Environmental governance and new ICTs: the impact of new information and communication technologies on global environmental governance

Jérôme Duberry

upf. **Universitat
Pompeu Fabra**
Barcelona

Acknowledgements

I would like to thank the Law Department of the University Pompeu Fabra and in particular my tutor Professor Dr. Josep Ibáñez Muñoz for his academic and personal support, and members of the Secretariat Lluïsa and Adela. I also would like to thank my parents for their encouragement, Max for his valuable comments and faithful support, Angela for her faith in me, my dear local friends Diego and Jessica, my Bloom and Boom dream team, and all those whose presence from close or far made this thesis possible.

Abstract

The doctoral dissertation deals with the impact of the use of new information and communication technologies (ICTs) on global environmental governance. The objective of the research is to analyze the influence of these technologies on the legitimacy of global governance tools and on the competences of global non-state actors –as part of global civil society– involved in processes of environmental politics. After defining the context in which new ICTs emerge, the thesis develops two case studies. The first one analyzes the resolution and recommendation process of the International Union for Conservation of Nature and Natural Resources (IUCN). It illustrates that the use of new ICT improves the participation and the creation of consensus around certain values, and shows therefore that the use of new ICTs has a positive impact on the legitimacy of this global governance mechanism. The second case study examines the use of new ICTs by IUCN and demonstrates that it has no substantial impact on the internal capacities of the organization. However, it has a positive yet limited impact on the external competences of IUCN, since it improves the organization's capacity to communicate only with its traditional audience.

Resumen

La tesis doctoral trata el impacto de la generalización de las nuevas tecnologías de la información y de la comunicación (TIC) sobre la gobernanza global del medio ambiente. El objetivo de la investigación es analizar la influencia de estas nuevas tecnologías sobre la legitimidad de los mecanismos de gobernanza global y sobre las capacidades de los actores globales no estatales –como parte de la sociedad civil global– implicados en estos procesos de política medioambiental . Después de definir el contexto en el cual emergen las nuevas TIC, la tesis desarrolla dos casos de estudio. El primero de ellos analiza la evolución del proceso de resoluciones y recomendaciones de la Unión Internacional para la Conservación de la Naturaleza (UICN) y permite ilustrar que el uso de las nuevas TIC mejora la participación en este proceso y la creación de consenso en torno a determinados valores. Por ello, el uso de las nuevas TIC tiene un impacto positivo sobre la legitimidad de este mecanismo de gobernanza global. El segundo caso analiza el uso de las nuevas TIC por parte de la UICN y demuestra que no tiene un impacto sustancial sobre las capacidades internas de esta organización. Sin embargo, sí cabe reseñar un impacto positivo pero limitado sobre las competencias externas de la UICN, de modo que mejora la capacidad de la organización para comunicar tan sólo con su audiencia tradicional.

Index

Part 1. Emergence of global actors and their use of new ICTs in global governance

Part 2. New ICTs and the legitimacy of a global environmental governance mechanism

**Part 3. New ICTs and global environmental
actor's competences**

List of tables and figures

x

List of abbreviations

ARPANET   Advanced Research Projects Agency Network
ABS   Nagoya Protocol on Access to Genetic Resources
          and the Fair and Equitable Sharing of Benefits
          Arising from their Utilization to the Convention
          on Biological Diversity
BBC   British Broadcasting Corporation
BRICS   Brazil, Russia, India, China, and South Africa
CBD   Convention on Biological Diversity
CEC   Commission on Education and Communication
          (IUCN)
CEL   World Commission on Environmental Law
          (IUCN)
CEM   Commission on Ecosystem Management (IUCN)
CEESP   Commission on Environmental, Economic and
          Social Policy (IUCN)
CFC   Chlorofluorocarbon
CI   Conservation International
CIEL   Center for International Environmental Law
CITES   Convention on International Trade in Endangered
          Species of Wild Fauna and Flora, also known as
          the Washington Convention
CMS   Convention on Migratory Species
COP   Conference of the Parties
COPUOS   Committee on the Peaceful Uses of Outer Space
COSPAR   Committee on Space Research
CSD   United Nations Commission on Sustainable
          Development
CSR   Corporate Social Responsibility
CNN   Cable News Network
ECOSOC   United Nations Economic and Social Council
EDF   Environmental Defense Fund
EU   European Union
FAO   Food and Agriculture Organization

FIELD	Foundation for International Environmental Law and Development
FSC	Forest Stewardship Council
GA	General Assembly
GARP	Global Atmospheric Research Program
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GEMS	United Nations Global Environment Monitoring System
GESAMP	Group of Experts on the Scientific Aspects of Marine Environmental Protection
GMO	Genetically Modified Organism
gTLD	generic Top-Level Domain
G8	Group of Eight
G20	Group of Twenty
HIV	Human Immunodeficiency Virus
HQ	Headquarters
HTPP	Hypertext Transfer Protocol
IAEA	International Atomic Energy Agency
ICANN	Internet Corporation for Assigned Names and Numbers
ICC	International Criminal Court
ICJ	International Court of Justice
ICSU	International Council for Science
ICTs	Information and Communication Technologies
IFRI	Institut Français des Relations Internationales
IGO	International Governmental Organization
ILC	International Law Commission
ILO	International Labor Organization
IO	International Organization
IMO	International Maritime Organization
INGO	International Non-governmental Organizations
IP	Internet Protocol
IPCC	Intergovernmental Panel on Climate Change
ISP	Internet Service Provider

IT	Information Technology
ITU	International Telecommunication Union
IUCN	International Union for Conservation of Nature
MDG	Millennium Development Goals
MIS	Management Information System
MOU	Memorandum Of Understanding
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
NRDC	Natural Resources Defense Council
OECD	Organization for Economic Co-operation and Development
R&D	Research and Development
SCAR	Scientific Committee on Antarctic Research
SCLDF	Sierra Club Legal Defense Fund
SCOPE	Scientific Committee on Problems of the Environment
SCOR	Scientific Committee on Oceanic Research
SDG	Sustainable Development Goals
SSC	IUCN Species Survival Commission
TLD	Top-Level Domain
TNC	Transnational Corporation
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNCCUR	United Nations Conference on the Conservation and Utilization of Resources
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe

UNESCO	United Nations Educational, Scientific and Cultural Organization
UNGA	United Nations General Assembly
UNITAR	United Nations Institute for Training and Research
UNREDD	United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation
USA	United states of America
USGS	United states Geological Survey
USSR	Union of Soviet Socialist Republics
WBCSD	World Business Council for Sustainable Development
WCC	World Conservation Congress
WCED	World Commission on Environment and Development
WCPA	World Commission on Protected Areas
Web	World Wide Web
WEF	World Economic Forum
WHC	World Heritage Committee
WHO	World Health Organization
WICEM	World Industry Conference on Environmental Management
WMO	World Meteorological Organization
WSF	World Social Forum
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wildlife Fund

Introduction

Nature sustains all aspects of human life and provides food, medicine, innovation, recreation and shelter. Although often considered as an inalterable ever lasting given, the earth is in a continuing process of adaptation to human needs and suffers more and more losses in terms of species, ecosystems and beauty. Demographic and economic booms of the last decades put pressure on the earth's natural resources and capacity of adaptation. As indicated in the 2014 Synthesis Report of the Intergovernmental Panel on Climate Change (IPCC), warming of the climate system is unequivocal, and many of the observed changes such as warmer atmosphere and ocean, diminished amounts of snow and ice, or higher sea levels are unprecedented over decades to millennia. The urgent need to manage efficiently nature with a long term and sustainable perspective is the first motivation of this research.

In the last decades, states have developed a wide array of agreements and international environmental regimes to manage this global public good. Some successful examples include the Montreal Protocol to ban CFC gas or the Convention on Biological Diversity (CBD). Also, the concept of sustainable development represents a real improvement, for it became increasingly present in global agreements, policies and trade objectives. It is nowadays difficult for a state to act without taking this element into consideration. Although the perception of the environment varies from one culture to another, no one denies today that the earth needs protection.

However, it must be pointed out that there is no universal understanding of the implications of such protection. Indeed, states still perceive quite differently the balance between economic development, social protection and nature conservation. The last United Conference on Climate Change in Copenhagen, or the United Nations Conference on Sustainable Development for instance proved complicated for states to reach a global and binding agreement on nature conservation and sustainable development.

The management of this challenge can only be found through global and multi-stakeholders cooperation. The environment is an opportunity to bridge some global governance gaps. Global environmental governance counts multiple actors, including states, inter-governmental and non-governmental organizations (IOs and NGOs), transnational corporations (TNCs), and even individuals. Although remaining the main global actor and the only elected representative of some populations, states became one category of player among others on the international stage. The emergence of these new actors on the global arena adds up to the global governance complexity and sheds additional light on global governance democratic deficit.

Most global governance mechanisms seem indeed quite distant to those who experience the implications of such agreements or their absence. The global civil society is probably the most vocal conglomerate of actors to demand more open and participatory global governance mechanisms.

Most scholars agree that the performance of such mechanisms is intrinsically linked to their local and national roots: the performance of a global measure to protect the environment depends on the level of participation and ownership of other actors, and in particular at the local level. Therefore, the question of the legitimacy of global governance mechanisms here raised has also motivated the conduct of this thesis.

Global multi-stakeholders cooperation and global to local ownership of such institutions to protect nature is not only necessary but also possible thanks to the generalization of new information and communication technologies (ICTs). Internet, social media, mobile phones, big data and more recently cyberspace are transforming all aspects of human life and society in an ongoing process of change. The implications of the generalization of new ICTs are part of a vast change of paradigm where new technologies are only one factor of change among others.

Technological innovations brought progress in many aspects. New ICTs have enabled access to information and communication as never before, and can also support a better global cooperation to manage nature as a global public good. This is not the idea of a world government, rather a question of participation and transparency of global governance institutions at a time where individuals have gained the capacity to know simultaneously almost as much as great powers.

A lot has been written on e-democracy and how Internet, mobile phones, or social media among other technologies and practices have become over the years key tools for all actors in international relations. States develop social media communication campaigns to influence their own nationals as well as nationals from other countries through public diplomacy initiatives. International organizations and non-governmental organizations use mobile tool to communicate, raise awareness, and funds. Scientists and academics collaborate and exchange ideas and knowledge through web-based scientific platforms.

However less has been written on the impact of new ICTs on global environmental governance. It seems quite evident that players on the international stage use more intensively these new technologies nowadays than they did twenty years ago. However, the question remains open when it comes to examine the evolution of global governance. Therefore, the main argument of this thesis states that the use of new ICTs in global environmental governance decision-making processes deserves a precise assessment to determine if they are politically relevant.

The main objective of this research is therefore to assess the impact of the use of new ICTs on global environmental governance. It aims to analyze the transformation of global environmental governance since the generalization of these technologies among its main actors, and with a particular emphasis on the global civil society. As new ICTs have

transformed many elements of our lives and societies, this thesis seeks to determine if they have also had an impact at the global level. Knowing that digital technologies are a continuous process of change, the main objective is also to define some trends for the future. As secondary objectives, it aims at assessing the impact of the use of new ICTs on the legitimacy of global environmental governance mechanisms and on the competence of global environmental governance actors.

The main question this research wishes to answer is whether the use of new ICTs has had a substantial impact on global environmental governance. As secondary questions, it will determine if the use of these technologies has improved both the legitimacy of a global environmental governance mechanism (IUCN's resolution and recommendation process), and internal and external competences of a global environmental actor (International Union for Conservation of Nature).

The main hypothesis of this research is that the use of new ICTs has not only had an impact at the individual and society levels, but it also triggered notorious changes on global environmental governance. Secondary hypotheses state that these technologies enhance the legitimacy of global environmental governance mechanisms, and that they improve internal and external competences of global environmental actors.

This thesis focuses on two case studies: a global environmental governance mechanism, and a global environmental governance actor. First, it conducts a quantitative analysis of the evolution of IUCN's resolution and recommendation process, and then leads a qualitative analysis of IUCN's external reviews. On the one hand, it compares the chronological evolution of resolutions and recommendations adopted by IUCN's members before and after 2000, both in terms of number and topics, to further determine if new ICTs have had an impact on the legitimacy of this governance mechanism. On the other hand, it examines the chronological evolution of IUCN's external reviews before and after 2000, to then determine whether new ICTs have had an impact on the organization's internal and external competences.

This research takes stock of the generalization of new ICTs since 2000. By this year, most global actors used already these technologies, Google had already emerged, and social media giants such as Facebook or Twitter were gaining millions and millions of users. The year 2000 will be used in this thesis to distinguish two eras: before and after the generalization of new ICTs. It will enable to compare global environmental governance mechanisms and actors before and after the generalized use of these technologies.

This research focuses on the International Union for Conservation of Nature for it is the oldest international environmental organization and a leading authority on

environment conservation and sustainable development. Its longstanding participation in global environmental governance led for instance to the creation of the World Wide Fund for Nature (WWF), the United Nations Environment Program (UNEP), or the adoption of the CBD.

Also, IUCN has a decentralized structure with regional and local offices throughout the world, which can highlight the use of new ICTs. Furthermore, it contains more than 1,200 members ranging from states, IOs and NGOs. It is one of the rare institutions that give an official voting status to NGOs through its General Assembly and the IUCN's resolution and recommendation process. Therefore it can allow determining the evolution of the participation of the global civil society in this global environmental governance mechanism.

Finally, in terms of data collection, IUCN has a very transparent policy, and offers data on resolutions and recommendations, as well as external reviews, free of use on its website. Therefore, it makes data collection easier, safer, and more coherent, as for both case studies they are originated from the same organization with the same methodology that enables a sound chronological comparison.

This research is divided into three parts. The first part develops the theoretical framework and analyzes the emergence of global actors and their use of new ICTs in global governance. It focuses on the evolution of global governance through the increased participation of private

authorities and the development of cyberspace as a new digital space in international relations. This first part also examines the evolution of global civil society and its use of digital technologies to participate in global governance.

In a second part, this thesis analyzes the impact of new ICTs on the legitimacy of a global environmental governance mechanism. It first defines the broader context in which this mechanism takes place by discussing the emergence of global environmental governance. Then it conducts a qualitative analysis of the IUCN resolution and recommendation process to determine whether the use of these technologies has had an impact on the legitimacy of such global decision-making mechanism.

Thirdly, this research examines the impact of new ICTs on a global environmental actor: IUCN. It first analyzes their impact on its internal and external competences. This case study determines if such global environmental organization's competences have evolved since the widespread use of new ICTs in 2000.

The results of this thesis should help us to better understand the way new ICTs may contribute to the governance of key issue areas of international relations. The pressing and fatal global environmental degradation deserves our academic efforts, starting by the proper assessment of our potential to develop adequate global governance mechanisms and policies.

Part 1. Emergence of global actors and their use of new ICTs in global governance

In the 1990s, globalization was put in the spotlight by various protests. Originally confined within the financial and academic worlds, the word 'globalization' is used today to describe everything that is happening across boundaries, from financial and technological interdependence to social interconnectedness.

According to Held, McGrew, Goldblatt, and Perraton, the use of the term 'globalization' reflects an increased interconnectedness in political, economic and cultural matters across the world that creates a shared social space and can be defined as a process or set of processes, which embody a transformation in the spatial organization of social relations and transactions, due to an increase in transboundary flows of capital, people and activities.[1]

In a globalizing world, states see their role and power evolving due to the emergence of new actors such as transnational corporations (TNCs), the dominance of the global marketplace, and the growing role of intergovernmental organizations supporting the global marketplace. States and populations are experiencing a

---

[1] Held, David, McGrew, Anthony G., Goldblatt, David, Perraton, Jonathan (1999) *Global Transformations: Politics, Economics, and Culture*. Stanford, CA: Stanford University Press, p.16.

profound change and need to adapt to a more uncertain and interconnected world.[2]

The uncertainty comes from the transformation of an industrial society into a knowledge society where issues, tools and actors become global. The interconnectedness comes from the generalization of new information and communication technologies: a process inexorably linked to globalization. Indeed, globalization offers a specific context in which new ICTs can develop. At the same time, high performance computers and new communication technologies such as the Internet accelerate globalization processes.

Globalization and the generalization of new ICTs happen in a parallel timeframe, and feed into each other. There is rarely a commentary on globalization without mentioning the Internet: in other words, the idea of the Internet is fully inscribed in the concept of globalization. [3] The more globalized the world becomes the more populations are connected.

The generalized use of ICTs, and new uses shared by all connected populations around the globe, led the Internet to become cyberspace: "a global domain within the information environment consisting of the interdependent network of information technology infrastructures, including the Internet,

---

[2] Ibid, 2

[3] Kaldor, Mary, Moore, Henrietta, Selchow, Sabine (2012) *Global Civil Society 2012: Ten years of critical reflection Global Civil Society Yearbook*. London, UK: Palgrave Macmillan, p.28.

telecommunications networks, computer systems, and embedded processors and controllers."[4]

Cyberspace is more than the Internet: it embeds the Internet, but also all other digital media, mobile technologies, and big data technologies. This concept also reflects the growing role of some global actors to control this digital space, which makes cyberspace a new field of international relations.

This research is about the adaptation of global environmental governance mechanisms and actors to this new interconnectedness and uncertainty. It aims at analyzing the impact of new ICTs on global environmental governance actors and mechanisms. This first part defines the theoretical framework, and in doing so, examines the emergence of new forms of international authority and then focuses on a specific one that will be extensively used in the second and third part of this research: the global civil society.

---

[4] Shachtman, Noah (2008) 26 Years After Gibson, Pentagon Defines Cyberspace, *Wired magazine*. Retrieved 10 October 2013 from http://www.wired.com/2008/05/pentagon-define/

Chapter 1. Private authorities and cyberspace in global governance

In Europe, the first information revolution happened in 1450 when Gutenberg invented the printing press. Beforehand, the Catholic Church controlled the production and diffusion of most written content. Books were only to be found in monasteries, and therefore only few intellectuals and clericals were literate. Decades later, hundreds of thousands of books from bestselling authors such as Luther and Erasmus were produced and sold in their lifetime.[5]

The invention of the printing press triggered new needs in terms of rules and laws, such as censorship and copyright. Thanks to these new rules, newly born states gained power over the Catholic Church. Indeed, the way information is produced, managed, and distributed leads to some changes in the rules and values that govern society.[6]

This new technology of production and distribution of information led to the emergence of the Renaissance period, and the flourishing of knowledge, innovation, and literature. New scientific founding put into question how the world was perceived and proposed new perspectives. This intellectual ebullition and the possibility to share information more easily

---

[5] Issawi, Charles (1980) Europe, the Middle East and the Shift in Power: Reflections on a Theme by Marshall Hodgson, *Comparative Studies in Society and History*. Vol.22, Issue 04, p.487.
[6] Mayer-Schoenberger, Viktor, Cukier, Kenneth (2013) *Big data: A revolution that will transform how we live, work, and think*. New York, NY: Houghton Mifflin Harcourt, p.171.

than before, have participated in the future economic, military and intellectual predominance of Europe.

Similarly, a series of information revolutions have taken place in the last decades thanks to the generalization of new ICTs. The international stage is permanently evolving thanks to a series of factors, one of which being the emergence of new technological capacities to acquire and keep power. This chapter examines recent evolutions of the international stage and in particular global governance actors and mechanisms. It first analyzes the evolution of the international society of states toward a global society of actors. It then discusses the concept of global governance and the emergence of new forms of private authority. Finally, it examines another change on the international stage: the emergence of a new arena where multiple forms of authority need to control, cooperate, or compete: cyberspace.

1.1 From an international society of states to a global society of actors

The state-nation system was born in the 17th century with the treaty of Westphalia of 1648. This treaty ended the thirty-year war between Protestants and Catholics and declared state sovereignty as the defining principle of international relations. In doing so, it put an end to the previous feudal system. Political authority became centralized in the secular state,

which possessed the monopoly on the legitimate use of force[7] and sovereignty over the land it controlled.[8]

In the years following the Westphalia treaty, most wars ended in the creation of new states.[9] Indeed, concentration of power in one political authority became a threat and produced a strong incentive to follow the same path and build states. The nation-state system provided a solution to a global need: it offered new governance mechanisms that brought peace at some point in history. Nation-state is an evolution of social and political organization. Indeed, the exigencies of modern warfare generated modern sovereign states and contributed to creating centralized bureaucracies, professionalized militaries, and central governments. City states and loosely knit empires were unable to withstand the most recent military innovation such as early modern 'gunpowder revolutions'. Also, modern political units provided for the establishment of internally pacified and defensible units with protected borders.[10]

The concept of nation state combines four elements: territory, population, government and sovereignty. The government owns the legitimate use of force on this specific territory. A nation is similar to a community: a large group of individuals

[7] Camilleri, Joseph A., Falk, Jim (1992) *The End of Sovereignty?: The Politics of a Shrinking and Fragmenting World*. London, UK: Edward Elgar Publishing, p.14.
[8] Bodin, Jean (1992) *On Sovereignty*. Cambridge, UK: Cambridge University Press, p.30.
[9] Tilly, Charles (1975) *The Formation of national States in Western Europe*. Princeton, NJ: Princeton University Press, p.636.
[10] Scheuerman, William E. (2011) Realists against the Nation-State, *Transnational Law and Contemporary Problems*, Vol.20, p.72.

who share a common identity based on common history, language, culture, and ethnicity.

A nation state is characterized by one nation that corresponds to one state: one community lives within the same borders and is governed by the same government. The reason that modern states took the form of nation states was the common identity: a shared sense of nationality with integrative and motivational energies that no other political form could compete with. Nation states can tap into a deeper sense of social belonging than their organizational rivals.[11] As discussed further, this sense of common identity and social belonging is lacking at the global level, and therefore led to a decentralized and ad hoc development of global governance mechanisms.

Some states are "pure" nation-states such as Japan or Sweden, while others are multinational nation-state such as the United Kingdom (UK), the United States of America (USA) or the Russian Federation. In some rare occasions, multinational nation states are challenged by cultural minorities or separationist movements (i.e. Chechnya in Russia). However, in most cases, their citizens feel they belong to one unitary actor. The nation binds people together across social classes, bridges regional, ethnic and sometimes religious differences, and links generations to each other, and mobilizes traditions

---

[11] Schwarzenberger, Georg (1941) *Power politics: introduction to the study of international relations and postwar planning*. London, UK: Jonathan Cape, p.57.

of cultural inheritance, perpetuated by educational systems, health care systems, or transportation systems.[12]

However, since globalization and the 21st century, the international stage has changed and states saw the emergence of new global actors such as TNC, IOs or NGOs. Borders do not protect against weapons of mass destruction such as nuclear bombs anymore.[13] New transboundary challenges such as environmental issues put pressure on the nation state system[14] and questions if nationalism could be eventually replaced by universalism. It is indeed conceivable that the attitudes and values of patriotism could be modified by increasingly global challenges and a sense of world identity.[15]

Universalism and the idea of a universal government has been suggested and discussed by many scholars, among others Kant, or Grotius the father of international law. It is also found in non-western cultures such as Chinese or Indian philosophers. For Jacobson, universalism is a process starting with small units such as family, tribe, city-state, nation state, and that would eventually culminates with combining all these in a global political unit.[16]

---

[12] Calhoun, Craig J. (2007) *Nations matter: culture, history, and the cosmopolitan dream*. New York, NY: Routledge, p.154.
[13] Niebuhr, Reinhold (1932) *Moral Man and Immoral Society: A Study in Ethics and Politics*. Westminster, UK: John Knox Press, p.49.
[14] Held, David (1995) *The anarchical society. A study of order in world politics.* London, UK : Macmillian, p.74.
[15] Schumann, Frederick (1941) *International politics*. New York, NY: McGraw-Hill, p.311.
[16] Calhoun, Craig J. (2007) Op Cit, p.90.

During and after the Second World War, the idea of supranational governance was quite popular among international relations scholars. An example is the American House Concurrent Resolution 64, with the "fundamental objective of the foreign policy of the United States to support and strengthen the United Nations and to seek its development into a world federation". This resolution received the support of 111 representatives, including John F. Kennedy, and Gerald Ford.[17] The creation of the United Nations did not satisfy fully the supporters of a world government, who grouped their activities under the banner of World Union Federalists: people like Albert Einstein and Ronald Reagan supported this movement.

However, with the cold war, states became more preoccupied by post-colonial non-alignment issues. Their concern was to keep most states on their side and avoid a third Word War. They invested massively in their defense capacities and promoted their way of life and culture. The commonalities between nation states faded away and the world divided into two. The idea of a world government vanished.

Since the end of the cold war, the international situation has changed. Indeed, nothing is governed once and for all. Global governance and global politics are dynamic processes: "each new governing arrangement alters the structures, rules, and

---

[17] Scheuerman, William E. (2011) Op Cit, p.189.

opportunities that came before." [18] World leaders often call on the international community in times of crisis, such as former President Bush who used this expression in few occasions: "Mr. President, the United States and the international community applaud your rejection of terrorism."[19] Also, most international organizations and the United Nations in particular claim to represent the international community[20] as asserts former Secretary General of the United Nations Kofi Annan: "the international community does exist. It has an address. It has achievements to its credits. And more and more, it is developing a conscience."[21]

Nevertheless, this might not be a reality, rather a wishful thinking. Indeed, a community is a group where common interests are given precedence over individual ones.[22] Two components are essential for an international community of states to exist: the existence of an international society and a common identity.

Before considering the existence of an international society, one must first examine the international reality as a system of states.[23] Indeed, there is an international system when two states or more have enough relations and when their decisions

[18] Avant, Deborah D., Finnemore, Martha, Sell, Susan K. (2010) *Who governs the globe?* Cambridge, UK: Cambridge University Press, p.17.
[19] Former U.S. President George W. Bush meeting with President Mahmud Abbas of the Palestinian Authority, 26 May 2005.
[20] Scheuerman, William E. (2011) Op Cit, p.119.
[21] Annan, Kofi (2002) *Prevention of Armed Conflict: Report of the Secretary-General*. New York, NY: United Nations, p.30.
[22] Scheuerman, William E. (2011) Op Cit, p.175.
[23] Bull, Hedley (1995) Op Cit, p175.

produce enough effects on both that they act as part of a whole. In other words, a system of states exists when states need to give a political answer to a reality provoked by the relation (political, economical, social or cultural) with other states. [24]

According to Hedley Bull, the difference between a system of states and a society of states is the common interest. Given shared interests, states are consciously belonging to a group, a society. A society of states is an artificial and voluntary construction, where members decide to take part into it. The society of states is based on legal rules and a necessity to be together. It exists since the 16th century in Europe with the emergence of modern state system: a society where states established rules and institutions because they shared an interest in preserving basic conditions of order in the international relations.[25]

Hurrell[26] argues that the values shared by members of the international society of states are limited to the minimum understanding on what is necessary for keeping a dialogue

[24] García Segura, Caterina (2005) Sociedad internacional o desorden mundia después del 11 de septiembre de 2001, In García Segura, Caterina, Vilariño Pintos, Eduardo (eds.) *Comunidad internacional y sociedad internacional después del 11 de septiembre de 2001.* Gernika-Lumo, Bizkaia : Gernika Gogoratuz, p.58.

[25] Ibañez Muñoz, Josep (2005) Sociedad Postinternacional In García Segura, Caterina, Vilariño Pintos, Eduardo (eds.) *Comunidad internacional y sociedad internacional después del 11 de septiembre de 2001.* Gernika-Lumo, Bizkaia : Gernika Gogoratuz, p.126.

[26] Hurrell, Andrew (1998) Society and anarchy in the 1990s, In Robertson, B.A. (ed.) *International Society and the development of international relations.* London, UK: Pinter, p.22.

and reaching an agreement on basic rules and institutions that allow to mediate potential conflicts. The international legal order plays indeed a significant role in the international society of states for it creates expectations on how states must behave and reduce the security dilemma. Its objective is to reach an agreement on basic common principles and rules of international conduct. It is built on common and concrete interests.

The international society is consciously built and holds an aspect of self-consciousness and self-regulation.[27] It can have various levels of integration and socialization. Barry Buzan argues that the international society of states has developed as a subsystem of a global system.[28] The international society also builds up with various subgroups: a central one with tighter bonds and relations than the ones at the periphery. But they are still distinct from the international system in the sense that they share a common interest and common institutions to protect it.

In terms of common rules and regulations, the actual international society is a mix of universalism and western imperialism according to Garcia Picazo. Indeed, some rules are universally recognized and respected: sovereignty and the

---

[27] García Picazo, Paloma (2005) Sociedad/Comunidad internacional: ¿una "comunidad imaginada"?, In García Segura, Caterina, Vilariño Pintos, Eduardo (eds.) *Comunidad internacional y sociedad internacional después del 11 de septiembre de 2001*. Gernika-Lumo, Bizkaia : Gernika Gogoratuz, p. 97.

[28] Buzan, Barry (1993), From international system to international society: structural realism and regime theory meet the English school, *International Organizations*, Vol.47, Issue 3, p.328.

international legal order for instance. However, western and westernized states also project some of their values as universal such as some human rights, or a certain vision of nature conservation. Also, these states have developed a tighter version of the international society. In this sense, there is a western international society of states, which exists within an international society of states, which exists within an international system, which is more diverse, less ordered and therefore more conflictual. [29]

Since globalization, states are not the only actors and authority in the international system. The fact of the international society focuses on states and doesn't take into consideration the impact of non-state actors on the creation and development of the world order is quite limiting.

According to Josep Ibañez, the more diverse and plural international reality can be defined as post-international society: a set of social relations constituted of interactions happening within the international society of states and between all actors of international relations, governmental and non-governmental, public and private, according to guidelines and patterns of behavior oriented to preserve elementary objectives of social order such as reduction of violence, respect of commitment, stability of property. [30] The post-international society comes after the international society that existed from 16th to 20th Century. It emerges from the

[29] García Segura, Caterina (2005) Op Cit, p.61.
[30] Ibañez Muñoz, Josep (2005) Op Cit, p. 129.

institutions and norms of the international society, where non-state actors have increasingly developed and performed transboundary activities.

Multiple actors, multiples spaces and levels (local, national, regional and international), multiple agendas, cultures and objectives make the world political order rich and complex.[31] The world becomes increasingly globalized and economic activities grow beyond national borders.[32] As a synonym to the post-international society, we define this new global institutional context as a global society of actors in order to encapsulate the complex and plural international reality that Ruggie defines as such:

> (…) the arena in which 'the authoritative allocation of values in societies' now takes place increasingly reaches beyond the confines of national boundaries, and a small, but growing fraction of norms and rules governing relations among social actors of all types (states, international agencies, firms and of civil society) are based in and pursued through transnational channels and processes. [33]

If the current international system can be defined as a global society of actors, it still needs to be clarified if an international community exists. Indeed, states have not yet

---

[31] Bull, Hedley (1977) *The Anarchical Society: a study of order in world politics*. New York, NY: Colombia University Press, p.266.
[32] Deutscher Bundestag (2002) *Study Commission, Globalization of the World Economy: challenges and answers*. Short version of the Final Report, Berlin, 14th Legislative period, p.67.
[33] Ruggie, John G. (2004) Reconstituting the global public domain – Issues, actors, and practices*, European Journal of International Relations,* V.10 (4) p.521.

shown a sense of common identity in their actions and in the mechanisms they developed. For instance, the United Nations is not a unitary actor. It has multiple sources of identity; only some of its constituents have the right to decide on its action and program; and it does not have a policy independence from its constituents units. In the field of global environmental governance, it is clear that most states agree on the importance to protect the planet. But they strongly disagree on how to protect nature. There is no supra-national entity responsible for the protection of nature on the planet. Therefore the current global society of actors cannot be qualified of international community.

The non-existence of an international community has substantial consequences in the emergence of global governance and global environmental governance mechanisms. Indeed, with no shared sense of common identity among states, global governance developed in an ad hoc, decentralized manner, and led to the development of complex and sometimes concurring mechanisms without any universal supra-national organization with power to impose sanctions on states. The following section examines the concept of global governance.

1.2 Global governance for a global society of actors

As Cosmopolitan political theorist David Held argues, the nation state system is a product of specific historical

circumstances, and therefore subject to change[34]. Like other cosmopolitan theorists, he wishes to replace what the realists call the interstate anarchy with "a global law-based democracy". [35] But cosmopolitans are not the only proponents of change. Realists from mid-twentieth century such as Reinhold Niebuhr, E.H Carr, John Hertz, Hans J. Morgenthau, Frederick Schuman or Georg Schwarzenberger recognized that the nation state model was not well adapted to the globalization process: the traditional nation-state is obsolescent given the technological and military conditions of the contemporary world."[36]

Global governance is a concept that embeds multiple meanings. It is often used to describe relations, activities, mechanisms and institutions beyond the nation-state. It provides a general term to describe an area that is not always well understood or well described by media or politicians. The negative consequence of the generalization of this expression is that it has lost its meaning: global governance encapsulate virtually anything.[37] Indeed, for some academics this concept describes a complex set of structures and processes, but for others it is a synonym of government.[38]

---

[34] Held, David (1995) Op Cit, p.75.
[35] Scheuerman, William E. (2011) Op Cit, p.68.
[36] Morgenthau, Hans J. (1954) *Politics among nations: the struggle for power and peace*. New York, NY: Knopf, 2nd edition, p.313.
[37] Finkelstein, Lawrence S. (1995) What is global governance?, *Global Governance,* Vol.1, p.368.
[38] Weiss, Thomas G. (2000) Governance, Good Governance and Global Governance: conceptual and actual challenges, *Third World Quarterly,* Vol.21, p.795.

The first word of the concept 'global' remains a bit vague but still clarifies what reality the concept is embracing: it is about the whole world, or the whole of something, of a group of things.[39] It describes what is non-local, non-national, non-regional. Contrary to the words 'international' or 'transnational', which restrict the analysis to either the relations between states or the transboundary relations between non-state actors. The word 'global' qualifies a more encompassing reality and includes the worldwide transboundary interactions between a wide array of actors.[40]

On the other hand, the term 'governance' describes the act of governing[41]. It is hence often associated with the concepts of government, management of public and private affairs. To govern stands for conducting the policy, actions, and affairs of a state, organization, or people.[42] Therefore global governance would deductively mean conducting the policy, actions, and affairs of what is relating to the whole world. According to Rosenau, however, it is more than the institutions managing world affairs: it includes "systems of rule at all levels of human activity – from the family to the international organization – in which the pursuit of goals through the

[39] Global [Def. 1] (n.d.) Oxford English Dictionary Online, In *Oxford English Dictionary*. Retrieved 18 June 2012. Oxford dictionary, http://oxforddictionaries.com/definition/english/global
[40] Dingwerth, Klaus, Pattberg Philippe (2006) Global Governance as a perspective on World Politics*, Global Governance*, Vol.12, p.185.
[41] Krahmann Elke (2003) National, regional and global governance: one phenomenon or many ?, *Global governance*, Vol.9, p.334.
[42] Govern [Def. 1] (n.d.) Oxford English Dictionary Online, In *Oxford English Dictionary*. Retrieved 18 June 2012. Oxford dictionary, http://oxforddictionaries.com/definition/american_english/govern?q=govern

exercise of control has transnational repercussions."[43] This means that an established legal or political authority is not the only actor at play in global governance:[44] it embeds as well local, subnational, national, international and transnational decision-making mechanism.[45]

Rosenau's definition includes new actors and mechanisms in international affairs: non-governmental organizations, Transnational corporations or groups of scientists or academics such as the International Panel on Climate Change (IPCC) or the scientific body of the Convention on Biological Diversity. The concept of global governance captures the transformation of the international system as described previously.[46]

Contrary to global governance, international governance tends to refer to relations between states. Transnational governance refers to relations between a wider array of actors, but still with the central role of nation states. In addition, international governance focuses on actors, whereas global governance approach looks at mechanisms, social regulations, decision-making processes, rules or norms. As follows, two models of global governance that will be used in the following chapters to analyze the environmentalist movement and the global civil society: alterglobalism and cosmopolitanism.

---

[43] Rosenau, James N. (1995) Governance in the Twenty-first Century, *Global Governance*, V.1, p.13.
[44] Rosenau James N. (1995), Op Cit, p.15.
[45] Dingwerth, Klaus, Pattberg, Philippe (2006), Op Cit, p.190.
[46] Weiss, Thomas G. (2000), Op Cit, p.808.

Alterglobalism

Alterglobalism is a movement against the negative impacts of the globalization process on societies, cultures, and the environment. Its followers fight against the free-riding attitude of transnational corporations, in particular how they play with national regulations to avoid paying taxes and move production to where social and human rights are less restrictive. It offers an alternative model of global governance where grassroots organizations – namely civil society organizations, social movements, and transnational social networks- are the key actors on the international political scene.

Alterglobalism focuses on the social bonds between individuals and groups of individuals. Political power stems from the plurality and heterogeneity of local groups focusing on the voice of minorities. It emerges from local practices, tightly linked to local realities and needs. An important element of the alterglobalism movement is its focus on local initiatives: contrary to other models, it focuses heavily on the necessity of building a global governance model based on local practices and groups, which would guarantee social cohesion and loyal ties.

This model is based on five principles that will be further illustrated by the World Social Forum in chapter two and the environmentalist movement in chapter three. First, it highlights the necessity to root global governance with local

communities and organizations.[47] The objective is to have institutions that are aware of local realities. It makes reference to the world politics and UN elites who meet in New York City or Geneva. Sometimes, their decisions are not what local populations need and the outcome of these decisions can reveal counter-effective.

The second principle is public engagement[48] through global governance mechanisms, which are truly representative, and where decisions made at the international level take into account the point of view of local populations, who can decide on the agenda and the output of international negotiations. It is opposed to the actual system where local populations are rarely allowed to participate in international decision-making processes.

The third principle is the autonomy of legitimate local authorities,[49] which have the rights and power to make their own decisions without interference of national or international entities, such as national state or international organizations. Legitimate local authorities mean they truly represent local populations. Therefore the question of local democracy is crucial in order to have a participatory global governance system: local elections must be fair, transparent and open to

---

[47] Gibson, Katherine, Graham, Julie (2006) *A Postcapitalist Politics.* Minneapolis, MN: Minnesota University Press, p.145.
[48] Della Porta, Donatella (2005) *Transnational Protest and Global Activism.* Landham, MD: Rowman and Littlefield, p. 67.
[49] Rajagopal, Balakrishnan (2003) *International Law from Below: Development, Social Movements and Third World Resistance.* Cambridge, UK: Cambridge University Press, p.235.

all people who are legally in age of voting (male, female, and all ethnics). A truly participatory and locally rooted international system is only possible if local authorities are legitimate.

The fourth principle is solidarity among actors on the international scene.[50] To address global challenges such as pollution, armed conflicts, or food security, all actors must cooperate. In today's world, it is complicated for a state to solve global issues by itself. Borders are permeable to these issues. Therefore cooperation among actors of global governance is essential for present and future times. Solidarity means cooperation and support: it implies some trust among actors and open exchange of information, knowledge.

The final principle is diversity: global governance mechanisms should reflect the variety of actors, points of views and situations in the world,[51] and not only the interests of some states or some elite (financial, cultural, ethnical). This element is essential when discussing about the global civil society. Our world is incredibly rich in terms of cultures, points of views, and languages. Even though some might argue that globalization is homogenizing the world through the development of a world culture, it is still quite important to remain aware of the world diversity and include all actors in the decision process. It can make decisions more

---

[50] Smith, Michael (2002) *Foreign Policy in a Transformed World*. Essex, UK: Pearson, p.12.

[51] Tarrow, Sidney (2005) *The new transnational activism*. Cambridge, UK: Cambridge University Press, p.183.

complicated to be formed, but surely the system will be richer and new alternative solutions will be found together. This is linked to a sense of ownership: all people, cultures, actors should have access to international negotiations, knowing their voice will be heard and taken into account.

A crucial element highlighted by this model is the need for legitimate global governance mechanism. This need, along with the democratic deficit of global governance, will be further discussed in chapter four. Indeed, for alterglobalists, local and grassroot communities and organizations grant legitimacy to global governance. In other words, the international system can only be legitimate when it is locally rooted.

Although states are elected bodies (in the case of democracies), their interests sometimes differ from their populations' and from the general public good with a long-term perspective. Therefore the participation of local and civil organizations can ensure that all interests are taken into account in the decision-making process. The alterglobalist model is self-determined and self-governing: local actors decide on the rules that will be applied to them with a bottom up approach. This explains why alterglobalism proponents oppose fiercely the actual international system[52] fight for abolishing global institutions such as the International

---

[52] Tarrow, Sidney (1998) *Power in Movement: Social Movements and Contentious Politics*. Cambridge, UK, Cambridge University Press, p.210.

Monetary Fund (IMF), the World Bank or World Trade Organization (WTO).

One well-known example of alterglobalism is the World Social Forum (WSF) that was founded in Porto Alegre (Brazil) in 2001 in opposition to the World Economic Forum in Davos (Switzerland) as described more in details in chapter two. The WSF has rapidly spread around the world and now counts numerous regional and local forums every year where grassroot organizations meet, discuss, exchange ideas, experiences and come out with some recommendations. Another example of alterglobalist movements are the global days for actions where individuals and non-state organizations protest at the same time all around the world in favor of the nature conservation such as the Earth Day or against the war in Iraq on February 15, 2003.

The alterglobalist movement offers political, economic and social alternatives[53] and reconciles the international system with local forces. It proposes to open the international stage to new actors and to radically change the international relations architecture to make it more participatory and more legitimate: it implies creating an arena for participation and cooperation of various stakeholders who can discuss and exchange ideas, find peaceful solutions to conflicts, lobby for socioeconomic equity and welfare, and disseminate democratic and universal human rights values.

---

[53] Pianta, Mario, Marchetti, Raffaele (2007) *The global justice movement: a cross-national and transnational perspective.* Boulder, CO: Paradigm, p.120.

This model also implies a sense of global ownership and therefore a sense of common identity among all actors and populations. Although it is not the case nowadays as discussed previously, alterglobalists proponents share common values and this sense of common identity no matter what country they come from. This was illustrated by various recent movements such as the "indignados" or "indigné" who gathered all around Europe to ask for a change.

This model is inspiring, for it sheds light on the richness of local forces and on the necessity to root the international system locally. The following model that shares the need for a common identity and world diversity inclusiveness describes the cosmopolitan perspective of international relations.

Cosmopolitanism
Cosmopolitanism stems from the Greek word kosmopolitês ('citizen of the world') and embeds an extensive variety of views. Its core element is the idea that all individuals belong to a "universal city" ("Kosmo Polis"). Human right should be applied universally and when in opposition with state sovereignty, they should have the supremacy: it states that the principle of 'non-intervention' currently at the core of the actual state system, should be disregarded when human rights are threatened. The situation in Syria represents a good example for a case where intervention could be permitted under this model.

Cosmopolitanism emphasizes on the commonalities among socio-cultural groups in order to improve their cooperation. It values the globalization process when it can generate fairer global political mechanisms. The market and the invisible hand should not be the drivers of globalization and international affairs. Universal justice is an important element of this model that grants equal rights of participation to all human beings on the planet. This is particularly essential in today's world where decisions taken (and not taken) at the international level affect all individuals. Therefore they should have the right and the possibility to have their say in these decisions. Individuals are considered world citizens entitled to universal rights and assigned duties. When addressing global issues, international principles, mechanisms and decisions have the primacy over all principles of justice.[54]

Cosmopolitanism aims to reform the actual international relations system, rather than abolishing it. The aim is to guarantee equal participation and representation of all human beings at the international level[55] through strengthening actual multilateral institution and moving forward toward a world federal model in where individuals are part of the decision-making process.[56]

An example of this model is the United Nations Convention relating to the Status of Refugees (1951), which grants asylum

[54] Marchetti, Raffaele (2009) Mapping Alternative Models of Global Politics, *International Studies Review*, Vol.11, p.146.
[55] Held, David (1995), Op Cit, p.82.
[56] Marchetti, Raffaele (2009), Op Cit, p. 151.

rights to all fleeing individuals no matter their country of origin.[57] Another example is the International Court of Justice with its quasi-universal jurisdiction and the new paradigm of responsibility to protect in case of humanitarian emergency regardless of state sovereignty: "the norm asserts a broad international public interest predicated on universal human rights."[58] The World Trade Organization has increasingly opened some of its mechanisms to civil society organizations in order to legitimate its decisions and policies. Also, the European Union's foreign policy promotes universal values of justice, democracy and rule of law.

Cosmopolitanism acknowledges the central role of states in international relations, but balances its rights with individual rights and the necessity to protect their basic needs which are common to the whole world: peace, life, human dignity, environmental sustainability. Some of its main scholars such as Archibugi, Held, Kölher, Kaldor, McGrew, and Linklater propose the creation of new transnational organizations limiting states' sovereignty but without calling for a world government with the objective of "democratizing globalization."[59]

Cosmopolitanism defends some values and a certain ethics with principles such as rule of law, transparency,

---

[57] Ibid, p.153.
[58] Arbour, Louise (2008) The responsibility to protect as a duty of care in international law and practice, *Review of International Studies*, V.34, p.448.
[59] Archibugi, Daniele (2004) Cosmopolitan Democracy and its Critics: A Review, *European Journal of International Relations*, Vol.10*,* p.370.

inclusiveness, social justice, protection of minorities, human rights, democracy, a just financial and economic market, and the protection of the environment.[60]

Cosmopolitanism also recognizes multiple and overlapping identities. Indeed, individuals belong to various groups and communities. To grasp the incredible diversity and cultural wealth of the world, cosmopolitanism proposes an attitude of openness. Hence, they may well at the same time have one or more nationalities, feel part of a regional or religious community, have special bonds or interest with other countries or cultures, are part of a certain cultural social group, of an age generation, etc. These loyalties to groups or communities are in constant evolution[61] as values, cultures and identities are evolving: they reflect as well which country, religion, community, and group or individual are dominant during a period of time and how much they influence the rest of the world.

Nowadays, more and more people, political and business leaders, organizations and communities are aware that global issues are shared around the world and common to all individuals. Hence, they can only be effectively addressed through the collective and coordinated action of different actors and authorities. As discussed in the next section, new forms of private authorities are increasingly active on the international stage. Hence, cosmopolitanism proposes a vision

---

[60] Ibid, p.378.
[61] Ibid, p.480.

and political project that are in line with this evolution and includes the plurality of actors, cultures and values to reduce global threats and enhance sustainably the well-being of all human beings on the planet.

Cosmopolitanism is not threatening local or regional particularities. Rather it unifies the planet and aims at diminishing the impacts of borders on populations and global actors. Thanks to globalization, this model postulates that a new understanding of the globality of most issues and of their solutions, along with a sense of common world identity or citizenship will emerge to create an international community. The generalization of new ICTs will probably participate in the development of this new sense of global identity as discussed in the next chapter.

Cosmopolitanism proposes a vision that is shared by the author for future developments of the international relations architecture based on peaceful cooperation and universal respect of human rights. State sovereignty is only a stage in international relations to achieve peaceful cooperation. It is not an end point. Human rights should have universal primacy over any other rule, at the global, regional, national and local level. The international system and the international law should guarantee fair and equal treatment to individuals, regardless of the nationality, ethnical origin, gender, or political opinion. Cosmopolitanism also recognizes the increasing role played by the civil society in global governance as discussed in chapter two.

As stated in this section, global governance is the result of complex political processes shaped by various variables, such as power, access to information, mobilization, and leadership among others: it is a "complex web of relationships among different authorities, accomplishing different tasks and dependent on one another for outcomes." [62]The following section examines the emergence of private authorities in global governance.

1.3 Private authorities in global governance

As discussed previously, the global society of actors describes an international stage with new and multiple forms of authorities. The concept of governance triangle recognizes two types of international private authority: transnational corporations and global civil society. For instance, the role of NGOs is becoming today as significant as the role of states in the past century.[63]

Authority embeds two elements: the capacity to induce deference on others, and the claim to be justified in doing so. Some scholars such as David Lake or Michael Zürn focus on the binding aspect of the rules originated from the authority. What defines an authority is its capacity to make rules that are binding, perceived as such, and applied. Authority entitles to make authoritative decisions in order to achieve an objective

---

[62] Ibid, p.4.
[63] Edwards, Michael (2014) *Civil Society*. Cambridge, UK: Polity Press, p.2.

and to use coercive and persuasive powers. It contains two levels: level one prescribes rules and level two enforces them.

