Arctic region: tourism. It will be helpful for delegates to go through this document as it shows good practices of the Antarctic case. It will also helps delegates to get a better understanding of how tourism can affect the environment in the Polar Regions and way to reduce the footprint of economic activities.*

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http://www.unep.org/gc/gc27/Docs/se/What%20Future%20for%20the%20Arctic.pdf
> *This document summarizes the actual situation in the Arctic regarding environment, climate change, and global warming. It gives a clear summary of the impacts of global warming and climate change on the Arctic people. Delegates should have a look at this document in order to*

understand the involvement of the UNEP and the Arctic Council on the issue. It is also a good
place to start when searching of legal documents applicable to this theme.

United Nations, United Nations Environment Programme. (2013). *UNEP Year Book 2013: Emerging issue in our global environment* [Annual Report]. Retrieved 7 September 2014 from: http://unep.org/publications/
> *In its annual Year Book, UNEP highlights the main issues about the environment and climate change throughout the year. The section on the Rapid changes in the Arctic analyzes the scientific, economic and political issues of the situation. Delegates should read the section in order to get a complete overview on the issue and a better understanding of the global importance of the changes in the Arctic.*

United Nations, United Nations Environment Programme. (2014). *UNEP Year Book 2014 emerging issues update: Rapid change in the Arctic* [Annual Report]. Retrieved 8 September 2014 from:
http://www.unep.org/yearbook/2014/PDF/chapt10.pdf
> *As the situation in Arctic is rapidly changing, this UNEP yearbook provides the delegates with the latest discussions of the committee on this matter. This document gives the delegates comprehensive definitions of several topics that were discussed in the 2013 UNEP Yearbook (resilience capacity by adapting to change, melting of sea ice and its global effects, and resources exploitation and shipping). Delegates should consult this source in order to have updates on some topics discussed in the previous yearbook. Videos and links give an interesting complement to the information presented.*

World Wildlife Fund. (n.d.). *Our solutions*. Retrieved 11 August 2014 from:
http://wwf.panda.org/what_we_do/where_we_work/arctic/what_we_do/
> *Several organizations are involved in the protection of the Arctic environment and other issues concerning the regions. This webpage is a good example for delegates on how NGOs have their word to say and how they are concretely working on the matter. This source provides delegates with several documents and summaries of the cooperation of the World Wildlife Fund with the different stakeholders on the topic (governments, Indigenous populations, businesses).*

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http://wwf.panda.org/what_we_do/where_we_work/arctic/what_we_do/

III. Promoting Resource Efficiency in Urban Development

Introduction

Currently, close to 50% of the world's population lives in urban areas, and by 2050, that number will increase to as high as 70%.[309] These urban areas create what is referred to as "human ecosystems," and this is at the core of urban development efforts.[310] In order to fully ensure the needs of each human ecosystems is accounted for, it is important to consider efficient resource use and its relationships with economic, social, and environmental sustainability.[311] These ecosystems require a comprehensive approach that balances social, environmental, and economic concerns.[312]

Efforts to promote resource efficiency have increasingly adopted a "life cycle" perspective that integrates the complete environmental impact of production and consumption.[313] For example, the life cycle of goods and services tracks production and consumption from the extraction of raw materials to eventual disposal.[314] While resource efficiency has developed as a growing concern over the past 20 years, implementing comprehensive changes in policy on national levels has been slow.[315] The lack of comprehensive policy is due in part to the broad scope of resource efficiency, which encompasses environmental issues ranging from climate change and land resources to economic and social issues such as poverty, employment, technology, gender, and youth initiatives.[316]