Authority can stem from various sources: institution, delegation, expertise or capacity, and principle.[64] The institutional authority (or institution-based authority) comes from the institution an individual represents: the managing director of the IMF, the head of a multinational, the Director General of an international NGO. This authority is limited to the functions of the institution it represents. The head of the IMF cannot pronounce policy on nuclear energy. It would loose its legitimacy. [65]

Delegated authority is an authority that derives from another institution: states delegate some of their authority to implement development programs to IOs or NGOs for instance. NGOs increasingly play a significant role in the promotion and reporting of some universal values such as environmental conservation or human rights. They also implement some public tasks such as water distribution, infrastructure development, health protection or education. It reflects the fact that some governments with limited means delegate some of their authority to NGOs. Indeed, they are sometimes asked to play public roles to compensate for (global, regional, national and local) governance gaps and failures.[66]

---

[64] Avant, Deborah D. (2010) Op Cit, p.11.
[65] Ibid.
[66] Ruggie, John G. (2004) Op Cit, p.518.

Principle authority is legitimate as long as it acts according to the principal. It looses its legitimacy otherwise.[67] Principle authority is based on widely accepted principles, morals or values. It can be NGOs acting to save the planet, protect human rights, and defend victims of a fraud. They call on altruism and act for the general good.

For instance, a global network of 600 civil society organizations in 70 countries spread the word on the World Wide Web to defeat the Multilateral Agreement on Investment (MAI) in 1998. This is one of the most iconic examples of global civil society influencing global rulemaking mechanisms to the point of preventing an agreement to happen. Their virtual presence and opposition, then supported by the world press, led to the withdrawn of this agreement from the international agenda. [68]

Expert or capacity-based authority stems from specialized knowledge: unlike the two previous types, it belongs to the actor, for it is knowledge that grants the authority to make a judgment or take action. It is the capacity to perform a specific action (solving a common problem or providing a global public good) that justifies the capacity-based authority.[69] This form of authority is based on special knowledge or moral expertise. What is decisive for the epistemic authority is not the quality of the judgment or the

---

[67] Avant, Deborah D. (2010) Op Cit, p.12.
[68] Ruggie, John G. (2004) Op Cit, p.511.
[69] Avant, Deborah D. (2010) Op Cit, p.14.

rule produced but rather the quality of the reputation.[70] The source of this authority is what justifies the recognition of authority. The expertise of is recognized by an audience as well-founded and impartial. For example, the Basel Accords elaborated by the Basel Committee on Banking Supervision have had an influence because the Committee has a key position in financial regulation thanks to the market power and expertise of its members.

If civil society organizations gained weight on the international arena, it is partly due to their growing number, but also due to their increased coordination with other international actors.[71] Indeed, states and intergovernmental organizations often outsource part of their development work to civil society organizations. Due to their expert authority (strong field experience and scientific knowledge) they are sometimes in a better position to implement international aid at the local level. Their field experience and scientific knowledge became a precious source of information for states and IOs.

Often this source of authority has no tool for enforcement, and needs to avoid conflict, and therefore must find another way to make others do what it wants to: it relies on the audience appropriating the ideas stemming from the authority thanks to its recognized expertise. This is the case for climate change evaluations by the IPCC, status of biodiversity by the IPBES,

---

[70] Michael Zürn (2012) Op Cit, p.86.
[71] This coordination is partly due to their use of new ICTs.

common definitions or common processes such as ISO standards, or diseases classification by the WHO.

This form of authority is quite prominent in global governance for it embeds all organizations that produce scientific knowledge or are recognized for holding an expertise in a certain field. The increasing development of indicators in global governance is an indication of this trend. This includes advice, recommendations and the formulation of best practices. The production of knowledge and information is often seen as a central tool for inducing change in the behavior of institutions and individuals in a complex environment.[72]

These sources of authority have led to developing a new concept of authority that encapsulates the most recent evolutions of global governance: solid and liquid authority of IR scholar Nico Kirch. Solid authority is all about command: the source of authority makes a rule and issues directives to its subjects like a monarch. In international relations, UN Security Council, the International Criminal Court and binding dispute settlement mechanisms, including the World Trade Organization count for solid expressions of authority. As stated previously, this represents only a small part of authority in global governance today.

---

[72] Peters, Guy B. (2012) Information and Governing: Cybernetic Models of Governance, In Levi-Faur, David (ed.) *Oxford Handbook of Governance*. Oxford, UK: Oxford University Press, p.40.

On the other hand, liquid authority counts for the most part of global governance from financial to environmental governance. It recognizes the multitude of other practices of rule, which are informal (not formal or binding), ideational (not demanding), fleeting (not settled and fixed), and multiple (not unitary).[73] It operates through soft law, recommendations, best practices or policy dialogues. It takes into consideration the multiple forms of international private authority that are active on the international stage. It also describes the growing role of the global civil society in global governance as defined in chapter two and in global environmental governance as examined in chapter four.

Another element of liquid authority is multiplicity. Whereas solid authority is unitary and centralized, liquid authority counts multiple sources of authorities. In the case of climate change, multiple recognized sources of authority produce recommendations: IPCC, domestic governments, international networks of scientists, UNEP, IUCN, WWF, and other NGOs, regional organizations such as the EU, etc. This plurality of authorities mean that authorities become 'relative' not only in for it comes in degrees, but also for it becomes relative to others and in interplay with others.[74]

---

[73] See Krisch, Nico (2012) Global Governance as Public Authority: An Introduction, *International Journal of Constitutional Law*, Vol.10, pp. 976-987

[74] Roughan, Nicole (2013) *Authorities: conflicts, cooperation, and transnational legal theory*. Oxford, UK: Oxford University Press, p.129.

Liquid authority is not fixed: it is a constant process of change. One institution might be the main authority for some time, and then disappear or be replaced by another. Authority can be shared among a wider range of institutions, and therefore rest in a range of organizations: not in one in particular.[75]

Liquid authority has a fleeting character: an institution can enjoy authority when created for a specific purpose and be a recognized source of authority. Then, when the need has disappeared, then it can be dismantled. For instance, informal institutions such as the Basel Committee are used because of the relative ease and speed of their creation, and because they can be quickly dismantled or rendered obsolete.[76]

As stated previously, global governance has evolved to include a broader range of private authorities. However, the increasing presence of new authorities in global governance is not the only change that took place on the international stage in the last decades. The generalization of new ICTs has produced the emergence of cyberspace, a new field of international relations. Cyberspace has extended the reach of global governance to a new digital space that has concrete implications for global actors such as states, TNCs and the

[75] Raustiala, Kal, Victor, David G. (2004) The regime complex for plant genetic resources, *International Organization,* June 2004, p.278.
[76] Vabulas, Felicity, Snidal, Duncan (2013) Organizations without delegation: informal intergovernmental organizations (IIGOs) and the spectrum of intergovernmental arrangements, *The Review of International Organizations*,
Vol.8, Issue 2, p.195.

global civil society. The following section examines the emergence of this field in international relations.

1.4 The impact of cyberspace on international relations

As stated previously, cyberspace encapsulates all recent ICTs innovations and their impact on society. It reflects indeed a broader reality than the generalization of new ICTs and suggests that diplomacy and global governance are more and more influenced by ICTs. In this new field of international relations, states, TNCs, criminal organizations, and the global civil society are active at various degrees. The following section examines the impact of new ICTs on diplomacy and international relations to illustrate how global actors have adapted to the generalization of these new technologies. Part two of this research pursues this analysis by focusing on the impact of new ICTs on global environmental governance.

The 9/11 attacks of the Twin Towers in New York City (USA) were organized through the Internet and mobile technologies by multiple criminal groups based in different countries. This event highlighted the destructive potential of the Internet and new ICTs, and triggered a response from states: some states allocated more resources to ensure more control on all new ICTs. Indeed, the financial and human resources states have dedicated to gain a central position and more power on cyberspace show how important this new field became.

States are indeed confronted to the high complexity of the information revolutions. Threats can come from anywhere, anytime and anyone: thanks to new ICTs, individuals and groups have found new ways to bypass state's control and to pursue their own interests. Therefore they are creating new units of decision other than the state itself. The generalization of new ICTs and the emergence of cyberspace led to new organizational principles in world politics.[77]

States are increasingly active on cyberspace not only through surveillance but also to block access to content because it is considered illegal or against the government: originally born free, the Internet is censored almost everywhere.[78] In some cases, Internet access is blocked completely to pacify political unrest. During the Green Revolution, the Iran's government was suspected of reducing the Internet speed. In San Francisco the authorities shut down the mobile phone network in a certain area to prevent people from organizing a protest. The USA is indeed one of the most active states in cyberspace. The recent divulgations of Edward Snowden led to confirm the predominant role of the USA in cyberspace, and how systematic and global its control over cyberspace became.

---

[77] Castells, Manuel (2012) *Networks of Outrage and Hope: Social Movements in the Internet Age*. Cambridge, UK: Polity, p.227.
[78] Leberknight, Christopher S. (2010) *A Taxonomy of Internet Censorship and Anti-Censorship*. Princeton, NJ: Princeton University Press, p.1. Retrieved 16 July 2013 from http://www.princeton.edu/~chiangm/anticensorship.pdf

Cyber espionage from individuals or organizations based in Chinese, Burmese, or Iran's jurisdictions became well known in the press in the recent years to obtain information from lobbies, major US companies, or national security information. The Ghostnet research is a sound example of vast spy systems targeting public services. In 2009, Canadian scientists investigated who infiltrated the computers of the Tibetan government in exile:

> Their sleuthing opened a window into a broader operation that, in less than two years, has infiltrated at least 1,295 computers in 103 countries, including many belonging to embassies, foreign ministries and other government offices, as well as the Dalai Lama's Tibetan exile centers in India, Brussels, London and New York. [79]

States pursue diplomatic and military actions on cyberspace that have an impact in real world. For instance, the cyber attack on the Iranian nuclear power plan with the Stuxnet's worm demonstrates this use of cyberspace: "there are political, economic and military ways in which the Internet can be exploited –and malware can be used– to gain advantage by foreign states". [80]

---

[79]Markoff, John (2009) Vast Spy System Loots Computers in 103 Countries, *The New York Times*. Retrieved 16 July 2013 from http://www.nytimes.com/2009/03/29/technology/29spy.html?pagewanted= all&_r=0

[80] Halliday, Josh (2009) Stuxnet worm is aimed to sabotage Iran's nuclear ambition, new research shows, *The Guardian*. Retrieved July 15 2013 from http://www.theguardian.com/technology/2010/nov/16/stuxnet-worm-iran-nuclear

These examples demonstrate that there could be an arms race in cyberspace. Indeed, in this domain "offenses is dominant, barriers to enter are low, deterrence is difficult to normalize because attribution is so tricky, enormous pressure to react quickly."[81] This situation that makes states feel insecure in relation to others is described as the security dilemma:

> The security dilemma occurs when two or more states each feel insecure in relation to other states. None of the states involved want relations to deteriorate, let alone for war to be declared, but as each state acts militarily or diplomatically to make itself more secure, the other states interpret its actions as threatening. An ironic cycle of unintended provocations emerges, resulting in an escalation of the conflicts which may eventually lead to open warfare.[82]

These threats have led to the growth of a vast cyber security market where new companies develop security solutions for states. Companies provide solution to states, but states also require these companies to deliver information on who's who, and access to their big data. States use these new technologies to protect their data but also to spy on other countries and organizations through mobile tracking and geolocalization, computer and emailing infiltrating, etc. These technological breakthroughs and threats imply some changes in law and policymaking: "An epistemic shift occurs around the

---

[81] Deibert, Ron (2012) *Big data meets big brother: The political economy of cyber security*. Video presentation at Watson Institute for International Studies, Brown University. Retrieved 20 July 2013 from http://watson.brown.edu/events/2012/ronald-deibert-big-data-meets-big-brother-political-economy-cyber-security

[82] Kanji, Omario (2003) *Security Beyond Intractability*. Boulder: University of Colorado Press, Retrieved on November 2013 from http://www.beyondintractability.org/essay/security

framework for rights and governance. What was inconceivable is increasingly considered routine. Lawmakers justify radical changes to basic rights checks and balances on state surveillance as part of a supposed necessity of the digital age."[83]

In addition, new ICTs developed by western companies are not only used by western states to protect their data, censor illegal content, and spy on others, but also by non-democratic regimes who use these technologies to control information within their own borders, identify and isolate opponents, reduce access to specific information, and to spy on their own population. Iran, Syria and others are using ICTs against parts of their populations. When Internet's use became more and more common all around the world, most observers thought it meant the end of non-democratic regimes, which could not isolate their population anymore and constraint access to non-censored information. However non-democratic regimes developed a real expertise to use cyberspace for their own interest and stay in power.

Cyberspace offers also new possibilities for soft power and public diplomacy initiatives. Indeed, cyberspace is also the space where states can promote their values and own interests. According to Stuart Hall, cultures are always looking for hegemony or power. Nowadays, new ICTs are of primary importance, as culture requires means of communication to spread: who controls the means of communications can

---

[83] Ibid.

decide what culture will become prominent.[84] On the international stage, the countries with economic and political power control global means of communication, and therefore can spread their culture and value all around the world through their means of communications. This is known as soft power.[85]

In addition, ideas, and cultural products from the most influential countries travel the world and can win the hearts and minds of people everywhere. In developing countries, people watch series (Telenovela) from Brazil or from the USA. The values of democracy, personal freedom, upward mobility, and openness are promoted and communicated through new ICTs on cyberspace. It probably contributes to US power in many areas.[86] The USA keeps sharing the "American dream" imagery and their values now also through the TV series online and on their new terminals such as tablets or smart phone.

---

[84] Hall, Stuart (1996) The West and the Rest: Discourse and power, In Hall, Stuart, Held, David, Hubert, Don, Thompson, Kenneth (Eds.) *Modernity: An introduction to modern societies*. Malden, MA: Blackwell, p54.

[85] Soft power is a concept developed by Harvard Professor Joseph Nye. It describes "the ability to attract and co-opt rather than coerce, use force or give money as a means of persuasion." In other words, soft power is about your ability to make others behave in a certain way, by using non-coercive actions such as culture, politics, values, and institutions. New information and communication technologies are a powerful means in this context since they facilitate the dissemination of such values.

[86] Hart, Jeffrey A. (2012) Information and communications technologies and power, In Costigan, Sean S., Perry, Jake (eds.) *Cyberspaces and global affairs.* Surrey, UK*:* Ashgate, p.207.

In addition, the mere fact that a technology was designed in a country already reflects some of its culture. Most Internet organizations such as the ICANN, Intel, Apple, Facebook, Twitter and Google have their Headquarters in the USA, where the Internet was born. When a new means of communication is designed, it contains not only technical feature, but also represents the culture where it was made. A communication tool designed in the USA or in China will have other technical functionalities, but will also intrinsically express other values and another culture. Therefore the western culture, supremacy and historical perspective still dominate not only the medium but also the content of the Internet.

Furthermore states also require sometimes TNCs to pursue police functions on cyberspace such as blocking Internet access to some users. It is known as intermediary liability. These companies are required to collect, record and store user data. States also require these TNCs to share that data with law enforcement and intelligence agencies.[87] Some companies are required to actively neutralize offending networks and traffic regardless of their geographic origin.[88]

These actions contradict clearly the concept of Internet neutrality coined by Professor Tim Wu in 2003, which implied that all data on the Internet is treated similarly, no matter what content is produced, no matter who the user is,

---

[87] Deibert, Ron, Crete-Nishihata, Masashi (2012) Global governance and the spread of cyberspace controls, *Global Governance* Vol.18, p.344.
[88] Ibid.

and no matter how data is exchanged.[89] The concept of Internet neutrality was a founding principle of the Internet and has been threatened by multiple actors, starting with TNCs that use their infrastructure to block some Internet application, reduce the speed of internet for some type of content, or block their competitors.

Based on the principle of neutrality, early developments of the Internet meant that no entity could control the information. It secured the right of users to access content, services and applications without any type of interference.[90] The Internet offered a new space with freedom of speech and expression for the civil society. However, this Internet does not exist anymore. Compared with East Germany a quarter-century ago, the ability to capture personal data has only gotten easier, cheaper, and more powerful. [91]

TNCs and the global civil society are also prominently active on cyberspace (although at various degrees since TNCs have often more financial and human resources to use and develop new ICTs). While previously it was the public administrations that collected data on their population (for security, territorial administration, or health care purposes), TNCs have now also access to vast amounts of data, and use it to maximize their profits. Indeed, since the generalization of cyberspace, multinationals have the technical tools to record and analyze

---

[89] Wu,Tim (2003) Network Neutrality, Broadband Discrimination, *Journal of Telecommunications and High Technology Law,* Vol. 2, p. 141.
[90] Deibert, Ron, Crete-Nishihata, Masashi (2012) Op Cit, p.342.
[91] Mayer-Schoenberger, Viktor (2013) Op Cit, p.156.

personal information of their clients on a global scale through their credit card records, cell phone data, Internet browsing, or supermarket loyalty programs. Amazon monitors personal shopping preferences, Google browsing habits, and Twitter knows what people thing by analyzing their tweets. Mobile operators know who people talk to, but also where they are and who is nearby.[92]

These vast amounts of data collected are becoming increasingly valuable on the international stage. They represent a valuable resource and powerful tool for global actors to act on the international stage. Therefore they must be taken into consideration at the time of analyzing the impact of new ICTs on global governance. Indeed, global actors with access to more data gain a comparative advantage, which can change the balance of power on the international stage.

Often referred to as big data, these unprecedented amounts of data are now collected at the global level. These datasets have a size, which is beyond the ability of typical database software to collect, save, analyze, and use[93]. Big data comprises as well all data that is produced when using new ICTs for texting, searching, emailing, or communicating.[94] Big data technologies also collect information from the data trail, which comprises of the secondary data produced when using

---

[92] Ibid, p.151.

[93] Manyika, James, Chui, Michael, Brown, Brad, Bughin, Jacques (2011) *Big data: The next frontier for innovation, competition, and productivity*. New York, NY: McKinsey Press, p.1.

[94] Deibert, Ron (2012) *Big data meets big brother: The political economy of cyber security*. Op Cit.

an ICT: when browsing on the web for instance, Google records and analyzes who searches for what. It is not data produced directly and intentionally by users, rather a secondary effect (often unknown) that stems from their action. This data is then sold to other private companies for marketing or advertising purposes.

This data about data, also called exhaust data[95] can come from multiple technologies: intended receiver of a call, the geolocalization of a text message sent, the date and time of a Google search, the most sold book online, the most searched word in a specific geographical area. This information is an embodiment of users who do not control it.

Big data is possible thanks to the datafication of everything: elements of everyday life record everything. For instance, new floors can now record everything that is happening on them like a giant smartphone. More and more individuals use their smartphone to measure their sleep patterns, heart rate, body temperature, or blood oxygenation. A private company somewhere collects all this data somehow.

What makes big data and recent datafication processes different from before is the scale of data produced, collected, and analyzed.[96] Every minute, a vast amount of information is produced and distributed: 168 million emails, 694,445 Google searches, 695,000 new Facebook status, 370,000 Skype calls,

---

[95] Manyika, James (2011) Op Cit, p.1.
[96] Ibid, p.3.

98,000 tweets, 20,000 new posts on Tumblr, 13,000 iPhone apps downloaded, 6,600 new pictures on Flickr, 1,500 new blog entries posted, 600+ videos posted totaling over 25 hours duration on YouTube.[97] Most of this information is collected, analyzed and used by various global actors. Although datafication is not a new process, the scale of the data produced and collected is never seen.

Another element that differentiates recent ICTs with past datafication is the added value of data collected. Thanks to new ICTs, data gained a new value: even what was previously considered as irrelevant is now stored for future potential use. As digitalized data can be used and re-used endlessly, endless possibilities of use are opening. For instance, Amazon.com is reusing the stored data about the purchases of their customers to create buying patterns, and provide other customers with an additional incentive to buy: "other people bought this book" type of recommendation.

Big data and the Internet of everything have the potential to change the world: Indeed, if computers knew everything there was to know about people, their habits, behavior, and the things they use every day, it would be possible to track and count everything, reduce waste, loss and cost of many aspects of life. It would indicate with an item needs replacing, repairing or recalling. It would ring an alarm when a person is about to fall sick and indicate what medicine to take. The

---

[97] Hudson, Alex (2012) *The age of information overload*. London, UK: British Broadcasting Corporation. Retrieved 5 April 2014 from http://news.bbc.co.uk/2/hi/programmes/click_online/9742180.stm

Internet of everything, also called the Internet of Things, is probably about to trigger another information revolution.[98]

Data collected and potentially analyzed provide a substantial new power. However, compilation of personal information implies a great responsibly in terms of protection of privacy right, and implies a threat in terms of control and use of personal information. For instance utility companies in Europe or USA are implementing improved electrical meters that enables to collect consumption data up to every six seconds and to determine how electricity is used, whether is it is to boil water, to recharge a mobile phone, or to grow marijuana plants. [99] In other words, collecting data on electrical consumption enables an entity to deduce vast amounts of intimate information concerning one household and its habits. The question of privacy is becoming crucial with the development of identifiers in objects we use every day such as phones, credit cards, public and private transportation, fridge, and so on.

The global civil society and famous whistle blowers regularly denounce abuses of personal data collection by TNCs and states. Indeed, individuals who agree on the collection of data often do not know what it implies and how this data is collected and to what secondary purpose. Indeed, most innovative secondary uses were not yet imagined at the time

---

[98] Ashton, Kevin (2009) That 'Internet of Things' Thing, *RFID Journal.* Retrieved on August 20 2013 from http://www.rfidjournal.com/articles/pdf?4986
[99] Mayer-Schoenberger, Viktor (2013) Op Cit, p.153.

data was collected. Therefore it is not possible for TNCs to provide notice for a purpose that has yet to exist.[100] Hence, notice of consent for each use and collection of data becomes increasingly irrelevant. However, it is still the best-known way to protect privacy.

On the Internet, whether on a browser such as Google, or on social media such as Facebook, it remains quite complicated to delete personal information. Although some progress was made (Google offers an online form to delete personal information), most activities or content on Internet are difficult to erase forever. Given the way the Internet is built, information can be spread throughout the world in seconds, on multiple websites, and social media platforms. Once "out there", information is difficult to retrieve. For the same reason, any trace to opt out becomes visible: Google Street View in Germany offered the possibility to people to block the view of their house or building after much resistance.

Attempts to make the data collected anonymous were not very successful so far. For instance, AOL and Netflix released vast amounts of data from their own customer databases to offer researchers the possibility to analyze it and improve the company's offer. The information was anonymized, in the sense that they erased references to the names or addresses of their customer. Nevertheless and in both cases, the identity of customers could be retrieved, and journalists from the New York Times identified successfully one person to prove that

---

[100] Ibid.

privacy could never be really ensured. Professor Paul Ohm states that given enough data, perfect anonymization is impossible.

As shown in this section, the impact of new ICTs on international relations is substantial. The future evolution of this new field of international relations depends on many factors and authorities. As cyberspace becomes increasingly important in diplomacy and international relations, it is crucial to examine how global actors will govern this global public good in the future. It will probably have an impact on other parts of international relations, and will provide valuable ideas at the time of analyzing the impact of new ICTs on the evolution of global environmental governance.

As defined by Choucri, the following four models of governance are based on future potential evolutions of cyberspace and can be "(…) understood as theoretical constructions designed to express the normative qualities of a democratic system as well as its constitutive institutions." [101]

Garrison cyber system

The first predictive model of cyberspace governance happens in a context of high violence and high sovereignty of state: "We call this model the *garrison cyber system*, in respectful memory of Harold Lasswell, who first coined the term "garrison state" and outlined its critical features more than

---

[101] Kuyper, Jonathan W. (2013) Global democratization and international regime complexity, *European Journal of International Relations,* Vol.0, Issue 0 , p.5.

sixty years ago." [102] A garrison state describes the emergence of a political-military ruling elite composed in a state where military matters dominate both the economic and political life.

This governance model outlines the securization of cyberspace and the growing influence of cyber security experts in governments, as well as the expanding state control and censorship on cyberspace. This model describes how countries such as Saudi Arabia, Myanmar, North Korea, and China govern cyberspace: "We have witnessed the garrison cyber system in action when the government of Egypt ordered total denial of cyber access and demanded that the ISPs comply forthwith. For a brief period, the country was totally cut off from the Internet."[103]

This model of cyberspace governance is at the opposite of what the Internet was originally designed for: indeed, its founding fathers in various US universities wished for a space free of state interference, where individuals could freely express their ideas, read anything they looked for, and communicate without control to whoever would be connected. This model puts security as the first governance priority, and the state as the leader. Private entities and other non-state actors must comply with states rules and can only act within the rules and freedom designed by the state. Cyberspace

---

[102] Deibert, Ron (2012) The Growing Dark Side of Cyberspace (. . . and What To Do About It), The Penn State Journal of Law and International Affairs, V.1, Issue 2, p.234. Retrieved on January 2013 from http://elibrary.law.psu.edu/jlia/vol1/iss2/3
[103] Ibid, p.235.

becomes an extension of the physical territory, where state rules and its laws apply to whoever is in this space.

Cyber anarchy

In the second model, there is no sovereign control over cyberspace. In other words, the context described in this model is one of high violence and conflicts without any form of overarching authority. This is a possible evolution of today's reality of the cyberspace: lots of actors, high violence, and no central authority to impose any type of control and regulation. This is model is called cyber anarchy: "In many ways, this future approximates the proverbial Hobbesian state of nature, the war of all against all." [104] Although it might seem at first sight quite extreme, cyberspace could become such an anarchy arena.

The first model favored state's action to make sure anarchy would not happen by taking control of cyberspace and evicting private actors from its management and decision making processes. This second model could be compared to some type of extreme free market, where states are not present and private entities regulate themselves…or not. Obviously no state favors this model of governance.

Cyber commons

This third model is another evolution – a more positive one - of today's cyberspace governance. Indeed, it outlines the cooperation and coordination among all actors taking part in

---

[104] Choucri, Nazli, Op Cit, p.234.

the Internet and cyberspace in general: states, but also most importantly non-state actors such as private corporation, global and local civil societies, NGOs, networks of citizens, etc. This model is called global cyber commons where access to cyberspace is recognized as a human right with very limited barriers to access. It assumes that the state system and international agencies, private and public, continue to expand the facilities for cyber access across the world.

This model is driven by global and local civil society. It focuses on the cooperative and multi-stakeholders' aspect of cyberspace governance. It also assumes a certain type of self-governing capacities among members of the civil society, as state is not present, and there is no central overarching authority to impose common rules and sanctions. The main objective of this model's governance mechanism is to prevent the tragedy of the commons to happen, which the second model describes very well as cyber anarchy: "In this model of cyberpolitics, everyone has a stake in the governance and in preserving its underlying norms." [105]

Cyber grand bargain

Finally, the fourth model is called cyber grand bargain to describe a future cyberspace governance with high state sovereignty but also high international cooperation, bargain and negotiation: "This future is an extension (…) of the original vision of the Internet, as well as the current cyber system and its management. The United States, the European

---

[105] Ibid, p.236.

Union, and other political democracies may potentially be supportive of such a future and help realize it." [106] This future model of governance functions well with a quite secure cyberspace. High violence and conflicts potential of cybercrime are not taken into account in this model.

This model outlines the importance of multi-stakeholders governance of cyberspace. But contrary to the first model, states ensure global cooperation rather than control over cyberspace: "The guiding principle is equity and efficiency in interaction and communication." [107] It suggests that the actual governance mechanisms can be improved and lead to a governance system based on consensus building among states but also other constituents of the current cyberspace governance and management: "The bargain also includes greater coordination among the various international and other agencies concerned with deploying cyber tools (…). As such, it supports the convergence of cyberspace and sustainability and reinforces the synergy." [108]

These four models show concretely how global governance and cyberspace are intrinsically intertwined and influence one another. As long as security issues do not become prominent, the multi-stakeholders approach and global coordination and negotiation among state and non-state actors is possible, and probably recommended. However, if the current situation degrades dramatically and cyberspace also becomes synonym

---

[106] Ibid, p.235.
[107] Ibid, p.236.
[108] Ibid, p.236.

of threat and crime, states will increase their control and make the Internet an extension of their territories.

As discussed in this first chapter, new ICTs have had a substantial impact on international relations. The emergence of new private authorities, along with new global threats, have led global actors to develop extra capacities to respond to this new global reality. Part of these new private authorities active on the international stage, the global civil society is a conglomerate of actors that became increasingly vocal and visible since the 1970s. The following chapter will discuss its emergence and the impact of new ICTs on its development and political participation.

Chapter 2. Global civil society and new ICTs in global governance

The global civil society is a concept largely discussed among international relations scholars. It encompasses the organized social life or civil activity of individual and collective actors in pursuit of various global to local political and nonpolitical goals. The global civil society inhabits the space between the private sector economy and the state. It includes a wide variety of actors with sometimes conflicting objectives: formal representative organizations such as parties, churches, lobbies or trade unions cohabit with informal functional organizations such as charities, universities, think tanks, mass media; and with more informal social and political entities and their networks such as social forums, ad hoc activist coalitions, diasporas networks causes or internationally coordinated social movements.[1]

Two important elements differentiate the global civil society conglomerate of actors from other ones: its voluntary nature (non-profit organizations as opposed to TNCs) and civility (as opposed to terrorist groups who resort to violence for accomplishing their goals).[2] In addition, the "global" element of this concept refers to various types of entities: truly global associations such as the World Wildlife Fund (WWF) with

---

[1] Kaldor, Mary, Anheier, Helmut, Glasius, Marlies (2003) *Global civil society 2003*. Oxford, UK: Oxford University Press, p.159.
[2] Ibid, p.35.

audiences all over the world;[3] organizations with activities or audiences in various countries but who are not really global;[4] and also local entities targeting global institutions in response to global issues.[5]

The emergence of global civil society is linked to the globalization process and the generalization of new ICTs, which reduced drastically the distance between people.[6] The advances in communication technologies, in particular Internet and mobile, have helped these movements and associations to grow rapidly beyond the boundaries of states.[7] States let globalization happen as well as the development of a global civil society. For Rosenau world politics evolved and became split into two: inter-states relations on one side, and various non-governmental actors who are independent of the state centric world and who often interact with counterparts in the state centric world.[8]

This chapter focuses on this group of global and local actors, namely the global civil society, and its use of new ICTs.

---

[3] Clark, Ann M., Friedman, Elisabeth J., Hochstetler, Kathryn (1998) The sovereign limits of global civil society: a comparison of NGO participation in UN world conferences on the environment, human rights, and women, *World Politics*, Vol.6, Issue 1, p.15.

[4] Florini, Ann (2000) *The third force: the rise of transnational civil society*. Washington, DC: The Carnegie Endowment for International Peace, p.7.

[5] Gaventa, John (2001) *Global Citizen Action*. London, UK: Earthscan Publications, p.276.

[6] Kaldor, Mary, Anheier, Helmut, Glasius, Marlies (2003) Op Cit, p.37.

[7] Powell, Frederick W. (2007) *The Politics of Civil Society: Neoliberalism Or Social Left?*. London, UK: Policy Press, p.117.

[8] Rosenau, James N. (2003) *Distant Proximities: Dynamics beyond Globalization*. Princeton, NJ: Princeton University Press, p.257.

Indeed, the second part of this research and in particular chapter four focuses on the participation the global civil society in a global environmental governance mechanism thanks to their use of new ICTs.

The increasing use of new ICTs and in particular social media in civic interactions is probably the most debated civil society phenomenon in the recent years.[9] This chapter first discusses the concept of civil society and then the global civil society. It further analyzes the impact of new ICTs on civil society, and then examines most recent forms of global civil society movements that emerged thanks to the use of new ICTs.

2.1 From civil society to the emergence of the non-profit sector

As discussed in chapter one, global governance has undergone substantial transformations over the past generations thanks to the emergence of new private authorities and the increasing influence of new ICTs and cyberspace on international relations. [10] According to the Center for Civil Society Studies, the non-profit sector was worth USD 1 trillion plus (excluding religious organizations) in 1999 with over 30,000 NGOs

---

[9]Edwards, Michael (2014) Op Cit, p.viii.
[10] Ruggie, John G. (2004) Reconstituting the global public domain – Issues, actors, and practices, *European Journal of International Relations,* Vol.10, Issue 4, p.507.

operating international programs and 1000 had membership from three or more countries. [11]

As Kaldor states, civil society is "the medium through which one or many social contracts between individuals, both women and men, and the political and economic centers of power are negotiated and reproduced." [12] It is also the product of nation-state and capitalism, in the sense that it arose spontaneously to mediate conflicts between the market economy and social life. It is also a universal collective expression of individuals: it can be found in all countries and stages of development, although with various cultural expressions. [13]

Among scholars and philosophers who studied this concept of civil society, Aristotle, Hobbes, Ferguson, de Tocqueville, and Gramsci. To understand contemporary definitions of civil society, it is essential to come back to its origins and the history of political thoughts. Indeed, civil society is a process, not an end point. [14] Civil society has been a point of reference for philosophers since antiquity. The concept of civil society was debated along with questions around a good society, rights and duties of citizens, the practice of politics and collective life. [15]

---

[11] Ruggie, John G. (2004) Op Cit, p.510.
[12] Kaldor, Mary (2004) *Global Civil Society: An answer to war*. Cambridge, UK: Polity Press, p.46.
[13] Edwards, Michael (2014) Op Cit, p.3.
[14] Kaldor, Mary (2004) Op Cit, p.20.
[15] Edwards, Michael (2014) Op Cit , p.4.

Originally, civil society was defined in contrast to the state of nature. It then was defined in contrast to the state. In classical thought, civil society referred to a type of political association that governed social conflict. Civil society and government were therefore undistinguishable. For Aristotle for instance, the polis was an association that enabled citizens to rule and being ruled. The state corresponded to the civil form of society and civility embedded the requirements of good citizenship. [16]

The concept of civil society was often linked to the idea of minimalizing violence in social relations in the sense that it enabled the use of reason to manage human affairs instead of submission based on fear, insecurity, ideology or superstition.[17] The concept of Societas Civilis implies the rule of law and political community where violence has been minimalized in the organization of social relations (civility). It is a peaceful order with implicit and explicit consent of individuals. [18] Its goal is public security.

This shift comes from the emergence of the nation-state in the late 18th early 19th century: it involved a more extensive and centralized state power, a new individual status from subject to citizen, and a growth in democratic control. [19] The emergence of the concept of civil society as understood today

---

[16] Ibid.
[17] Kaldor, Mary (2004) Op Cit, p.3.
[18] Ibid, p.7.
[19] Ibid, p.17.

was linked to the centralization of political power in a given territory and the formation of states. [20]

In this understanding, civil society was clearly distinguished from the state: it described a self-regulated group of associations that needed to be protected from the state in order to preserve its role of opposing despotism. James Madison and Alexis de Tocqueville represent this understanding.[21] The value of civil society was in their role to protect pluralism, nurture constructive social norms, and a defense against the domination of any particular group. In that sense, civil society was the foundation of a stable democratic polity.[22]

For Karl Marx, civil society was another means for the dominant class to further its interests under capitalism. It also described the ethical life between state and family and is about the rise of market society as a condition for individual freedom.[23] Gramsci reached different conclusions although reasoning in Marxist categories: social society is an arena of contestation. This idea was then taken over by philosophers in the USA such as Hannah Arendt and John Dewey, who developed the idea of a public sphere: a shared social and political experience that underpins public deliberation on main questions of public interest.[24]

---

[20] Ibid, p.31.
[21] Edwards, Michael (2014) Op Cit, p.5.
[22] Ibid.
[23] Kaldor, Mary (2004) Op Cit, p.10.
[24] Edwards, Michael (2014) Op Cit , p.7.

In the 20th century, the concept of civil society has been narrowed to social interactions that are distinct from state and market.[25] Indeed, after the fall of the Berlin wall, civil society became increasingly popular in the sense that it became a rallying cry for dissidents in authoritative states and the vehicle for building a society characterized by liberal democratic norms.[26]

Today civil society refers to NGOs, associations, social movements, and the non-profit sector.[27] Often referred as the "third sector" or the "non-profit" sector, civil society contains all types of associations and movements between family and state, where membership and activities are voluntary. This definition includes NGOs, labor unions, political parties and churches, professional and business associations, community and self-help groups, and independent media. It is the "space for uncoerced human association" according to Michael Walzer's famous definition.[28]

The number of NGOs in the world has risen substantially in the 1990s. India had 3.3 million NGOs in 2009, Brazil 220,000 and Egypt over 24,000 in 2007. In Ghana, Zimbabwe and Kenya, the non-profit sector provides at least 40 percent of all healthcare and education services delivered.[29] At the international level, the non-profit sector has emerged since

---

[25] Kaldor, Mary (2004) Op Cit , p.14.
[26] Edwards, Michael (2014) Op Cit , p.9.
[27] Kaldor, Mary (2004) Op Cit , p.20.
[28] Edwards, Michael (2014) Op Cit , p.18.
[29] Ibid, p.19.

early 1990s and constitutes the global civil society: over 56,000 international NGOs and 25,000 transnational NGO networks are active in the world today.[30]

Civil society is now perceived as a crucial counterweight to state and corporate power, as it promotes and sometimes enforces transparency, accountability and good governance.[31] The activist civil society means active citizenship where individual citizen self-organize outside political circles and where they can influence the conditions they live in.[32] In that sense, civil society is the arena of contestation, debate, dialogue and pluralism. It is both a source of civility and incivility.[33] It became a political empowerment.

The growing interconnectedness due to the generalization of new ICTs and the globalization enabled the emergence of islands of civic engagement in countries suffering from military dictatorship. Civil society groups bypassed their national states to appeal to international networks and institutions. The relationship between local civil society groups and transnational networks and institutions participated in the construction of a framework for global governance.[34] The civil society became global.

---

[30] Ibid, p.20.
[31] Ibid, p.12.
[32] Kaldor, Mary (2004) Op Cit , p.8.
[33] Ibid, p.9.
[34] Ibid, p.5.

The role of NGOs in supporting progress toward multi-party elections in authoritarian countries is well documented. Since the early 1990s, civil society organizations increasingly became global and challenged global policies of international institutions and led to the development of new accountability norms. They also offer (or state to) more legitimacy to global governance mechanisms by representing and being the voice of non-state and non-corporate actors. Many global institutions tend to associate with NGOs and the civil society at large to gain extra legitimacy and higher levels of public trust.[35]

For many scholars, the global civil society has not only the power to change the society, but also to influence the international relations system in many ways. First, it participates in international decision-making processes –most of the time as an observer. Here, it claims to represent the interests of some people and to influence world leaders. The global civil society aims to be the voice of groups and individuals during international negotiations on global issues, especially for marginalized people or minorities.[36] In this sense, it can provide more legitimacy to the international relations decisions making mechanisms by involving more stakeholders, being more open and making the mechanisms more transparent for the general public.

---

[35] Edwards, Michael (2014) Op Cit , p.13.
[36] Kaldor, Mary, Anheier, Helmut and Glasius, Marlies (2003) Op Cit, p.148.

However, the question of their legitimacy should be raised: who and how do they represent? While these entities often argue that they speak and act on behalf of humanity for global issues, they remain unelected actors playing on the international stage, whether as service providers (implementing development programs in the field, providing technical knowledge or information), information providers (denouncing human rights violations or environmental damage), or lobbies for a particular public good (child rights protection, prohibition of the trade in endangered species).

Nevertheless, the global civil society represents a great variety of interests from civilians, and in this case its participation in international institutions is extremely valuable and allows balancing state's interests and agendas.

Many studies confirm the influence of civil society organizations on global politics, especially when it comes down to agenda setting and monitoring results of a policy implementation.[37] This is particularly true for their participation in the conferences of the United Nations.[38] Another way in which the global civil society has an impact on states' decisions is with the production of specialized information about global issues such as the environment, refugees, etc.[39]

---

[37] Florini, Ann (2000) Op Cit, p.211.
[38] Clark, Ann M. (1998), Op Cit, p.27.
[39] Nowrot, Karsten (1999) Legal Consequences of Globalization: The Status of Non-Governmental Organizations Under International Law, *Indiana Journal of Global Legal Studies*, Vol.6, p.320.

In addition to scientific expertise, grassroots organizations have gained a lot of field experience they share with states and inter-governmental organizations. Part of this experience was accumulated "working with local and international actors in analyzing understanding and responding to violent conflicts in constructive and creative ways"[40]. Some studies show successful examples of the influence of global civil society on developing states, especially in terms of monitoring human rights violations of states; or generating international pressure.[41] States and IOs became more conscious of the social and environmental aspects of their policies, programs and decisions due to the work of civil society.[42]

A successful example of the existence, action and influence of the global civil society is the "Save the Narmada Movement" in India. A dam project, co-funded by the World Bank in 1989, was aiming to build thirty large, 135 medium and 3000 small dams in Narmada Valley in Madhaya Pradesh and Maharashtra, flooding an estimated 120,000,000 hectares of land and displacing more than 300,000 people. In response to that threat, a group of indigenous people formed the Narmada Bachao Andolan (Save the Narmada Movement), which established links with many other Indian groups and international organizations.

---

[40] Ohanyan, Anna (2008) *NGOs, IGOs, and the Network Mechanisms of Post-Conflict Global Governance in microfinance*. New York, NY: Palgrave Macmillan, p.6.

[41] Keck, Margaret E., Sikkink, Kathryn (1998) *Activists Beyond Borders: Advocacy Networks in International Politics*. Ithaca, NY: Cornell University Press p.80.

[42] Rugendyke, Barbara (2007) *NGOs as Advocates for Development in a Globalising World*. London, UK: Routledge, p.124.

Sixty thousand indigenous landless laborers and peasants gathered to protest against the construction of these dams. Local protests were coordinated with political pressure by international non-governmental organizations such as the environmental defense fund in Washington, Survival International in London, and Friends of the Earth in Tokyo. According to the World Bank official in charge of the project, the international networking was pivotal to the World Bank's cancellation of the project.[43]

In addition, in many regions of the world where the state is inefficient, NGOs are leading programs providing basic services to populations such as food, health, or education.[44] They seem to be more flexible than government bureaucracies and therefore sometimes more efficient in delivering these services.[45]

Although often confined to the role of observers, the non-profit sector is given more and more attention, in particular since Agenda 21 urged states to take "any legislative measures necessary to enable the establishment by non-governmental organizations to protect the public interest

---

[43] Jamison, Andrew (2001) *The Making of Green Knowledge: Environmental Politics and Cultural Transformation*. Cambridge, UK: Cambridge University Press, p.111.
[44] Kaldor, Mary, Anheier, Helmut and Glasius, Marlies (2003) Op Cit, p.148.
[45] Kaldor, Mary, Moore, Henrietta, Selchow, Sabine (2012) Op Cit, p.211.

through legal action[46]". As Glasius states, "global civil society is diverse, creative and chaotic. That's what makes it always interesting, often unpredictable, and sometimes very powerful." [47] It is indeed playing a key role in the international agenda setting: by raising awareness about a specific issue among the general public, they try to influence governments' actions and decisions as examined in the following section.

2.2 The political role of global civil society

Increasingly, problems debated and discussed in the public sphere are transnational by nature: climate change, humanitarian intervention for instance. The participation of civil society has evolved with the emergence of these new challenges as described more in details in chapter three.

The political role of the global civil society has evolved over time as describes Kaldor[48]: (1) old social movements pre 1970s, (2) social movement 1970s and 1980s, (3) NGOs, think-tanks, late 1980s and 1990s (4) transnational civic networks late 1980s and 1990s, (5) new nationalist and fundamentalist movements 1990s, (6) new anti-capitalist movement late 1990s and 2000s.

---

[46] United Nations Environment Programme (1992) *Agenda 21*. New York, NY: United Nations. Retrieved 20 January 2013 from http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=5 2&ArticleID=75&l=en
[47] Edwards, Michael (2014) Op Cit , p.107.
[48] Ibid, p.81.

Early social movements (before 1970s) dealt with issues such as redistribution of wealth, employment and welfare, self-determination and anti-colonialism. They took place in a world mostly dominated with one type of international actor: states. Cold war and the end of colonialism post World War 2 triggered many old social movements.

They were composed of workers and intellectuals with a strict vertical hierarchy. Their main forms of action were street demonstration, strike and lobbying. Theirs funds were stemming from their members, and their objective was to capture state power in relation to the issue they fought for.

New social movements from 1970s and 1980s dealt with questions of human rights, peace, women, environment, and third world solidarity. They come from 1968 student revolutions with new cosmopolitan values of peace and world collaboration. These movements incarnate a new vision of the world and a first mass consideration of global issues that need to be taken care of at the global level.

They were composed of students, new information class, and caring professions with a loose and horizontal hierarchy. Their favorite form of action was either direct action such as demonstration, mass events like concerts, and the use of media. Funding came from members and supporters, but also cultural events. Their relation to power was not to capture

state power, but rather change the society and the world according to cosmopolitan values.

> The growth and expansion of global civil society as a phenomenon in the 1990s seemed closely associated with a major shift in cultural and social values that took hold in most developed market economies in the 1970s. This shift saw a change in emphasis from material security to concerns about democracy, participation and meaning (…).[49]

In the late 1980s and 1990s, NGOs, think-tanks, and scientific and professional commissions represented the actors of the global civil society. As stated previously, 1990s is the decade that saw an unprecedented increase in the number of NGOs in the world that slowed down afterwards thanks to " (…) political opportunities in a broadened political space, institutional weakness of the state and transnational regimes, and easier and less costly communication."[50]

From the period of time onwards, civil society became more and more professionalized and included professionals and experts who worked on human rights, development and poverty reduction, humanitarianism, and conflicts resolution. Their organizational mode ranged from bureaucratic and corporate to small-scale and informal depending on the size of the organization. Their action was also professional through service provision, advocacy, expert knowledge, and use of media. Funding came from governments, international institutions, and private foundations. Their relation to power

---

[49] Kaldor, Mary (2012) Op Cit, p.22.
[50] Ibid, p.19.

was not to capture state power but rather to influence civil society, states and international institutions.

The 1990s also saw an increase in new nationalist and fundamentalist movements. These movements were composed of workers, small entrepreneurs, farmers, and informal sector. They often benefited from a charismatic leadership with vertical and horizontal leadership. Funding came from diaspora, and criminal activities. Their objective was to capture state power and to achieve this objective they made great use of media, mass rallies, and violence.

The late 1990s and 2000s saw the emergence of new alterglobalist movements as discussed previously. They aim at defending victims of globalization, and abolition or reform of global institutions. They are composed of students, workers, and peasants. They include networks of NGOs, social movements, and grass roots groups such as the World Social Forum.

They organize street protests, parallel events, use of media, and mobilize through the use of new ICTs as shown further with the Arab Spring or the WSF. Funding came from individual supporters, churches, and private foundations. They confront with states, international institutions, and transnational corporations to achieve their objectives.

New ICTs and the global civil society developed exponentially and in parallel. They are an expression of the

values that first emerged in the 1970s such as nature conservation, human rights, peace, religious and sexual orientation tolerance, or democracy. Some of these values are similar to Internet values such as transparency and cooperation, which explains why the Internet and INGOs developed at a similar time. These values first irrupted as protests against the war in Vietnam and grew from the 1970s onwards.

The Internet and emails increasingly became valuable tools for the global civil society to organize and communicate through emails, online networks, website and social media. These tools are important for all actors of global civil society. Websites are as important for Diaspora groups as for INGOs.[51] All scholars talking about social movements agree on the importance of the different forms of communications. In earlier times indeed, the invention of the printing press participated in the emergence of modern forms of protests.[52]

However, and as stated previously, cyberspace is not a free and open space: its access depends on private companies, the neutrality principle is about to disappear, states scrutinize more and more users and content. Data exchange on new ICTs is stored, manipulated, and controlled by a small group of private transnational companies and some states. The privatization of communications reduces the possibilities of debate and negotiated consensus in the public sphere, and

---

[51] Kaldor, Mary (2004) Op Cit , p.105.
[52] Ibid, p.103.

therefore might increase conflicts between various parts of society and among civil society.[53]

Modern forms of protests are cosmopolitan, modular, and autonomous. They are cosmopolitan, for people become aware of a wider community and not only people they know. They are modular, for people can learn from others and understand their demands through new forms of communication. Finally they are autonomous since any individual can sign a petition or write a message on a blog, a forum or a Facebook page.[54]

Nevertheless, the growth of INGOs didn't lead to the emergence of a new international relations system where civil society is formally integrated in the decision-making processes as a recognized international actor. The generalization of new ICTs didn't lead to the creation of new online governance mechanisms at a global level. The international relations system remained state-centered. Civil society organizations are kept in a role of observer in the vast majority of global environmental agreements. This fact can probably explain part of the stagnating number of INGOs since early 2000s.

If the number of INGOs has not evolved much since early 2000, their distribution over the planet also remains the same as in the 1990s: INGOs are predominantly from developed

---

[53] Edwards, Michael (2014) Op Cit , p.75.
[54] Kaldor, Mary (2004) Op Cit , p.103.

countries. Therefore it could be argued that they promote western values and a westernized vision of nature conservation. Only one geographical area sees a growth and changes in terms of INGOs in the last ten years: Africa. This continent sees the biggest increase in the number of INGOs, although not proportional to their population growth.[55]

Although the international relations system remains state-centered, and the number of INGOs is stagnating everywhere except in Africa, Internet values of transparency and cooperation are expanding.[56] In parallel to the adoption of new ICTs throughout the world, a new trend has emerged with the latest generation of biodiversity agreements. For instance, the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES) focuses on communication and information sharing about biodiversity.[57] Similarly, networks of individuals (citizens, scientists, academics) are booming:

> Looking at NGOs first, the trend towards NGO form changes that we first observed in 2002 has continued. The number of NGOs that are not conventional membership organizations or corporate NGOs increased (…). This category includes a very broad spectrum: from foundations to information networks and from diaspora organizations to hybrids such as 'informal quasi-organizations'. [58]

---

[55] Kaldor, Mary, Moore, Henrietta, Selchow, Sabine (2012) Op Cit , p.19
[56] The values of Internet are not considered as western values, but rather global values.
[57] IPBES (2014) *About IPBES.* Bonn, Germany: United Nations. Retrieved 14 August 2014 from http://www.ipbes.net/about-ipbes.html
[58] Kaldor, Mary, Moore, Henrietta, Selchow, Sabine (2012) Op Cit, p.21.

These informal quasi-organization offer new models of governance while taking into account the reality of the international relations scene: state-centered system, observer status of conventional NGOs, high costs to take part in and influence formal global decision-making processes. These new forms of NGOs are solely possible thanks to the use of new ICTs. Among them, the World Social Forum (WSF) is standing out: it provides a valuable example of this new form of governance from the civil society that makes intensive use of new ICTs.

WSF's growth and governance is indeed a striking and tangible example of this new type of organizations, whose existence is only possible thanks to the use of ICTs: it offers a concrete example of how the global civil society can organize without formal institutionalization: internationalization without institutionalization.

As examined in chapter one, new ICTs have a substantial impact on new ICTs and on some global actors such as states and TNCs. The following section will examine their impact of on the civil society.

2.3 The impact of new ICTs on civil society

Recent information revolutions are based on the emergence of new information and communication technologies, which encapsulate the converging set of technologies in

microelectronics, computing telecommunications and optoelectronics.[59] Previous industrial revolutions were based on technologies that used cheap inputs of energy. According to Castells, new ICTs are based on cheap inputs of information. This shift led to the emergence of a new paradigm, on which a new society he names 'informational society' is born.[60] This new paradigm consists of various elements.

The first element is how technology acts on and transforms information. It is no longer solely new information that acts on technology such as with previous industrial revolutions. It is also how information is becoming a raw material that can be used and reused for multiple purposes and in multiple aspects of life. Indeed, for the first time in history, the human mind is a productive force, and not just the decisive element of the production process.[61] Information itself becomes a resource to produce knowledge and wealth. Second, ICTs are pervasive technologies. Indeed, information is an integral part of human life, where most processes of our individual and collective existence are influenced by new ICTs.[62]

Third, new ICTs favor networking in the shape of a dynamic net such as social media. They allow complex, global and extensive interactions among individuals, which increases

---

[59] Castells, Manuel (1996) Op Cit, p.30.
[60] Grinin, Leonid (2007) Periodization of History: A theoretic-mathematical analysis, In: *History & Mathematics*. Moscow, Russia: KomKniga, p.20.
[61] Castells, Manuel (1996) Op Cit, p.32.
[62] Ibid, p.30.

creativity potential and leads to unpredictable patterns of development. This also leads to flexible processes and organizations that can change shape and form rapidly. Finally, the last element is the convergence of all technologies and media: microelectronics, telecommunications, optoelectronics, and computers are all integrated[63] and become as detailed further a global cyberspace.

The information revolutions gave birth to the Net Generation: children, teenagers and young adults who were born since the generalization of new ICTs have integrated all aspects of the previously described new paradigm. And for the first time in history, these young generations know more about the dominant technology than their parents.[64] Indeed, they are used to looking up the information they need on the web: they are not just passively consuming, but active in customizing the knowledge they wish to receive through setting up their Twitter, news feeds, blogs, or Facebook profiles.

Born with the third screen[65] (the screen of mobile devices that came after television and computer's screens), the Net generation is used to seeing electronically altered images or living in a virtual reality as contained in online video games. Uniform products or services are not appropriate for these users anymore, since they are used to tailor-made, real-time solutions that respond directly to their needs and desires. For

---

[63] Ibid, p.33.
[64] Tapscott, Don (2008) *Wikinomics: How Mass Collaboration Changes Everything*, New York, NY: Portfolio, Penguin Group, p.45.
[65] Ibid, p.78.

example, they choose to stream a series online instead of waiting for a TV channel to showcase it; they can customize or design their own cloths and order items from all around the world; they can create communities of peers with the same interest and receive answers to their questions almost in real time.

This has led to a perceived need of being part of an online community to share feelings, values and ideas. Institutions have become aware of this need and used them to support their interest. Obama, for instance, created an online platform for his two presidential campaigns[66] where potential voters could discuss issues relevant to them and make their views available to the President. This openness and transparence was probably one of the factors that led to his popularity among younger voters.

Sometimes, the Net generation becomes more visible, like in some Arab countries: the Arab spring as it is often called shows a good example of how the use of new ICTs can support a change in society. New ICTs provides new possibilities for people to be politically active. The causes of the revolution are not new and stem from injustice, the lack of jobs, repression, violence, the non-respect of human rights, or economic disparity.

---

[66] Democratic National Platform (2012) *Moving America Forward*, Retrieved 5 August 2013 from http://www.democrats.org/democratic-national-platform

The tools used to fight this revolution are however no longer weapons, but the new ICTs, which allow the Net generation to raise awareness, denounce or call for help.

The Internet and mobile phones are almost like military tools used by the youth in some Arab countries to spread the word, decide on a meeting point, join forces on an issue, locate snipers and send their location to friendly militant forces, and finally to change the society they are in. These newly created networks give a real sense of participation to the population. The clash is evident with authoritarian regimes such as in Iran where there is the biggest example of young generation with access to secular information.

Since a few years, the first wave of the Net generation is entering the workforce, the marketplace. This generation is bigger than the baby boomers: 80 million compared to 78 million in the USA alone.[67] In other parts of the world such as Asia or Africa, they represent an even bigger part of society. This generation with ownership of online tools becomes a powerful force to change societies: "thus, the industrial society, by educating citizens and by gradually organizing the economy around knowledge and information, prepared the ground for the empowering of the human mind when new information technologies became available."[68]

---

[67] Don Tapscott (2008) Op Cit, p.58.
[68] Castells, Manuel, *The Rise of the Network Society, Vol. I.* Op Cit, p.31.

Similarly to the Renaissance thinkers who planted the seed for the European technological dominance that took place a few centuries later, education and the generalization of new ICTs in the 20th century contributed to the emergence of a new type of society as defined by Castells with new organizational principles in the 21st century though three patterns of interaction: transparency, collaboration, and participation.

First, the Internet and mobile phones allow users to set the agenda and discuss among each other worldwide and in real-time with little constraint or rules. Most discussions take place transparently in public and can be contributed to by every individual. The pattern of transparency is one of the new values for the Net generation and our digital age: transparency is indeed a powerful and overall positive force.[69]

However so far, companies, governments, and organizations have been organized around secret data. This is especially the case for governments and transnational corporations. Individuals have a hard time now to secure their information. The Internet has the capacity to make any information available as discussed in chapter one. However, it sometimes leads to privacy issues that must be dealt with legally. When transparency is an opportunity for organizations, privacy is an obligation for individuals.[70] Most recent research shows that privacy breaches are what concern most Internet users.[71]

---

[69] Don Tapscott (2008) Op Cit, p.63.
[70] Don Tapscott (2008) Op Cit, p.64.
[71] Mohr, Nikolaus (2013) *Mobile Web Watch 2012*. New York, NY: Accenture Publishing, p.16. Retrieved May 2013 from

The second pattern of interaction is collaboration.[72] There is a new model of production in which people from all around the world join their forces to create a product, deliver a service, or innovate. The last new pattern of interaction is participation: consumers become what Alvin Toffler calls prosumers, in the sense that they do not only consume new ICTs but can also produce products or services thanks to these new technologies.

For instance, further to Kenya's controversial elections that resulted in civil turmoil, riots and deaths, a young lawyer created a website named " "Ushahidi", which means "testimony" in Swahili, (…) that was initially developed to map reports of violence in Kenya after the post-election fallout at the beginning of 2008. (…) Our roots are in the collaboration of Kenyan citizen journalists during a time of crisis."[73] In Haiti, after the 2010 earthquake, the Ushahidi network helped find people thanks to the geolocation of their phones, and send someone for their rescue.

A critical issue with collective action is the free-riding attitudes: "a rational actor will abstain from contributing to a public good if his or her contribution has a negligible impact on the total amount of the good produced and consequently a

---

http://www.accenture.com/us-en/Pages/insight-mobile-web-watch-2012-mobile-internet.aspx

[72] Don Tapscott (2008) Op Cit, p.75.

[73] For more detailed information on the organization's activities, see Ushahidi website: http://www.ushahidi.com/mission/

negligible impact on his or her consumption of the good"[74]. Therefore, participation is dependent on how visible the cause is: "seeing others contribute should motivate actors to contribute their share."[75] Visibility and efficiency of the cause are great motivators for people to participate. Mass waves of text messages sent to motivate an audience "strengthen the hidden networks, boosts solidarity, creates further groups, and recruits new militants who, attracted by the movement's public action, join the networks."[76]

New ICTs also enable the general public to monitor public figures in an unprecedented way.[77] Until recently, the state controlled power thanks to surveillance techniques. This control is now reciprocal. The state becomes more and more transparent for the public eye, and with it the actions of political figures. A feeling of constant scrutiny might discourage illegal activities. The speed by which information circulate via Internet and mobile technologies is an additional deciding factor for the political elite when taking actions.

These new patterns of interaction affect more and more aspects of our lives, as they are dominant on new ICTs. It is hard to define if they stem from users or from technology. In any case, it seems that adapting to these new circumstance is the only solution for some sectors of industry. For instance,

---

[74] Miard, Fabien (2012) Call for Power? Mobile phones as facilitators of political activism, In Costigan, Sean S., Perry, Jake (eds.) *Cyberspaces and Global Affairs*. London, UK: Ashgate, p.128.
[75] Ibid, p.128.
[76] Ibid, p.128.
[77] Ibid, p.131.

many newspapers struggle since 2000: they do not break news anymore. If the news is important, it will be first available on social media such as Twitter. Newspapers need to reinvent themselves: they still provide in-depth information and knowledge about complex issues and news.

New ICTs represent a continuous process of change[78] that involves users and developers, states and individuals, transnational corporations and civil society. New uses of Internet change its structure and its future developments. The influence is bi-directional: its structure and technical developments influence who uses the Internet, and the way the user behaves influences the Internet, mobile technologies, the Web and big data.

This process of change is not only technological. Demography is indeed another element to take into consideration: North America and Europe count for less than 35% of all Internet users. Asia counts for 45% with a lower rate of penetration, which means there is still a vast part of society still to be connected: "The Internet may have been born in the West but its future will almost certainly be decided elsewhere."[79] The following section analyzes the emergence of new forms of civil society movements thanks to the use of new ICTs.

---

[78] Kaldor, Mary, Moore, Henrietta, Selchow, Sabine (2012), Op Cit, p.30.
[79] Deibert Ron (2012) The Growing Dark Side of Cyberspace (. . . and What To Do About It), *The Penn State Journal of Law & International Affairs*, V.1 (2), p. 263.

2.4 New ICTs and recent global civil society movements

In the passionate debate about the use of new ICTs by civil society that opposes enthusiasts and skeptics, some elements are not disputed. First, new ICTs reduce the costs and increase the speed, ease and reach of information exchange. Thanks to the internet for instance, access to knowledge, opinions and ideas is at the level that was never seen before. Authors such as Manuel Castells, Clay Shirky, or Google chairman Eric Schmidt believe that new ICTs bring structural change to society. They state that new ICTs and social media in particular have inherent effects on society and politics. Thanks to new ICTs, new models of organizations (more open, horizontal, fluid and dynamic) and civil interaction will generate more engagement and debate, and therefore strengthen civil society.[80]

But some scholars are more skeptical about the digital revolution such as Morozov, Sherry Turkle, and Jaron Lanier. They argue that these changes are not necessarily and only positive, and also reject the idea that this change is happening inevitably. They state that new ICTs will lead to 'clictivism', 'slacktivism' and superficiality. One might follow a civil right activist on Twitter, but will never go along in the street to protest.[81] This is why no social movement is likely to start from the Internet.

---

[80] Edwards, Michael (2014) Op Cit , p.81.
[81] Ibid, p.82.

New ICTs can be used to expand a movement, to help organize protests, or raise awareness. But it cannot create a social movement (as opposed to social network). Furthermore, social media reproduces online the groups that exist in the physical world, leading to a balkanization of online communities that reflect the fractures and particularities in more traditional structures of communication. [82]

Given its low cost, and the fact that it first developed among the scientific community, the Internet was rapidly adopted by the civil society. The global civil society employs new ICTs for multiple purposes: to raise funds and acquire new members, to organize obstructive action forms and international events such as sit-ins or blockades, to simplify global coordination or to make it possible.

Social movements have three main components: a powerful idea, effective communication strategies to get their ideas into politics and media, and a strong social base.[83] As follows, two examples that illustrate the impact of new ICTs on the global civil society: the World Social Forum and the Arab Spring of developed indeed thanks to the generalization of new ICTs.

---

[82] Ibid.
[83] Edwards, Michael (2014) Op Cit , p.28.

World Social Forum

The World Social Forum was created in 2001 in opposition to the Davos World Economic Forum. It rapidly spread around the world and now counts numerous regional and local forums where grassroot organizations meet, discuss, exchange ideas, experiences and come out with some recommendations. The use of new ICTs was crucial for its development, as it provided affordable and efficient means of communication and coordination.

The WSF was founded to organize regular (every year at the beginning and then every couple of years since 2007) international meetings for all alterglobalist proponents. Its bottom-up approach aims at reconciling the international system with local forces. It proposes to open the international stage to new players and change the international relations architecture to make it more democratic: it means creating an arena for participation and cooperation of various stakeholders who can discuss and exchange ideas, find peaceful solutions to conflicts, lobby for socioeconomic equity and welfare, and disseminate democratic and universal human rights values:

> The World Social Forum is an open meeting place where social movements, networks, NGOs and other civil society organizations opposed to neo-liberalism and a world dominated by capital or by any form of imperialism come together to pursue their thinking, to debate ideas democratically, for formulate proposals,

share their experiences freely and network for effective action.[84]

The WSF proposes to coordinate the initiatives of local and global organizations engaged in building an alternative world. It does not act as a representative of the world civil society, and it is not an organization: it is a global public sphere. As defined by Habermas, a public sphere is where common concerns are debated among citizens in an equal, free, and peaceful manner.[85]

Thanks to the use of new ICTs, WSF became a global public space where individuals and organizations dealt with common problems through dialogue and discussion. The capacity to deliberate democratically, to perceive shared interests, to cede territory to others, and to work together to achieve a common objective is central in the concept of civil society thinking. In that sense, WSF is a "non-legislative, extra-judicial, public space in which societal differences, social problems, public policy, government action and matters of community and cultural identity are developed and debated." [86]

The model of development of WSF followed the Internet values such as transparency and cooperation: "a culture that favors horizontality, internal democracy and the active

[84] World Social Forum (2014) *What is the World Social Forum*. Brazil: WSF. Retrieved 11 October 2013 from http://www.forumsocialmundial.org.br/main.php?id_menu=19&cd_language=2
[85] Edwards, Michael (2014) Op Cit , p.68.
[86] Edwards, Michael (2014) Op Cit , p.67.

participation of grassroots actors." [87] Similarly to the Internet, the early development of the WSF lacked of representativeness: its founding members (the WSF International Council) made all the decisions and few famous scholars and intellectuals monopolized the discussions during panels and workshops.

Regular critiques from participants, and in particular grassroots activists led to opening up the organization and its governance processes. For instance, some young activists invaded its VIP lounge in 2002 to protest again the elitism in place. It resulted in closing definitely the VIP lounge. In 2005, other protests conducted the International Council of the WSF (IC) leaders to adopt new measure to make it more participatory. [88]

Over the years, the WSF witnessed the influence of two main stakeholders: global NGOs and political parties. The WSF could have indeed become a platform for the communication of some political parties. However, after the 2006 WSF in Caracas, where Hugo Chavez and its supporters took the floor and used the Forum to promote their revolutionary process, the IC decided to reduce the participation of political parties. Since then, the WSF is a non-political movement.

Until 2007, the other main type of WSF participant was global NGOs. Their participation in the WSF could have also led to

---

[87] Kaldor, Mary, Moore, Henrietta, Selchow, Sabine (2012) Op Cit, p.166.
[88] Ibid, p.173.

institutionalize the WSF. However, the IC decided also to reduce their influence and give more voice to social movements and other types of participants. Their objective was to give more space and voice to participants representing people on the ground, and therefore increase the legitimacy of the WSF. Indeed, within the WSF, the influence and number of informal quasi-organizations grew substantially as well:

> The evolution of the relationship between NGOs and social movements within the WSF process has both been fostered by and reflects one of the most significant changes in global civil society in the past decade: grassroots networks have realized that their internationalization did not necessarily require NGOs.[89]

The informal quasi-organizations, which took part in the WSF, influenced its development in becoming an informal quasi-organization. The WSF illustrates an alternative way of managing international movements. The global growth of informal quasi-organizations such as the WSF shows that it is possible to develop without institutionalizing if the culture of the movement enables it. This alternative model of governance protects diversity and allows heterogeneous actors to raise awareness about global issues such as biodiversity loss without being confronted to the costs of institutionalization, which ensures them a certain type of freedom.

---

[89] Ibid, Op Cit, p.176.

As shown, the WSF offers alternative governance and alternative development on the international scene thanks to its use of new ICTs. Indeed, when social movements grow traditionally, they usually become institutionalized. They take the familiar path from charisma to regularized routine, from inventiveness and passion to bureaucracy and hierarchy. Traditionally, social movements that become more international also become in parallel more institutional: in other words, an increased institutionalization supports the expansion of the social movement.

This path could have been the WSF's development road. Institutionalization usually contains two aspects: internal institutionalization with professionalized management and hierarchical structure, and external institutionalization with its integration into institutional international processes or become a service provider for its members. In other words, the movement becomes an organization that either "does or provides something" on the international scene in a professional way. Over time, protesters pacify and adapt once their requests once heard, and once they take part into a dialogue with authorities.

Given that WSF was founded by and for alter-globalization activists, its evolution did not follow the traditional pattern. It remained an open-space where grassroots movements are more represented than powerful INGOs.[90] The following

---

[90] Kaldor, Mary, Moore, Henrietta, Selchow, Sabine (2012) Op Cit, p.177.

subsection will examine another recent global civil society movement: the Arab Spring.

Arab Spring

The Arab Spring has provided ample examples of how young generations use the Internet and other new ICTs to protest and conduct demonstrations. Often described as the "Arab Spring", the "Arab awakening", or the "Arab Intifada", large-scale protests spread rapidly across the region.[91] As stated previously, new ICTs not the source or the cause of any social unrest. Demonstrations are triggered by frustrations arising from the lack of democracy, a feeling of injustice or inadequate access to food and sanitation. The path to democracy rarely goes directly from street protests to state office. The Arab Spring has its roots in the history of associational life in the region, where civil society groups, in particular in factories, mosques and universities, were the pre-requisite to the emergence of such large scale social movement that led to fundamental changes in many countries.[92]

Social protesters motivate each other through Internet, which provides them with a free window to the world. For instance, Egyptian, Algerian or Syrian protesters gained power and self-insurance by seeing social protests emerge in similar political and cultural contexts.

---

[91] Edwards, Michael (2014) Op Cit, p.31.
[92] Ibid, p.32.

Across the Middle Eastern region, civil society has been quite active with a wide variety of organizations secular and religious, modern and traditional. In Jordan and Morocco for instance, youth women groups coexist with Islamic associations. Middle Eastern societies have a long tradition of civil society organizations, which coexist, cooperate, and compete among each other: Islamic organizations, secular NGOs, think-tanks, women's groups, protest movements, labor union, bloggers and media outlet. [93]

Before a movement emerges, four elements must be present at certain threshold levels: resources, organization, opportunity, and grievances.[94] Mobile phones and Internet are new tools that could provide a surplus and offset the deficit of another element. For instance, mobile communication can allow to redistribute real-time scare resources, or share information in real-time about where the police is in order to continue the protest somewhere else.[95] In addition, ideas spread faster when individuals are socially linked.

New ICTs created windows of opportunities for young people to take part in the destiny of their country: by being computer and Internet savvy, the Net generation discovered its own way to make politics and build a new society. Traditional voting, where available was not satisfying for them. Thanks to new

---

[93] Ibid, p.31.
[94] Miard, Fabien, Op Cit, p.129.
[95] Castells, Manuel (2007) Communication, power and counter-power in the network society, *International Journal of Communication*, Vol.1, p.241.

ICTs, Tunisian protesters accessed for the first time to effective means to put pressure on their governments and request changes.

> Tunisia seems the first of several revolutions that started on December 17, 2010 following the self-immolation by fire of Mohammed Bouazizi: he protested against the corruption he suffered from the police who stole fruits and vegetables to pay a bribe. Following his action, hundreds of young people demonstrated. The use of Internet helped this movement organize and gain momentum. The result was the flee of the Ben Ali family on January 14, 2011.[96]

New ICTs enable individuals and their networks to stay more frequently and easily in contact. Although networks are old forms of social organization, they are now empowered by new ICTs, so that they combine at the same time flexible decentralization with focused decision-making processes.[97] Furthermore, mobile communications (call, SMS or web) are not tied up to a fixed location: communication is no longer from one place to another, but rather between people.[98]

Thanks to these new technologies, civil activists can easily take a snapshot with a mobile phone camera, record a short video, write a blog, send a tweet, or share comments on Facebook or Twitter. New ICTs enable them to propose new content to the general public and invite anyone who's

---

[96] Ibid, p.232.
[97] Castells, Manuel (1998) *End of Millennium, The Information Age: Economy, Society and Culture Vol. III*. Oxford, UK: Blackwell, p.154.
[98] Miard, Fabien, Op Cit, p.130.

interested in the world to the heart of the conflict without any other interference or intermediary.

Internet and mobile-based communication campaigns enable causes to become more visible and create social ties between potential participants away from traditional and sometimes censored media channels. Contrary to before, when the government was controlling the press and showing only part of the information, social media and web 2.0 enable the production of new content by people directly.

> Yet, at the same time, it is essential to emphasize the critical role of communication in the formation and practice of social movements, now and in history. Because people can only challenge domination by connecting with each other, by sharing outrage, by feeling togetherness, and by constructing alternative projects for themselves and for society at large. Their connectivity depends on interactive networks of communication.[99]

These civil society movements have some common characteristics: they are organized and function as a network and make intense use of new ICTs such as Internet based and mobile communications. They create multiple connections with peers, with other groups engaged for the same cause, with the media, and with society at large. To enable these unlimited local to global connections, civil activists need Internet.[100] These new forms of activism create a new global public domain:

---

[99] Castells, Manuel (2012) Op Cit, p.229.
[100] Ibid, p.240.

An institutionalized arena of discourse, contestation, and action organized around the production of global public goods. It is constituted by interactions among non-state actors as well as states. It permits the direct expression and pursuit of a variety of human interests, not merely those mediated (filtered, interpreted, promoted) by states. It 'exists' in transnational non-territorial spatial formations, and is anchored in norms and expectations as well as institutional networks and circuits within, across, and beyond states.[101]

This is what Castells describes with his concept of third space: the space of autonomy. Online and offline spaces feed into each other and meet in a semi-virtual space where local and global meet: where urban and online actions reinforce each other; and where long-lasting family or friendship networks cooperate with spontaneous or instantaneous gatherings.

New forms of activism use social media channels to debate, discuss but also to spread information rapidly and freely. Twitter, Facebook and other social media tools increasingly became the favored space where citizen start their participation in protests by either posting a photo, an information for the press, or support a cause by liking its page or following its hashtag. Iranian opponents to the newly reelected Iranian government also used other types of communication technologies such as mobile phones. The 37-second long video of an Iran woman being killed by a sniper during a street demonstration was taken with a mobile phone.

---

[101] Ruggie, John G. (2004) Op Cit, p.519.

A doctor sent this video to some friends living abroad who posted the video on YouTube, which was then picked up by major international broadcasters such as CNN or BBC.

When a citizen demonstrates on the street and sees a horrific scene, she/he records it on his phone and sends it to friends to post it on the Internet. This video is then seen by millions of people on the Internet and also traditional channels such as TV. This is a good example of how new medium of communication have transformed citizen participation in activism: it enables them to access global audiences and gives them more visibility. It also gives more power to citizens for they have new surveillance tools that can be used against abusive political leaders.

Nevertheless, new ICTs are not immune of criticism. First, "growing interconnectedness may be both a source of intense conflicts (rather than cooperation) as well as a product of shared fears and deeply held animosities." Second, enabling non-state actors through new ICTs can be counterproductive in some conflicts situations where it would be necessary for solely states to intervene.

Third, fast-paced and permanent communications often means it lacks of depth and might not be well researched or the sources might not be doubled-checked. This could hurt a peace-process or open door to misuse of communication for non-peaceful purposes. Major news agencies find it more and more difficult to find the original source of a buzz started on

Twitter. Sometimes, big numbers of followers or of tweeters make the story plausible.

Fourth, people have a hard time to manage the overload of information and are potentially less informed than before. Fifth, some recent research about the Palestinian Israeli conflict showed that the use of ICTs does not replace the need to face-to-face meeting and conversations. Furthermore, the use of ICTs requires some prior-knowledge of how to speak English (or an international language) and how to lead an online discussion. Finally, language used in unsupervised open online forums or social media channels are often more violent and extreme than direct communication.

When comparing the Arab spring with other new activist movements such as 99%, los indignados, or the Icelandic revolution, they have common elements. Mobiles phones and Internet based information and communication technologies "played a major role in spreading images and messages that mobilized people in providing a platform for debate, in calling for action, in coordinating and organizing the protests, and in relaying information and debate to the population at large."[102]

When facing an injustice or a situation that a society rejects, people tend to identify with the victim and act against the agent responsible for the situation. In the case of Tunisia for instance, the population identified with the young man who committed suicide in protest against the Tunisian government

---

[102] Castells, Manuel (2012) Op Cit p.250.

and police. In the case of Iceland, the population rejected the consequences of the financial crisis and decided to take action against the government and parliament who let the situation happen. In the case of the indignados and 99% social movements, the population identified with the victims of the economic downturn such as the young unemployed and the families who lost their houses. To overcome the fear triggered by these situations communicating and sharing with peers is key.

New ICTs are growing and will expand in the future mostly in the global south. Young activists of the Arab Spring were born with the new ICTs and knew instinctively how to make best use of it to diffuse the information and organize the protests. Often, a technology is built with an intention. But users develop it with unexpected uses and needs: "If the Californian culture of libertarianism and individual entrepreneurship defined the early history of cyberspace, we should be asking ourselves what the future of cyberspace holds as the center of gravity for usage and innovation shifts to the global South." [103]

Culture and values are ideas shared by a society, a social group, a family about what is right and what is wrong, what is acceptable and what is not, what is appropriate and what is not. Everything we do, need, eat, how we interact with one another, is strongly influenced by the culture we were born in and the one(s) we have lived in. Values are ideas shared by a

---

[103] Ibid, p.265.

society, a social group, a family about what is right and what is wrong, what is acceptable and what is not, what is appropriate and what is not. Cultural patterns of reactions emerge and are passed on to future generations. With time, humans comply with these patterns for they feel obliged to[104].

Culture is the product of an evolution. In such a changing world with ever-accelerating global flows of information, wealth, power, and images, people tend to regroup around primary identities to adapt to the confusion and uncertainty. The search for identity, collective or individual, becomes the fundamental source of social meaning.[105] This search for identity, enhanced by the generalization of new ICTs, might well trigger the emergence of a sense of global common identity, which in turn, will provide the missing component to create an international community. As described previously in the cosmopolitan approach, an international community, based on Postnational and universal values, would enable to overcome the conflict between universal objectives and particular states' interests.[106]

As analyzed in this part new ICTs have had a substantial impact on international relations and led to the emergence of a new field of international relations. New ICTs also imply for

---

[104] Licht, Amir, Goldschmidt, Chanan, Swartz, Shalom H. (2005) Law and Corporate Governance, *International Review of Law and Economy*, Vol.25 p.229.

[105] Castells, Manuel (1996) *The Rise of the Network Society, The Information Age: Economy, Society and Culture Vol. I.* Cambridge, MA and Oxford, UK: Blackwell, p.15.

[106] Held, David (1995) *La democracia y el orden global: Del Estado moderno al gobierno cosmopolita*. Barcelona, Spain: Paídos, p.124.

global actors to develop extra capacities to adapt to this new reality. Part two of this research further analyzes the impact of new ICTs on international relations by focusing on global environmental governance mechanisms. At a more micro level, part three will examine the impact of new ICT on one organization.

Part 2. New ICTs and the legitimacy of a global environmental governance mechanism

The environment is a global issue that requires a global response for its protection and governance as George Kennan wrote in 1970: "the entire ecology of the planet is not arranged in national compartments."[107] Air pollution, the extinction of species in high seas, climate change, desertification, or deforestation can only be addressed efficiently through global governance mechanisms. Nature conservation evolved over time to become more global and inclusive: states protect broader and broader geographical areas, and include more and more species and ecosystems in their conservation policies.

The perception of nature conservation has also evolved over time, and still varies from one culture to another. Since its early developments, it is profoundly anchored in science. Indeed scientific discoveries along with increasingly visible negative impacts of human activities on the environment have changed nature conservation.

Thanks to communications campaigns and the generalization of new ICTs, the general public became more aware of the

---

[107] Kennan, George F. (1979) To Prevent a World Wasteland, *Foreign Affairs*. Retrieved 22 October 2012 from http://www.foreignaffairs.com/articles/24149/george-f-kennan/to-prevent-a-world-wasteland

global environmental challenges facing present and future generations. However, no binding agreement was reached a at the 2009 Copenhagen Conference on climate change or at the 2012 UNCED Rio Conference.

In a knowledge society information and expertise become a key resource. As Castells argues, "power is based on the control of communication and information, be it the macro-power of the state and media corporations or the micro-power of organizations of all sorts."[108] Mastering new ICTs can make a difference in the balance of powers, especially when harsh negotiations at the last two UNCED conferences did not lead to any agreement. Thanks to new ICTs, NGOs can coordinate global actions, raise awareness among their members and followers on social media, and raise funds through their websites as discussed in the first part of this research.

The following part aims at analyzing the impact of new ICTs on global environmental governance. It first discusses the emergence of global environmental governance and then analyzes the impact of new ICTs on the legitimacy of a specific mechanism: the IUCN resolution and recommendation platform.

---

[108] Castells, Manuel (2009) Op Cit, p.1475.

Chapter 3. Emergence of global environmental governance

Global environmental governance is quite recent. Most scholars agree to mark the year 1972 as a starting point. As the International Court of Justice states in the Gabcikovo-Nagymaros case, mankind has, throughout the ages, throughout the ages, constantly interfered with nature. Owing to scientific insights and to a growing awareness, new norms and standards have been developed to reconcile economic development with protection of the environment.[1]

Although the urgency of protecting the planet varies from one state to another, none denies that nature needs protection. For some states, economical development must prevail on the protection of the environment. For others, the forthcoming financial and economical consequences of the absence of protection are more concrete: it is for instance the case of some islands facing the rise of sea levels.

Given the wide array of actors and initiatives, global environmental governance is at the forefront of new governance forms. Since the 1992 Rio Declaration, many initiatives to protect the environment were developed and implemented around the world: states, governmental and non-governmental organizations, social movements, and individuals joined forces to find common solutions.

---

[1] International Court of Justice (1997) Op Cit, paragraph 140.

This chapter analyzes the emergence of global environmental governance mechanisms and sets the context for the two case studies analyzed in chapter four and part three. It first discusses the need for global governance mechanisms to protect the global public good, then examines the emergence of the environmentalist movement, the emergence of global environmental governance mechanisms, and finally analyzes general principles of international environmental law.

3.1 Global environmental challenges

Despite a limited amount of resources and woods, past inhabitant of Easter Island cut down all the trees and little by little depleted the island of all its natural resources. At the individual level, it made sense to do so, although it was contrary to the group's long-term best interests. Over time, with less and less wood and fertile soil to grow food, the civilization went extinct. No public governance mechanism prevented these natural resources from going extinct, and therefore protected the inhabitants.

The history of Easter Island illustrates how devastating the lack of governance mechanisms can become. The environment is a global public good and therefore its protection needs efficient governance mechanisms. This section defines the current state of nature in order to better understand what are the needs in terms of governance

mechanisms and introduces the topics that are addressed by IUCN members in the first case study (IUCN's resolution and recommendation process). Therefore it begins with discussing environmental challenges such as climate change, stratospheric ozone depletion, species extinction and the loss of biodiversity, food security, environmental contamination by hazardous chemicals and wastes, access to fresh water, and air pollution. It continues with examining nature conservation related topic such as demography, consumption and technology.

Climate change

Between 1750 and 2009, the concentration of CO2 in the atmosphere has increased of 35%, concentration of methane has increased of 150% in the same period[2]. This change in concentration had an impact on the natural greenhouse effect, which is essential for life on earth. Without the natural greenhouse effect, the average temperature of the Earth's surface would be unbearable for human life. Earth's natural greenhouse effect makes life as we know it possible. Nevertheless the burning of fossil fuels and clearing forests accentuated the natural greenhouse effect and led to global warming.[3]

---

[2] Hunter, David, Salzman, James, Durwood, Zaelke (2010) *International environmental law and policy*. New York, NY: Foundation Press, Fourth Edition, p.2.

[3] IPCC (2007) What is the greenhouse effect ?, *Fourth Assessment Report*: *Climate Change 2007*. Cambridge, UK: Cambridge University Press, Retrieved 20 October 2012 from http://www.ipcc.ch/publications_and_data/ar4/wg1/en/faq-1-3.html

Climate change is not synonym of different weather patterns: a fluctuation of temperature, rain or wind is about weather forecast. Climate change is a permanent increase of the average temperature. Indeed, an increase of one degree Celsius can have a dramatic impact on the whole planet, rising the level of the sea, intensifying forest fires and desertification process, or increasing the intensity of tropical storms and the loss of biodiversity such as coral reef or polar bears for instance[4].

These intensified events often break the news. According to the IPCC Report from 2007, the last three decades have been the warmest years ever recorded, and the average temperature on the surface is projected to increase of 1.4 to 5.8 degree Celsius by 2100 compared to 1990's temperatures. This scenario is very likely due to the observed increase in greenhouse concentrations from man-made gas emissions. [5]

Many scientists now believe that the IPCC 2007 projections are still understating the impacts of global warming on the planet and on our human lives. In any case it shows that most human settlements – and in particular in developing countries – will be affected by the consequences of climate change. Because of the increase of average temperature, many people often refer to this phenomenon as global warming. However this might not be the most appropriate term: it is more about a

[4] IPCC (2007) What Factors Determine Earth's Climate?, Op Cit, Retrieved 20 October 2012 from https://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-faqs.pdf
[5] Ibid.

change in climate with some regions becoming dryer, others colder or warmer.

The US Geological Survey (USGS) projects that an increase of 2 degrees Celsius of the average Earth temperature would put the West Antarctic ice sheet at risk of melting, which as a consequence, would raise sea levels by about 8 meters. If this ice sheet and the one of Greenland would melt, the sea level would rise of 10 meters, which would put 25% of US population under water. These changes could also distort the Atlantic Ocean's Gulf Stream currents and provoke another ice age in Europe.[6] In general, there is an agreement among scientists that (1) climate is changing, (2) changes can result from human activities, (3) changes are happening faster than previously projected, and (4) there is an imminent need for action and for global governance mechanisms.

Ozone Depletion
The greatest ozone layer depletion takes place in Antarctica, where losses reach 60% of stratospheric ozone and where the "ozone hole" is larger than the territory of the United States. The second biggest hole is on the Arctic pole. Smaller ones are above Europe, North America, Australia, New Zealand, and Russia (35% over some parts of Siberia)[7]. The ozone layer corresponds to a concentration of ozone molecules in the stratosphere. Where it is thinner, it allows more radiation to reach the Earth's surface. For people, overexposure to UV

---

[6] Hunter, David, Salzman James and Durwood Zaelke (2010) Op Cit, p.4.
[7] Ibid, p.6.

rays can lead to skin cancer, cataracts, and weakened immune systems.[8]

Biodiversity and ecosystems

The world is loosing 74 species every day: three every hour according to some studies[9]. Although complex, the causes of biodiversity loss are linked to human behavior and overexploitation of natural resources for food, clothing, housing, transportation, or raw material. This implies also the destruction of crucial ecosystems for human activities such as drying out wetlands to build an airport or damning a river to produce electricity. Biodiversity is the variety of all living things and their habitats. It underpins the functioning of ecosystems and thus the production of the services they provide. It plays an important role in ecosystem function and in all services ecosystems provide, including nutrient and water cycling, soil formation and retention, resistance against invasive species, plant pollination, climate regulation, and pest and pollution control.[10]

Human life depends on these services, which are hardly replaceable. Therefore their loss can be as dramatic for the

---

[8] US Environmental Protection Agency (2010) Ozone layer protection, Washington, DC, EPA. Retrieved 21 October 2012 from www.epa.gov/ozone

[9] Wilson, Edward O. (1992) *The Diversity of Life*. Cambridge, MA: Harvard University Press, p.280.

[10] IUCN Red List (2008) *State of the World's Species*. Gland, Switzerland: SSC, IUCN. Retrieved 29 October 2012 from http://cmsdata.iucn.org/downloads/state_of_the_world_s_species_factsheet_en.pdf

earth as for human life on earth.[11] Ecosystems are as important as biodiversity. They correspond to communities of animals and plants interacting with each other and with their environment.[12] In the 2005 Millennium Ecosystem Assessment,[13] over 1360 experts determined that nearly two third of the services provided by nature to humankind in the world are in decline.[14] Sea, soil, pure water, nutrients, fields, insects, clean air, stable climate are all elements that interact with each other to produce a health living environment for humans. They are crucial for species and human to survive:

Toxic chemicals and hazardous waste

Hazardous wastes are divided into three categories: (1) non-specific source wastes such as solvent and substances used for cleaning or degreasing that are used by industries; (2) source specific wastes created in the production of petroleum products and pesticides; and (3) commercial chemicals. Toxic wastes must be kept in specific containers and in safe and stable geographical areas. Some toxic wastes can also be incinerated. All must follow local and national regulations. Hazardous wastes are dangerous or potentially harmful to health or the environment. They can take various forms liquids, solids, or gases, and they can even be sold as

[11] Hunter, David, Salzman James and Durwood Zaelke (2010) Op Cit, p.8.
[12] Ecosystem Management (2012) *What is an ecosystem?*. Gland, Switzerland: IUCN. Retrieved 5 November 2012 from http://www.iucn.org/about/work/programmes/ecosystem_management/
[13] Millennium Ecosystem Assessment (2005) *Ecosystems and Human Well-being*: *Synthesis*. Washington, DC: Island Press, p.18. Retrieved 2 November 2012 from http://www.millenniumassessment.org/documents/document.356.aspx.pdf
[14] Ibid, p.20.

commercial products, such as some cleaning fluids, batteries or pesticides.[15]

Some synthetic chemicals (DDT and PCBs for instance) used in agriculture or industry, were recognized by scientists since 1950s and 1960s to have a negative impact on human health and the environment. These chemicals absorbed by the body fat pass on to the next element of the food chain when eaten. A human being eating an animal who consumed products with DDT or PCBs will accumulate them in his body fat as well. It is known that when chemicals add up in the body, their effects multiply: 2 chemicals can produce not two but 10 or 10,000 effects on the body[16]. The world produces 400 million tons of hazardous waste per year, of which 300 million are produced in developed countries. Due to a high cost of disposal in developed countries, these waste are often outsourced or sent to developing countries where disposal is 50 times cheaper. This resulted in a trade of hazardous waste is often called "toxic colonialism"[17].

Water

Water is synonym of life: without water, human life would not exist on earth. Water is essential since the very first eruptions of life on the earth. Some of the oldest animals we

---

[15] IUCN (2012) *What is hazardous waste*, Gland, Switzerland: IUCN. Retrieved 10 November 2012 from http://www.iucn.org/about/union/secretariat/offices/iucnmed/iucn_med_programme/marine_programme/governance/glossary/?11350

[16] Hunter, David, Salzman James and Durwood Zaelke (2010) Op Cit, p.10.

[17] Ibid, p.10.

know live in the deep sea. Water is unequally distributed on the planet. Some areas lack drastically of water, and others have it in abundance. A US resident uses more water during his morning shower than the daily individual use in a developing country slum. Lack of access to clean water and sanitation has dramatic effects on populations and in particular children.[18]

Water is not only a question of supply, but also of distribution. With a growing world population, water is becoming a source of conflicts. As many watersheds border various countries, these conflicts may become international. Also, water is linked to other environmental issues, such as ecosystem decline: with less and less wetlands, water is less and less naturally cleaned, and could become a threat for human life.

Air pollution

Like water, air is not only essential to humans: it is vital. Without clean air to breath, no human life is possible. Polluted air is quite dangerous for the elderly and young children. In megacities such as Los Angeles, Beijing, or Mexico, air pollution kills people every year and accelerates the development of sickness: Many children in mega cities of

---

[18] IUCN (2012) *The Water Challenge*. Gland, Switzerland: IUCN. Retrieved 10 November 2012 from http://www.iucn.org/about/work/programmes/water/wp_about_water_prog /

developing countries breath an air as harmful as smoking daily two packs of cigarettes.[19]

Various types of air pollution exist: indoor including burning wood, straw or dung, and outdoor such as smoke, burning coal or car emissions. The WHO recently declared pollution from diesel engines harmful for human health. With more than half the world population living in cities, air pollution is a crucial element at stake. Air pollution is also becoming an elements businesses take into consideration when choosing a new location to open an office or a branch: their employees might not want to move to a highly polluted area of the world or city.

Food Security and Agriculture

More than one billion people are undernourished on the planet. With a growing population, food is a crucial issue. Although food production rose in the last 50 years (world production of grain nearly tripled between 1950 and 2000), expanding agriculture came with an environmental cost: use of pesticides, over-pumping groundwater, depleting topsoil, or clearing forest to dedicate land to agriculture. The United Nations World Food Council argues that ten to fifteen percent of cereals dedicated to livestock would be enough to raise the world food supply to adequate levels. Livestock creates a burden on the planet for it is very resource consuming.

---

[19] The Word Bank (2000) *World Development Report 1999/2000: Entering the 21st Century - The Changing Development Landscape*. Washington DC: World Bank, p.141. Retrieved 10 November 2012 from http://bit.ly/1qPOcdQ

Reducing raising livestock and focusing agriculture on other sources of proteins such as vegetables or cereals could be a solution to some environmental and hunger issues.

As discussed, the state of nature is not at its best, and scientists agree that human activities have an impact on its accelerated degradation and on climate change. With a growing middle population in developing countries, pressure on natural resources is not about to decrease. However some solutions can be found to avoid repeating the same scenario as on Easter Island.

Indeed, the environment provides many services to human life as described previously. These services are free for everyone to use: air, wind, climate stability, or rain. These services are public goods: no one owns them and no one pays for them. When they become scarce, their price does not increase to reflect their scarcity. This is why market mechanisms are not a good tool to manage this type of resources, for they are not private goods and therefore are not valued goods with a price tag that goes up or down. In other words, for the market, public goods are free of charge. Given that individuals seek the short-term maximization of its wealth, they will use public goods until they disappear.

For instance, a village with shepherds uses a common land to grow their cattle: the more each shepherd uses the common land, the more grass the land looses, to a point where no more grass can grow. Because grass belongs to no one, shepherds

want to use it before the others do. Therefore it will lead to what Garett Hardin calls the 'tragedy of the common': no more grass, means no more sheep and hence no more meat for the village. This tragedy does not only take place in the use of the common, but also the management and its care taking. The cost of wastes a person discharges into the commons is less than the cost of purifying his wastes. Since this is true for everyone, everyone is fooling its own nest as long as everyone behaves independent, rational, and free-enterprisers.[20] This is when global governance mechanisms are needed to protect the environment as common good.

The cost of production contains a mixture of priced 'inputs' including labor, capital, technology, and unpriced inputs including environmental services. However, market price does not reflect the totality of the resources being used during the production process.[21] These price tags are called "externalities": they describe what is not reflected in production cost or the sales price. Indeed, factories usually do not pay for the environmental services they use. While this use might have long-term effects on the ecosystems and therefore real costs, these real costs are not reflected in the price the consumer pays or in the producer's charges.

---

[20] Hardin, Garett (1968) The tragedy of the commons. The population problem has no technical solution; it requires a fundamental extension in morality, *Science*, V.162, p.1243.
[21] Pearce, David W. (1989) *Blueprint for a green economy*. London, UK: Earthscan Publications, p.155.

Externalities can be negative such as polluted air or water produced by a factory. But they can also be positive: a wetland area is producing clean water, or offers a natural buffer in case of flooding. If negative externalities were internalized, the market would reduce activities and products that pollutes. In a similar way, if positive externalities were taken into account, the market would promote nature conservation. Therefore one of the main objectives of international environmental governance is to promote the internalization of externalities.

To evaluate the impact of these environment activities on the environment as previously described, Paul Ehrlich and John Holdren developed a simple equation: $I = P \times A \times T$ where 'I' stands for Impact on the environment; 'P' is the Population size; 'A' the Affluence or per capita level of consumption; 'T' the Technology or environmental impact per capita level of consumption. Indeed, when some policy makers argue that technology can solve all problems resulting from man-made pollution, others state that world nations need to control demography and reduce their consumption.

Population

To explain what Paul Ehrlich described as the 'population bomb', it is essential to understand the difference between arithmetic and geometric. Arithmetic is quite simple: two cars produced every hour result in six cars produced after three hours. But what about producing factories instead of cars, and each factory can also produce factories, etc. The model

becomes exponential. Humans like factories grow in an exponential way.

To have a population at equilibrium, each woman must have no more than 2.1 children. As soon as this number grows, the population grows exponentially. The current global fertility is 2.56 children per woman, but expected to decrease in 2050 at 1.92 children per woman[22]. However, any demographic changes take several generations to have an impact. In today's world, there are more young people who will have children than older people who will die. Therefore the world population is still expected to grow although the fertility is decreasing. This phenomenon is called "demographic momentum".