In approaching resource efficiency in urban areas, prioritizing different needs is directly related to the type of sustainability method that can be utilized.[317] Many urban environmental needs are divided into "green" or "brown" initiatives.[318] "Brown" initiatives encompass health issues and adverse impacts related to poor water quality and sanitation, air quality, and solid waste management.[319]. Sustainable priorities with "green" initiatives deal with the effects of urban development that have damaged natural ecosystems including climate change and resource degradation.[320] Many of these sustainable impacts happen in both urban and rural areas. The "brown" initiatives pertain mostly to the urban poor, while "green" initiatives impact mainly middle- and upper-income urban populations.[321] Sustainability and consumption in the "green" and "brown" initiative methodologies link directly to the importance of sustainable consumption and production (SCP), which is defined as, "the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations."[322] While both resource efficiency and SCP share the goal of making resource efficiency a standard in sustainable development policy, SCP definitions are more distinct and apply to individual materials or services. Resource efficiency overlaps with SCP goals but incorporates wider social and economic development.[323] In practice, the difference between SCP and resource efficiency is that SCP looks at economic efficiency with positive environmental benefits, and resource efficiency looks at environmental efficiency with positive economic benefits.[324]

International and Regional Frameworks

Although the *Charter of the United Nations* (1945) does not explicitly discuss issues pertaining to the environment and sustainability, the international community has taken many important steps to emphasize the social, economic,

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[309] UN-Habitat, *Post 2015-Agenda*, 2014
[310] UN System-wide Earthwatch, *Earthwatch Strategic Framework for Environmental Observing, Assessment, and Reporting*.
[311] Ibid.
[312] Ibid.
[313] UNEP, *Resource Efficiency*, 2014.
[314] Ibid.
[315] European Commission, *Resource Efficiency: What does it mean and why is it relevant?* 2013.
[316] Ibid; World Bank, *Reinventing Cities in ECA: Urban Renewal for Sustainable Cities*, 2010.
[317] UNEP, *Integrating the Environment in Urban Planning and Management*, 2013.
[318] Ibid.
[319] Ibid.
[320] Ibid.
[321] Ibid.
[322] Oslo Roundtable on Sustainable Production and Consumption, *The Imperative of Sustainable Production and Consumption*, 1994.
[323] Ibid.
[324] UNEP, *Understanding Resource Efficient and Cleaner Production.*

and humanitarian importance of this issue. The first major step was the *Declaration of the United Nations Conference on the Human Environment* (1972) (also referred to as the *Stockholm Declaration*).[325] The *Stockholm Declaration* proposes the concept of the "human environment," which is described as the right of people to live a life that allows them to be economically satisfied, yet not at the expense of the environment they are surrounded by.[326] Principles 2 and 3 of the *Stockholm Declaration* detail how natural resources including air, water, and land must be safeguarded for future generations and renewable resources restored and improved.[327] To that end, the *United Nations Convention on the Law of the Sea* (1982) manages the use of bodies of water and marine resources for commercial use while maintaining the integrity of delicate ecosystems.[328]

A number of international treaties and resolutions have further sought to implement resource efficiency in various sectors of the environment, but none have developed universal standards or explicit frameworks for engaging resource efficiency in urban development.[329] Chapter 4 of *Agenda 21* (1992), one of the outcomes of the UN Conference on Environment and Development (Rio Conference), focuses on unsustainable patterns of production and consumption and the development of national policies and strategies to change them.[330] The *Convention on Biological Diversity* (1992)*,* one of the other outcomes of the conference outlines a structure for maintaining biological diversity and sustainable utilization of biological resources, was opened for signature.[331] Article 6 of the *Convention on Biological Diversity* established National Biodiversity Strategies and Action Plans (NBSAPs) to implement the Convention at the national level.[332] While many NBSAPs were initially developed, updated post-2010 NBSAPs that reflect new sustainable development frameworks and a stronger focus on resource efficiency and SCP have not been implemented by most countries.[333] *The United Nations Framework Convention on Climate Change* (1992), the *Kyoto Protocol to the United Nations Framework Convention on Climate Change* (1998), and the pending *Doha Amendment to the Kyoto Protocol* (2012) establish varying emission reduction standards for states and encourage all states to promote efficient energy consumption.[334] The World Summit on Sustainable Development referred to as Earth Summit 2002, recognized that resource efficiency and consumption needs a "mixed-policy" framework.[335] This mixed-policy framework should further poverty eradication, change consumption and production patterns, and protect and manage the natural base for economic and social development as the "overarching objectives of, and essential requirements for, sustainable development."[336]

The *Johannesburg Declaration*, the primary outcome of Earth Summit 2002, reiterates the importance of life cycle production, reduction in environmental and health impacts, and "where appropriate, science based approaches, such as life cycle analysis."[337] To assist states in addressing those challenges, the Marrakech Process was created to serve as a global platform for information and experience exchange through two principal objectives.[338] First, the Marrakech Process promotes the development of policies and programs that support governments and the private sector in implementing national and regional SCP initiatives.[339] Second, the Marrakech Process assisted the Commission on Sustainable Development in creating a 10-year Framework of Programmes on SCP Patterns (10YFP) for countries to shift towards more sustainable consumption and production.[340] The 10YFP was part of the outcome of the 2012 United Nations Conference on Sustainable Development (Rio +20.[341]

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[325] UN Conference on the Human Environment, *Declaration of the United Nations Conference on the Human Environment*, 1972.
[326] Ibid.
[327] Ibid.
[328] *United Nations Convention on the Law of the Sea*, 1982.
[329] UN Conference on Environment and Development, *Agenda 21*, 1992.
[330] Ibid.
[331] *Convention on Biological Diversity*, 1992.
[332] Secretariat of the Convention on Biological Diversity, *National Biodiversity Strategies and Action Plans (NBSAPs)*.
[333] Ibid.
[334] *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 1998.
[335] World Summit on Sustainable Development, *Report of the World Summit on Sustainable Development*, 2002.
[336] Ibid.
[337] World Summit on Sustainable Development, *Plan of Implementation of the World Summit on Sustainable Development*, 2002, p. 7.
[338] UN Department of Economic and Social Affairs, *Paving the Way to Sustainable Consumption and Production,* 2010, p. 4.
[339] Ibid.
[340] UNEP, *The Marrakech Process*, 2001.
[341] UNEP, *The 10 Year Framework of Programmes on Sustainable Consumption and Production*, 2012, p. 1.

Role of the International System

The United Nations Environment Programme (UNEP) assesses critical trends in extraction and production of resources.[342] To fulfill that role, UNEP is currently focused on four main concept areas of technology and scientific knowledge, action through government policy and resources, promotion of investment in technology and markets, and stimulating demand for resource efficiency.[343] UNEP also partners with the United Nations Industrial Development Organization (UNIDO) and the United Nations Human Settlements Programme (UN-HABITAT), which has developed specific programs dealing with resource efficiency including the Sustainable Cities Programme and the Urban Management Programme (UMP).[344] Both programs are designed to strengthen the ability of local and national governments to make improvements in resource efficiency including poverty reduction and environmental governance.[345]

Urbanization is strongly correlated to economic growth and prosperity; migration into cities can lower poverty rates and increase the standard of living.[346] However, promotion of urbanization without carefully planned strategies may, in turn, have an adverse impact.[347] To assist states in urbanization, UNEP has produced several resources that provide guidance by explaining what a city is, the components that make up a city's ecosystem including water, air, land, and biodiversity, and impacts on the surrounding ecosystem including population, waste, and pathogens.[348]

Establishing a comprehensive framework that harmonizes increasing urbanization with resource efficiency requires recognizing gaps from conditions such as poor infrastructure and inadequate housing.[349] One of UNEP's flagship publications, "Global Environment Outlook (GEO-5)," provided additional guidance on measuring the relationship between society and the environment by assessing 90 key goals established by the international community from the past decade and seeks to answer what is happening to the environment and why, what are the consequences of a changed environment, and what can be done at the regional and national levels.[350] The GEO-5 uses the "Drivers, Pressures, States, Impacts, and Responses" (DPSIR) analysis created by the Organization for Economic Cooperation and Development and the European Environmental Agency to designate how a driver (like population or, economic demand) impacts sustainable practices.[351]

The second meeting of High-Level Political Forum on Sustainable Development in July 2014 was focused on "promoting resource efficiency for sustainable urban development." UNEP's partners have a multitude of important initiatives relating directly to urban sustainability.[352] The United Nations Department of Economic and Social Affairs (UNDESA) and United Nations Centre for Regional Development (UNCRD) held.[353] The meeting was entitled, "Promoting Resource Efficiency for Sustainable Urban Development."[354] This meeting outlined the challenges faced in providing affordable access to water, energy, and sanitation.[355] The Technical Support Team, co-chaired by the Department of Economic and Social Affairs (DESA) released an issue brief focused on human settlements and sustainable.[356] Rather than creating greater resource efficiency, much of the agglomeration advantages that can be gained living in cities are not being attained in large enough numbers.[357] Jobs are becoming

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[342] UNEP, *Environmental Governance*, 2009.