International law dealing with demography is only soft law and most demographic law is handled at the national level. China is an example of policies in favor of a reduction of fertility: the 'later, longer, fewer' program followed by the 'one child' policy were quite successful in containing Chinese population growth. However, it also created some issues such as the number of male children superseding female babies, and the replacement of the population.

Although a model of demographic evolution is known (from high mortality/fertility to low mortality/high fertility to low

[22] United Nations (2008) *World population prospects: The 2008 revision.* New York, NY: United Nations, p.25. Retrieved November 15 2012 from http://www.un.org/esa/population/publications/wpp2008/wpp2008_highlights.pdf

mortality/fertility), it is difficult to distinguish what explains the variations in birth rates. One element however seems to be a dominant factor: women's education. The better women are educated, the fewer children they have[23]. It is also linked to their status in society: the more gender equality there is, the fewer children are born. Other elements need to be considered as well including provisions for elderlies (good retirement plans), high levels of hygiene, health and nutrition, and available family planning and contraceptive tools[24].

Consumption

When looking at the consequences of consumption on the environment, the first idea coming to mind is scarcity of resources. But today, technology can sometimes substitute some natural products with cheaper and less resource-intensive solutions: it is the case with pool balls for billiard (originally made of ivory and now with Bakelite). However, as shown previously, it is not the case for all natural resources or ecosystem services. Indeed, the destruction of some ecosystems, such as water purification, climate stabilization, or atmosphere protection, becomes irreversible.[25]

Consumption is destroying some ecosystems and biodiversity by overexploiting some natural resources: land conversion,

---

[23] Reed, Boland (1997) Symposium on Population Law: The Environment, Population, and Women's Human Rights, *Environmental Law*, Issue 27, p.1196.
[24] Hunter, David, Salzman James and Durwood Zaelke (2010) Op Cit, p.69.
[25] Daily, Gretchen C. (1998) *Nature's Services: Societal Dependence on Natural Ecosystems* Washington, DC: Island Press, p.220.

desertification, or withdrawal of freshwater. It also leads to pollution (air pollution for instance coming from means of transportation), which subsequently leads to climate change and the extinction of species and ecosystems.

Another question raised by consumption is inequality: since 2005, the world's richest 20% populations represent 75% of the global private consumption, whereas the 20% poorest share is only 1.5%. In developed countries, one child out of 100 does not reach the age of five, whereas in developing countries it is one child out of five[26]. So far, the response of developed states to the inequities in the world has been to support the economic growth of developing states. However the model of development these countries will choose, and the International Environmental Law that will be developed in the future might improve their economic development and at the same time protect natural resources. [27]

To reduce consumption, four options are available: rationing people, making prices reflect the environmental impact of the production of goods, increase consumers' awareness, and improve the resource efficiency. A lot of the past debate was about developed states complaining about developing states' demography, and developing states complaining about developed states consumption.

---

[26] United Nations Development Program (2008) *World Development Indicators*. New York, NY: United Nations, p21. Retrieved 24 November 2012 from http://data.worldbank.org/sites/default/files/wdi08.pdf
[27] Hunter, David, Salzman James and Durwood Zaelke (2010) Op Cit, p.49.

The IPAT formula indicates quite well the importance of reducing both population and consumption to mitigate the impact on the environment. What developing states denounce is that the concept of sustainable development seems to be used by developed states to deny them the same economic growth. However it is clear that a change towards sustainable development needs to happen, especially concerning sustainable consumption. Indeed if seven billion people would consume as much energy and natural resources as in developed countries, ten planets would be necessary to satisfy all our needs.[28]

The sustainable size of the population depends greatly on its geographical location: one person more in a developed country has a bigger impact on nature than one person more in a developing country. Gretchen Daily or Paul Ehrlich determined that only 2 billion people on the Planet could live at a level of France. If the world population were vegetarian and food distributed equally, the planet could support 6 billion people. If the world population would have the diet of a North American with 35% of food coming from animals, it could support only 2.5 billion. Therefore, both population and consumption should be contained as stated in the 1992 Rio Declaration: "to achieve sustainable development and a higher

---

[28] Nick, Robins (1999) Making sustainability bite: transforming global consumption patterns, *The Journal of Sustainable Product Design*, p.8. Retrieved 30 November 2012 from http://www.unep.fr/shared/publications/cdrom/WEBx0028xPA/contents/screading3.pdf

quality of life for all people, states should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies[29]".

Technology

As explained previously, population should only start decreasing naturally by 2050. No country has taken any effective measure to reduce the consumption of its population. States seem reluctant to provide regulation. Therefore the only variable of the IPAT equation that is possible to change is technology. In fact, technology is already reducing pollution and providing for food and energy with fewer natural resources. It is already the case in agriculture, energy efficiency, industrial waste and recycling, bio-products, material design, information technology, renewable energies or nanotechnologies.

These green innovations help reduce the negative impact of human activities on the planet. Some believe technological advances will be enough to avoid the destruction of vital ecosystems. However sometimes technology only transfers or replaces the negative impact of human activities with another one. For instance, Dichlorodiphenyltrichloroethane (DDT) was a great achievement compared to highly toxic copper and

---

[29] United Nations (1992) *Rio Declaration on Environment and Development*. New York, NY: United Nations. Retrieved 30 November 2012   from http://www.unep.org/Documents.Multilingual/Default.asp?documentid=78 &articleid=1163

arsenic based pesticides and used broadly until the 1970s where its harmful effects began to be discovered.

The free market does not seem to engage rapidly in new green technologies for various reasons such as a lack of information, risk aversion, lack of capital, financial interest of existing structures, or no incentives provided by public policies.[30] However international environmental law is already promoting environmental technology.[31] It is already the case with Agenda 21 (chapter 34) adopted in 1992 calling states to move towards a sustainable economy. States can promote the use of green technologies by adopting strict regulations such as clean air act, EU regulations for cars' emissions, forbidding the use of a dangerous product (CFC gas that favors the ozone hole).

Consumption, technology and population are mostly motivated by personal considerations: to buy more goods, travel buy plane, use a cell phone, or have another child as described previously. With Hardin's concept of 'tragedy of the commons', states, groups, communities or individuals, make use of the environment with a limited coordination and no long-term vision. To reduce the depreciation of the environment, global environmental mechanisms are required.

---

[30] Von Weizsäcker, Ernst, Lovins, Hunter L., Lovins, Amory (1997) *Factor Four: doubling wealth, halving resource use*. London, UK: Earthscan Publications, p.2.
[31] Pearlstein, Steven (2010) Can regulation beget innovation?, *The Washington Post*. Retrieved 10 December 2012 from http://www.washingtonpost.com/wp-dyn/content/article/2010/07/15/AR2010071506604.html

The following section examines the civil society response to these global environmental challenges: the emergence of the environmentalist movement.

3.2 Civil society's response to global environmental challenges

Studying nature is not a recent activity. Already in ancient Greece Aristotle referred to it. Scientists such as Alexander von Humboldt explained the impact of the environment on plants, Thomas Malthus stated the links between demography and natural resources, and Charles Darwin proposed his theory of evolution. In the 1860s, Ernst Haeckel used the word "ecology" for the first time to discuss the relations between one element of nature and its environment. In 1864, George Perkins Marsh argued for the first time that Man was the main cause of extinction of species in his book Man and Nature.

In her book Silent Spring (1962), Rachel Carson described pesticides as an "elixir of death". This book became a best seller and sold almost one million copies. Her scientific work had an impact of the general public (raising awareness about this issue) and on the US government (the President asked his Science Advisory Committee to examine pesticide use). Ecology became not only a science but also a way of living and a philosophy for many people.

In many instances, the scientific community has advised governments and international organizations: their scientific knowledge was then translated into new policy. For instance, agriculture changed and industry used new techniques with some negative impacts on nature. The use of some pesticides and genetically modified organisms (GMO) became controversial. Science recommended to ban the use of some pesticides (dichlorodiphenyltrichloroethane for instance) and a limited use of GMO. The European Union introduced a ban on the production and commercialization of GMOs.

Different approaches to respond to new scientific findings emerged. On one side, there is the reformist approach, for which only a rational use of natural resources was needed, and no need to transform society and economy. A rational use of natural resources would allow societies to grow. It is with this approach in mind that most environmental agencies were created. On the other side, there is the deep ecology attitude that meant to put nature first and humankind second: in other words, nature was worth protecting for its own sake, not for what it provides for humans. A third approach has been developed by James Lovelock stating that the planet should be considered as one single living system "Gaia" in reference to the Greek Goddess of the Earth.

Most countries created a national scientific body to advise governments in their environmental policy making decisions. Since 1970, the UK has its environmental agency called the Royal Commission for Environmental Pollution and the

Department for the Environment. The USA created the US Environmental Protection Agency. These creations responded to the growing awareness of the threat of pollution.

Science provides guidance for governments: scientists produce reports with numbers that can easily be understood and compared by economic policy designers and decision makers. The scientific community and science play a critical role in international treaty regimes: first it defines the scale of the environmental challenge and by publishing research it sets an agenda and pushes states to initiate negotiations. Then it provides knowledge throughout the process, even after the adoption, which allows states to add modifications in a protocol to the convention for instance. Also, many treaties have formal scientific advisory panels to provide knowledge and the latest scientific results to states. For instance, international scientific advisory bodies such as the IPCC provide a mechanism by which the advice of scientists on environmental issues has been institutionalized for decision-makers.[32]

Scientists also work closely with policy and decision makers, which sometimes may result in conflict due to the differences between scientific and political ways of establishing and communicating the truth:[33] "environmental regimes are not

---

[32] Biermann, Frank Pattberg, Philipp (2008) Global Environmental Governance: Taking Stock, Moving Forward, *Annual Review of Environment and Resources* Vol. 33, p.280.
[33] Evans, James P. (2012) *Environmental Governance*. New York, NY: Routledge, p.71.

only driven 'by state power, but by the application of scientific understanding about ecological systems to the management of environmental policy issues.'"[34]

As stated previously, science is at the origin of most advances in international environmental law. Scientific evidence stems from international institutions such as IPCC or the GESAMP, but also from states and NGOs. The scientific community is also organizing itself and coordinating: the International Council for Science (ICSU) is the coordinating body for all researchers and academics from 141 countries. Its subsidiary bodies are the Scientific Committees on Oceanic Resources (SCOR, 1957), on Space Research (COSPAR, 1958), on Antarctic Research (SCAR, 1958), and on Problems of the Environment (SCOPE, 1969).

The scientific community participates extensively in building global environmental governance mechanisms to protect the environment through providing evidence and new knowledge about its depreciation and how to protect it. The use of new ICTs is crucial for both the coordination of global research, and the communication about the results. Indeed, scientists can use social media and new ICTs to raise awareness directly to the general public, and therefore put additional pressure on states to reach an agreement. Information cannot be withheld anymore. Given the global and interconnected nature of the

---

[34] Lidskog, Rolf, Sundqvist, Göran (2011) *The Air: The Dynamics of Science, Policy, and Citizen Interaction*. Cambridge, MA: The MIT Press, p.81.

environment, effective research can only be conducted through networks of scientists.

Also, thanks to new ICTs, the scientific community can raise funds and awareness by itself, without passing by the intermediary of some international actors (each with a different agenda). It is fair to say that ICTs led to the creation of a network of scientists, who can better communicate and research, and therefore help protect the planet. For the same reason, their participation is global governance mechanisms, and their collaboration with policy makers is also improved.

The scientific community gave birth to the environmentalist movement. Due to the topic it is protecting, the latter will probably always remains strongly influenced by the first. However, since the 1960s, the movement opened to become a multifaceted community where non-scientific actors play a key role in shaping and leading communication campaigns and influencing policy makers.

In the USA, protest against nuclear atomic bomb and the rapid generalization of the use of pesticides mobilized students from all around the country. Nuclear weapons were at the heart of this protest from a rebel young generation. In the 1960s, major environmental global organizations were created such as the World Wide Fund (WWF in 1961), Friends of the Earth (FoE in 1969), the Environmental Defense Fund (EDF in 1967) and Greenpeace (1971). These groups through legal battles and communication campaigns achieved notable

successes in the 1960s and 1970s such as the National Environmental Policy Act, Clean Air Act, Clean Water Act and Endangered Species Act[35].

The movement became international in the 1970s when some of these organizations established a presence in Europe such as Friends of the Earth UK or Les Amis de la Terre in France. Also, green political parties were created and gained some votes such as the Mouvement d'Ecologie Politique who won 3.5% in 1981 in France or the Miljöpartiet in Sweden who won 5.5% in 1988.

In Germany, the West German Green Party established in 1979 also had its roots in student protests from the 1960s. Its founders were Daniel Cohn-Bendit (future green campaigner in France and Germany) and Joschka Fischer (future Foreign Minister and Vice Chancellor of Germany) who both were part of revolutionary movements in the 1960s.

Global environmental organizations invented new ways to attract people's attention. Max Nicholson gathered scientists and communication experts to create the WWF. It showcased nature wonders and cute animals such as the panda (who became its symbol) in global communication campaigns to raise funds for projects in the field. The use of general press and communication media for WWF campaigns made their logo one of the most known around the globe today.

---

[35] Haq, Gary, Alistair, Paul (2012) *Environmentalism since 1945*. New York, NY: Routledge, p.8.

Greenpeace has a different approach: it started with activists in Alaska who used a boat called Greenpeace to oppose nuclear tests ordered by the US government. Following this trip, the group (originally called the Do Not Make a Wave Committee) decided to call themselves Greenpeace and became known for carrying out their activities where the earth needed the most protection: next to boat fishing whales, close to natural sites where governments where testing nuclear weapons, etc. Overtime, the organizations created in the 1960s and early 1970s became a truly global network of smaller organizations who could then lobby or take action at the national level while campaigning at the global level.

In a similar manner as Greenpeace was created, the environmental movement became a global counterculture in the 1990s[36]. Meetings and Summit organized by the G8, the World Trade Organization, and the International Monetary Fund were targeted by grassroots protesters and green organizations in 1994 in Madrid, 1999 in Seattle or in 2001 in Genoa. The creation of the World Social Forum (the counterpart of the Davos Economic Forum) unified all forces acting to protect the environment, promote human rights and fight against the negative impacts of capitalism.

At the community level, some movements formed by minorities in the USA, Africa or Latin American, started to protest against the development of waste landfill or abandoned toxic waste fields mainly in poor areas. In 1994,

---

[36] Ibid, p.16.

these movements resulted in environmental justice principles affirmed by President Bill Clinton in 1994. In the UK, community based groups tried to stop the development of roads. Although they rarely succeeded in preventing the creation of a road, they clearly questioned the use of cars and reduced the scale of what the government had originally planned.

International environmental law recognizes individuals and groups of individuals – in particular indigenous communities – when it comes to their traditional knowledge and conservation of biodiversity[37]. The Principle 10 of the Rio Declaration states that environmental issues are best handled with the participation of all concerned citizens. This principle led to the adoption of the 1998 Aarhus Convention requiring parties to ensure access to information, justice and public participation in environmental matters[38].

As argued in this section, the environmentalist movement has participated in the development of new global environmental governance by raising awareness and pressing states to reach an agreement. It follows the development path of the global civil society as previously described. The use of new ICTs paved the way to the creation of NGOs and non-formal groups from the civil society. Indeed, most environmental organizations use new ICTs to campaign, raise funds, and gain new members. For instance, Greenpeace launched the

---

[37] CBD (2010) *Nagoya Protocol*, Montreal, Canada: CBD. Retrieved 15 January 2013 from http://www.cbd.int/abs/
[38] Ibid.

website "green my apple" with the objective of asking Apple fans to push for their favorite brand to ban some toxic chemicals in the construction of their computers. Thanks to the use of new ICTs, they succeeded within few months.

Communication campaigns to raise awareness are new ICTs-intensive. For instance, the NGO Friends of the Earth launched the Big Ask Campaign on the Internet to give governments of 18 countries the incentive to pass binding law to cut down gas emissions. The campaign started in 2005 in the UK and three years later a law was passed. This success was repeated in 2009 in Austria, Belgium, Finland, Malta, Ireland and Scotland.

Global environmental organizations such as Greenpeace or WWF count today millions of members around the world who support their actions and campaigns by either becoming a fan on Facebook, signing an online petition, or sending emails to politicians. New forms of activism as described in chapter two are also common in the environmental community to coordinate their actions and create networks of supporters. New environmental movements such as Avaaz or 350.org are based on the use of new ICTs. For instance, 350.org is a non-governmental organization aiming at cutting the fuel gas emission to a level of 350 parts per million of carbon dioxide. Thanks to the use of new ICTs, the organization organized 5200 events in 181 countries for the official Day of the Earth.

Finally, legal groups such as the Institut de Droit International or the International Law Association play also a crucial role in environmental governance by preparing legal advisory texts for states to consider for negotiation. Some private legal associations also contributed significantly to the development of international environmental law such as the Natural Resources Defense Council (NRDC), the Sierra Club Legal Defense Fund (SCLDF) and the Environmental Defense Fund (EDF). Finally, other legal bodies provide legal assistance to developing countries and international organizations such as the Foundation for International Environmental Law and Development (FIELD) and the Center for International Environmental Law (CIEL).

The environmentalist movement with its multiple components led to the emergence of nature conservation. Scientific knowledge and NGO's work participated in the development of a complex web of international environmental governance mechanisms, as examined in the following section.

3.3 International environmental regime complex

The global response state gave to the need to manage natural resources and protect the earth is significant although ad hoc and piecemeal. The development of international environmental regimes was stimulated by intensive international conference diplomacy over the past four decades, starting with 1972 Stockholm Conference on Human

Environment and further with a series of UN sponsored international conferences. [39] Through these negotiations, states succeeded in developing sets of rules and standards that aim at producing desired conditions and outcomes that individual states cannot attain on their own in order to protect the environment.

The notion of international regime has a rich pedigree in international relations. International regimes can be defined as "a set of implicit and explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations." [40] If some regimes are coherent single integrated legal instruments, others are highly fragmented legal instruments with little or no overlap. In between, regime complexes describe loosely coupled set of regimes that are simultaneously held together and kept apart by a series of institutional rules and cognitive frames. [41]

States have indeed developed over the years a complex web of international environmental regimes to find a collective and efficient answer to some specific and global issues.

> These international environmental regimes provide
> particular ways and means for regularizing the conduct
> amongst their participants, usually governments and
> states. Put tersely, an international regime provides for

[39] Joyner, Christopher C. (2005) Rethinking international environmental regimes: what role for partnership coalitions?, *Journal of International Law and International Relations*, Vol.1, Issue 1-2, p.92.
[40] Kuyper, Jonathan W. (2013) Op Cit, p.7.
[41] Kuyper, Jonathan W. (2013) Op Cit, p.9.

> mutually interdependent sets of norms, rules, principles, values, and policy-making procedures that governments of states come to agree upon and abide by in managing a particular issue-area affecting world affairs, in this case the quality of the Earth's environment.[42]

For example bilateral fisheries conventions were adopted in the late nineteenth century to prevent overfishing in some areas: the 1867 Convention between France and Great Britain relative to fisheries or the 1882 Overfishing convention. However, the environment was perceived as a stock of resources needed by humans for their survival and development. A growing number of specific species or ecosystems needed to be protected, but nature was perceived as an external resource that humans benefit from.

Another issue was bird protection: in 1872, Switzerland proposed an international regulatory commission for the protection of birds. This initiative led to the adoption of the 1902 Birds Convention (Convention to protect birds useful to agriculture), the 1916 first bilateral treaty for the protection of migratory birds[43], and the creation of the International Committee (later council) for Bird Protection (later preservation).

The first treaty protecting fauna in a specific region is the 1900 'Convention destinée à assurer la conservation des diverses espèces animals vivant à l'état sauvage en Afrique

---

[42] Joyner, Christopher C. (2005) Op Cit, p.90.

[43] Sands, Philippe, Peel, Jacqueline (2012) *Principles of international environmental law*. Cambridge, UK: Cambridge University Press, p.25.

qui sont utiles à l'homme ou inoffensives' aiming at protecting wildlife in European colonies in Africa. Already then, it used restrictions on trade for some furs and skins (art.II). This convention was then replaced by the 1933 Convention on the preservation of fauna and flora in their natural state. No institutions to implement the agreed measures or to monitor the compliance of the parties to the treaty were created.

The first steps toward the creation of an international organization for the protection of the environment came from the International Congress for the Protection of Nature in Paris in 1909 followed by the 1913 Act of Foundation of a Consultative Committee for the International Protection of Nature signed in Berne by seventeen countries to collect and publish information about nature protection.

Furthermore two international disputes supported development of international environmental law: the Pacific Fur Seal arbitration and the trail smelter case. The first one opposed the United States and Great Britain where Great Britain was accused of overexploiting fur seals beyond its national jurisdiction. The award set forth regulations for the "proper protection and preservation" of fur seal outside national jurisdiction[44].

---

[44] Agreement between the Government of the United states of America and the Government of her Britannic Majesty for a modus vivendi in relations to fur seal fisheries in the Bearing Sea, Washington, 15 June 1891; Convention between the Government of the United states of America and the Government of her Britannic Majesty for the renewal of

The second dispute opposed the United States and Canada. The latter was accused of causing damage in the State of Washington due to Sulphur fumes from a smelter across the border in Canada and it was decided that "no state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence[45]".

Although limited to some specific regional and thematic areas, early developments of international environmental law established strong foundations on which future progress will be based[46], among others, the creation of international organizations. Although the oldest International Organization to deal (indirectly) with environmental governance is the International Labor Organization, established in 1919, most IOs were created after the Second World War. This first period of time embraces slightly less than 30 years of environmental governance with the creation of the UN, the first international conferences, and the first international treaties under the auspice of IOs.

Indeed, international organizations provide a space for dialogue, where various actors of environmental governance

---

the existing modus vivendi in the Bearing Sea, Washington, 18 April 1892.
[45] Sands, Philippe, Peel, Jacqueline (2012) Op Cit, p.196.
[46] Ibid, p.197.

can meet and discuss. They also provide information on specific environmental issues. They develop policy guidance; adopt rules and standards that might become binding obligations for states. They also play a role in monitoring and reporting on the state of the environment and the activities of their members. Finally they provide independent dispute settlement mechanisms.

The United Nations has been one of the main actors in the development of international environmental regimes. The United Nations Charter does not mention the environment as a universal right. However, since the 1960s, the UN and in particular the General Assembly and the Economic and Social Council (ECOSOC) consider the protection of the environment and sustainable development as if they were one of the general purposes of the UN Charter[47].

Also established in 1945 by the UN Charter, the International Court of Justice began work in 1946 as the successor to the Permanent Court of International Justice. The Statute of ICJ, similar to that of its predecessor, is the main constitutional document constituting and regulating the Court. The ICJ participated in the development of international environmental law through its judgments and advisory opinions. Among the most famous cases where some environmental questions were at stake are the Gabcikovo-Nagymaros Project case, the Pulp Mills case, the Advisory Opinion on the Legality of the Use or Threat of Use of

---

[47] Sands, Philippe, Peel, Jacqueline (2012) Op Cit, p.56.

Nuclear Weapons, and the Request for examination of the situation in accordance with Paragraph 63 of the Court's Judgment of 20 December 1974 in the Nuclear Tests case.

In 1949, the ICJ confirmed "every state's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other states[48]". In 1962, the relationship between economic development and the protection of the environment was at the heart of the Resolution 1831 of the UN General Assembly. Furthermore, some convention addressed the issue of river water pollution such as the 1961 Protocol concerning the constitution of an international commission for the protection of the Mosel against pollution (Paris 20 December 1961) or the Agreement concerning the international commission for the protection of the Rhine against pollution (Berne, 29 April 1963).

The International Law Commission (ILC) established in 1947 aims at the "progressive development of international law and its codification[49]". In other words, this means the "preparation of draft conventions on subjects which have not yet been regulated by international law or in regard to which the law has not yet been sufficiently developed in the practice of states". Also, part of its work is about "the more precise formulation and systematization of rules of international law

---

[48] Lefeber, René (1996) *Transboundary Environmental Interference and the Origin of State Liability*. The Hague, The Netherlands: Kluwer Law International, p.73.
[49] UNGA (1947) *Resolution 174* (ii) *Art.1*. New York, NY: United Nations. Retrieved 20 November 2012 from http://www.un.org/documents/ga/res/2/ares2.htm

in fields where there already has been extensive state practice, precedent and doctrine[50]". Apart from addressing matters of general international law, the ILC deals with questions of international environmental law[51]. For instance, the ILC drafted a document that led to the development of the 1958 Geneva Conventions, or the 1997 Watercourses Convention.

The World Meteorological Organization established in 1947 and based in Geneva participates actively in the combat against climate change through a series of programs: the World Weather Watch Program, the World Climate Program, the Global Climate Observing System, the Atmospheric Research and Environment Program, and the Intergovernmental Panel on Climate Change (IPCC) with UNEP.

The International Marine Organization (IMO) based in London and established in 1948 deals with environmental issues through its Marine Environment Protection Committee (MEPC). The IMO is the Secretariat for and led to the adoption and a series of Conventions about oil pollution, pollution from ships, civil liability and compensation for oil pollution damage, emergency preparedness, control management of ship's ballast water and sediments, and for the 1972 London Convention, and has led to the adoption of non-binding guidelines, standards and codes in this matter.

---

[50] Ibid, Art.15.
[51] Hafner, Gerhard, Pearson, Holly (2000) Environmental issues in the work of the ILC, In Pearson, Holly (ed.) *Yearbook of international environmental law*. Oxford, UK: Oxford University Press, p.40.

The first UN attempt for environmental intergovernmental cooperation happened through the UN Economic and Social Council (ECOSOC). The Economic and Social Council (ECOSOC) makes recommendations to the UN General Assembly, prepares draft conventions, and coordinates all efforts of specialized UN agencies for international economic, social, cultural, educational and health issues. It receives reports from specialized agencies and UN bodies, including the United Nations Environment Program (UNEP) and CSD. It convened international conferences of the environment (1949 UNCCUR) and led to the adoption of regional treaties in Europe (UN Economic Commission for Europe UNECE) on air pollution, environmental impact assessment, and protection of watercourses.

In 1995, UNECE adopted the "Environment for Europe" program based on Agenda 21 targets, which was reformed in 2007. The ECOSOC created other subsidiary bodies dealing with environmental questions such as the UN Forum on Forest, the Permanent Forum on Indigenous Issues, the Commission on Population and Development, the Commission on Social Development, the Committee for Development Policy, the Committee of Experts on the transport of dangerous goods and on the globally harmonized system of classification and labeling of chemicals.

The ECOSOC resolution convened the 1949 UN Conference on the Conservation and Utilization of Resources

(UNCCUR), which recognized the need for "continuous development and widespread application of the techniques of resources conservation, and utilization[52]". This resolution also recognized the competence of the UN vis à vis the environment, and put the base for the 1972 Stockholm Conference and 1992 Rio UNCED.[53] The objectives of the UNCCUR were modestly to exchange information on "techniques in this field, their economic costs and benefits, and their interrelations"[54]. Held in 1949 in New York and attended by about 1000 participants, and 50 countries, the conference focused on six issues: minerals, fuels and energy, water, forest, land, wildlife and fish. The link between conservation and development were debated[55].

Further to this initiative in 1954, the United Nations convened a major international conference in the conservation of the living resources of the sea leading to the adoption of the 1958 Geneva conventions on the Law of the Sea. Also, the General Assembly adopted a series of resolutions about nuclear test and oil spilling in the oceans, which led to the adoption of the Test Ban Treaty in 1963. The first convention on oil pollution in the ocean was adopted in 1954.

---

[52] United Nations (1949) *Proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources, Preamble.* New York, NY: United Nations. Retrieved 5 December 2012 from http://www.archive.org/stream/proceedingsofthe029855mbp/proceedingsofthe029855mbp_djvu.txt
[53] Sands, Philippe, Peel, Jacqueline (2012) Op Cit, p.28.
[54] United Nations (1949) *Proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources,* Op Cit.
[55] Ibid.

In that period of time, some global conventions were adopted – responding to some specific environmental issues, often following environmental catastrophes – such as the 1954 International Convention for the Prevention of pollution of the sea by oil (London, 12 May 1954), the 1958 High seas fishing and conservation convention, the 1958 Convention on the High seas, and the 1971 Ramsar convention to protect wetland ecosystem.

International agreements for regulating the high seas have divided the ocean into special legal zones and designated jurisdiction over the activities that affect this space such as fishing, mining, or shipping for instance. However, due to states' economic interests in high seas resources, governance regimes were slow to develop. UN Conferences and ad hoc multilateral agreements only produced a patchwork or rules, principles and treaty law that left serious problems unsolved.[56]

The United Nations Development Program was established in 1965. It is the organization that coordinates all efforts of the United Nations for social and economic development. It manages UN-REDD, a program to combat emissions and deforestation, and the Global Environment Facility. One of the sectors it focuses on is energy and environment: effective and sustainable use of and access to resources and land management, protection of biodiversity, combat desertification and deforestation, include environmental considerations when planning development activities.

---

[56] Joyner, Christopher C. (2005) Op Cit, p.94.

In 1968, the UNESCO convened an intergovernmental conference (the Biosphere Conference) to discuss the impact of human activities on nature:

> Until this point in history the nations of the world have lacked considered, comprehensive policies for managing the environment. Although changes have been taking place for a long time, they seem to have reached a threshold recently that made the public aware of them. This awareness is leading to concern, to the recognition that to a large degree, man now has the capability and the responsibility to determine and guide the future of his environment, and to the beginnings of national and international corrective action.[57]

This conference set the tone for the following period of time starting with the 1972 Conference on human environment: [58] it was attended by 114 states and numerous governmental and non-governmental organizations, and adopted three non-binding agreements: a Resolution on institutional and financial arrangements, a Declaration containing 26 general guiding principles, and an Action Plan with 109 Recommendations for future actions to be taken by the international community. "There were significant elements of innovation in (1) the redefinition of international issues, (2) the rationale for co-operation, (3) the approach to

---

[57] Caldwell, Paul, Lynton, Keith, Weiland, Stanley (1996*) International Environmental Policy: From the Twentieth to the Twenty-first Century*. Durham, NC: Duke University Press, p.45.

[58] Sohn, Louis B. (1973) The Stockholm Declaration on the Human Environment, *Harvard International Law Journal*, Vol.14, p.423.

international responsibility, and (4) the conceptualization of international organizational relationships[59]."

The Conference recommended the UN General Assembly to establish (1) an intergovernmental Governing Council for Environmental Programs (producing policy guidance and coordinating environmental programs); (2) an environment secretariat; (3) an environment fund (financing environmental programs); and (4) an inter-agency coordinating board (coordinating programs among UN agencies). Therefore the UN created the United Nations Environment Program. It has an executive board of 58 members elected by the UN General Assembly called Governing Council. They report to the ECOSOC and General Assembly. It also has a Global Ministerial Forum meeting annually to discuss global environmental policy and a global secretariat with headquarters in Nairobi. In 2014, it became the United Nations Environmental Assembly, which met for the first time in Nairobi in June.

The Declaration of principles provided "a common outlook and (…) common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment[60]". Principle 24 states that international cooperation should "effectively control, prevent, reduce and eliminate adverse environmental effects resulting from

---

[59] Caldwell, Paul, Lynton, Keith, and Weiland, Stanley (1996), Op Cit, *p.*60.
[60] United Nations (1972) *Declaration of the United Nations Conference on the Human Environment*. New York, NY.

activities conducted in all spheres, in such a way that due account is taken of the sovereignty and interests of all states".

Principle 21 determined that states are responsible for all activities within their jurisdictions or by their nationals, ships or aircrafts that could cause any damage in another state or beyond its national jurisdiction. Principle 22 asks states to cooperate in developing international environmental law. Principle 23 states that some environmental standards to be determined nationally based on each state's value system, social costs and environmental standards needs.

The other principles are more general guidance. For instance, Principle one states that man has "the fundamental right to freedom, equality, and adequate conditions of life, in an environment of a quality that permits life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations"[61]. Other principles set forth general guidelines for the conservation of natural resources, identify threats to natural ecosystems, state the relationship between economic development and nature conservation, the need of demographic policies. The 1972 Stockholm Conference is recognized as a major milestone, for it concentrated for the first time worldwide recognition of the needs to protect the earth. [62]

---

[61] Ibid.
[62] Joyner, Christopher C. (2005) Op Cit, p.92.

UNEP is not a specialized agency but a program, hence has limited resources and capacity. UNEP has made a major contribution to international environmental law. It facilitated the development of major international environmental agreements and is the secretariat for some, such as the 1985 Vienna Convention and the 1987 Montreal Protocol, or the 1989 Basel Convention on Hazardous Waste. It also convenes regularly a group of experts on international environmental law called the Montevideo program.[63]

Among UNEP's current top priorities are strengthening the capacity of developing countries to combat climate change, ensuring sustainable use of natural resources, strengthening environmental governance, minimizing the negative impact of environmental catastrophe on human lives, ensuring that states integrate the protection of the environment in their development planning and activities.[64]

1972 is also considered a cornerstone in environmental protection due to the series of global treaties adopted that year to tackle various environmental issues such as dumping of waste at sea, pollution from ships, the trade of endangered species, the protection of world cultural heritage, and the UN Convention on the Law of the Sea (UNCLOS).

---

[63] Sands, Philippe, Peel, Jacqueline (2012), Op Cit, p.60.
[64] UNEP (2010) *Medium term Strategy 2010-2013, Environment for Development*. New York, NY: United Nations. Retrieved 10 December 2012 from UNEP/GCSS.X/8 http://www.unep.org/pdf/finalmtsgcss-x-8.pdf

The United Nations Convention on the Law of the Sea (UNCLOS), also called the Law of the Sea Convention or the Law of the Sea treaty, is the international agreement that resulted from the third United Nations Conference on the Law of the Sea (UNCLOS III), which took place from 1973 through 1982. The Law of the Sea Convention defines the rights and responsibilities of nations in their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources.

The following years saw the continuation of the growing number of multilateral agreements and plans to protect the environment, like the 1978 UNEP Draft "Principles of Conduct in the field of the environment for the guidance of states in the conservation of harmonious utilization of natural resources shared by two or more states", the 1980 World Conservation Strategy developed by IUCN, UNESCO, UNEP, and WWF and the 1982 World Charter for Nature adopted by the UN General Assembly[65] and elaborated by the International Union for Conservation of Nature and an international group of experts.

The World Charter for Nature starts with general principles to protect nature, its ecosystems and species, then calls for the integration of the protection of the environment in the long-term development planning, and finally addresses

---

[65] UNGA (1982) *World Charter for Nature*, *Resolution 37/7*. New York, NY: United Nations. Retrieved 10 December 2012 from http://www.un.org/documents/ga/res/37/a37r007.htm

implementation aspects through education, environmental impact assessment, and access to information. Indeed, states perceived increasingly clearly over time the influence of environmental issues on development and trade. The General Agreement on Tariffs and Trade (GATT), the predecessor of the World Trade Organization, established a group to tackle these issues. At the same time, the World Bank and regional banks were asked to include environmental consideration in their loan-making processes. Also, new binding agreements restricted the use of some natural resources: the moratorium on commercial whaling in 1982, on dumping waste at sea in 1983, on elephant ivory in 1989[66].

The new perception of the environment as a natural resource to preserve for the long term led to some changes in global governance mechanisms. A new understanding of development, a sustainable development that includes not only economic aspects, but also environmental and social ones became more and more accepted. It also corresponds to a growing number of active civil society organizations as described previously. The concept of sustainable development was first adopted by the World Commission on Environment and Development (WCED) in 1987. Established by the UN General Assembly, it produced the Brundtland Report[67] and made specific recommendations for six priority areas: (1)

---

[66] Sands, Philippe, Peel, Jaqueline (2012) Op Cit, p.34
[67] UNGA (1987) *Report of the World Commission on Environment and Development: Our common future*. New York, NY: United Nations. Retrieved 11 December 2012 from http://www.un.org/documents/ga/res/42/ares42-187.htm

sustainable development needs the economic and ecological support of national and international authorities, (2) UNEP should be strengthened, (3) the international community should have more power to address irreversible environmental damages, (4) NGOs, scientists and industry should have more rights to participate and be informed, (5) strengthen environmental law at international and national level.

In terms of economics, 'sustainable' means the 'maintenance of capital' or 'non-declining capital'. Natural capital represents the stock of environmentally provided assets such as soil, fauna, atmosphere, forest, water, etc. that provides goods and services. Another way of describing sustainable economy is about balancing inputs and outputs that human activities need and produce:

- Waste emissions should be limited to the capacity of the local environment to absorb.
- Harvest rates should remain within the regenerative capacity of the natural system that generates them.
- Depletion rates of non-renewable-resources should be equal to the rate at which renewable substitutes are developed by human invention.[68]

Sustainable development requires humankind to change the way we live, consume and produce what we consume in order to keep a high level of living standard in developed countries

---

[68] Goodland, Robert, Daly, Herman (1996) Environmental Sustainability: universal and non-negotiable, *Ecological applications*, Vol.6, p.1005.

and support improving living standards in developing countries while not jeopardizing our future.

The Intergovernmental Panel on Climate Change is the leading international body for the assessment of climate change. It was established by the United Nations Environment Program and the World Meteorological Organization in 1988 to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts. It produces Assessment Reports in Climate Change (1990, 1995, 2001, 2007 and 2014) and contributed to the Kyoto Protocol discussions.

The UN General Assembly convened a UN Conference on Environment and Development[69] in June 1992 in Rio de Janeiro, Brazil to "elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of strengthened national and international efforts to promote sustainable and environmentally sound development in all countries."[70]

Furthermore, three non-binding agreements were reached at Rio: the Rio Declaration on Environment and Development (Rio Declaration), a Non-legally binding authoritative

---

[69] UNGA (1992) *Report of the United Nations Conference on environment and development, Rio de Janeiro, 3-14 June 1992*. New York, NY: United Nations. Retrieved 12 December 2012 from http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm
[70] Sands, Philippe, Peel, Jacqueline (2012) Op Cit, p.40.

statement of principles for a global consensus on the management, conservation and sustainable development of all types of forest (UNCED Forest principles), and the Agenda 21.

Three treaties were drafted: the Convention on Biological Diversity (CBD), the UN Framework Convention of Climate Change (UNFCCC), and the UN Convention to Combat Desertification (UNCCD). An important advance at UNCED is the understanding that environmental concerns must be taken into account when designing and implementing economic and development activities. The challenge was to find the right balance between international environmental law prescriptions and rules of international economic cooperation.[71]

The 1992 UN Conference on Environment and Development (UNCED) in Rio highlighted the need to find ways to halt the destruction of irreplaceable natural resources and the pollution of the earth. Although it does not recognize the right to clean and healthy environment, it stipulates that human beings are "entitled to a healthy and productive life in harmony with nature." [72]

Two of the Rio principles must be highlighted: Principle three states that the "right to development must be fulfilled so as to equitably meet developmental and environmental needs of

---

[71] Ibid
[72] Joyner, Christopher C. (2005) Op Cit, p.93.

present and future generations" [73]. It is the first time the right to development is described in an international declaration. Principle four states: "in order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it" [74]. In other words, environment considerations must be taken into account when lending funds for development projects by international institutions. Another important element to highlight is Principle seven, which states that:

> In view of the different contributions to global environmental degradation, states have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command. [75]

The Rio Declaration provides several general principles of international environmental law such as the precautionary principle, or the polluter pays principle, as well as more procedural elements to implement the general principles such as environmental impact assessments or the exchange of information. Another outcome of the Rio Conference is Agenda 21: an action plan to implement sustainable development for the "fulfillment of basic needs, improved living standards for all, better protected and managed

---

[73] UNGA (1992) *Report of the United Nations Conference on environment and development, Rio de Janeiro, 3-14 June 1992*. Op Cit.
[74] Ibid.
[75] Ibid.

ecosystems and a safer, more prosperous future[76]". Although non-binding, it is a consensus document negotiated by the whole international community reflecting rules, principles and practices that could contribute to the development of new customary and conventional international environmental law.[77]

Agenda 21 identified the UN General Assembly as "the principal policy-making and appraisal organ"[78]. The UNGA resolutions are not binding. They led to the creation of some conferences (1972 UN Conference on human environment, UNCED, WSSD, Convention on Drought and Desertification, the Millennium Summit, the 2012 Rio+20 summit), some UN bodies (UNEP, UNDP, the International Law Commission, the Commission on Sustainable development, the Committee on the Development and Utilization of New and Renewable Sources of Energy) and an informal consultative process on ocean and law of the sea. Some of its most important resolutions in terms of the environment were the resolution on the historical responsibility of states for the preservation of nature[79], the UNEP Draft Code of Conduct, the 1982 World Charter for Nature[80], and on the Brundtland report.[81]

---

[76] Ibid

[77] Sands, Philippe, Peel, Jacqueline (2012) Op Cit, p.45.

[78] UNGA (1980) *Institutional arrangements to follow up the United Nations Conference on Environment and Development*. New York, NY: United Nations. Retrieved 14 December 2012 from http://www.un.org/documents/ga/res/35/a35r8e.pdf

[79] Ibid.

[80] UNGA (1982) *World Charter for Nature*, Op Cit.

[81] UNGA (1992) *Report of the United Nations Conference on environment and development, Rio de Janeiro, 3-14 June 1992*. Op Cit.

In 1992, the UN Conference on Trade and Development (UNCTAD) adopted a "New Partnership for Development: The Cartagena Commitment" requires UNCTAD to integrate environmental consideration in its growth and development planning and activities. The UN Institute on Training and Research (UNITAR) focuses on development training and research programs on sustainable development and international environmental law. The UN settlements program UN-Habitat, the Committee on peaceful Uses of outer space (COPUOS), the Scientific Committee on effects of atomic radiation (UNSCEAR), the Human Rights Committee and the Committee on Economic, Social and Cultural Rights also take environmental questions into consideration in their work.

Since Rio 1992, some major global governance instruments were adopted such as the Kyoto Protocol to the 1992 Climate Change Convention was adopted in 1997, Biosafety Protocol to the 1992 Biodiversity Convention was adopted in 2000, states adopted the Aarhus Convention to address the rights of participation in 1998, an IAEA nuclear safety convention, and a Protocol to the Convention on Biological Diversity concerning access to genetic resources and the fair and equitable sharing of benefits arising from their utilization in 2010 (Nagoya Protocol).

Also it is worth acknowledging the maintenance of the memorandum on commercial whaling and the prohibition on African elephant ivory trade. The International Court of Justice considered environmental considerations in four

important cases such as the Gabcikovo-Nagymaros project on the Danube river case and the Pulp Mills case.

In September 2002, the World Summit on Sustainable Development (WSSD) in Johannesburg marked the tenth anniversary of Rio 1992 but fell short of concrete action and agreement. Ten years later, the 2012 UN Conference on Environment and Development (UNCED or Rio+20) marked the 20th anniversary of the first Rio conference. Although states actively debated the issues at stake, and non-state actors were present to support and influence the output of the conference, no binding agreement was reached. However it was decided to replace the CSD with the High Level Political Forum for Sustainable Development and develop a set of Sustainable Development Goals.

On the international stage, the voice of developing countries is growing stronger. BRICS countries, along with others such as Mexico or South Korea, have gained unprecedented power in the last two decades. At the first Rio Conference in 1992, developed countries had more power to reach an agreement based on their understanding of the environment. Sustainable development is sometimes perceived as a foreign concept coming from developed countries. It is also sometimes perceived as a form of control used by developed countries to keep their supremacy. In addition, some developing countries have a different relationship to the earth than developed states.

The traditions of Gaia or Mother Nature are very common in many developing countries. They show a very respectful attitude towards the earth, and consider nature, and the earth, as a living and spiritual entity. This shows how heterogeneous developing countries' position towards the environment can be. Therefore, their growing (and necessary) voice renders international negotiations even more complicated.

As discussed in this section, states succeeded to go beyond their differences and developed international environmental regimes in order to protect the environment. The following section will examine their most universal outcomes: general principles of international environmental law.

3.4 General principles of international environmental law

Global environmental governance is made of hard and soft law: it contains international conventions on the protection of ecosystems or species that are binding. But it also contains a wide array of agreements that are soft law, such as the 2012 Rio Declaration. Although quite distinctive, hard and soft law instruments can serve as mutually supporting complements to each other.

This research agrees with legal rationalist scholars, who state that hard and soft law have distinct attributes that states choose for different contexts. It also favors the legal constructivist approach of soft-law instruments for "their

capacity to generate shared norms and a sense of common purpose and identity, without the constraints raised by concerns over potential litigation"[82] and therefore can lead to more parties reaching an agreement and a higher degree of compliance.

The existence of general principles in international environmental law was confirmed by the Arbitral Tribunal in the Iron Rhine case[83] Belgium against the Netherlands: they can be found in numerous treaties, binding acts of international organizations, state practice and soft law commitments.

Principles are different from rules in the sense that they "embody legal standards, but the standards they contain are more general than commitments and do not specify particular actions[84]". In other words, "a 'rule' 'is essentially practical and, moreover, binding…There are rules of art as there are rules of government' while principle 'expresses a general truth, which guides our action, serves as a theoretical basis for the various acts of our life, and the application of which to reality produces a given consequence.'"[85] It remains unclear if

---

[82] Schaffer, Gregory C., Pollack, Mark A. (2010) Hard vs. Soft Law: Alternatives, Complements and Antagonists in International Governance, *Minnesota Law Revue*, V.09 (23), p.715.

[83] International Court of Justice (1996) *Award in the Arbitration regarding the Iron Rhine ("Ijzeren Rijn") Railway (the Kingdom of Belgium and the Kingdom of the Netherlands), decision of 24.5.2005, RIAA XXVII, paragraph 223*. The Hague, Netherlands.

[84] Bodansky, Daniel (1993) The United Nations Framework Convention on Climate Change: A commentary, *Yale Journal of International Law*, Vol.18, p.459.

[85] Sands, Philippe, Peel, Jacqueline (2012) Op cit, p.189.

all the principles can be universally applied to call for legal action against states when not complying. Indeed, some states such as the USA or the UK tried to limit the scope of such principles, as in the case of the article 3 of the Biodiversity Convention.[86]

No legal instrument encapsulates general principles and rules for international environmental law. Therefore it remains necessary to look at the 1978 UNEP Draft Principles, the 1986 WCED Legal Principles and the 1992 Rio Declaration that continues to reflect "to the extent any international instrument can do so, the current consensus of values and priorities in environment and development."[87] The general principles will be discussed as follows: states' sovereignty over their natural resources, preventive action, cooperation, precautionary principle, sustainable development, the polluter pays, common but differentiated responsibility.[88]

States' sovereignty principle

Principles 21 of the 1972 Stockholm Declaration is the cornerstone of international environmental law: "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental

---

[86] Ibid, p.186.

[87] Porras, Ilena (1992) The Rio Declaration: a new basis for international cooperation, *Review of European Community and International Environmental Law*, p.245. Retrieved 24 February 2012 from http://onlinelibrary.wiley.com/doi/10.1111/j.1467-9388.1992.tb00043.x/full

[88] Sands, Philippe, Peel, Jacqueline (2012) Op cit, p.187.

policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction". This principle contains a right (to manage their own natural resources) and a duty (to not damage natural resources of another country) have become customary law and therefore are universally applied to states as confirmed in the ICJ's 1996 Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons.

States have the right to manage their land and activities taking place on this land: this is an extension of their sovereignty in the environmental law. They can allow private companies to perform any type of activity on their land for instance. This has been confirmed by numerous UN General Assembly's resolutions[89]. More recently, the 2010 Nagoya Protocol to the Biodiversity Convention also reaffirms the "sovereign rights over natural resources[90]" of state parties. The question remains open however for shared natural resources such as transboundary watercourses, migratory species, air quality, high seas or the climate system. The conditions a state could take unilateral measures to protect natural resources outside of its jurisdiction need to be yet discussed and determined.