[343] UNEP, *Resource Efficiency*, 2014.

[344] UN-Habitat, *Urban Management Programme*, 2014.

[345] Ibid.

[346] IISD, *ECOSOC Discusses Using Urbanization as a Vehicle for Sustainability*, 2014.

[347] Ibid.

[348] UNEP, *Framework Elements for Assessing Urban Environmental Performance*, 2012; UNEP, *Sustainable, Resource Efficient Cities-Making it Happen*, 2012.

[349] UNEP, *Measuring Progress Environmental Gaps and Goals*, 2012.

[350] UNEP, *The Global Environment Outlook (GEO-5): Environment for the Future We Want*, 2012.

[351] Ibid.

[352] UN Conference on Environment and Development, *Agenda 21*, 1992.

[353] UN DESA and UN Centre for Regional Development, *Promoting Resource Efficiency for Sustainable Urban Development*, 2014.

[354] Ibid.

[355] Ibid.

[356] UN DESA and UNDP, *Sustainable Cities and Human Settlements*, 2014.

[357] Ibid.

scarcer; transportation and housing costs are increasing, and segregation of the poor and minority groups is growing.[358]

When looking at resources, the manner in which post-industrialized states and developing states are growing and consuming energy is different.[359] The first stage, poverty alleviation, is marked by large rural migration and low per-capita income resulting in slum settlements and inadequate access to services.[360] The second stage, industrialization, promotes economic growth over environmental concerns leading to water, air, and land pollution.[361] The last stage, mass production and consumption, causes mass waste and pollution.[362] For post-industrial states, these stages of urbanization happened in succession over time.[363] In developing countries, though, poverty alleviation, industrialization, and mass production and consumption are happening almost simultaneously.[364] The nature of urbanization in developing countries means they cannot create policy that deals with each distinct stage of urbanization in a linear fashion. The approach of policy when creating sustainable practices instead needs to diverge from previous attempts to address all stages at once.[365]

The Post-2015 Development Agenda and the Sustainable Development Goals

At the 2010 High-level Plenary Meeting of the General Assembly on the Millennium Development Goals, Member States agreed to begin a more inclusive of creating a new global development agenda that builds off the successes and addresses the shortcoming of the Millennium Development Goals (MDGs).[366] Under that process, Secretary-General Ban Ki-moon established the UN System Task Team to coordinate global consultations with governments, intergovernmental organizations, civil society, academia, and the general public to gather input on development challenges that must be addressed under the next development agenda.[367] In parallel with that process, the United Nations Conference on Sustainable Development created the Open Working Group on Sustainable Development Goals (OWG) to draft sustainable development goals (SDGs).[368] At the end of 2014, the Secretary-General will combine the outcomes of both processes into a synthesis report that will serve as the basis for negotiations that ultimately adopt the sustainable development goals (SDGs), which form the basis for the post-2015 development agenda, in September 2015.[369]

In January 2014, the seventh session of the OWG hosted a roundtable on "Sustainable Future Cities We Want."[370] The meeting explored the balance of the three pillars of economic, social, and environmental sustainability.[371] At the most recent session of the OWG, the thirteenth session in July 2014, the OWG submitted its outcome document to the United Nations General Assembly.[372] That outcome document includes 17 goals with 169 targets.[373] The goals cover a broad range of issues including poverty, education, and climate change, but particularly relevant to the issue of resource efficiency in urban development are Goal 11, "Make cities and human settlements inclusive, safe, resilient and sustainable" and Goal 12, "Ensure SCP patterns."[374]

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[358] UN DESA and UNDP, *Sustainable Cities and Human Settlements*, 2014.

[359] UN-Habitat, *Sustainable Urban Energy: A Sourcebook for Asia*, 2012.

[360] Ibid.

[361] Ibid.

[362] Ibid.

[363] Ibid.

[364] Ibid.

[365] Ibid.

[366] UN Department of Public Information, *Beyond 2015: Overview*.

[367] Ibid.

[368] UN Department of Public Information, *Frequently Asked Questions: The Post-2015 Sustainable Development Agenda*.

[369] UN Department of Public Information, *Frequently Asked Questions: The Post-2015 Sustainable Development Agenda*.

[370] UN Open Working Group on Sustainable Development, *Sustainable Future Cities We Want*, 2014.

[371] UN Open Working Group on Sustainable Development, *Sustainable Future Cities We Want*, 2014.

[372] UN Department of Public Information, *UN General Assembly's Open Working Group proposes sustainable development goals*, 2014.

[373] Ibid.

[374] UN Open Working Group on Sustainable Development Goals, *Introduction to the Proposal of The Open Working Group for Sustainable Development Goals*, 2014, p. 5.

Means of Implementation (MOI) provide a way for developed and developing countries to build partnerships and for public, private sector partnerships.[375] The MOI's for the post-2015 agenda have created conflict in trying to balance the SDG goals with what developing states need and developed states want.[376] At a UN Open Working Group in July 2014, developing states argued the definition presented on universality removes the idea that there is a distinction between developed and developing countries.[377] The degree of national responsibility in the implementation, instead of being based on the various developmental levels and capacities of countries, could mean a lower degree of financial support for developing nations in meeting SDGs.[378] The inability for discussions on post-2015 to create a framework that allows for widespread implementation of SDG's means some of the largest issues within urban development, including poverty and SCP, may be underfunded or lacking strong policy.[379]

Poverty eradication

As the migration into cities increases, the urban population is creating larger and larger cities.[380] These cities then see increased poverty as infrastructure and sustainable practices cannot keep up with population demands.[381] Migration trends are also transforming many cities into "mega-regions" of interconnected satellite cities.[382] Satellite cities are medium- to small-sized cities that through trade and resource sharing are dependent on larger cities for economic stability.[383] In many developing states, the growing populations of cities are leading to satellite cities losing resources and suffering from poor infrastructure.[384] Building infrastructure to provide access in and out of satellite cities is one of the most important ways to help upgrade the living situations for persons living in slum conditions.[385] Further, many satellite cities have become hubs for black market economic systems and resources within these areas are either not developed for use by the population living in the area or are misused due to improper access to industry.[386]

Sustainable Consumption and Production

Sustainable Consumption and Production (SCP) is recognized as a way of addressing environmental and development challenges, simultaneously, by decoupling economic and population growth from non-sustainable practices and taking environmental and social factors into account when producing and consuming products.[387] Sustainable practices go beyond thinking about the "greening effect" of a particular product to include how the procurement of resources reduces waste.[388] Sustainable procurement or green procurement allows a city, government, or organization to allocate the needs of their constituents while minimizing harm to the environment.[389]

An example of how SCP can be implemented in practice, when considering resource efficiency, is the Life Cycle Assessment (LCA) technique used by many private and public entities in order to assess the environmental impact of a product from the sourcing of raw materials through processing and final consumption, or from "cradle-to-grave."[390] LCA considers the three primary levels of environmental interventions (which resource is extracted), impact (cost of extraction, production, or consumption), and damage (amount of waste produced for agriculture is