Concerning the second part of the principle 21 of the 1971 Stockholm Declaration, the ICJ in its 1996 Advisory Opinion

---

[89] Ibid, p.190.
[90] CBD (2010) *The Nagoya Protocol*. Montreal, Canada: CBD, Article 6. Retrieved 8 February 2012 from http://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf

on the Legality of the Threat or Use of Nuclear Weapons determined it reflects international customary law. In the Trail Smelter case, the ICJ states that "under the principles of international law…no state has the right to use or permit the use of territory in such a manner as to cause injury by fumes in or to the territory of another of the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence[91]". In 1972, the UN General Assembly reaffirmed "the right of each country to exploit its own resources in accordance with its own priorities and needs and in such manner as to avoid producing harmful effects on other countries[92]".

This principle is also the basis for the article 30 of the Charter of Economic Rights and Duties of States: "All states have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction[93]". This principle is referenced in many later treaties, declarations and acts. The ICJ states that "the existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other

---

[91] Sands, Philippe, Peel, Jacqueline (2012) Op cit, p.196
[92] UNGA (1972) *Resolution 2829 (ii) Art.1*. New York, NY: United Nations. Retrieved 20 November 2012 from http://www.un.org/depts/dhl/resguide/r26_en.shtml
[93] UNGA (1974) *Resolution 3281, (XXVII) Art.1*. New York, NY: United Nations. Retrieved 20 November 2012 from http://www.un.org/depts/dhl/resguide/r26_en.shtml

States or of areas beyond national control is now part of the corpus of international law relating to the environment."[94]

It is worth noticing that principle 2 of the Rio Declaration is adding the word "developmental" in this principle: states have the right to pursue "their own environmental and developmental policies". This principle limits the sovereignty of states: they must ensure that their activities are not damaging the environment of other states.

Preventive action principle

The ICJ described this principle as "an obligation, which entails not only the adoption of appropriate rules and measures, but also a certain level of vigilance in their enforcement and the exercise of administrative control applicable to public and private operators, such as monitoring of activities undertaken by such operators[95]". Also, the ICJ confirmed that it is now " a principle of general international law" that "applies not only in autonomous activities but also in activities undertaken in implementation of specific treaties between the Parties."[96]

Under this principle, a state may be obliged to prevent environmental damages outside of its jurisdiction but also

---

[94] International Court of Justice (1996) Op Cit, paragraph 222.
[95] International Court of Justice (2010) *Pulp Mills on the River Uruguay (Argentina v. Uruguay) Paragraph 197*. The Hague, The Netherlands. Retrieved 26 September 2012 from http://www.icj-cij.org/docket/files/135/15873.pdf
[96] International Court of Justice (2010), Op Cit, paragraph 101.

inside, unlike with the previous principle[97]. It also requires to take action before the damage may occur as the ICJ states in the Gabcikovo-Nagymaros Case: "in the field of environmental protection, vigilance and prevention are required on account of the often irreversible character of damage to the environment and of the limitations inherent in the very mechanism of reparation of this type of damage[98]". The objective is to prevent any activity (within or outside states' jurisdictions) in violation of international environmental standards. Many treaties aiming to protect species and flora; seas and marine life; ozone layer; atmosphere; water resources and watercourses; and migratory species have endorsed this principle, along with the 1972 Stockholm Declaration, the 1978 UNEP Draft Principles, and the 1982 World Charter for Nature[99].

Cooperation principle

The principle 7 of the 1978 UNEP Draft Principles describes cooperation in the field of the international environmental law as follows: "exchange of information, notification, consultation and other forms of cooperation regarding shared natural resources are carried out on the basis of the principle of good faith and in the spirit of good neighbourliness". The obligation to cooperate is affirmed in most international

---

[97] Munro, Robert D., Lammers, Johan G. (1987) *Environmental protection and Sustainable Development: legal principles and recommendations*. London, UK: Graham & Trotman, xi-xii.

[98] International Court of Justice (1997) *The Gabcikovo-Nagymaros Project, Paragraph 140.* The Hague, The Netherlands. Retrieved 26 September 2012 from http://www.icj-cij.org/docket/files/92/7375.pdf

[99] Sands, Philippe, Peel, Jacqueline (2012), Op Cit, p.202.

environmental agreement such as 1982 UNCLOS, 1985 Vienna Convention, 1992 Biodiversity Convention. It is also stated in bilateral and regional treaties such as 1933 London Convention, 1940 Western Hemisphere Convention or the 1991 Alpine Convention.

The ITLOS confirmed that the principle of cooperation is "a fundamental principle in the prevention of the marine environment under Part XII of the Convention and general international law[100]". In the MOX case, the tribunal affirmed that Ireland and the UK had to "(a) exchange further information with regard to possible consequences for the Irish Sea arising out of the commissioning of the MOX plant; (b) monitor risks or the effects of the operation of the MOX plant for the Irish Sea; (c) devise, as appropriate, measures to prevent pollution of the marine environment which might result from the operation of the MOX plant."[101]

Sustainable development principle

This term was first described in the Brundtland Report in 1987 as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[102] This definition recognizes the needs

---

[100] International Tribunal for the Law of the Sea (2001) *The Mox Plan Case, (Ireland vs United Kingdom), Provisional measures, Paragraph 33.* London, UK: ITLOS. Retrieved 10 August 2012 from https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_10/Order.03.12.01.E.pdf

[101] International Tribunal for the Law of the Sea (2001) Op Cit, p.83.

[102] Voigt, Christina (2009) *Sustainable development as a principle of international law: resolving conflicts between climate measures and WTO law.* Leiden, The Netherlands: Martinus Nijhof, p. 214.

of the poorest and at the same time the necessity to preserve natural resources in a longer-term perspective. The first treaty to mention it is the 1992 Agreement on the European Economic Area, and has been extensively used since then. Concerning states' practice, the 1893 Pacific Fur Seal Arbitration stated that seals should be protected for the benefit of mankind: it is the first approach of a sustainable way to manage natural resources by states.[103]

This concept encompasses four elements: (1) the principle of intergenerational equity; (2) the principle of sustainable use of natural resources; (3) the principle of equitable use of natural resources; (4) the principle of integration of environmental considerations into economic and development plan. Indeed, the ICJ states in the Gabcikovo-Nagymaros case: "This needs to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development. (…) Parties together should look afresh at the effects on the environment of the operation of the Gabcikovo power plant."[104] Furthermore the Preamble to the WTO Agreement recognizes the objective of sustainable development. The WTO Appellate Body also notes that it "has been generally accepted as integrating economic and social development and environmental protection."[105]

---

[103] Sands, Philippe, Peel, Jacqueline (2012) Op Cit, p.208.
[104] International Court of Justice (1997) Op Cit, paragraph 140.
[105] Sands, Philippe, Peel, Jacqueline (2012) Op cit, p.208.

Precautionary Principle

The precautionary principle stipulates that "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."[106] The precautionary principle is also called the precautionary approach by the USA and other countries. The 1990 Bergen Ministerial Declaration on Sustainable Development in the United Nations Economic Commission for Europe (UNECE) Region states that states' policies must be based on the precautionary principle and that environmental measures must anticipate, prevent and attack the causes of environmental degradation.

Where there are threats of serious or irreversible damage, the lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation". Within the European Union, this concept has now customary status. However the ICJ and the WTO panel refrained from acknowledging it, although various international conventions and treaties could support this fact.

Polluter pays principle

The European Union describes this principle as "natural or legal persons governed by public or private law who are responsible for pollution must pay the costs of such measures as are necessary to eliminate that pollution or to reduce it so

---

[106] United Nations (1992) *Rio Declaration on Environment and Development*, Op Cit, Principle 15.

as to comply with the standards or equivalent measures laid down by the public authorities[107]". This principle has not received the broad support as the previous principles. States tend to disagree with the assumption that the cost should be paid solely by the polluter. Also, this principle raises questions for its impact on the WTO rules.

Common but differentiated responsibility principle

The Principle 7 of the Rio Declaration provides that "States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, states have common but differentiated responsibilities." This principle recognizes the responsibility of all states to protect the environment. At the same time it values the different capabilities of states to protect nature. This principle has led to the creation of mechanisms to provide technical, financial and technical assistance to developing countries in the field of protection of nature.

If the existence and applicability of the rules and principles of international environmental law is widely recognized[108], their legal status, meaning and the consequence of their application remains uncertain[109]. They provide a framework that is the

---

[107] European Union (1957) *EU Treaty amended by the Treaty of Lisbon, Article 191.* Brussels, Belgium. Retrieved 10 August 2012 from http://europa.eu/legislation_summaries/institutional_affairs/treaties/treaties _eec_en.htm

[108] International Court of Justice (1996), Op Cit, paragraph 223.

[109] Sands, Philippe, Peel, Jacqueline (2012) Op cit, p.236.

basis for future developments of international environmental law.

As discussed in this chapter, nature needs protection urgently. Global environmental governance offers some solutions to the most pressing environmental challenges. States developed a complex web of environmental regimes. Also, new private authorities (mainly NGOs and scientists) participate in designing and providing a global and local response. Thanks to new ICTs and the growing general public awareness, nature has more chances than ever to be better protected. As stated previously, efficient policies need to be locally rooted and include measure to provide a sense of ownership to local communities. The following chapter discusses the impact of new ICTs on the legitimacy of global environmental governance.

Chapter 4. New ICTs and the legitimacy of IUCN's global environmental governance mechanism

Global environmental governance is characterized by the proliferation of regulatory schemes supported by a broad range of public and private actors. As discussed in previous chapters, the generalization of new ICTs provided new tools to communicate and gain access to the information that was once limited to a small number of states and organizations. The use of new ICTs has brought additional capacity to most global actors and has led to the emergence of a new field in international relations. Cyberspace is now recognized as an integral feature of the interactions within and across sovereign states.[1]

This chapter analyzes the impact of new ICTs on the legitimacy of a global environmental governance mechanism. First, it discusses the democratic deficit of global governance institutions, then the questions of legitimacy and accountability at the international level. Finally it analyzes the impact of new ICTs on IUCN's resolution and recommendation process.

---

[1] Choucri, Nazli (2012) Op Cit, p.238.

4.1 Democratic deficit of global governance institutions

There is broad agreement among scholars and international relations practitioners that most international institutions do not meet democratic standards. The democratic deficit of global institutions comes from a procedure and a scope factor. First, international institutions do not operate according to democratic standards. Second, decision-makers of these institutions are not accountable for wrong decisions to those who are affected by these decisions. This element is also reinforced by the inscrutability of most international decision-making processes. [2]

The post-World War Two (WW2) institutions have specific features. First they function through a specific mode of governance: executive multilateralism. This decision-making process implies that governmental representatives from various states make global decisions within global institutions to coordinate their policies with limited national parliamentary control and little public scrutiny.[3]

Second, states are the ultimate and exclusive addressees of the regulations, which take place between states. These regulations aim at managing only interstate relations and do not interfere within state's national territory and internal affairs. These regulations have also a high degree of certainty in terms of their economic effects globally.

---

[2] Zürn, Michael (2004) Global governance and legitimacy problems, *Government and Opposition*, Vol.39, Issue 2, p.260.
[3] Ibid,p.264.

Most institutions created after the WW2 followed the embedded liberalism principle, which implies a fundamental orientation toward free trade and open borders while keeping national political systems safe. Interestingly, states with most developed national welfare systems that were able to absorb the shocks and irregularities of the world market, are the ones that embraced most fully free trade and open borders policies.[4]

Embedded liberalism and executive multilateralism led to a global increase in transnational trade and to certain respect globalization. Initially, global institutions allowed national political systems to keep a large degree of autonomy (embedded liberalism). However, with time, they became more and more intrusive.

Liberalism and globalization have also led to societal denationalization, where national states loose their capabilities to absorb the shocks and irregularities of the global market:

> The effectiveness of state policies comes under pressure in those issue areas in which the spatial scope of national regulations does not extend as far as the real boundaries of transactions. (…) The paradox of post-war liberalism is therefore that it has ruined its own shock-absorbers. The capacity of an individual nation-state to intervene into market processes in order to cushion the undesired effects is challenged.[5]

---

[4] Ibid, p.263.
[5] Ibid, p.266.

Further to societal denationalization, global governance institutions have distinctive features: the ultimate addressee is not the state anymore but rather societal actors such as individuals, TNCs, NGOs, which were previously under the responsibility of national states: global governance institutions produce regulations with global but also national and local impacts.[6] These new regulations increase societal attention and sometimes resistance: "we find that the more decision-making power shifts to the European level for a policy field, or over time, the more attention for and criticism of the European Union rise."[7]

Indeed, the increasingly intrusiveness of global institutions at national and local level produces national and local resistance, which in turn reduces the effectiveness of global institutions and regulations. [8] Politicization is the (1) growing public awareness of a topic or an institution and the (2) mobilization of competing political preferences towards institutions' policies and procedures.[9] In other words, politicization of an international actor is about more people knowing about this actor (general public) and about actions taken regarding that actor, whether actions to join in or to organize contestation.

---

[6] Ibid, p.269.
[7] Zürn, Michael, Binder, Martin, Ecker-Ehrhardt, Matthias (2012) International authority and its politicization, *International Theory*, Vol.4, p89.
[8] Zürn, Michael (2004) Op Cit, p.285.
[9] Michael Zürn, Martin Binder and Matthias Ecker-Ehrhardt (2012) Op Cit, p71.

Politicization of international actors is a consequence of their new authority.[10] The more an institution has authority, the more it calls attention from the general public, and therefore the more it also triggers interest and demands. The public debates preceding the Vietnam war or the two wars in Iraq are examples of the politicization of foreign policy.

> The intrusiveness and visibility of these new international institutions gives rise to a politicization of these institutions. (…) Many societal actors who feel affected by these international decisions want to have a say in the decision-making. (…) What is then required is a transnational societally-backed system of multilateralism, with full mass media coverage, and with procedures that provide all those affected by the decision with the information they need as well as a chance to participate.[11]

Politicization defines the demand for and the act of transporting a topic into the field of politics.[12] It is about moving one issue from the private sphere to the public sphere thanks to the use of public communication. It is about making the audience of a topic or an institution wider and active.

Today, the audience of international institutions is wider than ever: individual citizens, networks of professionals, religious groups, TNCs, interest groups, political parties, lobby groups, NGOs, local diaspora or local communities are more and more aware of international institutions (actors and

---

[10] Ibid.

[11] Zürn, Michael (2004) Op Cit, p.285.

[12] Zürn, Michael, Binder, Martin, Ecker-Ehrhardt, Matthias (2012) Op Cit, p73.

procedures) and take more and more actions to either participate in these international institutions or contest these international institutions: "We currently observe substantial public awareness of international institutions and public mobilization of competing political preferences vis-à-vis institutional policies or procedures."[13]

Various global surveys show that most populations in the world are aware of international institutions and in particular of the United Nations.[14] Another indication of the politicization of international institutions is the growth of the presence and activities of interest groups in global governance hubs such as Geneva, New York, or Brussels. Even political parties and governments contest international institutions, such as the WTO, the World Bank, or the IMF.

The growth of anti-globalization protests and similar ones regarding international institutions was multiplied per 5 between 1990s and 2005 according to Pianta and Zola. The mobilization is not only about anti-globalization movement but also about NGOs acting in global environmental governance or policy, human rights, or development, where they produce information campaigns, contact directly international institutions, or search for media exposure (awareness raising).[15]

---

[13] Ibid, p75.
[14] Ibid, p76.
[15] Ibid, p77.

> The further international institutions intervene in formerly national issues, the more they will be confronted with questions regarding their legitimacy. In this sense, political denationalization has become a reflexive process, creating its own potential for resistance. At the same time, this resistance accelerates political denationalization in certain respects, since the critical movements themselves are the expression of political denationalization.[16]

The solution can come from a higher degree of democratization in the global institutions[17] and international environmental regime complex on two dimensions: first among interstate and multilateral negotiations (horizontal dimension) and second through local, national, regional and international levels of decision-making processes, from individuals at local level to global institutions (vertical dimension). [18] Horizontal negotiations can be democratized thanks to equal participation of state and non-state actors, accountability to previously agreed rules, and the possibility to revise the existing institutions. Also, rule-makers and rule-takers should be connected through a variety of mechanisms.[19]

These two dimensions reflect the two answers that are often proposed to the democratic deficit of global institutions: statism and cosmopolitanism. Statism implies an increased cooperation between nation states and international institutions. Whereas cosmopolitanism implies an increased

---

[16] Zürn, Michael (2004) Op Cit, p.277.
[17] Ibid, p.287.
[18] Kuyper, Jonathan W. (2013) Op Cit, p.2.
[19] Ibid, p.10.

participation of all affected actors in the decision-making processes, including individuals at the local level as discussed in chapter one. [20]

Three forms of democracy prevail: representative, participatory, and deliberative. First, representative democracy means that citizen can choose their political elites through electoral processes. This implies the existence of a global parliament and government. Second, participatory democracy emphasizes on the direct participation of citizen in the decision-making processes, which implies transnational referenda and citizen initiatives. Third, deliberative democracy focuses on public debates and the importance of civil society, stakeholder fora, and broad transnational public spheres. [21]

Three values are central in the democratization process: equal participation, accountability, and institutional revisability. A democracy should aim toward the fullest participation and representation of significantly affected individuals. Accountability implies that some actors have the right to hold other actors to a set of standards, monitor their performance, and sanction in case of violation. Also, an institution within a democracy should be revisable at any moment in time. [22]

As stated in this section, international institutions exercise more and more authority to protect the environment. These

---

[20] Ibid, p.2.
[21] Ibid, p.5.
[22] Ibid, p.7.

institutions that exercise (or are expected to) international authority are politicized and the intensity of this politicization depends on their legitimacy.[23] "Multilateralism must therefore be reshaped to meet the challenges of an increasingly denationalized world. Without radical reform, conventional multilateralism will fail to fulfill the growing societal demands for legitimacy." [24] The following section discusses the legitimacy and accountability of global governance institutions.

4.2 Legitimacy and accountability at the international level

States' interdependence, globalization, expansion of scope and authority of international organizations, and the growth of the global civil society have increased concerns about the use of power on the world stage.[25] The way authority is defined and understood is linked to the notion of legitimacy. Contrary to power, an authority claims a right to rule and needs to be legitimate. Indeed, subjects of authority must recognize the authority as legitimate and competent to accept and submit to the authority. In Hannah Arendt's words, authority in this sense is characterized by an "unquestioning recognition by

---

[23] Zürn, Michael, Binder, Martin, Ecker-Ehrhardt, Matthias (2012) Op Cit, p82.
[24] Zürn, Michael (2004) Op Cit, p.261.
[25] Grant, Ruth W., Keohane, Robert O. (2005) Accountability and abuses of power in world politics, *American political science review*, Vol.99, Issue 1, p.29.

those who are asked to obey; neither coercion nor persuasion is needed."[26]

However, as examined previously, there is not yet a global community that could hold accountable international institutions and grant them the legitimacy they need. The inexistence of a global political community poses a congruency problem at times of analyzing the legitimacy of global governance institutions. [27] New ICTs might trigger the emergence of a global community in the future, but it does not yet exist.

Indeed, there is no global public that can hold accountable global power-wielders as the source of that power or as the body affected by it. Looking at global power-wielders today, none is representing a global public, as there is not such thing as global democracy or a global community of people who share a sense of common destiny are have the habit to communicate with one another about public policy. [28]

> There is no juridical public on a global level, since no legal institutions define a public with authority to act globally. There is no sociological global public, because only a very small minority of people in the world identify and communicate with other people on a global basis, or even follow world events very closely.[29]

---

[26] Arendt, Hannah (1970) *On violence*. Boston, MA: Houghton Mifflin Harcourt, p.45.
[27] Zürn, Michael (2004) Op Cit, p.260.
[28] Grant, Ruth W., Keohane, Robert O. (2005) Op Cit, p.33.
[29] Ibid, p.34.

Nevertheless, new approaches of global legitimacy need to be defined even though there is no global democracy and no global public. [30] Legitimacy has two interpretations: normative and social. Hence, a legitimate organization must have the right to rule (normative interpretation) or to be believed to have the right to rule (social interpretation). [31]

The first interpretation of legitimacy (normative legitimacy) refers to the validity of political decisions and orders. It designates all mechanisms, processes, and standard that an authority must abide in order to be legitimate: checks and balances, separation of power, external auditing, designation of international recognized qualified professionals, ISO and other international standards are some examples of normative legitimacy.[32]

There are two models of normative legitimacy: participation and delegation models.[33] First, in the participation model, the performance of the rule-maker is evaluated by who is affected by the rules. People should be treated equally and should be free to make their decisions. Public power is legitimate when its decisions serve the interests of the general public or more precisely of the people as a whole. [34]

---

[30] Ibid, p.35.

[31] Keohane, Robert O. (2011) Global governance and Legitimacy, *Review of International Political Economy*, Vol.18, Issue 1, p.99.

[32] Zürn, Michael (2004) Op Cit, p.260.

[33] Grant, Ruth W., Keohane, Robert O. (2005) Op Cit, p.31.

[34] Ibid.

When power-wielders are regarded as instrumental agent, direct democracy is the ideal form of government. Political representatives are the most similar to people they represent and thanks to referenda this form of government expresses most truly the desires of the rule-takers. Rule-makers do what rule-takers instruct them to. However, when power-wielders are regarded as discretionary authorities, people entrust a political leader or party to speak for the interest of the whole population. Rule-makers make policies whose outcomes are approved but rule-takers.[35]

Most global actors and power-wielder acquired power without delegation: states, subunits of states (Régions, Länder, Comunidad Autonoma for instance), TNCs, are NGOs were never delegated power from or authorized by an entity remotely representative of the world population as a whole.[36] Only international organizations were delegated power by states to act in a specific area of international relations.

The second model of normative legitimacy is the delegation model, which states that performance of the rule-maker is evaluated by who are entrusting the rule-maker. Power is legitimate when authorized by the rule-takers and as long as it serves the purpose it was required to such as protection of rights or the pursuits of the public good. Power is delegated to those who are best suited to make decisions. But also, with a clear distinction between rule-takers and rule-makers, it is

---

[35] Ibid.

[36] Ibid, p.33.

easier to hold one accountable by the other thanks to the distance between the two. [37]

When power-wielders are regarded as instrumental agents, political officials are considered as if they were the employees of the rule-takers, whose desires and preferences are taken as a given. [38] However, when power-wielders are regarded as discretionary authorities, political officials use discretion when making a decision, and therefore not following people's desire to pursue the general interest is not considered an abuse of power, as long as it is in its jurisdiction and that it was consistent with the objective it was requested to achieve.[39] However, global governance institutions lack normative legitimacy:

> Acknowledged democratic deficits include the lack of identifiable decision-makers who are directly accountable for wrong decisions made at the international level, as well as the inscrutability of international decision-making processes and thus the advantage the executive decision-makers have over others in terms of information.[40]

Normative legitimacy deficits of international institutions inhibit their social acceptability: in other words, "(…) the normative legitimacy deficits of international institutions are in fact increasingly generating problems with respect to

---

[37] Ibid, p.32.
[38] Ibid.
[39] Ibid.
[40] Zürn, Michael (2004) Op Cit, p.261.

societal acceptance." [41] This societal acceptance represents the second interpretation of legitimacy.

Indeed, the second interpretation of legitimacy (social legitimacy) refers to the social acceptance of political decisions, processes and orders. It also refers to the belief of the subject of rule in the legitimacy of political decisions, processes and orders. The sources of legitimacy are transparency, accountability, expertise, and participation. Its decision-making procedures and decisions are seen to be regularly and permanently rightful.

Social legitimacy is all about representativeness: all activities of the institution represent a broad social base. It means that the international institution is recognized as necessary to achieve a global common good. In other words, an international institution has legitimate authority when the addressees of its authority recognize it competent to make judgment and binding decisions. It also means a consensus on the values and norms that reflect broad public interest, needs and preferences. [42]

For some authors, social legitimacy can be distinguished from a third interpretation: political legitimacy, which is all about accountability. It implies that institutions or authorities of global governance are accountable to someone or another institution. They follow specific standards of behavior,

---

[41] Ibid.
[42] Ibid, p.260.

provide broad access to information, and are subject to sanction when a violation of these standards. The legitimacy of international institutions can vary in terms of degree and in terms of the necessary legitimating sources. Depending on the type of authority, more or less of legitimacy is required.

Since there is not such a thing as a global public, legitimacy of global institutions cannot be defined in absolute terms: this means in other words that a threshold needs to be defined, under which an institution can absolutely not be defined as legitimate. Above this threshold, various levels and shades of legitimacy can exist and be recognized.[43]

Keohane developed six specific criteria to define the legitimacy of global governance institutions and whether they are beyond or below the legitimacy threshold. First is the minimal moral acceptability of institutions that should not perpetrate (or persist in perpetrating) acts that violate basic universal human rights such as physical security, freedom, and the right to subsistence.[44] The second criterion is inclusiveness: institutions need to be open to all who wish to participate in achieving the goals of the institution. This means that some peoples should not be arbitrarily excluded from global governance discussions. [45]

The third criterion is epistemic quality, which means that global institutions need to be transparent (provide the

---

[43] Keohane, Robert O. (2011) Op Cit, p.100.
[44] Ibid, p.101.
[45] Ibid.

necessary information to all and at a reasonable cost) and have an institutional integrity (relationship between performance and the truth). For instance, institutions based on beliefs that are false such as racism become ipso facto illegitimate: "(…) it is that the dispersal of information among a plurality of external epistemic actors provides some counterbalance to informational asymmetries favoring insiders."[46]

The fourth criterion is the compatibility with national democratic governance mechanisms and that they enhance democracy at national level: they can either make it more difficult for special interests to operate. They can help minority and individual rights. They can foster collective and open deliberations within countries.[47]

Fifth, global governance institutions need to pass the test of comparative benefit and produce better results than in their absence. Benefits can be either substantive (security, welfare, nature conservation) or procedural (ability to cooperate with different cultures and societies).[48]

The final criterion is accountability: it is basically the power of ruled over the rulers. It includes three elements: standards that must meet the rulers, information available on the performance of rulers, and the ability to impose sanctions on rulers. All institutions are accountable to another actor or

---

[46] Keohane, Robert O. (2011) Op Cit, p.102.
[47] Ibid, p.103.
[48] Ibid.

organization: funding states, audit firms, NGO members, individual supporters etc. [49] In other words, it means that "some actors have the right to hold other actors to a set of standards, to judge whether they have fulfilled their responsibilities in light of these standards, and to impose sanctions if they determine that these responsibilities have not been met yet."[50]

Accountability implies a relationship between the rule-maker and the rule-taker where the standards for accountability and the authority of each party are recognized as legitimate. [51] It sanctions unauthorized or illegitimate exercise of power and decisions that are judged as unwise or unjust by accountability holders. [52]Accountability is not relevant only when authority has been delegated. Otherwise it would mean to overlook NGOs, states, subunits of states and TNCs accountability. Accountability should be indeed understood differently at national and global levels.

Grant and Keohane define seven accountability mechanisms in world politics.[53] First, hierarchical accountability describes the bureaucratic organization where superiors can remove subordinates from office when violating a rule. This accountability mechanism takes place within an institution. It

---

[49] Keohane, Robert O. (2011) Op Cit, p.103.
[50] Grant, Ruth W., Keohane, Robert O. (2005) Op Cit, p.29.
[51] Ibid.
[52] Ibid, p.30.
[53] Ibid, p.36.

is in place within the United Nations, the World Bank group or any other global large bureaucracy.[54]

Second, supervisory accountability designates relations between organizations where one can hold another one accountable. For instance, the IMF or the World Bank are held accountable by states and institutions within states. Third, fiscal accountability describes mechanisms where funding agencies monitor performance and can sanction other organizations such as NGOs or IOs. Fourth, legal accountability refers to the legal requirements power-wielder need to follow. Any public official for instance can be held accountable to for their actions by administrative and criminal courts. [55]

Fifth, market accountability designates the organizations that are held accountable to investors and consumers. It is the case of TNCs or countries, which can be sanctioned by investors (or consumers) because of a violation of human rights or the pollution of natural resources. Sixth, peer accountability defines the mutual evaluation of two organizations: NGOs evaluate the content and scientific data from other NGOs for instance. Finally, public reputational accountability is a form of soft power where the general public can hold accountable public or private entities.[56]

---

[54] Ibid, p.36.
[55] Ibid, p.36.
[56] Ibid, p.37.

When examining the accountability of various non-state actors in global environmental governance, international organizations hold fiscal, supervisory, reputational, and hierarchical accountability, NGOs fiscal, supervisory, reputational, and hierarchical accountability; TNCs domestic, legal, market, hierarchical, and reputational accountability. For states on the other, it depends on their power. Weak and dependent states hold fiscal and supervisory accountability often through other donor states, the IMF or the World Bank. Independent states and great powers hold peer and reputational accountability.[57]

Under Keohane's list of accountability indicators, global actors such as states, NGOs, IOs and TNCs are accountable to multiple entities. As a global public or a global citizenship as such does not exist, global institutions have developed other accountability mechanisms. Indeed, global actors cannot be held accountable in a similar manner as national entities for that particular reason.

As discussed, accountability needs standards, sanctions and information. Thanks to new ICTs, information is becoming available in an affordable way, which can only improve global accountability toward smaller actors such as NGOs or individuals: "The cost of providing information through web sites are now so low that it is difficult to use cost or inconvenience as an excuse; people around the world are

---

[57] Ibid, p.40.

increasingly used to being able to get the information that they want almost instantaneously." [58]

The following section analyzes the first case study of this research: the impact of new ICTs on the legitimacy of IUCN's resolution and recommendation process.

4.3 The impact of new ICTs on the legitimacy of IUCN's resolution and recommendation process

As stated previously, most global actors are accountable to others. However, legitimacy is also about participation and consensus on values. This section first explains in detail the IUCN's resolution and recommendation process and the methodology used to analyze this case study. Then it examines if the use of new ICTs has had an impact on the participation of this global environmental governance mechanism. Thirdly, it analyzes if the use of new ICTs has had an impact of the consensus on values of the global environmental community represented by IUCN members.

IUCN resolution and recommendation process
IUCN is a trusted scientific and independent global environmental actor facilitating actions on the ground and proposing capacity building and advisory services to its

---

[58] Ibid, p.42.

members.[59] It was founded on 5 October 1948 by 18 governments, 7 international organizations, and 107 national nature conservation organizations, which all agreed to sign the Constitutive Act founding an International Union for the Protection of Nature.[60] It is today the largest global professional conservation network and a leading authority in biodiversity and conservation in general.

IUCN is often defined as a hybrid organization since it has non-governmental and governmental members. Its three major organizational parts are its membership (General Assembly, Council), scientific and technical Commissions, and the Secretariat.[61] The IUCN Council is elected every four years by the General Assembly of Members and counts a President, Treasurer, three representatives from each region, and the Chairs of the six Commissions. The Council meets twice a year and functions as a Board of Directors: it represents the members in between the General Assembly meetings, approves finances, and decides on the strategy.

Every four years, IUCN members meet at the World Conservation Congress and vote on proposals made by members on various topics. These proposals are called

[59] Poate, Derek, Gregorowski, Robbie, Blackshaw, Ursula (2011) *External Review of IUCN 2011*, Final Report, London, UK: ITAD. Retrieved 20 October 2012 from http://cmsdata.iucn.org/downloads/external_review_of_iucn_2011.pdf

[60] Holdgate, Martin (1999) Op Cit, p24

[61] Christoffersen, Leif E. (1994) IUCN: A Bridge-Builder for Nature Conservation, In Bergesen, Helge Ole, Parmann, Georg (eds.) *Green Globe YearBook*, Oxford, UK: Oxford University Press, p.11. Retrieved 16 October 2012 from http://www.fni.no/ybiced/97_04_christoffersen.pdf

'motions'. A motion is a document proposed by the IUCN Council or members to modify the governance and policies of IUCN; promote or discourage action by governments and other actors; or put forward conservation issues.[62] Before the Congress, the draft is submitted to the Secretariat for some formatting and also to follows some legal specifications such as being supported by five additional members at least. Once the motion has been reviewed, it is published online for all members to see.

Members can oppose the motion. If it is the case, members who oppose and the mains sponsor of the motion meet and debate in small groups to rephrase the motion and find a commonly agreed solution. This is a time of intense discussion and exchange between governments, non-governmental and governmental organizations. Once agreed on a final draft, it is submitted to the Council for technical and legal verifications, and then to the General Assembly for a final vote.

Motions become either a resolution or a recommendation. Resolutions are for IUCN to implement through its members, Council, Commissions, or Secretariat. On the other hand, recommendations are asking third parties to act in a certain manner. This democratic and participatory process enables

---

[62] World Conservation Congress (2012) *Resolutions and Recommendations adopted*. Switzerland, Gland: IUCN. Retrieved 7 May 2013 from http://www.iucnworldconservationcongress.org/member_s_assembly/resolutions/ as of 7 May 7, 2013

members to influence the environmental community and the international agenda. Since many states are members of IUCN, NGO and IO members can debate with them and discourage them to act in a certain way.

This process also made possible the adoption of several international environmental instruments, standards and agreements:[63] among other accomplishments, IUCN helped set up WWF (1961), created the World Heritage List with UNESCO (1972), helped establish the Convention on International Trade in Endangered Species (1973), drove the establishment of CITES convention (1973), coined the term "sustainable development" (1980), proposed the Biodiversity Convention (1982), and helped drive the Rio Earth Summit (1992).

In May 2014, IUCN created the IUCN resolution and recommendation online platform to give more visibility to this process and its outcomes. It allows to search online through resolutions and recommendations and thus makes them more accessible to all IUCN members and external actors. This online platform was used to create a table and all graphs of this section. All recommendations and resolutions are tagged with one or several themes that reflect its content and its geographical scope such as:

- Climate change/ water /marine /etc.
- Global/ West Asia /Antarctica /Africa/etc.

---

[63] World Conservation Congress (2012) *Resolutions and Recommendations adopted*. Op Cit.

The results of this search (hereby called entries) can be shown either in a chronological order or by type of motion (resolution/recommendation/all). Since 1948, IUCN organized 24 World Conservation Congress (WCC) and General Assemblies (GA). GA and WCC describe the same event: the name has changed over the years, but describes the same reality. The year 2000 will be used as a milestone to distinguish two periods of time: before the emergence of cyberspace and after.

After 2000, the Internet, Google, social media, mobile technologies and other new ICTs are generalized, and merging into one as explained in the first chapter. States are increasingly gaining control over new ICTs, and the Internet in particular. New forms of organizations are created (such as IPBES), or propose new models of governance such as internationalization without institutionalization (such as WSF) thanks to the use of ICTs.

Given its transparency and cooperation, the resolutions and recommendations process corresponds to the values of the Internet. It includes all major global environmental actors (states, IOs, INGOs) but also the main local environmental movements and NGOs: IUCN's membership and commissions therefore represent the environmental community as a whole. It can be said that the WCC is thus the main Forum where the environmental community meets to debate and vote on proposals about nature conservation, and biodiversity conservation in particular. Other international

arenas exist such as UN conferences or CBD COP meetings as mentioned above. However none of them recognizes civil society and states as formal members with an equal voting right.

For these reasons, the IUCN's resolution and recommendation process is used as a case study to determine the impact of new ICTs on the legitimacy of a global environmental governance mechanism. It also illustrates the evolution of the topics debated within the environmental community that correspond to the global challenges discussed in chapter three. This evolution is to compare with the main global environmental agreements reached in the same period of time. For instance, the rights of local and indigenous community are one of the most debated themes at WCCs before 2010 when the Nagoya Protocol was signed.

Throughout this section, the expressions 'Congress' and 'World Conservation Congress (WCC)' will be used to express the same reality. Before 2000, IUCN organized 20 WCC. The last one before this milestone was 1996. After 2000, IUCN organized four WCC: 2000, 2004, 2008, and 2012.

As stated previously, legitimacy implies a wide representation of all subjects to the rule. The following subsection examines the evolution of the participation in IUCN's resolution and recommendation process before and after the generalization of new ICTs.

Participation

The number of NGOs didn't grow dramatically in the international environmental community since 2000s as shown in chapter two and three. The number of IUCN members evolved similarly: its membership grew exponentially in the 1990s and slowed down since 2000s. In 2011, IUCN counted 1,143 Members and 10,143 Commission members.[64] Among all members, the majority (67.5%) are NGOs (23% of them are very small with 5 people or less), followed by intergovernmental agencies (12.3%), research organizations (7.2%), INGOs (6.2%), and states (4.5%). The resolution and recommendation process contains safeguards to ensure that all types of members have a say and their voice heard, even if their group represents a small portion of all members.

The dramatic increase of the number of IUCN members correspond to the global increase of the number of NGOs in the world (and of global civil society organizations), which took place in the 1990s as discussed in chapter two. Since 2000, the increase was limited in terms of numbers and in terms of type of member: mostly small NGOs joined IUCN since 2000. For small NGOs with a small budget, IUCN offers financial support to participate at the WCC. Hence, small NGOs can take part in all WCC discussions as INGOs, states or IOs.

---

[64] Poate, Derek, Gregorowski, Robbie, Blackshaw, Ursula (2011) Op Cit, p.115.

Given that this research focuses on global environmental governance, only resolutions and recommendations with a global geographical scope were chosen for this case study: out of 1193 resolutions and recommendations voted since 1948, 785 have a global outreach (66%).[65] 431 were adopted before 2000, and 354 were adopted afterwards. To be more precise 431 resolutions and recommendations with a global scope were adopted during 20 WCC before 2000 (55%) in 52 years, and 354 were adopted during 4 WCC after 2000 (45%) in only 12 years. Per event, IUCN members adopted an average of 21.55 resolutions and recommendations with a global scope before 2000, and 88.5 since 2000.

This means that after the emergence of cyberspace (and the generalization of new ICTs), IUCN members adopted 4.1 times more global resolutions and recommendations. This result cannot be explained by an increase in IUCN's membership (as it slowed down since 2000). In other words, the fact that IUCN members adopted four times more resolutions and recommendations since 2000 is a first indication of change since the generalization of new ICTs.

A detailed regional analysis was not performed. Indeed, IUCN's regions are specific to the organization's internal governance: North America is associated with Caribbean for instance. Therefore, the results sorted by region are specific to IUCN and cannot be extrapolated for general considerations.

---

[65] The regional scope 'global' was selected when conducting the search on IUCN resolution and recommendation online platform.

However, if taken region by region, the results of the search still show a similar increase in the number of resolutions and recommendations adopted. In average, they multiplied by four. As the table below indicates, IUCN members adopted 37 resolutions and recommendations about Africa before 2000 (1.85 per WCC) and 30 after (7.5 per WCC). This represents an increase of 405%. The following table shows some examples of increase per region.

Evolution of the average number of resolution and recommendation about regions adopted per WCC before and after 2000.

Topic of Resolution and Recommendation: Regions	Average number of resolution and recommendation adopted per WCC before 2000	Average number of resolution and recommendation adopted per WCC after 2000	Variations
Africa	1.85	7.5	+405%
South and Meso America	2.1	14.25	+678%
South and East Asia	1.55	10	+645%
West Asia	0.4	8.7	+621%
West Europe	1.85	8.75	+473%

Source: Jérôme Duberry, July 2014.

This number is very similar to the global IUCN resolutions and recommendations adopted at each WCC, which has multiplied per four. In other words, after the emergence of cyberspace and the generalization of new ICTs, IUCN members adopted four times more resolutions and recommendations (per region and globally). As stated

previously, the number of IUCN members slowed down after 2000. Therefore, the increase in the adoption of IUCN resolutions and recommendations cannot be explained by an increase in the number of IUCN members. Each member adopted more resolution and recommendation after 2000.

An explanation is the generalization of new ICTs: IUCN members have access to more information and can communicate more intensively with each other prior to the WCC, which leads to an increase in the number of motions submitted and thus resolutions and recommendations adopted.

The process that leads to the creation of a motion entails a lot of coordination, communication, and information sharing. As stated previously, each motion is the result of the work of six IUCN members, who agree on a common text. Given the geographical spread of IUCN members, this coordination is only possible by using information and communication technologies.

The generalization of new ICTs improves the coordination, communication and information sharing capacities. Therefore, it can be concluded that the increase in the number of resolutions and recommendation can be explained by the generalization of new ICTs among IUCN members and IUCN Secretariat since 2000. This element confirms our hypothesis: an increased participation in IUCN's resolutions and recommendations platform thanks to new ICTs, and therefore an increased normative legitimacy of this global

environmental governance mechanism. The following subsection examines the consensus on values in the IUCN's resolution and recommendation process.

Consensus on values

As stated previously, legitimacy needs a consensus on values. The following subsection includes a series of graphs that analyzes the evolution of topics adopted by IUCN Members at each World Conservation Congress. It will allow determining if IUCN Members agreed on a set of global values. This series of graphs was created for this research using data provided by IUCN's resolutions and recommendations online platform.[66] The choice was made to start the analysis in 1972, for it corresponds to the first milestone in global environmental governance (UN Stockholm Conference) as discussed in chapter three. Furthermore, the numbers of IUCN's resolutions and recommendations adopted between 1948 and 1972 were quite confidential.

Each graph shows the evolution of a selection of resolutions and recommendations adopted at each WCC: the vertical axis indicates the number of resolutions and recommendations, and the horizontal axis shows chronologically the last fourteen WCC starting in 1972 (numbered point 1) until 2012 (numbered point 14). The year 2000 is marked with a blue line to distinguish two periods of time: before and after the emergence of cyberspace and the generalization of new ICTs.

---

[66] IUCN Resolutions and Recommendations online platform, retrieved 12 March 2014 from https://portals.iucn.org/library/resrec

Each line represents the evolution of the number of resolution or/and recommendations adopted per topic. For instance, a line can represent the evolution of the number of all resolutions and recommendations adopted at each WCC about climate change. . All graphs except the second show together resolutions and recommendations on a same line. In addition, all the following graphs show resolutions and recommendations with a global outreach.

The first graph on page 209 shows all resolutions and recommendations voted during the last 14 WCC from 1972 until 2012. First of all, it confirms clearly what was argued previously: there is a substantial increase in the number of resolutions and recommendations adopted at WCC after 2000. Furthermore, the number of resolutions and recommendations adopted at WCC about "education, capacity building, raising awareness, and communication" grew substantially: from almost inexistent before 2000, they became the 4th most adopted topic of resolutions and recommendations at the last WCC. This theme is all about information and communication.

This result indicates that IUCN members make an extensive use of new ICTs: by adopting more resolutions and recommendations about this theme, they indicate how important this theme became for the environmental community and global environmental governance. To some extent, this new means of action could be translated as new

power and improved participation in international governance though education, capacity building, raising awareness and communication.

The top 5 most adopted topics at the last WCC are: environmental governance, international agreements and processes, ecosystems, education/communication, and human well-being. Four out of five topics are about participation in global environmental governance. This result indicates that IUCN members are willing to participate in global decision making processes and how much they wish to influence international environmental agreements.

As stated previously, IUCN saw only a slow increase of members since 2000, and mainly from small NGOs. Also, IUCN counted a vast majority of civil society organizations in 2011 (NGOs, INGOs, and research organizations), which represented 80.9% of all IUCN members[67]. It is clear that IUCN counted a majority of civil society organizations since 2000. And therefore the top 5 of resolutions and recommendations shows the interest of civil society in IUCN's governance and their choice to take part in global environmental governance mechanisms since 2000.

If civil society organizations are the majority among IUCN members, if the number of all resolutions and recommendations grew substantially (multiplied per four as see previously), and if the most adopted resolutions and

---

[67] Ibid.

recommendation are about environmental governance, it confirms that civil society organizations participate more in environmental governance since the generalization of new ICTs.

The first graph as follows shows all resolutions and recommendations about all topics with global outreach adopted at each WCC between 1972 (1) and 2012 (14). The use of colors distinguishes the different topics. The objective of this graph is to illustrate the substantial and general increase in the number of resolutions and recommendations adopted by IUCN members. The following seven graphs provide more detailed visual and analysis of each topic and each line.

As stated previously, a line represents the number of resolutions and recommendations tagged with a specific topic. Each recommendation and resolution often addressed various topics: climate change and ecosystem for instance. Therefore it indicates the evolutions of the topics discussed and debated by IUCN members and provides a clear indication of their participation in this global environmental governance mechanism.

Graph 1: Number of resolutions and recommendations about a topic with global outreach adopted at each WCC between 1972 (1) and 2012 (14).
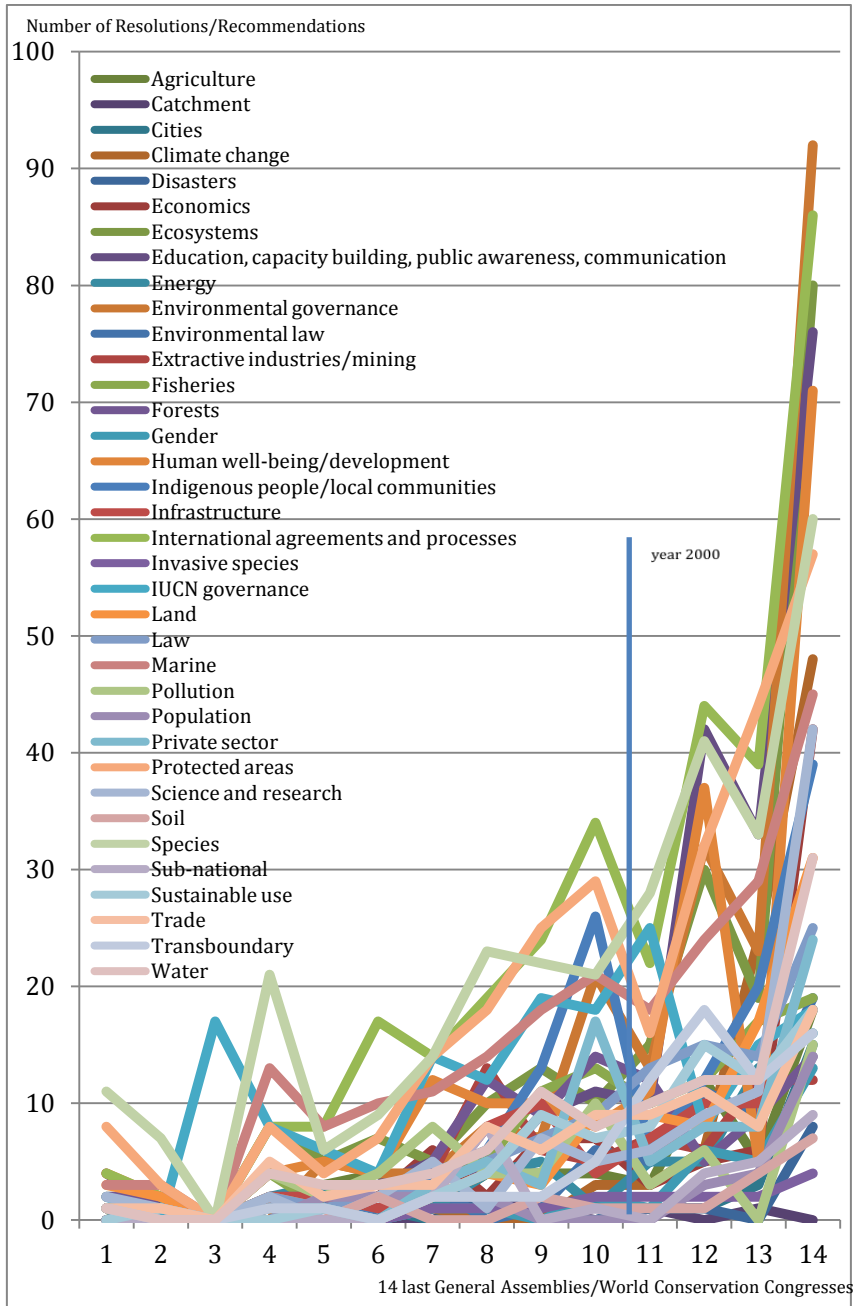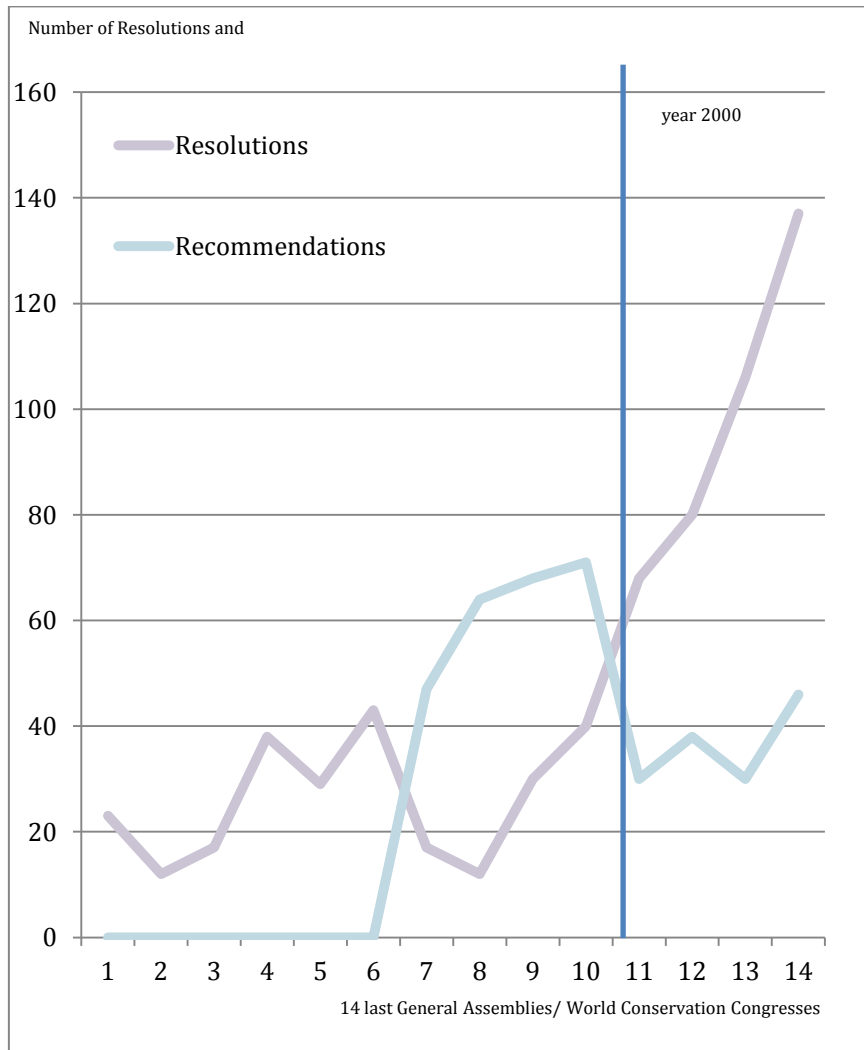

Source: Jérôme Duberry, July 2014.