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[375] Stakeholder Forum, *Post-2015 Development Agenda: Realizing the convergence of the Post-MDG and SDG decision-making processes*, 2013.
[376] Third World Network, *SDG negotiations reveal the hard fight for means of implementation*, 2014.
[377] Stakeholder Forum, *Post-2015 Development Agenda: Realizing the convergence of the Post-MDG and SDG decision-making processes,* 2013.
[378] Third World Network, *SDG negotiations reveal the hard fight for means of implementation*, 2014.
[379] Ibid.
[380] UNFPA, *State of the World Population 2007: Unleashing the Potential of Urban Growth*, 2007.
[381] UNEP, *Embedding the Environment in Sustainable Development Goals*, 2013.
[382] UN-Habitat, *Streets as Tools for Urban Transformation in Slums: A Street-Led Approach to Citywide Slum Upgrading*, 2012.
[383] Ibid.
[384] Ibid.
[385] Ibid.
[386] Ibid.
[387] UNEP, *Embedding the Environment in Sustainable Development Goals*, 2013; UNEP, *ABC of SCP: Clarifying Concepts on Sustainable Development*, 2013.
[388] UNEP, *ABC of SCP: Clarifying Concepts on Sustainable Development*, 2013.
[389] Ibid.
[390] Ibid; UNEP, *Towards a Life Cycle Sustainable Assessment*, 2011.

taken into account).[391] One example of the application of LCA can be seen in decision-making on public transportation systems, such as buses, in urban areas.[392] While the environmental intervention was not accounted for in the data, the impact was felt mostly in the cost of fuel.[393] The damage was the increased level of fuel consumption and the increased levels of air pollution.[394] An LCA of a comparable bus using the same variables except a more fuel-efficient compressed natural gas engine has significantly lower impact and damage based on less fuel and pollution costs.[395]

Business incentives may provide an opportunity to integrate resource efficiency into urban development. Developing countries in particular can further facilitate business incentives by creating renewable consumption and production markets.[396] One example of renewable markets is solar lighting.[397] In India, for example, solar lighting operates at a lower tariff, making it more expensive to import and purchase petroleum and kerosene lamps.[398] The consumption of solar lighting skyrocketed in India in response to this policy change.[399] Similarly, Nigeria has created a program that converts agricultural waste to organo-mineral fertilizer, facilitated by a working group comprised of the government, private sector, civil society, and community outreach groups.[400] This working group promoted and established an environmentally conscious manufacturing process to address the issue of agricultural waste, particularly cattle manure.[401] In Nigeria, this new manufacturing process reduces environmental degradation, developed a system of renewable business that can be integrated in other cities, and increased green sector employment.[402]

Conclusion

The relationship between resource efficiency and urban development encompasses a multitude of factors including SCP, the life cycle of goods, and the role of industry in production. While broad frameworks have been established to address various aspects of resource efficiency, stronger efforts are needed to implement resource efficiency in urban development. As the world's population continues to grow and urbanization increases, the inefficient use of resources in cities will only increase poverty within urban areas and the environmental degradation of surrounding regions. To address those challenges, global actions to eradicate poverty and improve environmental sustainability, particularly through the post-2015 development agenda, must consider the unique challenges of resource access and utilization in urban areas.

Further Research

As the international community considers how to guide future development actions through creation of the post-2015 development agenda, how can the efficient use of resources in urban development be integrated into the broader goals of poverty eradication and environmental sustainability? If resource efficiency is incorporated into the post-2015 development agenda, is there a way to create financial structures for supporting resource efficiency between the public sector, private sector, and civil society? How can resource efficiency become more interconnected with existing frameworks? Can the definitions of resource efficiency and SCP be clarified, and if so, do they need specific, individual frameworks to implement them?

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[391] UNEP, *ABC of SCP: Clarifying Concepts on Sustainable Development*, 2013; UNEP, *Towards a Life Cycle Sustainable Assessment*, 2011.
[392] Ibid.
[393] Ibid.
[394] Ibid.
[395] Ibid.
[396] UNEP, *Green Economy: South-South Trade in Renewable Energy*, 2014.
[397] Ibid.
[398] Ibid.
[399] Ibid.
[400] UNEP, *Responses Assessment, Millennium Ecosystem Assessment*, 2005.
[401] Ibid.
[402] International Institute for Sustainable Development, *Strategies and Tools*.

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> *This report details the regional applications of legislation and programs aimed at combating climate change. It details issues governments face with their respective ecosystems, urban areas, and rural areas. It goes into issues such as waste, air pollution, temperature change, water management, coastal erosion, population and poverty outlooks. It details areas of progress and areas that still need work in order to reverse or prevent future or further climate debilitation. Delegates should engage this document when wanting to understand climate change on many levels. Climate change has a direct correlation to resource efficiency and urban areas impact of climate change.*

International Institute for Sustainable Development. (2014). *ECOSOC Discusses Using Urbanization as a Vehicle for Sustainability*. Retrieved 29 July 2014 from: http://post2015.iisd.org/news/ecosoc-discusses-using-urbanization-as-vehicle-for-sustainability/

> *This publication explains how urbanization does not necessarily mean the re-allocation of poverty. Urbanization has the potential to reduce poverty through increased access to education, government resources, and employment. Urbanization creates a vacuum that can attract sustainable practices through monetary incentives. Delegates can examine this press release to understand the extent of urbanization, sustainable development, and future projects.*

United Nations Environment Programme. (2005). *Responses Assessment*. Millennium Ecosystem Assessment [Report]. 8 July 2014 from: http://www.unep.org/maweb/en/Responses.aspx

> *This assessment takes a regional approach to the state of ecosystems. It details issues including the creation and management of waste, pollution, biodiversity, flood and storm control, food, and support systems. This assessment details how sustainable development can help in achieving MDG's, including environmental sustainability. There is a special section dedicated to understanding urban ecosystems and its place in the widespread need for sustainable practices. It outlines the environment in which urban populations live in, its connection to economic security, poverty, and health. It makes a distinction between the issues middle to high incomes cities and communities face in correlation to what low-income cities and communities deal with regarding resource efficiency. It creates markers based on urban trends to present possible policy and programs to make urban cities more sustainable. Delegates can use this to examine very detailed examinations of sustainable development issues and how urban areas effect these sustainable goals.*

United Nations Environment Programme. (2011). *Towards a Life Cycle Sustainable Assessment* [Report]. Retrieved 10 July 2014 from: http://www.unep.org/pdf/UNEP_LifecycleInit_Dec_FINAL.pdf

> *This report takes a comprehensive look at many of the materials used when creating goods. What Life Cycle Sustainable Assessment (LCSA's) does it track the complete lifecycle of these materials. Including how is the material made and where the resources come from. These materials are tracked from the creation of the good to the disposal of these materials. It presents the question of whether materials being are sustainable and renewable. The goal is to create more awareness when deciding the type of materials being used in production and to adopt better renewal practices. Delegates can turn to this report to understand the importance of LCSA's connectedness with resource efficiency.*

United Nations Environment Programme. (2012). *The Global Environment Outlook (GEO-5): Environment for the Future We Want* [Report]. Retrieved 8 July 2014 from: http://www.unep.org/geo/pdfs/geo5/UNEP-ICLEI-GEO-5.pdf

> *Of the 90 key environmental goals established by the international community, only four have been adequately addressed. The Global Environmental Outlook assesses how states are implementing internationally agreed environmental policies, and details gaps to meeting those commitments. Delegates can use this resource as a means to understand current sustainable development policies and their outcomes through specific case studies.*

United Nations Environment Programme. (2013). *ABC of SCP: Clarifying Concepts on Sustainable Development* [Report]. Retrieved 7 July 2014 from: http://www.uneptie.org/scp/marrakech/pdf/ABC%20of%20SCP%20-%20Clarifying%20Concepts%20on%20SCP.pdf

> *SCP gives an understanding of the importance of governments, and the public and private sector has when creating an interconnected system that created sustainable environmental systems. This system includes proper waste management, sustainable procurement to reduce unnecessary waste, sustainable lifestyles which allow for access to green methods including public transportation and green jobs. Each level of SCP is given detailed examinations and how the inclusion of these practices into urban and rural systems can create a sustainable environment. This is a strong reference for delegates to understand the basics of what an SCP is and how they relate to resource efficiency. Delegates will get details about "green" SCP procurement and policy procedures.*