The second graph below shows the evolution of resolutions and recommendations since 1972. It distinguishes resolutions (for IUCN) from recommendations (for external stakeholders). Before and after 2000, their respective evolution is strikingly different: before 2000, the number of recommendations outperforms the number or resolutions. Since 2000 however, there has been a significant increase in resolutions and a simultaneous drop in recommendations.

In other words, since the generalization of new ICTs, IUCN adopts more resolutions for IUCN to implement (through the secretariat, the commissions, or its membership) rather than recommendations for external stakeholders. An explanation could be that IUCN members can perform more actions by themselves thanks to new ICTs, and therefore would require less action from external stakeholders. In the same vein, it confirms that IUCN members (with a majority of the civil society organization) show a strong interest in global environmental governance mechanisms and participate in IUCN's resolution and recommendation process to provide their response to global environmental challenges.

This second graph confirms a previous result: the increased participation of the civil society in environmental governance since 2000. Indeed, when IUCN members ask less external stakeholders to act on their behalf, it confirms that they participate in global environmental governance through their own network. This new empowerment is possible thanks to affordable and efficient new tools of communication, and

information sharing. Therefore, the use of new ICTs increased the capacity of civil society to participate in environmental governance.

Graph 2: Number of resolutions and recommendations with global outreach adopted at each WCC between 1972 (1) and 2012 (14).

Source: Jérôme Duberry, July 2014.

The following six graphs show six categories of resolutions and recommendations: each category groups together all resolutions and recommendations (with a global outreach) that have a common theme. The categorization was done to simplify the presentation of the results of this research: it does not correspond to any official categorization by IUCN or by international relations scholars. The categories defined are: human activities, human development, global concerns, nature elements, environmental governance and knowledge.

The third graph shows the number of resolutions and recommendations about human activities adopted at the last 14 WCC and includes adopted resolutions and recommendations about: "Agriculture", "Catchment", "Fisheries", "Mining" and extractive industries", "Infrastructure", "Private sector", "Sustainable use", and "Trade". All of them increased after 2000 except resolutions and recommendations about "Catchment" activities. It is probably due to the reduced activities in the world on this field and hence the fact that it is less communicated in the media and debated among the environmental community.

Although not among the most adopted ones, the increase of the topic "Sustainable use" follows chronologically the growing use of this concept since its introduction by the Brundtland Commission in its 1987 report Our Common Future as discussed in chapter three. The date corresponds to point 7 on the horizontal axis (WCC 1988). It has already been present even under different names before the

Brundtland report, but has since increased drastically. The reason could come from the growing use of ICTs, since IUCN members became more aware of it thanks to new ICTs.

This group shows the least adopted topics. Indeed, the topic of this group with the highest number at the last WCC (24 resolutions and recommendations adopted) is the "Private sector". It is quite low compared to "environmental governance' the most adopted topic at the last WCC overall (92 resolutions and recommendations) or "Ecosystems" (a total of 80 resolutions and recommendations).

Nevertheless, it is interesting to note that the IUCN membership adopts less resolutions and recommendations about human activities than other topics, although they have a strong impact on nature. A reason is probably that IUCN members do not count any representative from the private sector or the industry addressed in this group. As they tend to require less action from external stakeholder and prefer to take action directly (less recommendations, more resolutions are graph two indicated), this result is coherent.

Graph 3: Number of resolutions and recommendations about a topic linked to human activities with global outreach adopted at each WCC between 1972 (1) and 2012 (14).
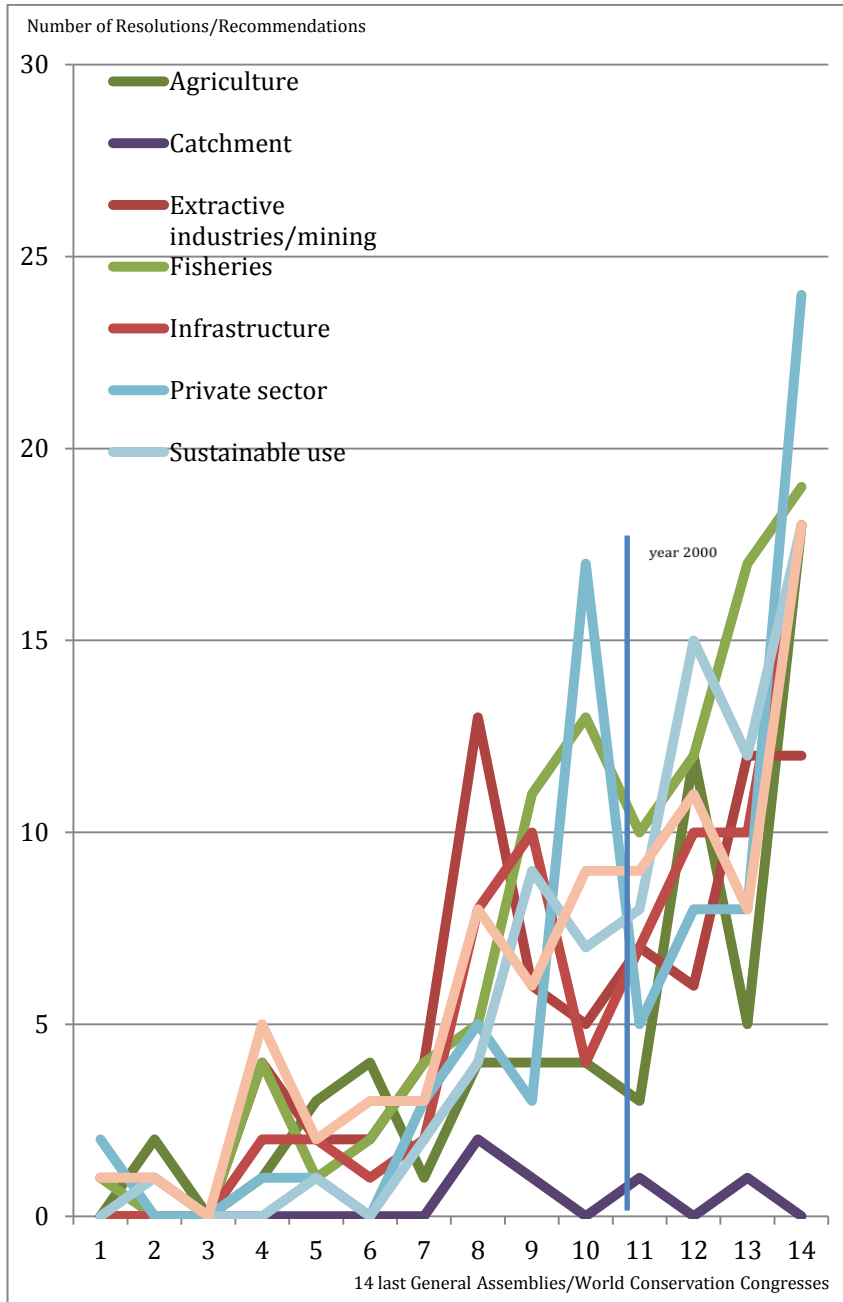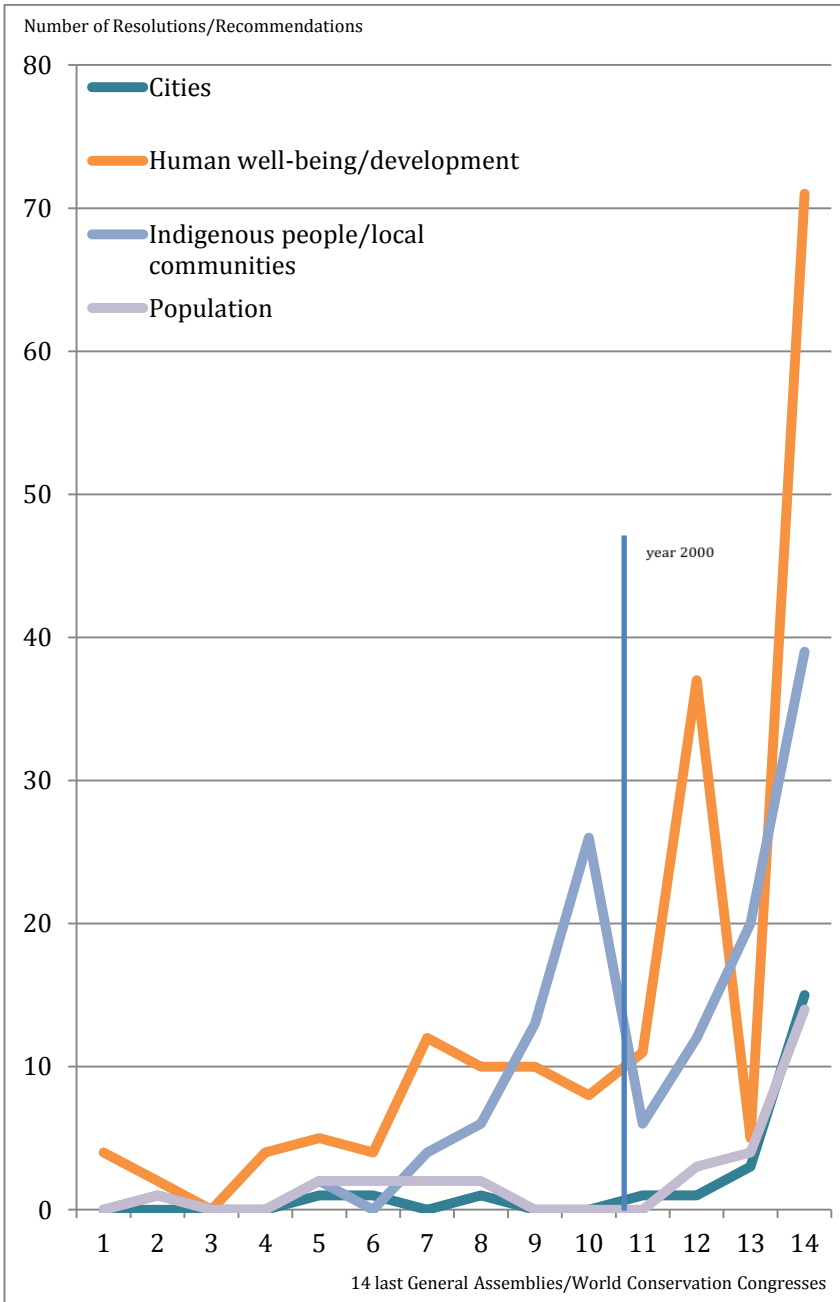

Source: Jérôme Duberry, July 2014.

Graph 4 below focuses on the category about human development: it contains all resolutions and recommendations about "Human well-being/development", "Indigenous people/local communities", "Cities", and "Populations". The first result is the striking increase of "Human well-being/development" after 2000. From 8 resolutions and recommendations voted at WCC in 1996 (point 10), it reaches a peak of 71 at the last WCC in 2012 (point 14). This is quite high compared to the most adopted topic at the last WCC (environmental governance with 92 resolutions and recommendations).

This graph shows that there is an increasingly understanding that nature conservation is also about human development and well-being. As stated previously, the concept of sustainable development unifies social, environmental and economical aspects of development. Over the years, this understanding grew to make nature conservation a vector for human development and human well-being. Given that humans can only protect nature as long as they have enough resources to live "well" and develop "well", nature conservation should indeed include human well-being and human development. This evolution is not only reflected in this topic, but also in others of this category. Indeed, the increase of resolutions and recommendations about "Indigenous people/local communities" corresponds to the same evolution of the concept of nature conservation (including human well-being and development).

Graph 4: Number of resolutions and recommendations about a topic linked to human development with global outreach adopted at each WCC between 1972 (1) and 2012 (14).

Source: Jérôme Duberry, July 2014.

Furthermore, this fact that this topic is debated and adopted in this global governance mechanism is due to their adoption of new ICTs: indigenous people/local communities are often isolated and far from main capital cities where decision-making mechanisms take place. Therefore to make their requests heard in this international arena and to participate in the whole process, they need new ICTs to gather information, coordinate their actions with other communities, and raise awareness about the issues that concern them. Their participation in global environmental governance, and in particular in IUCN's resolution and recommendation process shows how the generalization of new ICTs transforms global environmental governance to make it more participatory.

IUCN's resolution and recommendation process reflects well the evolution of the debate in the environmental community and its international agenda. The number of adopted resolutions and recommendations about "Indigenous people/local communities" grew from 6 at WCC 2000 (point 11) to 20 at WCC 2008 (point 13) and with a peak of 39 at WCC 2012 (point 14). This increase is reflects the discussions and the agreement reached in 2010 at Nagoya: the Nagoya protocol on ABS signed at COP10.

The following graph (graph 5) shows the category about global concerns: it contains all resolutions and recommendations about "Climate change", "Disasters", "Energy", and "Pollution". As for previous graphs, these resolutions and recommendations reflect the evolution of what

the environmental community is concerned about and what topics are the most mediatized. The sharp increase of "Climate change" is another concrete example. In 2006, Al Gore travelled throughout the world to present the documentary "An inconvenient Truth" about climate change. In 2004, 6 resolutions and recommendations about "Climate change" were adopted at WCC (point 12). Few years later, they were 48 at WCC 2012 (point 14). 2012 corresponds also the year before the UN Copenhagen conference on climate change. Therefore this topic was in all media and quite high on the international agenda at this time.

Although as important, other global concerns did not raise as much the attention of IUCN members. It is the case of "Pollution", "Energy or "Disasters" show lower numbers. They confirm that media (and therefore new ICTs) play a key role in global environmental governance. New ICTs are not only used by IUCN membership to communicate, coordinate, and raise awareness, but are also used by other actors outside the environmental community (the press, political figures, the arts, or the general public) to have an impact on the general public. This is reinforced since 2000 by the fact that all media channels increasingly unified since the emergence of cyberspace as stated in chapter two: information spreads from one media to the next in a continuing flow.

Graph 5: Number of resolutions and recommendations about a topic linked to global concerns with global outreach adopted at each WCC between 1972 (1) and 2012 (14).
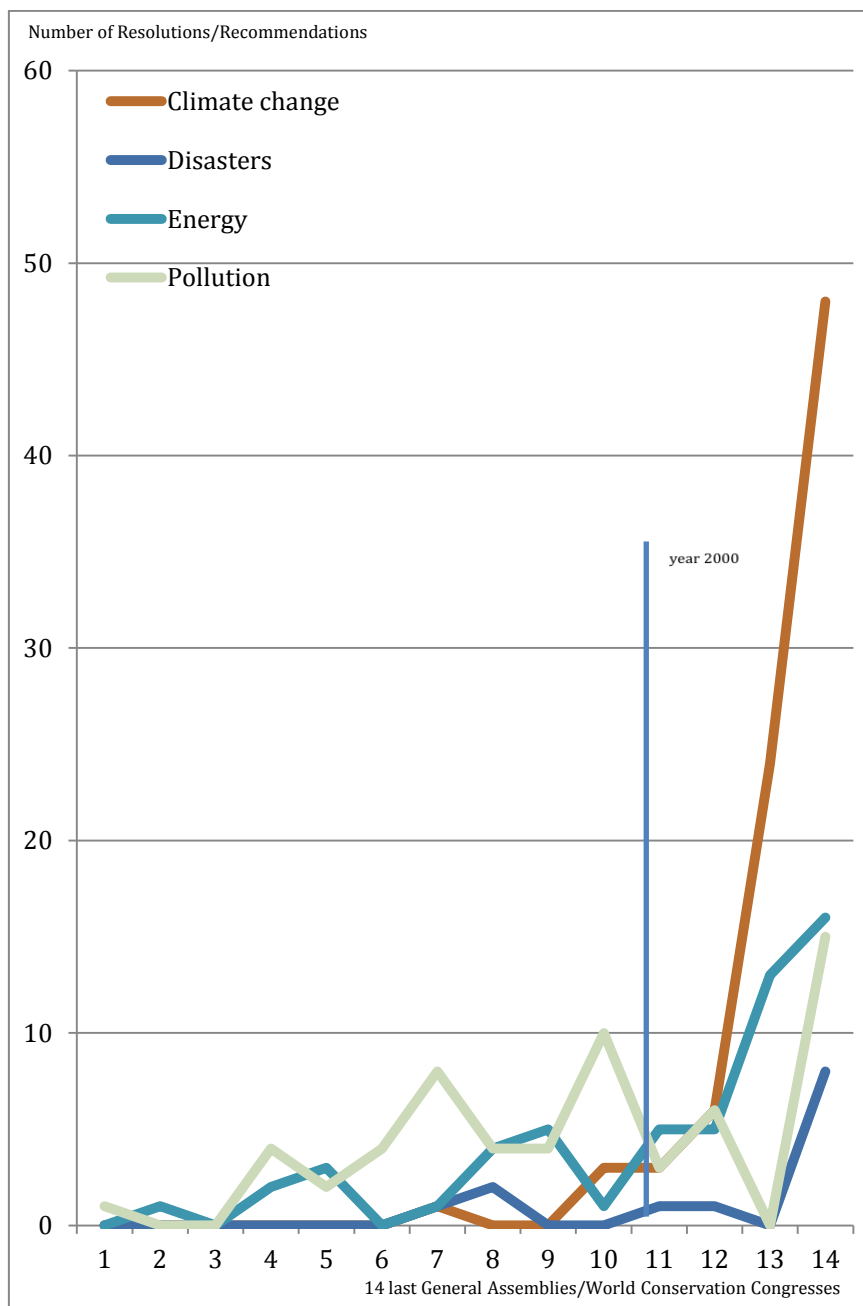
Source: Jérôme Duberry, July 2014.

Graph 6 below shows the category of nature elements and IUCN's first pillar of activities: nature conservation. Indeed, IUCN offers solutions to global and local conservation issues at three levels: it supports hundreds of conservation projects in the world, influences international conventions, policies and laws, and sets global standards and produces scientific conservation knowledge.

This group contains all resolutions and recommendations about "Ecosystems", "Forests", "Marine", "Invasive species", "Land", "Soil", "Species", and "Water". Since 2000, all topics saw an increase in the number of resolutions and recommendations adopted. Compared with resolutions and recommendations about human activities, human development and global concerns, this category contains topics much more debated and adopted with a peak of 80 resolutions and recommendations about ecosystems adopted at WCC 2012 (point 14). This is still quite high compared to the most adopted topic environmental governance (92 resolutions and recommendations). An explanation is clearly that these topics correspond to the first pillar of IUCN's activities and therefore its members are active and experts in these topics.

Graph 6: Number of resolutions and recommendations about a topic linked to nature elements with global outreach adopted at each WCC between 1972 (1) and 2012 (14).
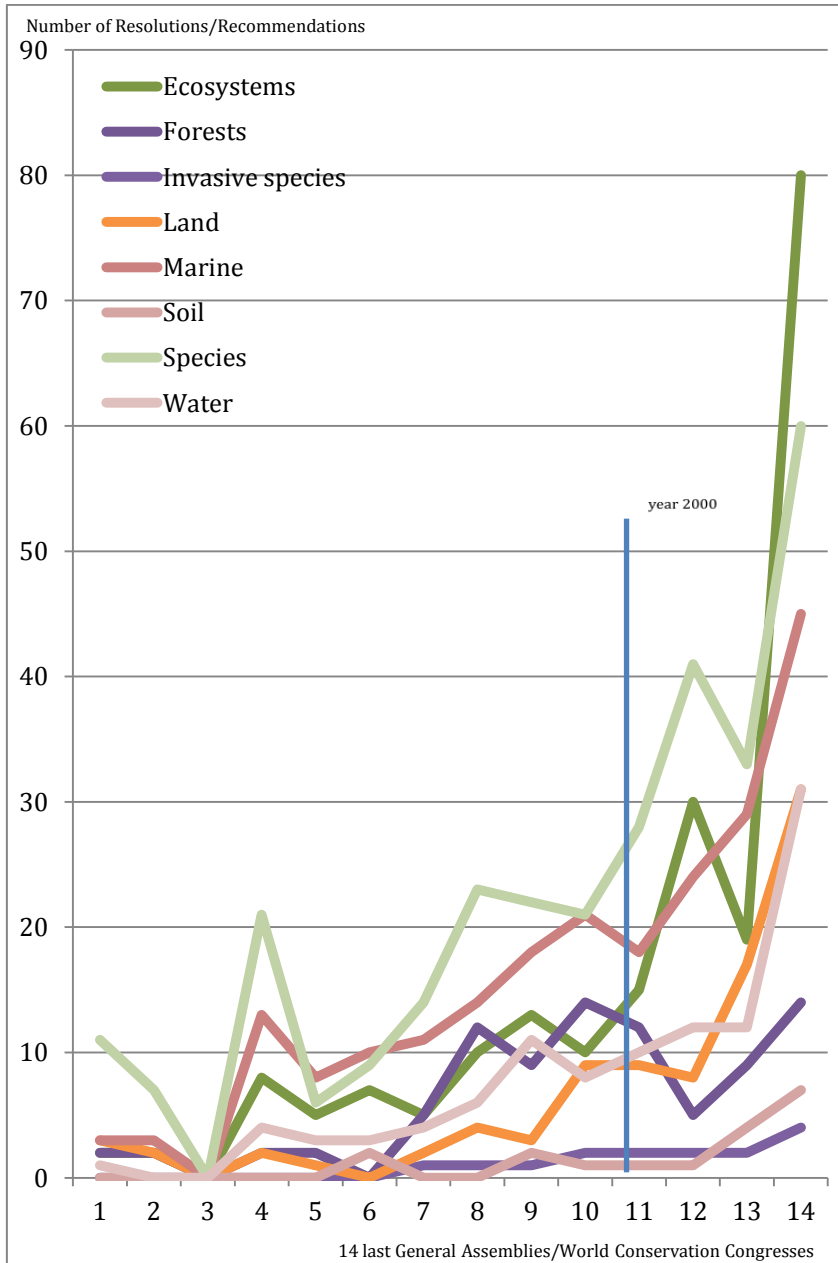
Source: Jérôme Duberry, July 2014.

Among all nature elements, the top 3 are "Ecosystems", "Species", and "Marine". "Marine" and "Species" are two topics highly communicated: for instance, many organizations raise awareness about species extinction. The general public is quite aware of these topics. As argued previously, the emergence of cyberspace made information flow through all various media (TV, radio, newspaper, internet, and mobile).

Furthermore, the IUCN RedList[68] assessing the conservation status of species is a well-known brand created by IUCN to increase its international recognition as a leading conservation actor and raise awareness about species and species extinctions.

Ecosystem is a very wide topic as described in chapter four: the high number of resolutions and recommendations comes from IUCN's strong involvement and promotion of 'nature-based solution', where ecosystems play an active role. Indeed, ecosystems can become an efficient tool for disaster risk reduction, fight against desertification, climate change, malnutrition or poverty. This illustrates well how nature conservation increasingly takes into consideration social and economic realities.

---

[68] http://www.iucnredlist.org/about/introduction

Graph 7 shows the category about governance and IUCN's second pillar of IUCN's activities: influencing global environmental governance. It contains all resolutions and recommendations about "Environmental governance", "Environmental law", "International agreements and processes", "IUCN governance", and "Protected areas". The latter topic is part of this category for the following reason: it is a tool used to manage biodiversity and ecosystems.

As for the previous category, governance related resolutions and recommendations show high results, and reflect IUCN's long-term involvement in environmental conservation and environmental governance. Indeed, the organization participated in most global environmental conferences. "Environmental governance" and "International agreements and processes" are the highest number of all with 92 and 86 resolutions and recommendations voted at the last WCC.

As stated previously, given that the majority of IUCN's members are from the civil society, this category confirms the involvement and participation of the global civil society in global environmental governance since the generalization of new ICTs. These new technologies have also empowered IUCN's membership to become more visible on the international scene and more vocal about environmental issues.

Graph 7: Number of resolutions and recommendations about a topic linked to governance with global outreach adopted at each WCC between 1972 (1) and 2012 (14).
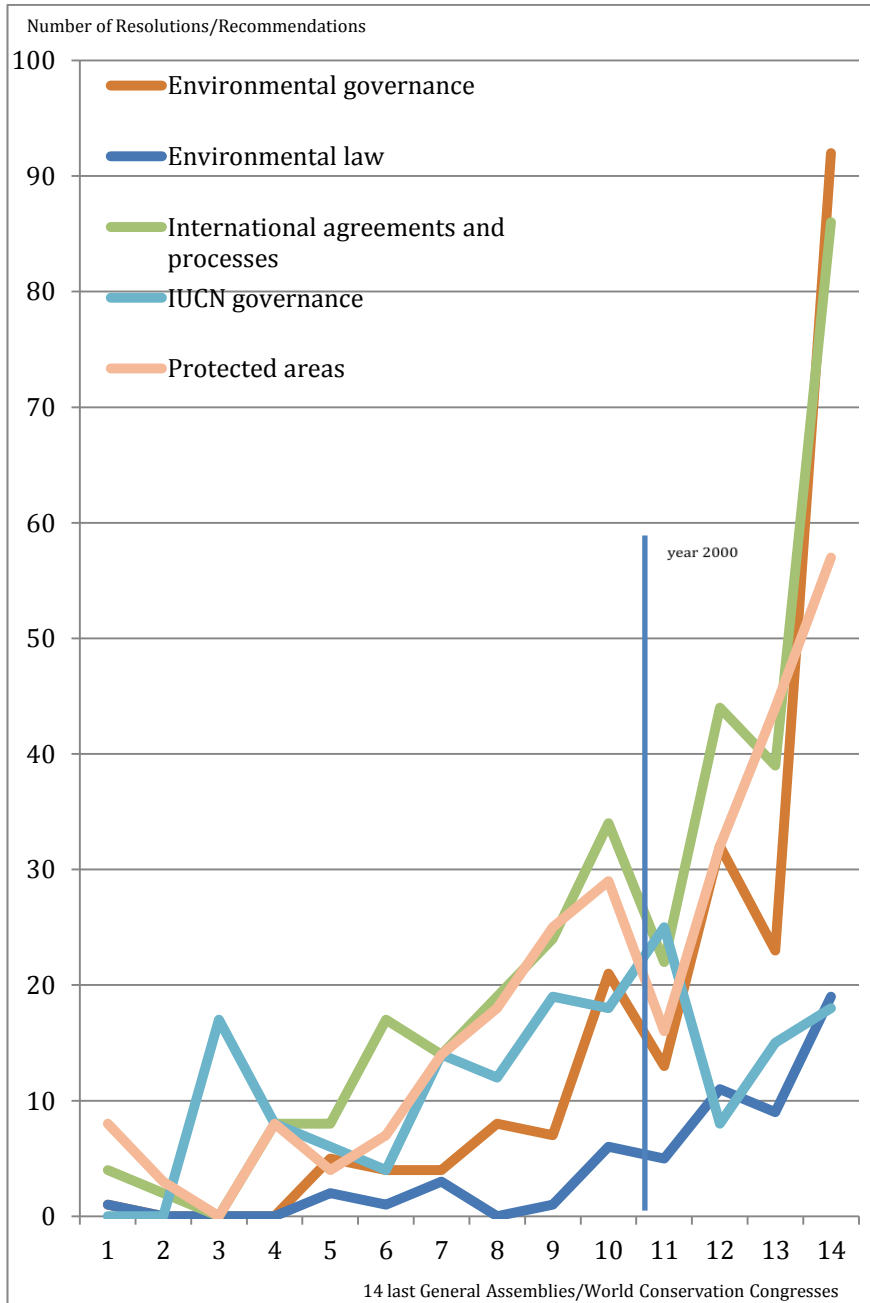
Graph 8 corresponds to the last category and shows all resolutions and recommendations about knowledge. They represent the third pillar of IUCN's activities: knowledge production. It indicates all resolutions and recommendations about "Economics", "Gender", "Law", "Science and research, and Education", capacity building, public awareness, and communication". As for the two previous categories, the numbers are quite high as they also represent the core of IUCN's work.

Apart from "gender", all trends increase exponentially since 2000, which confirms what was previously stated: new ICTs empowered IUCN's membership to create, produce and exchange knowledge. The production and dissemination of knowledge is indeed ICTs intensive. Therefore it is possible to conclude that exponential increase of resolutions and recommendations adopted in this category after 2000 reflects the generalized use of new ICTs by civil society (the majority of IUCN's members). It also reflects their increased participation in knowledge production as most IUCN members are experts in these fields and the organization has a long tradition in science and knowledge dissemination.

These results also confirm that nature conservation is highly influenced and led by scientists and academics as chapter three indicated with the development of the environmentalist movement.

Graph 8: Number of resolutions and recommendations about a topic linked to knowledge with global outreach adopted at each WCC between 1972 (1) and 2012 (14).
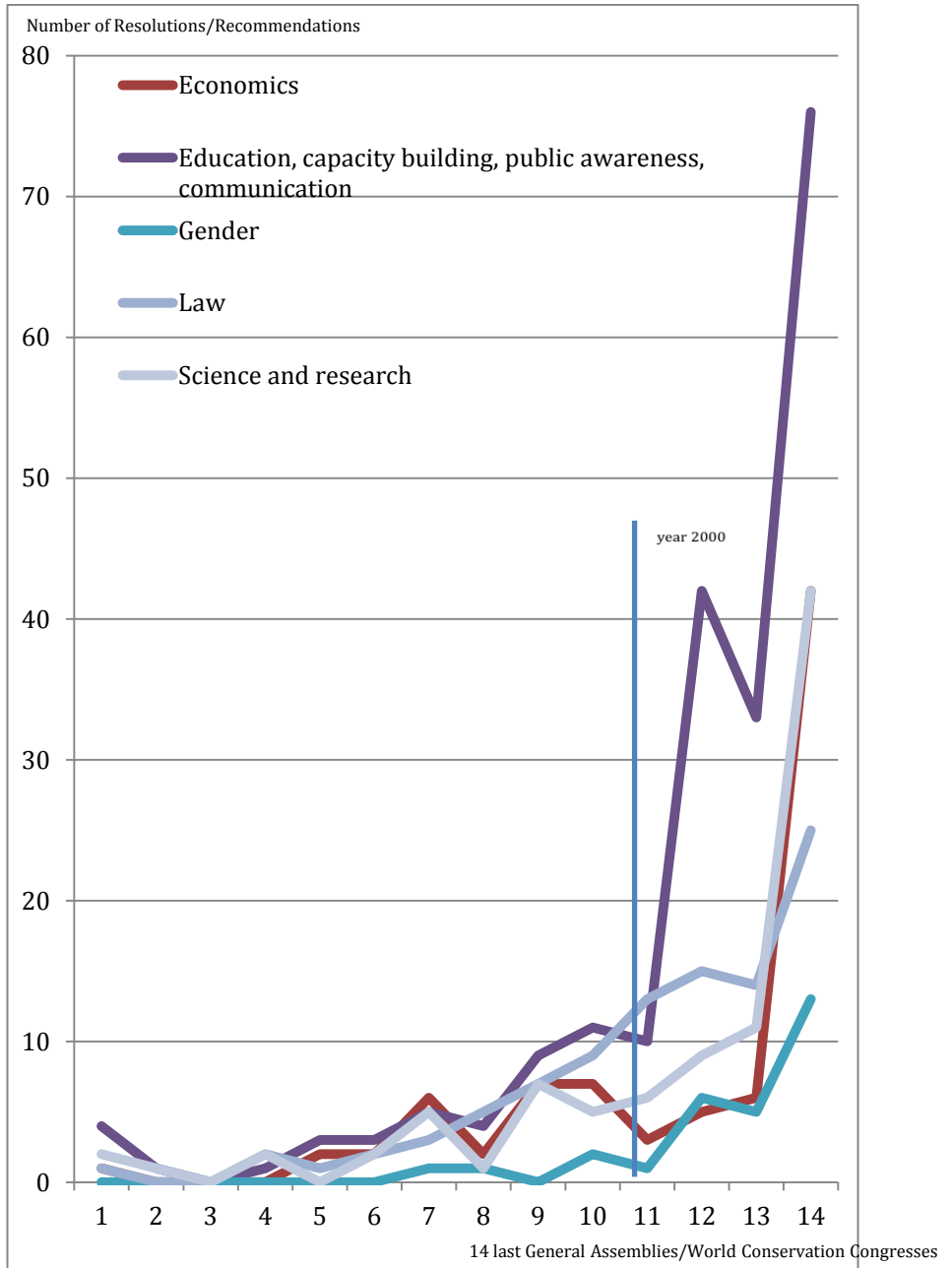
Source: Jérôme Duberry, July 2014.

This series of graphs has highlighted some global environmental trends debated among the environmental community. They illustrated well IUCN's three pillars of work such as nature conservation, environmental governance and scientific knowledge. Furthermore they have indicated that IUCN's members share a common understanding of what nature conservation is. Also, they have demonstrated that the participation in IUCN's resolution and recommendation process has increased substantially since 2000 and that the global civil society is the main driver of this increase. Finally, these graphs have confirmed that new ICTs have had an impact on this global environmental governance mechanism by not only increasing the participation, but also by influencing the topics debated. The striking increase of "Education, capacity building, raising awareness, communication" and other topics related to the international agenda or to issues well-covered by the press such as "Climate change" (compared to "pollution" or "catchment" for instance) confirm the growing role of new ICTs in global environmental governance.

These results also confirm that new ICTs have increased the legitimacy of the IUCN's resolution and recommendation process. Legitimacy needs accountability, information, and participation. As discussed previously in this chapter, most international institutions are accountable to some other constituents. It is the case of IUCN, which is accountable to its members who vote its program and budget at each WCC. It is also accountable to its funding partners.

In addition, new ICTs have increased the participation in IUCN's resolution and recommendation process and improved access to information through Internet, mobile technologies and social media as discussed in chapter two. Therefore it can be concluded that new ICTs improve normative and social legitimacy of this global environmental governance mechanism. As global environmental governance is constituted of mechanisms and actors, the following part will analyze the impact of new ICTs on a global environmental actor: IUCN.

Part 3. New ICTs and global environmental actor's competences

Founded in 1948, the International Union for Conservation of Nature is the oldest global environmental organization. Although unknown to the general public, IUCN supports scientific research and manages field projects all over the world. Being one of the main actors in global biodiversity governance, IUCN is also an inspiring case study for participatory governance mechanisms as discussed in the previous chapter.

IUCN was chosen for a series of reasons. First it is recognized as a leading authority on environment and sustainable development.[1] Indeed, it took part in most global environmental negotiations and gained permanent observer status at the United Nation General Assembly. IUCN also participated in the creation of the World Wide Fund for Nature (WWF) and the United Nations Environment Program (UNEP). Second, its decentralized structure and governance system need efficient information and communication technologies. Therefore, the use of new ICTs can be highlighted in a clear way.

Furthermore, the author of this research collaborated with IUCN, which made access to information and internal

---

[1] Holdgate, Martin (1999) *The Green Web: A Union for World Conservation.* London, UK: Earthscan, p23.

understanding easier and more accurate.[2] Finally, IUCN publishes on its website all external reviews since 1990s. It simplified greatly data collection and the verifications of sources of information.

This part aims at analyzing the impact of new ICTs on the competences of a global environmental governance actor. It first examines the impact of new ICTs on IUCN's internal competences, and then on its external capacities. The terms capacity and competence are understood as synonyms.

---

[2] The author worked at IUCN as webmaster in charge of Web and social media between 07/2011 – 10/2012

Chapter 5. The impact of new ICTs on IUCN's internal competences

IUCN is a global leader in nature conservation and a membership organization, which means it provides services to a group of member organizations and governments, who joined the organization to benefit from these services: practical solutions to conservation and biodiversity challenges, scientific and policy knowledge, influence international agreements, and network with an extensive community. To achieve these objectives, the organization has developed complex internal governance mechanisms, which require the organization to communicate and share information intensively between several locations throughout the world.

IUCN is often described as a hybrid organization: its members are governmental and non-governmental organizations. Some of its main donors are states and governmental development organizations, but the majority of members are NGOs as stated previously. In most communications, IUCN introduces itself as a Union composed of various bodies: a Secretariat, a Council, the Members Assembly, six Commissions, and numerous national and regional Committees. The Secretariat supports the work of the organization with over 1000 staff located at headquarters in Switzerland and in a web of regional and local offices throughout the world. It is divided into core functions such as finance, communications, human resources,

and programs, such as water, forest or global policy.

This chapter analyzes the impact of new ICTs on IUCN's internal competences. In other words, it analyzes the impact of new ICTs on how the organization organizes and coordinates its activities. It first examines IUCN's internal governance mechanisms, and then analyzes the impact of new ICTs on its knowledge management capacities, internal communications, and membership services. This chapter focuses on these three elements of internal governance mechanisms, for being the most ICTs intensive. They have therefore highlight best the use of new ICTs by IUCN.

5.1 Complex multi-stakeholder participatory governance

IUCN Members' Assembly (MA) that meets every four years at the WCC is the highest governing body of the organization. All members meet and decide on the work of the organization for the next four years. Each member has also the possibility to take part in the preparation of IUCN's program, and to propose motions that will be then debated and voted on. The MA elects the Council every four years and counts a President, Treasurer, three representatives from each region, and the Chairs of the six Commissions. The Council meets twice a year and functions as a Board of Directors: it represents the members in between the General Assembly meetings, approves finances, and decides on the strategy.

At national and regional levels, some member organizations joined forces and created national and regional Committees to coordinate their work and participation in the Union's global project. Some Committees have grown over the last decades with their own budget, donors, logos and projects. This is the case of the Dutch, Spanish or French Committees. National committees have no specific link with their respective governments, and therefore are free to take position and action freely.

Commissions are another essential body of IUCN's internal governance mechanisms. They consist of voluntary scientists who produce conservation knowledge, policy and technical advice. They are divided into six thematic Commissions: the Commissions on Ecosystem Management (CEM) that aims at guiding the management of natural and modified ecosystems; the Commission of Education and Communication (CEC), which promotes sustainability through education and communication; the Commission on Environmental, Economic and Social Policy (CEESP) advising on economic and social factors that affect natural resources; the World Commission on Environmental Law (WCEL) that aims at advancing environmental laws and its application; the World Commission on Protected Areas (WCPA) advising and promoting terrestrial and marine reserves, parks and protected areas; and finally the Species Survival Commission (SSC), which supports species conservation and protecting endangered species.

IUCN collaborates with the private sector at multiple levels to foster green economy and new business practices compatible with the goals of sustainable development. In other words, IUCN assists companies to ensure that any use of natural resources is equitable and ecologically sustainable. They include industries with large 'footprint' such as mining, fishing, agriculture and forestry, and 'green' enterprises including renewable energy and nature-based tourism.[1] IUCN also develops new knowledge with the private sector, to improve corporate environmental performance, and implement joint conservation projects. However, entities from the private sector cannot become an IUCN member, and therefore cannot vote or participate in the organization's internal governance mechanisms. IUCN's mission is:

> (…) to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.[2]

The organization designs a program to implement this objective. This program is designed by all members of IUCN through an extensive participatory process and then adopted by the MA at every four years at WCC. This program enables the organization to plan, implement, monitor and evaluate its work.

---

[1] IUCN (2012) *Transforming business practices*. Gland, Switzerland: BBP, IUCN. Retrieved 7 May 2013 from http://iucn.org/about/work/programmes/business

[2] IUCN (2012) *Global programme*. Gland, Switzerland: IUCN. Retrieved 7 May 2013 from http://www.iucn.org/what/global_programme

The most recent program (2013-2016) was approved at the 2012 World Conservation Congress in Jeju, Republic of South Korea, after a five month-consultation process. It focuses on:

> (1) valuing and conserving nature enhances IUCN's heartland work on biodiversity conservation, emphasizing both tangible and intangible values of nature; (2) effective and equitable governance of nature's use consolidates IUCN's work on people-nature relations, rights and responsibilities, and the political economy of nature; (3) deploying nature-based solutions to global challenges in climate, food and development expands IUCN's work on nature's contribution to tackling problems of sustainable development, particularly in climate change, food security and social and economic development.[3]

The program is implemented by the Union and its various constituents. Together with all resolutions and recommendations, it constitutes the foundation for IUCN's work to achieve it mission.[4] A new program is adopted at each World Conservation Congress. This event is not only crucial for IUCN, but also for the environmental community.

Together with the UN Earth Conferences (the latest one happened in 2012: Rio+20) they are the most important conservation events in the world. The first Congress was held in Fontainebleau in 1948 and the most recent one in Jeju, Republic of South Korea in 2012. It is organized every four

---

[3] IUCN (2012) *Global programme*, Op Cit
[4] World Conservation Congress (2012) *Thematic distribution of Congress Resolutions*. Gland, Switzerland: IUCN. Retrieved 7 May 2013 from http://www.iucnworldconservationcongress.org/member_s_assembly/reso lutions

years and brings together IUCN members, but also other environmental organizations, and world leaders from various sectors: governments, the public sector, non-governmental organizations, business, UN agencies and social organizations.

The World Conservation Congress contains two parts. First, the Forum is the place where the conservation community meets with the objective of exchanging ideas on how to better manage nature in regard to human, social and economic development. During these days, workshops and conferences are organized; publications and scientific research are launched. Following this first part, the second part of the Congress, the Members' Assembly gives voice to members, who vote on the program, elect the council, and debate on the proposals made by other members.

As discussed in chapter four, the IUCN resolution and recommendation process is a central element of IUCN's governance system and an important means for members to influence future directions in various conservation issues.[5] The WCC is the place where the conservation community meets, discussed and proposes solutions to the most urgent global environmental challenges. If IUCN has become a reference in terms of biodiversity and conservation, it is not only due to its democratic and participatory governance mechanisms, but also to its capacity to produce well-

---

[5] World Conservation Congress (2012) *Resolutions and Recommendations adopted*. Op Cit.

recognized scientific knowledge through its members and commissions. The following section is analyzing the impact of new ICTs on its knowledge production capacities.

5.2 Producing and disseminating scientific knowledge

As discussed previously, the informational society has changed many aspects of our lives. Knowledge is the key element of this change. Information and knowledge have become prominent: "the proportion of knowledge-intensive jobs is high, the economic weight of information sectors is a determining factor, and the shares of intangible capital is greater than that of tangible capital in the overall stock of real capital." [6]

Thanks to the generalization of new ICTs and their adoption by most organizations, information flows faster than ever between individuals, departments, and groups. What is true at the international level can also be pictured within an organization: more and more, knowledge is produced through collaborative group activity rather than through traditional individual scholar-researcher model. Combined with new ICTs, networking and mass collaboration creates new knowledge. [7]

---

[6] Choucri, Nazli (2012) Op Cit, p.73.
[7] Ibid, p.74.

With the generalization of new technologies that make information and communication affordable and easily shared globally, knowledge is a new source of wealth and power. The content and value of knowledge are both significantly enhanced by knowledge-networking practices made possible through the use of new ICTs. [8]

Knowledge management encompasses the strategies and processes to identify, capture, structure, and share an organization's intellectual assets, which in turn enhances its performance and competitiveness. It is based on the collection and dissemination of knowledge within an organization.[9]

Thanks to its three-pillar-structure and scientific contributions, IUCN extends its local, national, regional and international influence and provides excellent service to its members in terms of influence and scientific knowledge production. The diffusion of networking technologies and information sharing make it possible to engage in multiparty, asynchronous, and multidirectional interactions. New ICTs facilitate the flow of knowledge from lower levels of to higher levels of an organization.[10]

---

[8] Ibid.

[9] Knowledge management [Def. 1] (n.d.) *Business Dictionary Online*, Fairfax, VA: WebFinance. Retrieved 7 September 2013 from http://www.businessdictionary.com/definition/knowledge-management.html

[10] Choucri, Nazli (2012) Op Cit, p.72.

As indicated previously, the following analysis is based on global audit reports (called external reviews) available on IUCN's corporate website[11]. The chronological order is used to highlight some patterns of development (as in other parts of this research for the emergence of new ICTs or the evolution of environmental governance). The external reviews range from early 1990s until the latest one in 2011. Before each Congress, an external review is conducted by an external audit company. All data presented in this chapter can be found in these external reviews (on IUCN's website). This section presents the data collected on IUCN's knowledge management capacities. As follows, a chronological analysis.

The first external review (1993) mentions strategy through the lenses of communication and how IUCN should improve the formulation of its projects and programs. In this report, the auditing team recommended IUCN to define better what it wishes to achieve.

> The communications efforts may be useful in enabling regional and country programs to examine how communication initiatives can better facilitate the formulation of project definitions and project/program goals. The communication planning process seeks to link specific activities to clear objectives in order to assess the changes required to reach these objectives and, eventually, to monitor and evaluate results.[12]

---

[11] IUCN (2013) *External reviews*, Op Cit.

[12] IUCN (1994) *Report of the External Review of the IUCN Programme 1991 – 1993.* Gland, Switzerland, p12. Retrieved 10 May 2013 from http://cmsdata.iucn.org/downloads/report_of_the_external_review_of_iucn_programme__1991_1993_.pdf

The following external review in 1996 further advanced this request of better formulation and suggested IUCN defines better its mission. The organization is not anymore the only global environmental organization: UNEP, WWF, Conservation International, and Greenpeace take more and more space on the international scene. Therefore IUCN needs to determine its niche and added value.

> It was frequently pointed out that IUCN has to excel as a knowledge-based institution since its political impact is limited and it cannot make its influence felt through providing substantial financial resources to its members.[13]

Being a knowledge organization means for IUCN to capitalize on all parts of its union to produce knowledge. In other words, IUCN can count on all scientists from the six commissions, from its members and the secretariat to produce scientific data, knowledge, brochure, books, educational content about nature, conservation and biodiversity. Due to its main objective to encourage societies all over the world to conserve the integrity and biodiversity of nature, IUCN needs "(…) to capitalize on lessons learned from its operational programs, to relate them to policy advice and global issues, and also to disseminate and communicate these lessons 'widely'." [14] This question of IUCN becoming a knowledge

---

[13] Christoffersen, Leif E. (1996) *Report of the External Review of the IUCN programme*. Gland, Switzerland, p.5. Retrieved 10 May 2013 from https://www.iucn.org/knowledge/monitoring_evaluation/database/all_iuc n_evaluations/
[14] Christoffersen, Leif E. (1996) Op Cit, p.29.

organization is recurrent, and present prior to the generalized use of new ICTs.