United Nations Environment Programme. (2013). *Integrating the Environment in Urban Planning and Management* [Report]. Retrieved 29 August 2014 from: http://www.citiesalliance.org/sites/citiesalliance.org/files/publications/integrating_the_environment.pdf

> *This entry details the growing population moving into urban areas and the need for stronger sustainable urban planning. It looks at multiple platforms including poverty, employment and long-term climate change effects. This is an excellent source in looking at initiatives and resource efficiency in a step-by-step approach.*

United Nations Environment Programme. (2014). *Green Economy: South-South Trade in Renewable Energy* [Report]. Retrieved 2 August 2014 from: http://www.unep.org/publications/

> *This report details how trade can have a positive impact when promoting renewable energy and renewable energy sources. Tariffs that favor renewable energy can lead to urban infrastructures relying less on carbon-imprint heavy fuels and more clean, safer for the environment, sources. Delegates can search this document when looking to have a greater understanding of renewable energy, and understanding how trade can affect the cost-effectiveness of renewable energies.*

United Nations Environment Programme. (2014). *Valuing Plastic: The Business Case for Measuring, Managing and Disclosing Plastic Use in the Consumer Goods Industry* [Report]. Retrieved 30 July from: http://www.unep.org/publications/

> *Valuing Plastic is a report that details how responsible management and reporting of plastic usage in production and packaging by businesses can lead to a more efficiency way of managing recycling. This leads to a percentage of reduction of the use of plastics. Many plastics are harmful due to the high use of chemicals and the amount of plastics that end up in the environment. Marine life is the most susceptible to plastics. Delegates should consider this document when wanting examples in how materials that are used in high concentration in cities can lead to environmental erosion on a multitude of levels.*

United Nations Human Settlements Programme. (2012). *Streets as Tools for Urban Transformation in Slums: A Street-Led Approach to Citywide Slum Upgrading* [Report]. Retrieved 3 August 2014 from: http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3552

> *This report examines how urban development in relation to urban slums can be a catalyst for further improvements on the quality of life for the urban poor. Streets provide an avenue for government services to reach the population, provides better structure for future procurement of stable electricity, clean water, and economic opportunity. These amendments can be installed using the best environmental friendly resources and product. Delegates should look to this document to help them understand how sustainable urban planning can result in a reduction of resource waste and increased environmental policy.*

United Nations Population Fund (UNFPA). (2007). *State of the World Population 2007: Unleashing the Potential of Urban Growth* [Report]. Retrieved 2 August 2014 from: http://www.unfpa.org/swp/2007/english/introduction.html

> *State of the World Population 2007, details the trends of urban populations. It details where urban migration is happening and how it is effecting the urban area as a whole. It examines how the increasing number of people moving into the urban areas, how issues such as poverty, gender equality, health, and economic well-being are being addressed. It discusses how urban areas have the potential to reduce poverty while being a positive linkage for rural areas through integrated*

commerce and resource sharing. Delegates can examine this report to garner a better understanding of urban migration and the strongest issues cities are facing as populations in cities increase.

United Nations Human Settlements Programme. (2012). *Sustainable Urban Energy: A Sourcebook for Asia*. Retrieved 29 July 2014 from: http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3378
>   *This report gives a detailed analysis of the nature of urbanization. It shows the difference in urbanization between developing states and post-industrial states. It takes these urbanization distinctions and creates a road map for how urbanization in developing states will take shape. This includes how middle income cities will experience the stages of urbanization in a larger way due to migration out of rural areas transferring to middle-sized peripheral cities. This is a useful reference for delegates to better understand how current urbanization will manifest itself.*

Oslo Roundtable on Sustainable Production and Consumption. (1994). *The Imperative of Sustainable Production and Consumption* [Report]. Retrieved 28 August 2014 from: http://www.iisd.ca/consume/oslo004.html
>   *In this report, a more comprehensive definition of SCP is discussed. It provides key issues under the "umbrella" of sustainability and SCP. It is an excellent resource for discerning between resource efficiency and SCP. It gives detailed examples of SCP and the various life cycles these resources may go through. The examples give an understanding that SCP deals with individual materials or industries while connecting SCP to resource efficiency as a whole.*

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