In 1999, this question surfaces once more in the external review: it argues that IUCN should focus on "developing knowledge in the most fruitful directions."[15] Thanks to its unique network of voluntary scientists, staff and members, who count among the most prestigious and recognized people in the conservation community, IUCN seems invariably associated to knowledge and science:

> IUCN is principally a knowledge organization. Knowledge is its most valuable capital. This knowledge is diverse and dispersed. It resides in its member organizations, in the Commissions, in the Secretariat and in the networks of individuals that can be mobilized by members of each of these bodies.[16]

Furthermore, the organization is well known for its publications and scientific data. It supports governments and other organizations with policy guidelines, best practices, and educational content:

> IUCN carries out a range of different activities that bear on its knowledge base. These include publications, monitoring and evaluation, on-the-job learning, the mobilization of inputs from its Commissions, members and outside experts and the recent installation of Internet and intranet information systems. Nevertheless, we encountered many situations that suggested that these activities are being

---

[15] Bruszt, Gabor (1999) *The External Review of IUCN Programme*. Gland, Switzerland, p.35. Retrieved 10 May 2013 from http://cmsdata.iucn.org/downloads/external_review_final.pdf
[16] Ibid.

pursued on an ad hoc basis and do not contribute to the building of systematic knowledge management capacity within the organization.[17]

Although the auditing team recognizes the wealth of publications and scientific knowledge produced by IUCN, the need for a global knowledge management strategy is highlighted once more:

> There is, as yet, no overall knowledge management strategy in IUCN. If the Union is serious about nurturing its core asset, then it needs to establish a solid knowledge management system: maintaining rosters of relevant expertise, storing information in technical systems, operating formal and informal systems to build up knowledge, and nurturing a framework of values to provide for direction for all of this.[18]

Knowledge management entails many options and strategies. The external review becomes more specific and suggests idea on how to implement this changes:

> We therefore believe that IUCN should give priority to the management of knowledge based on personal expertise rather than formal documentation. The challenge is how best this pool of person-based knowledge can best be managed in an organization that houses several thousand knowledgeable people? (…) The principal role of program leaders would be to act as knowledge managers on specific themes, be they technical, thematic or cross cutting.[19]

---

[17] Ibid.

[18] Ibid.

[19] Ibid.

Before 2000, IUCN was already recommended to focus its strategy and develop its activities around knowledge management.

2003 marks the external reviews post cyberspace. Indeed, the first audit to mention new ICTs was in 1999. It confirms that the turn of new century is a milestone in the generalization of new ICTs. The 2003 audit mentions new ICTs as follows:

> Major progress has been made with some Commissions' knowledge management systems, notably the Species Information Service of the SSC. ORMA's National Networks (REDNAs) are a pioneering example of gender knowledge and learning networks that span the Secretariat, Members and partners in Meso America. SUR's website offers a variety of Member and staff services on line.[20]

New ICTs allow new possibilities for knowledge management that could enhance the organization's performance and global recognition.

> Access to interactive knowledge networking empowers stakeholders communities to project their preferences into the decision-making process, and conversely, gives decision makers access to multiple stakeholder communities. Transcending these interactions are powerful feedback dynamics whose characteristics are not fully understood.[21]

---

[20] Ibid, p.19.
[21] Choucri, Nazli (2012) Op Cit, p.84.

In response to the two previous external review's recommendations, IUCN raised funds to improve the information and communication systems in the organization:

> We also recognize the importance of the specific financial allocation that has been made to Innovation, Integration, Information and Communication (3I-C) across the Union. (…) Mechanisms and processes for integration and co-ordination should be a natural part of the organizational culture and of management concepts in IUCN, and should be reflected in the normal business planning processes of Secretariat units as well as in the specific efforts supported by this fund.[22]

This external review is also the first one to mention IUCN's culture: it is not only about information and communication techniques but also about culture and training. Although the organization has dedicated substantial resources to adopt new technologies, the strategy training, policy, communication and change in culture accompanying the new techniques are essential for their success. In other words, if two people do not speak, providing them with computers and Internet will not improve their communication. Internet emailing and Skype for instance are technologies successfully applied if strategy, culture and cooperation patterns allow. Knowledge management does not improve solely thanks to new ICTs:

> This has been confirmed by program coordinators' comments, as well as by respondents to our survey (Figure 6), who said that they seldom use the Knowledge Network for their program planning. Of course, as with all such information systems, the value

---

[22] Bruszt, Gador (1999) Op Cit, p.35.

of the Network is a function not only of its technical design and management but the enthusiasm with which its users feed material into it. A brief scan of the Network suggests that that enthusiasm is not universal in the Secretariat.[23]

The report highlights the difficulty of the organization to make changes and adopt the new changes in a new culture. In other words, the team recognizes all the initiatives put in place to make a change in terms of governance and management efficiency. But it notices they have little impact:

It is cause for considerable concern that so many past – and often high-quality – efforts at governance reform in IUCN have led to so little real change. If the current governance reform process also fails to deliver substantial reform, there is a good chance that the governance mechanism of the Union (or the weakness thereof) will become a major factor holding IUCN back from realizing its potential as the world's premier conservation organization.[24]

What the auditing team recommends is a fundamental change, a deep transformation of IUCN's culture and communication patterns. It does not specifically mentions new ICTs:

Its professional staff must be more competent in understanding the situations and processes of learning and the management of knowledge, more sensitive to and skillful in capacity building and empowerment, and better in policy research, influence and communication between global, national and regional

---

[23] Ibid, p.18.
[24] Bruszt, Gabor (2003) *The External Review*. Gland, Switzerland, p.40. Retrieved 10 May 2013 from http://cmsdata.iucn.org/downloads/iucn_external_review_2003.pdf

levels. This would be a major challenge – and a next step – in the further development of methods, instruments and competencies for the global Program and its components. [25]

The change is probably more difficult to implement in a decentralized and worldwide spread organization:

> The complexity of IUCN's mission and structure, and the dynamic way in which it has to adopt new concepts and approaches to conservation, demand well developed mechanisms for integration and co-ordination. These processes take place at the individual and organizational levels (for example between groups and units) as well as at the institutional levels (for example in various forms of partnership and collaboration). [26]

The complexity of the organization's structure and governance mechanisms is further mentioned by an expert from the external review team: "In dealing with IUCN, one must bear in mind that there never has been, and undoubtedly never will be, any other human organization even remotely resembling it." [27]

In 2003, the auditing team also suggests to strengthen the monitoring and evaluation (M&E) procedures to capitalize on the lessons-learnt:

> There is a need to improve communications, feedback systems, opportunities for dialogue and lessons learned from M&E work. There are inadequate

---

[25] Bruszt Gabor (2003) Op Cit, p.51.
[26] Ibid, p.35.
[27] Ibid, p.39.

resources allocated to M&E learning efforts... and there is a need to strengthen M&E capacity at country and regional levels to capture and use knowledge generated from projects and evaluations. [28]

The following external review in 2007 precisely stipulates the necessity to "strengthen IUCN as a knowledge organization."[29] This recurrent suggestion is highlighted in several parts of the report: "Other reviews, including external audits, have pointed out that IUCN is lagging behind other organizations in knowledge management."[30] The report also mentions the urgent need to develop "a complete, functional and interactive database that can be used by the secretariat to (…) support networks or communities of practice across the Union that link members and Commissions within the framework of the IUCN Program."[31]

By 2007, new ICTs are well used in all parts of the organization. But they do not seem to have facilitated the change at IUCN. Indeed, what is at stake (and what was at stake before Internet) is a profound transformation of IUCN's culture. If IUCN does not focus its development strategy on becoming a learning and knowledge organization it will loose its competitiveness:

---

[28] Ibid, p.18.
[29] Woodhill, Jim, Whyte, Anne (2008) *The External Review of IUCN Programme*, Vol.2. Gland, Switzerland, p.80. Retrieved 10 May 2013 from
http://cmsdata.iucn.org/downloads/final_er_vol_1_synthesis_report_15_apr.pdf
[30] Woodhill, Jim,Whyte, Anne (2008) Op Cit, p.vi.
[31] Ibid.

> If IUCN is to remain competitive, it needs to rethink its knowledge management policies and open up access to tools like the Knowledge Network. In other words, while putting in place immediate reforms, IUCN should also 'think big' for more fundamental changes to how IUCN conducts its business as a knowledge organization over the medium to longer term.[32]

For instance, the auditing team recommends accompanying better the implementation of new technologies with training and policies, and in particular "develop new guidelines for sharing knowledge with members, Commission members, and partners."[33]

Using new ICTs to communicate is similar to other communication channels. A strategy is needed: "The overall communications to members individually and collectively must be strategic and not chaotic."[34] It is not enough to send emails to have an effective communication. It is not enough to use an intranet to become more efficient. IUCN is using an intranet, Skype, emails. But it is essential to understand why these tools are used, train staff, and promote what they are developed for: implementing a global strategy focused on knowledge management.

The IUCN council identified three objectives and states once more what the external reviews suggested:

---

[32] Ibid, p.v.
[33] Ibid, p.81.
[34] Ibid, p.27.

> 1. Put in place basic organizational Internet systems to support and foster knowledge management   2. Strengthen knowledge creation, sharing and learning across organizational boundaries and shift the focus towards more efficient and concerted analysis and synthesis 3. Strengthen capacities to assist, empower and influence target audiences.[35]

However, as the 2007 external review notices, the organization still needs to implement this strategy, even though "improved knowledge management is no longer an option in IUCN". [36]

In 2011, the last external review suggests once more to "invest in the under-resourced core functions of fundraising, M&E, and knowledge management - continue to develop critical mechanisms for information sharing, coordination and alignment."[37] In addition, its overarching recommendation is to "Critically assess and (re-) define IUCN's purpose –take progressive and decisive steps to re-discover its purpose, re-define its niche as the global conservation union, and re-configure the organization to meet global challenges."[38]

The same external review also recommends to better determine IUCN's purpose: "Instigate a critical external questioning of purpose and niche (…) to make transparent and independent proposals about where the Union best fits

---

[35] Ibid, p.25.
[36] Ibid.
[37] Poate, Derek, Gregorowski, Robbie, Blackshaw, Ursula (2011) Op Cit, p.viii.
[38] Ibid.

and has most to contribute within the field" [39] and added value:

> Interrogate the Value Proposition and develop a Union-wide Theory of Change - manage a Union-wide consultation process to revisit the Value Proposition in order to define a statement which is unique and of practical value to managers and stakeholders.[40]

The 2011 external review states with similar words what has been recommended in the past external review: IUCN needs to have a strategy based on knowledge management, define its niche and determine its added value compared to other organizations.

With a growing number of members, located all around the world; regional offices and committees on all continents; and a complex governance system that require intense and effective information sharing, IUCN has used new ICTs to communicate for a long time. However, the generalized use of these technologies within and outside the organization has not facilitated the change in terms of strategy: IUCN continues to be confronted to the same questions. New ICTs favor greatly information sharing and communication, and was expected to improve how knowledge management functions. But it seems that Internet has in fact no impact on knowledge management and the evolution of the development strategy. The organization needs first to

---

[39] Ibid.
[40] Ibid.

determine its identity, mission, added value, objectives and niche.

As shown in this section, external reviews from before and after the emergence of cyberspace highlight that IUCN should dedicate more resources to the production and dissemination of scientific knowledge. If the emergence and development of new ICTs transformed parts of our societies, it seems it did not change the internal knowledge management of IUCN. To improve knowledge production, two elements are needed beyond the technological tools: a strategy and political will from the hierarchy, and an adaptive internal communication culture.

The generalization of ICTs did not change the culture of the organization, and therefore had a rather limited impact on the organization's knowledge management. All external reviews highlight the necessity to redefine the organization as a knowledge producer and improve the flows of information within its parts and constituents. Nevertheless, the last external reviews indicate a slow improvement, and it could be expected that, with time, knowledge management improve.

As stated in an external review, "communication is probably one of the most important functions of IUCN, as a complex, global organization dedicated to the generation, management and dissemination of knowledge." [41] Therefore the following

---

[41] Bruszt,Gabor (2003) Op Cit, p.18.

section analyzes the impact of new ICTs on IUCN's internal communications.

5.3 Communications within a decentralized organization

Internal communications imply sharing information within an organization, including via speech, telephone, radio, mail, paging, fax, closed circuit television, electronic mail, Internet connections and computer networks.[42] In 1993, the first external review mentions internal communications in a positive manner: "the information and experiences communication seem to have moved easily in a "two-way flow" between field and headquarters." [43]

IUCN's specificity is also a challenge: "IUCN derives one of its main strength from its network, from being a union of NGOs, IOs, governments, scientists, and professionals." This network is an added value only when internal communication performs well: "IUCN must also be more effective in sharing experiences within the organization, in learning from other institutions with relevant operational expertise, and in disseminating its own learning experiences." [44]

---

[42] Internal communications [Def. 1] (n.d.) Business English Dictionary Online, Fairfax, VA: WebFinance. Retrieved 7 September 2013 from http://www.   businessdictionary.com/definition/internal-communication.html
[43] IUCN (1994) Op Cit, p.8.
[44] Ibid, p.4.

As shown below, external reviews from before the emergence of new ICTs highlight that IUCN should improve its coordination and work distribution between all parts of the organization: the organization is so decentralized that efficient and affordable means of communication and information sharing are necessary. However, the generalized use of these new technologies does not seem to change internal communication patterns. In other words, the organization did not make full use of all the possibilities Internet can offer.

If the emergence and development of new ICTs transformed parts of our societies, it seems surprising it did not change the internal communications. To improve internal communication, two elements are needed beyond the technological tools: a strategy and political will from the hierarchy, and an adaptive internal culture. Here as well, the adoption of new ICTs did not bridge the gap between all parts and constituents of the organizations. Communication between Members, the Secretariat, the Regional Offices, and the Commissions remain inefficient, and could benefit from improvements.

The following external review In 1996, the external review highlights the importance of internal communication and insists on improving the information sharing between members, commissions and the secretariat: "Our main first recommendation is to reinforce the view that a special

strength of IUCN is the interaction between its three pillar."[45]
Indeed, due to its geographically decentralized structure,
interaction within IUCN does not come naturally:

> The external review team observes that the internal
> communication between the different components of
> the Union is far from satisfactory. IUCN has not made
> much progress in developing its capacities for
> learning from its own activities and programs. In
> order to remain in the forefront of issues related to
> nature conservation and sustainable resource use, it
> has to strengthen substantially its capacities as a
> knowledge-based "learning" institution. [46]

What is at stake here is the need for the Union to work as a
union and share information and lessons learnt with all parts:

> The Mission Statement of IUCN adopted by the
> General Assembly in January 1994, emphasizes the
> importance of communication and exchange of
> information. Dissemination and communication
> implies a strong capacity to capitalize the experience
> and lessons gained through field and other activities.
> IUCN should indeed be engaged in a constant search
> to develop and promote a common understanding on
> conservation and sustainable resource use.[47]

Interactions between regional offices, members and the
commissions are described in the same way:

> Unfortunately, there was little evidence that technical
> and scientific support and the monitoring and
> evaluation services from IUCN headquarters are
> available to the region. In particular, there seemed to
> be little or no interaction between the region and the
> IUCN commissions and technical programs, with

---

[45] Christoffersen, Leif E. (1996) Op Cit, p.28.
[46] Ibid, p.25.
[47] Ibid.

some notable exceptions in the cases of Sustainable Use initiative and the Wetlands Program. The linguistic isolation, especially of the francophone and lusophone countries, because of the English being the main working language in IUCN, is probably one important reason.[48]

The lack of communication always being in all three official languages (namely English, French and Spanish) is also highlighted further in the report: "some concern was expressed with regards to the language barrier, primarily in publications and communications from headquarters." [49]

In 1999, the latest 'pre-new ICTs' external review, the need for better coordination and work distribution between all parts of the organization is highlighted. And for the first time, the technical aspect of communications (here called telecommunications) is mentioned:

> For the multi-center concept to succeed, communications must be good and co-ordination clear. Not only must the telecommunications be efficient (and they certainly are not in all parts of IUCN's world). Everyone must know which offices are responsible for what, and all involved must optimize their internal communications to ensure that the multi-center concept enhances participation and relevance rather than exacerbating confusion.[50]

In other words, to improve internal communications is foremost about better coordination and distribution of tasks: once more it is a question of strategy and management.

---

[48] Ibid, p.14.
[49] Ibid, p.15.
[50] Bruszt, Gador (1999) Op Cit, p.39.

Indeed, the question of knowledge management is also associated to internal communication. In this last report, the auditing teams highlights the need for better knowledge management and coordination.

> IUCN faces a real challenge in improving the knowledge available in Commissions and members and mobilizing it effectively and efficiently. Documentation plays an important role here. The knowledge domains of people and organizations should be mapped and stored in such a way that the information can be easily retrieved through IUCN's intranet. The role of the Commission on Education and Communication in achieving these goals should be assessed.[51]

In the following external review in 2003, the new ICTs tools are highlighted such as the intranet called the Knowledge Network. It welcomes the fact that IUCN:

> "(…) has focused particularly on developing better information management systems for internal and external use (…). IUCN's Website is now an attractive and dynamic source of information and news (rather than structured knowledge) about issues that concern the Union and the ways in which it is addressing them. (…) The internal 'Knowledge Network', accessible only by password, has developed into a useful and diverse resource for those within the Union with access to it. But it remains more of a data base for the organization than a source of knowledge to be deployed in the management, execution and monitoring of Program strategy.[52]

---

[51] Ibid, p.35.
[52] Ibid, p.18.

It seems that IUCN at the time disseminates knowledge internally mainly through verbal forms such as workshops or meetings. But the question of the efficiency of such procedures is raised: the newly developed Internet-based tools are not used to share knowledge:

> (…) by far the most common mechanism for promoting the use of the knowledge generated is meetings and workshops – verbal dissemination, in other words, as opposed to the written form. Many documents and publications were produced as well, of course, and the various Websites served to disseminate knowledge too. The (cost-) effectiveness of these various dissemination mechanisms in reaching their intended audiences should be reviewed. (…) So far, then, the Secretariat's achievements consist more of information management than of knowledge management.[53]

Internal communication patterns do not seem to have improved thanks to the use of new ICTs yet. The organization does not seem to have grasped all the possibilities Internet can offer.

The following external review in 2007 reaffirms the need for IUCN to foster the use of ICTs within the organization. Indeed, the report examined how the intranet was used by the secretariat to communicate with members:

> It does not appear that these communication initiatives are very successful. Very few members contribute stories or news for the e- bulletin and very few members use the IUCN Members' Portal. A visit to

---

[53] Ibid, p.19.

the Members' Portal on 27 September 2007 revealed that only 12 articles had been posted; the last post in the on-line Members' Forum was 28 March 2006; nothing was listed under the page for Members' Publications; and there were only 87 members (out of 1045 members) registered as users. [54]

Indeed, Members are called to participate and share their stories and accomplishments with the Union, but rarely do: "The membership Unit has to search the websites of members to find stories to put in the bulletin."[55] It seems IUCN has not yet used new ICTs to its full potential first due to the misuse of the current technology available, and second due to the lack new developments:

> The current state of its MIS (Management Information System) and knowledge management is hampering its efficiency and effectiveness as an organization, and preventing it from serving and engaging members as well as it should.[56]

The following external review in 2011 states that internal communication has not evolved much since 2007: 47 to 53% mention only slight change when it comes to communication between members and commissions, communication about benefits and responsibilities of members, communication between members, and the effectiveness of services offered by the secretariat.[57] In other words, communication between the different parts of the organization is more problematic

---

[54] Woodhill, Jim, Whyte, Anne (2008) p.27.
[55] Ibid, p.25.
[56] Ibid, p.v.
[57] Poate, Derek, Gregorowski, Robbie, Blackshaw, Ursula (2011) Op Cit, p.117.

and has not evolved in the last years. Internet has not empowered all parts of the organizations to communicate better and more often.

Indeed, this lack of communication between members and commissions for instance is a longstanding issue that existed before the generalization of new ICTs. If the secretariat does not "train" the different parts of the organizations to communicate and work together, new ICTs will have no impact on internal communications. It is about changing the culture of the organization and implementing a strategy that focuses on improving internal communications for it is an essential part of IUCN's added value and one of the main services offered to members:

> The way Commission members interact with the Secretariat and Member-organizations leads to them being not well informed about the IUCN Program or of more strategic aspects such as the Value Proposition, One Program, theory of change, and developments in planning, monitoring and evaluation.[58]

This statement confirms what members mentioned in the 2007 survey: internal collaboration needs to be improved. Internet solutions such as emailing or Skype are not the solution to lack of cooperation and old communication patterns.

---

[58] Ibid, p.122.

Cooperation between members, commission members and secretariat at HQ and regional offices does not come by itself and is a recurrent challenge. Indeed, new ICTs do not seem to have had any substantial impact on IUCN's internal communications over the last years. The use of outdated communication technologies could be one explanation. But what most external reviews highlight is a problem of culture rather than a lack of communication tools. The following section will analyze the impact of new ICTs on IUCN's membership.

5.4 A representative multi-stakeholder membership

As a membership organization, service to members is an essential part in IUCN's work and mission. Due to their geographic locations, the use of new ICTs should improve the communication with members spread all over the planet. However, external reviews indicate that members still wish for an improved service to membership after the emergence of the new ICTs. Here as well, the generalized use of the new ICTs does not seem to change communication patterns as the following analysis indicates.

The first external review in 1996 praises the efforts made by IUCN to improve the services dedicated to its members and to recruit new ones:

> Over the last three years considerable efforts have been made to strengthen the institutional membership

based of IUCN. The Director General has taken a strong stand in support of making it a more member-focused institution. Regional and Country offices have sought to strengthen contacts with the existing membership and to recruit new institutional members.[59]

IUCN accompanied the growing number of members with the creation of regional and national committees all around the world. Few years before the generalization of new ICTs, IUCN succeeded in developing a network of members, providing support, and involving them into its governance mechanisms:

> The Union has now a broader global membership than at any time in its history. New National Committees for IUCN members were established in a number of countries. Several regional committees have also been set up. The increasing number of National Committees represents a significant element in IUCN's global structure. Substantial efforts are being undertaken in the regional and country offices to involve members, through the National Committees, as active participants in determining the main elements of country and regional programs.[60]

The growing role of regional committees are also highlighted in the report, and in particular their role in improving information sharing at the regional level, and also in terms of political influence.

> The Regional Committee of IUCN Members has become an important body for IUCN in the region. As an intermediate body it has played a significant role in

---

[59] Christoffersen, Leif E. (1996) Op Cit, p.5.
[60] Ibid.

disseminating information and promoting a better understanding of the ways in which the entire IUCN family can work more efficiently in the region. (…) It has become a promising regional political mechanism that could bring together the efforts of IUCN members at a very high policy level. The Regional Committee of IUCN Members has provided more scope for active participating by IUCN in this political structure.[61]

After the generalization of new ICTs in 2000, the 2003 external review describes the lack of involvement of all parts of the organization in designing the program and participating more actively in the governance mechanisms. Although new ICTs were available and used to communicate, they did not improve the involvement of members in designing the program: "we underline the finding that one of the main ambitions of the regionalization process – the mobilization, integration and empowerment of Members – has fallen far short of even modest expectations. This ambition and task await fulfillment."[62]

This contradicts clearly the previous external review that praised regional offices as a promising political body within IUCN that unites effort within the organization. The following review will clarify this contradiction.

Indeed, the same issue is raised in the next external review in 2007 and some additional explanations are provided:

For the most part, the strategy was not operationalized and its key results were not achieved, mainly due to

---

[61] Ibid, p.15.
[62] Bruszt, Gador (2003) Op Cit, p.36.

constraints of staff resources and adequate Internet and information systems, but also because it does not appear to have been a high priority for senior management.[63]

To summarize, the 1999 external review praises the regionalization initiative, whereas the 2003 and 2007 ones highlight the lack of concrete results and changes: "Members look to IUCN for networking so IUCN should strengthen its capacity to support members to work together and with the Commissions".[64]

If Members, Commission Members, and Secretariat cannot communicate properly and share information easily, IUCN looses its specificity of a network organization: "the three core elements in IUCN's value proposition to members are: networking, IUCN's convening power, and governmental and non-governmental members sharing the same platforms from local to global levels."[65]

In terms of publications, a vast majority of members were satisfied with IUCN's publications (84%). However 54% of members for who receiving policy expert advice is important were dissatisfied. And 20-45% of members say they were not involved in the design of the 2005-2008 Program. Also, some members would like to be more involved in influencing the international agenda and policy: "Of those members interviewed who have strong capacity for international

---

[63] Woodhill, Jim, Whyte, Anne (2008) Op Cit, p.x.
[64] Ibid, p.vi.
[65] Ibid.

policy, most would like to be more engaged with IUCN in influencing policy and developing the positions that IUCN takes in international fora."[66]

The survey shows that members expect IUCN to provide better service thanks to better communication and information sharing.

> IUCN could do more to support members in policy influence by increasing the sharing of information and policy experience between member countries, particularly within a region so that members do not have to reinvent the wheel or miss the opportunity to build on one another's experience.[67]

The organization needs to better train staff to use new ICTs such as the website. Also the survey shows a need to develop content dedicated to members. This is also a question linked to the definition of IUCN's added value such as the benefits to be an IUCN's member:

> Another potential tool is the Members' Portal on the IUCN website. It provides links to the Commission websites but there is little information that is not available to the general public (an observation that led at least one member to question its added value). It is very difficult for members to find out who might have the expertise they need in the Commissions and there appear to be no special privileges for IUCN members to access the Commissions.[68]

---

[66] Ibid.
[67] Ibid.
[68] Ibid, p.19.

In the same vein, the external review highlights the need for IUCN to define its strategy with members and improve its services to members.

> But for a long time IUCN has under-invested in those components of the secretariat that are most critical to engage members strategically and to serve them through the provision of the services that they want. These components include dedicated staff time; communication and knowledge management tools; and organizational structures and processes.[69]

IUCN promotes its value added as a membership organization that "works for, with and through its members".[70] To achieve this goal, "better communication and collaboration within the secretariat and eventually, to the way in which the secretariat engages with members and Commissions and manages its networks and external partnerships"[71] are needed.

In the last external review conducted (2011), the survey sent to members and commission members indicates they still would like to be more involved in the design of IUCN's strategy and program. Also, they would like to better communicate with each other and among themselves.

However, the survey further indicates that internal communication has progressed over time between some parts of the Union. A majority of members confirmed (45%) that

---

[69] Ibid, p.19.
[70] Ibid, p.v.
[71] Ibid.

communication between the secretariat and members has improved over time.

The survey shows contrasted results: when more than half of IUCN's members knew about the 2009-2012 program, a quarter didn't know at all about the value proposition, and a significant minorities of INGO and NGO members were not familiar with the program.[72] Information didn't reach all members the same way. There is a significant number of members who didn't know what to answer to the questions asked about IUCN's internal communications, strategy and policies.[73]

The generalization of new ICTs has not improved the communication with its members. This could be explained by a couple of factors. IUCN did not invest enough resources into its membership services. Its communication patterns and management culture did not allow better participation of members into the governance mechanisms.

Finally, new members of IUCN are generally small NGOs who might not have enough human resources to know about the program and IUCN's value proposition. As stated in the external review, most recent members are not yet familiar with how the organization functions, its history and the value proposition.

[72] Poate, Derek, Gregorowski, Robbie, Blackshaw, Ursula (2011) Op Cit, p.117.
[73] Ibid, p.118.

To conclude, new ICTs did not have the expected impact on IUCN's membership, for the same reasons it did not happen for knowledge management and internal communications. The lack of resources dedicated to these three elements is due to a development strategy that did not take them enough into consideration, although repeatedly highlighted in external reviews.

The 2011 external review recommends to "identify gaps in the Membership according to the requirements of the 2013-2016 Program and findings from the external analysis of purpose and niche, and start addressing these gaps through a new Membership Strategy."

Emailing, Skype, OCS and other ICTs did not transform IUCN internally. IUCN has developed very recently (2013) a new intranet. However this intranet has never been evaluated by the external reviews. Therefore it will not be discussed here. Beforehand, the intranet used by IUCN was the Knowledge Network, and its use was limited to an internally shared dropbox without further interactions.

The organization seems to have adopted a culture reluctant to change, although the efforts invested to change were highlighted and praised at many occasions by the auditing team. After analyzing the evolution of IUCN's internal functioning, the next chapter will examine the impact of new ICTs on IUCN's external competence.

Chapter 6. The impact of new ICTs on IUCN's external competences

States, TNCs and civil society use more and more resources for today's economic and demographic development. However, they also need to protect and save up the same resources for future generations. Given that access to global public goods such as clean air or water cannot be restricted, everyone can abuse it. In respect to the environment this means that each individual or nation is depleting the environment for its own economic development.

This rational decision is based on the analysis that it maximizes its profit by doing so. However, if all nations do the same, it will lead to overexploitation of natural resources, and soon there will not be any resource left for anyone. Therefore, as Hardin concludes, a rational individual decision can become irrational and counter-productive at the group level.

Since IUCN's foundation in 1948, the environment became an important topic of international negotiations and a topic of concern in the world. This chapter discusses the impact of new ICTs on IUCN's external capacities. It first analyzes its external communications, its international influence, its website, and finally the use of Internet and social media tools at the 2012 World Conservation Congress.

6.1 IUCN's influence on global environmental governance

Influencing the international agenda, societies, organizations, governments, and the general public is one of IUCN's main objectives: "through the collective strength of more than 1,200 government and non-governmental Member organizations, IUCN influences international environmental conventions, policies and laws."[1]

In 1993, the first external review mentions how active IUCN is when developing new partnerships and sponsorships with external organizations or governments: "the external review is impressed with IUCN's efforts in recent years to mobilize resources (…)"[2] and when providing policy support: "The team did find solid progress on several fronts. We were impressed with the diverse efforts to provide policy advice at both international and national levels."[3]

However, to balance this positive note, the external review also insists on the need for IUCN to develop more influence thanks to educational knowledge and supporting governments and organizations to design educational programs and material that take nature and conservation into consideration:

> The review team shares the concern expressed in other IUCN documents regarding the lack of progress in environmental education area under the Commission on Education and Communication. We did see

---

[1] Holdgate, Martin (1999) Op Cit, p.23.
[2] IUCN (1994) Op Cit, p.20
[3] Ibid, p.4

> evidence in the field that several regional and country programs have included innovative environmental education activities. We believe there is opportunity for IUCN to make major contributions to conservation training and awareness, particularly in non-formal education.[4]

In 1996, the external review also highlights how IUCN improved its cooperation at national levels. It should be mentioned that country and regional offices are part of IUCN's secretariat.

> Generally the Country offices have been quite successful in establishing good working relationships with various donors and international development agencies. IUCN's scientific and nature conservation background as well as its status as an international organization which include regional and national entities, is considered an advantage compared to many large international organizations. (…) The relationships have helped to attract funding through IUCN to projects of members. This also explains the important income generated in the region from donors over the last six years.[5]

IUCN is also recognized for its active influence in the development of the Convention on Biological Diversity: "there is no doubt that the Biodiversity Program has played an important role with respect to the formulation and the initial establishment of the Convention and its Secretariat."[6] IUCN's biodiversity program is a good example of international influence. Indeed, the organization had a strong impact on the international agenda.

---

[4] Ibid, p.11.
[5] Christoffersen, Leif E. (1996) Op Cit, p.13.
[6] Ibid, p.18.

It has been exceptionally productive and has been very effective in establishing IUCN's imprint on many major discussions on global biodiversity issues. We have heard some strong views that this major input was strategically very important for the early stages of setting up the Convention, particularly to assist its interim secretariat.[7]

In 1999, the external review highlights once more the importance of IUCN in the implementation of the Convention on Biological Diversity:

Supporting implementation of the Convention on Biological Diversity (CBD), for example, IUCN has provided advice on various aspects of national compliance to at least 25 countries in all regions. It has worked in many other pertinent areas, such as the development of environmental legislation, promoting south-south collaboration, the management of protected areas, and the development of environmental impact assessment capacity.[8]

In 2003, the external review changes of tone and recommends the organization to create more links with other organizations through a knowledge and learning management perspective:

It should address ways for IUCN to move beyond internal knowledge management to develop knowledge networks that link all components of the Union, and its partners, with the wider world.[9]

In 2007, the external review reveals that members see IUCN as a leader on the international stage for nature conservation. However, it is not known enough to be a leader for other

---

[7] Ibid.
[8] Bruszt, Gabor (1999) Op Cit, p.5.
[9] Bruszt, Gador (2003) Op Cit, p.20.

related issues such as sustainable developments. IUCN keeps its influence for its traditional area of work, but fails to expand: 86% of all members see IUCN as a knowledge-based organization. Only a minority of members thinks IUCN is a leader for sustainable development in their region. In some regions such as North America, West and East Europe, North and Central Asia, less than 30% see IUCN as a lead organization for sustainable development:[10] "IUCN has a track record and is recognized as a leader in nature conservation but cannot compete with other organizations in sustainable development, particularly at national and regional levels." [11]

Most members question IUCN's leadership at national or regional levels and they see IUCN as "a knowledge organization rather than an 'on the ground' development agency."[12] In the interviews the survey conducted, some members explained their doubts about IUCN's leadership: "Others link 'leadership' with 'activism' and 'advocacy' and say that IUCN is not well-enough known and does not get its messages across to key political and civil society audiences, especially in the regions." [13]

Some years later in 2011, another element about influence confirms what was stated previously: 49 to 42% of members argued that IUCN is ineffective or very ineffective in

---

[10] Woodhill, Jim, Whyte, Anne (2008) Op Cit, p.13.
[11] Ibid, p.12.
[12] Ibid.
[13] Ibid.

engaging with policy and lawmakers in their country or region. Influence on government officials is inefficient according to members. The results were confirmed by field visits to members and regional offices.[14] But at the same time, commission members rated as an improvement the adoption of new methods of communication (for 71% of all commission members).

> Together these results indicate that IUCN is considered by members of Commissions to have begun to improve its effectiveness at policy influence but from a relatively low base. And that a major part of this has been that IUCN has adopted better communications methods.[15]

If new ICTs are synonym of "new methods of communication", it means that these new technologies have had a positive impact on IUCN's traditional audience: the environmental community. The following section analyzes the organizations' external communications to define it this positive impact is also true for the general public and non-traditional IUCN audiences (scientists, the environmentalist movement, academics, NGOs, and other constituents of the global environmental governance).

---

[14] Poate, Derek, Gregorowski, Robbie, Blackshaw, Ursula (2011) Op Cit, p.118.
[15] Ibid, p.121.

6.2 Communications with multiple audiences

External communications embeds the strategy and processes to exchange information between an organization and the outside world: other organizations, groups, or individuals. Its objectives are to facilitate cooperation and present a favorable image of the organization and its products or services to society at large.[16]

External communications can and should become very visible to all stakeholders: if a change is perceived, it should be in terms of external communications and outreach. The website, social media, web-based advertising campaigns are some examples of external communication using new ICTs. As shown below, the adoption of new ICTs has improved external communications but not to the point where it became well known by the general public.

The first external review in 1993 mentions external communications. The report starts on a positive note and makes references to the efforts made in this field: "significant improvements have been made in communications and in providing conservation information, although we will comment later in this report on the need for more such efforts." [17]

---

[16]External communications [Def. 1] (n.d.) Business English Dictionary Online, Fairfax, VA: WebFinance. Retrieved 7 September 2013 from http://www.   businessdictionary.com/definition/external-communication.html
[17] IUCN (1994) Op Cit, p.4.

It continues with a positive evaluation of the existing of the communication team:

> The communications functions of IUCN have improved during the 1991-1993 period. The approach of the communications unit is two-pronged. Planning for behavioral change is decentralized and conducted as closely as possible to the target audiences. Public relations and general public awareness follow a centralized approach.[18]

Indeed, this external review mentions an important element. IUCN needs to adapt the scientific knowledge it creates to a wide variety of audiences such as environmentalists in the field, scientists, informed public, the environmental community at large, donors, the private sector, the press, members of IUCN, and also the general public:

> Constructive efforts have been made towards presenting a more easily understandable "outside face" of IUCN to external audiences. IUCN still has a tendency to publish comprehensive reports, which serve a very useful function as reference materials, but which are not easy to digest at decision-making and policy levels, whether national or international. The voluminous IUCN products, which are mostly published in English, are difficult to absorb for non-English speaking users. Policy-focused briefs would have wider application.[19]

In 1996, the following external review continues also on a positive note with the communication products created by IUCN:

---

[18] Ibid, p.12.
[19] Ibid, p.12.

> SSC has a very active publication policy and has provided technical information through Action Plans, Newsletters, Red Data Books, trade reports for CITES and for others, and other publications. The new categories for threatened species have already had considerable influence on reformulating the Red Data Books and many Action Plans. The SSC newsletter, Species, has been designed to maintain contact with SSC and to the rest of IUCN. Several guidelines have been published and more are under preparation.[20]

Another example of the positive work of commissions in terms of external communications is the predecessor of the World Commission on Protected Areas:

> CNPPA has generally fulfilled its objectives. It has been able to mobilize its network in a number of regions and it organizes every ten years a major World Parks Congress. It has developed new Action Plans for Europe and for North America, and it is in the process of completing plans for the Northern Eurasia, South Asia, Africa, and North Africa & the Middle East. The Membership has more than doubled in the period, and it now over 1000. A Vice Chair for World Heritage Sites has been established. A number of valuable guidelines and assessments have been made.[21]

In 1999, the external communications products and efforts to reach out to new audiences such as the general public and the private sector are praised, even before the generalized use of new ICTs.

---

[20] Christoffersen, Leif E. (1996) Op Cit, p.6.
[21] Christoffersen, Leif E. (1996) Op Cit, p.9.

IUCN continues to produce high quality publications on the science and management of biodiversity, mainly reaching a professional readership. However, success in influencing societies depends largely on reaching out to the general public and the corporate sector. Efforts in this regard have increased during this triennium, which included the publicity surrounding the Union's 50th anniversary. A Communication Co-coordinators' Network of regional and headquarters Secretariat staff is helping IUCN offices around the world actively to develop the Union's public profile.[22]

In 2003, the external review mentions newly developed ICTs tools such as the website " (…) IUCN's Website is now an attractive and dynamic source of information and news (rather than structured knowledge) about issues that concern the Union and the ways in which it is addressing them."[23] However, little is mentioned about external communications per se: it more about knowledge management and positioning IUCN on the international stage as a learning and knowledge organization.

In 2011, the survey done with members shows positive results: for them, IUCN has adopted methods to provide better communication about nature conservation issues:[24] Its members perceive IUCN's external communication positively. External communication has usually been reviewed quite positively since 1990s until the most recent one, although IUCN was traditionally a science-based and

---

[22] Bruszt, Gador (1999) Op Cit, p.42.
[23] Bruszt, Gador (2003) Op Cit, p.18.
[24] Poate, Derek, Gregorowski, Robbie, Blackshaw, Ursula (2011) Op Cit, p.118.

membership organization. Its most traditional communication audiences were "internal": towards its members, scientists or the conservation community. It is only recently that the organization started opening up to the outside world, including the general public in its external communications. For traditional audiences, IUCN's external communication is evaluated positively.

However, a survey is needed to understand what the general public knows of IUCN and if Internet has made a change in this respect. Nevertheless, general public has never been the main objective of IUCN's external communication (it became over time one of its audiences). As most membership organization, its external communication was first and foremost focused on gaining new members. This objective was reached with a constantly growing number of members.

The use of the ICTs does not seem to have transformed substantially IUCN's external communication. What external reviews reveal is more a concern around IUCN's niche and identity. Indeed, before communicating to external audiences, it is essential to know who the organization is and where it positions itself on the international stage.

The most visible use of new ICTs for external communications is the website. The following section will focus on IUCN's website www.iucn.org. More precisely it will analyze IUCN's website and present some results from a survey done in 2009 with the general public about its website.

The objective is to complement the analysis of external reviews with recent case studies of ICTs use by IUCN to analyze the impact of ICTs on IUCN's outreach.

6.3 IUCN's institutional website

Online communications and in particular the website has become over the years increasingly important for organizations to promote a brand, sell products, or raise awareness on a specific issue. It is extremely rare now to find any organization (apart from some local ones) who is left without a website. Often described as the face and voice of the organization online, the website and its management are crucial tools for communication managers, but not only.

New ICTs and web 2.0 enable the organization to present itself, its actions and its added value, while its audience responds, reacts, sends comments, shares the information, likes, or disapproves. Constant monitoring of what is said on the red, adaptation to audience's needs, and a quick response to their demands is part of the management of a website.

International non-profit organizations, as it is the case of IUCN, often have a complex audience to whom they must address their communication: general public, journalists and press, donors and potential donors, other organizations, scientists, and staff. Hence, one website must often respond to the needs and demands of very different profiles. A successful

online communication should enable visitors from all the above categories to find the information they are looking for.

IUCN's website should contain complex scientific knowledge, as well as general simplified information. This is what a multilayered website is designed for: several layers of information for several audiences. "Each layer of content is unique, with different qualities that make it good or bad. What makes a good press release is different from what makes a good multimedia presentation or document library."[25]

The website should have at least the following sections: current information, presentation pages, documents, services, and customization and online community.[26] Sections are complementary, and sometimes propose similar information but with a different presentation or style to address different audience. For instance, the current information section is the most visible section in most websites, often featured on the main homepage with a photo or a news story. In parallel, the online community section offers a snapshot of the organization's latest update on Facebook, Twitter or the corporate blog with similar content (but presented differently).

The homepage gives already good information on what the organization focuses on, or better said, on what the

[25] Nuk, Igor and Olejarnik, Michal (2002) *Building.org: a manager's guide to creating successful websites for international organizations*. Malta, La Valette: Diplohandbooks, p.87.
[26] Ibid.

organization's communication focuses on. What are the most highlighted pieces of information or sections on the homepage: latest news, publications, or photos? It gives the visitor also a general first impression of the visual identity and values of the organization and its brands: artistic creativity, scientific seriousness, aggressive campaigns and photos? Similar to the first impression one has when meeting a person for the first time, the homepage of an organization is crucial in that aspect.

IUCN mandated an external agency to run a survey on IUCN's website perception. The survey was conducted in London on the 26th February 2009 with two groups of eight individuals, all highly educated, informed public Group one was composed of members "intellectually curious and keenly interested in the world" and group two had members for who the " environment is of keen interest (…): climate change, green initiatives, biodiversity, species survival, etc."[27] They were presented a website similar to the actual one, except for the homepage, which has been revamped since then. However, the visual identity, the layout of the rest of the website remained identical.

In this survey, none had heard of IUCN, and they were surprised that they had not heard about the IUCN, and curious to know why they had not. They seemed very interested and positive about the activities of the organization. They

---

[27] FHIOS (2009) *Understanding the Environment/Conservation Focus Groups*. London, UK: The Media Centre, p.3.

expected the organization to be better known by the general public. None of them had visited IUCN's website, but they expected the organization to have one. Once shown, they were generally very critical of the current website: "old fashion and corporate"[28], poor photographic images, un-engaging content, too long, not enough information on the structure of the organization, insufficient content relating to the activities, few multimedia elements, poor use of maps, lack of languages.

Since this survey, some of the comments have been incorporated. The homepage changed its layout to incorporate a bigger picture and videos (multimedia). The "About IUCN page" also includes a corporate video describing the organization. Apart from these changes, the general layout, structure, tone of voice or type of content has not changed. Therefore the comments still remain relevant. Also, it is worth noting that this survey asked highly educated people who complain the information is "very corporate" and not "punchy" enough.

The results might be probably a bit more negative for less educated people. What seems confusing though is that one person found "I thought it'd be more scientific." In other words, the website seems on one hand too corporate, but on the other hand, not scientific enough. This comment has to do with the general layout visual and structure. Indeed, the website offers plenty of scientific document, and information.

---

[28] FHIOS (2009) Op Cit, p.16.

Current information layout should be "the main source of updates and information on the work of your organization. These updates could come in various formats: as news releases, as notices of upcoming events, as feature stories or as multimedia presentations. Notice of job vacancies and contact information are other examples of important information items."[29] IUCN's website offers a variety of current information displayed in various sub-sections: News (containing News by date, News by region, News by theme, IUCN at international events, Monthly focus, Blog and Twitter Hub). It also offers a section for Media (containing Media contacts, News releases, IUCN experts, Facts and figures, IUCN in the news, and media awards)[30]. Job postings are under another section, and are among the most visited pages of the website.

The current information layout seems quite well categorized with clearly distinct sections for press releases, news, or multimedia (under resources). Labeling of sub-sections is clear and user friendly. The template used to show written content is quite plain yet clear. However, "it is better to use formats tailored to the particular type of information you want to display"[31].

On IUCN's website, most written content has a similar format. It is difficult to distinguish a press release from an

[29] Nuk, Igor, Olejarnik, Michal (2002) Op Cit, p.88.
[30] IUCN Global website's homepage. Retrieved 8 May 2013 from http://www.iucn.org
[31] Nuk, Igor, Olejarnik, Michal (2002) Op Cit, p.91.

article or a news story solely based on format or design. This section also contains a direct access to social media tools such as blog or twitter hub. However, the systematic way the same font is used offer the viewer a harmonized impression of the organization and its three pillars.

The second part the website of an international organization should contain is the presentation section: where the organization describes itself. Typically, it is one of the most visited sections, and one that first time visitor will check. It is a crucial section, for it should not only present clearly the organization (typically for the general public, hence in general terms), but also induce (or not) visitors to continue their navigation on the website and explore more in depth what the organization has to offer:

> A good website needs a presentation layer in order to provide background information on your organization, on the one hand, and to communicate important issues, on the other. Without it, the information on your website has no context or background and will not be effective.[32]

A presentation section should contain three elements: background information on the organization, highlight of some projects or issues, advertising services offered by the organization.

On IUCN's website, the presentation section is mainly About IUCN (containing What is IUCN, Our Union, How we work,

---

[32] Ibid, p.95.

Accountability and values, IUCN awards, World Conservation Congress) and What we do (containing What we do, Our work, Global program, priorities, Work by topic, Our experts, Biodiversity). IUCN's presentation section seems well built: it contains background information on the organization, highlight issues such as biodiversity or projects or events such as the World Conservation Congress, and what services are offered by the organization.

In terms of design and attractiveness for users, the 2009 survey gives us some indication: "Unless you're taking notes you're not going to sit and read through all of that" (About the IUCN page) or "the introduction didn't really grab me. It's a bit disappointing. I'd like something with a bit more punch." (What we do page)[33], "now it seems like a smaller campaigning organization not the international company I first thought it was." [34] Although the survey was done in 2009, not much has changed on these pages since then, for the background information, or highlights are still the same since decades. Therefore it could be said that the problem distinguished by the survey in about the format, design, visual or language used.

The structure is complete as described above. The language seems the same on the whole website: scientific and complex for users who are not familiar with multi-stakeholders governance systems or environmental issues: how to simplify

---

[33] FHIOS (2009) Op Cit, p.17.
[34] Ibid, p.18.

the language used in the presentation section, and render more attractive the layout of the pages:

> The effectiveness of the presentation pages depends on the visual impact they make and on the quality of the content they include; they need to be easy to understand and to communicate the essential points regarding the issue presented. In other words, in presentation pages, the creativity of your editors and designers is put to the test.[35]

The third section or layer a website of an international organization should contain is about documents:

> The Web is an ideal tool for distributing documents to a worldwide audience and it is hard to imagine an international group's website that does not provide an online library.[36]

These documents range from policy statement, to speeches of senior officials, reports and analyses to publications. On IUCN's website, the document section is called Resources (containing publications, conservation tools, monthly focuses, multimedia, did you know, statutory and corporate documents, monitoring and evaluation). This layer is also rich in information and data. It contains what the organization produces of in terms of written content (apart from news), but also in terms audio and visual content (video and photo).

Finally, the website should contain online service such as ordering publications or downloading photos, videos or

---

[35] Nuk, Igor, Olejarnik, Michal (2002) Op Cit, p.97.
[36] Ibid, p.99.

sharing articles. IUCN's website is quite poor in terms of online services. It only offers the possibility to share content on social media. This is part of the last layer a website should contain, and yet "they certainly do not have a minor importance to your website."[37]

Most of the website offers the possibility to share the content on social media channels, and news are available on RSS feed. However it is not customizable and does not really interact with viewers: no forum is available, it is not possible to show only some information to selected visitors. Therefore, the website lacks some of the latest technologies, which is what the 2009 survey highlighted: "You'd expect it to be up to date technologically."[38]

Concerning the general visual of the website, it seems quite homogenate: colors, font, size of pictures, layout. From all perspectives, the website looks and feels one in all sections and sub-sections, even when navigating several levels under the top pages. This is a very positive point as it conveys an image of consistency and seriousness. The external image conveyed by a website is part of the external communication. It is crucial for a knowledge-based organization to provide access to its products through the Internet.

IUCN's website offers a wide range of information about the organization, its actions, and also scientific knowledge about

---

[37] Ibid, p.104.
[38] FHIOS (2009) Op Cit, p.20.

the environment. In that sense, it is a well built website for international organizations. Therefore, it is possible to conclude that the website participates influencing its traditional audience by providing valuable information. However, IUCN could make a better use of this website by (1) proposing an online ordering system for its books and other scientific products, and (2) developing a section for the general audience with more user-friendly information.

In this sense, the website participates in improving IUCN's influence on the environmental community. However, it does not improve the outreach to other audiences. The following section analyzes how new ICTs were used at the 2012 World Conservation Congress in Jeju, Republic of South Korea.

6.4 The use of Internet and social media at 2012 WCC

As discussed previously, World Conservation Congresses are crucial for IUCN. They enable the organization to fund new projects and develop new tools used at the Congress or launched during the event. One example of this emulation is the Motions blog, which is an online platform where the Secretariat can show all motions in three languages.[39] The motions blog is not the only new information and communication technology used at the World Conservation Congress.

---

[39] IUCN (2012) *The Motions Blog*. Gland, Switzerland: IUCN. Retrieved 10 February 2013 from https://portals.iucn.org/2012motions/latest/

Social media were also heavily used to promote externally the event and communicate internally as well. Some elements presented further (such as IUCN's audience on YouTube or Flickr) indicate that its audience is mainly IUCN members, staff, commission members and Congress participants. Therefore social media are also an internal communication tool, especially for a knowledge organization such as IUCN. In this case, internal and external communications blend.

Social media enabled members and the Union in general to promote internally and externally its work; share information within the Union and Congress participants; and communicate quickly and cheaply crucial information. Another element tends to confirm the fact that social media were also used as an internal communication tool: after the congress, the hashtag #IUCN2012 was only rarely used on Twitter, YouTube or Flickr. And the Twitter hub, as the World Conservation Congress website lost the majority of the traffic. As follows, an analysis of the two main ICTs tools used at the 2012 Congress: the motions blog and social media.

The motions blog aims at enabling members to participate more actively in the motions process and make the process more transparent and efficient. This is one of the resolutions from the past Congress. From the beginning of the process where motions are submitted (few months before the Congress) to the last day of the Congress (where motions are

voted), members can see every motion, its status (submitted, in debate group, voted or rejected) and the text accordingly (firs draft, amended draft, or final version). With a growing number of members and motions, the motions process benefited from this new technological tool. Indeed, the Motions blog was intensively consulted during the Congress with a total of over 63'000 page views, a ratio of returning visits of approximately 4.5, and an average time of 8 minutes. Together, these results show that IUCN members made great use of this new tool. At the 2012 Congress:

> (…) 183 Resolutions and Recommendations were finally adopted by the 2012 IUCN World Conservation Congress in Jeju. This amount represents a 34% increase over the 136 Resolutions and Recommendations adopted by the 2008 World Conservation Congress in Barcelona. From 2008 to 2012 there has been an 11.5% increase in IUCN Membership. In the last 4 Congresses there has been continuous increase in the number of submitted motions (…). 68% of Resolutions and Recommendations were found to be of Global scale.[40]

These good results show that the use of new Internet enabled the organization to be efficient although the high number of members of motions. Without this tool, members would have lacked some information. The high number of members who used the motions blog indicates its usefulness as an intranet system. It would otherwise also not have been possible for the

---

[40] IUCN (2012) *Preliminary Analysis of IUCN Resolutions and Recommendations*. Gland, Switzerland: IUCN. Retrieved 10 February 2013
http://cmsdata.iucn.org/downloads/preliminary_analysis_of_resolutions_and_recommendations.pdf

motions team to process the motions. Emails were sent, they were uploaded and downloaded from this website. The status of the motions was tracked. All this happened with ICTs, but behind the scenes by the secretariat for the members.

As part of the ICTs used at Congress, social media channels were heavily developed in 2012 (although IUCN was already active beforehand on social media). Indeed, IUCN hired a social media agency to support the development and implementation of a global social media strategy. It included a monthly photo competition on Twitter with some nature ambassadors such as Cousteau or Silvia Early; a blog contest on Facebook in partnership with Thomson Reuters; a new platform for all tweets about nature conservation called the Twitter Hub; new videos posted on YouTube; and a call for photos posted on Flickr with a vote for the best photo of the month. The strategy included as well more active community management on all channels; social media trainings at HQ and regional offices; and finally the monitoring of traffic coming from social media channels to the website.

As a consequence, IUCN multiplied by 34 the number of people talking daily about the #IUCN2012 Congress between September 3 to September 11, with a peak of 1.6 million people. The outreach means the number of people who have seen a tweet about the Congress (showing on their twitter wall). With a daily outreach average of 739,147 people, the objective of communicating on Twitter about the Congress was achieved. One of the reasons to explain these results

could be the fact that IUCN hosted the event, and therefore had access to most workshops and information, which made the communication easier and quicker. It enabled IUCN to implement a very focused Twitter strategy with "insiders' view" where the Congress was communicated from the inside such as: taking photos, interviewing participants, sharing one quote or the results of the discussion in a snapshot.

Also, being the host meant communicating first about the information produced during the event. This meant that other major environmental organizations or partners retweeted what IUCN had communicated. "Big players" such as the World Bank, UNEP, Syngenta, Holcim or conservation heroes such as Silvia Hearl have hundred of followers on Twitter. And therefore when they retweeted and reached their audience, it enabled IUCN to become more visible. Here again, internal and external communications blend: IUCN shares information with other Congress participants and IUCN members; and also with external audiences.

Furthermore, IUCN developed interactive dialogues similar to what the UN developed at Rio+20 with the Rio Dialogues. The World Leaders Dialogues feature "internationally recognized experts, politicians and CEOs in a series of five moderated public debates that tackle the most strategic issues related to conservation and sustainable development."[41] These

---

[41] World Conservation Congress (2012) *The Forum*. Gland, Switzerland: IUCN. Retrieved 12 February 2013 from http://www.iucnworldconservationcongress.org/forum___exhibition/world leaders_dialogue/

dialogues were transmitted online and people from all around the world could send their questions to the panel before and during the session. The questions or comments were also shown on a screen behind the stage where the panel discussed. These dialogues, combined with an interactive twitter strategy, could explain part of the good results.

Another tool developed especially for the Congress was the Twitter Hub: it is a platform showing on one page all tweets about some specific subjects defined in advance.[42] For instance, all tweets mentioning nature or including hashtags about biodiversity can be found on this page. It shows as well many other categories. This is quite useful for journalists, researchers, or IUCN members and Commission members who can find already sorted information on nature and about the Congress.

The traffic on this platform evolved over the Congress from 57 page views per day to 354 at the end of the Congress with an average time of 3 minutes per page. However, in total, the number of page views is quite small and under 3000 for the whole congress with about 2500 single visits. This means only 2500 persons checked this platform, and very few came back for a second or third visit.

Few reasons could explain this problem: little promotion, late implementation (hence few people knew about it), and

---

[42] IUCN (2012) *Twitter Hub*. Gland, Switzerland: IUCN. Retrieved 12 February 2013 from http://iucnworldconservationcongress.org/twitter_hub/

difficult to communicate the concept, which resulted too complicated or foreign for non-social media specialists.

In addition, IUCN multiplied per almost four the number of videos viewed on its YouTube channel. It is quite a good result. And most videos viewed are internal such as the "flashmob" which is a dance happening performed by some IUCN staff. On Facebook the number of people reached was multiplied by 3.3 throughout the Congress. The number of fans of IUCN' page didn't grow as it was expected to.

One reason to explain this result is the fact that contrary to Twitter, the number of posts and updates per day is quite limited. More than five is often seen as too invasive for the fans of a page. Also, the page was used by other users to protest about the naval base and some updates were promoted by other major organizations such as the World Bank. In addition, Facebook seems more adapted to social content, whereas Twitter allows also social and more scientific content to be communicated. Lots of news agencies use Twitter to receive the latest news on what is happening in the world.

Nevertheless another element previously implemented on IUCN's Facebook channel before the Congress enabled to rise substantially the number of its followers: a blog contest in partnership with Thomson Reuter, which resulted in doubling the number of fans from 25'000 to 50'000. Originally, this contest was not on social media. It was created to promote IUCN through the journalist community, especially young

ones from developing countries. Every journalist on the planet could send one article about nature and a panel of specialists chose the best one, who received a money prize. What differed with the last contest was its openness to both journalists and bloggers. They were asked to write a blog post about nature and submit it on a specific Facebook page, where IUCN fans could vote on and choose the winner. The winner gained a trip to the 2012 World Conservation Congress.

The objective for IUCN was to grow its fan community. The contest worked very well in that sense: people had to like the IUCN page before voting for their favorite blogger. Therefore all friends from competitors who wanted to vote for their favorite candidate had to "like" IUCN's page. This "condition" to participate in a contest, game, or to obtain a result is found in many occasions on social media channels. For instance, to receive free daily astrological updates, the user needs to share all his information and his friends' addresses. This "condition" to participate should have been also used on Twitter when IUCN organized a photo contest with Cousteau for instance. Indeed, the high numbers of followers achieved at the 2012 WCC were not kept or transformed in followers: today, IUCN has a bit less than 30'000 followers.[43]

Furthermore, IUCN reached a sharp increase on Flickr. Throughout the Congress, IUCN multiplied per five the

---

[43] IUCN (2012) *IUCN Twitter account*. Gland, Switzerland: IUCN. Retrieved 12 June 2013 from https://twitter.com/IUCN/followers

number of page views on this channel, reaching a peak of over 5100 pages viewed daily. The Conservation Campus photos were the most viewed. They were photos from the event that could give a "flavor" or a "taste" of what was happening every day. This result confirms what has been said for YouTube: this audience is quite "internal", maybe not necessarily only IUCN, but surely Congress participants and IUCN members.

Finally, some considerations about these results: at the same time the World Conservation Congress took place, a demonstration of local inhabitants grew in importance and coverage: they were fighting against the construction of a naval base on the island of Jeju. They used the Congress as a way to promote their cause. This brought the issue even more in the spotlight in Korea. Even if some participants of the Congress joined the cause and asked for more information, the protests on the island and online were mainly Korean and in Korean language.

Nevertheless, this also brought lots of tweeters to follow the Congress and participate in the discussion platform. In the context of an event, new ICTs can even substitute to more traditional forms of communication between the different parts of the organization due to their openness and flexibility. In that sense, they also improve IUCN's internal communication.

This chapter showed that new ICTs did not transformed IUCN's external competences. If they make communication easier, accessible, instantaneous and affordable, new ICTs do not solve all issues. In the case of IUCN, they have improved its influence toward its traditional audiences, but have not yet improved its outreach to the general public. Since the generalization of new ICTs, IUCN is not better known by people or organizations outside the environmental community.

Conclusions

This research was motivated by a deep concern about the urgent necessity to protect nature and to find a global response to this need. In this sense, it sought to participate in the academic debate about global governance gaps and democratic deficit. With the generalization of new ICTs at all levels, these new technologies have the potential to bridge global governance gaps and reduce democratic deficit of global governance institutions, as examined in this research.

The first conclusion of this thesis is that the use of new ICTs reduces global governance democratic deficit for three reasons that correspond to the three aspects of the political process: obtaining information, engaging in deliberation, and participating in decision-making. First, new ICTs enable non-state actors and individuals to access information, and hold state representatives accountable as never before.

Second, new ICTs enable non-state actors and in particular the global civil society to discuss simultaneously throughout the world. As seen with the Arab Spring, the Indignados or the World Social Forum, the global civil society has gained extra capacity to mobilize and debate.

Third, new ICTs give the possibility to vote online or at least to express an opinion through websites, forums, or social media channels. Because of the overlapping nature of new media, information is moving from one platform to the next in

a viral manner. The press uses social media and the Internet to find out the latest breaking news. Therefore social media and the Internet rapidly became a major source of information for the press and therefore a major channel of expression for many actors of the international stage. The so-called Internet values of transparency and mass collaboration apply also at the global level.

The second conclusion states that the use of new ICTs gives rise to a new feeling of belonging to humanity. The international reality is diverse and plural. It emerged from an international society of states and became a post-international society where states, TNCs and global civil society organizations develop and perform transboundary activities.

The missing element for an international community –namely a sense of common identity– can become reality thanks to the generalization of new ICTs. As described by cosmopolitanism, the international reality is made of multiple and overlapping identities. Indeed, individuals belong to various groups and communities, which becomes even truer with all possibilities offered by new ICTs. Furthermore, thanks to access to information, more and more people, political and business leaders, organizations and communities are aware that global issues are shared around the world and common to all individuals. The new digital realities where time and space do not exist reinforce this sense of sharing common global issues.

Often decried as a factor of uniformization, new ICTs might in fact enable non-state actors and in particular global civil society and individuals to grow a sense of common identity thanks to the increasingly urgent needs to protect their environment, which comprises of peace, nature, or health. This new understanding of the globality of most issues and of their solutions is giving rise to a new feeling of belonging to humanity that will not substitute to national or local identity but will add to it. This element is due to the generalization of new ICTs and the impact of information and knowledge on populations.

The third conclusion states that new ICTs have increased the participation of the global civil society in a global environmental governance mechanism: IUCN's resolution and recommendation process. Its members, mainly composed of civil society organizations, adopted four times more resolutions and recommendations at each World Conservation Congress since 2000.

New ICTs are the main explanatory factor for this increase: the participation in such decentralized global decision-making process can only be performed through affordable and efficient information and communication technologies. The resolution and recommendation process starts well in advance before the World Conservation Congress. Therefore IUCN members need to discuss about a topic to be proposed, to coordinate their actions, and to agree on a final text that will

be sent as a motion to IUCN's headquarter before the Congress.

Because IUCN members are spread throughout the world, this can only be done thanks to new ICTs. Otherwise, only states, some IOs and few major NGOs could dedicate funding for the logistics and human resources to participate in this process. As the majority of IUCN members are smaller NGOs, the strong increase in participation can only be explained by the use of new ICTs.

This third conclusion is confirmed by the fact that IUCN members adopted more resolutions and recommendations about "education, capacity building, raising awareness, and communication" since 2000. It became the fourth most adopted topic with an increase ranging from 10 resolutions and recommendations adopted at WCC in 2000 to 76 in 2012. This sharp increase indicated not only that IUCN members value much more education and information, but also that they make an extensive use of new ICTs through raising awareness and communications.

The fourth conclusion of this thesis reveals that new ICTs have enhanced IUCN members to reach a consensus on values. Although IUCN members adopt resolutions and recommendations with a simple majority procedure, consensus on some specific values can be distinguished. Indeed, IUCN members found consensus on values that define

their common understanding and vision of what nature conservation is.

The first common value is about open participation in nature governance: effective and equitable governance of nature that enhances the participation of all actors and users of nature. The two most adopted topics are "environmental governance" and "international agreements and processes". This result, combined with the previous conclusion stating that IUCN members participated more in this decision-making process, confirm that IUCN members found consensus on the value of open participation. This value shows that previously described Internet values such as mass-collaboration and transparency are increasingly incorporated in global environmental governance mechanisms.

The second value IUCN members agree on is the importance of focusing their actions on protecting ecosystems and species (respectively the third and sixth most adopted topic at WCC 2012). Indeed, well managed, healthy and diverse ecosystems and species enable a healthy and prosperous world. This is what IUCN calls "nature-based solutions": thanks to healthy ecosystems and protected species, nature can provide solutions to world environmental challenges such as climate change.

Thirdly, IUCN members agree that nature conservation should consider and include human well being (fifth most adopted at WCC 2012). It includes the rights and

responsibilities of indigenous people, local communities, cities, and populations. It is not only about their participation in global environmental governance mechanisms, but also about their human, social and economic development. This value follows the concept of sustainable development that unifies social, environmental and economical aspects of development.

The fourth value that IUCN members find a consensus on is knowledge. They agree that the production and dissemination of scientific knowledge is essential to nature conservation, which is shown by the increase in the number of resolutions and recommendations about economics, law, science and research, and education, capacity building, public awareness, and communication. Although nature conservation could be perceived as more action oriented or prevention towards the general public, IUCN members place science at the heart of their understanding and vision of what nature conservation is. Also, science being at the core of IUCN, it is not surprising that its members agree on the positive impact of knowledge on nature conservation.

The fifth conclusion of the research derives from the two previous ones: new ICTs have improved the legitimacy of a global environmental governance mechanism, namely IUCN's resolution and recommendation process, first by increasing the participation of the global civil society, and second by enhancing IUCN members to reach a consensus on values. In this case, new ICTs have reduced global

governance gap and global governance democratic deficit as argued previously.

The sixth conclusion of this research states that new ICTs did not have a substantial impact on a global environmental actor. The emergence and development of new ICTs did not change the internal knowledge management process of IUCN. To improve knowledge production, two elements are needed beyond the technological tools: a political will from the hierarchy, and an adaptive internal communication culture. IUCN did not have the political will to transform the organization into a knowledge producer and therefore did not transform its knowledge production processes. This result is quite surprising, as IUCN members have found a consensus on the importance of knowledge in nature conservation.

Furthermore, new ICTs did not transform the culture of the organization, and in particular its patterns of internal communication and information management flows. In such decentralized organization, cooperation between headquarters, regional and local offices does not come by itself and was a recurrent challenge. Although it was expected that the generalization of new ICTs would improve internal communication between all constituents, there has been no substantial impact since 2000. New ICTs did not change communication patterns between the different parts of the organization. What most external reviews highlight is a problem of culture rather than a question of means of communication. Similarly, the generalization of new ICTs has

not improved the communication with its members: new ICTs did not have the expected impact on IUCN's membership, for the same reasons as for knowledge management and internal communications.

The seventh conclusion of this thesis corresponds to the only impact new ICTs have had on IUCN. As indicated in external reviews, new means of communication have improved IUCN's capacity to engage with policy and lawmakers, and influence government officials, IOs and other NGOs prior and during global environmental governance meetings. Similarly, the analysis of IUCN's website and the use of new ICTs at the 2012 World Conservation Congress indicated that new ICTs have improved IUCN's capacity to reach the environmental community. On the other hand however, new ICTs did not improve its global outreach, especially when it comes to the general public as argued previously.

In the future, the need to protect nature will remain a high priority on the international agenda. Indeed, with a population due to grow until 2050 to reach 11 billion, pressure on natural resources to feed and shelter the world population can only increase. Also, due to economic growth in Africa, and the emergence of a middle class in developing countries, the demand for consumption goods will rise as will the demand for energy. To ensure that nature can continue to support our well being, good and functioning governance mechanisms are quintessential as they guarantee its conservation and the sustainable use of its resources.

As shown in this research, new ICTs can participate in closing global governance gaps, in particular by making information accessible and by reducing the democratic deficit of global decision-making mechanisms. Although global governance mechanisms will probably remain diverse and plural with no single, centralized institution of solid authority, new ICTs do offer the possibility to improve consensus-building mechanisms and include all relevant stakeholders in the decision process.

In this respect, further research to assess the impact of ICTs on other global decision-making mechanisms is required and would help to gain additional understanding of their potential impact. In addition, an analysis of all forms of civil society participation and consensus-building processes in global environmental governance could help bring forward general trends and show the role of new ICTs in this evolution.

In addition, further research should be conducted to examine the influence of civil society organizations on treaties and global agreements to protect nature. If some global environmental governance mechanisms are more legitimate than others, the next stage would be to define if the global civil society had gained more influence on the final version of treaties because of new ICTs. The coming year with the 21st Conference of the Parties on Climate Change in Paris will offer an opportunity to determine if the global civil society

has influenced states in reaching an agreement that reduces gas emissions.

This thesis together with the above mentioned future research in other areas of environmental governance could help build additional knowledge on the prevalence, limits and opportunities of new ICTs. Showing how new ICTs could be deployed to strengthen existing decision-making mechanisms and to ensure legitimate governance mechanisms that are successful in protecting nature, the foundation of our lives.

Bibliography

References

Annan, Kofi (2002) *Prevention of Armed Conflict: Report of the Secretary-General*. New York, NY: United Nations.

Arbour, Louise (2008) The responsibility to protect as a duty of care in international law and practice, *Review of International Studies*, Vol.34, Issue 3, pp. 445-458.

Archibugi, Daniele (2004) Cosmopolitan Democracy and its Critics: A Review, *European Journal of International Relations*, Vol.10, Issue 3, pp.437-473.

Arendt, Hannah (1970) *On violence*. Boston, MA: Houghton Mifflin Harcourt.

Ashton, Kevin (2009) That 'Internet of Things' Thing, *RFID Journal*.

Atapattu, Sumudu A. (2006) *Emerging principles of international environmental law*. Leiden, The Netherlands: Brill.

Avant, Deborah D., Finnemore, Martha, Sell, Susan K. (2010) *Who governs the globe?*. Cambridge, UK: Cambridge University Press.

Axelrod, Regina, Vandeveer Stacy, Downie, Leonard (2010) *The Global Environment: Insititutions, Law and Policy*. Washington DC: CQ Press, 3rd Edition.

Biermann, Frank, Pattberg, Philipp (2008) Global Environmental Governance: Taking Stock, Moving Forward, *Annual Review of Environment and Resources,* Vol.33, pp.277-294.

Billé, Raphael, Chabason, Lucien, Chiarolla, Claudio, Jardin, Mireille, Kleitz, Gilles, Le Duc, Jean-Patrick, Mermet,

Laurent (2010) Global Governance of Biodiversity: New perspectives on a shared challenge, *Health and Environment Reports n°6*. Paris, France: IFRI.

Bodansky, Daniel (1993) The United Nations Framework Convention on Climate Change: A commentary, *Yale Journal of International Law*, Vol.18, pp.451-558.

Bodin, Jean (1992) *On Sovereignty*. Cambridge, UK: Cambridge University Press.

Bollier, David (2003) The rise of Netpolitik: how the Internet is changing international politics and diplomacy. *A report of the Eleventh Annual Aspen Institute Roundtable on Information Technology*. Washington, DC: Aspen Institute.

Bruszt, Gabor (1999) *The External Review of IUCN Programme*. Gland, Switzerland: IUCN.

Bruszt, Gabor (2003) *The External Review*. Gland, Switzerland: IUCN.

Bull, Hedley (1977) *The Anarchical Society: a study of order in world politics*. New York, NY: Colombia University Press.

Bundestag (2002) *Study Commission, Globalization of the World Economy: challenges and answers*. Short version of the Final Report, Berlin, 14th Legislative period.

Büthe, Tim (2004) Governance through private authority: non-state actors in world politics, *Journal of International affairs*, Vol.58, Issue 1, pp.281-290.

Caldwell, Paul, Lynton, Keith, Weiland, Stanley (1996*) International Environmental Policy: From the Twentieth to the Twenty-first Century*. Durham, NC: Duke University Press.

Calhoun, Craig J. (2007) *Nations matter: culture, history, and the cosmopolitan dream*, New York, NY: Routledge.

Camilleri, Joseph A., Falk, Jim (1992) *The End of Sovereignty?: The Politics of a Shrinking and Fragmenting World*. London, UK: Edward Elgar Publishing.

Castells, Manuel (2000) *The Rise of the Network Society, The Information Age: Economy, Society and Culture Vol. I*. Oxford, UK: Blackwell, 2nd Edition.

Castells, Manuel (2000) *The Power of Identity, The Information Age: Economy, Society and Culture Vol. II*. Oxford, UK: Blackwell, 2nd Edition.

Castells, Manuel (2000) *End of Millennium, The Information Age: Economy, Society and Culture Vol. III*. Oxford, UK: Blackwell, 2nd Edition.

Castells, Manuel (2012) *Networks of Outrage and Hope. Social Movements in the Internet Age.* Cambridge, MA: Polity Press.

Castells, Manuel (2007) Communication, power and counter-power in the network society, *International Journal of Communication*, Vol.1, Issue 1, pp.238-266.

Castells, Manuel (2009) *Communication power*. Oxford, UK: Oxford University Press.

Carroll, William, K., Carson, Colin (2003) The network of global corporations and elite policy groups: a structure for transnational capitalist class formation?, *Global Networks*, Vol.3, Issue 1, pp.29-57.

Chambers, Bradnee W., Green, Jessica F. (2005) *Reforming International Environmental Governance: From Institutional Limits to Innovative Reforms.* Tokyo, Japan: United Nations University Press.

Choucri, Nazli (2012) *CyberPolitics in International Relations*. Cambridge, MA: The MIT Press.

Christoffersen, Leif E. (1997) IUCN: A Bridge-Builder for Nature Conservation, In Bergesen, Helge Ole, Parmann, Georg (eds.) *Green Globe YearBook*. Oxford, UK: Oxford University Press.

Christoffersen, Leif E. (1996) *Report of the External Review of the IUCN programme*. Gland, Switzerland.

Clark, Ann M., Friedman Elisabeth J., Hochstetler, Kathryn (1998) The sovereign limits of global civil society: a comparison of NGO participation in UN world conferences on the environment, human rights, and women, *World Politics*, Vol.51, Issue 1, pp.1-35.

Daily, Gretchen C. (1998) *Nature's Services: Societal Dependence on Natural Ecosystems.* Washington, DC: Island Press.

Dallmayr, Fred (1996) *Beyond Orientalism: Essays on Cross-Cultural Encounter*. New York, NY: State University of New York.

Deibert, Ron (2011) Towards a cyber security strategy for global civil society?, In Finlay, Alan (ed.) *Global Information Society Watch 2011*. South Africa, Cape Town: APC and Hivos.

Deibert, Ron, Crete-Nishihata, Masashi (2012) Global governance and the spread of cyberspace controls, *Global Governance,* Vol.18, Issue 3, pp.339-361.

Deibert, Ronald (2012) The Growing Dark Side of Cyberspace (. . . and What To Do About It), *Penn State Journal of Law & International Affairs*, Vol.1, Issue 2, pp.260-274.

Deibert, Ron (2012) *Big data meets big brother: The political economy of cyber security*. Video presentation at Watson Institute for International Studies, Brown University.

Della Porta, Donatella (2005) *Transnational Protest and Global Activism.* Landham, MD: Rowman and Littlefield.

Dingwerth, Klaus, Pattberg, Philippe (2006) Global Governance as a perspective on World Politics*, Global Governance*, Vol.12, Issue 2, pp.185-203.

Edwards, Michael (2014) *Civil Society*. Cambridge, UK: Polity Press.

Ellis, David C. (2009) On the Possibility of 'International Community', *International Studies Review*, Vol. 11, Issue 1, pp.1-26.

Evans, James P. (2012) *Environmental Governance*. New York, NY: Routledge.

Finkelstein, Lawrence S. (1995) What is global governance? *Global Governance,* Vol.1, Issue 3, pp.367-372.

Florini, Ann (2000) *The third force: the rise of transnational civil society*. Washington, DC: The Carnegie Endowment for International Peace.

García Picazo, Paloma (2005) Sociedad/Comunidad internacional: ¿una 'comunidad imaginada'?*, In García Segura, Caterina, Vilariño Pintos, Eduardo (eds.) *Comunidad internacional y sociedad internacional después del 11 de septiembre de 2001*. Gernika-Lumo, Bizkaia: Gernika Gogoratuz.

García Segura, Caterina, Vilariño Pintos, Eduardo (2005) *Comunidad internacional y sociedad internacional después del 11 de septiembre de 2001*. Gernika-Lumo, Bizkaia: Gernika Gogoratuz.

García Segura, Caterina (2005) Sociedad internacional o desorden mundia después del 11 de septiembre de 2001, In García Segura, Caterina, Vilariño Pintos, Eduardo (eds.) *Comunidad internacional y sociedad internacional después del 11 de septiembre de 2001*. Gernika-Lumo, Bizkaia: Gernika Gogoratuz.

Gaventa, John (2001) *Global Citizen Action*. London, UK: Earthscan Publications.

Gibson, Katherine, Graham, Julie (2006) *A Postcapitalist Politics*. Minneapolis, MN: Minnesota University Press.

Goldenstein, Gordon M. (2014) The end of the Internet?, *The Atlantic.*

Goodland, Robert, Daly, Herman (1996) Environmental Sustainability: universal and non-negotiable*, Ecological applications*, Vol.6, Issue 4, pp.1002-1017.

Goudie, Andrew S. (1981) *The Human impact: Man's role in Environmental Change*. Oxford UK: Blackwell Publishers.

Grinin, Leonid (2007) Periodization of History: A theoretic-mathematical analysis, *History & Mathematics*, Vol.6, Issue 2, pp.10-38.

Hart, Jeffrey A. (2012) Information and communications technologies and power, In Costigan, Sean S., Perry, Jake (eds.) *Cyberspaces and global affairs.* Surrey, UK: Ashgate.

Haq, Gary, Alistair, Paul (2012) *Environmentalism since 1945*. New York, NY: Routledge.

Hardin, Garett (1968) The tragedy of the commons. The population problem has no technical solution; it requires a fundamental extension in morality, *Science*, Vol. 162, Issue 3859, pp. 1243-1248.

Hafner, Gerhard, Pearson, Holly (2000) Environmental issues in the work of the ILC, In Pearson, Holly (ed.) *Yearbook of international environmental law*, Vol.3. Oxford, UK: Oxford University Press.

Halliday, Josh (2009) Stuxnet worm is aimed to sabotage Iran's nuclear ambition, new research shows, *The Guardian*.

Held, David (1995) *Democracy and the global order; from the modern state to cosmopolitan governance*. Cambridge, UK: Polity Press.

Held, David, McGrew, Anthony G., Goldblatt, David, Perraton, Jonathan (1999) *Global Transformations: Politics, Economics, and Culture*. Stanford, CA: Stanford University Press.

Held, David, McGrew, Anthony (2002) *Governing Globalization: Power, Authority and Global Governance*. Cambridge, UK: Polity Press.

Holdgate, Martin (1999) *The green web: A union for world Conservation.* London, UK: Earthscan.

Hudson, Alex (2012) *The age of information overload*. London, UK: BBC News.

Hunter, David, Salzman James, Durwood, Zaelke (2010) *International Environmental Law and policy*. Mineola, NY: Foundation Press, 4th edition.

Huntington, Samuel (1996) *The Clash of Civilizations and the Remaking of World Order*. New York, NY: Simon and Schuster.

Hurrell, Andrew (1998) Society and anarchy in the 1990s, In Roberson, Barbara A. (ed.) *International Society and the development of international relations*. London, UK: Pinter.

Ibañez Muñoz, Josep (2005) Sociedad Postinternacional, In García Segura, Caterina, Vilariño Pintos, Eduardo (eds.) *Comunidad internacional y sociedad internacional después del 11 de septiembre de 2001*. Gernika-Lumo, Bizkaia: Gernika Gogoratuz.

International Court of Justice (1996) *Award in the Arbitration regarding the Iron Rhine ('Ijzeren Rijn') Railway (the Kingdom of Belgium and the Kingdom of the Netherlands),* The Hague, The Netherlands.

International Court of Justice (1997) *The Gabcikovo-Nagymaros Project*, The Hague, The Netherlands.

International Court of Justice (2010) *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*. The Hague, The Netherlands.

International Tribunal for the Law of the Sea (2001) *The Mox Plan Case, (Ireland vs United Kingdom)*, Provisional measures, London, UK.

IPCC (2007) What is the greenhouse effect ?, *Fourth Assessment Report*: *Climate Change 2007*. Cambridge, UK: Cambridge University Press.

Issawi, Charles (1980) Europe, the Middle East and the Shift in Power: Reflections on a Theme by Marshall Hodgson, *Comparative Studies in Society and History*, Vol.22, Issue 4, pp.487-505.

IUCN (1994) *Report of the External Review of the IUCN Programme 1991 – 1993, Final Report.* Gland, Switzerland.

IUCN Red List (2008) *State of the World's Species*. Gland, Switzerland.

IUCN (2010) *Strategic Plan for Biodiversity 2011-2020*. Gland, Switzerland.

IUCN (2012) *Preliminary Analysis of IUCN Resolutions and Recommendations*. Gland, Switzerland.

Jamison, Andrew (2001) *The Making of Green Knowledge: Environmental Politics and Cultural Transformation*. Cambridge, UK: Cambridge University Press.

Jardin, Mireille, Billé, Raphael, Chabason, Lucien, Chiarolla Claudio, Kleitz, Gilles, Le Duc, Jean-Patrick, Mermet, Laurent (2010) Global Governance of Biodiversity: New perspectives on a shared challenge, *Health and Environment Reports*, n° 6, IFRI.

Kaldor, Mary, Anheier, Helmut, Glasius, Marlies, (2003) *Global civil society 2003*. Oxford, UK: Oxford University Press.

Kaldor, Mary (2004) *Global Civil Society: An answer to war*. Cambridge, UK: Polity Press.

Kaldor, Mary, Moore, Henrietta, Selchow, Sabine (2012) *Global Civil Society 2012: Ten years of critical reflection Global Civil Society Yearbook*. London, UK: Palgrave Macmillan.

Kanji, Omario (2003) *Security Beyond Intractability*. Boulder, CO: University of Colorado Press.

Keck, Margaret E., Sikkink, Kathryn (1998) *Activists Beyond Borders: Advocacy Networks in International Politics*. Ithaca, NY: Cornell University Press.

Keohane, Robert O. (2011) Global governance and Legitimacy, *Review of International Political Economy*, V.18 (1), pp.99-109.

Kennan, George F. (1979) To Prevent a World Wasteland, *Foreign Affairs*, Vol.48, pp.401-13.

Krahmann, Elke (2003) National, regional and global governance: one phenomenon or many?, *Global governance*, Vol.9, Issue 3, pp.323-346.

Krisch, Nico (2012) Global Governance as Public Authority: An Introduction, *International Journal of Constitutional Law*, Vol.10, Issue 4, pp. 614-626.

Kuyper, Jonathan W. (2013) Global democratization and international regime complexity, *European Journal of International Relations,* Vol.20, Issue 1, pp.29-55.

Leberknight, Christopher S. (2010) *A Taxonomy of Internet Censorship and Anti-Censorship*. Princeton, NJ: Princeton University Press.

Lefeber, René (1996) *Transboundary Environmental Interference and the Origin of State Liability*. The Hague, Netherlands: Kluwer Law International.

Licht, Amir, Goldschmidt, Chanan, Swartz, Shalom H. (2005) Law and Corporate Governance, *International Review of Law and Economy*, Vol.25, pp.229-255.

Lidskog, Rolf, Sundqvist, Göran (2011) *The Air: The Dynamics of Science, Policy, and Citizen Interaction*. Cambridge, MA: The MIT Press.

Lipschutz, Ronnie D. (1996) *Global Civil Society and Global Environmental Governance: The Politics of Nature from place to planet*. New York, NY: State University of New York.

Manyika, James, Chui, Michael, Brown, Brad, Bughin, Jacques, Dobbs, Richard, Charles, Roxburgh, Hung Byers, Angela (2011) *Big data: The next frontier for innovation, competition, and productivity*. New York, USA: McKinsey Global Institute.

Marchetti, Raffaele (2009) Mapping Alternative Models of Global Politics, *International Studies Review*, Vol.11, Issue 1, pp.113-156.

Markoff, John (2009) Vast Spy System Loots Computers in 103 Countries, *The New York Times*.

Mayer-Schoenberger, Viktor, Cukier, Kenneth (2013) *Big data: a revolution that will transform how we live, work, and think*. New York: Houghton Mifflin Harcourt.

Messer, Ellen, Uvin, Peter (1996) Food enough for the needy? In *World Disasters report 1996*. Geneva, Switzerland: International Federation of Red Cross and Red Crescent Societies.

Melamed, Claire (2014) Data Revolution: Development's Next Frontier, *World Politics Review*, Vol.1, Issue 28, pp.2-28.

Miard, Fabien (2012) Call for Power? Mobile phones as facilitators of political activism, In Costigan, Sean S., Perry, Jake (eds.) *Cyberspaces and Global Affairs*. London: Ashgate.

Millennium Ecosystem Assessment (2005) *Ecosystems and Human Well-being*: *Synthesis*. Washington, DC: Island Press.

Mohr, Nikolaus (2013) *Mobile Web Watch 2012*. New York, NY: Accenture Publishing.

Morgenthau, Hans J. (1954) *Politics among nations: the struggle for power and peace*. New York, NY: Knopf, 2nd edition.

Morris, Christopher G. (1992) *Academic Press Dictionary of Science and Technology*. London, UK: Academic Press.

Munro, Robert D., Lammers, Johan G. (1987) *Environmental protection and Sustainable Development: legal principles and recommendations*. London, UK: Graham & Trotman.

Niebuhr, Reinhold (1932) *Moral Man and Immoral Society: A Study in Ethics and Politics*. Westminster, UK: John Knox Press.

Nowrot, Karsten (1999) Legal Consequences of Globalization: The Status of Non-Governmental Organizations Under International Law, *Indiana Journal of Global Legal Studies*, Vol.6, Issue 2, pp.579-645.

Nuk, Igor, Olejarnik, Michal (2002) *Building.org: a manager's guide to creating successful websites for international organizations*. Malta, La Valette: Diplohandbooks.

Nye, Joseph (2004*) Soft Power: The Means to Success in World Politics.* Cambridge, MA: Public Affairs, Perseus Books Group.

Ohanyan, Anna (2008) *NGOs, IGOs, and the Network Mechanisms of Post-Conflict Global Governance in microfinance*. New York, NY: Palgrave Macmillan.

Ohmae, Kenichi (1999) *The Borderless World: Power and Strategy in the Interlinked Economy*. New York, NY: HarperCollins.

Omelicheva, Mariya Y. (2009) Global Civil Society and Democratization of World Politics: A Bona Fide Relationship or Illusionary Liaison?, *International Studies Review*, Vol.11, Issue 1, pp.109-133.

O'Neill Kate (2009) *The environment and international relations*. Cambridge, UK: Cambridge University Press.

Peters, Guy B. (2012) Information and Governing: Cybernetic Models of Governance, In Levi-Faur, David (ed.) *Oxford Handbook of Governance.* Oxford, UK: Oxford University Press.

Petito, Fabio, Michalis, Michael S. (2009) *Civilizational Dialogue and World Order: The Other Politics of Cultures.* Houndmills, UK: Palgrave Macmillan.

Pianta, Mario, Marchetti, Raffaele (2007) *The global justice movement: a cross-national and transnational perspective.* Boulder, CO: Paradigm.

Porras, Ilena (1992) The Rio Declaration: a new basis for international cooperation, *Review of European Community and International Environmental Law*, Vol.1, Issue 3, pp.245-253.

Postiglione, Amedeo (2010) *Global environmental governance: the need for an international environmental agency and an international court of the environment*. Brussels, Belgium: Bruylant.

Powell, Frederick W. (2007) *The Politics of Civil Society: Neoliberalism Or Social Left?*. London, UK: Policy Press.

Pearce, David W. (1989) *Blueprint for a green economy*. London, UK: Earthscan Publications.

Pearlstein, Steven (2010) Can regulation beget innovation?, *The Washington Post*.

Poate, Derek, Gregorowski, Robbie, Blackshaw, Ursula, Newman, Steve (2011) *External Review of IUCN 2011*. London, UK: ITAD.

Rajagopal, Balakrishnan (2003) *International Law from Below: Development, Social Movements and Third World Resistance.* Cambridge, UK: Cambridge University Press.

Rajamani, Lavanya (2006) *Differential Treatment in International Environmental Law*. Oxford, UK: Oxford University Press.

Raustiala, Kal, Victor, David G. (2004) The regime complex for plant genetic resources, *International Organization,* Vol.58, Issue 2, pp.277-309.

Reed, Boland (1997) Symposium on Population Law: The Environment, Population, and Women's Human Rights, *Environmental Law*, Vol.27, pp.1137-1167.

Rhodes, Rod A. (2012) Waves of Governance, In Levi-Faur, David (ed.) *Oxford Handbook of Governance*. Oxford, UK: Oxford University Press.

Rosenau James N. (1995) Governance in the Twenty-first Century, *Global Governance*, Vol.1, Issue 3, pp.367-372.

Rosenau, James N. (2003) *Distant Proximities: Dynamics beyond Globalization*. Princeton, NJ: Princeton University Press.

Roughan, Nicole (2013) *Authorities: conflicts, cooperation, and transnational legal theory*. Oxford, UK: Oxford University Press.

Routledge, Katherine (1919) *The Mystery of Easter Island*, Kempton, IL: Adventures Unlimited Press.

Ruggie, John G. (2004) Reconstituting the global public domain – Issues, actors, and practices*, European Journal of International Relations,* Vol.10, Issue 4, pp.503-530.

Rugendyke, Barbara (2007) *NGOs as Advocates for Development in a Globalising World*. London, UK: Routledge.

Sands, Philippe, Peel, Jacqueline (2012) *Principles of international environmental law*. Cambridge, UK: Cambridge University Press.

Schaffer, Gregory C., Pollack, Mark A. (2010) Hard vs. Soft Law: Alternatives, Complements and Antagonists in International Governance, *Minnesota Law Revue*, Vol.9, Issue 23, pp.706-799.

Scheuerman, William E. (2011) Realists against the Nation-State, *Transnational Law and Contemporary Problems*, Vol. 20, Issue 1, pp.67-105.

Schumann, Frederick (1941) *International politics*. New York, NY: McGraw-Hill.

Schwarzenberger, Georg (1941) *Power politics: introduction to the study of international relations and postwar planning*. London, UK: Jonathan Cape.

Shachtman, Noah (2008) 26 Years After Gibson, Pentagon Defines Cyberspace, *Wired magazine*.

Shrestha, Rajendra, Alkemade, Rob, Trisurat, Yongyut (2011) *Linkage between Biodiversity, Land Use Informatics and Climate Change*. Hershey, PN: IGI Global.

Slaughter, Marie (2004) *A new world order*. Princeton, NJ: Princeton University Press.

Smith, Michael (2002) *Foreign Policy in a Transformed World*. Essex, UK: Pearson.

Sohn, Louis B. (1973) The Stockholm Declaration on the Human Environment, *Harvard International Law Journal*, Vol.14, pp.423-89.

Stiglitz, Joseph E. (2002) *Globalization and Its Discontents*. New York, NY: Norton and Company.

Strange, Susan (1994) *States and Market*. New York, NY: Continuum, 2nd Edition.

Tapscott, Don (2008) *Wikinomics: How Mass Collaboration Changes Everything*. New York, NY: Portfolio, Penguin Group.

Tarrow, Sidney (1998) *Power in Movement: Social Movements and Contentious Politics*. Cambridge, UK: Cambridge University Press.

Tarrow, Sidney (2005) *The new transnational activism.* Cambridge, UK: Cambridge University Press.

Thompson, Hubert K. (1995) *Modernity: An introduction to modern societies*. Malden, MA: Blackwell.

Tilly, Charles (1975) *The Formation of national States in Western Europe*. Princeton, NJ: Princeton University Press.

United Nations (1949) *Proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources.* New York, NY: United Nations.

United Nations (1972) *Declaration of the United Nations Conference on the Human Environment*. New York, NY: United Nations.

United Nations General Assembly (1974) *Resolution 3281*, (XXVII). New York, NY: United Nations.

United Nations General Assembly (1980) *Institutional arrangements to follow up the United Nations Conference on Environment and Development*. New York, NY: United Nations.

United Nations General Assembly (1987) *Report of the World Commission on Environment and Development: Our common future*. New York, NY: United Nations.

UNEP (2012) *Global Environmental Outlook 5: Environment for the future we want.* Nairobi, Kenya, UNEP.

Vabulas, Felicity, Snidal, Duncan (2013) Organizations without delegation: informal intergovernmental organizations (IIGOs) and the spectrum of intergovernmental arrangements, *The Review of International Organizations*, Vol.8, Issue 2, pp.193-220.

Voigt, Christina (2009*) Sustainable development as a principle of international law: resolving conflicts between climate measures and WTO law*. Leiden, Netherlands: Martinus Nijhof.

Von Weizsäcker, Ernst, Lovins, Hunter L., Lovins, Amory (1997) *Factor Four: doubling wealth, halving resource use*. London, UK: Earthscan Publications.

Weiss, Brown E. (1990) What obligation does our generation owe to the next? An approach to global environmental responsibility: our rights and obligations to future generations for the environment, *American Journal of International Law*, Vol.84, pp.190-93.

Weiss, Thomas G. (2000) Governance, Good Governance and Global Governance: conceptual and actual challenges, *Third World Quarterly,* Vol.21, Issue 5, pp. 795-814.

Wessel, David (2007) Prizes for Solutions to Problems Play Valuable Role in Innovation, *Wall Street Journal*.

Wilson, Edward O. (1992) *The Diversity of Life*. Cambridge, MA: Harvard University Press.

Wolf, Martin (2004) *Why globalization works?*. New Haven, CT: Yale University Press.

The Word Bank (2000) *World Development Report 1999/2000: Entering the 21st Century - The Changing Development Landscape*, Washington DC: World Bank.

Woodhill, Jim, Whyte, Anne (2008) *The External Review of IUCN Programme*. Gland, Switzerland.

Wu, Tim (2003) Network Neutrality, Broadband Discrimination, *Journal of Telecommunications and High Technology Law,* Vol.2, pp.141-178.

Zürn, Michael (2004) Global governance and legitimacy problems, *Government and Opposition*, Vol.39, Issue 2, pp.260-87.

Zürn, Michael, Binder, Martin, Ecker-Ehrhardt, Mathias (2012) International authority and its politicization, *International Theory*. Vol.4, Issue 1, pp.69-106.

Official documents

CBD (2010) *The Nagoya Protocol*. Montreal, Canada: CBD.

CBD (2010) *Strategic Plan for Biodiversity 2011-2020*. Montreal, Canada: CBD.

European Union (1957) *EU Treaty amended by the Treaty of Lisbon.* Brussels, Belgium.

United Nations (1992) *Rio Declaration on Environment and Development*. New York, NY: United Nations.

Websites

Collins English Dictionary, retrieved 7 September 2013 from http://www.collinsdictionary.com

Oxford English Dictionary, retrieved 18 June 2012. Oxford dictionary, http://oxforddictionaries.com

Moving America Forward, retrieved 5 August 2013 from http://www.democrats.org/democratic-national-platform

Business Dictionary, retrieved 7 September 2013 from http://www.businessdictionary.com

IPBES, retrieved 8 March 2013 from http://www.ipbes.net

IUCN, retrieved 10 February 2013 from http://www.iucn.org

IUCN Motions Blog, retrieved 10 February 2013 from https://portals.iucn.org/2012motions

IUCN Resolutions and Recommendations Platform, retrieved 12 March 2014 from https://portals.iucn.org/library/resrec

UNEP, retrieved 10 December 2012 from http://www.unep.org

World Conservation Congress, retrieved 7 May 2013 from http://www.iucnworldconservationcongress.org

World Social Forum, retrieved 11 October 2013 from http://www.forumsocialmundial.org.br